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>
> — Dave Dyson, Three UK CEO

Three UK
From building capacity to sci-fi

Three UK has earmarked a minimum of £2 billion for its 5G launch and is aiming to be one of the first UK operators to roll out the technology next year. Currently, the mobile operator is performing various tests to make its ambitious plans a reality. Three UK CEO Dave Dyson explains how the operator has been planning its strategy for many years and is well positioned to take the lead in the 5G arena.

Dyson believes that the short-term opportunity for 5G exists with enhanced capacity and better connectivity for consumers, before it evolves through a raft of exciting applications that previously existed in the realm of sci-fi.

The explosion of mobile data

Three UK is in the process of overhauling its network to make it ready for when 5G becomes commercially viable. The operator has more 5G-capable spectrum than any other UK operator, which it believes puts it in the strongest position for an early 5G lead in the UK. According to Dyson, "We've always led in mobile data and 5G is another game-changer. Also described as wireless fiber, 5G delivers a huge increase in capacity together with ultra-low latency. It opens up new possibilities in home broadband and industrial applications, as well as being able to support the rapid

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growth in mobile data usage."

Now a market stalwart that's been active in the market for 15 years, Three UK has built its philosophy on mobile data, which will continue into the 5G era. Through 4G, Dyson said it has been able to make the most out of spectrum it owns, through both mobile connectivity and its home broadband proposition. As the attention turns to 5G, Dyson says that the company has been planning for the technology for two years so far, working out the spectrum required and collaborating with Huawei on its radio network.

Collaborating for the future

In November, 2018, Three UK announced its partnership with Huawei on a 5G broadband demo in London, with the service attaining download speeds of up to 2 Gbps. The demonstration utilized its 100 MHz C-Band spectrum and Huawei's commercial 5G home broadband routers, with the partners reporting that speeds will average around 1 Gbps for each user. Three UK and Huawei have been working on pre-commercial tests in 2018, and said they will continue testing the service ahead of the public launch in dense urban areas and train stations in 2019.

By keeping the data mantra in mind, Dyson is confident that 5G will push the mobile data and the home broadband opportunity even further, with both emerging as the most immediate short-term opportunities before moving on to much-vaunted future use cases such as massive IoT and industrial applications.

"I'm really excited that 5G will bring a huge amount of capacity into the network, which is great for our mobile customers, but it also opens up different opportunities within the home broadband market, so I'd say that's the most immediate opportunity," says Dyson. "Obviously, there's lots of talk about massive IoT and some of the more sci-fi type applications, remote robotics, and things like that. That will come. And I think things like network slicing are particularly interesting and potentially quite disruptive, which is good for 5G operators."

First and foremost, Dyson points out that he's excited about bringing "more capacity and better-quality connectivity to our consumers. This is a major investment into the UK's digital infrastructure. UK consumers have an insatiable appetite for data and 5G unlocks significant capability to meet that demand."

Doing the legwork

Work on 5G is well and truly underway for Three UK. So far, Dyson said the company has been heavily focused on securing the planning consent required for new equipment and new antennas, as well as obtaining building rights from landlords. With 5G, Dyson highlighted it's not only about building the necessary equipment, but also about deploying what's required.

And with 2018 drawing to a close, it's all hands on deck as the company looks to launch 5G in the first half of this year. Three UK has focused its spending on acquiring 5G spectrum, signing an agreement for cell site technology rollouts across major urban areas to deploy 5G and enhance 4G, building a high-capacity dark fiber network connecting 20 new data centers, deploying a 5G-ready cloud core network with an initial capacity of 1.2 TBps, and rolling out carrier aggregation technology on 2,500 mobile sites.

"A lot of legwork is needed to bring it to life, but we feel that by the middle of the year we will have progressed sufficiently on that front." He added that one of the biggest unknowns at the moment is whether 5G-enabled devices would be available within its set timeframes, but he believes that this will be much clearer ahead of launch.

As is the case with leading operators around the world, another key pillar of Three UK's 5G development is the ongoing testing of the technology. Dyson states that the company is encouraged by its work so far, particularly Massive MIMO technology. He conceded that the company has concerns about mid-band spectrum, particularly 3.5 GHz, with the coverage footprint expected to be a lot less than the 1,800 MHz and 2,100 MHz that it currently uses for 4G.

"But with the extra boost you can get from that [Massive MIMO], we can get the same coverage footprint, which means we can use 5G on all existing sites without the need to go off and acquire and build new sites, which means faster time to market and lower costs. It's good for us and it should be good for our consumers," says Dyson.

The AI opportunity

5G aside, another major focus for Three UK as the next-era of connectivity approaches is finding ways to ensure it benefits from the opportunities that AI can deliver. Dyson says that the company decided to replace its entire IT environment as a result of the developments in AI, as it was difficult to weave these opportunities into its existing infrastructure, which it has been running for the last 15 years. As we now enter a time when the planet has billions of connected devices and with the 5G network standard fast coming online, the need for what the industry is calling "fully automated infrastructure" is ever more prevalent. This is a layer of the total technology fabric where AI and cloud services play a big role in managing our data.

To truly capture the potential of AI, Three UK is now working on developing a cloud-based digital infrastructure, "Once that's in place, and it becomes available to our customers next year, it gives us a great platform to plug and play all these AI-type applications."

When it comes to long-term AI benefits, Dyson admits that he's not sure who "the winners and losers will be," or where exactly Three UK will see the most significant customer benefits or cost-saving opportunities. "The most important thing is to have the underlying platform in place, so that when things come along we can plug and play, we can test and we can see what works for us and what works for our customers."