Frenzy: Every Major U.S. Carrier Has Now Launched 5G Service

The Administration's claim that the U.S. must beat China in the rollout of 5G is meaningless and absurd, but it has provided a bum's rush to hurry up and install it throughout America. TN Editor

T-Mobile launched its 5G service in six U.S. cities over the weekend: Atlanta, Cleveland, Dallas, Las Vegas, Los Angeles and New York.

All four of the country's major carriers now offer 5G.
The ultra-fast network can be accessed on the Samsung Galaxy S10 5G, which retails for $1299.99. The phone can access T-Mobile's LTE network in areas where 5G is unavailable.

In a statement, T-Mobile CEO John Legere said the company's network would be "broad, deep and transformational." With the company's proposed merger to Sprint still pending before the government, Legere said approval would mean the combined companies could build "the kind of 5G network America deserves."

With this launch, every major U.S. carrier now has some sort of 5G on the map, and each has talked up big plans to expand (Verizon also brought their service to Denver and Providence, RI last week). Although it's still early, the 5G adoption from major cities marks a positive trend that should keep the U.S. on pace with other countries.

Like the other carriers, the scope of T-Mobile's 5G offering is limited to a handful of neighborhoods in each city, according to service maps the company published. For example, even though T-Mobile is the first carrier to bring 5G to New York, it can only be accessed in parts of Manhattan and downtown Brooklyn. According to Venture Beat, testers also lost 5G signal when they entered buildings.

T-Mobile's launch is still tied up in its Sprint merger, which has seen significant backlash from some in the government despite getting approval from the Federal Communications Commission chairman. Sprint already brought 5G to four cities in May, with plans to reach nine by the summer. Both companies have said their combined resources will create the nation's most comprehensive 5G network, including by bringing Sprint's mid-band spectrum to the fold.

Read full story here...

6G Will Combine AI With Real-Time Speeds Of 1 Terabyte/Sec.

If 5G is just a stepping stone to 6G, then hold on to your seat. AI plus instantaneous connections will enable ad-hoc networks of things and people to achieve unheard-of outcomes. TN Editor

Mobile-phone technology has changed the way humans understand and interact with the world and with each other. It's hard to think of a technology that has more strongly shaped 21st-century living.

The latest technology—the fifth generation of mobile standards, or 5G—is currently being deployed in select locations around the world. And that raises an obvious question. What factors will drive the development of the sixth generation of mobile technology? How will 6G differ from 5G, and what kinds of interactions and activity will it allow that won't be possible with 5G?

Today, we get an answer of sorts, thanks to the work of Razvan-Andrei Stoica and Giuseppe Abreu at Jacobs University Bremen in Germany. These guys have mapped out the limitations of 5G and the factors they think will drive the development of 6G. Their conclusion is that artificial intelligence will be the main driver of mobile technology and that 6G will be the enabling force behind an entirely new generation of applications for machine intelligence.

First some background. By any criteria, 5G is a significant advance on the previous 4G standards. The first 5G networks already offer download speeds of up to 600 megabits per second and have the potential to get significantly faster. By contrast, 4G generally operates at up to 28 Mbits/s—and most mobile-phone users will have experienced that rate grinding to zero from time to time, for reasons that aren't always clear.

5G is obviously better in this respect and could even replace many landline connections.

But the most significant benefits go beyond these headline figures. 5G base stations, for example, are designed to handle up to a million connections, versus the 4,000 that 4G base stations can cope with. That should make a difference to communication at major gatherings such as sporting events, demonstrations, and so on, and it could enable all kinds of applications for the internet of things.

Then there is latency—the time it takes for signals to travel across the network. 5G is designed to have a latency of just a single millisecond, compared with 50 milliseconds or more on 4G. Any gamer will tell you how important that is, because it makes the remote control of gaming characters more responsive. But various telecoms operators have demonstrated how the same advantage makes it possible to control drones more accurately, and even to perform telesurgery using a mobile connection.

