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Looking Beyond the COVID-19 Pandemic Enviroment

CONFEDERATION OF ASIA-PACIFIC CHAMBERS OF COMMERCE AND INDUSTRY

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The Journal of Commerce and Industry hopes to provide its readers with ideas and visions on regional economic cooperation. Articles on industrial entrepreneurship and management and on international trade and business practices also offer challenging and inspiring models.

The CACCI Secretariat welcomes opinions and comments and will be glad to consider for possible publication articles which will help advance the aims and objectives of the Confederation of Asia-Pacific Chambers of Commerce and Industry (CACCI) and of this Journal.

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IN THIS ISSUE (Vol. 2, 2021)

This issue features articles that appeared in the publications of Business Inquirer and the BRINK, a resource of March & McLennan Insights, a research institute dedicated to analysing increasingly complex risks that are reshaping industries, governments, and societies. The editors and staff of the CACCI Journal of Commerce and Industry would like to take this opportunity to thank the authors for sharing their materials with CACCI and its members.

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TABLE OF CONTENTS

What Do Post-COVID Supply Chains Look Like?

Richard Wilding,
Professor of Supply Chain Strategy at Cranfield School of Management

Container ships from China passing at Blankenese on the Elbe, Germany. Photo: plus49/Construction Photography/ Avalon/Getty Images

Across the world, companies have been celebrating the return of more normal activity, more reliable supply chains and a boost from renewed consumer confidence. And that's where they are going wrong.

A year ago, I described how the pandemic was changing supply chains in unexpected ways, and if a business's supply chains have remained the same as they were before the pandemic, then it is going to have problems. Retail is just one immediate example. Post-lockdown sales might be sharply up, but profits remain down because the cost to serve is so much higher for online sales and delivery models. Businesses in all sectors need to move forward to a new normal for supply chains. Perhaps it can be a "new better."

Cost to Serve Is Higher

A year on from the first waves of shocks, global supply chains are working in a fast and furious fashion. Working, but volatile — subject to local uncertainties and the potential for a difficult accumulation of disruption.

In the short to medium term, the impact of the COVID-19 pandemic is not going away, which means a changing picture of lockdowns and restrictions in different parts of the globe. Overall, that has meant sharp rises in shipping and air freight costs. And, in general, lead times for supply chains have needed to be extended.

The knock-on effect of this has been a need for more containers, more containers not moving and capacity being fully taken up — so, containers end up in the wrong places around the global supply chains system. It's like supermarket trolleys. If processes to take trolleys back to the front of the store aren't working, then they're going to end up scattered all around the extremities of the car park.

Bottled Up Consumer Spending

Supply chain disruptions and shortages are continuing to happen because of the dramatic upturn in economies, a release of bottled-up consumer spending.

The microchip shortages in some sectors are also being exacerbated by parallel interactions, where there is increased competition from across different sectors competing for supplies, especially with the accelerated shift to computerization and

autonomous systems in everything from the workplace to transport systems.

A question mark also remains over whether the surge in demand for products is real or just a bubble of stockpiling as businesses fill their stock rooms to pre-empt recovery. The danger is that customer demand doesn't or won't exist on the same scale and we enter a boom-and-bust cycle.

The pandemic crisis of 2020-21 has brought permanent, structural changes to supply chains. There is no return to 2019, and businesses need to take on board the lessons of the past 18 months and find the best blend of old and new.

Shorter, More Localized Supply Chains

We have seen how those supply chain managers with the strongest network of relationships have coped better. Businesses tend to focus effectively on the basic management of inventories, KPIs, information systems and people — but appear to think relationships happen by accident. Collaboration and proactively managed relationships are the key to future resilience.

Businesses have seen the need for shorter, more localized supply chains. Supplies of some high-demand raw materials, like cobalt and lithium, can only come from specific regions — nothing can change that situation — but there can be more near-shoring and on-shoring. There is also the need for multi-shoring, not basic multi-sourcing, which caught out some operations during lockdown that had arranged multiple different supply sources in the same region, all affected by COVID-19 transport restrictions.

The crisis has demonstrated the need for transparency: continuous monitoring and intelligence, real-time information across networks in order to anticipate and understand the impact of volatility and better deal with the complexity involved. Events like the blockage of the Suez Canal earlier this year had a heightened impact because it was a case of disruption on disruption.

The Need for a Strong Culture

A strong culture has been critical for ensuring there's the necessary agility and flexibility in a supply chain operation. By 'culture' I mean what happens when people are left without instruction and under pressure? What do they do? Can they work together to find solutions?

People have been shown to be the most vulnerable element in an organization, adding to the momentum toward Robot Process Automation. This could both increase resilience within operations (not having to rely on the presence and movements of human employees) but also take the repetition out of human work roles.

There needs to be a working trade-off between property assets, information systems and HR. Organizations may no longer need physical offices to the same extent as a result of automation and remote working, but they need to invest into more than just new information systems. There has to be renewed attention and investment into HR and the management and leadership of dispersed workforces, all the processes that need to be re-engineered for a virtual world of work. The growing reliance on digitization and

connectivity also means a new intensity of focus on cybersecurity.

A 'New Better'?

What companies and consumers value has changed. Lockdowns have moved a much larger proportion of the consumer population — including older demographics — over to the ease of online shopping. In other words, people have got used to shopping differently, and that means that whole supply chain processes, networks, information systems and organizations have to change.

Ultimately the lesson has been the need to procure for resilience and not solely cost. Cost and value will always be fundamental, but resilience has to be the priority for protecting company survival for the longer-term.

A new better for supply chains will bring some major changes for wider societies.

There will be benefits from more automation, digital systems and on-shoring, including higher quality jobs, the potential for more diversity in the workforce, a reduced transport footprint for the environment and less plastic waste. But at the same time, there will be challenges, including the need for new business models to ensure viability and maintaining the engagement and motivation of supply chain workers. The biggest barrier, though, will be complacency around the "return to normal."

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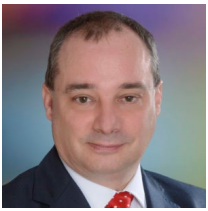
About the Author



Richard Wilding
Professor of Supply Chain Strategy at Cranfield School of Management

Richard Wilding, OBE, is the professor of supply chain strategy at Cranfield School of Management. He is also the chair of the Chartered Institute of Logistics & Transport (UK), and recognised as one of the world's leading experts in logistics and supply chain management.

The Productivity Puzzle of Working Remotely

Emma Harrington,
PhD Candidate in Harvard University's Department of Economics

A Harvard University report found that in this remote work setting, people with childcare responsibilities are more productive than those without those responsibilities — both before and after the pandemic. Photo: Pexels

New research by Harvard University suggests that there are productivity gains for companies that offer remote working — both before and during the COVID-19 pandemic.

However, whether those gains will persist after the pandemic depends on the type of workers attracted to remote jobs. BRINK spoke to Emma Harrington of Harvard University, who contributed to this research on remote working with her colleague Natalia Emmanuel.

HARRINGTON: We studied the effect of going remote for workers in two different settings. In both, we found that working remotely improved worker productivity.

First, we looked at workers who started working in a call center and then transitioned to working remotely before the pandemic. For those workers, we found a pretty sharp increase in their productivity following that transition — the calls they took per hour rose by about 8% when they went from the office to working at home.

Productivity Rises When Remote

Second, we looked at what happened when the pandemic forced all the onsite workers at the same retailer to work remotely. Then, we compared the productivity of newly remote workers, who were no longer able to go into the office due to the pandemic, to the productivity change of their already remote working peers.

The productivity of newly remote workers rose relative to their already remote peers. So even if they didn't volunteer to be remote, they still became more productive when working from home. In both cases for a given worker, transitioning from onsite work to remote work led to about an 8% increase in productivity.

Our explanation for this increase in productivity is that it likely stems from a reduction in distractions. So you might be spending less time interacting with your coworkers. Particularly in the context of a call center, you might have a reduction in ambient noise of people chatting around you on the phone.

Some Workers Are More Productive Than Others

BRINK: But you found a difference between those who were hired to do remote work and those who were hired to work on site, but were then forced to go remote.

HARRINGTON: Yes, so there are two dimensions of productivity. One is: Are

people reaching their full potential of their personal productivity? And the other is: How productive are the people who are taking a particular job? When we think about the extent to which people are reaching their personal potential, it looks like remote work is helping people.

However, the people who were hired for remote jobs turned out to be relatively less productive than the people hired initially into onsite jobs and then transferred to remote working.

So, from the firm's perspective, when they think about which work arrangement is going to be more productive, they also need to also think about what types of workers are going to take these two types of jobs.

When we get out of the pandemic, a company might prefer to hire new workers into an office role — even though that worker might be more productive being remote — just because the type of worker who is willing to go into the office may on average be more productive.

In other words, the willingness to go into the office may reveal some sort of dedication to the job that can be divorced from the effect of being in an office on someone's productivity.

Workers with Childcare

BRINK: One of the findings showed a positive correlation with childcare responsibility. Is that correct?

HARRINGTON: Yes, we found that in this setting, people with childcare responsibilities were more productive than those without those responsibilities — both before and after the pandemic. The gap became marginally larger after the pandemic.

I think one possible explanation for that finding is that this is a relatively low wage job. Therefore, I think choosing this role because of constraints at home might be a better signal about a worker than choosing this job without those constraints.

BRINK: This research was conducted with call center workers, which are relatively low wage jobs. Do you think these findings have equal application in other higher paid or executive level jobs?

HARRINGTON: I think the benefits of being remote in reducing distractions are likely to be pretty generalizable. In lots of jobs, you're going to be benefited by having fewer distractions.

But in those other jobs, these benefits need to be weighed against the potential costs of remote work, making coordination more difficult. You might also lose some of those productive water cooler chats that you would likely have in the office.

Further, in other occupations, the question of who takes a remote versus onsite job might be an even bigger concern. When productivity is harder to assess, workers who are less productive may have a more direct incentive to be remote to hide their

lower productivity from their manager.

Going Back to the Office Post-Pandemic

When firms think about what to do after the pandemic, there may be incentives for them to return to the office because they prefer to hire workers who want to go to the office rather than work remotely.

That doesn't mean going back to the office is the socially optimal outcome. Using remote versus onsite work to sort workers into different types can lead to a market failure. Some workers who would prefer to work remotely, and would be more productive at home, still might decide to go into the office because they don't want to be seen as less productive.

The market doesn't necessarily get to the best solution because the incentives of individual firms don't necessarily align with maximizing total output. Privately, each firm might be worried about the types of workers it will hire into remote jobs. But, in the aggregate, productivity might rise if more jobs were remote.

Thus, one implication of our findings is that moves by governments and other entities to try to support remote work may improve efficiency. Further, since workers with childcare responsibilities have an added interest in working at home, such policies may also improve economic equity.

Brink News

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10 Questions That Will Determine the Future of Work

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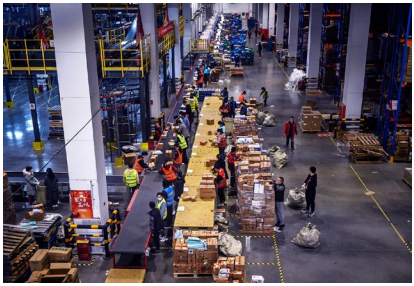

Employees work in a warehouse in Beijing, China. Photo: Kevin Frayer/Getty Images

In the span of a few months, the COVID-19 pandemic has prompted a rethink not only of how workers work, but of long-term policies that respond to disruptions being unleashed by technology and automation.

Policymakers are quickly drawing up plans to address the future of work from the perspectives of inequality, skilling, social protection, gender and the role of human labor in the 21st century.

The Pre-Pandemic Future of Work

Prior to the pandemic, many governments and policymakers treated future-of-work policy making with little urgency, believing that technology and automation would be implemented gradually. But the pandemic has shown that the job and labor market disruption can come from nearly any direction — not just through technology and automation.

Still, governments around the world broadly face a set of common themes when it comes to preparing their countries for the future of work. Since up to 14% of workers globally may have to change occupations by 2030, policymakers are rightly concerned with exactly how training models can avert skills obsolescence.

The pandemic has also heightened concern over inequality and job disruption among specific groups, which in turn has led to granular discussions of how governments can build social safety nets that protect workers while welcoming new technologies that boost workers' productivity and living standards.

But in many cases, policymakers face a blizzard of contradictory information and forecasts that can lead to confusion and inaction. Unable to make sense of the torrent of data being thrown their way, policymakers often end up being preoccupied by the answers presented — rather than reflecting on the questions that matter.

Right Time, Wrong Questions

If we want to design "good" future-of-work policies, we must have an inclusive and wide-ranging discussion of what we are trying to solve before we attempt to develop and deploy solutions.

Deficiencies in our policymaking processes leave us ill-equipped to respond to complex policy challenges, ranging from pandemics to climate change and the future of work. Future challenges (and many current ones) require a rethink of how we develop policy and search for answers to our most vexing public problems.

While the pandemic has catapulted questions surrounding the future of work into the mainstream, we still lack a basic stable of solutions for policymakers to test-drive. Among the approaches that have been floated are universal basic income (UBI), increasing digital literacy and reskilling programs.

Some of these, notably UBI, have gained traction around the world, from the United States to Germany and Kenya. Don't get us wrong: UBI may indeed be among the policy solutions that work. But, in future-of-work policy deliberations, "solutions" such as UBI often precede a reasoned and methodical discussion of exactly what problems we are trying to solve.

Putting the Cart Before the Horse

Solutions cannot come before a clear understanding of the problem. What is required are more foundational — and inclusive — discussions and society-wide debates that would help identify the most important questions and more generally establish priorities to guide how scarce resources should be allocated.

We have found that policymakers often fail to ask questions and are often uncertain about the variables that underpin a problem.

