

5G HQ

Pioneering the new 5G era in **retail**

**How T-Mobile can help fuel an industry
transformation, today and tomorrow.**

5G: Capable device required; coverage not available in some areas. Some uses may require certain plan or feature; see T-Mobile.com.

T | T-MOBILE
FOR BUSINESS

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Introduction

Retailers create better experiences with reliable wireless connectivity.

There's a revolution happening in retail. As the world adopts new technologies, digital experiences are more than a novelty—they're expected. To survive in today's market, retail business models must adapt to accommodate the new ways people interact with and purchase products. The benefits are clear. Customers can feel a greater sense of connection to their purchase when the shopping experience is enriching and informative. Shoppers are doing their homework about products before buying. In fact, 81% of retail consumers do research online before making their purchase.¹

Digital experiences are on the rise for employees too. Retail staff members are empowered to do their best work when they have the right tools and logistical procedures. And efficiency goes up when maintenance is frictionless with faster mobile connectivity.

In the world of retail, 5G is setting the foundation for new digital experiences that will help businesses flourish. Reliable wireless capabilities can help retailers reimagine how they engage with customers, improve employee productivity, and increase operations through expansive mobile connectivity.

5G innovation

A recent survey revealed that 26.8% of retailers have already implemented 5G connectivity in 2021, and 62.8% say they plan to implement 5G by 2023.² Clearly, mobile technology is becoming a big part of retail, from how customers preview and purchase products to how companies improve employee engagement and increase operational efficiencies.

Next-generation networks

When it comes to delivering on the promise of 5G in higher retail, service matters.

When it comes to delivering on the promise of 5G in retail, service matters. T-Mobile can help retailers reach more customers, delivering innovative shopping experiences that establish loyalty and unlock savings for businesses. With 186 million people already covered by T-Mobile Ultra Capacity 5G, we plan to cover 200 million with enhanced speeds by year-end. And with Extended Range 5G, we offer broad coverage to over 90% of the U.S. population—308 million people and counting.

¹ <https://www.invoqa.com/blog/retail-marketing-statistics>

² <https://idcdocserv.com/US47856021>

Capable device required for 5G; coverage not available in some areas. Some uses may require certain plan or feature; see T-Mobile.com. Extended Range 5G includes low-band 5G signals. Ultra Capacity 5G includes dedicated mid- and/or high-band 5G signals & covers hundreds of cities and millions of people, with more added all the time.



The present and potential: Transforming retail with 5G-powered use cases

With the ultra-low latency and reliability of 5G, emerging technologies like augmented reality (AR), virtual reality (VR), and Internet of Things (IoT) devices, retailers can meet changing market demands and customer shopping expectations. Digital systems powered by 5G network coverage, speed, and capacity give retailers a 360-degree view of their business by creating a more connected in-store experience, innovating how employees work, and reinventing retail sales models. With real-time data analytics, the options for interaction and promotion are nearly endless.

Here's what 5G
can make possible
in retail—

NOW and **NEXT**

- 1 **Personalized experiences**
- 2 **Improved productivity**
- 3 **More store connectivity**
- 4 **Increased efficiencies**

Personalized shopper experiences

5G connectivity powers technology that creates a more personalized shopping experience.

NOW

Together, 5G speeds and the ability to transmit large amounts of data deliver connected shopping experiences in-store and online.

Some of the big box retailers are using emerging technologies like AR mapping to assist customers in finding their desired products—even displaying on-screen pricing specials. In a recent survey, 46% of customers said they use their smartphone to find product information while shopping in-store.³

As mobile device usage increases, wireless technology like Bluetooth beacons can assist shoppers by helping them locate specific products with strategically placed sensors throughout the store and can increase profits by almost 9%.⁴

³ <https://www.statista.com/statistics/1253831/mobile-phone-usage-shopping-in-store-united-states/>

⁴ <https://clevertap.com/blog/beacon-marketing/>



NOW

Wireless sensors also enable geolocation technology. Geofencing enhances the shopping experience by creating a virtual “fence” to welcome customers, showing them relevant promotions, sending notifications with exclusive offers, and alerts for curbside pickup orders—all through their mobile device.

