

The '5G' vs 'Wi-Fi' Debate



Will 5G make Wi-Fi irrelevant?

- Various articles purport that 5G will kill Wi-Fi or make it irrelevant

World without Wi-Fi looks possible?

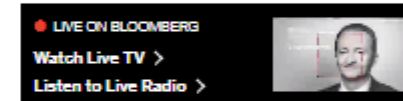
Technology

A World Without Wi-Fi Looks Possible as Unlimited Plans Rise

By [Olga Kharif](#)

March 9, 2017, 10:00 AM GMT *Updated on March 9, 2017, 6:20 PM GMT*

- ▶ Unlimited mobile data plans, competing systems pose threats
- ▶ 'You could see a big switch' in consumer behavior: analyst



The Wi-Fi icon -- a dot with radio waves radiating outward -- glows on nearly every internet-connected device, from the iPhone to thermostats to TVs. But it's starting to fade from the limelight.

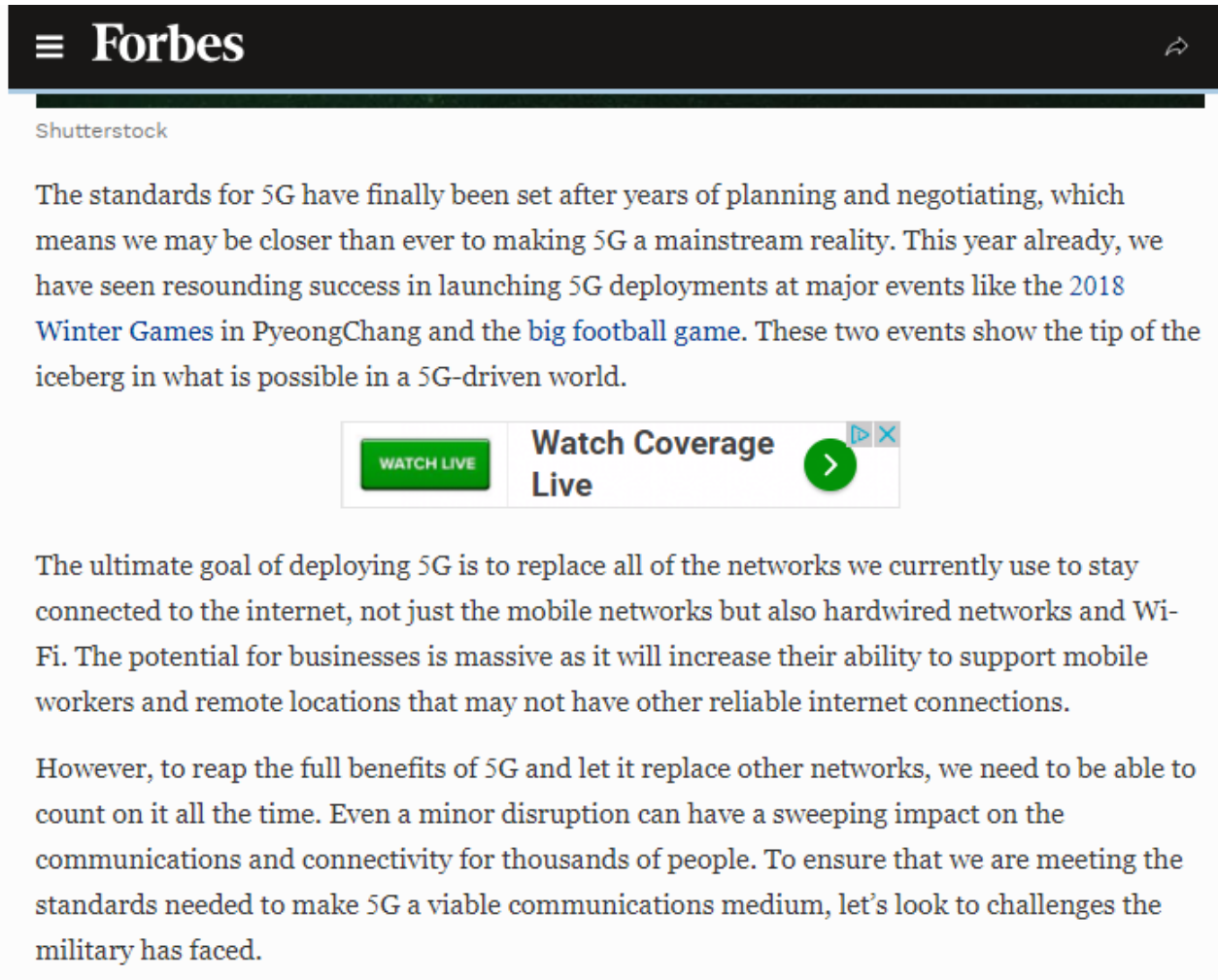
With every major U.S. wireless carrier now offering unlimited data plans, consumers don't need to log on to a Wi-Fi network to avoid costly overage charges anymore. That's a critical change that threatens to render Wi-Fi obsolete. And with new competitive technologies crowding in, the future looks even dimmer.

