How the 5G Breakthrough Can Make You Rich

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Demand for this service has no end in sight Apple, Google, and Amazon can't function without it Here's how to own the future and collect tolls for the next 50+ years

On August 2, 2018, Apple became the first American company to cross the $1 trillion threshold in market value.

That's a "1" with 12 zeros after it.

Apple's crossing of that historic milestone was a big, hyped-up event that made all the major news outlets.

Less hyped but equally instructive was the fact that four other companies were hot on Apple's heels in the race to join the $1 trillion club. Amazon surged past that market cap just two months later, and both Alphabet (Google's parent) and Microsoft were within striking distance.

Stocks got volatile later in the year, but those same four companies ended 2018 as the most valuable in the market.

Think about that list for a moment. There's no car maker on it. No big manufacturer like General Electric. There's no oil company, no mining company, no steel company, and no banking company.

The market has spoken. Technology – with its ability to create smartphones, software, time-saving apps, social media platforms, online shopping experiences, medical advancements, and so much more – is now the most dominant, most valued part of our economy.

Tech entrepreneurs and investors are making fortunes as a result.

If Apple, Google, Amazon, and Microsoft are the tallest skyscrapers – the commanding heights of our "economic city" – it's no exaggeration to say their foundations rest on the bedrock of our communications grid...

The internet. Without this bedrock, those skyscrapers crash to the ground.

As you read this report, the next trillion-dollar companies – the next Amazon, the next Google, etc. – are being hatched in research facilities and garages around the world. These firms will further change the world and revolutionize our economy.

If you follow technology even a little bit, you know what fields these companies are operating in: self-driving cars, artificial intelligence, virtual and augmented reality, battery breakthroughs, Internet of Things (IoT), mobile payments, and more.

Just as Apple, Google, Amazon, and Microsoft can't function without the internet, the next generation of world-changing, $1 trillion mega winners can't survive without the subject of this report... the super powerful infrastructure technology we call "5G."

In this report, I'll explain what 5G and why it's so revolutionary. I'll also detail some of the companies that will soar in value as 5G goes worldwide.

Owning the Infrastructure Can Multiply Your Money

There has been strong demand for better and faster communications for literally thousands of years – from smoke signals to homing pigeons to the Pony Express, telegraphs and telephones. Call it the thousand-year bull market, one that I can see continuing for another 1,000 years.

Fortunately, we don't need to think that far ahead to make money now. The next great leap in technology and communications is happening as we speak... and this move to 5G is going to be the biggest one yet.

Just think about how technology has become an increasingly important part of our lives over the last century. If you take technology away, almost everything collapses.

It used to be roads that were considered our most important infrastructure. Now it's the information super highway.

That super highway has been built over the last quarter century or so as the internet moved from government and academia to commercial networks and enterprises. It is now everywhere, from our computers to our phones, our cars, even our appliances.

Investors who recognized this trend in the 1980s and 1990s and owned the best internet "infrastructure" stocks made a ton of money.

Intel was the king of semiconductors. Its stock soared more than 3,500% in the 1990s.

Applied Materials made the equipment that made all of those semiconductors. Its return in the 1990s? More than 6,150%.

Then there was Cisco, the king of communications and networking equipment. The stock surged from under $1 per share in the early ’90s to $43 by the end of the decade – life-changing returns of nearly 34,000%. (The stock took off so much in the late 1990s that on the chart below, the higher prices on the Y axis are mushed together.)

I’m telling you this because we are now on the verge of a new infrastructure that will not only make communications faster but also enable the next generation of technological innovations across the world.

Similar to the 1990s, smart investors have rare opportunities for life-changing profits.

The Next Mobile Communications Revolution

Martin Cooper stood on 6th Ave. in Manhattan. It was Tuesday, April 3, 1973.

The senior engineer at Motorola was nervous. He was about to attempt the first cell phone call in history.

Would it work?

Cooper didn't call a family member, a friend, or even a co-worker. Instead, he called his chief competitor, Dr. Joel Engle at Bell Labs. The two had been in a race to get to this day first.

