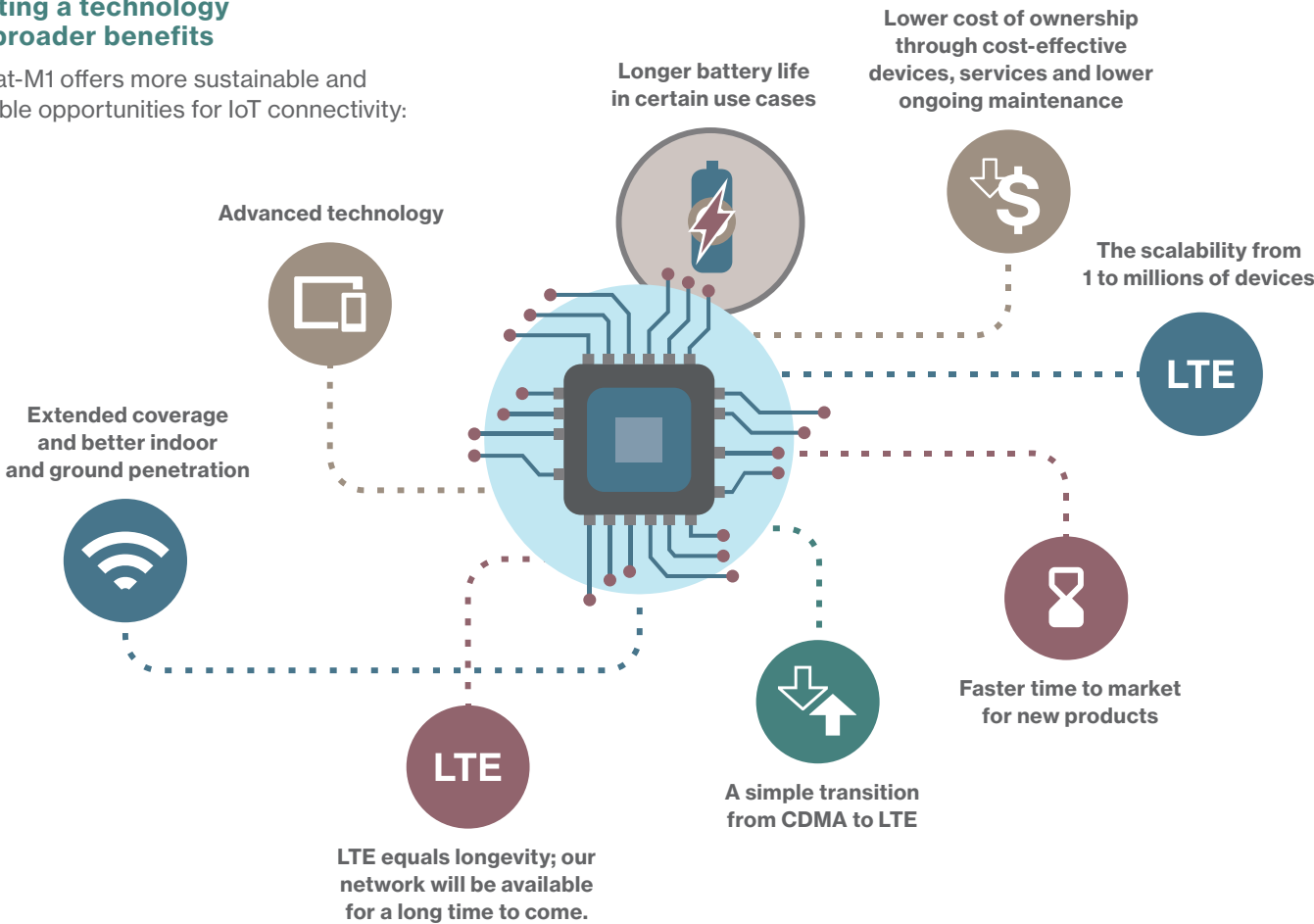# What's next for IoT?