Link: [Bloomberg](#), [Denver Post](#)


Will 5G make Wi-Fi irrelevant?

- Various articles purport that 5G will kill Wi-Fi or make it irrelevant
- In some cases, articles assert that 5G will replace fixed broadband in your home

5G will replace fixed broadband in your home?





The screenshot shows a Forbes article snippet. At the top is the Forbes logo and a share icon. Below that is the word "Shutterstock". The main text discusses 5G standards and deployment success at the 2018 Winter Games and a football game. A "Watch Coverage Live" button is visible. The text continues to discuss the goal of replacing current networks and the challenges of 5G deployment.

≡ **Forbes** 

Shutterstock

The standards for 5G have finally been set after years of planning and negotiating, which means we may be closer than ever to making 5G a mainstream reality. This year already, we have seen resounding success in launching 5G deployments at major events like the [2018 Winter Games](#) in PyeongChang and the [big football game](#). These two events show the tip of the iceberg in what is possible in a 5G-driven world.

[WATCH LIVE](#) **Watch Coverage Live**  

The ultimate goal of deploying 5G is to replace all of the networks we currently use to stay connected to the internet, not just the mobile networks but also hardwired networks and Wi-Fi. The potential for businesses is massive as it will increase their ability to support mobile workers and remote locations that may not have other reliable internet connections.

However, to reap the full benefits of 5G and let it replace other networks, we need to be able to count on it all the time. Even a minor disruption can have a sweeping impact on the communications and connectivity for thousands of people. To ensure that we are meeting the standards needed to make 5G a viable communications medium, let's look to challenges the military has faced.

Source: [Forbes](#)

Will 5G make Wi-Fi irrelevant?

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- In some cases, articles assert that 5G will replace fixed broadband in your home
- Mobile networks are getting faster and Wi-Fi is not able to keep up with the 4G/5G speeds

Mobile Networks are getting faster


The screenshot shows the top of the The Register website. The header is red with the logo "The Register" and the tagline "Biting the hand that feeds IT". Navigation links include DATA CENTRE, SOFTWARE, SECURITY, DEVOPS, BUSINESS, PERSONAL TECH, SCIENCE, EMERGENT TECH, BOOTNOTES, and LECTURES. Below the header is a dark grey banner for HPE SimpliVity with the text "HPE SimpliVity. Start Innovating. Hewlett Packard Enterprise. HPE SimpliVity customers spent 14.8% of their time on innovation and new projects before deploying HPE SimpliVity compared with 28.1% of their time on innovation and new projects after deploying HPE SimpliVity, a gain of 91%. Full IDC report https://www.hpe.com/us/en/resources/integrated-systems/simplivity-customer-interviews.html".

Data Centre ▸ **Networks**

Mobile networks are killing Wi-Fi for speed around the world

And that means smartphones will need to get smarter

By Andrew Orłowski 23 Nov 2018 at 18:15 108 **SHARE** ▾



HPE SimpliVity.
Increase time for innovation by 91%*.
Start Innovating

Source: [The Register](https://www.theregister.com/2018/11/23/mobile-networks-wi-fi-speed/)

Will 5G make Wi-Fi irrelevant?