"Joel, this is Marty," he said. "I'm calling you from a cell phone, a real handheld personal cell phone."

Consider those the first words in the mobile communications revolution... the first step on the road to 5G wireless communications.

Martin Cooper in 2007 reenacting the first cell phone call from 1973.

It took nearly another decade before mobile phones were introduced to the public, but by the 1980s they were creeping into the cars of wealthier individuals. The **first generation** of mobile technology kicked off the trend toward an increasingly connected world.

The first devices weighed a couple of pounds and were bigger than your head – they are called "bricks" for a reason! No matter.

They made possible something that had never been done before.

The **second generation** of networks (2G and 2.5G) debuted in the 1990s. This next stage included the ability to send text messages, something we now take for granted. Heck, a lot of people text more than make actual phone calls.

As the calendar turned over into the new millennium, the upgrade to 3G brought major advances in the speed and capabilities of cellular networks. With the **third generation** of networks, mobile devices could access broadband technology, which made possible entertainment, web browsing, and shopping.

There is now a whole generation of people who find it hard to believe that there used to be no Amazon app to instantly reorder your toilet paper.

Just as semiconductors were part of the internet infrastructure, they were also the backbone of the step up to 3G. As a result, chip stocks made big money for investors during this era. Qualcomm rallied more than 1000% in the 1990s ahead of when 4G networks started to appear.

That's where we are today. As nice as it was to be able to browse the internet on your phone, the **fourth generation** of wireless connectivity took mobile technology to another level, including the ability to stream video without waiting for buffering. It was more enjoyable, and it opened up business opportunities for content companies.

Still, the biggest advancement was real-time information, which led to the sharing economy. People could connect instantaneously through their mobile devices. Without real-time data transfer there would be no Uber, GrubHub, or any other app that relies on a fast connection.

Once again, there was money to be made in the switch to 4G. Cell tower companies were among those enjoying huge rallies. The new capabilities and increasing use of video meant that better towers were required.

Two of the leading cell phone tower companies brought big profits to their investors over the last ten years. Since the start of 2009, American Tower Corp (AMT) is up 661% while competitor Crown Castle International (CCI) has gained 790%.

And now, the most advanced breakthrough of all is right around the corner.

5G's Widespread Impact

As far as we've come, we haven't seen anything yet. In fact, I see the opportunities from 5G as even bigger than before because this leap ahead will drive some of the most powerful tech trends the world has ever seen.

I think of it as the next-generation toll road. The road to the future passes through 5G, and it's time to set up your booth and start collecting.

The next-generation network will take speeds to levels that seem almost unimaginable.

How fast?

Well, in theory 5G will increase speed to match that of human reflexes... so we're talking the blink of an eye. Perhaps literally.

The 4G network speeds clock in at around 100 megabits per second, which is extremely fast compared to its predecessor. Once 5G rolls out, that speed jumps to 10,000 megabits per second – or 100 times faster than the current network!

My phone and tablet stream videos nearly flawlessly already, so why should I even care that 5G will be 100 times faster? It will eliminate those slow connections we still run into at times, which is nice, but ultimately unimportant.

The game changer here is that phones and mobile devices are about to become mobile supercomputers.

This big breakthrough will bring about the ability to connect millions more devices that share large amounts of data in real-time. If you think we live in a connected world already, you haven't seen anything yet.

The widespread impact will be felt in just about every corner of our lives and our economy. Here are just some of the key tech industries that will be impacted.

Internet of Things: Every generation of networks has its shining moment, and in the first few years 5G is deployed, the most noticeable change will have to do with the IoT – short for the Internet of Things. As billions of devices are connected every year, extremely fast mobile network speeds will be required.

IoT is already alive and well. Think of a speaker in our home that can reach Amazon and order new curtains, change the temperature setting in your house, unlock your doors, turn on your lights, start your car, and more.

Think of your refrigerator telling you are low on milk.

Think of your fitness tracker that uses GPS to track your exercise, record your heartbeat, and save all of that information in your personal account.