Mobile checkout systems are also on the rise, making it easier and more convenient for customers to shop. Wireless interactions like self-checkout through mobile apps and tablet kiosk stations eliminate long lines and help customers move through the store more efficiently. Mobile commerce is expected to increase by \$12 billion over the next two years, boosting sales and opportunities for growth in the retail industry.⁵

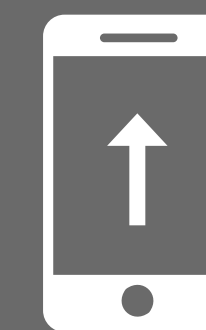
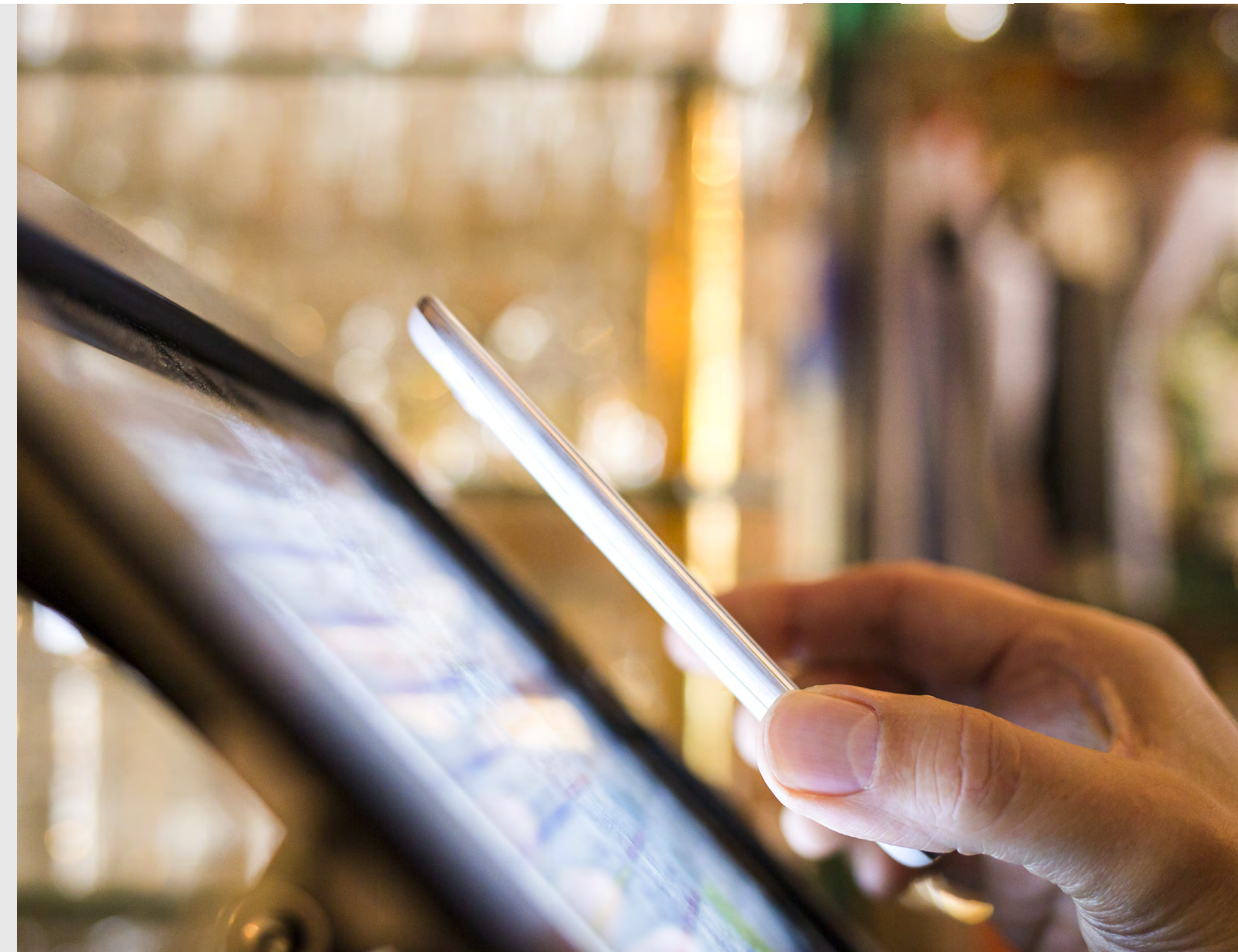
“ [5G] is just going to take this big leap forward, in terms of what’s possible from the customer experience. ”