In addition, few of the interventions that have been deployed make the best use of data, an emerging but underused asset that is increasingly available as a result of the ongoing digital transformation. If civil society, think tanks and others fail to create the space for a sustainable future-of-work policy to germinate, "solutions" without clearly articulated problems will continue to dictate policy.

The 100 Questions Initiative

Over the past six months, TheGovLab and the Bertelsmann Foundation engaged with more than 100 "bilinguals" — practitioners across fields who have both domain knowledge and data science expertise. We used a participatory and iterative process to harness the power of collective intelligence and to compile a set of questions that could be transformative if answered.

Our 100 Questions Initiative seeks to interrupt this cycle of preoccupation with answers by ensuring that policymakers are, first of all, armed with a methodology they can use to ask the right questions and from there, craft the right solutions.

We are now releasing the top 10 questions and are seeking the public's assistance through voting and providing feedback on whether or not these are really the right questions we should be asking:

Preparing for the Future of Work

1. How can we determine the value of skills relevant to the future-of work-marketplace, and how can we increase the value of human labor in the

21st century?

2. What are the economic and social costs and benefits of modernizing worker-support systems and providing social protection for workers of all employment backgrounds, but particularly for women and those in part-time or informal work?
3. How does the current use of AI affect diversity and equity in the labor force? How can AI be used to increase the participation of underrepresented groups (including women, Black people, Latinx people, and low-income communities)? What aspects/strategies have proved most effective in reducing AI biases?
4. How do automation and digitization impact income inequality? How can workers from all backgrounds benefit from technological innovations in the world of work?
5. What factors hinder women's participation in the labor force? How do these barriers impact women's work in the future and their career trajectories? What policies or programs can facilitate women's work and remove barriers to their work and careers?
6. What new systems of education and training could help workers reap gains from technology and automation?
7. How can we demonstrate the relationship between skills gained and economic mobility? What characteristics of retraining programs produce equitable outcomes for workers — across a range of demographic and professional characteristics — and what is the impact of these educational/training programs and vocational schooling?
8. Who determines the legal and governance frameworks, as well as the ethical conditions under which technologies are developed and used, and how can we make these decisions more democratic? What legal gaps need to be identified and filled in order to protect the labor market and society from any negative effects of technology? What aspects of and practices from international law can help mitigate the impact of technology and automation on workers and the labor market?
9. What does a labor force that is resilient to technological, financial, health or other shocks look like?
10. In what ways will technology and automation widen or narrow gaps between developed and developing nations? What steps can developing countries take to harness and apply new technologies?

The 100 Questions Initiative is not just about becoming more methodical and less driven by buzzwords. Rather, we want to prioritize questions that can steer the creation of purpose-driven data collaboratives for policymakers to incorporate into their own decision-making.

While this project has channeled the expertise of 100 "bilinguals," future systems and practices could be developed to ask the right questions — and solve for the

right variables — at scale. Indeed, as policy challenges grow increasingly complex, this approach will seem not optional, but necessary.

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Jeffrey Brown leads the technology policy portfolio at the Washington, D.C.,-based Bertelsmann Foundation. He works with stakeholders in Europe and the U.S. to build policy around new technologies and the future of work.

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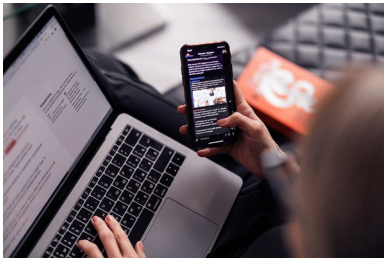
How Businesses Can Use Social Media Influencers

Sara McCorquodale,
CEO and Founder of CORQ

The concept of influencers is rapidly gaining ground in marketing. Some say that in a couple of years, the majority of online advertising will be done through influencers.

Yet as businesses try to figure out how to convert influencers' huge armies of followers into customers for their products, many are finding that it is not straightforward.

Sara McCorquodale is the author of Influence: How Social Media Influencers Are Shaping Our Digital Future.



Often brands will look at an influencer, they'll look at that large follower number, and they'll say, we want to reach all those people. Whereas actually, if I'm working with a brand, I'll look at the quality of their commercial work. Photo: Unsplash

MCCORQUODALE: I think that the influencer industry is slowly becoming the advertising industry and slowly becoming the marketing industry. By the time that we get to the end of 2021, agencies and brands will be dedicating more and more of their budget to supporting influencers. It has become an industry. There's no other way to describe it.

More and more people are buying products off of their social media feeds, as opposed to going directly to websites — that's where the customer journey starts. So if you are a CMO or the head of a brand, you're thinking, OK, I need to find my customers.

And at this point, many of these customers are not on the high street, so they can't rely on footfall. But they are on social media, and they are tuning to these influencers by the millions. It's quite a logical point of view to say "I need to get in front of these people," and a really good way to do that is via influencer channels.

A Big Following Does Not Always Result In Being an Influencer

BRINK: You would assume that someone with a large following is automatically an influencer, but you say that's not the case?

MCCORQUODALE: Not necessarily. Some people turn to YouTubers or celebrities because they want to be entertained. They don't want to be sold to. They're not looking for lifestyle advice. And they don't trust that YouTuber to recommend a face cream, or a garment or a place to buy their groceries. They are tuning in because they want that person to amuse them.

In contrast, there are many others who have turned themselves into lifestyle editors. They're doing the job that magazines have done for decades. They're saying, if you look across the market and you see that there are hundreds and thousands of face creams, actually these six are the best, and here's why.

That's not to say that the entertainer can't necessarily influence their consumer behavior, or perhaps suggest a product to them. But it would have to be done in a very different way, so that they didn't turn off the consumer.

A lot of the influencers with highly engaged audiences have often picked a niche. So even if that influencer has only 40,000 followers, those are 40,000 very invested followers. And that's a valuable thing.

Finding the Right One Is Trial and Error

BRINK: How does a business decide which influencer will help it to sell a product and is, therefore, worth investing in?

MCCORQUODALE: This is a very experimental space. Any brand taking its first steps into influencer marketing should be aware that it is very unlikely that they're just going to hit a home run in their first few campaigns. You might see an influencer who, on the surface, seems to align very well with your brands — they have a similar ethos to your company, they are ticking all the right boxes for you — so you put your product in their hands and create content, and it could do nothing.

There's a very fashionable jewelry brand, which has a kind of cool-girl look, but it's not the obvious influencers who are driving sales for them. It's very much your girl-next-door YouTubers. And they only realized that because they started to experiment.

Often brands will look at an influencer, they'll look at that large follower number, and they'll say, we want to reach all those people.

Whereas, actually, if I'm working with a brand, I'll look at the quality of their commercial work. Often the commercial work isn't necessarily of the same quality as their organic content, and you need them to bring that same level of quality. You need someone who's going to take that same level of care and apply that creativity to an advert in the same way that they would an organic post.

The Need For a Hook

Secondly, you have to have a hook.

For me, the hook is what is often missing in influencer campaigns. So, I think especially in the first decade of influencer marketing, what you might find is a brand would just say to an influencer, I want you to advertise this shampoo.

And the influencer holds up the bottle of shampoo on Instagram and says, "Oh, I really love this shampoo. I use it all the time." And unsurprisingly, they get nowhere near the same engagement as their organic content. They have lots of negative comments under the post, and the whole thing just feels contrived.

Whereas, if you were a shampoo brand and you were aiming at an audience

that really cares about, let's say, zero waste, and you were giving your customers a bottle, and they sent away for refills, instead of buying a new plastic bottle every time, then it would make sense for you to work with an influencer who has a history of talking about living a zero-waste lifestyle.

Someone who has authority in that area. Someone who walks the walk and, therefore, their audience is going to listen to them when they talk about your brand. Because they are probably very choosy and specific in the way that they live their life.

So, it's looking for that hook, whether it's in an influencer's lifestyle, whether it's in something to do with their personal history, you have to find the point at which your brand naturally intercepts with the influencer's narrative. That will create a good narrative, which will create a good campaign.

Risky Relationship for a Brand

BRINK: It's not a risk-free relationship. Presumably it can actually backfire for some brands?

MCCORQUODALE: Oh, it's enormously risky. Because at the end of the day, you're working with people, and people are risky!

People can change their minds. People can spell your brand name wrong. They can get the handle of your social accounts wrong. It's not like a brand working with a publisher, where you can look at the past 10 years of Vogue and you know what's coming in next month's edition.

When it comes to an influencer, they could turn around tomorrow and decide to completely change the aesthetic and focus of their content.

And on top of that, you see influencers constantly making gaffs on social media. You see historical tweets emerging from years past where influencers have been racist. So you have to know who you're working with.

BRINK: Where is this industry heading?

MCCORQUODALE: In 2019, I forecast that we would see a widespread political awakening of influencers across the board. And definitely the growth of the Black Lives Matter movement, and coronavirus, actually, has accelerated this. It's very difficult now to work with an influencer who hasn't expressed some kind of political view, be that party political or related to topical issues.

And they will readily criticize brands, in a way they never had before. These days, influencers' audiences, more and more, want them to have an opinion. It's not just about, I'm wearing this outfit, I'm buying this skincare, I'm going to this restaurant anymore. They want them to express an opinion. They want to get a sense of them as a real person.

And with that comes an element of risk, particularly if, for some brands, they do not want to align with any kind of politics.

We're definitely seeing a greater crossover where influencers have used social media as a springboard and now they are crossing over to traditional broadcasters. And their aim is to become household names.

Gen Z Is Grittier and More Value-Driven

If you look at millennials, they came of age or graduated into the 2008 recession. And a lot of them switched off from that enormous problem and created these worlds online. So, you saw so many people who were documenting these idealistic, incredibly perfectionist lives on Instagram. And turning their backs to what was happening in the real world.

Whereas Gen Z has done the exact opposite. They are facing it head on. And they're saying, we need solutions to these problems. We need solutions to the mental health epidemic. We need solutions to gun violence. We need solutions to racism. And they're very, very vocal about it.

Those Greta Thunberg-style influencers who see social platforms as a way to effect change by building large digital audiences, and then using that to get their message into mainstream media — they're actually developing this whole notion of digital influence in a much more effective way than their millennial predecessors did.

Brink News

About the Author

Sara McCorquodale
CEO and Founder of CORQ

Sara McCorquodale is the CEO and founder of CORQ, an influencer intelligence and digital trends service used by brands such as the BBC, Deliveroo and Bumble. She is also a journalist, visiting lecturer in digital strategy at the University of Roehampton and non-executive director of River Cottage.

AI Could Be As Harmful As It Is Helpful — Depending on How You Use It

Ben Hoster,
Director of Transformative Technologies at Marsh & McLennan Advantage;
Richard Smith-Bingham,
Executive Director of Insights, Marsh & McLennan Advantage

An employee transports parcels from a conveyor belt to an automatic robot at a warehouse in Wuhan, Hubei province. Photo: Wang He/Getty Images

Artificial intelligence has embedded itself into the business landscape. No longer the purview of Big Tech companies alone, firms across various industries are actively integrating AI into their processes, acquiring tech startups and scouting opportunities to deploy the technology in the near future. COVID-19 has only accelerated this trend as businesses have had to contend with plummeting revenue and workforce restrictions.

But as companies increasingly look toward AI to solve business challenges and increase their profitability, what risks will they face? How might they mitigate such risks? What else should business leaders take into consideration?

Balancing Public Health and Individual Liberty

Despite the substantial benefits that the technology promises, AI deployment without safeguards poses risks at all levels of business, especially for traditional, non-tech companies. To limit severe financial and reputational harm, it is crucial that companies weigh the many benefits of AI use against the risks intrinsic to its use, as well as associated concerns from the broader community. Consider, as one particularly pertinent example, the myriad ways wherein AI has been deployed in response to the global pandemic: from contact tracing to enhanced infection risk profiling, those who develop and use such cutting-edge techniques must carefully balance the dual imperatives of public health and individual liberties.

Defending the Decisions of Algorithms

Given the self-learning and automated nature of AI, a well-known concern associated with the technology is that of "explainability," especially with public-facing "black box" AI models that make decisions on sensitive or consequential issues such as job recruitment, credit risk assessments and medical diagnoses. A lack of transparency and traceability, particularly when using externally procured applications, exposes businesses to significant reputational harm.

For instance, numerous controversies in recent years have shown us that AI systems can inadvertently generate biased and potentially discriminatory outputs that exacerbate or even perpetuate inequalities. Organizations, especially when such adverse

outcomes to customers and staff are possible, must be able to explain and defend algorithm-based decision processes and their output to a range of stakeholders, including subject-matter experts and even the legal community in cases of alleged malpractice. Big-name tech firms with dedicated AI specialists on hand have long struggled with this issue; non-tech companies are also at risk of intense public scrutiny and brand damage.

Cybercriminals Exploiting AI

Cyber risk is also a significant threat to companies using AI, especially with the rush toward digitization during the COVID-19 lockdowns. In fact, participants in a survey of more than 12,000 business executives rated cyber risk as the top risk for doing business in the U.S., the U.K., and Canada — among other developed economies — over the next decade. The growing use of AI in critical business operations will only increase vulnerability to cybercrime as hackers can gain control of entire systems simply by manipulating their underlying algorithms. AI can moreover directly enhance the arsenal of cybercriminals who can now cause disproportionate levels of harm by leveraging the speed of decision-making enabled by automated programs. Smarter cyber threats, coupled with industry's growing reliance on digital capabilities, only escalate the risks to operations and revenue streams.

Beyond such technical hazards, businesses that adopt AI solutions, also risk reputational harm and revenue erosion if consumer data is used inappropriately or otherwise exposed. Some major tech companies have drawn sharp criticism over the last few years for allegedly misusing sensitive voice data recorded by their AI-powered digital assistants. Given Big Tech's enduring ability to generate insights from big data and exploit personal profiles in ways that consumers have not anticipated or accepted, such scrutiny will surely persist. This public outcry for data privacy will no doubt extend to non-tech firms in the future.

