



Interview

with Chris Gehlen, Founder and CEO of Neutroon

By Melissa Cogavin, Managing Editor, SCTE

Tell me about 5G and the biggest myths surrounding it.



Chris Gehlen, Founder and CEO of Neutroon

Chris Gehlen: The first myth is about how quickly 5G will reach its potential. Generally speaking, the telcos and companies selling 5G have piled on expectations for a technology that has yet to mature. And luckily we're getting there, but it won't happen overnight. It's just the evolution of a very complex technology.

You think they overplayed the upsides?

In the short term, yes. Moving from 3G to 4G took probably a decade and we're facing the same situation now. That's one of the largest myths and one that you need to consider that at the beginning: the operators, they were selling 5G services, but it was not a 5G landscape at all. It was a combination of 4G and 5G.

Experts 18 months ago were really making a big deal out of it; but as a consumer, not much has changed. And sometimes one's internet speeds aren't faster at all.

But that's because it's still not the full 5G. The technology evolution is still ongoing at different parts of the network. We will see 5G's potential more towards the end of 2024. We need to be patient and have faith that the use cases and the devices will come. Just not yet.

You're right at the forefront of this. It must be frustrating waiting for the consumer side to catch up.

We're at a different end of the market. We are mostly on the enterprise sector and it's moving much faster than the consumer sector with regards to 5G. The potential for us has been more tangible and there are more applications and use cases; what is happening in the industrial 5G arena is really a revolution.

Could you tell me a bit about 5G frequencies, what they are and the different types?

There are three main frequencies in 5G. There are lower bands between 700-900MHz, which are good for larger coverage areas, like IOT solutions in farms, for example. Mid band, which is what we get as consumers is between 3.5GHz and 4.2GHz. Finally there's the millimetre wave section; those are very high frequencies around 26 to 28GHz and that's really where you'll see the full potential of 5G.

Multi gigabit per second experiences will be enabled by millimetre wave, but we're just starting with that. Consumer phones are already capable, but it's just there are not many networks out there capable yet, because technology is still expensive to deploy, and at the same time there are no use cases.

Consequently consumers are not willing to pay significantly more for those services.

So it's a chicken and egg problem?

It is at the moment, yes. Another very interesting area is related to allocation of frequencies. Typically the public MNOs acquire public frequencies to offer their services and until very recently, five years ago, the US was the first mover in making and liberalising the spectrum allocation, allowing any single enterprise to acquire its own spectrum. So if you have a factory, for example, in the middle of a desert and you have no coverage from an MNO, you can just get, buy your spectrum, your frequencies, and you can deploy your own private

network because of this access to spectrum. The technology isn't new, but the liberalisation of the market is.

The possibilities are worrying with that surely. Wide open to abuse.

It grew into an issue of competition; if there are factories in the middle of the US which can get their own 5G networks and China has been doing that for some time, you can imagine Europe saying, "Hey, we need to catch up. We need to do this as well." So the UK and Ofcom just released their own private spectrum allocation and many other countries are just following suit really.

In terms of the challenges facing 5G, how do you see that changing next year?

Much will change in 2024 because of new devices getting into consumers' hands. As the cost of the chip sets reduces next year, XR, extended reality solutions will accelerate accordingly. The latest Meta headset is \$500-\$1000; this will really drive demand. So that's going to suddenly change the perception or the need for 5G services for consumers.

In the enterprise sector, companies are rolling out operational networks or 5G networks in their factories. They're moving from just testing the technology to massive implementations and you see many ports deploying these and more. The potential is just endless. Any environment featuring more robots and drones will need these solutions, because Wi-Fi will not be capable of handling all this traffic and the lower latencies and so on.



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How do you see this development impacting businesses and homeowners?

The ecosystem is more mature in terms of availability of devices, in terms of cost and in terms of service providers being able to give you real services based on the 5G technology. The last few years have been about just testing new things using 5G, but we're moving towards real roll outs now.

And for homeowners, in the US it's becoming clear how 5G can complement FTTH because as a backup for moments where you have more traffic, the 5G network can work together with the fibre to increase the throughput available or work as a backflow. If something fails on the FTTH or on the 5G network, you can switch from one to the other. New routers are available now which can handle those two technologies, combining FTTH and fixed wireless access.

Why do you think everyone needs to know what 5G is and how it works?

Here's some perspective: what happened between 3G and 4G was mostly about more capacity, more performance, but the jump between 4G and 5G is really adding an intelligent layer into the network.

While the user won't really appreciate it (which is part of the problem in marketing 5G), the upside is the automatically-programmed capacity that the network will have to transmit augmented reality to your phone, for example. It's a network that, for the first time in history, is programmed like you're programming a computer code.

Password protocols have recently been automated to respond to the user's own biometrics, thanks to the work of the FIDO Alliance and its big tech members. It is a monumental piece of industry synergy that's taken 10 years to achieve, but for you and me, it just means no passwords anymore. Same thing.

Correct. Hard to perceive as a consumer because things will just magically work, but the evolution and all the heavy lifting that is happening in the back end shouldn't be underestimated.

Arguably you could make that case with any technology and say, my car is so much different from what it was 20 years ago, I don't really know how it works, I don't need to know what makes it so special, but I still want that new car.

And you're willing to pay more, right? The most interesting aspect is the hyper personalisation. You will be able to personalise your experience; things will work for you and if they don't work, you will be able to pay more for a specific application in a specific time of the day, and you will get your experience delivered to you as you expect.

Personalisation thing sounds really interesting, because that's not happened so far. That's something a consumer can get behind.

Gamers demand the highest experience, as an example. There's so much money being invested into this; the networks need to be prepared. That's where 5G is going to come into its own.

