qolcom

5G:

What is 5G and what it means for the enterprise.

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In a mobile world where everything is connected, 5G is an essential catalyst for connectivity.

As the 5th generation mobile network and a new global wireless standard, 5G is designed to connect virtually everyone and everything.

Whereas today's human internet essentially connects people to each other, 5G will enable things to connect with things. So much more than another mobile upgrade, 5G is the platform on which the world's digital economy will run.

Benefits 5G?

With high data speeds paired with superior network reliability, 5G presents immense opportunities for business transformation and renewal. Enhancing business efficiency and productivity while also giving users faster access to more information, 5G delivers:

10x Faster speed
10x Lower latency
10x Connection density
100x Traffic capacity

Benefits of 5G

Faster speed.
Allowing the download of huge amounts of data, in an instant.

In a 4G world, a data download speed of 40 megabits per second is fairly typical. Compare this to 5G which can potentially achieve blistering download speeds about 10 to 20 times faster in real world conditions (compared to speeds of 500 to 1500 Mbps that have been clocked in the lab).

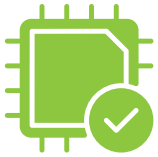
While this means an HD movie download in under a minute, paves the way for businesses to start using applications that send enormous amounts of data quickly to a huge number of simultaneous users, without causing network gridlock.

Lower latency.
The of end lag time when using a device over the network.

Latency is the time lag between when a data packet is sent and when it is received and acknowledged. High latency results in noticeable lag, whereas lower latency heralds richer communication experiences.

Lower latency is particularly important for businesses looking to adopt IoT devices at scale as it can significantly improve the functionality of the devices.

Delivering latency as low as 1 millisecond, businesses wanting to take advantage of streaming high-resolution video, audio, and images, can do so – without lag or glitches. As advanced technologies such as AR, VR, or 3D become commonplace, 5G will allow businesses to virtualize more experiences for customers and remote works in more meaningful ways.



Enhanced reliability and stability.
Connectivity issues will be a thing of the past.

These days, internet connectivity is mission critical in most modern businesses. High levels of productivity, innovation, and even employee morale go hand-in-hand with the performance and availability of your internet. When your people expect high performance, there's a very low tolerance for having to wait for pages to load.

With 5G, increased bandwidth enables rich video files and presentations be shared in seconds and provide agility for remote workers who often need to download files on the fly.

Greater flexibility.
Accommodating a broader range of devices and applications.

Handling traffic capacity one hundred times denser than today's standard, 5G will enable far more devices to operate seamlessly without perceived delays, and dropped signals, enabling enterprise networks to host large numbers of devices in their IT infrastructure – all of which can undertake simultaneous data transfer thanks to the network's larger spectrum band.

How it works

Wireless networks have always operated on the same radio-frequency bands. Not surprisingly, as more and more users demand vastly more data, these bands have become increasingly congested with cellular traffic. This leads to breakdowns in service, particularly when lots of people in the same area are trying to access mobile services online at the same time.

To meet this challenge, cellular providers have moved into the higher frequencies of millimetre waves and cover spectrums not used in 4G. Using millimetre waves between 30GHz and 300GHz which are 10 to 100 times higher than the radio waves used for 4G, is the basis for 5G's boost in speed, capacity, low latency, and quality.

With advances throughout network architecture, new antennas incorporate multiple input, multiple output technology known as MIMO which enables multiple transmitters and receivers to transfer more data at the same time.

How 5G is better than 4G

4G networks enabled voice and data IP services, a fast broadband internet experience, with unified networks architectures and protocols. The introduction of 4G LTE (Long Term Evolution) doubled data speeds. 5G takes this to a whole new level:

5G is faster than 4G

5G can deliver speeds from 10 to 20 times faster than average data transfer rates for 4G.

5G has more capacity than 4G

5G is designed to support a 100x increase in traffic capacity and network efficiency.

5G has lower latency than 4G

5G is able to deliver more instantaneous, real-time access, with end-to-end latency down to one millisecond.

5G is a unified platform that is more capable than 4G

While 4G LTE focused on delivering much faster mobile broadband services than 3G, 5G is a unified platform that elevates mobile broadband experiences and supports new services such as mission-critical communications and IoT at scale.

5G uses spectrum better than 4G

5G is also designed to get the most out of the entire spectrum from low bands below 1 GHz, to mid bands from 1 GHz to 6 GHz, to high bands known as millimetre waves (mmWave).

