

EXPANDING BROADBAND CONNECTIVITY IN NORTHEAST ASIA WITH THE ASIA-PACIFIC INFORMATION SUPERHIGHWAY (AP-IS)

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BACKGROUND – CHARACTERISTICS OF ICT

- Unique capabilities of reaching remote and rural areas instantly and delivering information digitally and cost-efficiently, ICT has been helping create business and employment opportunities, better match demand and supply of agricultural produce, enhance quality of healthcare and education through e-health and e-education, just to name a few (Rossotto, Gelvanovska, Hohlov et al 2015, Heeks 2017).
- A meta-infrastructure which supports other infrastructure, such as intelligent transport systems (ITS), smart grids, paperless trade and single windows (ESCAP 2018a).

BACKGROUND – BROADBAND

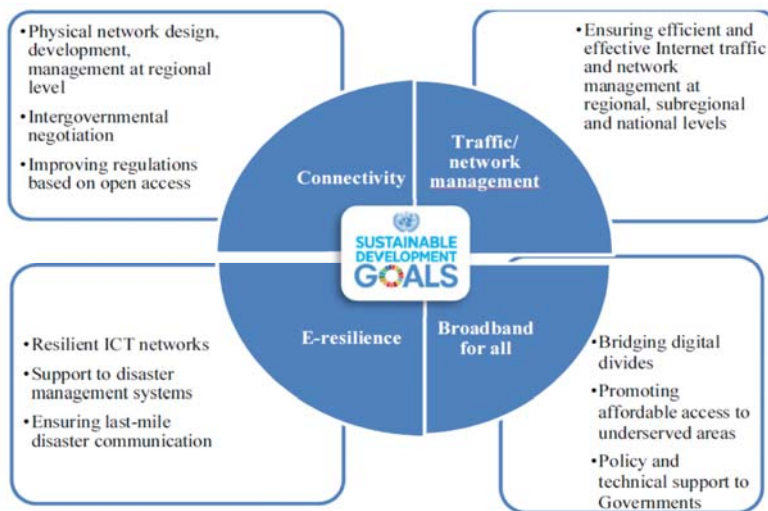
- Because of the rapid advancement of emerging technologies, such as artificial intelligence (AI) and blockchain, the gap between developed and developing countries may be widening (ESCAP 2017a).
- The improved communication and transport infrastructure in particular expected to lower barriers to market access (ADB 2009).
- The telecommunication infrastructure is also evidenced to have positive impacts on economic growth (Datta and Agarwal 2004, Röller and Waverman 2001)
- Development of broadband infrastructure as their national development priorities

BACKGROUND – ICT IN NORTHEAST ASIA

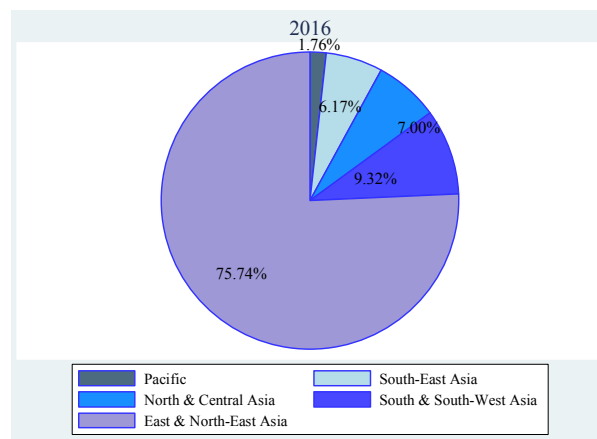
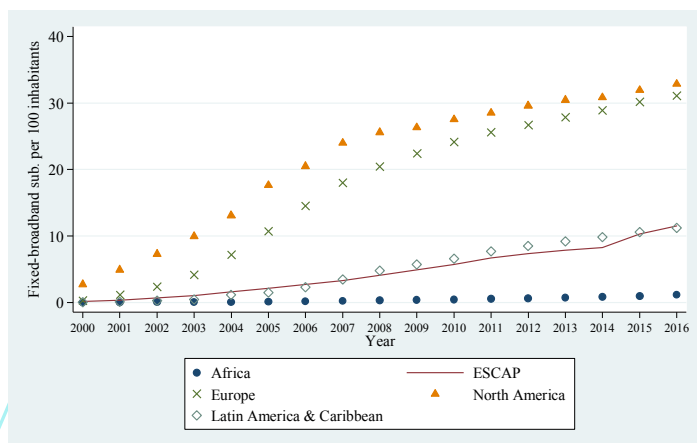
- China, Japan and the Republic of Korea have been leading the development of physical infrastructure, applications and emerging technologies, such as artificial intelligence and blockchain globally (ESCAP 2018e, UN 2018).
- While coastal areas of these countries enjoy the advantages of submarine cables, the inland territories are not well integrated into the regional broadband networks