Thanks to all of this connectivity, we can do today what was difficult to imagine just a few years ago. Once 5G is mass deployed, it will take IoT to an entirely new level.

From a consumer point of view, we may not notice huge changes immediately. Behind the scenes, though, the faster speeds will make a major difference for corporations. The elimination of slow connection speeds and intermittent issues should result in another economic boom.

IHS Markit estimates that the number of connected IoT devices will grow from nearly 27 billion in 2017 to 125 billion by 2030. That's a ton of new devices using the 5G network. Eventually, the 5G revolution will turn its focus to the ultimate thing to be connected – autonomous vehicles (AV), which we'll talk much more about in moment.

Augmented and Virtual Reality: AR and VR could not function without very fast connection speeds. 5G will allow both to flourish.

The first thing that may come to mind is gaming, which is indeed a large part of the AR/VR industry. 5G speeds are necessary for eSports matches featuring players from around the world competing for large cash prizes. Can you imagine a championship competition with a $1 million prize on the line and suddenly the connection blips? That would be one expensive blip to somebody. The burgeoning world of eSports will generate billions of dollars globally in the future, thanks to 5G.

But AR and VR go well beyond gaming. Consider retail. This industry already spends over $1 billion annually on AR/VR. With 5G speeds, a retailer will be able to offer a nearly real-life experience to shoppers.

Say you want to buy a couch. Wouldn't it be great if you could "try it out" and see how it looks in your house? An AR app will put the couch in the room you want it in, add a human avatar, and let you move it around to see exactly what it would look like. (If we could only get those avatars to help us move real furniture!) 5G will

enable the speed and low latency needed for such an app to work effectively. Shopping may never be the same again.

Smart Cities: We're already seeing smart cities emerge as connectivity helps monitor traffic, energy, crime, and more... but the smart city I envision is just starting to take shape.

A lot of cities have held back on spending until the next generation of networks is ready to roll out. Think about what becomes possible: real-time connections between traffic cameras and the police department, traffic lights that change based on conditions at that moment, and smart streets embedded with sensors that pass data to the municipalities.

I spend a lot of time researching and thinking about the future, but I have to admit that even I have a difficult time imagining how different our cities will look 10 years from now. What I do know is that none of it would be possible without 5G.

The Cloud in Real-Time: A decade ago, people didn't even know what "the cloud" meant. It sounded like it should be part of the weather forecast. The thought of storing our life's work in the cloud seemed like science fiction. Today, our documents, family pictures, music, and just about everything else live in the cloud.

The evolution of mobile networks paved the way for the cloud. Without the advancements, it would still be impossible to store and share files not on our devices. With 5G, the cloud will be real-time. No delays. Retrieving data will be as fast as if it were stored on each individual device.

As usage spreads, Cisco predicts that data center traffic will hit 19.5 zettabytes per year by 2021, up 225% from 6 zettabytes in 2016. (It seems we need to make up new terms to keep up, doesn't it? If you're wondering, a zettabyte is equal to one billion terabytes or a trillion gigabytes.) Even more eye-popping is that data center

traffic from the cloud will make up virtually all data center traffic – 95% of the total.

Healthcare: Investors sometimes look past healthcare when thinking about technology because it is considered an older, stodgier industry. Please don't make that mistake. There is a lot of opportunity here – we're talking $76 billion in revenue for companies by 2026 in healthcare and 5G.

Health devices will talk to each other reliably and instantly. At a consumer level, we're looking at things like the Apple Watch, which is already evolving into a wearable medical device. Within a few years, it will be monitoring your vitals 24/7 and sending that information to your doctor.

More importantly, reliable and instant communication will allow increased usage of healthcare devices. We already have robotic surgeries, and we can expect more in the future... including remote robotic surgeries.

If I forget that I'm getting older and blow out a knee trying to recreate my college football days, I can get a top orthopedic surgeon to operate... from another city. You better believe I'd want the connection to be fast and flawless.

5G and the Future of Transportation

There is one industry in particular that cannot exist without 5G, and it's a big one. I call it Transportation 2.0, which includes both electric and autonomous vehicles (AV).

