



EMBRACING THE 5G FUTURE

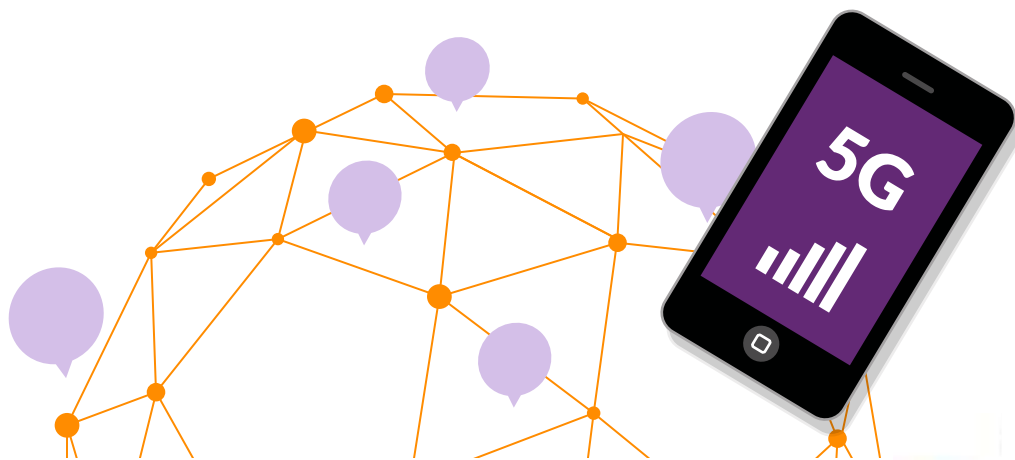
STRATEGIES FOR NAVIGATING
FIFTH-GENERATION
WIRELESS TECHNOLOGY



TRANSFORMATIVE TELECOMMUNICATIONS TECHNOLOGY ON THE RISE

Of the numerous experimental enterprise communications technologies generating buzz within the global business community, fifth-generation wireless infrastructure is far and away the most anticipated. Technologists and operations experts believe this innovation could transform how companies share information and communicate with customers. Leading telecommunications providers are expected to release their initial 5G offerings within the year, potentially setting off the connective revolution so many have predicted.

However, organizations considering 5G adoption should tread carefully during this opening salvo. While the technology certainly possesses immense potential, product quality will vary, meaning some implementers could invest considerable resources into 5G setups that offer few actionable advantages. To avoid such an outcome, information technology teams must develop a deep understanding of 5G, explore its benefits and scope out some of the service options set to enter the marketplace in 2018.





The Internet of Things now encompasses
MORE THAN 100 BILLION DEVICES WORLDWIDE

CONNECTIVITY FOR IoT AGE

The continued expansion of the Internet of Things, which now encompasses more than 11 billion devices worldwide, has forced enterprise IT and telecommunications providers to explore experimental technologies designed to accelerate data flow.¹ 5G is perhaps foremost product of this sector-agnostic search.

The technology has roots in a partnership between NASA and the Machine-to-Machine Intelligence Corp, an IT data security company.² The two entities began working on what would become 5G in 2008, approximately four years before 4G broadband service become available. Over time, numerous other organizations began pursuing the technology. Within eight years of the initial NASA-M2Mi collaboration, nearly all telecommunications and consumer technology providers were looking into or actively pursuing 5G.³ This work was anything but easy.

Fifth-generation networks leverage the high-frequency region of the wireless spectrum, an area

called the millimeter wave spectrum, to shuttle information at high speeds. Here, radio waves ranging from 30 to 300 gigahertz facilitate download speeds as fast as 10 gigabytes per second with limited latency, allowing users load feature-length films onto their mobile devices in seconds.⁴ However, this high performance comes with a cost.

While millimeter waves move quicker and carry more information than their low-frequency counterparts, they are far less adaptable to the physical world. The low-frequency radio waves that power third- and fourth-generation networks can easily pass through manmade and natural structures. Millimeter waves, on the other hand, cannot. Another problem: high-frequency waves do not travel as far. These technical roadblocks have proven challenging to 5G innovators that wish to create nationwide fifth-generation networks. However, most are planning to overcome these hurdles by increasing cell tower densities and developing voluminous yet unobtrusive networks that support blanket coverage.