Lack of Holistic Governance Standards

Finally, due to the emergent nature of this technology, companies may find themselves deploying AI in rapidly evolving regulatory environments, complicating compliance efforts. The global fragmentation of data standards creates additional regulatory discontinuities across jurisdictions. Non-tech firms that are less familiar with international differences in AI-specific legislation may struggle to align their use of AI with shifting regional mandates, thereby necessitating decentralized, and often difficult and costly, policy rollouts.

These are just some of the threats to which businesses expose themselves should they attempt to realize the benefits of AI without implementing effective and holistic governance measures. Given the complexity of the technology and the pervasiveness of its potential perils in all aspects of operations, a multifaceted and dynamic approach to governance is required to manage AI risks. It is important that businesses evaluate their use of AI technology across five areas:

- Intent: Using data in a principled manner and verifying that AI design and implementation processes are ethically aligned and appropriate.

- Fairness: Ensuring that the processes and outputs of AI systems do not unwittingly discriminate against any group or individual.
- Transparency: Verifying that AI processes are explainable and repeatable.
- Safety/Security: Establishing robust capabilities in data governance, threat protection, and user privacy so as to better defend against malicious incursions.
- Accountability: Undertaking rigorous audit and compliance assurance processes to assuage the concerns of various stakeholders — lawmakers, auditors, customers, business partners and shareholders, among others.
- To activate effective governance aligned with these principles, organizations must additionally implement supporting infrastructure and processes, including an oversight committee, a risk register and testing and analytics. Training should also be provided for staff involved in development and management of AI such that they can proficiently handle the dynamic risks that this technology presents.

By framing the management of their AI solutions around the five dimensions outlined above and instituting proper governance mechanisms, businesses can ensure that they do not expose themselves to undue risk, or worse, inadvertently cause harm to broader society. In doing so, they will be able to rest easier when procuring, developing and implementing new AI solutions.

A version of this article originally appeared on NACD BoardTalk blog.

Brink News

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We Should Design Cities for Short-Distance Travel, Not Faster Speeds

Adie Tomer,
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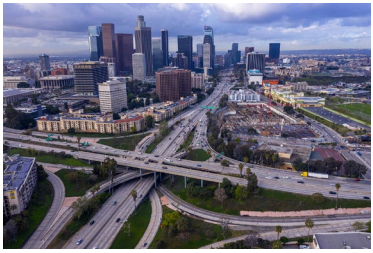

Freeway traffic flows lighter than usual on the 110 and 101 freeways before the new COVID-19 restrictions went into effect in California. Photo: David McNew/ Getty Images

The COVID-19 pandemic and recession have initiated the most consequential transportation upheaval of our lifetimes. Stay-at-home orders, job losses and public health fears have meant fewer vehicles on the road, a surge in e-commerce deliveries, frightening drops in transit ridership and a genuine biking renaissance. They have also delivered the holy grail for many transportation planners: roadways without congestion.

Yet even as drivers enjoy free-flowing traffic, long-standing structural concerns in transportation remain. Decades of suburbanization and highway investment have stretched the distances between where people live and where they want to go. The result is a transportation system that is a top source of pollution and unintentional death, strains household budgets and public coffers, and gives consumers little transportation choice.

In other words, the pandemic has proved that solving congestion doesn't solve our bigger transportation problems.

Overcoming those structural issues will require a new approach in how policymakers, planners, and other leaders design, build and pay for our transportation networks and the neighborhoods they serve. Metropolitan America needs an approach focused on proximity and bringing people and places closer together. This means we can no longer make congestion our top priority; we need to build cities for shorter-distance travel.

The Flaws in Focusing on Congestion

Today's structural problems have their roots in how we measure the performance of our transportation networks and prioritize faster vehicle speeds. Governments tend to use a system called "level of service" (LOS) to measure congestion, which isn't too dissimilar from the color-coded traffic indicators in a GPS map app. Essentially, LOS delivers higher scores for roads where traffic can more frequently reach posted speed limits. Transportation analysts then use LOS results to judge where to make infrastructure investments and inform the kinds of congestion indexes that the media cites.

No one likes being stuck in traffic, but this congestion-focused approach is flawed from the start. LOS and congestion indexes fail to inform practitioners about where travelers start their trips, where they end those trips or why they're traveling in the first place. There is no recognition of the interplay between physical design and travel behavior, nor is there a recognition of broader economic, social or environmental goals. And with Americans regularly wasting more time in traffic than ever before, the approach doesn't even work.

Tracking Travel Behavior

Fortunately, new technology can support a new approach. The emergence of anonymized geolocation data allows practitioners and researchers to better track travel behavior at a regional and neighborhood scale, measuring exactly when, where and how far people travel every day. The COVID-19 pandemic has been the grand demonstration of this data's power: Media outlets worldwide have used geolocation data to demonstrate how many people were staying home, where people were congregating too much and a host of other measures.

Using those same kinds of data, it's now easier to compare trip distances across metropolitan America — and study how planning decisions impact people's behavior.

In an October report, we analyzed travel patterns in six U.S. metro areas using geographically granular geolocation data (Table 1). Using a pool of 71.5 million daily trips, we found that the average trip in these six places spanned 7.3 miles and lasted 15.5 minutes. But it was also clear that metro areas with less congestion also force residents into longer-distance trips. It's nice that Kansas City, Mo., drivers encounter less rush hour congestion than their peers in Portland, Ore., and that they save 2.5 minutes per trip — but they're also likely to travel 1,600 more miles per year. Subsequently, Kansas City residents are likely to spend more money on gas and vehicle maintenance, consume more energy and see their local governments devote more money to maintain more infrastructure. So who's really winning?

Table 1. Travel summary statistics, six metropolitan areas

Metro Area	Total trips	Average distance (mi)	Average duration (min)	Average speed (mph)	Daily mileage per capita	Travel time index rank*
Birmingham-Hoover, AL	3,456,412	7.5	12:13	36.8	23.8	83
Chicago-Naperville-Elgin, IL-IN-WI	27,227,092	7.3	18:54	23.3	21.0	16
Dallas-Fort Worth-Arlington, TX	20,442,486	7.5	12:35	35.5	21.3	23
Kansas City, MO-KS	6,478,170	8.2	13:50	35.0	25.2	71
Portland-Vancouver-Hillsboro, OR-WA	7,178,101	6.2	16:00	23.3	18.4	7
Sacramento--Roseville--Arden-Arcade, CA	6,759,309	6.8	13:07	31.1	20.1	21
6-Metro Area Totals	71,541,570	7.3	15:29	29.3	21.3	---

**: The ratio of travel time in the peak period to travel time in free-flow conditions; a higher number indicates less congestion*
Source: Brookings analysis of Census Bureau, Replica, and Texas A&M data.

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How Travel Behavior Changes by Neighborhood

Another advantage to geolocation data is it allows us to compare travel behavior among individual neighborhoods, which in our analysis totaled 5,257 census tracts. We cross-compared that enormous sample size with a wealth of geographic and demographic characteristics.

Subdividing these neighborhoods by their average trip distance offers two vital takeaways (Table 2). First, neighborhoods associated with longer-distance trips do enjoy faster travel speeds, but their total travel time is often longer. In other words, there's little to no time savings to counterbalance all the extra miles traveled. Second, physical design matters: Neighborhoods with shorter-distance trips tend to have greater population densities, are situated closer to downtown and contain more intersections — all features of more proximity-focused designs.

Table 2. Neighborhood characteristics, by average trip distance and census tract, six metropolitan area groups

Distance Group	Tract count	Average trip duration (min)	Average trip speed (mph)	Average distance from downtown	Population density	Intersection density
Under 5 Miles	691	15:05	18.1	6.5	16,012.4	411.1
5 - 6 Miles	1,209	13:36	24.4	10.5	8,238.4	254.7
6 - 7 Miles	1,225	13:49	28.2	14.8	5,219.0	176.7
7 - 8 Miles	824	14:55	30.1	18.7	3,512.8	128.2
8 - 9 Miles	509	16:37	30.6	22.3	2,097.0	81.3
9 - 10 Miles	276	17:29	32.4	24.6	1,452.6	66.2
Over 10 Miles	523	21:57	32.9	33.7	1,315.8	61.5

Source: Brookings analysis of Census Bureau and Replica data.

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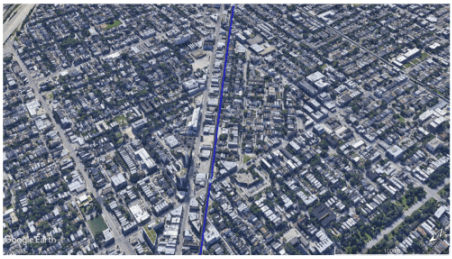
Comparing two specific neighborhoods can illustrate the relationship between physical design and local travel behavior. For example, Chicago's Logan Square neighborhood — which was designed for pedestrians and transit use, not cars — ends up having much shorter trips than a suburban peer like Roselle, Ill., which filters traffic to a highway and other wide roads.

Logan Square, Chicago



Roselle, Ill.

Source: Google Earth.

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Considering these findings, metropolitan planners, elected officials and other partners should want to create more neighborhoods like Logan Square. Neighborhoods designed at this scale are more socially inclusive, more environmentally resilient, require less infrastructure per capita and are safer for all. Our findings also reveal why chasing congestion reduction is a fool's errand: Communities will lose many benefits of proximity while mostly failing to give residents shorter travel times.

The New Indicators of Success

Practitioners at all levels of government need a new approach to performance measurement, one that will help build more proximity-focused neighborhoods and downplay the importance of congestion reduction. We recommend any performance measurement suite include three key guiding principles:

- Practitioners should use anonymized geolocation data to accurately measure travel behavior at the neighborhood scale and make inter-neighborhood comparisons.
- Practitioners should build accessibility indexes to measure the number of key destinations someone can reach by multiple modes within certain distances and times.
- A database should include a broad range of complementary datasets — industry location data, sidewalk quality, property values, etc. — to compare how infrastructure supply, neighborhood conditions and travel behavior interrelate.

Some of this work is already underway. California is now testing a transition to a "vehicle miles traveled" (VMT) measurement scheme to replace LOS. Many other cities and states have general VMT reduction targets. Even if there's no example of a complete implementation of a new measurement approach, practitioners are moving in the right direction and emerging data will make it possible.

The COVID-19 pandemic and recession will not last forever — and once they're over, it's reasonable to expect that congestion will return. When that happens, we must resist the urge to keep trying to "solve" congestion. Instead, let's address the inequities that existed before COVID-19. Connecting people to opportunity, reducing our fossil fuel use, and saving everyone money are benefits too good to ignore.

A version of this article first appeared on the Brookings website.

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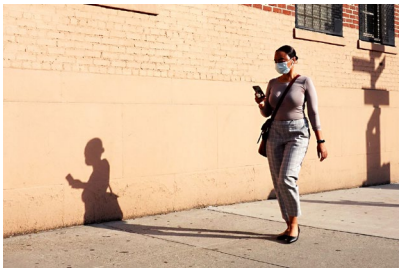
The Data Economy We Need: Local and Distributed

Douglas Elliott,
Partner at Oliver Wyman

Cooperatives can protect individual rights in the information age just as unions did in the industrialization era, says MIT's Sandy Pentland.

Data has grown so pervasive as to seem to threaten human agency through the power of tech giants or an invasive state. Yet Pentland, a professor who co-created the MIT Media Lab and still runs its entrepreneurship program, hasn't lost his belief in the power of data to improve human understanding and well-being.



A person wearing a protective mask walks while looking at a cell phone in New York City. Photo: Cindy Ord/Getty Images

"What motivates me is there's always huge public good you can get from data, but it's endangered by mishandling privacy," he says. "So you have to focus on privacy to get the architecture right to capture the public good."

Pentland discusses how distributed systems, in which information is not centralized in any one entity's hands, can help society unlock the benefits of data while avoiding abuse in a conversation with Douglas J. Elliott of Oliver Wyman.

What Happened to Silicon Valley?

ELLIOTT: Silicon Valley used to be seen as an area of promise. Now it tends to evoke surveillance, misinformation, monopolistic power. What happened?

PENTLAND: Silicon Valley is set up to innovate, but it relies on society, markets, and government to push back and keep it a force for good.

We've been here before. Back in the 1870s, big banks came into being and exploited farmers in ways that provoked them to set up their own banks. That's where credit unions and agricultural banks come from. The same thing happened with labor around 1900 and big industrialized firms. People pushed back and we got labor unions and labor law.

Now we have a couple of Silicon Valley guys that have taken over what's a major means of production — data — just like money, just like labor. We need to balance the data needs of society. The value of data is not just money, it's helping kids get educated, helping us stay healthy and have a sustainable future.

ELLIOTT: How do we strike a new balance?

PENTLAND: What's different today is we can pull much more data and measure things in granular detail, like inequality. You can ask if a government policy is helping people or not. I expect to see that tax policy will be based on companies' effects on society. Digital taxes that the OECD and France and others are proposing are first examples of that.

Governments are saying, "Well, you're delivering the service, but none of the profit or pay sticks here. Without local taxes, how are we going to educate the next generation? We have to extract some tax to keep your customers alive." There are debates about the gig economy, about who contributes to retirement funds. Those are the big issues, and data is at the core of them.

The Role of Data in the COVID Context

ELLIOTT: The pandemic has been a great test case for the use of data. What lessons have we learned?

PENTLAND: We have not been very successful at using data for management of the disease. We've been using models that are much too simple. The places where data did help is in the analysis of proteins and the virus, where you had data-sharing among academic units.

ELLIOTT: How do you feel about vaccine passports?

PENTLAND: One of the fundamental questions is, do you want to create a national registry of people who are vaccinated or have antibodies? I would say no, because one of things that goes along with that is contact tracing. Would we want the government to know everybody in the whole country and who they spend time with? Not in my country.

