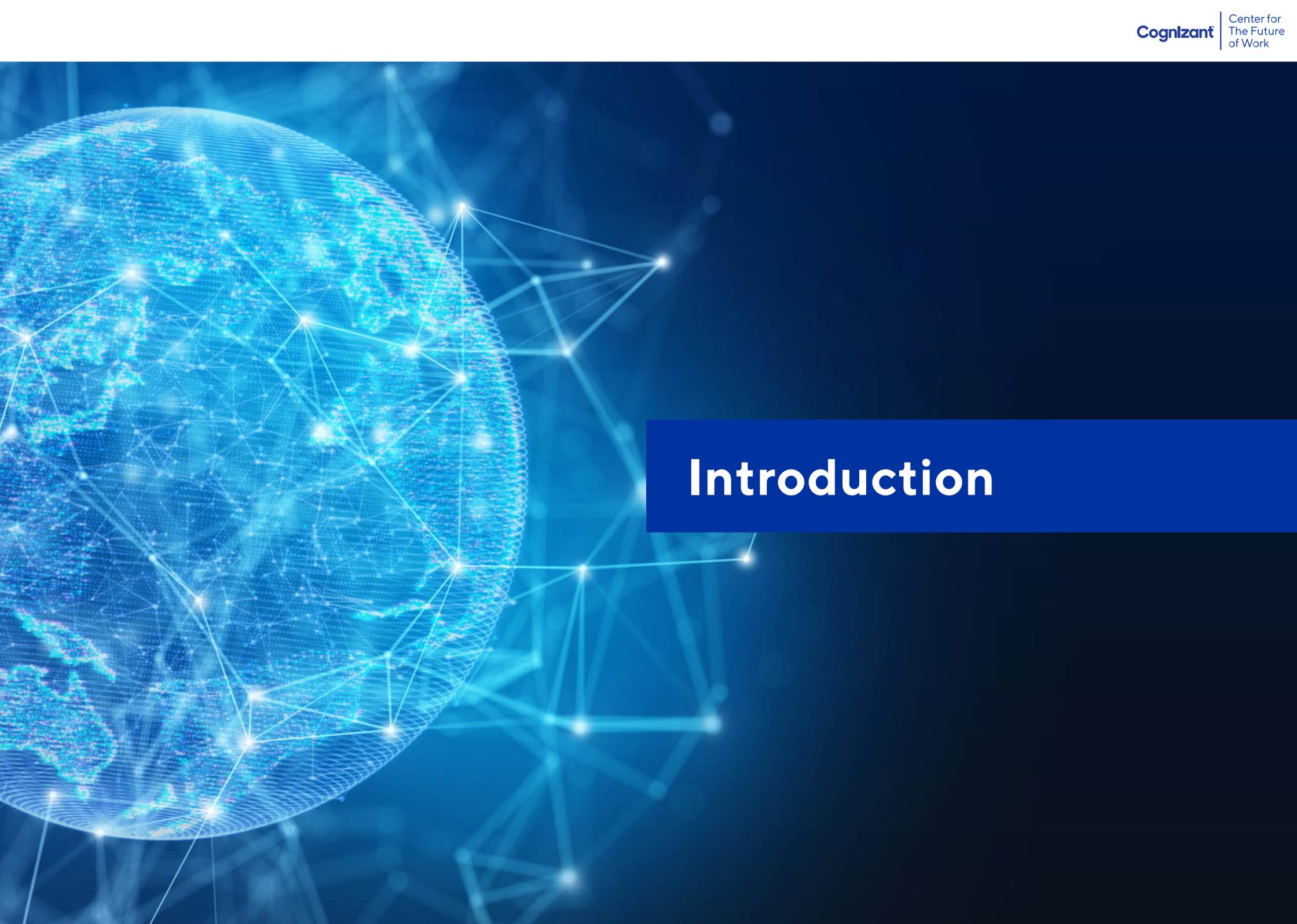


AFTER THE VIRUS

A Special Report Looking Back on the
Next Five Years





Introduction



AFTER THE VIRUS

After the coronavirus global pandemic, the world will be quite different. Whether the current lockdown lasts weeks or months (heaven help us, years?), very little will remain unchanged by COVID-19.

Geopolitics will change. Will European solidarity withstand the pressure for Germans to prioritize Germans, Italians their fellow countrymen and women, etc.? Will China be ostracized by the global community? Or further embraced?

National politics will change. Will populism surge, or will deep states reassert themselves at a time when only governments have the scale to deal with existential threats?

Socioeconomics will change. The overnight nationalization of economies in avowedly capitalist countries will supercharge simmering

debates about wealth inequality. Will faith in capitalism be weakened or strengthened by the stress test faced by economies around the world?

Business will change. Will global supply chains withstand breakdowns in what has become business-as-usual over the last generation or two? Will reshoring and localization require a complete about-turn for how multinationals operate? Will Mr. Justin Time survive?

Work will change. Will everyone work from home? Virtually? Will robots and AI be more popular or less so? (Their bugs seem sort of tame in comparison ...) Will the gig economy be wiped away or the only port in a global storm?

Life will change. Will we ever shake hands again? Will we ever again sit next to a total stranger on a 15-hour flight? Will we pull up the drawbridges around our homes?

These, and a whole host of other facets of life and business as we know it, will all be changed by the pleomorphic spherical particles with bulbous surface projections that roam among us.

In this special report, the team from Cognizant's Center for the Future of Work considers what the world will look like in 2023 – a time that's far enough away for the implications of the virus to have materially changed things but not so far away that pure idle speculation reigns supreme.

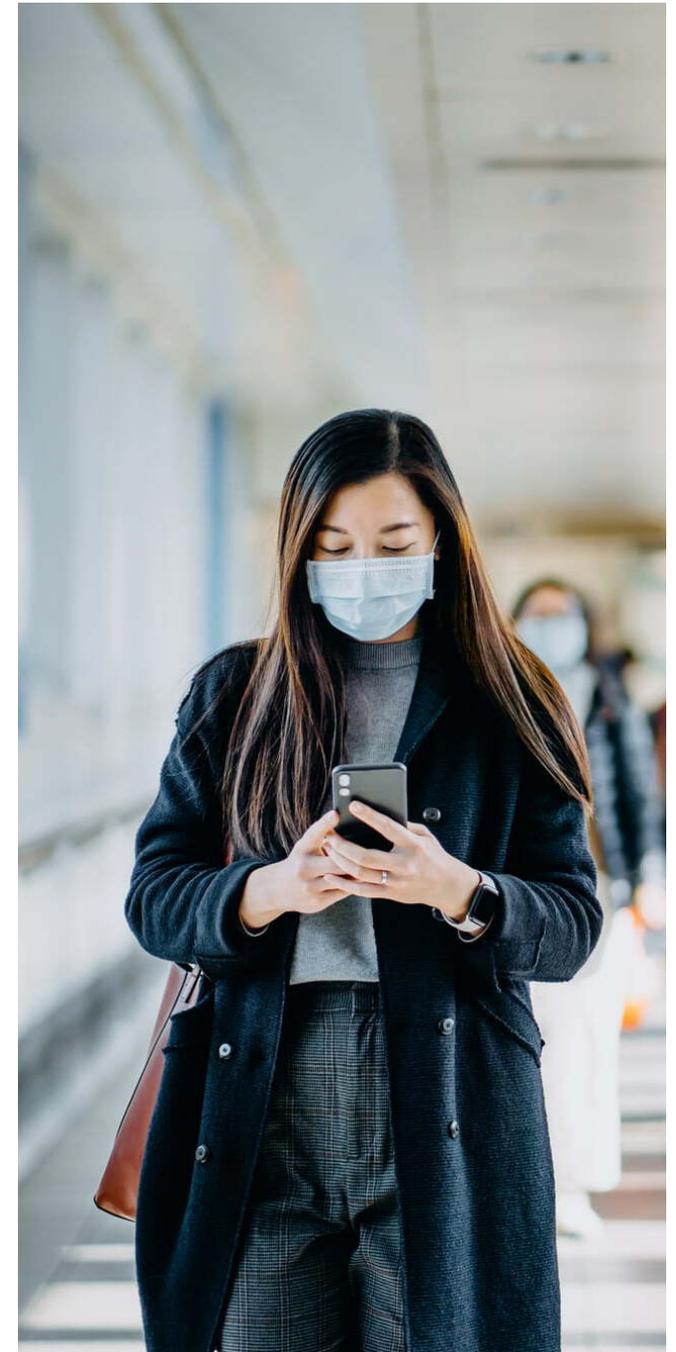
We write from a future perspective – as if we are chronicling events in the year 2025 and are looking back on the changes that occurred in the days, months and years following the great crisis of 2020.

