

Bhutan

Despite being remote, landlocked and a least developed country, the mountain kingdom of Bhutan has achieved a high level of ICT access. Mobile population coverage is high and the fibre-optic backbone has reached most parts of the country.

Mobile services: Bhutan has two mobile operators. The State-owned incumbent Bhutan Telecom Limited launched its GSM network in November 2003, operating under the brand B-mobile. Tashi InfoComm Limited, operating under the brand TashiCell, a privately-owned company, entered the market in 2008. Population coverage by 2G mobile is extensive and, by 2017, 97 per cent of households had mobile access, with a slight difference in coverage between urban (99.3 per cent) and rural (95.7 per cent) areas.⁹⁸ Mobile-broadband has become very popular since the introduction of 3G by Bhutan Telecom in 2008 and by TashiCell in 2013. Growth in mobile broadband coverage has been aided by the deployment of 3G using 850 MHz and 700 MHz, which has a long, wider signal range. Bhutan Telecom launched LTE in 2013, with TashiCell following in 2016. LTE services are now available in all 20 districts.

Fixed services: Bhutan Telecom is the sole provider of fixed-line telephone services. The number of fixed-line subscriptions has been declining owing to the popularity of mobile services. Bhutan Telecom and DrukComm use ADSL and fibre-to-the-home (FTTH)/ fibre-to-the-curb (FTTC) to provide fixed broadband access. There are several other ISPs offering fixed-broadband access, including wireless technologies. The country has an extensive fibre-optic backbone. The National Broadband Master Plan Implementation Project led to the connection of all *Dzongkhags* (second-level administrative units in Bhutan equivalent to a district) and 201 out of 205 *Gewogs* (blocks of villages). The Government owns the network, spanning some 3 300 km, and leases optical fibre to telecommunication operators and ISPs free of charge. The network extends to the Indian border, where Bhutan's Internet traffic is routed to undersea fibre-optic cables. There are plans to establish an Internet exchange point.

Government policy: The Ministry of Information and Communications is the lead policy-making

Key indicators for Bhutan (2017)		Asia & Pacific	World
Fixed-telephone sub. per 100 inhab.	2.6	9.5	13.0
Mobile-cellular sub. per 100 inhab.	90.5	104.0	103.6
Active mobile-broadband sub. per 100 inhab.	87.4	60.3	61.9
3G coverage (% of population)	90.0	91.3	87.9
LTE/WiMAX coverage (% of population)	55.0	86.9	76.3
Individuals using the Internet (%)	48.1	44.3	48.6
Households with a computer (%)	17.7	38.9	47.1
Households with Internet access (%)	34.4	49.0	54.7
International bandwidth per Internet user (kbit/s)	18.2	61.7	76.6
Fixed-broadband sub. per 100 inhab.	2.1	13.0	13.6
Fixed-broadband sub. by speed tiers, % distribution			
<i>-256 kbit/s to 2 Mbit/s</i>	98.8	2.4	4.2
<i>-2 to 10 Mbit/s</i>	0.6	7.6	13.2
<i>-equal to or above 10 Mbit/s</i>	0.6	90.0	82.6

Note: Data in italics are ITU estimates. Source: ITU (as of June 2018).

body focused on the development of media and ICTs in the country. The 2015 ICT Roadmap guides policy for the sector with the vision of “An ICT-Enabled, Knowledge Society as a Foundation for Gross National Happiness”. The Roadmap identifies 15 specific strategies to achieve the three main outcomes: ICT for Good Governance; ICT for a Shared National Consciousness; and ICT as a Key Enabler for Sustainable Economic Development. The Bhutan Telecommunications and Broadband Policy was adopted in 2014 with the chief aims of connectivity for all, bolstering the regulatory environment, creating an enabling environment for private investment, and competition resulting in affordable broadband services. The Bhutan InfoComm and Media Authority is the independent agency established in 2007 to promote and regulate ICT/telecommunications, media and broadcasting sectors. The Information, Communications and Media Act of Bhutan 2018⁹⁹ is the key regulatory legislation for the sector. In 2010, Thimphu TechPark was inaugurated in the capital. It houses the government data centre and offices for private companies providing ICT-enabled services. A number of online services are now available to the public.

Conclusion: The country has witnessed impressive progress in ICT in the past decade, with high mobile cellular coverage and growing Internet usage. Forward-thinking policies and strategies, including a predictable regulatory environment and a reasonable level of competition for a country of Bhutan's size, have facilitated this progress.