



Understanding 5G

Everything you need to know.
Maintel's Guide to the rapidly
developing world of the next
generation of mobility.

What is 5G?

Like with the rollout of 3G and 4G, there's been a lot of hype and build up to the arrival of faster speeds - it's become a bit of a buzzword to say the least. But 5G is finally a reality, with the service now being switched on in the most heavily populated areas of the major UK cities.

5G is the next generation of mobile internet connectivity promising faster speeds, wider coverage and more stable connections.

With 5G, you'll see exponentially faster download and upload speeds. Expect device speeds at least 10 times faster than 4G. Latency, or response times will also drastically decrease.

5G was launched in the UK in May 2019 by EE in six cities, with Vodafone and O2 following close behind. Coverage plans vary by operator, but not surprisingly roll-out is generally focused on the major UK cities and there are now more than 20 major towns and cities in the UK with 5G coverage on at least one mobile network.

It's a gradual roll-out, with the whole of the UK expected to be 5G-ready by 2022. Their plans focus on outdoor 5G coverage to start, before looking to improve indoor signal strength.

So, what's with the hype on 5G?

Well – for the consumer, 5G is going to offer greater speeds, the opportunity for more real-time engagement and a great mobile video experience. Less buffering will make video conferences more commonplace. In fact, things like healthcare and patient diagnosis will become much more possible via video.

Essentially, the applications that it will benefit are the ones which need less latency and thus have less lag time. Think about driverless cars and robotics – it's not just about our mobile phones and Netflix.

The business impact of this technology will be huge.

Features and Benefits

Compared to the current generation of 4G mobile networks, 5G mobile networks promise several benefits:

Faster Speeds

The headline benefit of 5G is speed. 5G is set to be much faster than previous generation networks – perhaps up to 100 times faster than existing 4G networks. For business processes, this should translate into faster applications, improved performance and quicker response times.

Wider Coverage

5G networks will be secure, will cope better with heavier data loads, and will also adapt to reserve the highest speeds for those devices needing it.

Stable Connections

5G's proposition is one of extreme reliability meaning fewer dropped calls or connections and enabling critical use cases such as connected cars and remote surgery.

Though it's not always noticeable, there is often a brief lag from when data is sent to when it's received. 5G is designed to significantly reduce latency meaning less delay or lag. For businesses, this will translate to consistently higher quality for voice and video communications. This is also important for remote control of critical infrastructure and machinery, like medical devices where even the slightest delay can be problematic in critical situations.

5G Spectrum

The UK auction of 2.3 GHz and 3.4 GHz spectrum resulted in the big four operators securing similar amounts of 5G spectrum.

On offer was 40 MHz of 2.3 GHz band, to be used for 4G, and 150 MHz of 3.4 GHz band, to be used for 5G.

Perhaps the big winner was O2, which got all the 2.3 GHz spectrum which is immediately usable to provide extra capacity for 4G services and 40 MHz of 3.4 GHz too.

The 5G auction result was as follows:

Operator	2.3GHz Won	3.4GHz Won
O2	40 MHz	40 MHz
Vodafone	0	50 MHz
EE	0	40 MHz
Three	0	20 MHz

The first spectrum will be nowhere near enough to satisfy our need for speed, so there will be further auctions sometime in 2020.

5G Considerations

It is not just about speed and new devices. Higher speeds and lower latency will also be used to connect virtually everything around us and make new experiences possible with augmented and virtual reality, connected cars and the smart home. So, what are the key considerations for 5G adoption?



Speed

Consider what you and your users actually use mobile data for. Faster speeds are more useful when dealing with heavy, content rich media. Do you or your users need to do a lot of video streaming or download large files on the move?



Devices

You will need a new 5G enabled phone and the first wave of 5G devices are now generally available and expensive. Interestingly of the current crop, they are all large display devices with screen sizes of at least 6.4 inches.



Battery Life

There are differing opinions on this, with experts arguing that battery life will either be vastly improved or dramatically reduced! In early testing, major concerns over battery life look unfounded so far - perhaps mitigated by bigger batteries in bigger devices.



Coverage

You need to know where 5G is available to be able to really take advantage of what it has to offer. Where will you be using 5G? Is 5G coverage actually available there currently and what will coverage be like indoors? If you are not in the busiest areas of the top UK cities, then you are going to have to wait for 5G.



Tariffs

Initially it appeared as if operators might look to charge a premium for 5G or enforce a data cap. But that quickly changed as more operators launched their services.

It's hard to compare exactly but most operators now have an unlimited data option, at the same price as its 4G equivalents.

But beware, some of the cheaper tariff options come with speed restrictions capping the top service speed to 3G/4G levels.

Speed Tests

Early testing on the first commercially available UK 5G networks has shown download speeds of between 200 Mbps and 400 Mbps.

Side-by-side tests with a comparable 4G device shows download speeds that are 10 times faster on 5G than on a 4G network.

Do I Need 5G?

There's still a lot to do and widespread adoption simply isn't going to happen this year. For users, it depends whether you need a new phone and where you use it. For businesses, 5G will enable new data hungry critical applications and allow businesses to rely on mobile connectivity in the workplace. Maybe the answer is let's wait and see.

For most businesses, 4G technology already offers adequate download speeds required for most typical smartphone uses – including web browsing, video calling and media streaming.

Whilst 5G will enhance this experience, it potentially comes with a significant price increase to the business.

Furthermore, a key benefit of 5G, the improved coverage isn't available at present in many areas and indoors.

5G Checklist

- **Coverage** – Is there 5G coverage in the areas of the country where you do business?
- **Device** – Are your devices 5G-ready?
- **Tariff** – How does the cost compare to your current tariff?

Why Maintel?

Maintel, as an independent supplier of mobile solutions, can provide connectivity for all major UK networks.

We work with you to remove the complexity created by a mobile workforce. We do this by helping organisations define, deploy and support the right mobility and flexible working strategy.

We will help mobilise your people, their workplace and their workflow enabling them to work as productively and securely on the move as they can in the office.

Contact us

† +44 (0)344 871 1122

e info@maintel.co.uk

w maintel.co.uk

 twitter.com/maintel

 linkedin.com/company/maintel