Remember the future?

By Jim Carroll, CPA

That question was something you often thought about before the axis of our world shifted. Suddenly, with Covid-19 and the global pandemic, you stopped thinking about it because it seemed so far away, so esoteric and so out of reach given the need for fast-paced adaptation and survival strategies.

But guess what! The future is still out there, and it is dramatically different from what it was before. Simply put, it's faster. It's coming at you with even greater speed and intensity; it's far more disruptive and transformative; and will come at you sooner than you think. You'd do well to plan for this reality.

As a futurist (and also a CPA), I make my living advising some of the largest organizations in the world on the trends and scenarios that will affect them, and what they need to do to align with this disruptive future. This is usually done through my rather odd "job." For close to 25 years, I've had the privilege of being the opening keynote speaker for conferences, events and Fortune 1000 leadership meetings worldwide. Case in point: just prior to the global lockdown, I was on a stage in Marrakech, Morocco, at an event for the World Bank/International Finance Corporation.

Here's What I Know About the Impact of Covid-19

The pandemic has compressed a massive number of long-term trends into an incredibly short period of time. In doing so, it taught organizations and leaders something new about the concept of speed. In a nutshell, organizations have learned how to think, act, innovate, collaborate and disrupt at a speed faster than they might have ever considered.

Retail? People spoke for years about the need for robust, reliable e-commerce strategies and sophisticated last-mile delivery capabilities. Then, they had to come up with those capabilities, often in a matter of just weeks, simply in order to survive.

Healthcare? Executives long spoke of the need for telemedicine and virtual healthcare strategies, and then they simply had to move to those platforms as the lockdown took hold.

Manufacturing? Companies spoke of the importance of such esoteric concepts as 3D printing, and then had to make the investments to quickly manufacture face masks, personal protective equipment, nasal swabs and other urgent medical devices.

Every single industry suddenly found itself confronted with a need to act on previously identified trends at a speed at which they had never operated before.

What Is the Impact of this Massive Acceleration?
Companies have learned a lot about the future and the fact that it isn't as complicated to get there as they once thought it would be. In doing so, the old barriers that were in the way B.C. (before Covid) were absolutely obliterated.

Decision making paralysis? Gone.

Committees and groupthink? Gone.

Slow moving teams and organizational paralysis? Gone.

Clunky, bureaucratic structures that got in the way of change? Gone.

Studying issues to death? Gone.

Management by focus group? Gone.

Interminable meetings that droned on without an agenda? Gone.

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For many years, global CEOs had been asking me to speak of the need for agility, the ability to operate at speed. In response, I wrote books with titles such as *The Future Belongs to Those Who Are Fast* and *Think Big, Start Small, Scale Fast*. I think people get the concept now.

How Has the Future Already Changed?
To a degree, for many industries, it hasn't changed a lot except that the timing of particular trends has shifted to a huge degree. They're coming at us a lot more quickly!

We're still going to have autonomous vehicles, but the timing of their arrival has probably shifted so that they will be here sooner. One reason for this is that the fast-moving events in the world of retail have led to an acceleration of research into some of the building blocks of

autonomy, such as self-flying delivery drones and self-driving neighborhood delivery micro-trucks. Those will be here sooner than you think, and lead to other new forms of autonomous technology.

Healthcare? We had been talking about remote patient monitoring via iPhone and other connected medical devices, remote video visits and the acceleration of medical science R&D. All of those trends were put into an acceleration machine with Covid-19, and came out the other side like a rocket.

Energy? We are still seeing a transition away from an oil-based economy but the wreckage of the energy sector at the start of the downturn has accelerated the investment in renewable technology, microgrids and more.

Give Me an Industry and I'll Give You Speed – Our World in 2030
With all of this, the result is that business models aren't going back to where they were before. They've been twisted. They've been changed. They've been redefined. They've been smashed and are still being redefined in real time.

So where are we headed? Just before Covid-19, I wrote a long post, "20 Trends for 2030," to provide my global clients with an overview of where we are headed in 20 different industries. It's still all entirely valid today, but it will happen a whole lot sooner than we expect! This is how I imagine our world in 2030.

Your car has become a shopping cart with credit card payment technology built in.

Transportation: We've gone from driving cars and trucks based on carbon, gas and the internal combustion engine to vehicles based on big batteries and computers. They mostly drive themselves, or do so in cooperative packs, talking to each other on a continuous basis with respect to traffic flow and other important matters. Cars have become, essentially, anticipatory data-sensing computers on wheels.

Healthcare: Rather than having a system of "sick-care" that fixed people after things went wrong, we've transitioned a good part of the system to real "healthcare," anticipating what people are likely to become sick with. Based on that knowledge, we've realigned the architecture of the healthcare system to deal with healthcare issues on a proactive, rather than reactive, basis. How? Genomics, mobile devices, embedded in-body health sensors and real-time analytical predictive healthcare dashboards led us to a world in which we could predict the emergence of particular healthcare issues and risks on a real-time basis. This resulted in a fundamental realignment of resources to manage any particular issue; "disease management" became a world of "disease action planning."