All this should be possible with lower power requirements to boot, and current claims suggest that 5G devices should have 10 times the battery lives of 4G devices.

So how can 6G better that? 6G will, of course, offer even faster download speeds—the current thinking is that they could approach 1 terabit per second.

But what kind of transformative improvements could it offer? The answer, according to Stoica and Abreu, is that it will enable rapidly changing collaborations on vast scales between intelligent agents solving intricate challenges on the fly and negotiating solutions to complex problems.

Take the problem of coordinating self-driving vehicles through a major city. That’s a significant challenge, given that some 2.7 million vehicles enter a city like New York every day.

The self-driving vehicles of the future will need to be aware of their location, their environment and how it is changing, and other road users such as cyclists, pedestrians, and other self-driving vehicles. They will need to negotiate passage through junctions and optimize their route in a way that minimizes journey times.

Read full story here…

Dr. Mercola Warns On The Impending 5G Apocalypse

The fact that the Technocrat elite flatly ignore stern and documented warnings against 5G, indicates that they have some ulterior agenda that they must accomplish regardless of the negative impact on humans. It is the establishment of Technocracy, aka, Scientific Dictatorship. TN Editor

Are you still under the misconception that unchecked exposure to electromagnetic field (EMF) and radiofrequency (RF) radiation is of no concern? Then I urge you to view the featured documentary, "5G Apocalypse — The Extinction Event" by Sacha Stone.

Please understand that while I am not in agreement with some of Stone's conspiracy theories on the militarization of these frequencies, the

science is beyond solid to justify concern about 5G without throwing in conspiracy allegations. I do believe that, overall, the documentary was well done and nicely packages the nonconspiracy information.

EMF Exposure Has Dramatically Increased Over the Past 100 Years

Indeed, even the earlier, and less intense, generations of wireless technologies have been shown to produce severe harm over time. As explained in my 2017 interview with Martin Pall, Ph.D., professor emeritus of biochemistry and basic medical sciences at Washington State University, the primary danger of EMFs — and what drives the processes of chronic disease — is mitochondrial damagetriggered by peroxynitrites, one of the most damaging types of reactive nitrogen species.

Devices that continuously emit EMF radiation at levels that damage your mitochondria include your cellphone, cellphone towers, Wi-Fi routers and modems, baby monitors and "smart" devices of all kinds, including smart meters and smart appliances.

If you go back in time to the end of World War I, around 1918 or so, and use that timeframe as a baseline of EMF exposure among the general public, you come to the astonishing conclusion that EMF exposure has increased about 1 quintillion times over the past 100 years.

It's irrational to assume that this radical increase — an increase of 1 billion times — could not have adverse effects on the environment and human health. The reality is that most people are experiencing biological impacts as a result of this exposure, but have no appreciation of the damage it's causing until it's too late. Even then, it's extremely difficult to link EMF exposure to the symptoms or the disease.

Understanding the Mechanisms of Harm

According to Pall's research,[1,2,3,4] low-frequency microwave radiation such as that from your cellphone and wireless router activates the

voltage-gated calcium channels (VGCCs) located in the outer membrane of your cells. According to Pall, VGCCs are 7.2 million times more sensitive to microwave radiation than the charged particles inside and outside our cells, which means the safety standards for this exposure are off by a factor of 7.2 million.

Low-frequency microwave radiation opens your VGCCs, thereby allowing an abnormal influx of calcium ions into the cell, which in turn activates nitric oxide (NO) and superoxide which react nearly instantaneously to form peroxynitrite.[5]

Peroxynitrite than catalyzes massive oxidative stress by the creation of free radicals that are associated with an increased level of systemic inflammation and mitochondrial dysfunction, and are thought to be a root cause for many of today's chronic diseases.

For an in-depth understanding of peroxynitrites and the harm they inflict, see "Nitric Oxide and Peroxynitrite in Health and Disease"[6] — a 140-page paper with 1,500 references written by Dr. Pal Pacher, Joseph Beckman and Dr. Lucas Liaudet. It's an epic paper and one of the best reviews I've ever read, and can be downloaded for free.