Investors who got in early during prior transformational trends profited to the tune of 20 to 50 times their money. The AV/5G mega-trend is one another that cannot be ignored.

Transportation is a $7 *trillion* industry. It is about to be completely transformed for the first time in nearly a century. The full rollout of the 5G network will provide the much-needed communications infrastructure for auto manufacturers to introduce AVs to the masses.

This may be the biggest breakthrough of all, and again, it would not be possible without the reliability and real-time data sharing that 5G enables. Imagine a self-driving car going 70 miles an hour down the highway and the network experiences a 100-millisecond delay. In virtually every other circumstance, that delay would never be noticed, but it could be devastating in an AV. For example, it could result in the braking system stopping the vehicle 10 feet beyond where it would have otherwise, potentially leading to a major accident.

Future AVs will essentially be data centers on wheels. The amount of data that will be stored in the brain of the vehicle will be beyond what we can imagine.

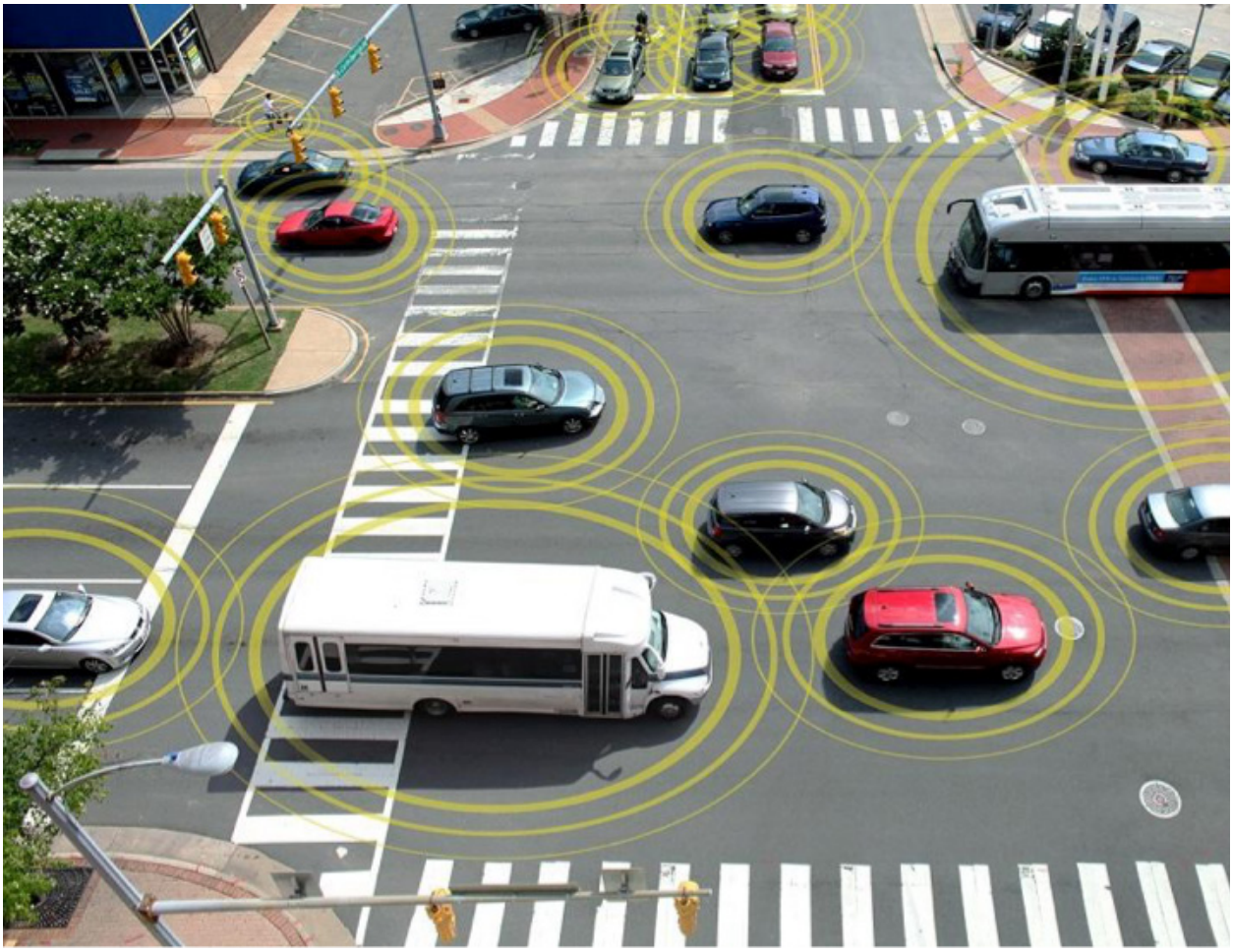
Morgan Stanley predicts that a 2050 AV will produce 40 terabytes *per hour*. A terabyte is equal to one trillion bytes, or one thousand gigabytes. Today, your iPhone produces maybe 2-5 gigabytes of data *per month*. If Morgan Stanley is correct, a 2050 AV will produce 500 times more data in one hour than your iPhone currently produces in an entire month!