5G for the enterprise

5G is set to impact every area of business as we know it – from the way employees work and communicate, to the way businesses innovate and develop ever more meaningful customer experiences. Much better at handling thousands of devices simultaneously, 5G also supports the fast-escalating growth in data being transferred every minute of every day in businesses everywhere.

Enterprise mobility

With increasing numbers of employees accessing cloud-based applications and rich content from mobile devices, the bandwidth required to support each application is growing apace. Enabling faster data speeds, lower latency, and increased capacity 5G translates to higher quality voice and video calls and the flexibility for employees to work anywhere, anytime.

Unified Communications systems will also work better with smooth interaction between business software and communication systems supporting the streaming of high-resolution video, audio and images with practically no latency.

And with more organisations supporting remote working, 5G enables a business to be more agile, enabling staff to collaborate and share work-related files faster. 5G networks will also connect rural areas more affordably, opening up more business opportunities.

Cloud

As businesses adopt new technologies along their digital transformation journeys, moving existing workloads from on-premises to cloud services will accelerate. 5G will also expand the storage capacity of the cloud for big data, but it will also supercharge the speed with which data is stored and retrieved from the cloud.

The circulation of data outside of public clouds will be more safe and secure. 5G has the ability to place your data outside the cloud and process it well. With wide bandwidth availability and enhanced security features via network slicing, 5G will be a viable option for enterprises to connect to various clouds more cheaply than through MPLS and other fixed access technologies.

IoT

According to IDC, the number of connected devices is expected to reach 75 billion globally by 2025, with the lion's share of these devices connected to IoT platforms. As organisations increasingly build business strategies reliant on data generated by IoT, the ability to transmit data faster and support more connections at once is essential.

With its high speeds, low latency and reliable signal, 5G will empower the rise of IoT systems across industries, allowing companies to collect, store, and gain insights from a vast array of data from various sources via the cloud in a cost-effective manner.

5G is the biggest enabler of a mobile-first world.

SD-WAN: Creating a foundation for 5G

Software defined wide-area networking, also known as SD-WAN, improves network performance, reduces downtime, and offers greater visibility and control over network traffic. Bringing immediate benefits to businesses, its ability to future-proof enterprise networks for 5G rollouts makes it a highly attractive offering.

For 5G architecture, networking functionality is managed through software rather than hardware. This means enabling your organisation to be 5G ready requires software defined wide-area networking.

Many of the benefits of SD-WAN, including scalability and adaptability, will help smooth connectivity with 5G mobile networks, enabling enterprises to keep up with the dynamic changes driven by the IoT and an ever-increasing number of mobile users.

In one move, SD-WAN allows businesses to improve current operations while also preparing to address some of the key requirements of a 5G future.

5G impact on industries

5G's monumental improvements in terms of faster transmission speeds, enhanced reliability, and increased network capacity are ushering in the next wave of enterprise digital transformation across all industries.

Manufacturing

Making the most of low latency, high bandwidth, and reliable communication, Industry 4.0 becomes a reality. Secure and almost real-time connectivity will result in transformative productivity, speed and efficiency improvements.

Connected cameras and sensors enabled by 5G will further accelerate automated processes in smart factories and allow machines to update themselves in real time. Skilled staff will be able to control manufacturing remotely, resulting in increased efficiency, safety, productivity, and flexibility.

Hospitality

From enhanced customer interaction to operational improvements, 5G will deliver significant value to businesses in the hospitality sector. For example, it can be used to increase efficiency, accuracy, and success in the food-delivery sector, using smart cars and drones to execute food orders and deliver them with more precision.

This technology is expected to fuel the immergence of ghost restaurants that manage food orders and delivery without needing to operate a dedicated storefront.

Retail

Advanced technologies such as augmented and virtual realities use a lot of processing power and cellular data, making them a perfect fit for 5G networks.

With these technologies, retailers can create richer experiences, integrating the physical and digital worlds. By gathering more data and insight, they can ultimately build long-lasting relationships with customers.

Automotive

5G network connections bring the advent of fast, smart, and safe self-driving cars closer to reality. Self-driving cars use hundreds of sensors to make vehicles faster and smarter.

These sensors generate unprecedented amounts of data and require incredible data processing capabilities and speeds needed to mimic the timing of human reflexes. The promise to bring safer and smarter self-driving cars to Australia's highways is no longer the stuff of science fiction thanks to 5G.