- Various articles purport that 5G will kill Wi-Fi or make it irrelevant
- In some cases, articles assert that 5G will replace fixed broadband in your home
- Mobile networks are getting faster and Wi-Fi is not able to keep up with the 4G/5G speeds
- Finally, there are articles about how many companies that are fed-up of the crappy Wi-Fi will be replacing them by 5G

5G vs Crappy Company Wi-Fi

Connectivity

Companies fed up with crappy Wi-Fi are deploying 5G instead

Automakers, oil companies, and shipping ports plan to build private 5G networks for faster, more reliable connectivity.

by Elizabeth Woyke November 28, 2018

Someday soon, the wireless connectivity inside an Audi production facility may be as advanced as the vehicles.

The German automaker plans to build its own, private wireless network at its production sites using 5G, the next generation of cellular

Source: [MIT Technology Review](#)

Let's start with the basics

There are many different types of Wi-Fi:

- Home Wi-Fi: We use this to connect our computers, laptops, tablets, smartphones and other Wi-Fi enabled devices in our houses
- Enterprise or Office Wi-Fi: Companies, small and big need Wi-Fi to connect their computers, tablets, smartphones and other devices that connect to Wi-Fi out of the box
- Free Unmanaged Public Wi-Fi: These are the free Wi-Fi hotspots available in coffee shops, malls, restaurants, etc. to lure customers to visit and stay there. The thinking behind is that this will translate into business.
- Managed Public Wi-Fi: These are the Wi-Fi hotspots by ISPs and MNOs that are better quality than the free hotspots but needs subscription.

Home Wi-Fi

- Most people have Wi-Fi in their houses that are backhauled on Fibre, Cable, ADSL, FWA, etc.
- In addition to computers, tablets, smartphones, many other devices including game consoles, smart TVs, fridges, etc. has Wi-Fi built in.
- Wi-Fi chipsets are very cheap, so the incremental cost of connectivity is low
- Adding 5G chipset in most of these devices will increase the manufacturing cost significantly, would need subscription, leading to increase in running costs and provide no additional benefit. **Home Wi-Fi will continue to exist like today in the foreseeable future.**



Source: [Linksys](#)

Enterprise or Office Wi-Fi

- Offices, large or small, have highly secure Wi-Fi to serve the needs of people who work there as well as the visitors.
- While it may be possible to move people to using 5G, the subscription costs will be a massive overhead.
- In addition there are printers, projectors, white boards, and many other devices that are all connected over Wi-Fi. They cannot be moved to 5G unless a massive effort is applied. Most enterprises are not capable to undertaking this.
- **We do not foresee a move from Wi-Fi to 5G in enterprises.**



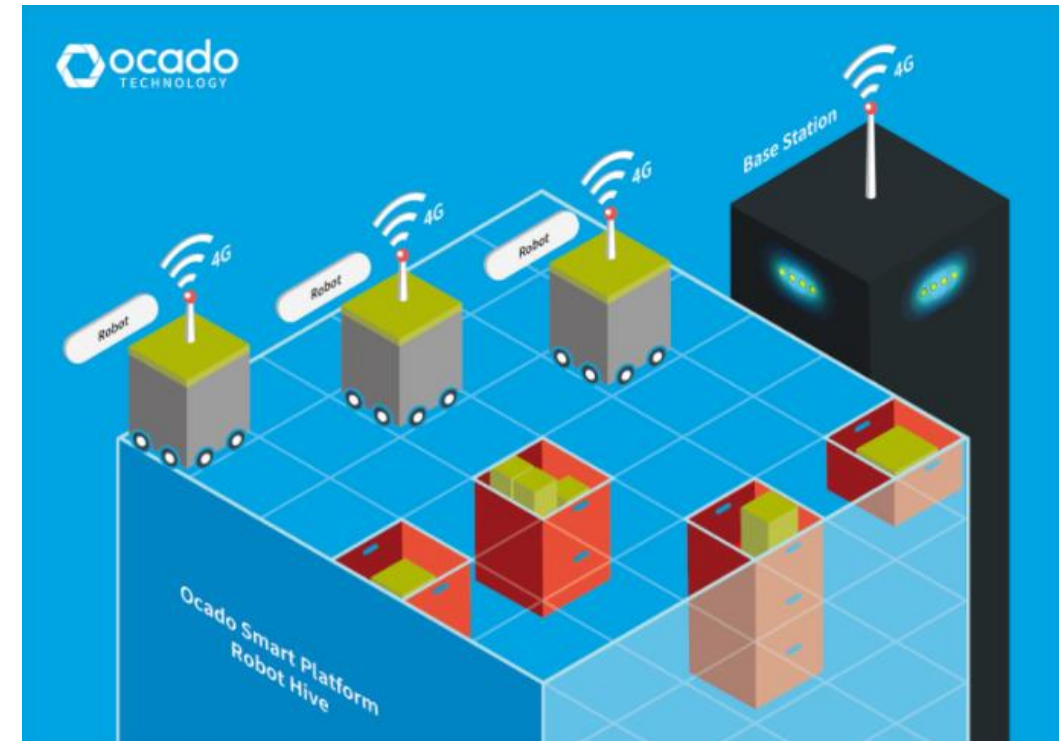
Source: [Made By WiFi](#)