Such enormous amounts of data will be required due to the number of decisions taking place at all times. The AV will take in data from sensors surrounding the vehicle and instantaneously decide when to accelerate, brake, turn, etc.

And not only will the vehicle need 5G for computing within itself, it will also "talk" to sensors in other vehicles, the roads, cell towers, satellites, smart cities, and more.

The thought of vehicles talking to each other makes me think of some pretty creepy sci-fi images... or on a lighter note, the movie *Cars*. (Below, Mater the tow truck is helping out Lightning McQueen.)

That's not reality. Vehicles talking to each other will look more like the image below. Notice that everything in that picture has a sensor that is communicating with the other sensors in the area. Even the man pushing the child in the stroller and the bicyclist have sensors that are "talking" to the vehicles!



The photo is from Toyota, which plans to deploy its vehicle-to-vehicle and vehicle-to-infrastructure technology in the U.S. by 2021. The bigger idea of vehicles connecting with what's around them is called vehicles-to-everything (V2X). 5G is necessary for V2X to become a reality. The 4G network is great for streaming videos, but the speed and latency would create major safety issues for AVs.

Stake Your Claim Now

I hope I've given you a sense for how 5G networks will pave the way for so many breakthrough innovations that will change our world. Not just faster phones, but self-driving cars, smart homes and cities, virtual reality, healthcare, and so much more.

When exactly does all of this excitement happen?

It's already starting.

You may have seen advertising for 5G home internet services in some cities. Some of that advertising has come under some criticism for jumping the gun a bit as Verizon's technology in particular didn't operate on the agreed-upon 5G standard. That will come by the end of 2019, though, as it expands to other cities.

Smartphone manufacturers are also expected to roll out the first 5G-enabled phones this year, including a few in the first half of 2019.

This year should be big for 5G as the sector will make headlines with new rollouts and introductions around the country and globe. Expect the media and investors to start paying attention soon. That means you want to own stocks now.

To get you started, here is a list of some of the biggest players in the 5G Revolution. Some you've undoubtedly heard of; others may be new to you.

Carriers

You would assume that biggest cellular providers are on this list, and you would be correct. **Verizon Communications** (VZ) with its Verizon Wireless division and **AT&T** (T) with its AT&T Mobility division lead the pack. Both are investing heavily in the move to 5G.

T-Mobile US (TMUS) and **Sprint** (S) are as well with neither wanting to be left behind.

Semiconductors

We've gotten used to computer chips being in almost everything, but 5G will put a whole new level of demand on their capabilities on everything from individual devices to connectivity to massive data centers. Speed and reliability will be paramount. The emergence of artificial intelligence (AI) will also require more performance from chips.

A couple of well-known leaders are again at the front of the pack in 5G, including both **Intel** (INTC) and **Qualcomm** (QCOM). Qualcomm will begin supplying 5G chips to Apple for its iPhones.