One of its most significant hazards of peroxynitrite is that it damages DNA. The European REFLEX study published in 2004 revealed the nonthermal effects of 2G and 3G radiation are actually very similar to the effects of X-rays in terms of the genetic damage they cause.[7]

Your body has the capacity to repair that damage through a family of 17 different enzymes collectively called poly ADP ribose polymerases (PARP). However, while PARP work well, they require NAD+ for fuel and when they run out of NAD+ they stop repairing your DNA, which can lead to premature cell death as over 100 to 150 NAD+ molecules are needed to repair every DNA strand break.

NAD+ is central to maintaining cellular and mitochondrial health, so the fact that PARP consumes NAD+ to counteract EMF damage is an important concern. Can you improve your NAD+ levels? Yes, but it's a

complex topic that really requires a book to carefully explain. As a first step, though, you need to reduce NAD+ consumption, which necessitates limiting your EMF exposure.

Damage Occurs Over Extended Periods of Time

Were the negative effects of EMFs immediately recognizable, matters would be much simpler. Alas, it doesn't work that way. The damage accrues over time, similar to that from smoking. For years, you can get away without feeling any ill effects until, all of a sudden, you're beset with debilitating symptoms.

Researchers are in general agreement that there's a latency period of about 10 years or more before the damage shows up, which places children at greatest risk, since their exposures begin much earlier (nowadays in utero) and persist throughout life unless steps are taken to minimize their daily exposure.

While the controversy over EMF damage has centered around whether or not it can cause cancer, especially brain tumors, this actually isn't your greatest concern. Since the damage is strongly linked to activation of your VGCCs, it stands to reason that areas where VGCCs are the densest would be most vulnerable to damage.

As it happens, the highest density of VGCCs are found in your nervous system, your brain, the pacemaker in your heart and in male testes. As a result, EMFs are likely to contribute to neurological and neuropsychiatric problems, heart and reproductive problems, including but not limited to cardiac arrhythmias, anxiety, depression, autism, Alzheimer's and infertility.

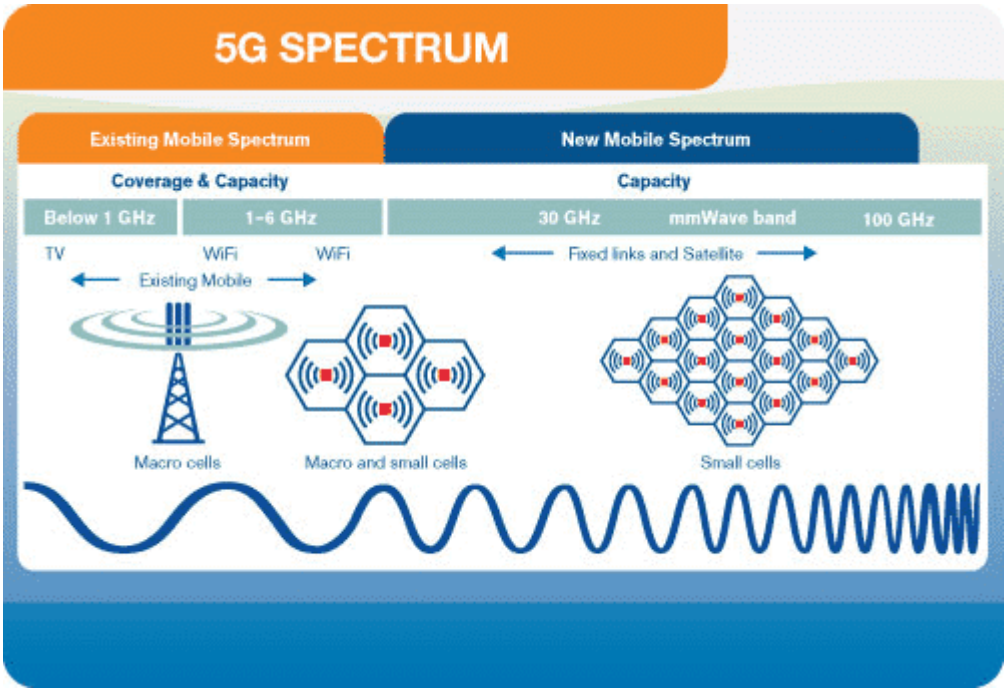
Indeed, this is what researchers keep finding, and all of these health problems are far more prevalent and kill more people than brain cancer.

