



Health Risk: Citizens Push Back On 5G Towers In Moraga, Calif

Cities potentially have significant clout to change the 5G landscape, but are typically too timid to do so. Most lay off decisions to Federal and State regulations. Meanwhile, 5G companies have become schoolyard bullies by threatening endless lawsuits. □ TN Editor

An East Bay neighborhood's fight against 5G is the topic of a town council meeting scheduled for Wednesday night. Moraga residents are expected to turn out and demand the city do more to protect people from cell phone radiation exposure.

It is a fight that's been going on across the country and has been particularly heated in the East Bay. Ellie Marks has been outspoken against 5G and cell phone companies for 11 years now.

"We may not see the full ramifications of this for 20-30 years. How can we just fly blindly into this? It doesn't make sense," Marks said.

Her fight began when her husband developed a brain tumor on the right side of his head back in 2008. She says he was a heavy cell phone user since 1986.

“He used it all the time; held it right to his right ear and the tumor developed right where he held the phone,” Marks said.

Fortunately her husband survived, but she says it was her wake-up call. Ever since then, she’s been touring the country, organizing against the spread of cell phone towers and raising awareness about increased exposure to radio frequency.

The FCC and cell phone companies all maintain RF exposure we receive from cell phones is well within safe levels.

“The FCC is lying to the general public,” Marks countered.

“So far every major study concludes it [5G] is not having a harmful impact,” CNET Editor at Large Ian Sherr said.

Sherr has been following the launch of 5G and the race to beat China to a full 5G launch.

“5G is not just another ‘G.’ It’s supposed to be faster, more reliable and possibly the way the internet runs will change because of this technology,” Sherr said.

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5G Will Revolutionize Internet Of Things And AI Platforms

T-Mobile lays out the real driver behind 5G: IoT and AI. Connecting everything and everybody together will permit command and control like never seen before in history. Unimaginable volumes of data will be collected, which is the life-blood of Artificial Intelligence. □ TN Editor

The rollout of 5G will enable a rapid rise of IoT and AI, changing everything — again — for CIOs.

CIOs and CTOs have managed rapid digital transformation, yet even bigger change is coming. Soon. The impending rollout of 5G networks will enable a more rapid scaling of Internet of Things (IoT) and artificial intelligence (AI) platforms. This signals a major turning point in digital transformation in the enterprise, as technology leaders will be challenged to leverage these changes to boost the customer experience while protecting endpoints and data.

Enterprise CIOs and CTOs gathered recently for a roundtable, sponsored by T-Mobile for Business at the New York Stock Exchange, to discuss this significant wave of change about to crash ashore and wash over their global IT organizations.

All acknowledged that within a few years, AI platforms will routinely churn through unfathomable volumes of data generated by billions of IoT devices connected over 5G networks. As a result, organizations will have unprecedented opportunities to deliver entirely new customer experiences. Yet each enterprise will be similarly challenged to leverage the 'big three' (AI, IoT and 5G) to improve operations and processes and develop new products and services — all in the name of competitive advantage.

Who's driving the change?

IoT growth projections are roughly 25 percent per year for the next several years, reaching a half trillion dollars globally within three years. Deloitte predicts the number of mobile providers launching 5G networks globally will double from 25 to 50 by the end of next year. Accenture research on the impact of AI in 12 industrialized countries found that AI could double annual economic growth rates by 2035 through changing the very nature of work.

Make no mistake: The building wave of 5G-IoT-AI is as inevitable as it is enormous. The potential for disruption and change was not lost on the panel participants.

To Eash Sundaram, executive vice president and digital and technology officer at JetBlue Airways Corp., there is little question that consumers will drive the transformation triggered by these emerging technologies. "Consider what happened with the iPhone. Consumers drove the smart phone revolution and the enterprise adoption naturally followed," Sundaram said.

The CIO of a major enterprise communications company agreed, saying, "Consumers will pull 5G into the enterprise, without doubt."