LTE with the right cost, data rate, power efficiency and bandwidth

Early adopters and innovators have clearly embraced the Internet of Things (IoT) to make business processes more efficient, control costs, engage customers and grow. Yet, some businesses may think adding IoT to their operations may be too expensive or complex. That's where the Verizon LTE family of IoT solutions can help. With the launch of LTE Cat-M1, we're the first major network carrier to build network services specifically for IoT.

Our LTE IoT solutions, including both category 1 and M1, help lower the barrier of entry to the IoT world and give you a quick and easy way to deploy and manage IoT solutions. We introduced LTE Cat-1 in late 2015, which made it easier to transition your CDMA 1x and EV-DO applications to the Verizon 4G LTE network. With the launch of LTE Cat-M1, you can take full advantage of enhanced network features built specifically for IoT, giving you access to improved coverage, including in-building coverage, and more cost-efficient devices with ingenious technology that allows for longer battery life.

Adopting a technology with broader benefits

LTE Cat-M1 offers more sustainable and profitable opportunities for IoT connectivity:

Advanced technology

Longer battery life in certain use cases

Lower cost of ownership through cost-effective devices, services and lower ongoing maintenance

The scalability from 1 to millions of devices

Extended coverage and better indoor and ground penetration

Faster time to market for new products

A simple transition from CDMA to LTE

LTE equals longevity; our network will be available for a long time to come.

verizon√

One size doesn't fit all your IoT needs.

The Verizon LTE IoT service supports applications that require both low and medium data speeds, while also providing voice support. This means that LTE will align perfectly with your machine-to-machine (M2M) applications. From simple monitoring tasks to complex data reporting, there are categories of user equipment to match those M2M opportunities, each optimized for data rate, power efficiency and bandwidth.

LTE Cat-M1 delivers the same channel bandwidth as Cat-4 and above, but is designed to work more efficiently for IoT. It enables 3G-type bandwidth solutions, such as full-featured Voice over LTE (VoLTE) and moderate data usage, while using power more efficiently.

The release of LTE Cat-M1 represents a giant leap forward in addressing a new class of IoT use cases. LTE Cat-M1 devices are cost-effective and support use cases that use small amounts of data and check in with the network infrequently, which means long battery life. Plus they're optimized for narrower bandwidth and lower data-rate applications, giving you improved performance over CDMA/2G/3G devices with all the benefits of LTE. LTE Cat-M1 can also make use of improved IoT coverage, including better in-building and ground penetration.

Spotlight: LTE Cat-M1

The newest member of our LTE family, LTE Cat-M1 delivers standards-compliant, nationwide network service specifically for IoT. Both chipsets and modules are already certified so you can quickly certify your device today or leverage an existing device. LTE Cat-M1 gives you low-cost devices with technology that supports long battery life and support for new IoT features, such as a power-saving mode and enhanced coverage with low-cost single-antenna designs. And with the full support of the Verizon LTE network, LTE Cat-M1 offers the greatest coverage, reliability and support for the largest number of deployed devices of any U.S. operator. Plus, we've simplified our device certification process, so you can tap into a rich ecosystem of partners who can help you with your IoT deployment needs.

Feature spotlight: the scalability of LTE Cat-M1

Most companies need the ability to track assets while in the field. Tracking assets involves more than just knowing their location; it also includes near real-time monitoring of environmental conditions. You can track all kinds of assets, such as vehicles, critical manufacturing components and even finished goods. LTE Cat-M1 devices are low-cost and mobile, delivering quick deployment to help you track important business assets. Such tracking systems can quickly ramp up from just a few devices to hundreds of thousands. We built our LTE network to cost-effectively support such a scale without service degradation.

Get the right technology for your business.

See how LTE Cat-1 and LTE Cat-M1 compare to find which one best fits your needs.

