

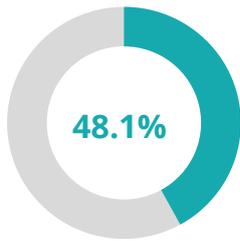


BHUTAN DIGITAL CONNECTIVITY BRIEF

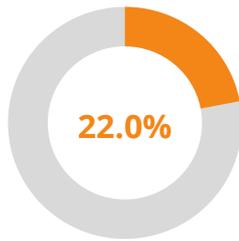


Country overview

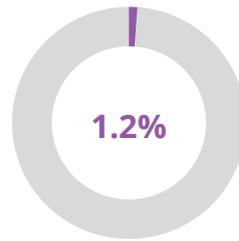
Bhutan has a stable political and economic environment, and has made a lot of progress in reducing extreme poverty and promoting gender equality. However, just 48.11% of Bhutan’s population has used the internet, and only 22% are connected to mobile broadband; with 1.2% connected to fixed broadband. While mobile penetration has increased significantly over the past decade, fixed broadband subscriptions declined during the period 2015-2019 (-26 %), and the gender gap in internet use is one of highest in the region.



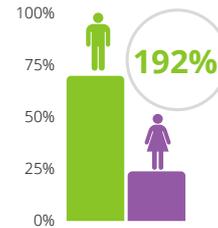
ONLINE POPULATION
Source: ITU, 2019



MOBILE BROADBAND PENETRATION
Source: A4AI from GSMA, 2020

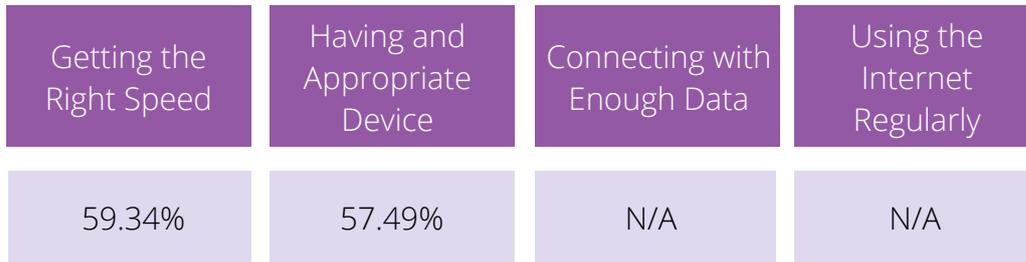


FIXED BROADBAND PENETRATION
Source: A4AI from ITU, 2019



INTERNET USE GENDER GAP
Source: A4AI from EQUALS, 2019

Dimensions of Meaningful Connectivity



Source: GSMA, 2020

Meaningful connectivity to the internet implies having access to an appropriate device, enough data and speeds, and using the internet every day. Close to 60% of the people in Bhutan have access to 4G compatible speeds, while about 57% have access to smartphones, i.e., an appropriate device. This scenario is better than in other countries in South Asia, but still insufficient. According to the country’s Broadband Policy (2014), entry level broadband means a minimum download speed of 512 kilobits per second (kbps).

ICT Affordability

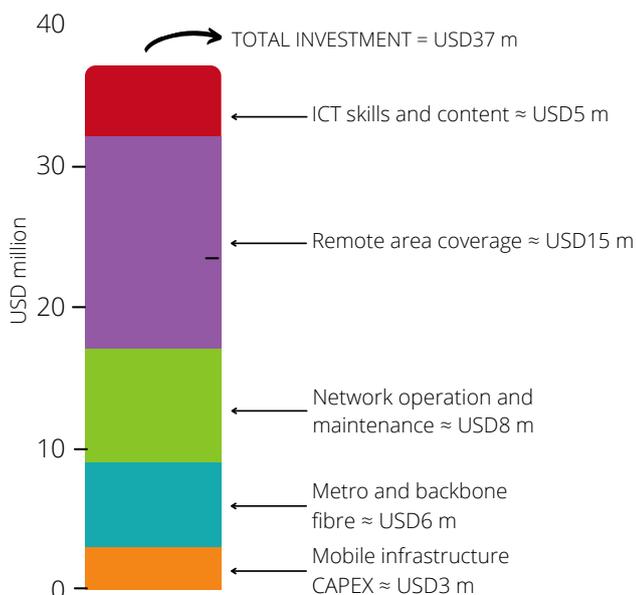
AS A % OF GNI P.C.



