

Is This a Setback for the Internet of Things?

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The [Internet of Things](#) (IoT) is widely considered the next big thing in technology. Research firm IDC expects worldwide spending on the IoT to reach [\\$1.4 trillion](#) by 2021. Overall, networking communications provider **Cisco** expects the IoT to be a \$19 trillion opportunity.

Unsurprisingly, the Internet of Things requires an internet connection, and not just any internet connection. The sheer volume of devices that will now be connected to the internet will require lightning-fast data transfer, especially as the number of internet-connected devices proliferates.

To accomplish this, wireless service providers will need to build out their networks [to fifth-generation \(5G\) technology](#) to provide the data-transfer speeds needed to fully support the IoT.

A broken backbone?

Morgan Stanley notes telecommunication providers like **Verizon Communications** (NYSE: VZ) and **AT&T** (NYSE: T) are somewhat lukewarm on building out their 5G capability. This is significant because 5G is considered the backbone of the IoT. As Asha Keddy, general manager of mobile standards of **Intel**, said:

The 2G networks were designed for voice, 3G for voice and data, and 4G for broadband internet experiences. With 5G, we'll see computing capabilities getting fused with communications everywhere, so trillions of things like wearable devices don't have to worry about computing power because network can do any processing needed.

The report noted that telcos are somewhat apprehensive to move quickly on a 5G buildout because of 4G -- after spending a combined \$275 billion on a rollout and densification of the current transfer standard, the industry has not seen significant returns on the investment. Instead, under pressure from **T-Mobile**, mobile continues to adopt policies like unlimited data and voice with strong price competition. While these policies are great for consumers, they are decidedly less so for wireless providers.

Morgan Stanley notes that 5G will be different. First, the industry will spend less on the build-out and the rollout will take longer. From 2019 to 2040 the industry is estimated to spend \$225 billion on 5G capital expenditures with the larger spend coming in the outer years. Additionally, Morgan Stanley expects the first 5G enabled smartphone will come to market as early as 2020, but real adoption and spending could take decades.

Will high debt levels lead to slower adoption?

Another factor that may delay 5G adoption is high debt levels. Verizon and AT&T are highly leveraged, and while both can service their debt easily, adding more obligations to highly leveraged balance sheets could result in downgrades and higher debt-servicing costs. Although mobile provider **Sprint** has a tremendous asset in the form of a 2.5GHz spectrum, the company has approximately [\\$16 billion of debt maturing in the next three years](#). That's the equivalent of 85% of its total market cap, which will make it difficult to build out its 5G capabilities.

Compounding 5G adoption is competing for business interests. Verizon now has Oath, its digital media business formed from its acquisition of Yahoo, AOL, and The Huffington Post. Both have wireline telephony and subscription-based television delivery, with Verizon FiOS and AT&T's recent DirecTV purchase. The latter two require high capex layouts that may compete for 5G spend.

The IoT is still a great opportunity

In the long run, the opportunity from the IoT is simply too big to ignore. The savings and value creation from automation and productivity increases should be world-changing. However, it's possible for the process to be delayed until mobile ISPs determine a compelling business case exists to build out 5G.

It appears ISPs are at least starting the process. In Verizon's last quarterly call CFO Matt Ellis said Verizon was "prepositioning" for its 5G network. Sprint and T-Mobile have noted their intentions to launch a network in 2019, and AT&T is working on a 5G network as well. If the opportunity is as compelling as Cisco and IDC expect, it's possible for 5G buildout to occur faster than Morgan Stanley notes.