The report examines how education, health, shopping and entertainment became more virtual. How online interactive dinner parties, concerts and political rallies became common and “real” versions withered. How houses were retrofitted with dedicated home office spaces (routers in the right place, soundproofed, separate entrances, pre-built Gorilla Glass wall screens) as working from home became the norm, not the exception. It records that travel became a last, not first, resort, and those who did leave the house were subject to “OK2GO” scans on entering other buildings.

It finds that the environmental agenda gathered momentum (once the immediate crunch abated) as we realized the virus was a scream for help from a planet that had added six billion people in under 100 years, and as we further realized just how dirty (metaphorically and literally) the Earth had become.

The virus forced a reckoning of how we treat aging and how we regard privacy – the health monitoring that sprang up in China, Singapore and Israel spread around the world before we knew it. Of course, it sounded sensible, but the road to hell is paved with good intentions.

By propelling ourselves forward five years and looking back at all the changes precipitated by the virus, we chart a path forward and provide lead indicators of what is to come. And suggest that there is a future of work.



Online's "Big Bang"



Online's "Big Bang"

COVID-19 digitized the world at light speed. Seventy years into the information technology revolution, it became clear in early 2020 that although we thought tech was big, IT had only really scratched the surface of life. The virus ended all that.

Before the pandemic, many digital alternatives – whether to traditional healthcare, education, finance, you name it – were there; we just weren't trying them, bemoaning "they're too expensive" or "we've always done it this way." But when the pandemic took hold, necessity dictated: "Get over it, get

going, get used to it." The COVID-19 big bang vaporized work-from-home [canards about "tele-shirking"](#) or that certain work could never be done online or virtually at all.

The lasting lesson of the bug? Everything that could move online, did move online.

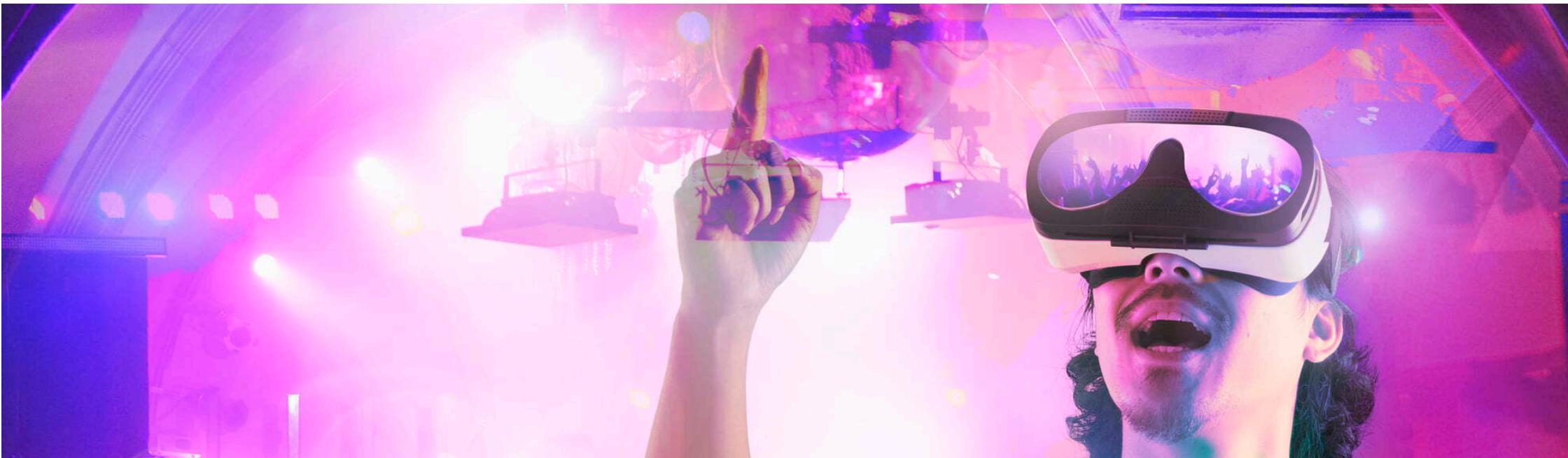
The early going was a tad bumpy. After months of fumbling with Zoom Rooms and goofy online cocktail parties with fellow employees, workstreams emerged that were cheaper, faster and higher-quality. Interminable conference-call-bingo buzzwords (“Who just joined?” “Sorry ... you cut out”) were replaced with flawless, frictionless UX.

Huge infrastructure investments that could scale

elastically to handle millions of remote employees and/or customers reliably paid off. Legacy kludges of technical-debt-riddled patchworks of systems were deemed poison. Collaboration platforms judged to be time-sucks (no names ...) were swapped for new names like Betterworks for frictionless, distraction-free remote team collaboration, Krisp (bye, background noise!), Muzzle (bye, embarrassing screen pop-ups!), and Trello (way better virtual team huddles!), in addition to the

Everything that could move online, did move online.





clear winners of the summer of 2020: the aforementioned Zoom and Bluescape.

The use of mixed reality got a huge boost, too. With sci-fi inspirations like Star Trek's holodeck as a lodestar, the ashes of "Second Life" were rekindled into real virtual reality

(as "Sansar"). The Wild allowed workers to design virtual workspaces, and Hub Culture's Emerald City took off.

Whether it was "be-there" livestreaming of concerts, events or remote fitness, COVID-19 accelerated remote,

augmented-reality-based, "see-what-I-see," in-the-moment troubleshooting for everything from grocery supply chains undertaking massive restocking efforts, to remote caregivers interacting with seniors or a client with a disability.

Companies like [Strivr](#), initially designed for football quarterbacks to get virtual reps, trained tens of thousands of retail workers to keep supplies running smoothly.

At schools and universities, teachers

scaled experiments with online media. Rote classroom activities gave way to a fusion of lesson plans with videogame-like distance learning, all galvanized by instructors with captivating online personalities that fostered far better student

engagement than physical classrooms ever did. Conferences and conventions learned similar lessons.

At hospitals, constraints of geography and brick-and-mortar physical visits diminished. The vast benefit of having “a Fitbit for your physiology” became undeniable. Diagnostics, intelligent routing to specialists and triaging – at home – became commonplace, relieving beleaguered doctors and nurses in the wake of the virus. Everything from AR-driven virtual phlebotomy from AccuVein, Shazam-like identification of heart murmurs, virtual physical therapy and digital blood-and-urine tests rivaling the

ease of an at-home diabetic testing kit became ubiquitous (while phrases like “fax me the patient’s documents” became as rare as using leeches for bloodletting).

Of course, there have been downsides. Some have been seduced by virtual worlds they never want to leave. The Japanese subculture of hikikomori (“pulling inward”) became a worrying trend. Like whiskey, too much of a good thing sometimes became a bad thing, and society increasingly prioritized digital detox to give addled brains a break.

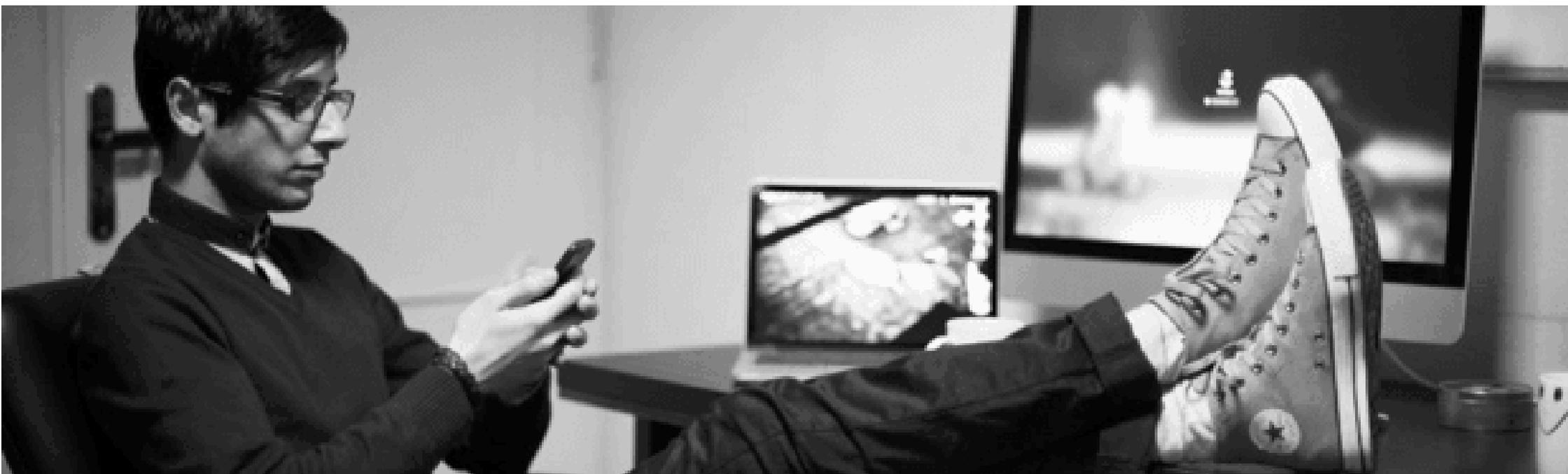
Online everything rippling out of the COVID-19 big bang was just that – big. The crisis was scary, but its

