The COVID-19 Tipping Point

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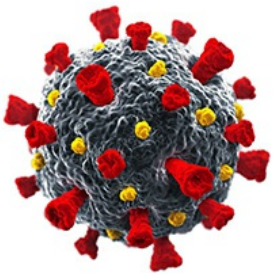

There are a few points in history, most of them incredibly tragic, that forever change the world. The world before 9/11 was drastically different than after 9/11. The world after World War II was dramatically different than the years that preceded it. And it was more than the world-changing event itself. The shockwaves that radiated from these events changed the way we work, live, and even think to this day.

Prior to 9/11, for example, I remember arriving at the airport 45 minutes before a flight, briskly walking directly to the gate, and board the plane just as the doors were closing. No security, no TSA—just a guy with a ticket getting on a plane. It felt free. Being able to precisely time it left me with a sense of great accomplishment. I even recall friends and family meeting me at the arrival gate after landing—regardless of whether or not they had a ticket—with no pat downs or invasive x-rays of their person. No disrobing of shoes and belts. Nobody peering through the clothing they wore.

Before World War II, children actually played outside. They headed home at dusk and into the arms of their loving mothers. Nuclear weapons had never been used. The threat of nuclear war did not exist. Israel was still Palestine. But all that changed. “Duck and cover” became a schoolhouse mantra. NATO was formed. Foreign policy forever changed around the world. Terrorism was born. Millions of women, children, and minorities joined the workforce to support the war effort; giving rise to the middle class, dual-income households, and an expanded credit market. Prior to World War II you could buy a home for a few thousand dollars and a car for a few hundred. Now you can finance a fifty-thousand-dollar Durango for six years, and a home will cost you several hundred thousand dollars, which you might pay off over the course of your lifetime. In fact, I'd argue much of the terror-ridden, credit-laden, and dual-income society in which we live today can be traced back to the impact of World War II, including 9/11.

Then COVID-19 happened. The novel coronavirus, which causes the disease COVID-19 (COVID), has infected more than 4,000,000 people worldwide and nearly 300,000 people have tragically died from it to date. To put that into perspective, that’s ten times more people than died on 9/11. About three percent of the world’s population at the time died in World War II, and COVID has a 7.5 percent mortality rate worldwide. A rate which may climb as non-diagnosed, and post-viral syndrome deaths are added to its rate of morbidity. And, while the rate of infection is slowing in some areas, it is holding firm and even increasing in others. Households, places of work and worship, cities, states, and entire countries have been locked down, with—in some cases—police-enforced stay-at-home orders in place, and these are being extended by months in others.

Prior to COVID, children went to school. Parents went to work. Friends and family came to visit. Packages that arrived were eagerly opened, and not left on the porch for hours (the obligatory waiting period to allow the virus to die on cardboard surfaces). People went to stores, malls, and occasionally ordered take-out from their favorite restaurants. They went out to sporting events and concerts. In fact, there were live sporting events people could actually attend. Ttoday, the treatment for COVID is obscure, and mass vaccines are one to two years away at best. But we didn’t go into this global pandemic totally unprepared.

As I wrote in my Letter from the Editor in the last issue of *Pipeline,* we are now

leveraging technology that has existed for years, decades, or more. Voice-over-IP applications and online shopping sites, like Skype and Amazon, have been around a long time. Social media applications, such as Twitter and Facebook; enterprise networking applications, such as Slack and Yammer; digital document formats, such as Adobe PDF and DocuSign; and digital payment platforms, such as PayPal, have been around for about as long. Video conferencing applications, like Zoom, Citrix GotoMeeting, and Cisco Webex, have been available for years, as has telemedicine and virtual PBX platforms, such as Teledoc and RingCentral. Their predecessors—even longer. Anyone remember SunRocket (VoIP), AOL or Yahoo! Instant Messenger, Dialpad.com (virtual phone service), PaymyBills.com (automated digital payment platform), or MySpace (social media)? Anybody still use eBay? I do. These programs,platforms, and applications are nothing new. *Pipeline* started leveraging many of these virtual technologies over 15 years ago. By 2005, we decided to close our brick and mortar locations in exchange for the more cost-effective and flexible pay-by-use virtual office programs—giving us access to over 1,000 “ivory-tower” office locations worldwide at a fraction of the cost. By 2007, we decided to make physical article and issue reprints only available on demand, and built our own digital publishing platform to harness the power of digital media and distribution mechanisms.

The only difference now is these digital and virtual technologies have now become mission-critical, imperative—and an integral part of our lives—now and into the foreseeable future.

A Brave New World

People and enterprises are now having to rethink their world and adjust the way they work, live and play. The world is starting to discover that we don’t need to be physically present to be productive, engage in social activities, or acquire the things we need. Many businesses are beginning to deliberate on whether they need a physical office location—and I would argue many, if not most, don’t. Just this week, Facebook and Visa have announced that it will allow workers to work from home for the remainder of the year, and Twitter and Square have all announced their workers can continue to work from home "forever."

Before COVID, this would be a somewhat speculative play—and an enticing option. Now it’s the only option. These virtual technologies are proven and our bridge to the future. And, at the heart of all this is connectivity.