ASIA-PACIFIC INFORMATION SUPERHIGHWAY (AP-IS) AS FRAMEWORK FOR ANALYSIS

- UN-resolution based regional broadband connectivity initiative which aims to enhance the availability, affordability, resilience and reliability of broadband networks in Asia and the Pacific

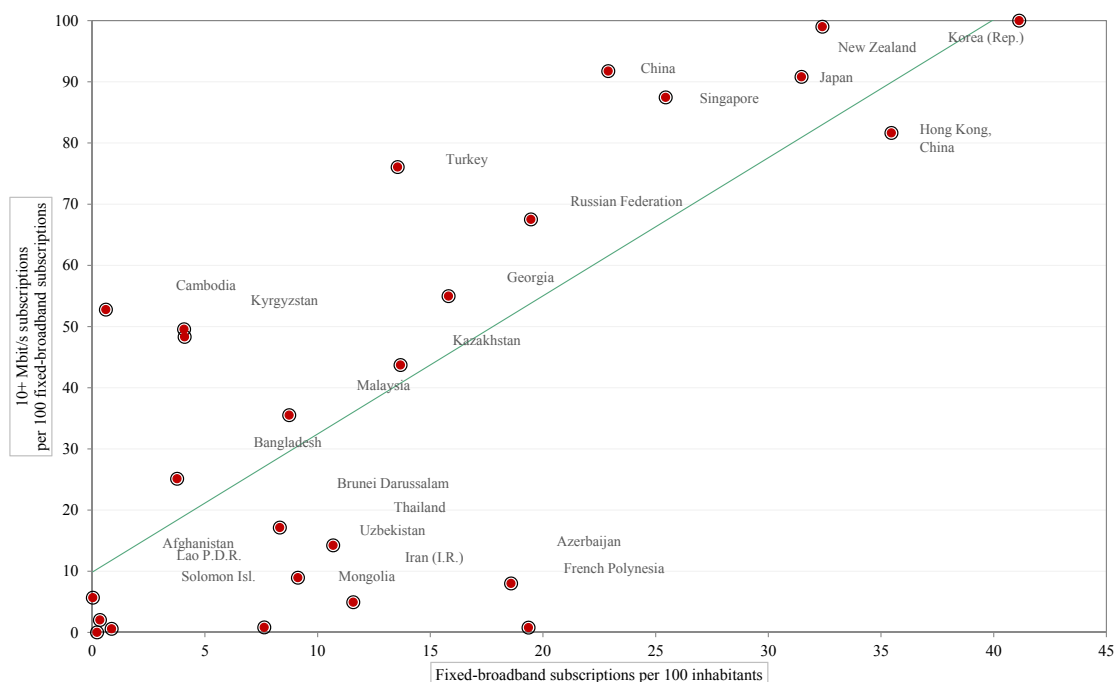


FIXED BROADBAND DEVELOPMENT IN AP: COMPARISON WITH OTHER REGIONS AND TOTAL NUMBER OF FIXED BROADBAND SUBSCRIBERS