JetBlue's Sundaram noted that his company's decision to provide free high-speed internet connectivity on its flights is another example of consumer-driven transformation. JetBlue customers want, and now expect, to have a consumer internet experience while flying. JetBlue went a step further than other airlines in offering this service free of

charge on all domestic flights, and is working on boosting connection speeds.

Securing the mountains of data

Sundaram believes the challenge with the explosion in IoT devices on 5G networks lies in linking them in ways that augment the customer experience. With regard to security, Sundaram says his experience and his 'glass half-full' philosophy lead him to think that the tenacious work of security experts will keep enterprises relatively safe.

However, the founder and CTO of a fast-growing security start-up said the velocity and sophistication of attacks is growing fast, leading him to question whether this will slow the expected boom in enterprise IoT devices. He said security in this emerging IoT environment would be the responsibility of AI platforms capable of quickly noting anomalies from enormous streams of IoT and network data. But, as he and others noted, AI can be deployed to hack these devices as well.

This cautionary view was echoed by Dr. David Dodd, vice president and chief information officer of Information Technology at Stevens Institute of Technology. "I see high-speed 5G networks and IoT becoming commoditized," Dodd said. "But rest assured the bad guys are actively figuring out how to compromise millions of new endpoints. How the enterprise will prepare for this reality and secure it will be a serious challenge."

Expanding opportunity

Neil Green, vice president and transformation chief digital officer at Otis Elevator Co., says his company is already benefitting from IoT sensors and high-speed networking to sharply reduce elevator downtime, an aggravation to which most everyone can relate. Otis is actively mining sensor data to reduce major delays due to door malfunctions. Analyzing sensor data allows Otis to accurately predict minor failures that can lead to total shut down, thus limiting most repairs to short intervals when traffic is light.

Green also spoke of the potential to leverage anonymous facial recognition and other data to predict who is using elevators and when (millennials, business executives, high-end shoppers, etc.), thereby allowing clients to deliver highly targeted advertising. “Digital transformation is all about the data, and a lot of us are struggling to figure out how to monetize it,” Green said.

This last point suggests one more challenge for CIOs: Beyond building improved customer experience and better security, what are the products and services these technologies will enable and how can they be monetized?

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China's Race To 5G Dominance Raises Global

Security Concerns

China has raced way ahead of America on setting 5G standards and hold twice as many patents as we do. Furthermore, Huawei is the leading producer of 5G-related hardware. As a Technocracy, China is pouring billions into 5G rollout because they recognize how critical it will be to implementing their Scientific Dictatorship. □ TN Editor

[Michael R. Wessel](#) is a commissioner of the U.S.-China Economic and Security Review Commission, a U.S. government organization that investigates the national security implications of trade and economic relationship between the U.S. and China.

He recently discussed with VOA his concerns about China's race to 5G, the next generation of wireless connectivity being built worldwide. With a 5G network, users will be able to send and receive more data in less time, which could have implications for self-driving cars, smart cities and other technologies.

Q: How much does it matter which country is first to fully functioning 5G?

Wessel: It does matter. First mover advantage is crucial in any new technology, but it is particularly important in 5G because it is foundational for cutting-edge innovation and applications including smart cities, network manufacturing, and integrated warfighting capability.

When standards are created, controlled, and sold by other countries, there is enhanced pressure on the U.S. to adopt those standards, which would have significant economic and national security costs.

For example, U.S. 4G leadership contributed to around \$125 billion in U.S. company revenue from abroad and more than \$40 billion in U.S. application and content developer revenue, and created 2.1 million new jobs from 2011-2014. And, from a national security perspective, the "control" of technologies raises unacceptable risks.

Q: How far ahead is Huawei or China on 5G?

Wessel: China's leadership in 5G depends on how we define competition. Some U.S. companies are already offering 5G devices and are running pilot projects in select cities, so they have beat China to the punch. However, Chinese investment into 5G is vast.

As of early February 2019, Huawei owned 1,529 "standard-essential" 5G patents, the most of any company, according to data-analytics firm IPlytics. By comparison, Qualcomm, a U.S. company, owned 787 standard-essential patents. All Chinese companies together own 36 percent of all 5G standard-essential patents, while U.S. companies (Intel and Qualcomm) own 14 percent.