The way to handle this is analogous to using a credit card. Mastercard, for instance, doesn't know how much money you have in your bank account, but they know to ask the bank and the bank says yea or nay. Similarly, when you present your COVID pass, the verification software should ask the place where you got your test or shot, and they'll say yea or nay.

The Value of Data Cooperatives

ELLIOTT: You're a big proponent of data cooperatives. Why?

PENTLAND: Data is much like money. Money is only valuable if you can get enough of it in one spot. So, we formed banks. They don't own our money, but they can aggregate it, invest it, and they're audited and regulated, so it's safer than your mattress.

You need the same help to manage data. It's too complicated for anybody to understand what the choices are. And the value comes from aggregates, not from individuals. So, you have to have a trusted way of doing that. Finance has this notion of fiduciary, somebody who acts on your behalf legally and is obligated to do the best for

you. You need that sort of thing around data.

People say, "Wait a second, these data banks are going to sell my data?" No, you almost never need to move data. What you want is to be able to get insights from the data. So, if somebody wants to ask if the hospital is delivering good health care, you don't give them people's individual health data. You give them statistics about health in each neighborhood, and that's enough to have a fact-based discussion with the health authorities. Similarly, if you're talking about advertising, the fiduciary would be a buffer between you and the digital firm.

ELLIOTT: Would people have one data co-op to deal with the full range of requests, or do you think people might have, say, six different co-ops?

PENTLAND: They could easily have six because data about what I eat isn't particularly interesting to figure out what I buy or where I work. People have personas. There's the work me, the family me, etc., and they don't need to be connected.

The proposals we have for digital identity are segmented because the correlations between them are very low. It's a way of blocking abusive practices and building resilience in the system. You want to have a distributed system that holds your data and helps you do things. You don't want that to be in any one person's hands or in only one place to attack.

ELLIOTT: Are there examples of successful data co-ops, or are they more theoretical at this point?

PENTLAND: The short answer is not really, but there's a huge amount of activity in this area. We're working with co-ops to help local investment. We're working with digital artists like musicians and so forth to be able to own their data and have a more efficient market for it. There's huge excitement in the legal and regulatory domain about this, so this is coming. It's part of the European Union's 2021 guidance for regulation, and part of the California privacy law.

The form of those co-ops isn't fixed. A bank could begin holding data for you. Why not, if you trust them? Phone companies are always interested. And then there are community organizations.

ELLIOTT: It's interesting that a number of systems for digital identity around the world tend to be based around banks or telecoms, or a combination of the two.

PENTLAND: Usually it's banks, telecoms, with some government. And as medicine becomes more plausibly digital, you'll see that coming in, too. Those are probably the most important data sources for most people. And it's good that these are multiple industries, because one database could be compromised, but those other two would still work.

A version of this piece was originally published on the Oliver Wyman Forum.

Brink

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Douglas J. Elliott is a partner at Oliver Wyman. He focuses on public policy and its implications for the financial sector. Elliot has written and spoken extensively on the impact of recent political developments on financial institutions

A Pro-Nature Economy Will Create Jobs and Prosperity

Margaret Kuhlow,
Finance Practice Lead at World Wildlife Fund

An aerial view of illegal deforestation at the Natural National Park in Colombia. Photo: Raul Arboleda/AFP via Getty Images

Financial decision-making has largely ignored our dependency — and impact — on nature. As a result, we're now on course to destroy the very ecological wealth that has underwritten millennia of human progress and prosperity. But 2021 could be the year we choose a better path.

Be Clear About What We Stand to Lose

First, let's be clear about what we stand to lose. The benefits that nature provides — crop pollination, water and air purification, pest and disease control, climate regulation, storm surge protection and so much more — are essential to everyday life. These ecosystem products and services are also the life blood of our economy: Roughly $44 trillion of the world's economic output, or a little more than half of global GDP, is either moderately or highly reliant on the bounty that nature provides.

We seem to have forgotten the simple rule not to eat your seed corn. Unsustainable economic activities, from deforestation to agricultural expansion and intensification, land use change and overfishing, are exploiting our natural assets faster than the planet can restore them. We are consuming the very asset base from which we are building our future.

Wildlife populations monitored for WWF's biennial Living Planet Report have declined on average by 68% since 1970.

Meanwhile, collapsing ecosystems have put a million animal and plant species on track for extinction, and extreme weather events from fires to floods exacerbated by climate change are roiling the face of our planet as never before, costing us billions.

Major Source of Systemic Risk

These negative impacts are clearly a source of systemic risk and instability for markets and the financial system. Anyone who still doubts that need only step outside and take a stroll past the countless businesses shuttered in response to COVID-19 — a virus that jumped from animals to humans in a cycle made more likely by humanity's continued incursion into nature. Indeed, the pandemic illustrates why any viable, large-scale solution to environmental degradation will require more than simply a shift to more sustainable business practices.

It doesn't have to be this way.

At the cost of $2.7 trillion per year, we could transition the world's economies through a combination of ecosystem restoration, regenerative agriculture and circular business models. If $2.7 trillion sounds like a lot of money, that's because it is. But flash-forward just one decade: By then, our nature-positive global economy will have created 395 million new jobs and will be generating over $10 trillion in annual business value. Soon, we'll have made our money back and then some, all while ensuring a healthy, clean and secure future for people and nature.

Now compare that to the cost of doing nothing.

If nature's decline continues unchecked, annual economic losses could soon surpass $479 billion. By mid-century, the total cost could reach $10 trillion. In other words, we can work toward a future where we rake in an additional $10 trillion each year, or we can live in a future where we set that $10 trillion on fire. The choice seems clear.

What's Holding Us Back?

We know that nature-related financial risks have a material influence on society and economies, but we can't manage what we can't measure. How, exactly, can a company identify and quantify both its dependencies and impacts on nature? How can a financial institution capture that information to make judgements about the risks it takes or impacts it enables? And what do those risks and impacts mean for regulators once aggregated across the system?

Those are tough questions, but we have already faced a similar conundrum in assessing the risks and opportunities that arise from climate change.

The Task Force on Climate-Related Financial Disclosures (TCFD) was created to improve and expand the reporting of climate-related financial information, providing investors with the data and information needed to understand the risks they might be taking on, and for regulators to better understand and respond to the financial system risks of climate change.

A Task Force on Nature-Related Financial Disclosures

The market needs a similar mechanism for nature.

Building on the model of the TCFD, together with the UN Environment Programme Finance Initiative, UN Development Programme, and Global Canopy, WWF co-founded an informal working group of more than 70 banks, insurers, asset managers, companies, governments and regulators. This year, the group plans to formally launch a Task Force on Nature-Related Financial Disclosures (TNFD) designed to fill the data gaps that currently prevent financial institutions from better integrating nature — business dependencies, impacts and risks — into their decision-making.

In doing so, the TNFD will help shift finance away from unsustainable economic activities to activities that better align with the Paris Agreement, the Convention on Biological Diversity and the UN Sustainable Development Goals.

Finance is a powerful lever for change. Pull it in one direction and you shift humanity toward infinite consumption on a finite planet — rather like taking a long walk off a short pier. But, pull the lever in the other direction, and you can shift the entire global economy from nature-negative to nature-positive, with clear benefits for nature and people, our communities and our economies.

Only the collective clout of government, industry and civil society can budge that lever. That's why we urge leaders gathering this year for discussions in the G-7 and G-20, at the United Nations General Assembly, and at several critical summits on the environment and climate, to seize this historic opportunity to change the way we interact with the natural world around us and deliver the promise of the Sustainable Development Goals: prosperity for all on a healthy planet. This could be our generation's greatest legacy.

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Margaret Kuhlow leads World Wildlife Fund's Finance Practice, providing strategic direction and leadership to WWF's global engagement with the finance sector. She has lived and worked extensively in developing and emerging markets, and has broad experience in sustainable investment and development finance.

Asia's Workforce Is Rapidly Aging — And Many Countries Are Not Ready

Alicia García-Herrero,
Senior Fellow for Bruegel and Chief Economist for Asia Pacific at Natixis

A pedestrian walks in a street in Tokyo. Photo: Charly Triballeau/AFP via Getty Images

Many Asian economies will age more rapidly over the next several decades, including Hong Kong, Japan, Mainland China, Singapore, South Korea, Taiwan and Thailand. For all of these countries, the working-age population peaked in 2015 and will decline at an accelerating rate in the coming decades. By 2050, the proportion of elderly in their populations is expected to increase to 27% — from just 7% in 1995.

A Nataxis report recently explored the consequences of this important trend at the macro- and sectoral-level. It showed that a reduced labor supply creates a drag on growth. But this can be mitigated by higher labor participation, capital investment and policies that address productivity.

Nonetheless, this is a gravity-defying act.

Aging Gracefully?

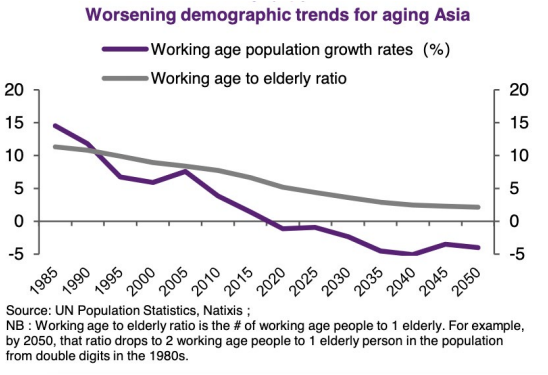
With fewer workers and an increased elderly population requiring more savings to sustain spending in retirement, greater pressure on public finances is to be expected. As such, the more prepared an economy can be while still youthful, the more likely it is to age gracefully.

Assuming all else is equal, the goal of rapidly growing GDP per capita and the standard of living becomes more difficult with lower potential output. Some Asian economies, such as China and Thailand, will still be in the "middle income trap" when they rapidly age.

The analysis of external savings — GDP per capita and pension systems — shows that most Asian economies are not adequately prepared for aging. Thailand is in the worst position for aging unlike Singapore, Taiwan and South Korea, who are better prepared.

The Need for Structural Reform

Japan's case shows that even when aging with a high income per capita, productivity tends to slow. As demand for health care increased, larger employment in the sector with lower productivity has reduced overall productivity. Furthermore, policies tend to favor the senior age group rather than the young age group, with larger expenditures in health care and pension than childcare and education.



Source: UN Population Statistics, Natixis ;
NB : Working age to elderly ratio is the # of working age people to 1 elderly. For example, by 2050, that ratio drops to 2 working age people to 1 elderly person in the population from double digits in the 1980s.

In turn, this has been a political roadblock to improving fertility. Rapidly aging population has also offset the efforts to lift the potential growth rate through increasing labor participation.

Therefore, without meaningful structural reforms in the labor market and deregulation, the Japanese economy could lose vibrancy as the population ages.

China's Dilemma

China will also age rapidly in the coming decades: By 2050, 1-in-4 people in China will be elderly compared to 1-in-10 in 2020. Any reduction in the supply of available workers will push up wage costs and drag down growth since the economy will have fewer productive adults.

In China's case, the deceleration of manufacturing productivity is more substantial than its decrease of output, which means that even as inputs — such as labor and capital — were growing, productivity was already weakening. Moving forward, population aging will further weigh on China's potential labor input, and thus weaken its existing competitiveness.

The economic transformation towards more capital and skilled-labor intensive activities will help buffer such a shock, but this needs a more efficient organization of factors to enhance labor productivity.

Another important consequence is the increased fiscal pressure. The immediate impact of the latter is likely to be limited, but over the longer term, the issue could become more concerning if the economy continues to decelerate.

The Silver Lining

Still, there is a silver lining to an aging Asia.

Japan is the pioneer in defying the gravity of aging on growth, with clear shifts towards health care on the demand side and robotics on the supply side. With a graying population, sales of pharmaceutical and medical equipment have grown, but the government has tamed the expense through price control.

Japan has also become one of the biggest producers and users of industrial

robots. With fewer workers, e-commerce will be essential to reduce costs and increase productivity. Although a shrinking population may be challenging for finance, automobile and lifestyle, evolving consumer patterns will bring opportunities.

The costs on health care have stimulated the demand for pensions and investment services, meaning asset management is more relevant than ever before. Car sales will also be supported by the popularity of mini-cars and the preference of ongoing driving by the elderly. In terms of lifestyle, travelling is the top choice among all hobbies for the retirees.

However, insurance, communication and education could all face pressure, with the need to transform their business models and increase their reliance on overseas markets.

Japan has shown a clear path of an aging society, but its example is not the only outcome. Taiwan shows that capital intensive sector specialization and industrial policies can also mitigate the impact of aging on growth. The reasons behind its sprouting technology sector are the heavy R&D expenditure and supportive government policies.

As such, Taiwan has managed to keep its growth of total factor productivity afloat alongside an aging population. From a global perspective, ongoing input for robotics will be one of the key game changers in industrial production and services.

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Alicia García Herrero is chief economist for Asia-Pacific at Natixis and a senior fellow for Bruegel. Previously she was chief economist for Emerging Markets at Banco Bilbao Vizcaya Argentaria. She is a non-resident fellow at Cornell's emerging market research centre and Senior Research Fellow at El Cano Royal Institute for International Relations. She is currently adjunct professor at City University of Hong Kong, visiting faculty at University of Science and Technology as well as at China-Europe International Business School.

Will Diversity, Equity and Inclusion Be Sustained?

Patricia Steis,
Global Risk Management Leader for Marsh's Southeast Region

To make DE&I a priority, leaders first need to recognize how a diverse team and stakeholders can improve a business's operations and increase resilience. Organizations can then determine the steps required to improve DE&I. Photo: Pexels

Diversity, equity, and inclusion (DE&I) are gaining traction in the business world. Following a year that highlighted inequity in health care and beyond, best-in-class organizations are continuing to refine their DE&I strategies, aiming to make their workplaces more inclusive and reflective of the increased diversity of the U.S. population.

