



# Mobile and the power of spectrum

## Powered by spectrum: the mobile industry brings connectivity and digital services to the world

**No one has done more with their spectrum to deliver a better future for everyone than the mobile industry.** The mobile industry has consistently demonstrated its potential to generate economic value and social benefit for individuals and societies across the world.

However, spectrum is still a relatively scarce resource in many parts of the world, particularly with regards to spectrum in the bands below 1 GHz.

These bands are ideal for mobile, offering good coverage characteristics, reasonable capacity and availability in sufficient blocks for efficient deployment of mobile broadband. The social benefit of using the spectrum for mobile broadband cannot be overstated; access to the internet through mobile bridges the 'digital divide' between technology haves and have-nots, and mobile services in these bands can reach previously unserved rural areas in a cost-effective and expedient way.

## Powered by spectrum: mobile connecting over 5 billion people by 2025

More than 5 billion people across the world now have a mobile subscription, connecting people to each other and the digital economy. The internet is the most important enabler of social development and economic growth of our time.

### Unique mobile subscribers



2018

5.1bn



67%

PENETRATION RATE  
(% of population)

71%

CAGR  
2018-25

5.8bn

1.9%

2025

### Mobile internet users



2018

3.6bn



47%

PENETRATION RATE  
(% of population)

61%

CAGR  
2018-25

5.0bn

4.8%

2025

## Powered by spectrum: mobile enables access to vital services in developing countries

Beyond the provision of connectivity, mobile is playing a crucial role in delivering vital services to previously underserved populations in many of the world's poorest regions. For these people, mobile is more than just a useful communications device; it is the only means of getting online, the only way of accessing education and health services, and a vital tool to help lift themselves out of poverty. The use of mobile devices for leisure pursuits including entertainment and social interactions should also not be overlooked.

### Mobile Money in 2018



**272**

MOBILE MONEY DEPLOYMENTS

ARE LIVE IN

**90**  
COUNTRIES



**866M**

REGISTERED MOBILE MONEY ACCOUNTS



**20% increase from 2017**

### mHealth



**2** over  
**million**

women and their families have been reached by the GSMA's mHealth programme with pregnancy, maternal and newborn child health information via their phones, improving their nutrition knowledge and practices.

### M4D Utilities



**27** over  
**million**

people have benefitted from the work of the GSMA's Innovation Fund grantees. These organisations have gone on to reach over 27 million people globally.

### Disaster Response



**155**

mobile network operators have signed the Humanitarian Connectivity Charter, operating in over 108 countries.

### Connected Women



**38\***  
MOBILE OPERATORS

have made 53 commitments to reduce the gender gap in their mobile money and/or mobile internet customer base across Africa, Asia and Latin America, driving an effort to accelerate digital and financial inclusion for women.

\*as of May 2019

### AgriTech



**14** million

smallholder farmers have been reached by the GSMA's mAgri programme since its inception with mobile agricultural services to improve their crop yields and income.

### Ecosystem Accelerator

**1,646** 

applications to date have been received by the GSMA Ecosystem Accelerator Innovation Fund, from start-ups operating in more than 50 countries across Asia Pacific and Africa.

## UN Sustainable Development Goals

Mobile is a powerful tool for achieving the United Nations Sustainable Development Goals (SDGs), helping to reduce poverty, improve healthcare and education, and drive sustainable economic growth. Countries with high levels of mobile connectivity have made the most progress in meeting their SDG commitments – put simply, quality of life improves as people gain access to mobile technology.

**“Mobile technology is having an impact across all 17 SDGs, and is increasing its contribution. Financial services, health information and educational resources are just a few of the ways in which mobile technology is contributing to achieving the SDGs.”**

Amina J. Mohammed  
Deputy Secretary-General, United Nations

## Powered by spectrum: mobile drives economic growth across the world

Powered by spectrum, the mobile industry makes a significant contribution to global GDP growth, as well as helping drive employment and delivering material tax revenues to governments.



## Public funding

Mobile ecosystem contribution to public funding (before regulatory and spectrum fees)

**\$510bn**  
2018



## Employment



**+17m indirect jobs**

## Powered by spectrum: mobile will deliver the next range of services with 5G

Mobile operators are already beginning to roll out the next generation of mobile services. 5G networks promise significantly faster mobile broadband speeds and support strong growth in mobile data volumes. They will also help realise the full potential of the Internet of Things. However, the speed, reach and quality of 5G services will depend on governments and regulators supporting timely access to the right amount and type of spectrum, and under the right conditions.



### The GSMA's key 5G spectrum positions

**80–100 MHz per MNO**  
IN MID-BANDS —  
& **1 GHz per MNO**  
— IN MMW

5G needs a significant amount of new harmonised mobile spectrum. Regulators should aim to make available 80–100 MHz of contiguous spectrum per operator in prime 5G mid-bands and around 1 GHz per operator in millimetre wave bands.

5G needs spectrum within three key frequency ranges to deliver widespread coverage and support all use cases.



THE THREE RANGES ARE:

**Sub-1 GHz**  
**1–6 GHz**  
**AND ABOVE 6 GHz**



WRC-19 is vital to realising the ultra-high-speed vision for 5G, and government backing for the mobile industry is needed during the whole process. The GSMA recommends supporting the 26 GHz, 40 GHz and 66–71 GHz bands for mobile.



Governments and regulators should avoid inflating 5G spectrum prices (e.g. through excessive reserve prices or annual fees) as they risk limiting network investment and driving up the cost of services



Exclusively licensed spectrum should remain the core 5G spectrum management approach. Spectrum sharing and unlicensed bands can play a complementary role.

Setting spectrum aside for verticals in priority 5G bands could jeopardise the success of public 5G services and may waste spectrum. Sharing approaches like leasing are better options where verticals require access to the spectrum.



Regulators must consult 5G stakeholders to ensure spectrum awards and licensing approaches consider technical and commercial deployment plans.



Governments and regulators need to adopt national spectrum policy measures to encourage long-term heavy investments in 5G networks (e.g. long-term licences, a clear renewal process and spectrum roadmap).