In terms of 5G network build out, China is also racing ahead: China Tower, a monopoly created by the Chinese government to build the country's 5G infrastructure, said it would likely cover the country by 2023. One estimate said China Tower built more sites in 3 months than U.S. did in 3 years. In the United States, the process is likely to take much longer, with each company handling its own networks, and will need to negotiate with local governments for tower locations.

Q: The U.S. is urging its allies to not work with Huawei in building their 5G networks out of concern that the Chinese technology giant could give the Chinese government access to the new network for spying. Some countries such as Germany say they won't rule out working with Huawei. Why is this a problem for the U.S.?

Wessel: We tend to focus on the economic cost and not consider the national security cost of something as significant as a nationwide 5G network rollout.

Huawei products, services and activities have already raised significant concerns and our allies have to consider how much more investment they are willing to make into their technology.

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Why The U.S. Is Terrified That Huawei Controls The World's 5G Network

With 29 billion connected devices by 2022, one security expert claims, “Whoever gets to dominate 5G infrastructure will become the owner of the next generation of the world’s telecoms infrastructure.” That company is Huawei. □ TN Editor

US lobbying against Chinese firm Huawei, one of the biggest phone makers and telecommunications kit providers in the world, hit a new level this week during the phone industry’s big annual conference.

Around 100,000 technology vendors, carriers, and device makers head to Mobile World Congress in Barcelona every year both to strike deals and to showcase emerging technologies. This year, the conversation was dominated almost exclusively by 5G, as carriers look to introduce next-generation, superfast mobile networks.

The conference was heavily sponsored by Huawei, as the firm made its big pitch about its 5G capabilities.

But looming in the background were the months of negative press about whether Huawei's equipment might provide a backdoor that would allow the Chinese government to spy on people.

The firm's chief financial officer, Meng Wanzhou, is awaiting Canada's decision on [whether to extradite her to the US](#), after [alleged sanctions violations](#). And the company was also indicted by the US for [alleged theft of trade secrets](#).

Rotating chairman Guo Ping [took to the stage on Tuesday morning](#) to talk up Huawei's 5G business to a cavernous auditorium filled with telecoms executives and journalists.

His speech took an unexpected turn about halfway through, when he fired a shot at the US government, turning claims that Huawei spies on behalf of China back on America.

"PRISM, PRISM on the wall, who is the most trustworthy of them all?" Guo said onstage, in reference to the PRISM surveillance system used by America's intelligence agency. "Huawei has a strong track record in security in three decades. Three billion people around the world. The US security accusations of our 5G has no evidence, nothing."

Behind him, a slide appeared in his presentation with the statement: "Huawei has not and will never plant backdoors." There was even some muted laughter from the audience.

Elsewhere around the conference centre, Huawei's logo adorned lanyards of thousands of attendees, while ads for its Mate X foldable phone greeted visitors as they entered the building.

Just five hours after Guo's swipe, US government officials held a small press conference [to make their position on Huawei clear](#). Up until that point, there had been no visible sign of the US government delegation, which had quietly turned up to Mobile World Congress to lobby its European allies not to use Huawei's equipment in their networks.

Reading from a printed statement, with no microphone or slides, top US cyber official Robert Strayer said: "The United States is asking other

governments and the private sector to consider the threat posed by Huawei and other Chinese information technology companies.”

When pressed by reporters, Strayer refused to say whether the US had proof that Huawei might have built backdoors into its telecommunications equipment.

And asked if the US might simply be worried about leaning too heavily on a foreign tech company, Strayer said: “Really I think the question is this: Do you want to have a system that is potentially compromised by the Chinese government or would you rather go with a more secure alternative?”

The US will be hoping that Strayer’s comments, and its behind-the-scenes lobbying, will land more effectively with its allies than Huawei’s attack on the big stage at MWC.