5G Linked to Significant Health Concerns

One of the main problems with 5G is that it relies primarily on the bandwidth of the millimeter wave (MMW), which is primarily between 30 gigahertz (GHz) and 300GHz,[8] and are known to penetrate 1 to 2 millimeters of human skin tissue.[9,10]

Its ability to penetrate tissue and cause a severe burning sensation is exactly why MMW was chosen for use in crowd control weapons (Active Denial Systems) by the U.S. Department of Defense.[11]

Read full story here...



Health Warning: The Risks Of

5G And Are They Worth Taking?

Technocrats are in hot pursuit of lighting up the Internet of Things by implementing 5G world-wide. This desire far outweighs any human health risks that are demonstratedly present. To the Technocrat mind, human life has little value. TN Editor

In recent months there's been a lot of talk about 5G – the next generation of wireless technology. 5G is being touted as a necessary step to the 'internet of things' – a world in which our refrigerators alert us when we're low on milk, our baby's diapers tell us when they need to be changed, and Netflix is available everywhere, all the time. But what we're not hearing is that evidence-based studies worldwide have clearly established the harmful effects of human exposure to pulsed radiofrequency radiation from cell towers, cell phones and other devices – and that 5G will make the problem exponentially worse.

Most people believe that the Federal Communications Commission (FCC) carefully assesses the health risks of these technologies before approving them. But in testimony taken by Senator Blumenthal of Connecticut, the FCC admitted it has not conducted *any* safety studies on 5G.

Telecom lobbyists assure us that guidelines already in place are adequate to protect the public. Those safety guidelines, however, are based on a 1996 study of how much a cell phone heated the head of an adult-sized plastic mannequin. This is problematic, for at least three reasons:

> + *living organisms consist of highly complex and interdependent cells and tissue, not plastic.*
>
> + *those being exposed to radiofrequency radiation include fetuses, children, plants, and wildlife – not just adult male humans.*
>
> + *the frequencies used in the mannequin study were far lower than the exposures associated with 5G.*

5G radiofrequency (RF) radiation uses a 'cocktail' of three types of radiation, ranging from relatively low-energy radio waves, microwave radiation with far more energy, and millimeter waves with vastly more energy (see below). The extremely high frequencies in 5G are where the biggest danger lies. While 4G frequencies go as high as 6 GHz, 5G exposes biological life to pulsed signals in the 30 GHz to 100 GHz range. The general public has never before been exposed to such high frequencies for long periods of time.

This is a big deal. It turns out that our eyes and our sweat ducts act as antennas for absorption of the higher-frequency 5G waves.[1] And because the distances these high-energy waves can travel is relatively short, transmitters will be required closer to homes and schools than earlier wireless technologies: the build-out will add the equivalent of a cell tower every 2-10 houses.

But former FCC Chairman Tom Wheeler has made it clear the Telecom-dominated FCC does not put health first: "Stay out of the way of technological development," he said. "Unlike some countries, we do not believe we should spend the next couple of years studying… Turning innovators loose is far preferable to letting committees and regulators define the future. We won't wait for the standards." In response to questions about health concerns, Mr. Wheeler said: "Talk to the medical people".[2]

Good idea.

