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5 Unexpected Ways 5G Will Change Retail ... for the Better



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By **Florian Bohn**

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2020 Retail Technology Report

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Most people think 5G technology is only related to the telecom industry. However, the 5G wireless network will affect more than cell phone coverage. As this next-generation network gains traction, it will have far-reaching effects for many industries, including retail.

According to a recent Ericsson [report](#), five years from now 65 percent of the global population will be covered by 5G, with networks generating nearly half of all mobile data traffic. As 5G wireless becomes more commonplace, it will have an impact on the retail industry – in ways retailers might not yet expect.

Dynamic Displays

Faster connections and reduced latency allow for new features in brick-and-mortar establishments, including digital price tags in food stores and smart digital displays in clothing stores. If a preferred shopper enters a clothing store, reduced latency means an intelligent display can update its content based on the person's last online order, instantly, for a personalized shopping experience.

But how will retailers efficiently keep digital tags and displays operating? The answer lies in wireless power. This innovation has both consumer and commercial applications – it intelligently sends targeted power to smartphones and tablets – as well as digital displays and Internet of Things (IoT) sensors. Retailers can take full advantage of untethered, wireless power in tandem with 5G technology to grow their businesses and offer unique experiences.

Related story: [Amazon Now Offering Checkout-Free Tech to Retailers](#)

Smart Shelves, Smarter Inventory

The retail industry will discover further benefits from 5G. Consider the browsing clothes-store shopper. If a shirt they want isn't on the rack, a sales associate could advise instantly if there's another somewhere in current inventory. Smart shelves give instant visibility into merchandise availability, even allowing automatic updates to product availability on websites.

Smart shelves utilize built-in weight sensors that notify a back-end system if there's a change in the number of items on a particular shelf. The sensors utilize RFID tags and readers to scan items on the shelf, alerting store clerks when an item is running low or a potential theft is detected.

The network will also provide cableless connectivity for industrial robots as they receive commands and software updates from the cloud. Warehouse operations can go beyond Wi-Fi to embrace IoT technology in a way that was previously unavailable.

Truck drivers will get help finding the best routes during inclement weather — and give logistics managers real-time visibility into their trucks' locations — or even the whereabouts of driverless vehicles delivering goods. Also, connectivity in rural areas will be greatly improved by 5G's lower frequency band, providing wider coverage and continuous end-to-end monitoring.

Checking Out the Checkout Line

Inside brick-and-mortar shops, checkout stands are still a requisite feature, but soon rendered obsolete with 5G. The technology will allow customers to scan labels with their smartphones to instantly pay for items. Shopping carts can also be outfitted with checkout systems monitoring items shoppers put into or take out of their carts, charging them afterward.

The store itself can be outfitted with a system where customers enter by scanning a smartphone app and are charged for whatever items they take off the shelf and walk out of the store with. Cameras and sensors placed on the ceiling track products placed into a shopping cart, with the help of artificial intelligence. These immediate and convenient transactions are sure to be adopted by more retailers, like Amazon Go stores.

Upleveling Batteries

Overall, the 5G network will bring a 90 percent reduction in power consumption. All the mobile data traffic traveling over 5G will be compressed, which reduces traffic volume. This and more efficient network protocols give rechargeable batteries a longer life. Smartphone batteries will last up to three years, and low-power IoT-device batteries up to 10 years. This will allow devices and transactions to operate uninterrupted, improving efficiency for retail businesses.

With all these advantages of 5G, retailers can unlock opportunities to better leverage data in real time with AI, IoT devices and more. Smaller retailers will also be able to compete with larger enterprises by adopting the latest technologies. Prepare for 5G to significantly impact every aspect of the retail industry, from the warehouse to the storefront.

Florian Bohn is co-founder and CEO of [GuRu Wireless](#), a VC-funded startup located in Pasadena, California on a mission to deliver electric power through the air at room scale and beyond.

Understanding how integrated data gives retailers the foundation for insight power data-driven decisions.

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Florian Bohn is Co-Founder and CEO of [GuRu Wireless](#), a VC-funded start-up located in Pasadena, California on a mission to deliver electric power through the air at room scale and beyond.

Florian has always felt compelled to understand the way the world works. His curiosity moved him to study Electrical Engineering at Caltech (B.S. Cum Laude), to receive an M.S. in Electrical and Computer Engineering from UC Santa Barbara, and a Ph.D. in Electrical Engineering from Caltech. At GuRu, Florian is thrilled to be building technology that will enrich people's lives on a global scale. He is also proud to be building a community of passionate and like-minded engineers at the organization.

As a co-founder and CEO at GuRu, Florian brings years of technology experience. At Axium Microdevices, he helped define and implement high-frequency RF integrated circuits which have shipped more than 400 million units. At Agilent Laboratories (formerly HP Labs) he worked on clock and data recovery circuits as well as novel test and measurement systems. As a Caltech Lead Scientific Researcher, Florian guided engineering and operational aspects of implementing the microwave system at Caltech's Space Solar Power Initiative.

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