- **Corey Pierson**, Co-Founder of Custora, a predictive marketing analytics platform, in a **National Retail Federation blog feature (NRF)**⁶

⁵ <https://darkroomagency.com/articles/how-5g-is-changing-e-commerce-for-a-more-vivid-buyer-experience/>

⁶ <https://nrf.com/blog/following-5g>

⁷ <https://idcdocserv.com/US47856021>



A recent survey found that mobile app usage increased by 53%, mobile orders increased 48%, and mobile payments went up nearly 43% in 2020.⁷



NEXT

The future of 5G, with ultra-low latency and enhanced coverage, will provide quicker connectivity that personalizes how customers shop.

The world of retail is evolving. 5G is expected to create a global smart retail market worth \$58 billion by 2025.⁸ Implementing the next generation of wireless connectivity will fuel innovation, creating a \$10 trillion economic output by 2035.⁹

As stores become smarter, retailers can personalize experiences for customers using real-time data analytics. For example, in-store beacons connected to a cloud server can push out targeted content to a specific smartphone, with special promotions for customers based on data that provides personal product solutions.

⁸ <https://www.intel.com/content/www/us/en/wireless-network/5g-smart-retail-infographic.html>

⁹ <https://www.intel.com/content/www/us/en/wireless-network/5g-business-opportunity-infographic.html>

Improved employee productivity

**Digital solutions
with powerful
connectivity can
increase staff
engagement while
improving efficiency
and effectiveness.**

NOW

5G supports employees as they perform their job and engage with customers.

When retail staff need to locate products and check inventory levels, many workers rely on a company-issued mobile device. But most of the time, even when businesses believe products are in stock, customers only find what they're looking for 75% of the time.¹⁰ That's a problem—inventory distortion cost the U.S retail industry \$580 million in 2020.¹¹ One way to remedy product variance is with a combination of RFID tags, Bluetooth sensors, HD cameras, and drones that can reach higher shelves to identify products from more than 25 feet away on both sides of the aisle.¹² With this technology, retailers can track inventory more consistently, making increased network capacity and speed critical.

Reliable wireless connectivity can also power mobile platforms that enable employees to learn the skills needed to fulfill their job duties. It's estimated that companies in the U.S. spent \$83 billion on training initiatives in 2019.¹³

¹⁰ <https://venturebeat.com/2020/10/26/5g-and-edge-computing-help-retailers-work-smarter-behind-the-scenes/>

¹¹ <https://www.statista.com/statistics/1199064/inventory-distortion-costs-breakdown-in-retail-industry/>

¹² <https://www.interlakemecalux.com/blog/drone-inventory-management>

¹³ <https://www.statista.com/statistics/788521/training-expenditures-united-states/>



**NEXT****With faster speeds and increased capacity, 5G can enable real-time data analytics based on employee productivity and behaviors.**

As mobile devices proliferate across the retail workforce, immersive learning modules are reimagining employee training. VR can improve the onboarding experience for new hires, allowing them to practice the best approach for customer engagement.