The "medical people" have conducted over 2,000 international evidence-based studies that link health impacts with pulsed radiowave radiation from cell towers, routers, cell phones, tablets, and other wireless devices. These studies tell us that RF radiation is harmful at even low and short exposures, and that it impacts children and fetuses more rapidly than adults. Among the findings are that RF radiation is carcinogenic, causes DNA damage, affects fertility and the endocrine system, and has neurological impacts. Pulsed electromagnetic frequencies have also been shown to cause neurological symptoms: depression, anxiety, headaches, muscle pain, attention deficits, insomnia, dizziness, tinnitus, skin tingling, loss of appetite, and

nausea.[3]

The U.S. Government has known of these risks since at least 1971, when the Naval Medical Research and Development Command published a bibliography containing 3,700 references reporting 100 biological and clinical effects attributed to microwave and radio-frequency radiation.

Recent findings, such as the $30 million 2018 U.S. National Toxicology Program (NTP) Study, have corroborated the findings of all well-designed heart and brain cancer studies of people with 10 or more years' exposure to cellular radiation from cell towers and cell phones. They all agree: RF radiation causes cancer.[4]

What has been the response to these findings?

Scientists are urging the World Health Organization (WHO) to update its classification of RF from a Group 2B Carcinogen to a Class 1 carcinogen – making RF and 5G comparable to arsenic and asbestos. Annie Sasco, former Chief of WHO's Research Unit of Epidemiology for Cancer Prevention, says, "Enough is enough, how many more deaths would be needed before serious action is taken? Evidence just continues to accumulate."

Read full story here…

Google Dumps Fiber Optic, Pays To Restore Infrastructure

Google placed big bets on fiber optic cable installation but now is leaving cities in the lurch by abandoning the entire effort. Instead, Google is now relying on 5G infrastructure to manage its expansion. TN Editor

Google Fiber agreed to pay Louisville, KY $3.84 million after ceasing its broadband service in the city this week (following a February announcement of the departure). The money will be used to remove cable from roads, pave streets and remove above-ground infrastructure, according to an announcement from the city.

The company had dug shallow trenches along streets to lay cable, but encountered technical problems with the new construction method. It must now remove that cable and repair the roads.

Google Fiber will also make a $150,000 donation to the Community Foundation of Louisville's Digital Inclusion Fund to support refurbishing used computers for low-income individuals and bring low-cost internet to

public housing residents.

Google Fiber shocked Louisville in February with the announcementthat it would leave the city, after promising to lay fiber that would support 1 gigabit per second (Gbps) internet at lower costs than traditional cable and internet providers. Monday marked the final day of service in Louisville, and Google Fiber provided two free months of service to allow subscribers to find a new option.

Google attributed the decision to technical issues with its fiber strategy, which involved digging two-inch-deep trenches to install cables, then filling them in with a solidifying, rubbery liquid. The installation was meant to cut the cost of laying fiber and get service out quicker, but residents reported that cables were popping out of the ground and complained about roads and lawns being torn up. Google has tried a similar technique in San Antonio and says “the lessons we’ve learned in Louisville have already made us better in our other Google Fiber cities.”

Google is clearly trying to ease the sting of its exit by picking up the bill for costly infrastructure repairs (in a statement, Louisville’s chief of civic innovation and technology Grace Simrall said infrastructure “will look as good or better than [it] did before the company began construction.”). But the departure still hurts Louisville, which has dealt with a pronounced digital divide and was hoping to offer more low-cost options. Google Fiber launched with fanfare in 2012, but has significantly scaled back its ambitions, including offering only wireless service in some cities.

Read full story here…

Trump: 5G Rollout Is A Race ‘America Must Win’

The Trump Administration is fully behind the rapid implementation of 5G in America, despite the lack of safeguards and ethical discussions over its applications of Smart City technologies. In China, 5G is clearly being used to complete its Scientific Dictatorship over its citizens. TN Editor

President Donald Trump and the FCC on Friday announced several initiatives to spur 5G network growth in the U.S.

“The race to 5G is on and America must win,” Trump said, noting that 92 5G markets will be ready by the end of the year, outpacing South Korea, which is on pace to have 48 markets live by the end of 2019.

“It’s a race our great companies are now involved in,” Trump said. “According to some estimates, the wireless industry plans to invest $275 billion in 5G networks, creating 3 million American jobs quickly, and adding $500 billion to our economy.”