Insurance: We used to get insurance coverage based on our historical behavior or past actions. Now, insurance policies are written and adjusted in real time based on real-time data and activities. Rather than looking back to assess and underwrite insurance risk, we increasingly do so by looking forward, based on what we know right now. P&C, life and all other aspects of insurance have been dramatically affected by the arrival of continuous real-time risk monitoring technology!

Agriculture: Rather than farming when the sun is up, we've moved to a world of continuous 24-hour farming, aided by robotics, autonomous self-driving technology and virtualized farming platforms, which really mirror the concepts found in the videogame Farmville. The entire process goes by the name "real time spatial intelligence farming." A continuous flood of new technologies has come into the industry, supported by the arrival of the tech-generation that has taken over the family and industrial farm: things such as weed zapping l aserbots, virtual tractors, drone seeding copters and more.

Retail: While we used to go to stores to buy the things we needed, we now find that the majority of what we buy comes to us via a wide variety of automated, intelligent, last-mile delivery technologies – delivery bots, automated drones and more. Many homes now have drone pads on their driveways and robotic storage lockers that safeguard products after delivery. When you actually do go out to buy things, your car takes care of much of the process; it has become a shopping cart with credit card payment technology built in.

Cities and towns: Massive urbanization has taken hold, with 70% of the earth's population now concentrated into about 40 megacities. This has driven the arrival of all kinds of fascinating new trends and industries that are based on people living in close proximity. A good example is vertical farming, or in-city farming. It's everywhere and involves 100-story skyscrapers that are

used to grow food. Water is recycled, plants grow 24 hours a day under lights and self-contained resource reuse drives down the cost of food production.

Construction: We used to send people and materials to a site for assembly into a building. Now, we generally assemble the building offsite with robotic technology and 3D-printing technologies, and then send it to the site for a fast final assembly. Essentially, we've gone from building homes on site to building them in factories. AI and robots drive this manufacturing process; brick laying robotic masons are everywhere, as is the ability to 3D print in concrete.

Education: We've gone from the concept of "foundational degree knowledge" to "just-in-time knowledge." Most people in the workforce have now mastered the skill of getting the right knowledge at the right time for the right purpose. The concept of "the career" has disappeared as most people transition from project to project at an absolutely furious pace. There is a continuous arrival of new careers, the rapid obsolescence of old careers and the fleeting arrival of short-term "micro-careers." We used to train for a career that would take us through most of our life. Now, by constantly reinventing ourselves, we live a life that takes us through multiple careers.

Energy and utilities: We've moved from a world of centralized energy production based on big facilities generating energy from carbon and nuclear power to a massively distributed architecture based on the input of millions of small, local, renewable energy resources. We've gone from essentially dumb, one-way grids to highly intelligent two-way smart grids that feature accelerated load balancing; they support millions of production and input sources. And the architecture of the grid itself has changed. For example, most cars and trucks have now become a part of the energy grid through vehicle-to-grid battery connectivity, storing energy during off peak hours and feeding it back into the grid later on. Most utilities have also found themselves operating in the highway and road-building industry, as electrified roads and charging infrastructure appeared everywhere to support a world that involves a majority of electric-battery vehicles.

Food: We used to eat the same food that everyone else ate. Now, we eat food that is grown specifically for our particular DNA, and matched to our particular metabolic profile, based on real-time insight from monitoring technology built into our smart phones and clothing. A world of continuous body and health monitoring has appeared, driven by the idea that the glycemic index of an apple for one person is entirely different from that for someone else. We've gone from food manufactured for mass consumption to food that is personalized based on the ideas of mass customization! Many consumers have a one-to-one relationship with distant and local food production companies and the agricultural community based on hyperconnected plants and animals. 3D-printed food is found within most homes, leading to a renaissance and

explosion in new menu concepts and taste sensations. The explosion of vertical farming in agriculture has also led to the mass addition of in-home food production technology.

Manufacturing: We've transitioned from a world of mass production, with millions of products that are all the same, to one of mass customization, based on 3D printing, advanced materials, agility-based manufacturing methodologies and iterative, regenerative product design concepts. End-of-runway manufacturing and the end of the concept of inventory has taken hold

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as additive manufacturing concepts now permit the production of a lot of products closer to the consumer. This has resulted in a massive reduction in the cost of shipping and transportation. The concept of "inventory on hand" has come to an end and supply chain ideas have been turned on their head.

Clothing and fashion: The arrival of smart, connected, intelligent clothing led to marriage of fashion, healthcare and wellness. New, "smart" fibers and textiles now link into the data grid around you, adjusting their warmth and cooling cycles based on real-time information analysis. New textile science has also led to clothing that evolves its form and function based on local conditions: clothing that cools with built-in refrigerant technology and coats that warm you through smart carbon-fiber heating tech. Not only that, but you discovered that other healthcare related technologies – glasses, contacts, hearing aids – were increasingly integrated into your overall "clothing infrastructure" as they became "smart" and "connected."