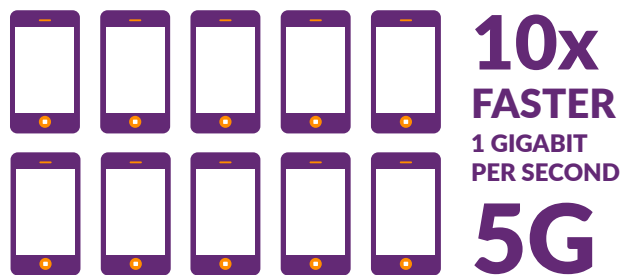
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CONNECTIVITY FOR IoT AGE

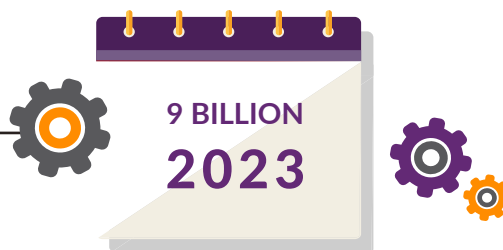
When will this infrastructure be ready for use? Both AT&T and Verizon plan to release their 5G offerings over the last quarter of 2018.⁵ The former is overseeing trials in Kalamazoo, Michigan; South Bend, Indiana; and Waco, Texas, with plans to roll out 5G in 12 U.S. markets by the end of 2018.⁶ If AT&T's test deployments are any indication, the service could be promising. These setups can facilitate download speeds of 1 gbps, almost 10 times faster than the quickest 4G LTE connection. Verizon also is testing 5G technology and intends to make its initial offering to customers in Sacramento, California. Sprint and T-Mobile have merged and intend to launch a nationwide 5G network, though the companies have not released a timetable for the project.⁷

This widespread pursuit of fifth-generation connective infrastructure is expected to lay the groundwork for accelerated worldwide broadband service consumption. By 2023, carriers will manage more than 9 billion mobile subscriptions globally, 1 billion of which will apply to 5G service plans.⁸

This innovation-drive connective environment seems to bode well for businesses looking to boost internal and external communication workflows, or adopt cutting-edge IoT equipment. However, organizations in this position should carefully consider their options and determine if and how 5G can catalyze actionable results within their operations.



By 2023, carriers will manage
**MORE THAN 9 BILLION MOBILE
SUBSCRIPTIONS GLOBALLY.**



THE SEARCH FOR 5G SUCCESS

Fifth-generation broadband infrastructure is made for the IoT age and therefore best fits firms with ample mobile workflows, heavy data collection and processing demands, large connected shop floor setups or connectivity-centric product offerings.⁹ Consequently, telecommunications experts often label advanced manufacturing, networking, smart transportation and technology companies as ideal candidates for 5G adoption. Organizations such as these are in the position to generate the most return on investment via fifth-generation wireless assets. Conversely, enterprises without robust technical needs may not see many benefits—at least not enough to justify the expenses and technical difficulties that come with 5G implementation.

Those that do have much to gain from adopting fifth-generation telecommunications technology must address some critical variables, most notably, ancillary assets. Internal IT teams overseeing 5G infrastructure must have the backend systems required to collect and manage the massive amounts of data that these fixtures generate.¹⁰ For many businesses, this means implementing robust cloud-based storage technology. While roughly 96 percent of enterprises worldwide have some type of cloud service in place, few possess infrastructure mature enough to handle data received via 5G channels.¹¹

In addition to putting into place new-and-improved backend support, adopters will have to obtain or promote the use of fresh mobile devices. Existing smartphones and IoT assets are not configured for 5G and those that are will not be available for at least another year.¹² Companies seriously considering 5G should be prepared to invest in this new hardware.

These complications, along with the general difficulties that accompany internal technological sea change, are likely to lay the groundwork for slow yet steady enterprise adoption.¹³



ENTERPRISES FOR 5G INNOVATION

Fifth-generation wireless networks are indeed capable of transforming enterprise IT operations and facilitating organizational growth. However, businesses should approach 5G adoption with pragmatism to ensure that the solutions they greenlight are cost-effective, stable and meet the needs of their staff.

Here at Teligistics, we empower organizations to navigate major enterprise communication shifts with confidence through our suite of telecommunications expense and asset management, and sourcing platforms.

Connect with us today to learn how we can help your company navigate the 5G revolution.

SOURCES

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