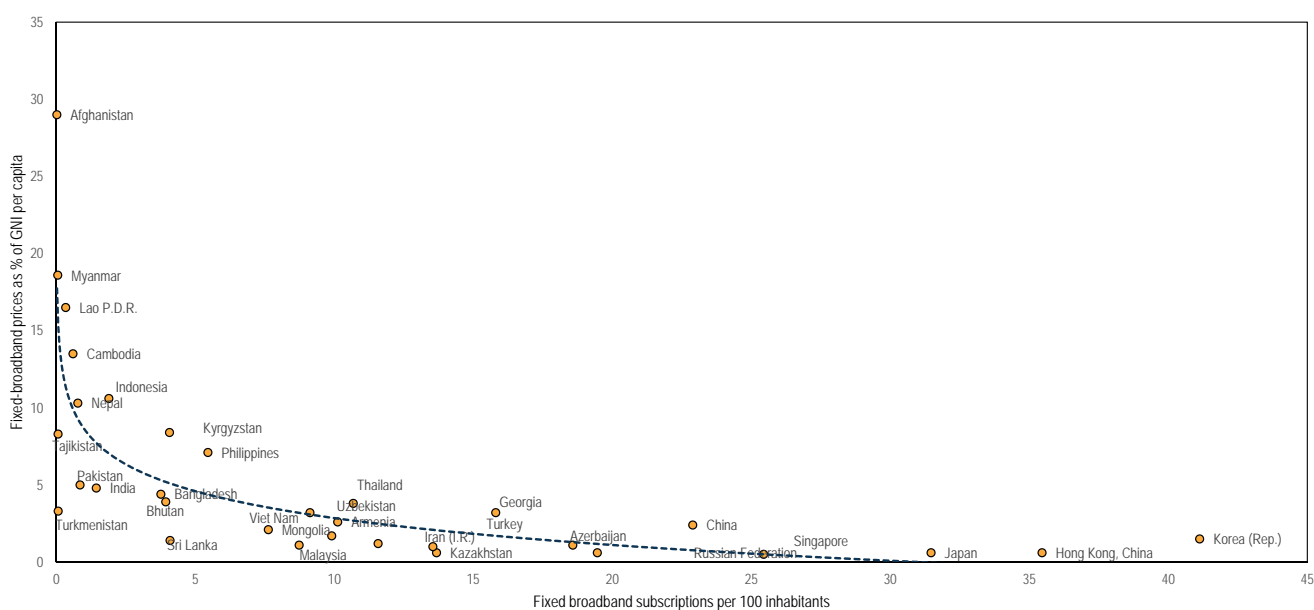
Source: Produced by ESCAP, based on data from ITU World Telecommunication/ICT Indicators Database (accessed July 2017).

FIXED BROADBAND NETWORK SPEED



Source: Produced by ESCAP, based on data from ITU World Telecommunication/ICT Indicators Database (accessed July 2017).