5G is the next generation of wireless network that will enable faster data speeds. Unlike 4G LTE, which mainly targeted mobile phones, tablets

and computers, 5G is also expected to enable more reliable connections on self-driving vehicles that will need a constant data connection, and smart cities that use “internet of things” devices, such as connected street lamps, traffic lights and more.

AT&T and Verizon already have fledgling 5G networks in the United States, and T-Mobile and Sprint plan to activate their networks later in 2019. Only one phone from Motorola, offered on Verizon, supports 5G in the U.S. right now.

“To accelerate and incentivize these investments, my administration is freeing up as much wireless spectrum as needed,” Trump said. “[We’re] removing regularity barriers to the buildout of networks.The FCC is taking very bold action, bolder than they’ve ever taken before, to make wireless spectrum available.

Spectrum is the airwaves networks use to provide internet to devices. Spectrum space is regulated by the FCC.

Trump’s comments come in tandem with announcements the FCC made Friday. The FCC said that starting on Dec. 10, it will offer “the largest spectrum auction in our nation’s history,” allow carriers bid on 3,400 MHz of new spectrum in the Upper 37 GHz, 39 GHz and 47 GHz spectrum bands. The additional spectrum would “promote the development of 5G, the Internet of Things and other advanced spectrum-based services,” the FCC said.

Read full story here…

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.

Read full story here…

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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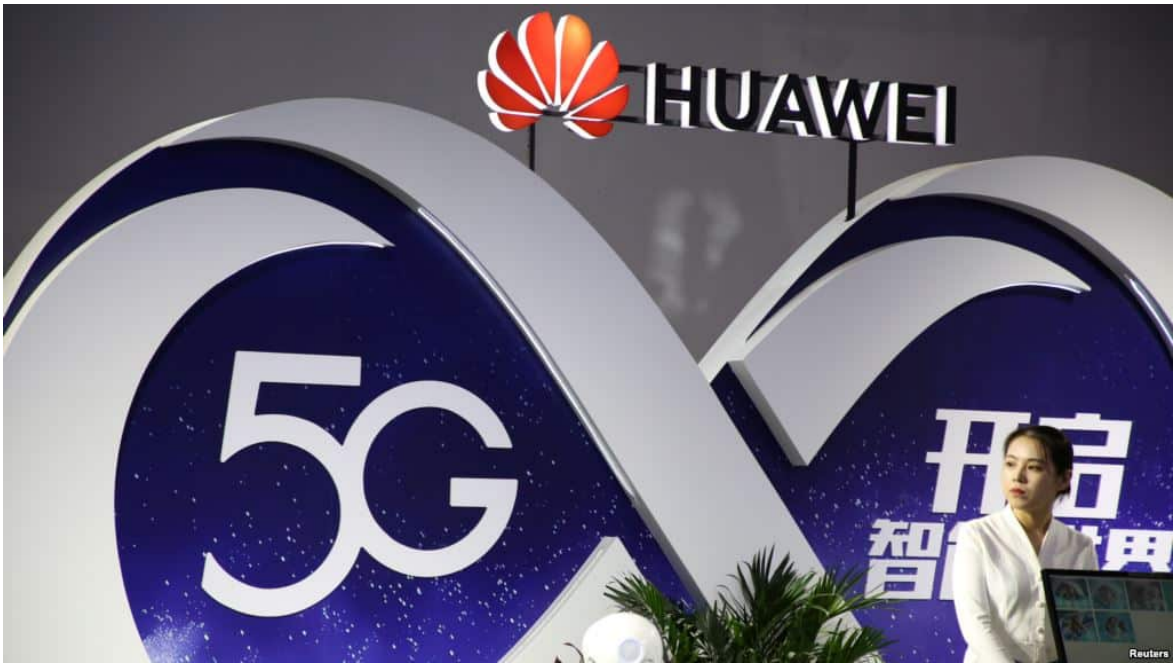

China’s Race To 5G Dominance Raises Global

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.

Read full story here…

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, afteralleged 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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