**VR training—better for business and employees**

One employer deployed a VR training program to over 1,500 service agents, reducing the time customers spent on hold by 50%.¹⁴

In addition to new technologies like VR powered by 5G, connected wearable devices can improve worker safety and wellbeing by monitoring employee health, potentially limiting insurance liability with a reduced number of accidents and disputes in the workplace. In a recent survey of 239 large corporations, more than 50% are using some type of nontraditional employee monitoring technique.¹⁵ It's estimated that 75 million wearables will be introduced into the workplace globally by 2022.¹⁶

¹⁴ <https://www.shrm.org/hr-today/news/hr-magazine/spring2021/pages/virtual-reality-training-spreads-its-wings.aspx>

¹⁵ <https://www.gartner.com/smarterwithgartner/the-future-of-employee-monitoring>

¹⁶ <https://www.corporatewellnessmagazine.com/article/wearable-technology-its-place-in-the-workplace>

More connected stores

Combining physical and digital retail environments leads to greater business insights and customer loyalty.

NOW

5G coverage is helping deploy more digital experiences in physical locations to enhance how customers shop and interact with staff.

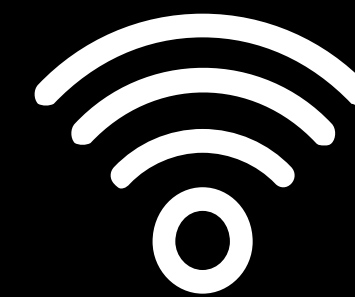
Customers have choices: for where to shop and how to obtain their desired product. If one retailer doesn't have it, it's easy to find it elsewhere.



NOW

Reliable wireless connectivity allows businesses to offer an “endless aisle” of product selection. Having an endless aisle means inventory can be located more easily from a mobile device, making customer service interactions more meaningful and untethering employees from terminals. One of the ways the endless aisle can be implemented is through a vast array of IoT devices. 5G speeds will allow retailers to have a real-time connection to sensors and beacons that allow for precision detection of a smart mobile device within 30 centimeters.¹⁷ This up-leveled product experience is ushering in a new era of retail that benefits everyone.

As mobile devices become more advanced, so do the digital shopping experiences they offer. AR/VR is becoming increasingly popular as a way for customers to preview their product, especially in the cosmetics, jewelry, and furniture industries. It’s projected that 100 million consumers shopped with AR online and in-store, and 46% of retailers planned to deploy AR or VR solutions to meet customer service expectations.¹⁸ Customers who used AR to preview their product before purchasing were 40% less likely to make a return.¹⁹

**5G smartphones**

It’s expected that up to 489 million 5G smartphones will be sold in 2021.²⁰

¹⁷ <https://nrf.com/blog/following-5g>

¹⁸ <https://www.gartner.com/en/newsroom/press-releases/2019-04-01-gartner-says-100-million-consumers-will-shop-in-augme>

¹⁹ <https://www.modernretail.co/retailers/how-virtual-fitting-rooms-became-the-next-retail-battleground/>

²⁰ <https://www.finextra.com/blogposting/19660/5g-and-the-payments-industry>



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The future will require 5G networks capable of handling massive amounts of data through connected systems and sensors to enable more enriching retail experiences.

As more people choose to shop online and have their product shipped to them, brick-and-mortar retailers need to offer alternative solutions to stay relevant. Physical stores are implementing digital solutions to meet customer expectations.

Buy online pickup in-store (BOPIS) is becoming increasingly popular, giving customers new ways to shop while allowing traditional retail stores to compete with online retailers.

Reliable, low-latency 5G means the ability to offer more streamlined BOPIS options. Grocery and food retailers can use remotely controlled storage lockers to keep hot and cold items fresh longer.

With a more connected store, the “phy-gital” environment can also deliver an enhanced fitting room experience. Virtual fitting rooms will give customers additional product options that complement their current choices and can increase retail sales.

Meeting changing retail needs

60% of U.S. consumers who used BOPIS in 2020 plan on continuing to do so after the pandemic ends.²¹

²¹ <https://www.forbes.com/sites/forbestechcouncil/2021/07/05/how-retailers-can-use-these-four-emerging-technologies-in-their-post-covid-evolution/?sh=1a091e561cad>

Increased operational efficiency

To effectively manage store operations, retail environments need streamlined systems and processes that optimize productivity.

NOW

5G connectivity is uncovering new ways of working that optimize on-site operations and increase store functionality.