exigencies welded together imagination and creativity out of necessity. An electric universe of online connections pushed possibilities far beyond what had been imaginable up until the virus spread. The long-term impact of the coronavirus was the creation of a world that accepted its manifest destiny was in cyberspace – for the future of its work, play and everything in between.



Everyone's Home is Their Castle





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The Future of Work@Home

Think back 5 years. It's 9:00 AM. You're working from home. You're not one of the lucky ones with a home office space, so you're in the dining room. Your better half is also working, but they lost the rock-scissors-paper fight for the table, so they're perched on the sofa with their laptop. Office documents and notes are spread all over

your respective working areas. Your children – whose school is shut until further notice – are doing everything they can to distract you. (If you have toddlers at home, may the force be with you.) You're busy trying to stop their fights and put out fires at work. What joy. Your partner and you have divided things up – work, cooking,

children and household chores. You glance up at the clock. 9:07 AM. It's going to be a long day ...

Not too long ago, working from home was a privilege for few, but when COVID-19 hit, it suddenly became a necessity for everyone. As with anything in life, #WFH worked for some, and for others, fuggedaboutit. The sudden shift caught many of us by surprise. Trying to work productively became more than just having an office laptop and internet connectivity. It represented more than carving out a place in

the kitchen, living room or bedroom. It became a fight for survival – for the future of your work.

Home is where the work is

In the aftermath of the pandemic, the builder trade boomed. Homes were built – or retrofitted – with dedicated home office spaces: routers in the right place, soundproofing, separate voice-driven entrances, Gorilla Glass wall screens. Homes became castles in which podcast booths and 3-D printers replaced stone walls and moats. Home became the place where we're empowered with networks and platforms to connect, create and accomplish – become smarter and work smarter. It's a place where we can self-isolate (and concentrate) and still stay connected with the entire world.

The shift toward the home office accelerated [the wirearchy movement](#) (a term coined by consultant and author Jon Husband): a dynamic two-way flow of power and authority, based on knowledge, trust, credibility and a focus on results, enabled by interconnected people and technology. The key to home-office success

became the ability to build and nurture deep, trust-based connections with peers, clients, partners and anyone in the connected world to get the work done. On LinkedIn, those in-the-know promoted themselves as “home office wirearchists.”

Soon, realtor advertisements began carrying descriptions like “3BHK apartment with separate state-of-the-art home office.” At the high end of the market, customers preferred work to flow smoothly into their non-work lives. Architects, builders, interior designers and tech companies who could help people seamlessly blend their home with work became the new rockstars.

Offices did not die out completely. But the notion of spending 40, 50, 70 hours there a week did. The office was a product of the Third Industrial Revolution. The fourth one, floundering in its infancy pre-COVID-19, really took off as the virus bit – and the office was another casualty.

With #WFH now firmly established, it would be foolhardy to assume we'll ever go back to the old ways of working. Changes made and opportunities taken have forever changed how we behave, in both our professional and personal lives. But if we've done nothing else as a result of the dark days of the pandemic, we've redefined the forever truth: there really is no place like home.



Business Travel Loses its Cool





Business Travel Loses its Cool

"Mom, Dad, do you really need to fly?" Following the coronavirus pandemic, Sweden's climate-driven flight-shaming movement "flygskam" went global, with many self-identifying flygskammers ready to pressure their parents, colleagues and even their leaders into staying put. Humanity had never flown so much in the years leading up to 2020, but the planet's climate couldn't cope. The fixes touted by the airline industry – sustainable aviation fuel (yeh, right) and electric planes (would you fly in one?) – as a response to climate change never took off.

The inconvenient truth was that dumping tons of carbon into the sky wasn't something that could go on forever. The virus delivered a cosmic message that our travel behavior needed to change, and in the seeming blink of an eye, business travel went from a high-status

activity ("You went to Sydney for a conference? Oh, how wonderful") to an embarrassment ("You went to Sydney for a conference? How could you?").

Where do you think you're going?

Flying for an annual family holiday wasn't really the problem; it was the frequent business fliers that accounted for the bulk of the damage. [The 12% of Americans](#) who made over six round trips a year accounted for two-thirds of global air travel (and each emitted, on average, three tons of carbon a year). Chinese and European fliers weren't far behind. The post-virus hiatus forced us all to re-examine our flying habits – was it essential to fly halfway across the earth for that two-day meeting? We all dug the face-to-face contact, but Slack,



Zoom or Trello broke the corporate hold that the talismanic in-person experience once held.

In the spirit of never letting a good crisis go to waste, governments nudged things along by progressively taxing flights, ratcheting up the cost for each subsequent flight taken by a person throughout the year. Businesses launched innovative workforce policies with extra time off for those who chose to travel sustainably to

their meetings or vacations. The slow boat to China came back into fashion. “Work @board” became chic as the four-day trip from Southampton to New York became de rigueur. Companies provided an additional three days’ extra leave a year so employees could travel more slowly – and given ubiquitous WiFi, tablets and noise-canceling headphones, the ability to work on a train and get up and walk to the restaurant car was so much more appealing than the hectic scramble to get to the airport and cram onto a plane. 2023 saw the beginning of a new golden era for train travel, with many European train lines reintroducing sleeper services.

In 2020, when air travel represented one of the largest industries in the world, no government (not even China) had ever forced people to completely stop traveling by plane. But the virus did. Overnight, millions

of people stopped flying, marking a profound reduction in carbon emissions, which have declined drastically since their peak in 2019. As horrific an experience as it was, the coronavirus taught us that, yes, we could do something to reverse the damage we’d inflicted on our planet, and it spurred us to take the first steps on the long journey to protect what we have.

As we watched the unthinkable unfold before our eyes, the idea that we couldn’t do hard things evaporated. Business travel, it turned out, was not the engine of commerce we’d thought it was. And those who still hop on a plane to get to a business conference find they’ve got some ‘splainin’ to do. Frequent fliers, it turns out, are no longer cool.



Ubiquitous Health Screening. Welcome the HSA



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Those old enough to have flown before Sept.10, 2001, will recall moseying up to the check-in counter 30 minutes before takeoff, the cursory look in your carry-on by a half-asleep security guard and the casual “howdy” with the pilot as you were welcomed aboard.

All of that changed the next day.

Soon after, little old ladies were forced to stand up from their wheelchairs and be patted down, children’s stuffed animals were put through X-ray scanners, and pilots were locked away behind impregnable steel doors.

In short order, following the terrible events of 9/11, a security

infrastructure was built to ensure such terrorist attacks never happened again. Within weeks, the Transportation Security Agency (TSA) was established in the U.S. (and variations of such around the world), and overnight, the flying experience was utterly changed. Now, each and every one of us is regarded as a threat. Now, each and every one of us is treated the same – saint and sinner alike. Now, each and every one of us is safe – few terrorist

attacks have happened since – but we have all suffered from what little joy there was in flying eroding further away.

By 2023, in the aftermath of the COVID-19 pandemic, the Health Security Agency (HSA) had ramped up, with a budget that made the TSA’s \$7.7 billion look like chicken feed.

To enter any building or space (not just a plane) or country, people were

required by law to have a Star Trek-like “tricorder” scan and be turned away if they fail. The “OK2GO” clearance system was initially deployed in high-traffic areas but eventually spread into every county of every state in the country. At first, HSA staff administered the scan, but in another couple of years, the entire process was automated – the scanning equipment became ubiquitous in the air-lock lobby of every building. Including domestic buildings.

