

Heading into the 5G era



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Consumers have been the first to experience the new cellular network technology. But, for 5G to fulfil its potential, network deployment must evolve to support industrial usage.

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Extensive trials have been conducted over the past few years, and 5G is now firmly in its deployment and commercial phase.

Most operators launching 5G services have targeted the consumer sector, offering higher-capacity mobile broadband services that support downloading of large files, seamless online gaming and other entertainment services.

But the full promise of 5G will only

be realized if public networks also support industrial usage. If not, the industry may become fragmented as private network providers and others rush in to fill the void.

5G planning has focussed on use cases in the consumer sphere (rather than industry) for a number of reasons. Most 5G deployment plans are – at least initially – designed to make the most of the existing 4G core, as this allows faster roll-out. But decisions have also been shaped

by the capabilities of handsets, market demand and the availability of appropriate radio spectrum.

Ultra-reliable and instant connectivity, regardless of where you are

The current 5G deployments are just the start. Potential services for industrial use include data aggregation for distributed networks, real-time image and video distribution, mobile robotics and real-time machine control.

These industrial applications often rely on low-latency, and capacity-intensive connectivity being available in localised areas, such as manufacturing complexes or transport hubs.

This need for coverage over wide areas, but with variations in coverage and availability depending on the location of the user puts very different pressures on telecoms infrastructure.

It requires networks to be

rolled out in a way that is very different to previous deployments. Mobile networks will need to offer far greater consistency of user experience within their coverage areas, and they will need to augment 5G infrastructure with edge computing-enabled capabilities too. By processing data as close to the source as possible, operators can significantly reduce latency and improve quality of service.

Our economy relies on connectivity

It is widely acknowledged that mobile connectivity supports and enhances economic development, but widespread progress requires near-ubiquitous high-speed connectivity. If 5G is initially deployed only in the most favourable areas (as with previous mobile generations), there will be significant gaps in coverage, in which mobile devices must ‘fall back’ onto 4G (or 3G).

For uses that require low latency and real-time communication, this fall-back option is a severe constraint. To minimise these gaps, operators will be adding edge capability, along with wide-area coverage. The mobile industry will need a strong strategy for managed edge platforms around specific industrial uses. 5G networks will then be able to integrate disparate use cases with underlying common services and to support a variety of complementary service providers.

Without a clear and effective strategy, 5G networks may not be able to create the local connectivity market that industrial users need. ■

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