Private Networks in Factories

- Many factories rely on Wi-Fi for critical connectivity tasks.
 1. The problem with unlicensed bands is that they can easily get interference from other sources.
 2. The QoS with Wi-Fi is not good enough for some use cases but this can often be attributed to point (1).
 3. Workers in the factory may create Wi-Fi hotspots leading to interference on the floor.
- Many factories in the car industry for example uses wired networks to overcome the above issues but this results in loss of flexibility that can be achieved with wireless.
- Other industries where moving parts rely on Wi-Fi does not benefit from wired connectivity.
- **Private 5G network may work in these scenarios** but there are other alternatives that can be cheaper to run.

Case Study: Ocado Warehouse Automation

- Online grocery retailer Ocado uses 1,000 robots working across a 150 metre radius in their warehouse in UK.
- To solve Wi-Fi limitations of how many of them can be connected to an access point, lack of predictability with roaming and guaranteed latency, they worked with Cambridge Consultants to design LTE network in 5GHz Wi-Fi band.
- The same approach can be used when 5G networks are available in unlicensed bands or in licensed bands with operator supporting it
- Detailed case study on Cambridge Consultants website [here](#).



Source: [Mobile Europe](#)

Free Unmanaged Public Wi-Fi

- Due to large data allowance in many packages, the number of users relying on free Wi-Fi is reducing.
- The other issue with free Wi-Fi often is
 - Lack of security so devices can be affected by malware
 - Poor speeds, when there are many users connected to it
- But there are still many use cases for using public Wi-Fi
 - Sometimes mobile signals are poor, Wi-Fi hotspot not only provides better throughput but also doesn't let battery drain quickly
 - Many devices like laptops rely on Wi-Fi
 - Students and international roaming users rely on Wi-Fi
- **We do not foresee that free public Wi-Fi hotspots will disappear anytime soon.** They will be less loaded thereby providing higher quality connection to users.



Managed Public Wi-Fi

- Many operators and service providers offer free Wi-Fi
 - One of the main reasons is to offload traffic indoors where coverage is poor.
 - Offloading traffic in dense areas is another good use case.
 - This is also a way to lure new users.
- Some Service Providers (SPs) use free Wi-Fi to their customers as a differentiator and will continue doing so.
- With the new advancements in Wi-Fi technology (like Hot Spot 2.0, a.k.a. Passpoint), there is no longer a need to enter login credentials all the time.
- The **same trend is expected to continue when 5G** is launched as Wi-Fi spectrum doesn't cost much to the operators and reduces the number of base stations they are needed to deploy for capacity purposes.



Source: [O2](#)

Summary

So in summary of the question, ‘Will 5G make Wi-Fi irrelevant?’:

- Wi-Fi in the home will continue to exist like today.
- Wi-Fi in offices and enterprises will continue to exist like today.
- Some factories and warehouses that rely on critical factors like QoS and latency may choose to replace Wi-Fi networks with private 5G networks.
- Free unmanaged public wi-fi may be shunned by many users but will continue to exist and will continue to be used.
- Operator / ISPs Managed wi-fi will also continue to exist for variety of use cases

In short, **5G will not make Wi-Fi irrelevant** for the foreseeable future

Thank You

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