[Huawei upped the ante in its fight with the US](#) over its telecommunication devices on Thursday local time, announcing that it filed a lawsuit against the US government, which has banned its federal agents from using the equipment, citing privacy concerns.

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Total Data Domination: 5G, IoT, AI Surveillance And The Smart City

In 1932, Aldous Huxley foresaw a Scientific Dictatorship in his book, *Brave New World*. In 2019, Huxley's dystopian future is appearing right before our eyes, but few recognize it. □ TN Editor

By Patrick Wood

People who have a modern smartphone normally think of 5G as nothing more than a progression from 3G and 4G. Offering fewer dropped calls, faster data transfer, and more convenience. 5G is the fifth generation of wireless technology.

This thinking barely scratches the surface. There must be a greater reason why CEOs of major cellular carriers are breaking their necks to railroad the fastest implementation in history of a new communication standard.

This reason has little to do with your personal cellphone and everything

to do with the so-called Internet of Things (IoT) where all electronic devices will be connected together in real-time. Collectively, the IoT is the core technology used to implement Smart City makeovers.

“Real time” is a magical tech term. 5G is at least one order of magnitude faster than anything before it. It is comparable to everything being connected directly by fiber-optic cable where as soon as you touch the send key, your data transmission is received at the other end, faster than a blink of your eye.

Let’s do some math. 4G can transfer data at 100,000,000 bits per second (which is 10 megabits per second). That’s really fast! However, 5G blows out the same data at 10,000,000,000 bits per second, or 10 Gbps (Gigabits per second). This is **100 times faster** than 4G. Secondly, 4G has a typical “ping” factor between 10ms and 50ms (milliseconds) that measures the time needed in order to send a single packet of information. 5G drops that time to 1ms.

In spite of the cutthroat American race between wireless providers like AT&T, Verizon and T-Mobile, China has declared that it intends to emerge as the global leader on 5G rollout to its own 1.4 billion citizens. China is also mass-producing the technology to sell to the rest of the world.

In the U.S., 5G is being heavily promoted by the Trump Administration. The Federal Communications Commission issued a ruling in September that blocks cities from charging higher fees for installing 5G infrastructure. Loud protests have been registered from the U.S. Conference of Mayors, the National Association of Counties, the National Governors Association and the Nation Conference of State Legislatures. Why? Because the FCC’s actions are unconstitutional and cities are being stripped of the little sovereignty they have left. Thus far, the FCC is undeterred in its position.

Smart City technology is brought to us exclusively by Big Tech corporations in the name of Technocracy and Sustainable Development. With the advent of sophisticated Artificial Intelligence (AI) programs, massive amounts of data collected from sensors of all types can be

analyzed in real-time, displaying the results in a multi-dimensional model. What are sensors? Cameras, microphones, self-driving vehicles, license-plate readers, cell phones, Bluetooth devices, Smart Meters and all connected devices in Smart Homes.

Thanks to real-time connections between autonomous vehicles, road sensors and central computers equipped with AI, they will be able to navigate any and all roadways with authority and impunity. They will also inform on you every inch of the way.

In China, where all of this massive surveillance is weaponized against civilians, Technocrats have implemented a Social Credit Score assigned by algorithm, to all 1.4 billion inhabitants. By 2020, China intends to have 600 million facial recognition cameras installed, or about one camera for every 4 citizens. All of them will transmit their images in real-time to central computers running sophisticated AI programs. Each person in the big-data database will have their personal data pulled from every conceivable location in the nation. By the time that they know who you are, what you are, what you do, what you think and what you intend to do, their AI algorithms will calculate and assign to you a Social Credit Score that will limit or expand whatever privileges you will have from that time on.

The Social Credit Score system is coming to America as well, unless we somehow convince our own officials that this is a horrible idea that will utterly destroy the American dream.

Nothing has changed in the 85 years since Technocracy, Inc. defined its original mission in 1938:

Technocracy is the science of social engineering, the scientific operation of the entire social mechanism to produce and distribute goods and services to the entire population.

