

# State of Broadband report 2016

## *Key Findings*

### **The digital divide has shifted from voice telephony to the Internet...**

As mobile telephony becomes commonplace in even the poorest nations, the digital divide is shifting, with attention focusing on the 3.9 billion people – 53% of the world's population – who will still be offline at the end of 2016. ITU believes it is vital to bring the unconnected online to ensure everyone has an equal opportunity to participate in the digital economy and access all the information opportunities that the internet has to empower them and enrich their lives, and for the world to be able to achieve the Sustainable Development Goals (SDGs) by 2030.

ITU's *Connect 2020* targets call for 60% of the world's population to be online by 2020 – equivalent to bringing another 1.2 billion people online over the next four years. But in the 48 UN-designated Least Developed Countries (LDCs), only around one in seven people will be online at the end of 2016.

The countries where offline populations are concentrated are surprisingly few. The top 20 countries with the largest offline populations (which include the United States at number #15) account for around 75% of the total global offline population. The top three countries alone (India, China and Indonesia) account for 46%, while adding in Pakistan, Bangladesh and Nigeria to create the top six countries accounts for 55%.

Interestingly, two of the top three countries for the total numbers of people offline are also the top countries for the total number of people online. With an estimated 277 million Internet users, India has now overtaken the US to become the world's second largest Internet market, second only to China. With their huge populations, even relatively low penetration rates make these markets vast.

### **More people have access to mobile phones than electricity and running water...**

In 2015 there were just under five billion unique mobile subscribers, according to GSMA Intelligence and Ericsson, compared with the global population of 7.4 billion. Forecasts predict 5.6 billion unique mobile subscribers globally by 2020 – which is likely to be more than the number of people with electricity at home (5.3 billion), bank accounts (4.5 billion) or running water (3.5 billion). The vast majority of new subscriber additions will come from developing markets, with GSMA Intelligence putting this proportion as high as 93%.

### **Mobile is now the world's favourite way of accessing the Internet...**

ITU forecasts that the total number of mobile-broadband subscriptions will reach 3.6 billion by end 2016, while almost half of all mobile subscriptions are already broadband-enabled. Broadband-enabled smartphones are increasingly popular in wealthy countries because of their convenience; in developing countries, chronic lack of fixed telecommunications infrastructure makes mobile more a platform of necessity, rather than choice.

The smartphone market has reached 90% penetration in the saturated markets of North America and Europe and in mature markets in Asia-Pacific, leaving little room for future growth. But emerging markets will see robust shipment growth, with India and Indonesia, in particular, driving growth over the next few years. Already in early 2016, India overtook the United States as the second largest market in the world for smartphones (with over 260 million).

An estimated 165 countries have now deployed 4G (mobile broadband) networks. Europe is home to around 30% of all 4G networks deployed worldwide. In Europe (and elsewhere), operators have started shutting down 2G and/or 3G networks – indeed, it is looking increasingly likely that 3G networks might be shut down before 2G network elements are fully decommissioned.

This increase in connections and devices is accompanied by a similar increase in adoption of registered users in online services. The milestone of one billion WhatsApp users was passed in February 2016, Google has just reached one billion Gmail monthly active users at end 2015, and Facebook reports 1.13 billion daily active users on average by mid-2016, of which 91% access Facebook via mobile. Some 84.5% of these daily active users reside outside the US and Canada.

### **The future of ‘5G’ mobile is closely tied to the ‘Internet of Everything’...**

So-called ‘5G’ mobile, expected to be commercialized around 2020, will be closely integrated into vertical applications in health, education, smart cities, the industrial Internet, and connected cars, as we move from the ‘Internet of Things’ (IoT) to an ‘Internet of Everything’. Some analysts predict more than 6.4 billion connected objects in use by 2016, a 30% rise on 2015, with that number forecast to continue rising dramatically over the rest of this decade.

Despite the rapid growth in mobile broadband, fixed broadband technologies still play a vital role in providing connectivity and mobile network backhaul. ITU estimates that there will be 884 million fixed broadband subscriptions by end 2016, up 8% on the previous year.

Growth in fixed broadband is driven mostly by parts of Asia, Europe and North America. Asia-Pacific accounts for nearly half of all fixed broadband subscriptions globally, and has steadily increased its share of the total global market for fixed broadband, from 44% in 2014 to 49% by the end of 2016.

## **ITU’S G.FAST – TRANSFORMING BROADBAND**

**An important development in the area of fixed broadband has been the progress made in the deployment of networks built using ITU’s G.fast broadband standard.**

**G.fast is a new technique to achieve fibre-equivalent speeds of up to 1Gbps reusing traditional copper telephone lines in the ‘last mile’. The standards for G.fast were approved by ITU-T Study Group 15 in 2014 and 2015. There are now major G.fast trials underway in many diverse countries, including Australia, Brazil, Croatia, the Republic of Korea, Norway, Panama, Switzerland, the UK and the US.**

**G.fast can be also used in combination with coaxial cable to give symmetrical maximum speeds of 750/750 Mbps. In Switzerland, Swisscom is trialling the new G.fast data transmission standard, and will extend G.fast deployments to all its fibre-to-the-building (FTTB) and fibre-to-the-street (FTTS) connections from mid-2016 onwards, to give speeds of up to 500 Mbps<sup>1</sup>.**

<sup>1</sup> Light Reading, issue 5 May 2015.