As with TSA-Pre, a pre-approval system was instituted for those who enroll in the home-based telemedicine “OK2GO+.” This allowed people to take the scan at home up to four hours before their travel time, certifying they’re not carrying any infectious disease.

The creation of the HSA in the U.S. was a huge money spinner. Contracts to develop and produce the tricorder ran into the tens of billions of dollars. The diagnostic capability and its ongoing maintenance (updating the tests for new and emerging viruses) was a generational goldmine. Hundreds of thousands of staff were hired. The HSA model was mirrored in most other countries in the world.

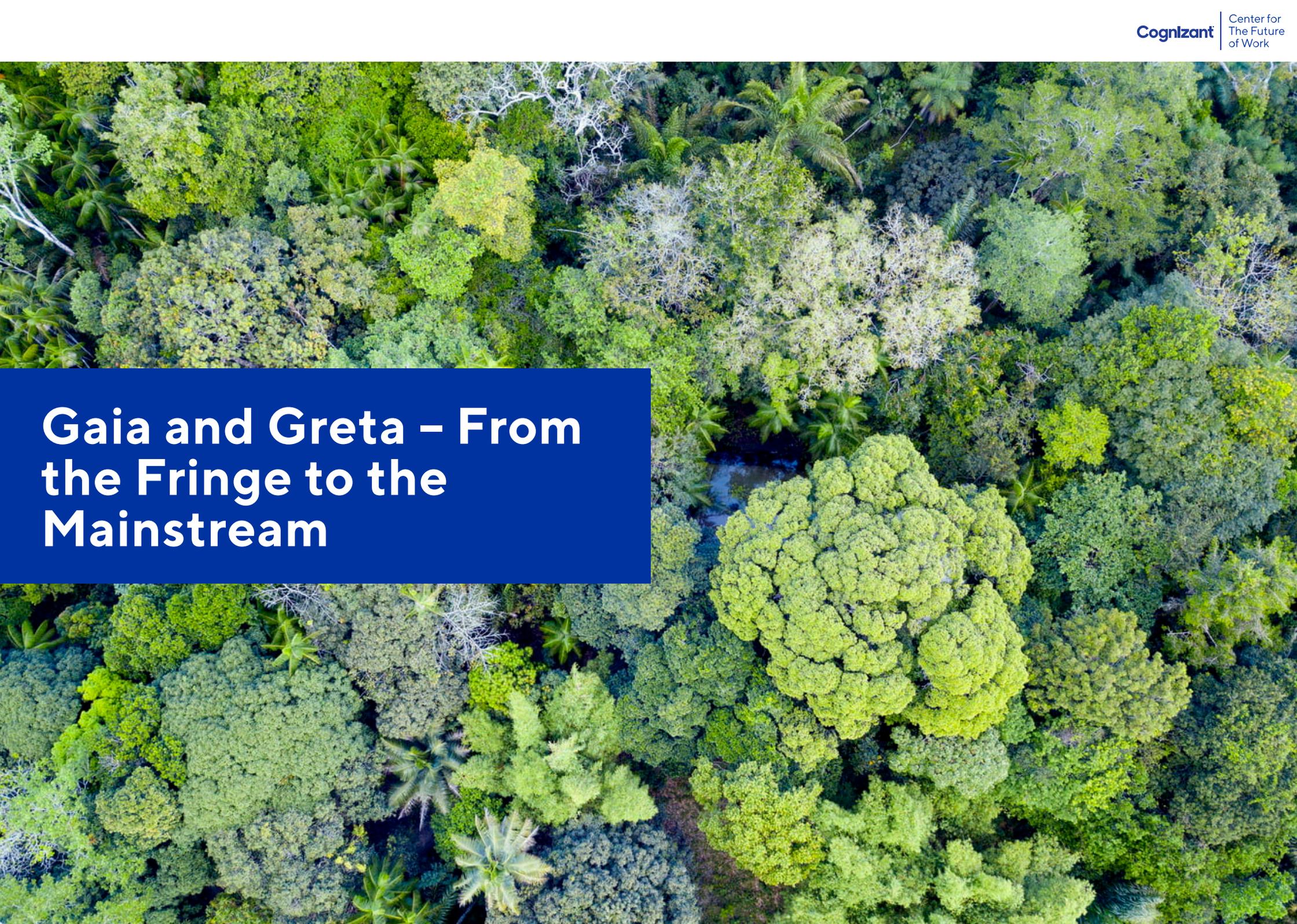
A fact of life

As with flying, the inconveniences of this new situation are significant but unavoidable. If you've got a boss who's a stickler for you being at your desk by 8:00 AM, you have to plan on arriving at your office building's air-lock by 7:30. If you're feeling a little under the weather and aren't enrolled in OK2GO+, there's the risk of being turned away.

In the evenings and on weekends, if you go to a show or football game, the lines are long and slow-moving – social distancing means a 1,000-person-line covering a quarter of a mile. Many grumble; some push and shove. But, knowing what we know in the wake of COVID-19, there's little sympathy for those who think the HSA (and its sister agencies in other countries) is "overkill."

The HSA infrastructure is a vital element of stopping the coronavirus panic of 2020 from ever happening again. The world cannot live hostage to communicable disease, known and unknown. If we could go back to the easy days of August 2001 and treat flying like taking a bus, of course we would. But we know we can't. In summer and fall of 2020, the HSA's "iron curtain" descended – we may not see it lift in our lifetime.



An aerial photograph of a lush tropical forest. The canopy is dense and multi-layered, with various shades of green. A prominent, large, rounded tree canopy is visible in the lower right quadrant. A small stream or clearing is visible in the center of the image. The overall scene is vibrant and detailed, showing the intricate patterns of the forest floor and the variety of plant life.

Gaia and Greta – From the Fringe to the Mainstream

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If the outbreak and spread of the virus taught us anything, it was how inextricably interconnected and interdependent we truly are – biologically, economically and environmentally. China sneezed, and the whole world got a new Depression – and there was nothing Great about it.

Even now, all these years later, we still can't measure the size of the socioeconomic fallout from the pandemic. The trillions (and trillions) of dollars are easy to count, but what about the intangibles? A young person's hampered career opportunities? Treating psychological angst? The populist leaders who rose to prominence,



whose legacy can be counted not in the deficits of our treasuries or our balance sheets but in the deficit of our democracies?

Silver linings did emerge amid the storm clouds; perhaps the most important historically speaking was how the prolonged economic slowdown of 2020–2022 stopped the clock of our frenetic business-as-usual and allowed us a chance to step back, take a deep breath and start recalibrating how we live on our blue planet. Very blue indeed in the wake of the crisis. In that moment of pause, it became obvious to all but the most myopic that the virus was a scream for help from an ecosystem groaning under the weight of expanding from 1.8 to 7.7 billion people in under 100 years.

Will your green habits improve thanks to COVID?

- Yes
- No
- Unsure

SEE RESULTS

And then the earth breathed

2020 brought home to us that Gaia theory was not fringe quackery and that Greta was onto something. In short order, a window opened itself to the world to see how much damage we were doing. Many clambered through it.

Satellite imagery taken shortly after the initial stages of the lockdown offered a persuasive “what-if” perspective. An overhead view of Italy revealed a significant decline in nitrogen dioxide (NO₂), a key element in greenhouse gas