Scoffers may argue that history does not mean anything and there is no relevance to modern times. If they understood history, they would not say such a thing. For instance, consider 'ride-sharing' schemes where nobody owns a vehicle and everyone shares a common pool of community owned autos. This idea is not new. Technocrats had it in their

sights as early as 1934:

The Automotive Branch of Transportation would provide a network of garages at convenient places all over the country from which automobiles could be had at any hour of the night or day. **No automobiles would be privately owned.** When one wished to use an automobile he would merely call the garage, present his driver's license, and a car of the type needed would be assigned to him. 'When he was through with the car, he would return it either to the same garage or to any other garage that happened to be convenient, and surrender his Energy Certificates in payment for the cost incurred while he was using it.

I will suggest that the modern world cannot be even remotely understood except in terms of Technocracy and its inevitable outcome: Scientific Dictatorship. Every major meme in global geo-politics, economics and globalization, devolution of national sovereignty, etc., is dancing to the Technocrat drumbeat.

As to today, 5G is about to deliver the ultimate tool for total control over Americans, and it has nothing to do with your cell phones getting a speed upgrade.

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Huawei/US Conflict Hinders Plans For 5G Rollout

China's behemoth Huawei is hindered by the growing concern of foreign leaders that it is an organ of the Technocrat dictatorship. Huawei's plans for 5G domination are thus in serious jeopardy. □ TN Editor

The US-led offensive against Chinese tech firm Huawei is creating big problems for mobile operators as they start building the next generation of wireless networks.

The United States is trying to persuade other countries not to allow Huawei equipment into new superfast 5G networks because it claims the gear could be used by the Chinese government for spying.

Huawei strongly denies the accusations. And it has already built up such a strong lead in 5G technology that it's practically irreplaceable for many wireless carriers that want to be among the first to offer the new services.

"Banning Huawei will create a vacuum that no one can fill in a timely fashion and may seriously impair 5G deployments worldwide," said Stéphane Téral, a mobile telecom infrastructure expert at research firm

IHS Markit. The uncertainty is particularly problematic for Europe, where Huawei was expected to play a key role in building 5G networks that the region's leaders say are vital for its economic future.

The international rollout of 5G has become a front line in the broader clash over advanced technology between the United States and China that is reshaping the relationship between the world's top two economies.

The United States doesn't have a heavyweight global competitor to Huawei in telecommunications equipment. The Chinese firm's biggest rivals are Ericsson (ERIC) of Sweden and Nokia (NOK) of Finland. But they have struggled for years with losses and job cuts while Huawei has powered ahead, generating annual revenue of more than \$100 billion, building a strong base in China and amassing intellectual property that will help determine the future of 5G.

Unhappy mobile operators

Some top international mobile operators are warning that by shutting Huawei out of 5G networks, countries risk undermining their own tech capabilities. The new wave of wireless communications is expected to increase internet speeds as much as 100 times compared with 4G networks, and help power emerging technologies like smart cities and connected vehicles.

Vodafone's (VOD) CEO Nick Read cautioned last month that a complete ban on all Huawei gear would substantially delay the availability of 5G. The mobile carrier has suspended the installation of the Chinese company's equipment in core networks in Europe while it speaks with authorities and the company.

In August, Vodafone slammed the Australian government's decision to ban Huawei from providing 5G technology for networks there, saying the move "fundamentally undermines Australia's 5G future."

UK telecom group BT's chief architect, Neil McRae, put the situation in stark terms late last year.

"There is only one true 5G supplier right now, and that is Huawei," he

said at an industry event in London. “The others need to catch up.”

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Expert Warns 5G Could Cause Cancer In Humans

The health concerns over 5G may or may not be justified in the end, but the industry’s refusal to permit adequate testing and release of existing data is reprehensible. In the meantime, 5G is the great enabler of Technocracy. □ TN Editor

Superfast broadband could be a global catastrophe, kill wildlife, give people terminal diseases and cause the Earth’s magnetic field to change, according to shock claims by a technology expert.

Arthur Robert Firstenberg is an American author and activist on electromagnetic radiation and health.