	LTE Cat-1	LTE Cat-M1
Channel bandwidth (RF)	20 MHz	1.4 MHz
Max downlink speed	10 Mbps	350 kbps
Max uplink speed	5 Mbps	350 kbps
Duplex	Full	Half
Number of antennas	2[1]	1
Coverage improvement (link budget enhancement)	None	Up to 15 dB
Hardware cost	Similar to 3G	Similar to 2G

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Why Verizon

When it comes to IoT, the network matters. We offer America's largest, most reliable 4G LTE network. Our network was rated number one in overall network performance for the fifth consecutive testing period among the four national wireless companies in the United States by RootMetrics in its National RootScore® Report.[2]

In fact, 98% of the Fortune 500 rely on our services and technologies.[3] More businesses choose Verizon than any other wireless carrier. And we offer complete solutions, with expertise in cloud, M2M and IoT.
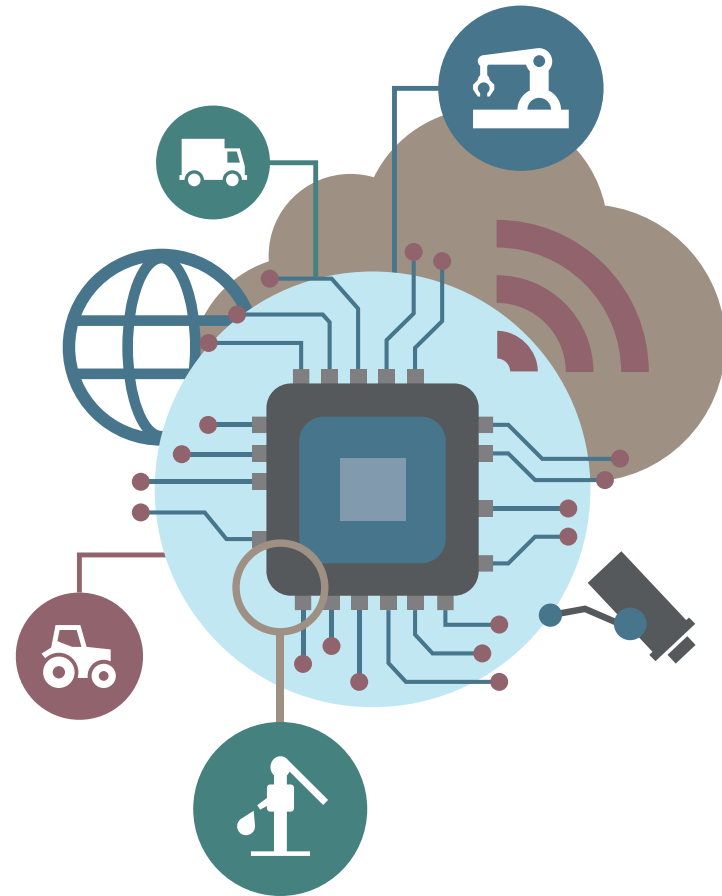
We're the first U.S. carrier to fully support LTE Cat-M1 devices, backed by a vibrant ecosystem with a streamlined certification process to get them deployed quickly. They come backed by the best 4G LTE network and ThingSpace, our strong machine-to-machine (M2M)/IoT management platform. LTE also includes full authentication, security credentialing and encryption to help keep your communications safe and secure. This means we protect your data, so you can trust us with your business.

LTE Cat-M1 advantages:

- **Cost-effective to deploy**: The cost per unit for LTE Cat-M1 is lower than 2G devices, delivering improved technology for a better price.

- **Better coverage**: LTE Cat-M1 devices include special network features that help provide better coverage, giving you coverage in places previously unavailable.

- **Better battery life**: LTE Cat-M1 devices can reduce communication with the network and even go to sleep for extended periods of time, increasing battery life to up to 10 years, depending on your use case.

Try LTE Cat-M1

Contact your Verizon Wireless business specialist to set up a free demonstration. Visit us at **VerizonEnterprise.com/ contact-us**.