The 2021 Excellence in Risk Management project, a joint collaboration between Marsh and RIMS, found that while companies have made progress on DE&I, numerous gaps and areas for improvement remain.

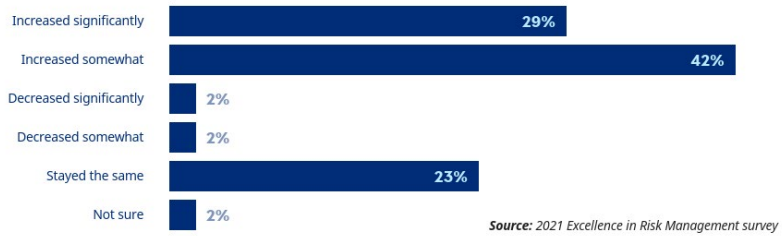
The Case for a DE&I Strategy

Why should organizations make DE&I a strategic imperative? Perhaps most importantly, fostering a diverse, equitable and inclusive culture is the right thing to do. And increasingly, employees, customers, investors and communities demand it.

There are also clear business advantages. Companies that prioritize DE&I and embed it within their business strategy are often better able to hire and retain talented employees to meet the needs and expectations of their customers, stakeholders and the organization as a whole. And because employees — especially ones from diverse backgrounds — at companies that prioritize DE&I have an enhanced ability to reach their full potential, they are also better positioned to help their organization improve performance.

Diversity of thought helps companies make strides forward. In fact, companies with diverse executive teams have been shown to perform better financially. One study found that the most diverse S&P 500 companies have better results and their shares tend to outperform firms that are less diverse. The study, carried out by The Wall Street Journal, also found that a diverse workforce can lead to better products and more innovation.

Considering these advantages, it is heartening that the majority of respondents to the Excellence survey said DE&I has increased in their organization; close to one-third of respondents said the increase was significant (see Figure 1).



Source: *2021 Excellence in Risk Management survey*

Addressing Risks Starts With Recognizing Them

Failing to effectively address this strategic challenge can threaten organizations socially and financially. In multiple conversations held as part of the Excellence project, C-level executives, risk managers and experts in the field underscored that lack of DE&I is a major challenge and can hold back organizations. And yet, just over half of survey respondents consider DE&I a core business risk.

With organizations, communities and individuals increasingly expecting businesses to be diverse, equitable and inclusive, a lackluster DE&I strategy — or the total lack of one — may lead to negative business outcomes. More companies are inquiring about the diversity efforts of current and potential business partners, and those that fall short risk losing existing clients and face difficulties attracting new ones. Organizations will struggle to attract and retain the best talent and face clear reputational risks for not getting DE&I right.

To make DE&I a priority, leaders first need to recognize how a diverse team and stakeholders can improve a business's operations and increase resilience. Organizations can then determine the steps required to improve DE&I. The Excellence report includes a number of recommendations, most of which do not require major investment. They do, however, require a clear commitment to make the right changes, including reviewing current recruitment and promotion opportunities for diverse individuals and ensuring representation across the organization.

The Public-Private Divide

The Excellence survey found that public companies tend to be more advanced when it comes to DE&I initiatives. Although two-thirds of private company respondents said that DE&I has improved within their organizations, less than half said their organization has a formal DE&I program or considers DE&I when hiring new team members.

It is, to an extent, understandable that public companies generally have made more progress. They are typically larger than private companies, and thus tend to have more resources. In fact, the Excellence survey found that larger companies were more likely to have a DE&I program. Publicly listed companies also tend to be under increased scrutiny by shareholders and the general public, which may lead to a heightened risk of litigation. According to one report, 99% of Fortune 500 companies have paid settlements in at least one discrimination or sexual harassment case.

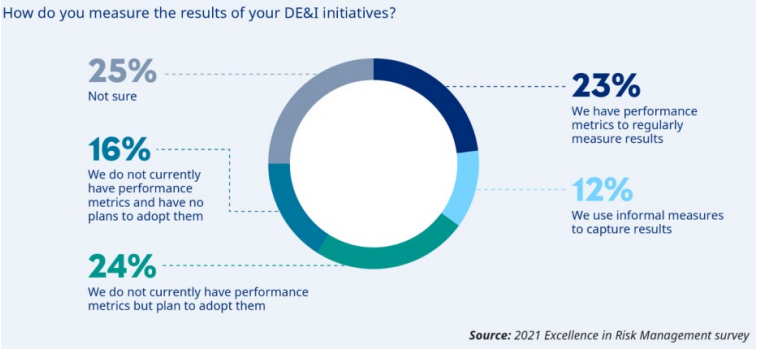
Private companies, however, cannot afford to be complacent. For example, those that plan to go public would do well to advance their DE&I journey before scrutiny increases.

And even those that have no immediate plans to go public should understand the financial and cultural advantages of instilling clear DE&I principles within their organization. Diversity of thought will help elevate their organization, both among employees and clients. And they will do well to prepare to someday face the same level of scrutiny experienced by larger companies.

Measurement Is Key to Improvement

Measurement and improvement go hand-in-hand. That's why it is concerning that less than a quarter of Excellence survey respondents said they have performance metrics to regularly measure the results of their DE&I initiatives (see Figure 2).

Regular Measurement Still Lacking



Some organizations struggle to understand what they should be measuring, while also being challenged to collect the right data, beyond demographic information. Understanding demographics is a good start, but it is not enough. To understand the effectiveness of DE&I initiatives, leaders require insight into areas such as promotion and retention rates and how these may differ among different demographic groups.

For companies with clear DE&I goals, measurement can help them remain accountable and ensure they are on the right track. Of course, leaders need to be committed to making changes based on the findings. It's essential to drill deep into the metrics and understand the reason for particular results. For example, if there is a higher churn among a particular employee demographic, data can help to understand why and develop changes to address the challenge.

Making DE&I initiatives successful over the long term requires a commitment to continuous evaluation and improvement, not start-and-stop efforts. Companies that prioritize DE&I will be better positioned for consistent and sustainable growth, while also contributing to a more just society.

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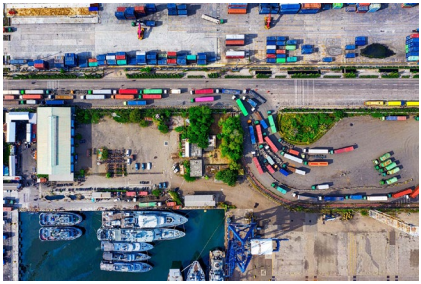
Patricia Steis is Global Risk Management Leader for Marsh's Southeast region, responsible for delivering risk advisory and brokerage services and solutions to Marsh's largest national and multinational clients in the Mid-Atlantic and Southeast. Patti has more than 30 years of leadership, risk advisory, and legal experience.

How Trade Tech Is Transforming Global Supply Chains

Alex Capri,
Senior Fellow at The National University of Singapore;
Wolfgang Lehmacher,
Operating Partner at Anchor Group



Global supply chains have been criticized for their vulnerability to shocks. A higher level of visibility is needed regarding the suppliers along the chain, their location, abilities and capacities, etc. Photo: Pexels

COVID-19 is often linked to its impact on mobility and globalization. Stringent measures have been taken to contain the situation, which have constrained the movement of people and goods, nationally and internationally. The coronavirus pandemic has also accelerated previously existing geopolitical trends, especially regarding trade protectionism associated with, for example, medical equipment, pharmaceutical products and COVID-19 vaccine-related research. This, in turn, continues to feed a techno-nationalist zeitgeist as governments resort to export controls and sanctions in "strategic" sectors such as semiconductors and 5G networks and other so-called "dual use" technologies.

This environment has created an acute demand for new and innovative management tools and systems to support good corporate governance and risk management practices. Governments also need to apply new technologies and tools to better fight COVID-19 and facilitate trade.

The emerging solution to manage the challenges of both COVID-19 and techno-nationalism are coming from a burgeoning new field called Trade Tech. The dynamics of the development in this field are captured in the new World Economic Forum report, Mapping Trade Tech: Trade in the Fourth Industrial Revolution.

Trade Tech

Trade tech leverages the internet of things (IoT), artificial intelligence, 5G, cloud-based platforms and other Fourth Industrial Revolution technologies to unlock new possibilities and enable transparency and traceability in digital trade and global value chains.

The importance of digital trade has also been outlined in a 2019 paper: Services trade is on a trajectory to outperform global goods trade. The authors of the report write: "In 2017, gross trade in services totaled $5.1 trillion, a figure dwarfed by the $17.3 trillion global goods trade. But trade in services has grown more than 60% faster than goods trade over the past decade."

Although differences between political and economic systems are on a trajectory of decoupling, and value chains are fragmenting around different standards and values — which will present challenges to trade tech — there will still be many opportunities to turn this field in a significant growth industry.

Three areas, in particular, offer great promise for the future of trade tech.

1. Expanding Upon Existing Supply Chain Technology

Visibility and data-sharing are critical for 21st century supply chain and logistics management. They allow companies to drive efficiencies, resilience and customer satisfaction. The complete end-to-end data, paired with powerful analytics, also enables compliance in export controls, denied parties, restricted entity and data privacy regulations. Advanced technology provides the components to realize innovative trade tech solutions to bring global commerce to a new level of performance and compliance.

Initiatives such as IATA's ONE Record in aviation or the TradeLens data-sharing environment for container ocean shipping intend to ease data-sharing and raise visibility. The maritime sector is also working on digital standards through the Digital Container Shipping Association (DCSA).

Global supply chains have been criticized for their vulnerability to shocks. While many argue that near-shoring is the solution, this is easier said than done. A higher level of visibility is needed regarding the suppliers along the chain, their location, abilities and capacities, the progress of orders and levels of material stocks, as well as the location and condition of goods in transit.

Compliance risk can be mitigated through unique digital trade identities. In a digital world with limited travel, it is hard to know with whom we are dealing. Privately, a Google or Facebook identity can be used across multiple applications. But big businesses need to establish and maintain thousands of profiles, one for each application they use. This comes at a heavy cost and not without risk. While we are lacking a neutral entity that issues standardized and recognized identities for businesses, more reliable product identity technologies have emerged. Startups like Evrythng and Santrust, for example, have developed immutable QR codes to ensure authenticity of products.

For some time, export software solutions have been helping companies and employees to increase efficiencies in document processing, execute export licensing and deal with denied parties lists. Compliance and performance traditionally go largely hand-in-hand, and many older, well-established software solutions will coalesce into new technology ecosystems.

2. Trade Tech Ecosystem

The new constraints and risks such as trading restrictions caused by the COVID-19 pandemic and techno-nationalism create opportunities for startups and innovative companies. A buzzword in the fintech industry is "reg-tech." Major banks are investing in know-your-customer, regulatory and onboarding technology to reduce risk and costs as part of the broader digital transformation agenda.

Blending reg-tech into the mix of trade tech solutions minimizes the impact of

regulatory scrutiny, while coping with the changes of procedures, laws and regulations. New export control-driven reg-tech involves work being done on microscopic tracking technology that can be placed inside the tiniest of sub-components and components, which then get subsumed within larger machines. These can be used to trace "end use" and "end users" of restricted technologies.

When sovereign interests and our own health are at risk, the stakes for private business are highest. With the expanded use of trade tech and reg-tech, the need for cybersecurity is also increasing, as the fight against cyber risk and cybercrime is fought with the most advanced and sophisticated "cyber weapons."

3. Beneficial Spillover From Trade Tech to Other Sectors

Data analytics services cut across major parts of supply chain networks throughout the global economy. With their industry-agnostic solutions, data companies drive progress and innovation throughout the world. Specialized companies fill data gaps with their own or third-party sensors and analyze newly created data along with data that is stored in traditional systems. These companies, such as Navis and FourKites are themselves innovators, but they also create the foundations for others to innovate on, across all industries.

Trade tech allows for the better management of sites, partners and activities far away. Technologies like 3D-printing, robotics and the internet of things allow for a much more distributed way of manufacturing and operating. While holding the global economy together, they also distribute the grounds for innovation and growth. Trade tech at large is driving many new solutions, ranging from better measurement and reduction of carbon footprints, to enforcement of labor standards, to tools that help to realize the circular economy — a model that fosters the reuse of products and materials to replace the take-make-waste approach.

A recent survey finds that 70% of supply chain leaders are planning to invest in the circular economy in the next 18 months. "Already, 35% of companies believe that digital technology will be a key enabler for their circular economy strategies, but very few are leveraging existing technology for this purpose yet," says Sarah Watt, senior director analyst.

Sensors and satellite imagery combined with other technologies that provide additional data points can be used to trace carbon footprints, illicit discharge and water pollution, and enforce environmental standards for sustainably caught seafood. Many of these same technologies can also be used to track controlled technologies, from an export controls perspective, throughout global value chains.

Conclusion

Techno-nationalism, accelerated by the COVID-19 pandemic, has disrupted supply chains and global commerce. But the need to manage new risks brings additional pressure for innovation to the trade tech field, which, in turn, has spawned new ecosystems of Fourth Industrial Revolution technologies and businesses. These solutions provide

transparency and traceability in supply chains, which facilitate commerce; as well as offering small- and medium-sized enterprises the possibility to better connect to the global marketplace.

Core elements of trade tech are expanding into new areas, creating new ecosystems and spilling over into other sectors, and have become important drivers on the journey toward a more just and sustainable economy.

This piece was originally published in the World Economic Forum.