He founded the independent campaign group the Cellular Phone Task Force and since 1996 he has argued in numerous publications that wireless technology is dangerous.

In his 1997 book *Microwaving Our Planet: The Environmental Impact of the Wireless Revolution*, he claimed: "The telecommunications industry has suppressed damaging evidence about its technology since at least 1927."

He has recently started an online petition calling on world organisations, such as the UN, World Health Organisation (WHO), and EU to "urgently halt the development of 5G" - which is due to be rolled out this year.

Speaking to the Daily Star Online, he explained: "There is about to be as many as 20,000 satellites in the atmosphere.

"The FCC approved Elon Musk's project for 12,000 satellites in November 15th and he's going to launch his in mid-2019.

"I'm getting reports from various parts of the world that [5G](#) antennas are being erected all over and people are already getting sick from what's there now and the insect population is getting affected.

"This could become a global catastrophe. When the first satellites were launched in the late 1990s for mobile phones, on the day they were launched people sensitive to these things got very sick.

"The mortality rate rose in the US by 5-10% too and there were reports that birds were not flying.

"People who realised this the most were pigeon racers who released their birds who then didn't return.

"And that was for only 77 satellites, so we are very frightened at the prospect of 20,000."

According to the Firstenberg, wireless networks are "harmful for humans" and the development of the next generation is "defined as a crime" under international law - he states in the online petition.

The petition adds: “[5G](#) will massively increase exposure to radio frequency (RF) radiation on top of the 2G, 3G and 4G networks for telecommunications already in place.

“RF radiation has been proven harmful for humans and the environment. The deployment of 5G constitutes an experiment on humanity and the environment that is defined as a crime under international law.

“Despite widespread denial, the evidence that radio frequency (RF) radiation is harmful to life is already overwhelming. The accumulated clinical evidence of sick and injured human beings, experimental evidence of damage to DNA, cells and organ systems in a wide variety of plants and animals, and epidemiological evidence that the major diseases of modern civilization—cancer, heart disease and diabetes—are in large part caused by electromagnetic pollution, forms a literature base of well over 10,000 peer-reviewed studies.”

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Technocrat Executives

Welcome A Future With 5G

This is a paid ad/article from T-Mobile, a leader in 5G rollout in America, confirming what TN has been writing about the connection between IoT and 5G. Top execs clearly expect a gold rush when 5G hits the airwaves.
□ TN Editor

The rollout of 5G will enable a rapid rise of IoT and AI, changing everything — again — for CIOs.

CIOs and CTOs have managed rapid digital transformation, yet even bigger change is coming. Soon. The impending rollout of 5G networks will enable a more rapid scaling of Internet of Things (IoT) and artificial intelligence (AI) platforms. This signals a major turning point in digital transformation in the enterprise, as technology leaders will be challenged to leverage these changes to boost the customer experience while protecting endpoints and data.

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All acknowledged that within a few years, AI platforms will routinely churn through unfathomable volumes of data generated by billions of IoT devices connected over 5G networks. As a result, organizations will have unprecedented opportunities to deliver entirely new customer experiences. Yet each enterprise will be similarly challenged to leverage the 'big three' (AI, IoT and 5G) to improve operations and processes and develop new products and services — all in the name of competitive advantage.

Who's driving the change?

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several years, reaching a half trillion dollars globally within three years. Deloitte predicts the number of mobile providers launching 5G networks globally will double from 25 to 50 by the end of next year. Accenture research on the impact of AI in 12 industrialized countries found that AI could double annual economic growth rates by 2035 through changing the very nature of work.

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This cautionary view was echoed by Dr. David Dodd, vice president and chief information officer of Information Technology at Stevens Institute of Technology. “I see high-speed 5G networks and IoT becoming commoditized,” Dodd said. “But rest assured the bad guys are actively figuring out how to compromise millions of new endpoints. How the enterprise will prepare for this reality and secure it will be a serious challenge.”

