

A slice of the 5G action with GSA

Joe Barrett, President of the Global mobile Suppliers Association (GSA), sat down with us to discuss the technical side of 5G, the latest industry trends, and some of the benefits we can expect to see. Here's what he had to say.

By Gary Maidment

WinWin: What disruptive changes do you expect 5G will create in different verticals?

Joe Barrett: There's going to be quite a lot of disruption because we're going to see new capabilities and new levels of service with 5G as a result of faster bandwidth, more capacity, and more granularity. And there will also be greater flexibility for enterprises and different companies to utilize just parts of the 5G system for new services. Whether its robotics or factory automation or autonomous driving, it's all going to play into new services for critical markets.

WinWin: What benefits will network slicing in 5G bring?

Barrett: Network slicing in 5G is going to create flexibility for operators to deliver unique services far more efficiently to their customers, because it means that there's no wasted spectrum. At the end of the day, that's where the limit is: spectrum. Network slicing will let operators deliver a very small slice of information, for example, through a sensor with NB-IoT in an agricultural scenario, or they'll provide a much wider slice for services like VR and AR. That flexibility in 5G is going to change the dynamics of

how operators deliver services to their customers.

What are your thoughts on the complexity of 5G networks?

Barrett: 5G should actually bring less complexity into the industry. The core network is going more software-based and therefore far more like IT infrastructure with software-defined networking (SDN) and Network Functions Virtualization (NFV) supporting the underlying physical infrastructure, cloudified access, transport, and core networks. That means the implementation and overall costs should over time fall, so we should see a cost-benefit with 5G as it rolls out over the next 5 to 10 years.

WinWin: What new infrastructure functions will 5G bring?

Barrett: There are some interesting new functions coming with 5G including MEC (mobile edge computing), which is bringing the functionality and the service closer to the end user and content closer to the point. That helps with latency in services where you need really fast control – robotics, for example, where you want to be able to have an instant decision made on an action.



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One of the things about 5G we will see is the mobilization of mobile. With drones, for example, there's no reason why you can't put a whole 5G network into a drone and deploy that in an emergency situation. You can also have drones in agriculture, checking on livestock. Robotics and autonomous driving are also other examples, where you need information – you can bring a 5G network to where it needs to be. You can't do that today with the current structure.

WinWin: What spectrum challenges exist with 5G?

Barrett: One of the big advantages of 5G is the release of new spectrum: 6 GHz and above to 26, 28 and even up to 70 GHz, and that's going to give far broader bandwidth. It will enable smaller cells, more capacity, and more throughput, especially in densely populated areas where we have a need for very, very high bandwidth and multi-gigabit services. GSA is working with the GSMA on spectrum activities and we've established a global spectrum group, which includes Huawei. We're lobbying and consulting globally on new spectrum allocations, and trying to get as much harmonized spectrum globally, so it's easier for devices to work across multiple regions.

WinWin: What do you expect to see with spectral efficiency?

Barrett: 5G is also going to bring increases in data rates and we're going to see new techniques, especially massive MIMO. That's going to enable greater flexibility in delivering maximum capacity and maximum efficiency, so that you can reuse spectrum within the same cell and retarget services towards a specific spot. And there are other technologies like 256 QAM, not only on the downlink, but it's also being deployed now on the uplink in some cases. And we'll see that the new radio application within 5G will be far more efficient at managing the spectrum that's available.

What do you expect from vendors like Huawei?

Barrett: I think we've seen vendors like Huawei develop and drive the ecosystem. Not just devices, but also the whole network and expanding that out and supporting vertical markets, which is where there's a lot of need now when you think about things like robotics and factory automation. 5G is going to come into those places and companies like Huawei are really driving that capability and that niche side of the business. 