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Here's How Emerging Technologies Will Impact the Future of Infrastructure

Blair Chalmers,
Director of Marsh & McLennan Advantage;
Lawrence Slade,
CEO of the Global Infrastructure Investor Association

Solar panels of a photovoltaic power plant are shown in Guignen, western France. Photo: Loic Venance/AFP via Getty Images

The transformative and disruptive technologies of the Fourth Industrial Revolution are reimagining the possibilities for the built environment. Advances in data proliferation, connectivity, automation and sustainability technology are disrupting existing markets and creating new ones altogether in many infrastructure sub-sectors.

The COVID-19 crisis is also causing profound shifts in societal needs and consumer demands, hastening the adoption of certain technologies that threaten to erode the market share of assets that were conventionally highly used. Taken together, these dynamics are now shaking long-held assumptions about the essential and monopolistic nature of some infrastructure services.

As noted in the recent report from Marsh & McLennan Advantage and the Global Infrastructure Investor Association (GIIA), Global Risks for Infrastructure: The Technology Challenge, these two forces have resulted in increased competition for owners and operators of certain assets while reducing or changing demand for others.

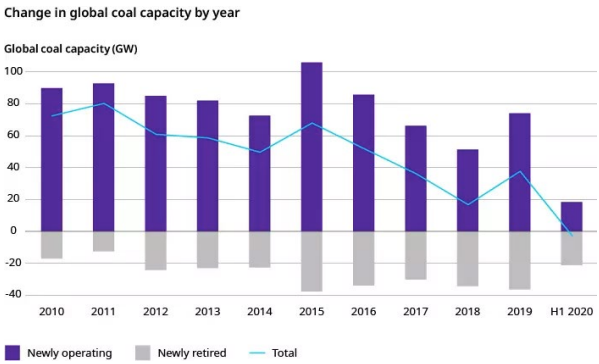
Yet the infrastructure sector has historically been slow to understand and adopt new technology. In 2019, the World Economic Forum remarked that it remains "one of the least digitally transformed sectors of the economy." This disconnect creates the potential for stranded assets — it is estimated that the disruptive power of renewables will strand almost $20 trillion worth of traditional fossil fuel-based energy assets worldwide within the next 30 years. As such, the time is now for the infrastructure sector to sit up and take notice of the risks that technological disruption entails.

An Evolving Competitive Landscape

Rapid technological developments have often lowered the traditionally high barriers to entry for infrastructure services that had previously been regarded as monopolistic in nature. As new technologies become cheaper or more efficient, opportunistic disruptors increasingly stake a claim for market share in many sub-sectors by offering attractive alternatives to existing products and services. This creates new risks for incumbent investors and raises hard questions about asset valuations and long-

term contracting structures.

Technological disruption is particularly relevant to the energy sector, with renewable energy and energy storage technologies making large strides toward cost and efficiency parity with fossil fuel-based electricity generation. According to the International Renewable Energy Agency, the cost of utility-scale solar photovoltaic energy fell 82% between 2010 and 2019, while new solar and wind projects are already cheaper than existing coal-fired power plants in many regions and new coal plants in all major markets. Consequently, global coal power capacity has fallen for the first time on record, with more generators being shut down than commissioned in the first half of 2020.



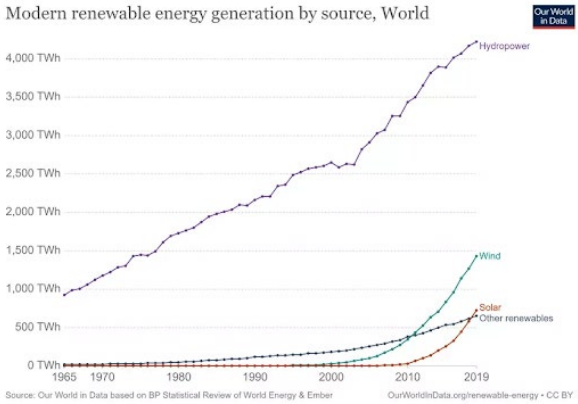
Global coal capacity by year; Source: Marsh & McLennan Advantage/Carbon Brief and Global Coal Plant Tracker

Renewable energy has already broken the monopoly of fossil fuel-based electricity generation by providing consumers with a genuine alternative that is moreover backed by the ongoing crusade against climate change. With green technology poised to become more commercially viable at large scales in the coming years — in part driven by the continuation of government-backed subsidies — fossil fuel power may eventually lose the centrality it has long enjoyed in the world's energy system. Indeed, global energy infrastructure financing is already moving away from fossil fuel-based assets and toward renewables, with investment in the latter expected to overtake downstream oil and gas investment in the near future.

The rise of renewables is even threatening to strand assets in other infrastructure sub-sectors, such as freight rail tracks that exclusively transport coal to power plants. As the Fourth Industrial Revolution rolls on, the competitive pressure from emerging technologies will only continue to transform the outlook for incumbent infrastructure investors and operators.

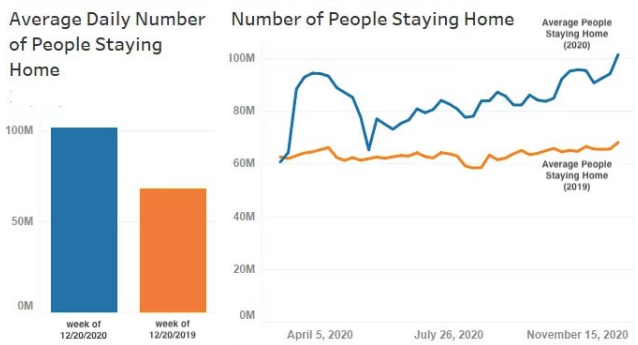
Reduced Utilization Rates For Transportation Assets

The societal fallout from the COVID-19 crisis is also expediting a shift in customer needs and preferences, which can further undermine the fundamental and



essential nature of assets and services.

For instance, the downturn in traffic for commuter rail and international air travel has been matched by the rapid adoption of remote working technologies and shifting work practices. Data from the U.S. Bureau of Transportation Statistics suggests that, since the COVID-19 lockdowns began, more people stayed home in any given week of 2020 than in the corresponding week in 2019. The dramatic transformation in mobility patterns has induced seismic shockwaves across various transportation sub-sectors. U.S. monthly urban rail use is down to almost a quarter of 2019 levels; total monthly air travel is down 65% year-on-year.



Average daily number of people staying home week beginning December 20, 2020. Source: Bureau of Transportation Statistics

It remains to be seen if the pandemic's full impact on travel is here to stay, but it is at least clear that technology-enabled, remote work models are becoming more legitimate in many spaces. This means business travel in particular, from intercity bus and rail to domestic or international flights, may no longer be as essential as before for some citizens in the "new normal." Depending on the extent to which companies embrace digital solutions such as video conferencing, the post-pandemic world could

be marked by reduced demand for some commuter transportation services, which may in turn impact the nature and scale of future investment for many transportation assets.

Looking Ahead

While the sector's technological revolution and the onset of the COVID-19 pandemic have no doubt resulted in increased demand and supply uncertainty, the need for new infrastructure across the globe continues to rise to levels beyond the capacity of governments alone. Private investment, at higher levels than has been allocated to date, will be needed in order to close the multi-trillion-dollar global infrastructure gap.

Looking at the core markets for Global Infrastructure Investor Association (GIIA) members, the challenges of decarbonization, climate resilience and digital connectivity will drive unprecedented levels of new investment opportunities.

As governments around the world look to bounce back from the economic damage inflicted by COVID-19, they will have to quickly determine the role they see for private investment in delivering our future infrastructure needs. Infrastructure asset owners stand ready to bring not only much-needed private capital, but also global expertise, innovation and project discipline to bear. The GIIA will continue to work with governments and regulators to create the right framework to encourage that investment in a way that works for all stakeholders.

A version of this piece originally appeared on the World Economic Forum Agenda blog.

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Lawrence Slade
CEO of the Global Infrastructure Investor Association

Lawrence Slade joined the Global Infrastructure Investor Association as CEO in January 2020, having most recently been Chief Executive of Energy UK since 2015. He has been involved in the energy industry since the late 1990's working in countries all over the world. Lawrence is a member of the UK Government's Committee on Fuel Poverty, an Advisory Board member of Connected Kerb, a Board Trustee and Audit Committee member of the Money Advice Trust (who run the National Debtline and Business Debtline), and is also a fellow of the Energy Institute.

Trends in the Mobility Industry Point Toward Eco-Friendly, Self-Sufficient Transportation

Andreas Nienhaus,
Partner, Automotive & Mobility at Oliver Wyman

Like driving down a dark road with broken headlights, it's been hard to navigate the mobility industry in 2020.

The coronavirus has transformed how — and how much — we move. Public transit networks around the world are running at a fraction of capacity as people stay home or choose more individual modes of transit, with car ownership enjoying a resurgence in some urban areas. Yet the pandemic shows no sign of slowing the rise of eco-friendly transportation.

People ride bicycles in New York City during the coronavirus pandemic. Photo: Angela Weiss/ AFP via Getty Images

Governments have remained steadfast in their commitment to greener mobility. The European Union, for example, is investing more than $2 billion for transportation projects like reinforcing cross-border railway links and deploying more charging stations. Cities have reacted quickly to make their streets more hospitable to pedestrians and cyclists. And while car sales have rebounded strongly in many areas, more and more of them are electric vehicles.

The urgency for action against climate change is bound to intensify ahead of the UN's COP26 conference in Glasgow in November. That suggests that demand for greener and safer transit options will accelerate in the new year.

Cars Are the Winner of 2020

Travelers have shunned public modes of transit and turned to personal means of mobility during the pandemic. Roughly a quarter of people said that they would be less willing to commute via bus or subway after lockdown orders end, according to an eight-nation Oliver Wyman Forum survey in June.

Conversely, cars saw the biggest upswing in traveler sentiment. Forty-six percent of respondents said that they would be more willing to commute via automobile after lockdown orders were lifted. Auto sales staged a recovery in the second half of the year after the pandemic shut factories around the world in the spring. Even more striking was the shift toward electric vehicles, which could pay sustainability dividends if it's sustained. EV sales surged across Europe in 2020, particularly in Norway and Germany, and more markets across the world are primed for similar growth. As the price of batteries falls and more charging infrastructure and models become available, we expect the U.S. to experience rising EV adoption through 2021.

Cyclists and Walkers Are Here to Stay

From the U.S. to Europe, cycling became a popular choice last year for travelers as they escaped the close-quarters of public transit. About a quarter of bicyclists said they would be more willing to commute by two wheels when they return to the office. Pedestrians were no different: 41% of walkers said they would be more willing to keep doing so when they return to the office.

We expect these micromobility gains to continue through 2021, particularly with many cities reshaping their infrastructure. Cities such as Berlin, Bogota and New York have redesigned their roads to make way for more pedestrians and cyclists in response to COVID-19. Others, like Montreal, San Francisco and Vienna, are banning through-traffic and lowering speed limits to create "slow streets" for pedestrians and cyclists.

These municipal moves are only one part of a larger trend we see in 2021 toward greener mobility.

Climate Change Will Drive Mobility Regulation

Many governments are maintaining their commitments to climate change regulation despite the financial fallout from the pandemic, and their boldness will power the growth of eco-friendly forms of transit in 2021 and beyond.

The European Union has reaffirmed strict car emission standards, while Japan and California made moves to phase out gasoline cars. More governments are offering cash and other creative incentives, such as easier parking or charging, to convince consumers to purchase an EV.

As shown by our Urban Mobility Readiness Index, not every city has a holistic vision for future mobility. Still, we expect more governments to adopt regulations or legislation that promote climate-friendly modes of transportation. That should hasten the arrival of mobility's new chapter: one that's clean, resilient and increasingly digital.

Virtual Technologies Will Outlast COVID

Mobility is no exception to the acceleration of digitization in our daily lives. With technologies like telehealth, online grocery deliveries or video conferencing, many adapted quickly to lockdown measures. That may become a lifestyle change instead of a temporary adjustment.

More than half of those who tried video conferencing, online grocery, telehealth or e-learning technologies will use them more after COVID-19. The staying power of these technologies has less to do with safety in avoiding contagion than one may think: Saving time and getting just as much done compared to working in-person were the primary reasons survey respondents said they would continue using virtual technologies.

Mobility players are anticipating a lasting change in behavior. Gioia Ghezzi, president of Milan's mass transit operator, told an Oliver Wyman Forum roundtable that she and her team believe that passenger capacity in the new normal will be only 80% of the old normal. With people moving about less to work, shop and receive medical care,

the implications for mobility are as loud and clear as a train horn.

Businesses Adapt and Partner to Succeed

Mobility providers are embracing digital solutions to respond to the new market realities. “I expect a tremendous acceleration of digital,” said Ghezzi, who mentioned things like paperless ticketing and information apps for train and bus journeys. Caroline Parot, chief executive of Europcar Mobility Group, told the Forum roundtable that her group was promoting contactless car rentals reserved online on short notice — days or hours rather than a few weeks.

These shifts in business models don’t come easily or cheaply. Many will require collaboration among the public and private sectors to get the job done. Cities don’t have the capital to transform their mobility networks, making strategic partnerships more important than ever in the new year. We expect the competition between cities for these collaborations to heat up as mobility players seek the most innovative and forward-looking governments.

Fostering innovation, equity and collaboration is at the heart of Michigan’s new autonomous vehicle corridor between Detroit, the state’s business hub, and Ann Arbor, home of the University of Michigan. It wouldn’t have been possible for the state to build the corridor without the partnership of tech, mobility and academic organizations — none of which are in it for the economic returns.

“It’s not just about tech for tech’s sake,” said Trevor Pawl, Michigan’s first chief mobility officer. “The idea here is to look at the existing transportation systems that get people around and create equity or inequity, and use this new technology to make them better.“

As the world seeks to build back better, we foresee more of these bold partnerships that will be the driving force of change in the mobility industry. Collaboration “will become a must because all of us have so many things to do,” said Parot. “We won’t be able to reinvent everything alone.”