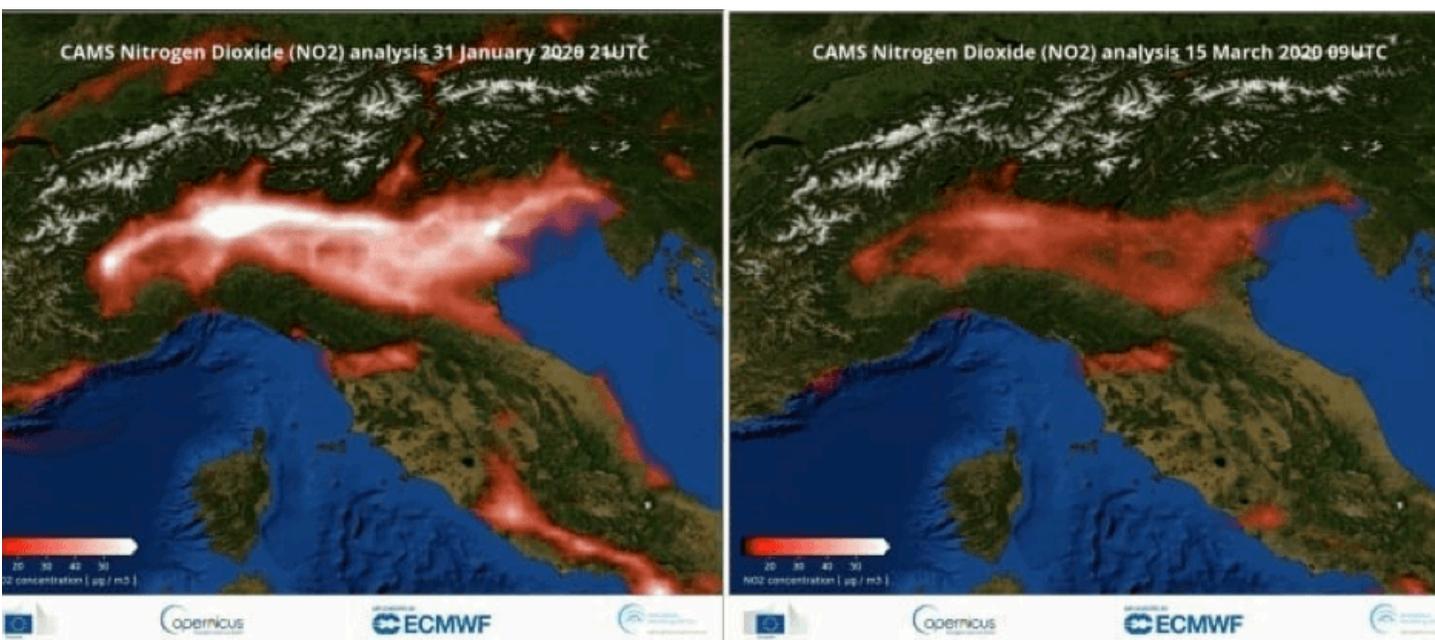
emissions. In Venice, fish began to appear again in the canals – something that amazed the gente vecchia. Similar seeming miracles occurred around the world. Before and after photos showed how quickly the earth could heal – if only we gave it the chance. What, people wondered, could we do if the pause became a reset? Save the Amazon? Stave off the melting of the Greenland ice shield? Resurrect extinct species like the Saudi Gazelle?

According to Ms. Thunberg (who thankfully recovered from the virus), these initial

environmental achievements were a beacon of hope but wouldn't mean much unless they were replicated, amplified and sustained the world over. Over the last few years, we've frankly struggled to do that. The need to behave better, enact and enforce stricter regulations, and hold big business accountable for preventing ecological disasters before they occur have all been unnatural acts. Deploying big data and AI-powered predictive analytics, and fanatically embracing the three R's of planetary renewal – reduce, reuse and recycle – were easier said than done.

The black-and-white of blue and green

The conundrum for the world remains: How do we grow economically (with all the benefits wealth brings) without destroying the very ground beneath our feet? Author and MIT researcher [Andrew McAfee believes](#) the virus occurred at a point that was already tipping; that since the inaugural Earth Day in 1970, we have taken better care of our planet by consuming fewer resources and reaping greater economic



rewards – even as the world’s population has skyrocketed.

In his 2019 book [More from Less](#), McAfee wrote that rapidly expanding and technologically sophisticated market-based economies around the world are creating scale and efficiency for producing and consuming more products/ services from fewer resources. Tighter collaboration between the forces of technology and capitalism, as well as better governance and great public awareness, will make the world a greener place, he believes.

McAfee’s ideas raised many eyebrows before and after the virus struck; he seemed to see a different world than millions of environmentalists in the U.S. and Europe did. But his argument gave many people encouragement. The need to grow – sustainably – has become, since 2020, the most pressing challenge the world has ever faced. The real fallout of the pandemic was in altering the arc of the moral universe.



Humans in the Machine



Humans in the Machine

In the middle of the COVID-19 pandemic, we learned to love our digital communities, to find happiness in online communication and to finally give videoconferencing platforms the respect they deserved.

Pre-lockdown, technology was widely blamed for raising an antisocial generation. Devices = distraction. Information overload = limited attention spans.

Grumpy middle-aged commentators (and parents alike) lamented how commonly “the young” responded mid-conversation with nothing more than a “hmmm?” – their eyes reluctantly peeling away from their phones, more engaged in TikTok

than what was going on around them. “Digital interactions are weakening human interactions,” they cried.

But suddenly, technology became the only thing keeping us connected during our enforced social isolation. Older folks who once decried virtual interactions were using the Houseparty app like they were spotty little screenagers. Some even taught out-of-touch millennials how and where to sign up on Twitch, in a dazzling display of reverse

mentoring.

The virus changed attitudes seemingly overnight and made us finally appreciate the digital communication technology that had been right at our fingertips. Instead of rolling our eyes at every “Can everyone please go on mute,” we were thankful for the opportunity

to stay in touch – an opportunity that wouldn’t have existed if COVID-19 had hit a decade earlier or anytime in the pre-digital era. Young folks became grateful (and amused) that granny finally learned how to use FaceTime so they could check in in a more personal way. Fans of the UK’s Strictly Come Dancing were thrilled that Oti Mabuse hosted free virtual



dance classes from her living room. Millions of parents there also loved Joe Wicks' virtual PE lessons, keeping their kids entertained and healthy.

As 2020 rolled into 2021 and 2022, not everyone wanted to stay home and party with friends over Zoom. The first second they could, young and old alike sprinted out to the nearest pub to toast a post-pandemic world (like a pre-holiday airport breakfast, pints became socially acceptable at 9:00 AM). We still meet up IRL and joke about the time we tried to play "Monopoly" over webcam (turns out there was an online multiplayer version all along). But it's become an affectionate mocking of digital communication technology, not a frustrated one, because deep down, we are grateful – to Zoom, to Webex, to FaceTime – for seeing us through.

The social virtues of the physical and the digital

In the wake of this newfound appreciation, innovation in communication technology accelerated. The years after the crisis saw an explosion of virtual reality startups for collaboration and interaction, in the same way that war-time innovation accelerated technological advancement.

Just as plastic surgery, mass production of antibiotics and encrypted communication flourished in post-world-war times, post-COVID-19 gave rise to haptic interfaces, in the form of gloves or full bodysuits (like Teslasuit or HaptX textiles) that allow us to feel tactile sensations – not just see and hear – through virtual reality. Developers continue to work on technologies that might allow us one day to sit around the same



"Monopoly" board as our siblings in the farthest reaches of the world – high-fiving them when they bankrupt dad, tipping the virtual board over when we inevitably lose.

The opportunity of multi-sensory virtual interaction has spurred an overwhelming new frontier. Today we join virtual political rallies from the safety of our homes, without fear of being tear-gassed or arrested. We attend music concerts

on wavexr.com – no need to find parking or miss the last train home.

When we finally stepped out of our houses post-COVID-19, we brought our newfound love for virtual interaction with us, just in time for multi-sensory virtual interaction to become a very real alternative to IRL interaction. We stepped into a world where humans have realized they could very easily live inside the machine.



The Birth of the Clean Regime



The Birth of the Clean Regime

It didn't take long to break us. Within days of quarantine, cabin fever set in. We quickly realized that maintaining our sanity required contact with humanity. While few were clamoring to commute back to the office every day, everybody looked forward to the return to socially cohesive spaces – the parks, cafes, libraries and other spaces where people congregated outside of home and work to connect with others. Our desire for these spaces was compounded by the fact that, for many, home and work had melded into one.



The problem was, the virus changed how we saw the world. And with this new perspective, we suddenly realized that everything around us was filthy: the public spaces, the planes, the trains, the automobiles – our neighbors' houses. Our own. All of them were covered in invisible grime and deadly germs, full of creepy-crawlies, the perfect habitats for the next bug or virus that would lay the world low.

After months of the coronavirus pandemic, many were dubious about returning to convene with crowds.

But pain points led to breakthroughs. As we resumed our social activities, the response by communities and societies around the world was a prolonged emphasis on cleaning up. The fear of another pandemic gave rise to a Clean Regime that prioritized a visual aesthetic and ritualized cleanliness behaviors. Soon, this regime shaped global commerce and policy and became embedded in the cultural zeitgeist. People began seeking products and services that both ensured their personal cleanliness and put it on display. Businesses enacted policies that mandated clean properties. And governments renewed messaging and strategies that promoted societal cleanliness as a matter of public health.