FIXED BROADBAND AFFORDABILITY

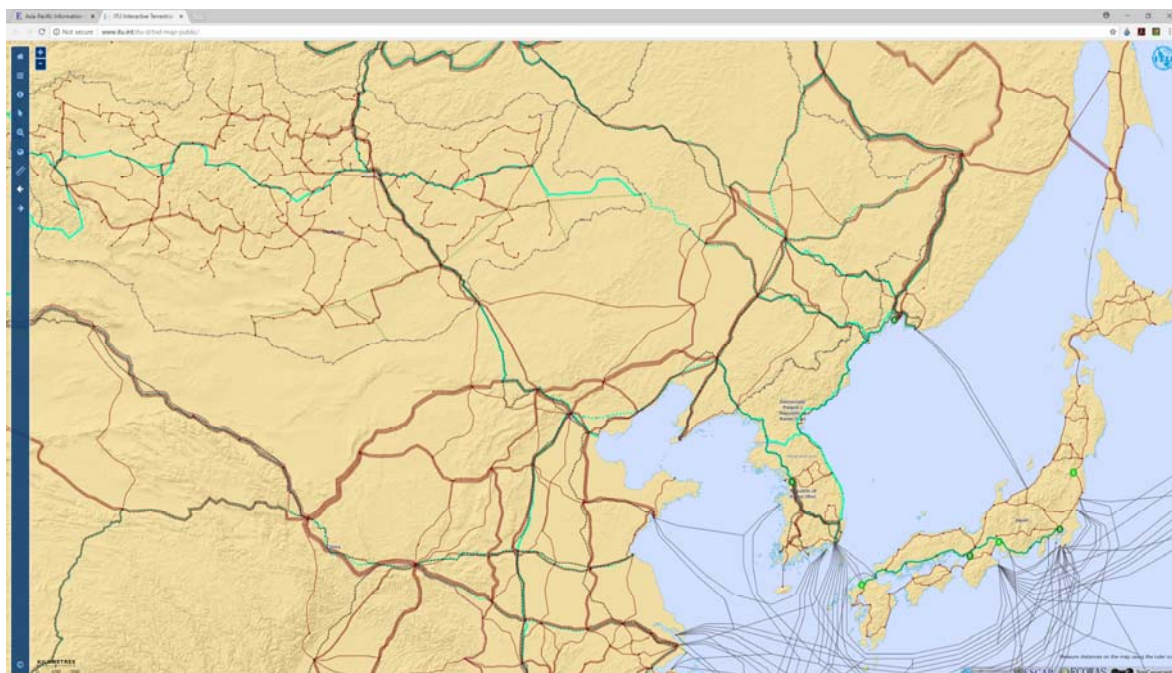


Sources: Produced by ESCAP, based on data for fixed broadband subscriptions per 100 inhabitants sourced from ITU World Telecommunications/ICT Indicators Database (accessed July 2017). The data on fixed-broadband prices as a percentage of GNI per capita is sourced from the Measuring the Information Society Report 2017, available from http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2017/MISR2017_Volume2.pdf

BROADBAND DEVELOPMENT IN NORTHEAST ASIA

	World	East Asia/ Pacific	China	DPRK	Japan	Mongolia	RoK	RF
Population (millions)	7,442	2,297	1,379	25	127	3	51	144
GNI per capita (\$)	10,299	9,868	8,260		38,000	3,550	27,600	9,720
Telecom revenue (% of GDP)	2.3	2.1	1.7			3.4	3.7	1.8
Telecom investment (% of revenue)	20.7		38.8			25.7	6.9	19
Mobile subscriptions/100 ppl	101.6	109.6	96.9	14.3	129.8	113.6	122.7	163.3
Fixed BB subscriptions/100 ppl	12.5	18.8	22.9		31.5	7.6	41.1	19.5
Individuals using the Internet (%)	45.9	52.8	53.2		92	22.3	92.7	76.4
Population covered by 3G+ (%)	85	95	97	95	100	95	99	75
Int. Internet bandwidth (bits/user)	78,795	71,118	14,699		83,010	166,056	54,252	51,888
Mobile service fee (\$ a month)	9.5	7.3	4.2		32.8	2.7	28.3	3.9
Fixed BB service fee (\$ a month)	20.1	20.5	16		20.1	6.7	34.1	6
Online service index (0-1, 1=highest)	0.46	0.35	0.77	0.02	0.88	0.51	0.94	0.73



FIBRE OPTIC CABLE SYSTEMS IN NORTHEAST ASIA



Source: AP-IS Transmission Map at www.itu.int/itu-d/tnd-map-public/ (accessed on 21/08/2018). Blue line indicates Asian Highway routes; green dots are IXPs; barbed line indicates Trans-Asian railway routes; dark red is the transmission links.



CONCLUSION

- Submarine and terrestrial cables abundant along coastal areas
 - Inland and landlocked country/areas slow to be connected
 - Exposure to natural disasters
 - Emerging technologies, such as artificial intelligence and blockchain, driving the divide further
 - Need for effective policy and regulations to manage vulnerabilities and effective utilization of data/bandwidth
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