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Andreas Nienhaus has spent the past 10 years focusing on strategy development for automotive OEMs and Mobility Service Providers. He’s a Partner in Oliver Wyman’s Automotive & Manufacturing practice, based in the Frankfurt Office. Neinhaus is involved in designing new strategic business models for emerging mobility solutions and services.

Women's Health Is Better When They Have More Autonomy in Society

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Associate Professor of Evolutionary Anthropology at University of New Mexico;
Adam Z. Reynolds,
Doctoral candidate at University of New Mexico;
Katherine Wander,
Assistant Professor at Binghamton University, State University of New York

A large body of research suggests human health is strongly influenced by social circumstances. Living in societies that are more unequal is associated with negative health outcomes. Photo: Pexels

Gender disparities in health are not a phenomenon unique to the pandemic. Long before COVID-19, women made less money than men, had more child care responsibilities and were at increased risk of gender-based violence. But now, the pandemic has made women and their children even more vulnerable.

Women typically live longer than men but experience generally worse health, including higher risk for many chronic diseases, a phenomenon often referred to as the health-survival paradox. Many see this as due to biological differences between women and men. Female reproductive hormones affect many tissues in the body; pregnancy and childbirth come with additional risks to health.

But a large body of research suggests human health is strongly influenced by social circumstances. Living in societies that are more unequal is associated with negative health outcomes. Preferences for sons can cause neglect of daughters, which can lead to poor health and even death. What role, then, do gender norms play in subtler gender health disparities?

Two of us are anthropologists, the other an epidemiologist. Together our team developed a study to investigate how male-biased versus female-biased gender norms impact health.

Comparing Patrilineal and Matrilinial Communities

That study, published in Proceedings of the National Academy of Sciences, was conducted in two farming communities in southwestern China. Both communities, part of the Mosuo ethnic minority, share a common language, religion and rites of passage. They differ, however, in one key way that made this unique study possible: kinship.

Some Mosuo pass land and other resources from mothers to daughters. Anthropologists call this system "matriliny." The role of men in Mosuo families is de-emphasized, although some take active roles as fathers and husbands. About 30% are in "walking marriages": Men and women are together at night, but do not formally marry. Instead, the men remain part of their mother's or sister's household. The men

in matrilineal communities often provide financial support to women, and the walking marriages, though easy to dissolve, are often monogamous.

Compare this with a smaller, less well-known population of "patrilineal" Mosuo, who typically marry monogamously and pass inheritances from fathers to sons. They are more similar to many Euro-American families, where gender norms typically empower men.

With that as background, we began to wonder if the Mosuo would show evidence of improved health for women in matrilineal communities, where women have greater autonomy and access to resources. This proved difficult to test, because communities differing in kinship and degree of women's autonomy also differ in other ways.

Our team traveled to hundreds of households in both the patrilineal and matrilineal communities of Mosuo. We asked participants about their social, economic and household circumstances. We measured their blood pressure and collected small specimens of blood for other health assessments. From that, we could compare matrilineal and patrilineal communities, and we found this: Gender disparities in health were completely reversed in matrilineal communities.

For Women With Greater Autonomy, Better Health

Women's health was poorer than men's in patrilineal settings. But it was better than men's in the matrilineal communities. There, women's rates of chronic inflammation were roughly half of men's, with rates of hypertension roughly 12% lower.

Both chronic inflammation and hypertension are early indicators of long-term chronic disease. Both put people at higher risk for cardiovascular disease, diabetes, neurodegenerative disorders and death. The poorer health that women experienced in the patrilineal Mosuo communities likely occurred due to differences in daily experiences, including stress that accumulated both in the short and long term.

Our findings challenge simplistic notions that biology is the only or primary determinant of gendered health differences. This is not a new revelation, but the study suggests an even stronger role for culture than previously evidenced.

This does not mean biology plays no role in the health differences between men and women. Virtually all diseases are biological at the cellular level. But emphasizing only biological differences assumes everything else between men and women is equal. This is rarely, if ever, the case.

Child care and household duties are easier when women have help and autonomy. Mosuo women in both matrilineal and patrilineal communities take on substantial responsibility for both. But those in matrilineal communities do so with greater autonomy and more support from relatives and childhood friends. Those in patrilineal communities are more isolated from their sisters and often take on household chores with less help.

These findings are relevant to women's health, not just in Mosuo communities, but elsewhere. Everyone's health is affected by their autonomy and access to support. Now, with a better understanding of how kinship and gender norms can impact women's health, we can work to lessen health disparities and decrease the ever-growing burden

of chronic disease.

A version of this piece was previously published in The Conversation.

Brink News

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The Rise in Demand for Sustainable Goods

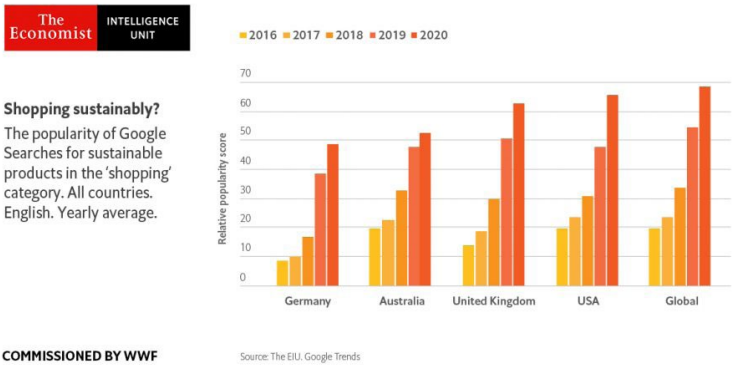
Sheila Bonini,
Senior Vice President of Private Sector Engagement of World Wildlife Fund

Reusable grocery bags made from recycled plastic bottles and cotton are sold at a grocery store in California. Photo: David McNew/Getty Images

More people than ever before are speaking out on behalf of the planet — not just with their voices and votes, but with their wallets as well. The individual consumer decisions that each of us makes, from the car we drive to the food we eat, may be mere drops in the bucket when it comes to solving the biggest ecological challenges, but together they add up to a groundswell of support for change — one that leaders from all sectors of society would be wise to embrace.

A new global analysis, commissioned by World Wildlife Fund (WWF) and conducted across 54 nations by the Economist Intelligence Unit (EIU), offers the latest evidence for this rising tide of public concern about the environment.

According to the report, the popularity of internet searches for sustainable goods around the world has increased by 71% in just five years. Even in the midst of the ongoing COVID-19 pandemic, that number has continued to grow. What's more, this welcome news isn't limited to developed nations and advanced economies. The EIU report found a similar trend in many developing nations and emerging markets as well. Ecuador, for example, has seen a staggering 120% growth in consumer clicks for sustainable goods.



Waking Up to the Urgency

The public's shift toward green consumerism comes amid a recent rise in public discourse and activism concerning the environment. Since the EIU began its analysis

in 2016, the global volume of Twitter conversations about nature-loss has increased by 65%, and over 159 million people have signed on to biodiversity-related campaigns.

People are waking up to the urgency of the moment. They see one million species barreling toward extinction. They see forests, grasslands and other critical ecosystems vanishing at an alarming rate. And the symptoms of our ailing planet — rising seas, toxic pollution, out-of-control wildfires, new infectious diseases — are more than just images of some far-away problem splashed across our TV screens.

Regardless of where we live, we can feel the impacts of humanity's broken relationship with nature in our own communities and in our own daily lives.

In this tragic saga, humanity is both culprit and victim. And just to add one more layer of irony, we also happen to be the only actors capable of ensuring a happy ending — for people and nature. That's why this "eco-wakening" across the general public offers such promise. And yet, it's also important to understand that public awareness and engagement, while certainly essential, are not sufficient on their own to solve this century's biggest environmental challenges.

The Hurdles Consumers Face Going Green

Everyday citizens still face multiple hurdles in their quest to go green. Many simply don't know what Earth-friendly options are out there. Some assume, often incorrectly, that sustainable goods are of lower quality than their conventional alternatives. Others remain skeptical about the extent of these products' actual "greenness." And even those who make good faith efforts to seek out such products often run into other barriers, like high costs and limited availability.

The reality is that people are ready and willing to embrace sustainability. But they need and expect companies and governments to do their part. This is how an issue like food safety eventually became something that Americans can by-and-large take for granted. Thanks to government regulation and private sector leadership, consumers walking the grocery aisles today don't worry if the items in their cart meet certain standards — it's just a given. When consumers can shop with similar confidence without checking for a "green label," we'll know we've succeeded.

Savvy business leaders can already see which way the wind is blowing. What's more, they can see the profits to be reaped by those companies that are quickest to change course.

New Markets Are Opening Up

This surge in consumer demand for sustainable goods opens the door to new markets, particularly in the cosmetics, pharmaceutical, fashion and food industries. It also presents new opportunities for companies to build public trust and enhance their brand reputation — and improve their bottom line in the process.

For example, HP's sustainability activities helped increase the company's sales in 2019 by over $1.6 billion. And HP is not alone: According to research conducted by NYU Stern's Center for Sustainable Business from 2013 to 2018, the number of products marketed as sustainable grew 5.6 times faster than products that were not.

We're not asking companies to go on this journey on their own. To address

specific issues in their supply chains, there are stakeholder groups for just about every environmentally intensive commodity, including plastic, beef, palm oil and more. For those businesses without a sense of where to begin, there are several environmental science organizations, WWF included, who can serve as guides on this journey.

While some companies will always step up to be leaders in this space, we will never reach our sustainability-everywhere goal without leveling the playing field. And that's going to take a change in policy.

Governments Are Taking Notice

Governments are sitting up and taking notice. According to the EIU report, growing public awareness and pressure across the globe have helped to produce a wave of new laws and policies — one example being the surge in legislation restricting single-use or hard-to-recycle plastic items. As of 2019, 127 nations have enacted such laws.

Successes like these have given fresh momentum to the cause. Today, more than two million people are calling for a first-of-its-kind global treaty on marine plastic pollution. Will world leaders take up the gauntlet? They'll have an opportunity to demonstrate their commitment on that issue and others when they gather later this year for the UN Climate Change Conference, which was scheduled to take place last year but was delayed by the COVID-19 pandemic.

The digital age has given individuals new and exciting tools to affect change on their own and demand change from their leaders. But one thing that hasn't changed is that, by and large, it's companies and governments that still operate the main levers of power. They can choose to stymie the change that people are clamoring for, or they can get onboard and help spur the innovation needed to ensure a clean, secure and prosperous future.

Brink News

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Sheila Bonini leads the private sector engagement team at WWF, overseeing a team of sustainability professionals supporting the organization's conservation mission. Sheila joined WWF from The Sustainability Consortium (TSC), a global organization focused on making consumer products more sustainable, where she served as Chief Executive Officer.

Smart cities in ASEAN: Powering good amidst tough times

Dr.Woo Jun Jie

Last March 11, the World Health Organization (WHO) declared a global pandemic, naming Coronavirus Disease 2019, or COVID-19, as the disease that's responsible for the outbreak. The COVID-19 pandemic forced the majority of nations to go on emergency lockdowns, thereby bringing global economies at an almost standstill and severely disrupting many supply chains, businesses, and even lives. Because of the intense economic impact of COVID-19, it hastened many governments' move to digital transformation, as well as spurred the incessant search for new technological tools and urban solutions that can address the current crisis and hopefully drive the next stage of economic growth.

A common response among many governments across the world to the COVID-19 pandemic has been to fast-track the development of their smart cities with the technological and urban innovations associated with the smart city seen as powerful tools for crisis management and, perhaps more importantly, a source of growth and income in the post-COVID-19 global economy.

In a report released by the McKinsey Global Institute, smart cities are expected to create 1.2 million – 1.5 million new jobs, prevent 260,000 – 270,000 kilotons of greenhouse gas emissions, and give rise to US$9 billion – US$16 billion savings on cost of living across ASEAN.

By addressing these urgent economic and environmental challenges, digital services and technologies can help future-proof smart cities against future crises and challenges.

The COVID-19 pandemic has in fact laid bare the importance of smart cities, with the digital technologies that have facilitated telecommuting and global financial transactions proving to be crucial in the continued functioning of many urban economies.

ASEAN Smart Cities Network

In Southeast Asia, smart cities will play an increasingly important role in generating economic growth and solving complex urban challenges.

Faced with rapid urbanisation, Southeast Asia is expected to see around 100 million people migrate from rural regions to cities. This is complicated by rapid population ageing in countries such as Singapore and Thailand and the emergence of a middle class in other countries such as Vietnam and Myanmar.

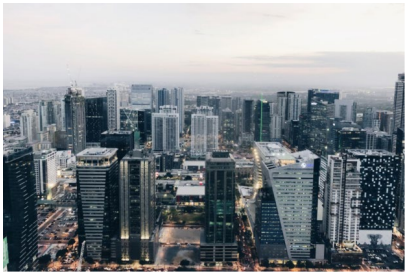
Despite the diversity of their populations and their different stages of economic development, ASEAN member-states are increasingly united by their belief that smart cities may hold the key to the urban and socio-economic challenges that they face.

From the Digital Philippines initiative to Singapore's Smart Nation

initiative, governments across Southeast Asia are driving digitalization and smart city transformations. These transformations will have a significant impact on economic development and crisis mitigation across the region.

During the 36th ASEAN summit that was held recently, Singapore's Prime Minister Lee Hsien Loong argued that ASEAN can "use the ASEAN Smart Cities Network to exchange ideas and experiences on using technology to fight COVID-19. For example, technology to enhance contact tracing".

Established on 28 April 2018, the ASEAN Smart Cities Network (ASCN) aims to encourage greater cooperation among the 10 ASEAN member-states to foster smart and sustainable urban development. Central to the work of the ASCN is a focus on improving the lives of ASEAN citizens through technology.