A new age of cleanliness

The winds of change were already blowing on this cultural shift, pre-COVID-19. Video of supermodel Naomi Campbell disinfecting every surface of her seating area on flights had racked up millions of views. But post-COVID-19, personal hygiene routines began rivaling

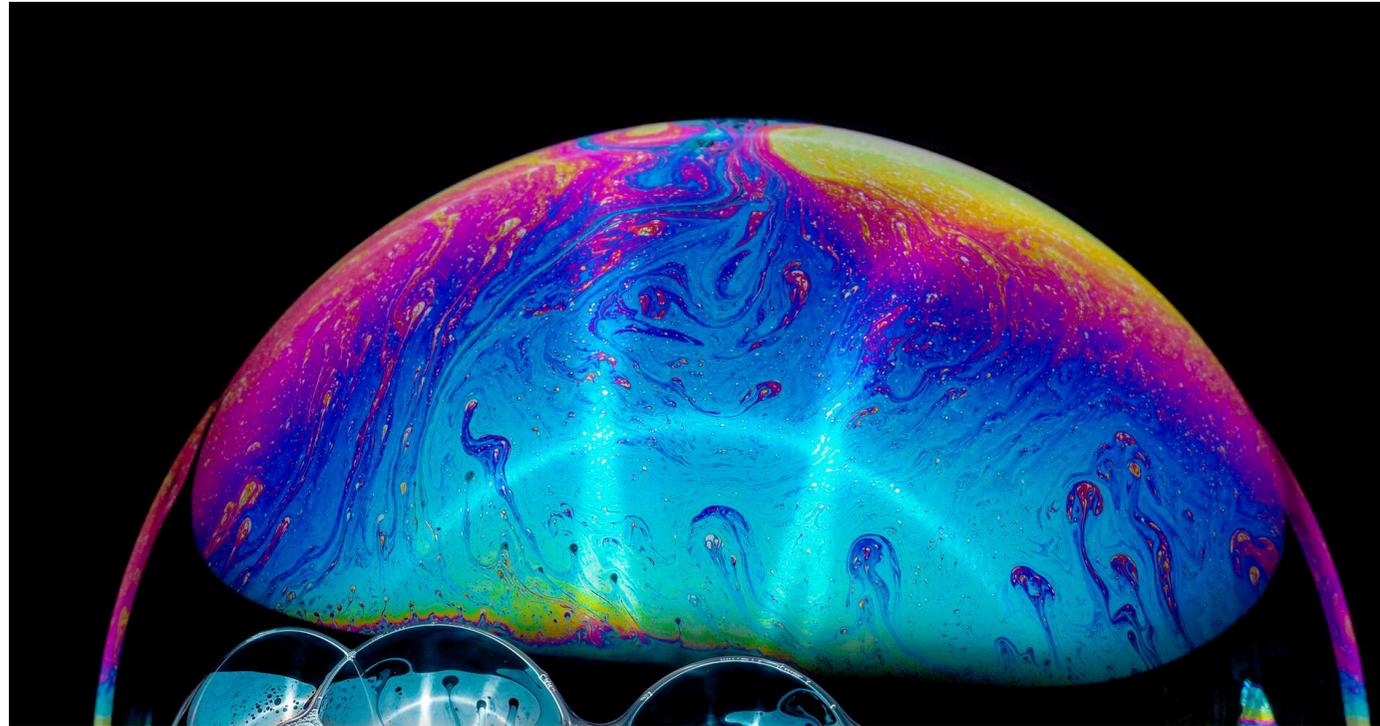
“unboxing videos” in social media popularity. While established cleaning product brands gained stature, nimble startups were the ones to make cleaning sexy; companies like Blueland and Truman’s became household names as they added style to the new aesthetic. Even global arbiter of style and luxury LVMH pivoted to creating designer sanitizers in an effort to combat the novel coronavirus. Clean became cool. And where there was cool, there was cash.

The war against pathogens was fought (and will continue to be fought) much differently from wars of the past. Germs can’t be shot down or bombed. Instead, we combatted our enemy with sanitizing and handwashing. Propaganda posters pictured not “Rosie the Riveter” but “Cliff the Cleaner.” We thanked those on the frontline of this ongoing battle – hospital staff, cleaning crews, sanitation workers – the same way we thanked the military for their wartime service.

Part of the social pact of the Clean Regime was keeping germs out of public places in the first place. Businesses adopted corporate hygiene

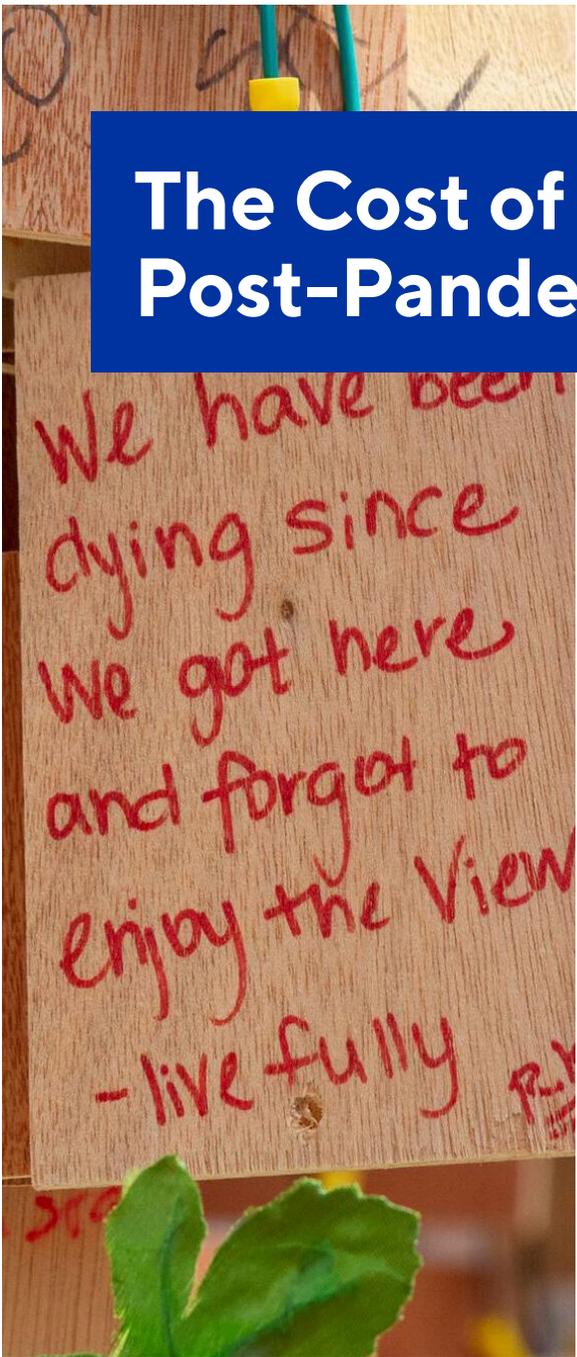
policies to keep sick employees at home or in the care of medical professionals without worries of missed pay or benefits. The increased costs of regularly deep-cleaning workplaces and providing paid sick leave were considered a worthwhile investment in maintaining reputations and avoiding the PR debacle of being a vector of viral infection. This commitment to workplace wellness pushed paid sick leave policies from corporate nicety to tablestakes necessity.

Our past habits in public places made them breeding grounds for virus outbreaks. They were crowded and seldom cleaned. But COVID-19 gave us a wakeup call and the reprieve we needed to clean up our act. Diligent, humanity-driven hygiene practices are now an essential element of our daily routines and a crucial requirement of combatting the threat of future outbreaks. If cleanliness is next to godliness, then this Clean Regime was an answered prayer.





The Cost of Aging in a Post-Pandemic World



The Cost of Aging in a Post-Pandemic World

As the famous saying goes, there are only two certainties in life: death and taxes. Ray Kurzweil didn't agree. In his 2004 book, *Fantastic Voyage: Live Long Enough to Live Forever*, he argued that if we can just make it to the ripe old age of 120, biotechnology will have advanced so much that humanity will have been cured of death.

Unsurprisingly, lots of people loved this idea, and though it seemed fantastical in the early 21st century, the spirit behind it motivated many people to regard longevity as a moral good.

In reality, though, we all know we're going to die – we just don't know when (and we're still all paying the tax bills to allay the damage of the virus).

In addition to the metaphysical panic it unleashed, COVID-19 forced a reckoning of how we treat aging and dying in a post-pandemic world.

We watched as health services around the globe (both privately and publicly funded) buckled under the strain of coping with sudden huge numbers of infected people, in large part due to institutions' routine deployment of resources and budgets to extend the lives of the very elderly and already very sick.