Retail stores depend on technology to keep them up and running. Currently, stores can be outfitted with IoT sensors to regulate and control temperature settings, light fixtures, and alarm systems, which help reduce utilities expenses. With powerful 5G coverage, retailers can deploy IoT devices and sensors in greater numbers, creating new processes that drive operational efficiency from the store to the supply chain.

RFID tags can create a more autonomous supply chain by enabling drones and robots that can scan and track products in warehouses and storage facilities—transforming how inventory is managed. In a recent survey of more than 1,000 supply chain professionals, 52% of companies say they plan to increase their investment in sensors and automatic product identification in the next two years.²²

Automated shipment records can track logistics more easily, resolving issues like lost cargo and misplaced containers. One of Italy's largest seaports integrated 5G-based management solutions that ended up reducing vessel mooring time and increasing productivity by \$2.95 million.²³

²² <https://www.supplychaindive.com/news/supply-chains-RFID-sensor-automation-identification-technology/605839/>

²³ <https://www.forbes.com/sites/forbestechcouncil/2020/10/22/how-will-5g-shape-the-next-generation-of-supply-chains/?sh=2efc88334211>





NEXT

Future 5G networks will support massive IoT devices, allowing digital capabilities to scale and make a significant difference in retail operations.

Faster wireless connectivity will allow retailers to gain greater visibility, insight, and control over operational logistics. This includes optimizing shipment routes, tracking autonomous delivery vehicles, and managing the number of orders placed. The expansion of IoT devices will bring opportunities for streamlining operations that optimize retail logistic performance. It's estimated that 75 billion IoT devices will be in use by 2025, and 70% of IoT applications will be in B2B settings by 2035—serving as massive growth opportunities for businesses of all sizes.²⁴

²⁴ <https://www.intel.com/content/www/us/en/wireless-network/5g-business-opportunity-infographic.html>

²⁵ https://www.scmr.com/article/the_impact_of_5g

²⁶ <https://www.ericsson.com/495d5c/assets/local/about-ericsson/sustainability-and-corporate-responsibility/documents/2020/breaking-the-energy-curve-report.pdf>

Sustainability

More businesses are expected to address growing environmental concerns created from their production output. 5G can be more energy efficient and cost effective when it comes to implementing network equipment and devices for supply chain operations and service deployment. In fact, compared to the previous generation of wireless technology, 5G will consume only 10% of the energy, allowing devices to operate for longer periods of time without the need for human interaction—saving on overall operational costs.²⁵ With features like Micro Sleep Tx (MSTx) and the Low Energy Scheduler Solution (LESS) radio equipment, energy consumption can be reduced by 15% on-site, all while maintaining the same user experience.²⁶

T-Mobile for Business: Innovation through partnership

Forging ahead with America's largest, fastest, and now according to umlaut, most reliable 5G network.

Retailers need a 5G partner that can deliver next generation wireless services, has the expertise required to help companies automate and streamline processes, reduce costs, reach more customers, provide valuable digital tools to employees, and innovate for a changing future.

T-Mobile for Business offers transformative solutions for retailers of every size.

A partnership with us means access to the latest devices and services that enhance customer interactions, redefine employee workflows, and reimagine how businesses operate. Every project starts with an understanding of each company's specific connectivity challenges, internal resources, and business goals. Then, our team of retail experts can help build solutions that push the envelope on industry-wide innovation.

Capable device required for 5G; coverage not available in some areas. Some uses may require certain plan or feature; see T-Mobile.com. **Most Reliable:** 5G mobile network results in the US are based on an audit report conducted by independent third-party umlaut containing crowdsourced data for user experience collected from April 2021 to September 2021. Full details can be found on: www.umlaut.com/en/benchmarking/USA. **Fastest:** average, overall combined 5G speeds according to Opensignal Awards – USA: 5G User Experience Report October 2021, based on independent analysis of average speeds from mobile measurements recorded during the period June 14 – September 11, 2021© 2021 Opensignal Limited

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**Ready to find out how T-Mobile for Business
can support your company's goals?**

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