Highways and infrastructure: They've become smart, intelligent, connected. Your self-driving car doesn't just drive itself, but talks to other vehicles around it, to sensors embedded in the road, and to light poles and other road-tech that helps to guide it on its voyage. Amazon and other disruptors now provide for pay-per-access to the best route based on real time embedded road-sensor technology. Not just that, but the very roads themselves charge the batteries of the cars that drive on them, although you have to pay a premium to do so.

Financial services: We used to take out mortgages and loans to acquire the things we wanted, but now we simply get the things we want, but for a short time only, and then move on to the next thing. We generally just share what we need rather than purchasing it for the long term. The result is that most banks have become just short-term lending institutions.

Technology: We used to have computers, which were physically separate devices that we carried around or plopped on our desk. Now, intelligence is embedded everywhere: in our clothing, eyeglasses, cars, homes and factories. It's all just there. We don't even think about it much anymore, except when some hacker re-programs our 3D food printer and serves us up

anchovy-flavored jello as a joke. When it comes to bandwidth, yottabit capacities have arrived – look it up!

Material science and chemical industries: We used to have 19 million known chemical substances, but now we have some five billion. We witnessed the birth of countless new industries and opportunities through the rapid acceleration of pure science. Mines are mined automatically with virtual robotics, and materials are engineered from constituent materials closer to their final destination. Africa was reborn as the birthplace of the modern economy, as the raw materials used for electric vehicles and other industries led to a massive resource

Every golf ball has a Webcam and can share your ace in an instant with a bird's eye view of its path.

boom.

Legal and professional services: The world of law and other professions is now driven by the acceleration of legal risk and hyper-complexity. This came about as the result of the rapid emergence of new risk, an era of "hyperconnected, shared risk," more complex – and faster – corporate partnership risk and other factors that came about as the result of a faster-moving economy. IP or intellectual property issues went through the roof in terms of complexity as AI came to drive the discovery of new ideas, new knowledge and new products – who owns the output of a computer generated mind-idea?

Sports, fitness and recreation: A simple wooden baseball bat now exists only in a museum. The baseball bat of 2030 is wirelessly connected to a web cam that automatically records a player's swing style and speed. Kids live in a widely interactive world in which they are aware of all sports results and actions instantly through an online connection. Skis and boards are hi-tech snow devices, providing coaching direction and real time route planning. Sports coaches have immediate access to their teams for coaching purposes. Golf? Every golf ball has a Webcam and can share your ace in an instant with a bird's eye view of its path – for those lucky enough to have a hole in one.

Entertainment and media: The explosion of deep-fake technology in the early part of the decade made redundant the concept of CGI technology in film and media. Instead, stock-footage of ready-to-fake video exists online. Actors have mostly become irrelevant. Instead, avatars are ready off the shelf to be turned into the next great performance. We began to see

the arrival of virtualized entertainment business models, with technology leading to highly customized, just-for-one entertainment productions based on the rapid assembly of this deep-fake inventory. The ability to create your own personal version of a movie with your own unique storyline became a part of the new world of entertainment.

The unknown industry: Last but not least, we saw the emergence of a new industry that we simply could not conceive of, and which did not exist on January 1, 2020. That's because some companies appeared that made entirely innovative products or services, based on ideas and concepts that weren't yet around, with methodologies that had yet to be invented, using material never seen before. We were in awe of the concepts that appeared with the birth of this massive new, multi-trillion dollar industry.

Are You Ready For This Future?

If you think about these trends, you come to a stunning realization: you are either part of this new future that has been based on this new collaborative agility built on speed or you're not a part of it. And that has pretty profound implications.

So what you need to do is once again revisit the future trends that are going to reshape your world. My mantra pre-Covid remains. Think big, start small, scale fast!

Jim Carroll is recognized as one of the world's leading futurists and innovation experts, with a massive global blue-chip client list. For more than 25 years, Jim has shared his insights with global clients from virtually every industry sector: the World Bank, Volvo, NASA, the PGA of America, the Walt Disney Organization, the World Government Summit in Dubai, the Swiss Innovation Forum, the *Wall Street Journal*, National Australia Bank, WorldSkills, Microsoft, Johnson & Johnson, DuPont, The GAP, the US Air Force Research Laboratory, Godiva, SAP, Pfizer, Mercedes Benz, etc. Carroll has written numerous books, including *Think Big, Start Small, Scale Fast*; *Surviving the Information Age*, *The Future Belongs To Those Who Are Fast, Ready, Set, Done* and *What I Learned From Frogs in Texas: Saving Your Skin with Forward Thinking Innovation*. You can learn more at virtual.jimcarroll.com