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5G From Space: 20,000 Satellites To Blanket The Earth

Technocrat Elon Musk will use SpaceX to launch 12,000 satellites alone. Although data has zero mass, land-based plus sky-based 5G will be teeming with constant rivers of data while blanketing humanity with questionable radiation. □ TN Editor

Public attention about 5G has been focused on the plans of telecom companies to install millions of small cell towers on electric utility poles, on public buildings and schools, on bus stop shelters, in public parks, and anywhere they want in national parks and on federally owned land.

In local urban communities there would be a cell tower approximately every 500 feet along every street.

As bad as these small cell towers might seem from the standpoint of constant exposure to radio frequency (RF) radiation in close proximity to the source, perhaps an even more alarming prospect will be the beaming of millimeter length microwaves at the earth from thousands of new communication satellites.

The FCC gave approval to SpaceX on March 29, 2018, to launch 4,425 satellites into low orbit around the Earth.

The total number of satellites that is expected to be put into low and high orbit by several companies will be 20,000 satellites.

5G will use Phased Array Antennas to shoot Beams of Radiation at Cell Phones

These satellites will use the same type of phased array antennas as will be used by the ground-based 5G systems.

This means that they will send tightly focused beams of intense microwave radiation at each specific 5G device that is on the Earth and

each device will send a beam of radiation back to the satellite.

Previous generations of RF cellular communication used large antennas to send a blanket of radiation in all directions. The lower frequencies they used and the broad distribution of microwaves limited the numbers of cellular devices that could connect through an individual tall tower.

The much shorter length microwaves used for 5G will make it possible to use small phased array antennas to send and receive signals.

Phased array antennas consist of clusters of hundreds of tiny antennas that work together to shoot a ray of energy at a target just like a bullet. A cluster of these tiny antennas can be arranged in a 4 inch by 4 inch matrix.

The rays of microwaves they produce will be strong enough to pass through walls and human bodies. If they were not strong enough to do this, then everyone with a 5G smartphone would have to stand outside when using the devices.

Each 5G product will also have multiple phased array antennas which will be used to create a powerful beam of radiation back to the 5G devices mounted on electrical utility poles or toward a specific satellite in space.

These beams of radiation will also need to be strong enough to pass through walls and human flesh such as a hand or head to reach the intended destination.

This means that if you are in a crowded location, such as an airport or on a train, there will be hundreds if not thousands of invisible beams of radiation flying through the environment at the speed of light.

As people move in that environment, their bodies will be penetrated by numerous beams of radiation as they walk or as other people walk around them with their 5G smartphones.

5G Phones will be much more Powerful than Previous Phones

The effective radiated power of the 5G phased array antennas in phones will be 10 times more powerful than 4G phones.

No one will be free from exposure.

In addition, 5G beams of microwave radiation will be received and transmitted from new computer equipment, household appliances, and automobiles.

Stationary equipment such as Wi-Fi hubs in homes and offices will be permitted to use microwave beams that are 15 times stronger (300 watts) than the signals from 5G phones or 150 times stronger than 4G phones.

Why is 5G so Much More Dangerous than Previous Microwave Communication Systems?

Arthur Firstenberg, author, researcher, and advocate for limiting RF exposure from the environment, explains the analysis of 5G radiation that was published in Microwave News in 2002. He stated:

When an ordinary electromagnetic field enters the body, it causes charges to move and currents to flow.

But when extremely short electromagnetic pulses enter the body [5G], something else happens: the moving charges themselves become little antennas that re-radiate the electromagnetic field and send it deeper into the body.

These re-radiated waves are called Brillouin precursors.

They become significant when either the power or the phase of the waves changes rapidly enough.

5G will probably satisfy both requirements. This means that the

reassurance we are being given—that these millimeter waves are too short to penetrate far into the body—is not true.

5G Satellites Will Fill the Skies

These are the companies with the biggest plans to deploy satellites:

- SpaceX: 12,000 satellites
- OneWeb: 4,560 satellites
- Boeing: 2,956 satellites
- Spire Global: 972 satellites

Arthur Firstenberg describes the plans of corporations who want to use 5G technology. He states:

Honeywell has already signed a memorandum of understanding to become OneWeb's first large customer—it plans to provide high-speed Wi-Fi on business, commercial, and military aircraft throughout the world.