COVID has forever changed the way we rely on connectivity. Enterprises are beginning to understand what can (and in some cases can’t) be done remotely. Companies are understanding the network and technological components they need to run their businesses in a virtual environment. And new platforms and technologies are continuing to emerge as the lifeline of our global society. People are learning that a virtual meeting, happy hour, or coffee date, can be just as meaningful as one in person. Children are growing up with e-learning and parents will question why they need to be in a physical school—exposed to bullies, negative influences, and the risk of school shootings—when they could transform their homes into virtual classrooms and be digitally connected to peers and teachers across the world. Their lives are already digital; why isn’t their education?

Of course, there is still value in physical connections. But as individuals and a global society, we must now become futurists. Our world has now changed once again. We have passed the tipping point and there is no going back to the way it was. Imagine the possibilities of a world that can transform appliances, rooms, homes, cars, education, events, cities, medicine, and entertainment into something new with just a wireless connection. We already have the technology, but it relies upon dependable wireless connectivity.

The Unique Role and Challenge of 5G

5G promises faster speed, lower latency, and greater capacity than current 4G networks. The use cases for this network are still emerging. But what we do know is this: to shift to a more virtual environment that people and businesses can capitalize

on, we need true, pervasive 5G connectivity. But, with 5G in its infancy, accomplishing this is no small task.

In urban environments, 5G requires antennas everywhere and anywhere. 5G requires mobile densification: the process of adding densely deployed, low-powered cellular nodes across an existing network in order to reuse spectrum and add capacity. To give context, just over five years ago, carriers were estimating tens of thousands of nodes would need to be deployed across the five boroughs of New York City. Today, these estimates are in the hundreds of thousands, and collectively less than 10 percent of these have been built to date.

It's a scary thought for some—antennas anywhere and everywhere—and conspiracy theories have already begun to emerge. Conspiracy theorists, primarily led by the social media proclamations of a pop star, have linked 5G to everything from COVID to cancer. However, in reality 5G cellular sites emit very low energy waves: 63,000 times less energy than a ray of sunshine. We mustn't let speculative fear impede our recovery. There is simply too much at stake.

Imagine if we were already working, living, and leveraging critical services remotely—such as shopping and medical—before COVID descended upon us. What if we could dynamically shift resources to ship or manufacture critical protective gear, as some new, emerging platforms now are? What if our home and virtual offices were already in place? What if our children already had virtual classrooms set up at home? What if our housing projects, homeless shelters, and nursing homes all had the access to critical wireless infrastructure to ensure these vulnerable populations would not be left isolated or behind? Think about how drastic a change our response as a community could be and the impact that would have been with the right tools, technologies, platforms, applications, and networks of the future in place.

But 5G presents more than a promise of future connectivity. It presents the promise of employment, economic prosperity, and enterprise productivity, and these are promises we cannot afford to ignore. Qualcomm reported that 5G's global economic output will create 22.3 million jobs; that's nearly the number of people currently unemployed in the United States. These are jobs in construction. Jobs in IT. Jobs from new businesses created by entrepreneurs who will imagine new use cases for 5G networks. It means more administrative workers in municipalities and telecommunications companies processing applications and ensuring that these sites are safely deployed. It means more network engineers optimizing radio and fiber networks. From the Local(3) IBEW 19-year-old training as a splicer, to the 55-year-old retired school teacher turned civil service employee, to the 40-year-old engineering manager—these are our friends, neighbors, husbands, and sisters looking for and finding work. For our children, 5G promises access to education. Live in the wrong zip code? Can't afford that college halfway around the world? What if it could come to your home and be delivered at a fraction of the price? 5G means jobs today and opportunity tomorrow. 5G promises a path to economic security. In the short term, this is seen in the opportunities for electricians and construction workers preparing the pathways for cell sites.

But the industry is in the early innings of building out the infrastructure to support 5G. There is a massive amount of physical construction and investment that needs to be done to build these out. The latest estimates of the required investment are in the billions of dollars. This will be ultimately done through shared infrastructure that carriers can collectively
leverage, and now is the time to start laying the foundation for our future.

The Silver Lining

If there is a silver lining in the COVID crisis, it's that it is both showing the limitations of the world that was and the promise of what it can be. It's forcing us to envision a better, safer world. What if, during the world-changing events of in the past, we took to the time to ask if we were making the world a better place for the future?

This is just the beginning, we have the technology, and now is the time to start envisioning and shaping the world in which we want to live. We get to define how much time we spend at home, at the office, and how we interact with the people and

products we've come to depend upon. Now is the time to imagine, invent, and transform. We have passed the tipping point, and it's time to look to the future and mold it into what we want it to become.

As we all bravely embrace our new world, we will find that we will become more connected. The planet will be greener. Our houses will become more our homes and the center of our lives. Parents will be more engaged and work alongside their children. We will spend more time playing and working together, less time commuting and at the office. It won’t be the same. There will definitely be challenges along the way. But in the end, we will be more connected to the activities, people, and things we need and love.