We flinched in horror as doctors on the front lines decided who to save based on their age and likelihood of survival. Many people criticized

Britain's ex-chief scientist Sir David King [for telling citizens in their 90s who had contracted the virus to stay home](#), lest they overburden the NHS. But many people privately, thought he might have a point.

COVID-19 shined a spotlight on the issue of our aging planet. We could no longer ignore that between 2020 and 2030, 10,000 baby boomers a day would turn 65, and seven in 10 would need long-term care. Or that while 80% of Americans said they would like to die in their homes vs. a hospital, close to 55% of older adults met their end in a hospital or nursing home. We realized there were more people over the age of 65 globally than under the age of 5. Who, some asked, would pay for Kurzweil's dream?

A new conversation around the inevitable

Shifting healthcare budgets from sick care to prevention became the existential challenge. In Japan, which had the oldest population in the world (28% over 65) and longest life expectancy (84), the cost to care for the elderly was more than \$138 billion a year. With public debt at 250% of GDP, and debt service consuming 24% of spending, the government there desperately sought ways to cut costs – keeping people at home became one of the main options.

To improve the lives of the aging, a new field of study called gerontechnology emerged; helping older people age at home on their terms, including palliative care for the terminally ill, became a leading-edge discipline. Advancements included using AI, sensors, virtual reality and usability design to improve vision and

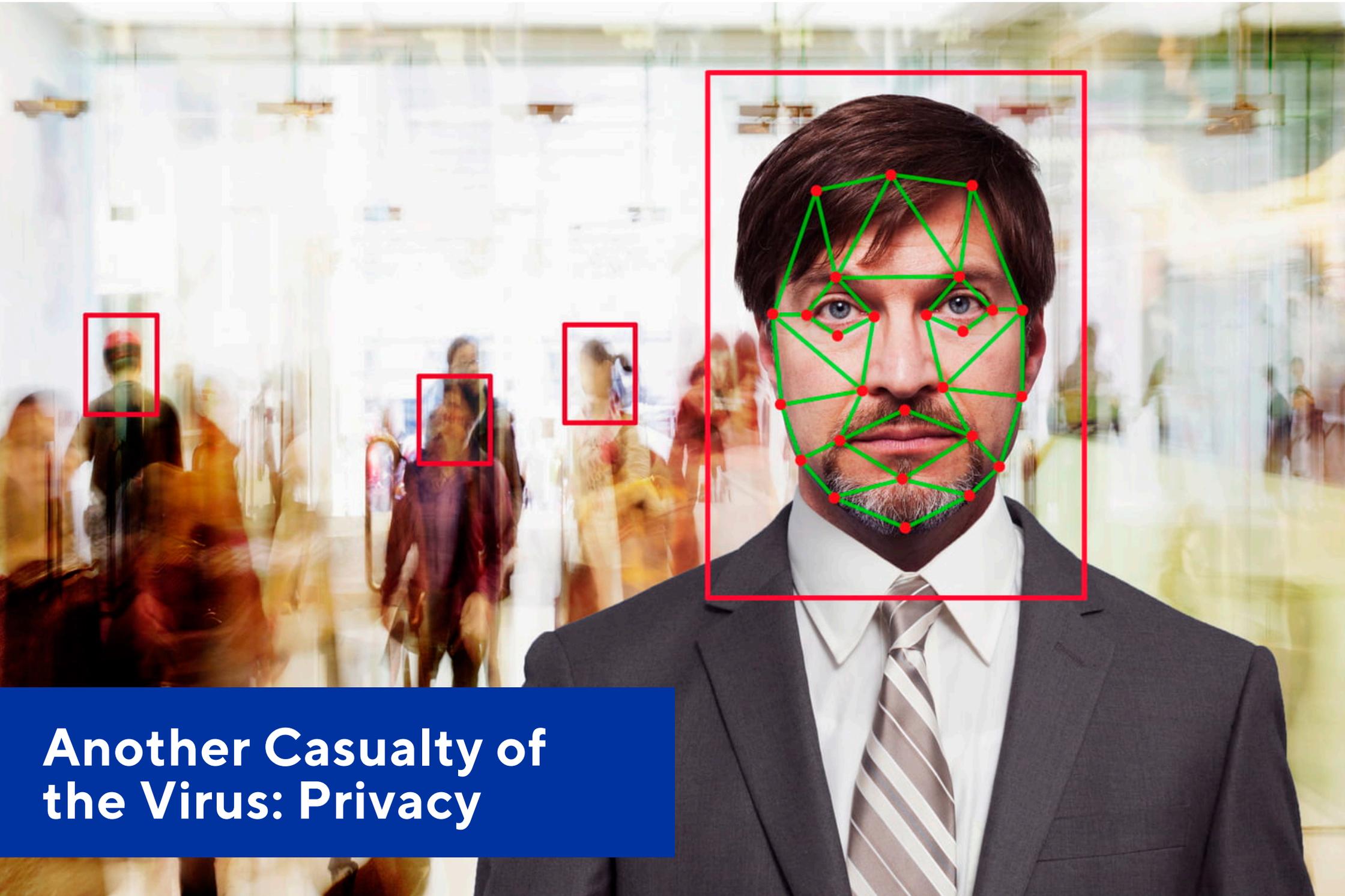
hearing and support memory loss, with the goal of keeping people out of the hospital – and off government payrolls.

Many people also began to understand the need to prepare ourselves for our inevitable passing. People started having open conversations about how they wanted to die and when. The oncologist and director of bioethics at the U.S. National Institutes of Health, Ezekiel Emanuel, whose [controversial 2018 article](#) for The Atlantic angered many on its publication, found a new audience. His argument for a “defined death date,” which would remove the fuzziness of trying to live as long as possible (and facilitate better planning at a macro and micro level), began to move into the Overton Window. According to Emanuel, “Its specificity forces us to think about the end of our lives and engage with

the deepest existential questions and ponder what we want to leave our children and grandchildren, our community, our fellow Americans, the world. The deadline also forces each of us to ask whether our consumption is worth our contribution.”

We’re still not close to resolving the questions around life and death for our aging populations, but at least we’re in synch now with one of the most oft-repeated quotes of our time – and finally embracing the folly of thinking we can override it.





Another Casualty of the Virus: Privacy



Another Casualty of the Virus: Privacy

In the desperate scramble to halt the spread of the coronavirus through the spring and summer of 2020, governments around the world began instituting health monitoring policies, leveraging GPS and other data on phones and watches and fitness bands.

“Smart technologies being used in smart ways,” many thought. But concerns about surveillance – which had been growing for a number of years – also flared up, as the long-term implications of a permanent surveillance infrastructure became apparent.

Pre-COVID-19, legislation such as GDPR in Europe, POPI in South Africa and APPI in Japan had emerged,

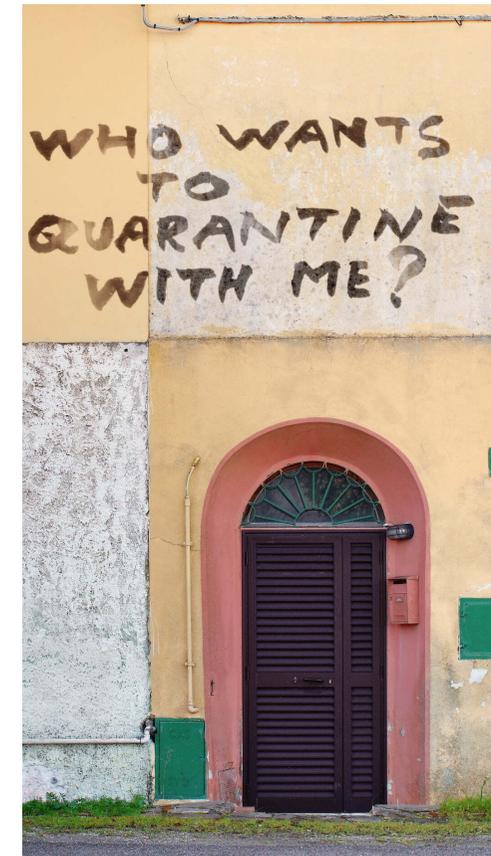
based on a recognition that personal data was a new source of economic wealth and that this wealth was accruing to a small number of large technology companies – not to the providers of that data.

The need to stop the virus, however, overruled misgivings about data privacy, and leaders in Israel, China and South Korea forged ahead with sophisticated monitoring policies, particularly after initial exhortations to practice social distancing and self isolation fell on deaf ears. What had seemed like calls for good old-fashioned common sense were ignored by those without it – especially younger individuals, who continued to

gather in groups, use public transport (still running for essential workers) and socialize as though nothing was wrong.