Logistics

With 5G, the days of losing cargo, misplacing parcels and incurring losses due to human error, mismanagement, and inefficiencies will be a thing of the past. For the logistics and supply chain industry, 5G and IoT will potentially transform every aspect of logistics with end-to-end continuous coverage for monitoring, tracking and theft detection.

Agriculture

5G not only brings massive connectivity to agriculture, but paves the way for more effective and precise farming with improved crop yields, better quality produce, and higher profits.

Utilizing IoT and 5G, farmers can monitor field conditions and be notified when crops need watering, pesticides, or fertilizer. At the same time, piloting agricultural drones and directing self-driving tractors can be used to track livestock.

Healthcare

Transmitting large medical images in next to no time, facilitating telehealth initiatives, and supporting remote patient monitoring tools and services are all possible with 5G as they depend on fast network speeds and low latency.

5G will also facilitate faster downloads and communication on mobile devices and tablets used in healthcare settings.

Higher education

With 5G's ability to support a million devices without any delays, universities with multiple campuses within close proximity to each other can take advantage of virtual reality and augmented reality to support high quality learning.

By using 5G instead of 4G technology, students have an enriched learning experience while tutors can take their students out of the classroom and visit other dimensions and explore various concepts through zooming, pinching and even touching.

Finance

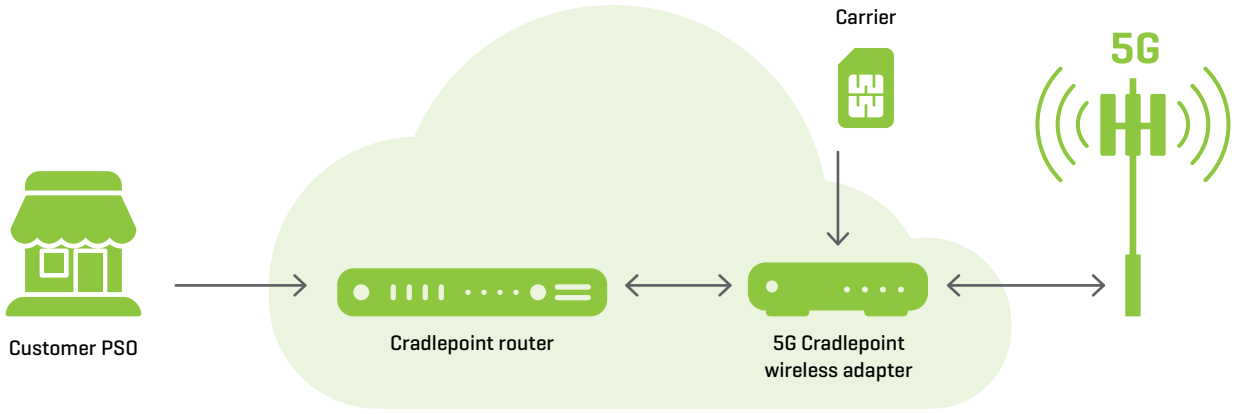
The future of financial services is mobile. 5G technology is set to help banks and other finance companies improve the customer experience and deliver new and innovative mobile services. With more reliable, responsive networks, banks will be able to create a new platform for the delivery of services to customers wherever they are and create a future that is more productive, efficient and protected.

How Qolcom supports 5G for Enterprise

For businesses gearing up to adopt the types of applications that fly when bandwidth isn't an issue or are needing to boost connectivity in locations with poor performance, 5G is the answer.

Our Enterprise 5G solution leverages a standalone 5G network and enterprise devices from Cradlepoint.

Qolcom offers professional and managed services with a single point of contact to assist in designing and maintaining secure 5G internet connectivity using leading enterprise wireless devices.



We provide end-to-end management, oversight, and service ownership of your enterprise wireless solution using Cradlepoint devices. With Enterprise 5G Wireless Managed Services delivered by Qolcom, we work with you to minimise downtime and maximise reliable connectivity, taking care of:

- Device staging and configuration by experts
- Device installation onsite
- Device lifecycle management of your Cradlepoint adaptors and routers, including:
  - Licence Management
  - Asset management
  - Platform management via NetCloud Manager
  - Reporting and insights
- Proactive and reactive end user support with incident monitoring, issue resolution, and help desk.

Plan your move to a 5G future with Enterprise 5G Wireless Managed Service

Let us help you ready your business for the competitive advantage that comes with enterprise wireless using Enterprise 5G Wireless Managed Service delivered by Qolcom.
For more information, please get in touch.

Contact us to find out more.