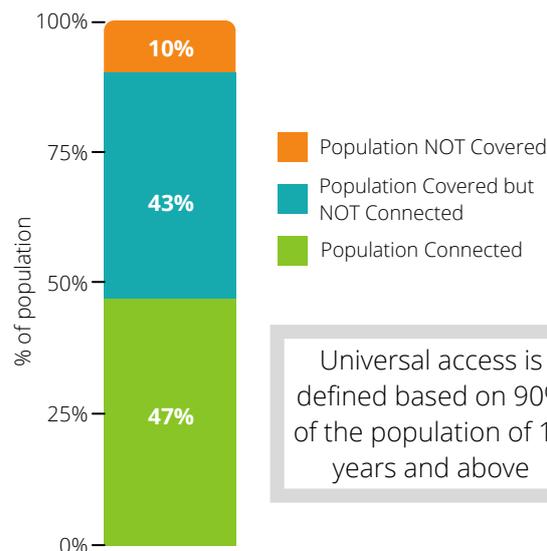
Source: A4AI & ITU, 2020

Bhutan meets the affordability target established by the United Nations Broadband Commission, as 1.5GB corresponds to 0.93% of the monthly average income in the country. Fixed 5GB is at 3%. It is unclear how this affordability threshold relates to lower income quintiles in the country.

Investments needed by 2030



Source: A4AI from ITU, GSMA, A4AI, operator and regulator, 2019



Source: A4AI from GSMA, Xalam and UN population data, 2019

Universal access is defined based on 90% of the population of 10 years and above

While 90% of the population is covered by 4G networks, only 47% of Bhutan's population is in fact connected to 4G networks (see Figures), resulting in a total of 53% of the population fully unconnected (via 4G networks or other access options). As the Figures also show, our analysis reveals that remote area investments make up the largest portion of the investment needs to connect the population in Bhutan by 2030, i.e., \$15million. Given its mountainous terrain and low population density, this context creates unique challenges. Additional investments in mobile infrastructure, fiber deployments, network operation and maintenance, still require about \$17million. Other needed investments relate to ICT skills and content.

Policy Highlights

Policy and Regulatory Environment

The Department of Information Technology and Telecom and the InfoComm and Media Authority release reports e.g. on mobile connectivity, network reliability and others frequently.

Policy and Regulatory Environment

Bhutan's Broadband Policy was released in 2014, but it has not been updated. Other policy documents, e.g., e-Governance policy, have also been developed over five years ago. Parts of the DITT's website have not been updated for ten years.

Policy and Regulatory Environment

The National Broadband Masterplan Implementation Project and the Broadband Policy were released years ago and still seem to be valid. There is a clear commitment to support deployment in non-commercially viable areas. The InfoComm and Media Authority has even developed a regulatory framework for 5G development, and is planning on establishing mobile number portability (MNP).

Universal Access

The Rural Communication Programme (RCP) is being implemented, which represents a positive action. However, some of the villages will be connected to 2G and 3G, while others to 4G. Connecting all villages with 4G would be a sound approach, as 2G and 3G do not allow for meaningful connectivity and the resulting digital opportunities that support a digital economy.

Infrastructure sharing

The country has experimented with infrastructure sharing and co-deployment of the fiber optic cable network along the power transmission infrastructure.

Market structure

Total telecommunication revenue has increased over the past years, but revenue has decreased (between 2018 and 2019). While further information is needed to explore correlations, this might indicate problems with market sustainability.