The most draconian (or sensible, depending on your point of view) policy took hold in China, where the use of smartphone data and facial recognition cameras (already used in the country’s controversial social credit system) obliged individuals to self-report their temperature and medical condition on a daily basis. Using these measures, the government could effectively track and, in some cases, forcibly isolate individuals considered high risk, as well as identify those with whom they’d come into contact. In Singapore, mobile

apps helped people identify infected and at-risk individuals. In Israel, technology intended to track and monitor terrorist activity was deployed to watch the health conditions of ordinary law-abiding citizens.





A cure with lasting implications

Proponents of health monitoring argued that extraordinary times required extraordinary measures – that safety takes priority over everything else. But civil liberty-oriented critics claimed that a dangerous precedent was being set, and questioned whether politicians really understood the implications of their actions and just how drastic the fallout could be. For years, surveillance capitalism had been insidiously

creeping into every corner of our lives, and the dust from the Cambridge Analytica scandal had only just settled (a little) as the virus hit. Many people had become suspicious of the data giants; in the middle of the Corona crunch, a British law firm had advised its employees working from home to turn off smart speakers while on client calls in a bid to prevent the recording of sensitive information.

Some said the introduction of Black Mirror-style social monitoring was only a

temporary, necessary phenomenon – that this type and level of surveillance would end as the crisis waned. History, though, paints a very different picture. One has only to look at the U.S. wartime surveillance that lived on well after the first and second world wars in programs such as Black Chamber and Project SHAMROCK to see how things might unfold. The press censorship and land confiscation policies of Israel's 1948 War of Independence are still in place. Governments could very well argue that in order to prevent a reoccurrence of COVID-19 or the emergence of some new pandemic, stringent data checks need to remain.

What terrifies many is that it isn't just clicks and likes that are analyzed but also our health, movement and biometric data that – when combined – can be used (is being used) to not just see what you look at but how you physically respond to this input, as well. Put simply, our very emotions are now capable of being tracked and analyzed.

Of course, during the COVID-19 crisis, surveillance sounded sensible, but the road to hell is paved with good intentions. In a post-virus age, are we finally seeing the true death of privacy? Are we finally answering the question many people have posed over the years: How did 1984 happen?



About the Authors

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Ben Pring

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Cognizant's Center for the
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Ben Pring co-founded and leads Cognizant's Center for the Future of Work. He is a co-author of the best-selling and award-winning books *What To Do When Machines Do Everything* (2017) and *Code Halos; How the Digital Lives of People, Things, and Organizations are Changing the Rules of Business* (2014).

Ben sits on the advisory board of the Labor and Work Life program at Harvard Law School. In 2018, he was a Bilderberg Meeting participant.

Ben joined Cognizant in 2011 from Gartner, where he spent 15 years researching and advising on areas such as cloud computing and global sourcing. Prior to Gartner, Ben

worked for a number of consulting companies, including Coopers and Lybrand.

At Gartner, Ben was the lead analyst on all things "cloud"; he wrote the industry's first research notes on cloud computing (in 1997!) and Salesforce.com (in 2001), and became well known for providing provocative but accurate predictions about the future of IT. In 2007, Ben won Gartner's prestigious annual Thought Leader Award.

Ben's expertise in helping clients see around corners, think the unthinkable and calculate the compound annual growth rate of unintended consequences has

made him an internationally recognized authority on leading-edge technology and its intersection with business and society. His work has been featured in *The Wall Street Journal*, *Financial Times*, *The London Times*, *Forbes*, *Fortune*, *MIT Technology Review*, *The Daily Telegraph*, *Quartz, Inc.*, *Axios*, *The Australian* and *The Economic Times*.

Based in Boston since 2000, Ben graduated with a degree in philosophy from Manchester University in the UK, where he grew up.

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In his role as a corporate Vice President, Alan Alper is responsible for all of Cognizant's thought leadership, globally. This includes white papers, case studies, blogs, short-form content that appears in the Latest Thinking section of cognizant.com (and Digitally Cognizant app), videos, podcasts,

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Previously, Alan was the online editor of Managing Automation magazine and served as editorial director at Gomez, Inc., an internet performance monitoring/benchmarking/advisory services firm based in Waltham, MA. Prior to this, he was news and features editor at Computerworld. He also was on the founding team at Computer Industry Daily, the information technology industry's first online daily publication, launched by Ziff Davis under the tutelage of industry "gadfly" (now venture capitalist), Esther Dyson.

His freelance articles have appeared

in Datacommunications, Datamation and Venture magazines, as well as The Improper Bostonian. Alan cut his teeth in the daily newspaper business at the Albany Times-Union and Saratogian, and served as news editor at The Wyckoff News, a weekly newspaper in Wyckoff, New Jersey. After finishing college, Alan interned for Jack Anderson, the world-renowned columnist.

He earned his bachelor's degree in rhetoric and communications (minoring in journalism) at the State University of New York at Albany.

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Robert Hoyle Brown is a Vice President in Cognizant's Center for the Future of Work. Since joining Cognizant in 2014, he has specialized on the topics of robotics, automation and augmented reality and their impact on business processes. He has worked extensively with the Cognizant Digital Operations Practice as head of market strategy, and also with

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Prior to joining Cognizant, he was Managing Vice President of the Business and Applications Services team at Gartner, and as a research analyst, he was a recognized subject matter expert in BPO. He also held roles at Hewlett-Packard and G2 Research, a boutique outsourcing research firm in Silicon Valley. He holds a bachelor's degree from the University of California at Berkeley and, prior to his graduation, attended the London School of Economics as a Hansard Scholar.

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Euan Davis leads Cognizant's Center for the Future of Work in EMEA. A respected speaker and thinker, Euan has guided many Fortune 500 companies into the future of work with his thought-provoking research and advisory skills.

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Previously, Euan held senior analyst, advisory and leadership positions at Forrester Research, IDC and CEB.

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Mara is responsible for strategic events and communications within Cognizant's Center for the Future of Work. In this role Mara collaborates with her colleagues to help shape key research and thought leadership content. She oversees strategic partnerships with organizations including: The World Economic Forum, TED, The Nantucket Project and Thinkers50

among others.

Prior to joining Cognizant, Mara was the founder of Emerge Public Relations where she provided marketing, public relations and strategic counsel to many global 1000 organizations. Mara earned her bachelor of arts in Communications with a minor in journalism from Stephen F. Austin University.

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Michael Cook is a Senior Manager in Cognizant's Center for the Future of Work in EMEA. In this role, Mike identifies the changing dynamics that will shape the business ecosystem of the future, delivering original research and analysis of work trends in Europe. Mike also collaborates with a wide range of technology thinkers and academics about what the future of

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Prior to joining Cognizant, Mike served as Global Research Director with HfS Research, where he worked across multiple research topics and led HfS's buy-side focused research program. Mike earned his bachelor's degree in economics and econometrics and postgraduate qualification of international trade and development from the University of Johannesburg.

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Caroline Styr is a Research Analyst in Cognizant's Center for the Future of Work in Europe. In this role, she develops thought leadership to challenge perceptions of the future of work. Above all, she is dedicated to demystifying what the individual needs to succeed in the modern organization.

Prior to joining the CFoW, Caroline was part of Cognizant Consulting, working in international digital services and transformation across the retail and healthcare industries. She has a bachelor of arts (Hons.) in German from the University of Bristol, alongside which she certified in theatre and performance at Bristol Acting Academy.

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His research with the CFoW focuses on the human impact of decisions related to technology development and deployment.

He has an MBA (data analytics) from Georgia Institute of Technology, and an undergraduate degree in marketing from Georgia State University.

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About Cognizant

Cognizant

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era.

Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 193 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us [@Cognizant](https://twitter.com/Cognizant).

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About the Center for the Future of Work

The Center for the Future of Work

Cognizant's Center for the Future of Work™ is chartered to examine how work is changing, and will change, in response to the emergence of new technologies, new business practices and new workers. The Center provides original research and analysis of work trends and dynamics, and collaborates with a wide range of business, technology and academic thinkers about what the future of work will look like as technology changes so many aspects of our working lives. For more information, visit www.cognizant.com/futureofwork or contact Ben Pring, Cognizant VP and Managing Director of the Center for the Future of Work, at Benjamin.Pring@cognizant.com.

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After the Virus