I would add two lesser-known names to the list. **Marvell Technology Group** (MRVL) doesn't make superhero chips, but it is getting attention for its 5G products and recently introduced end-to-end "optimized 5G platform."

Xilinx (XLNX) is a leader in 5G infrastructure and should be a big beneficiary as carriers roll out their new networks. Its last earnings report was quite strong, especially compared to its peers.
The stock has been quite strong in 2019.

Equipment

In addition to the semiconductors, 5G opens up new opportunities in necessary software and hardware. The equipment must be able to handle bigger bandwidths and higher frequencies with fewer delays. It must also allow devices to talk to each other as is necessary with all of the devices to be connected as the Internet of Things phenomenon grows.

One name forever associated with networking equipment remains on the list: **Cisco Systems** (CSCO), which is still the biggest maker

of computer networking equipment. Its gear helps move tons of data through the internet. CEO Chuck Robbins has said the company has been investing in 5G for years, and it is about to supply much of the core infrastructure required to run the networks.

Nokia (NOK) does still make cell phones, but you don't hear about them as much anymore. The company's bigger splash is in network equipment, software, services and licensing around the world. It has already announced 30 commercial 5G deals.

Ericsson (ERIC) is similar to Nokia. It also had earlier glory days, rallying over 14,000% from the 1980s to the top in 2000. It then lost 99% of its value in the next two years. After a decade and a half of not doing much, ERIC is now one of the best-positioned companies to benefit from the transition to the 5G network. It hasn't announced quite as many deals but its 5G radio hardware is in demand.

Ciena (CIEN) focuses on optical networking equipment. Revenue grew 20.5% in the first quarter of 2019, and management expects continued growth with 5G deployments beginning. Early in the year, Ciena joined forces with one of India's leading telecom operators, Bharat Sanchar Nigam, to conduct field trials with the goal of rolling out 5G by 2020.

The Wired Part of Wireless

5G is rightfully called wireless networking, but that doesn't mean it is completely wireless. A wired framework is still necessary, and that framework will be made from fiber. The closer the user is to fiber, the more speed and bandwidth they have available.

Corning (GLW) is a leader in optical fiber. Verizon is buying a minimum of $1 billion of Corning's optical solutions over three years. Corning will supply Verizon with up to 20 million kilometers of optical fiber annual.

It's not just Verizon. Corning stock popped 11% after releasing earnings in January that were better than expected thanks to optical fiber wiring due to the build-out of 5G networks.

Testing

Much of what all of these companies do comes together in the design and testing phase. **Keysight Technologies** (KEYS) is the one such company on this list at the moment. It helps companies and governments test across channels, carriers, and data protocols. Qualcomm is among its partners. This is another stock that has traded very well in 2019, up 40% in the first quarter alone.

Communications Infrastructure

Crown Castle International (CCI) is officially a real estate investment trust (REIT), which means it is required by law to distribute 90% of its income to its shareholders. One of the first things you'll notice is its juicy dividend (currently 3.5%).

Crown Castle owns 40,000 cell phone towers, 65,000 small cell nodes (relaying signals like towers but much smaller and less obtrusive), and 70,000 route miles of fiber. It is in every major U.S. market and is well-positioned as demand for data and information grows with 5G.

All-in-One

If you prefer one-stop shopping, you may want to look at a new exchange-traded fund (ETF) called **Defiance 5G Next Generation Connectivity ETF** (FIVG). It just started on March 4 and is actually the first 5G ETF. It is designed to track the Bluestar 5G Communications Index.

Many of the companies we've talked about here today are in the ETF. Xilinx, Ericsson, Nokia, Keysight Technologies and Cisco Systems are five of the Top 10 holdings.

Still Time to Get In Early

I hope this report has given you a better idea of both the possibilities and opportunities in 5G. We're already seeing the very first stages of this next-generation network, and the pace will only pick up from here.

That's true of the stock prices, too, which will move prior to specific developments. Some of the biggest profits will probably be made in the early stages, which is why now is the time to buy into this gigantic theme.