SpaceX would like to provide the equivalent of 5G to every person on the planet.

Ground-based 5G Implementation

Ground-based 5G systems are already being implemented in dozens of major cities right now. Plans are being approved by hundreds of other cities, which will allow implementation in 2019 and beyond.

As I explained in my previous articles, cities do not have the right to “say no” to 5G. FCC regulations prevent cities from objecting on the basis of health concerns - they only can speak to issues of esthetics and the practical matter of the placement of equipment.

They are required to “say yes,” and they better do it quickly, or telecom companies will threaten them with legal action for obstructing their plans.

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Qualcomm: 5G Is Coming In 2019, And It's Going To Change Your Life

This is a Qualcomm press release. It is a leader in 5G technology, providing “innovation in autonomous driving, smart cities, social good, and beyond.” It promises Utopia yet delivers Scientific Dictatorship. However, it is true that 5G is going to change your life! □ TN Editor

It's hard to imagine life without smart phones and mobile devices. But it wasn't until 3G that smart phones began to resemble the user experience now so ingrained in our daily lives. Since then, faster network speeds have been one of key enablers of the creation and widespread use of cloud technology enabling transformative services like ride-sharing apps, HD entertainment, and video calls that have become mainstream.

While 3G and 4G powered these services, 5G represents another connectivity leap beginning this year.

It is envisioned - per ITU-R's IMT-2020 requirements — to support blazing-fast speeds of up to 20 Gbps, low latency as low as 1 millisecond, and 100x more capacity as compared to 4G, 5G is setting the stage for immediate improvements to existing experiences as well as the development of new, yet-to-be-imagined technological advancements.

Here's a look at the change coming:

Everything will get faster

From day 1, 5G is designed to make virtually everything faster, providing fiber-like speeds to support insatiable demand for unlimited data. You should notice improved download speeds, superior quality video streaming and virtually instant cloud access in flagship 5G devices launching in 2019. And it should be easier than ever to download your favorite binge-worthy series at the airport or deliver massive files to colleagues when you're on the go.

Instant access to cloud

5G brings extraordinary low latency. Latency is the time between data request and its delivery. 5G is purpose-built and designed to deliver entirely new real-time experiences we've never had before. We expect our new smartphones, tablets, and always-connected PCs* will be able to utilize 5G's lower latency connectivity, higher capacity, in addition to its super-fast speeds, for the next level of cloud services.

Smooth real-time multiplayer gaming

Once online/cloud gaming make it easier for multi-player collaboration, then, live-stream gameplay with rapid map and level downloads will get a boost. Think of first-person shooter game where latency can be the difference between your character's life and death.

Transformation to the Wireless Edge

As virtually everything gets connected in this new era, realizing 5G's full potential requires transformation of the wireless edge. An architecture

of distributed intelligence where intelligence that deals with immediacy is moved toward the edge (closer to or on the devices) while processing-intensive functions are kept in the cloud. 5G is enabled with the help of Qualcomm's foundational inventions and mobile platforms, and is engineered to provide the high-speed low-latency link that connects them together.

One great use case of 5G and edge computing is extended reality (XR). Enough processing is kept in the headset while offloading nearly everything else, including rendering, to the cloud. With your 360-degree views effortlessly synchronized with your movements, XR experience is intended to feel immediate and photorealistic. Simply put, this could transform your experience from passive watching to living the moment.

Another use case is AR shopping. This is just beyond utility, it can make the shopping experience more fun, with the ability to virtually decorate with friends or family. An experience that can allow you to see how a couch will fit in your home - try it before you buy type of experience.

What's next can only be imagined

Qualcomm, an inventor of breakthrough technologies for wireless, is focused on enterprise as well as consumer use cases. The next phase of 5G is designed to bring large-scale changes for the enterprise and business sides, allowing for innovation in autonomous driving, smart cities, social good, and beyond.

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