Driving Technological Innovation

With its extensive experience in building public infrastructure such as electric power, water, sewage and industrial systems, Hitachi has long been involved in developing the urban infrastructure of cities across Asia.

In the spirit of co-creation, Hitachi has actively engaged industry actors with the aim of developing a deeper understanding of the data and business needs of emerging smart cities in the region.

"Driving Digitalisation Ecosystems in ASEAN" was a themed online forum recently co-hosted by Mr Van Tang, Director and Head of Business Development & International Partnerships – APAC at Hitachi. This forum involved discussions with industry leaders on data collaboration in the real estate and retail industries. Industry engagement forums like these help with uncovering insights that lead to better planning and enhancement of urban solutions.

Such collaborative efforts are crucial for developing the urban and technological infrastructure of a smart city. This infrastructure includes hardware components such as sensors, cameras and smart grids as well as software elements such as data analytics, artificial intelligence and a smart city 'dashboard'.

While the embedding of sensors and smart grids in the urban infrastructure will allow governments to continuously collect data to design and run more efficient cities, cutting-edge software will allow for the rapid analysis of data, allowing both governments and businesses to gain a better understanding of citizen and consumer preferences.

With 110 years of experience in operational technology and 60 years of experience in the information technology industry, Hitachi has developed an extensive network of global partners that is focused on co-developing technological solutions to address emerging economic and societal needs.

In the Philippines, Hitachi is exploring how it can provide smart urban solutions to its emerging smart cities. This is achieved through Integrated Infrastructure as a Service (IIaaS), which involves providing consultancy services to real estate developers

and co-developing smart city solutions with these developers.

This represents a ground-up approach that focuses on the integration of various technologies into a smart city project. Through IIaaS, Hitachi has been involved in the implementation of smart city solutions in various smart city pilot projects. Some of these solutions include a water supply and sewage monitoring and control system, AI-driven customer and sentiment analysis for marketers, the optimization of supply chain and delivery operations through AI and IoT solutions, as well as integrated life-care solutions such as elderly-monitoring systems and cloud-based medication administration services, among many others.

Hitachi Social Innovation is POWERING GOOD

A successful smart city should ideally ensure the happiness of its citizens and enhance their quality of life, as well as provide opportunities for personal and community growth that can enhance citizens' social, economic and environmental values. Thankfully, we now possess the technological possibilities for building smart, sustainable, and liveable cities of tomorrow.

By focusing on powering good, Hitachi's role in smart city development has very much been focused on enhancing and improving the lives of people through social innovation. Hitachi seeks to study the real problems faced and solve them via technology, providing effective overall solutions to make lives better and to make the world a better and happier place to live in.

From enhancing public safety through smart surveillance and video analytics to optimising energy use with smart energy management systems and developing greater connectivity through efficient and reliable transport networks, there is great potential in combining Hitachi's urban solutions and technologies with the built environment.

A smart city is more than its digital and urban infrastructure. Smart city technologies and social innovations can contribute towards the happiness and well-being of citizens. For instance, governments can collect public feedback and data through advanced data analytics platforms and apply these insights to perform more

'people-centric' city planning.

A good example of this is Hitachi's efforts to use data and people-flow analysis to understand human flow within the city to ensure more effective location of public amenities such as parks and childcare centres. This will greatly enhance citizens' quality of life and contribute to greater collective happiness.

Find out more about Hitachi's social innovation business.

Business Inquirer

About the Author

Dr.Woo Jun Jie

Dr. Woo Jun Jie is a policy researcher with expertise in economic governance, urban policy and resilience.

Carbon Offsets Do Not Reduce Carbon Emissions, Only Delay Them

Kate Dooley,
Research Fellow of Melbourne University

The question of whether carbon offsets actually help in the transition to a net zero economy is a thorny one for many companies. The recent Taskforce on Scaling Voluntary Carbon Markets, set up by Mark Carney, says there is a role for carbon offsets (see our recent interview with Alex Hanafi of the Environmental Defense Fund).

But many researchers insist that offsets don't actually reduce carbon emissions and could make it harder to achieve a fully decarbonized economy. Kate Dooley is a research fellow at the University of Melbourne who studies the impact of carbon accounting, including offsets.

The best way to remove atmospheric carbon dioxide is via forests, land and oceans. Restoring and expanding ecosystems and planting new forests will remove emissions from the atmosphere. Photo: Pexels

DOOLEY: My work looks at whether or not offsets in carbon trading are actually doing anything to mitigate climate change, because if these aren't helping us to reduce emissions, then we're just moving deck chairs on the Titanic.

For various reasons, carbon offsets tend to primarily focus on forest offsets, forest and land. And that's where the real problem is, because continuing to dig up and burn fossil fuels and emitting fossil fuel emissions into the atmosphere, and then removing these by growing forests doesn't actually reduce atmospheric emissions or atmospheric concentrations over a century-long time scale.

The Fast and the Slow Carbon Cycle

Half of what we emit gets taken up by natural systems — the land and ocean carbon sinks. But these are known as the "fast" carbon cycle, as carbon cycles continuously between the atmosphere, ocean and land. When we take up extra carbon through the planting of trees, it stays in the fast carbon cycle, cycling back into the atmosphere. But it doesn't return to geological storage on time scales relevant to humans — the process of carbon moving from the fast carbon cycle to the effectively permanent geological (fossil fuel) reserves doesn't happen in anything less than a millennia.

So what we're doing when we burn fossil fuels is adding emissions to the carbon cycle in aggregate. Then, when we pull carbon into trees, it's still in the carbon cycle and has not been fully eliminated.

BRINK: Can you explain what is meant by the carbon cycle — why is it that this lasts only a relatively short time?

DOOLEY: The simple answer is that trees (like all living things) die and their

carbon is returned to the atmosphere. It's not really as simple as that, because forests can live for centuries, but it's a much shorter time than carbon needs to be stored if it is to properly compensate for the release of fossil emissions, the majority of which stay in the atmosphere for over 1,000 years.

The Problem of Permanence

This is referred to as permanence, which is a time scale issue: When we plant more trees, we can't guarantee that we've taken this carbon up for 1,000 years. The carbon cycle of trees is cycling on years and decades, whereas geological reservoirs are essentially permanent.

Additionally, burning fossil fuels releases carbon dioxide emissions immediately; growing trees to remove these emissions takes many decades, during which time carbon dioxide continues to accumulate in the atmosphere, causing warming.

BRINK: Given what you have just laid out, can you conceive of a carbon offset that would actually reduce the net amount of carbon in the atmosphere?

DOOLEY: Carbon offsetting is not really designed to reduce the net amount of emissions in the atmosphere — it's designed to not increase the amount of emissions in the atmosphere. Offsetting essentially means for every ton we remove, we emit a ton somewhere else.

Forests Can Remove Emissions — but Only From Forests

Nowadays, the aim is to reduce carbon dioxide emissions to zero and then to actually remove carbon dioxide from the atmosphere. Offsetting is not a tool to achieve that goal.

The easiest and, in many ways, the best way to remove atmospheric carbon dioxide is via forests, land and oceans, so via natural ecosystems. If we can restore degraded ecosystems to their previous intact states, this will increase the carbon stored in these ecosystems. Restoring and expanding ecosystems and planting new forests will remove emissions from the atmosphere — although not on long enough time scales to justify burning more fossil fuels.

But it's almost like these two ideas have been conflated — planting forests to remove emissions from the atmosphere (known as negative emissions) and using forests as offsets to compensate for burning more fossil fuels.

We have no space now for continued carbon dioxide emissions. Emissions need to go to zero within a few decades, and we need removals on top of that to reduce atmospheric concentrations. So we need to separate out these two things, offsets and removals, and one doesn't justify the other.

BRINK: The other aspect of offsets that is sometimes touted is the idea that it's a way to finance new climate initiatives. Do you see any merit in that?

DOOLEY: Yes it can be. Sometimes projects are run very well, good things are achieved, and they're high quality projects with the finance put to good use.

Unfortunately, there have been plenty of examples of badly run projects that have endangered people and not achieved climate mitigation goals. On a sectoral basis, with carbon trading restricted to certain sectors that didn't justify further fossil fuel emissions, market mechanisms could be part of a financing initiative.

So for example, if you confined offsetting to biological carbon within the agriculture and land-use sector, it would be more feasible. You would bypass this issue of compensating for fossil fuels being burned from geological reservoirs and taken up by trees, because if you restricted offsetting to biological emissions within the agriculture and land-use sector that can't be reduced to zero (known as residual emissions), then it's all in the same carbon cycle.

So you could keep agriculture and land-use to a net zero level of emissions and even go negative within that sector.

Need to Eliminate Fossil Fuels and Go Negative

At the end of the day, we need a managed transition away from fossil fuels and a managed decline to zero fossil fuel emissions. If offsetting is allowing fossil fuels to continue to be burnt, there's very little room for that.

There is no time left for offsetting to be relevant. In past decades, it may have been a useful financial tool in some situations, and some good projects have been run, but we're fast leaving that space.

For developed countries like the U.S., the U.K., Australia, we've all exceeded our carbon budget, and we need to actually reduce emissions by more than 100% already — we already need to go net negative, not just net-zero. That needs to be done in the form of climate finance and technology transfers to developing countries, on a scale far beyond what offsetting or carbon trading could ever achieve.

Brink News

About the Author

Kate Dooley
Research Fellow of Melbourne University

Kate Dooley is a research fellow at Melbourne University's Climate & Energy College. Kate has policy expertise on forest governance, climate change and carbon accounting and has almost two decades experience advising government and nongovernment organizations. She is currently researching the potential for ambitious restoration of natural ecosystems to remove atmospheric carbon.

Is Your Company a Water Steward?

Kate Gibson,
Global Director of Society at Diageo

A woman carries drinking water to her home in an impoverished neighborhood in San Pedro Sula, Honduras. Photo: John Moore/Getty Images

COVID-19 has brought into sharp focus the critical role of clean water, sanitation and hygiene as the first line of defense against the pandemic and other diseases — along with the reality that millions of people still lack access to this fundamental human right.

March 22 is World Water Day — a date used since 1993 to raise awareness of the importance of freshwater resources in sustaining life and livelihoods around the world.

This is the second piece in an occasional series about the state of business around the SDGs, in the lead up to the COP26 Conference in November. Here is the first article in the series.

Half of the World Could Suffer Water Stress by 2050

1 in 10 people currently lack a source of clean water. Three billion live without hand-washing facilities at home. More than 2 billion people live in areas of water stress — defined as areas where demand for freshwater is greater than supply. This disproportionately impacts women and girls, who are often responsible for fetching water, putting their security at risk and reducing access to education and employment.

Sadly, this situation is getting worse, driven by population growth, unsustainable use and pollution. Climate change is also exacerbating the crisis, resulting in more frequent and severe flooding, in turn claiming lives and overwhelming fragile water and sanitation services, and greater incidence of drought. If we do not act, half of the world's population will live in areas of water stress by 2050.

Diageo is a part of the Business Avengers — a group of companies advocating for leadership and collaboration from business in achieving the U.N. Sustainable Development Goals (SDGs) by 2030.

We are the Business Avenger for SDG 6 on Clean Water and Sanitation. We have been working for nearly two decades to embed water stewardship into our business and supply chain and advocating for others to do the same. As a global drinks company with more than 200 brands sold in 180 countries, our business cannot exist without water.

The Business Case for Investment in SDG 6

Commitment to SDG 6 is not solely philanthropic — there is a compelling business case for investment. There are a lot of ways that businesses can help to reduce water stress. Diageo's focus on water stewardship over the past decade has enabled

the company to achieve a 46% improvement in water efficiency globally, reducing our costs, mitigating risk and building resilience in our operations.

Our water replenishment work around our sites and the areas where we source our agricultural raw materials has helped to enhance health outcomes and livelihoods in these communities. This builds greater resilience in our supply chain and fosters economic growth and connections in our local communities. And our focus on water sanitation and hygiene in our workplaces and with our suppliers provides a first line of defense for COVID-19 and better outcomes for our business and for society.

Diageo has committed to using 30% less water per drink (40% in water-stressed areas) by 2030. We will replenish more water than we directly use in all our water-stressed areas — the equivalent of over four billion liters of water — through more than 150 community water projects on five continents, improving water quality and access to clean water, sanitation and hygiene, as well as planting trees and desilting dams.

Water Basins Are Critical

Water stress is often driven by unsustainable practices and management at the river-basin level, so spurring collective action to preserve water in our most at-risk basins is essential, such as the collective action to protect the Tana River supplying 95% of water for Nairobi. Another is the Beverage Industry Environmental Roundtable, which addresses watershed challenges in the Santiago-Lerma water basin in Jalisco, Mexico. It is important to proactively engage with local and national governments on water policy, regulation and planning — recognizing that governance is often the greatest challenge in these basins.

The Water Resilience Coalition and WaterAid initiatives are calls for urgent and collective corporate water action to support the response to COVID-19 and build long-term resilience.

Any Company Can Be a Water Steward

For any company, the water stewardship journey needs to start with an understanding of which sites and suppliers are operating in areas of water stress and where the "water footprint" of products is concentrated.

This will direct focus to site-level water efficiency projects, where they can have the biggest immediate impact and help prioritize supplier engagement.

For many food and beverage companies, for example, a significant part of a product's water footprint is often in agricultural raw materials, so partnering with and supporting farmers to improve their water stewardship is a core priority. Diageo has worked with WaterAid to provide businesses with guidance on how to take action in this critical area.

Water ATMs

Innovation is key to delivering scalable solutions — such as "water ATMs."

Inspired by cash-vending machines, water ATMs enable people to buy clean, low-cost drinking water, typically provided by a solar-powered borehole and treatment

plant. In addition to providing 45,000 people with access to water in 2019, Diageo trained 287 women entrepreneurs to maintain and run the facilities — increasing their incomes, while ensuring the ATMs are at the heart of their communities.

Responding to the current pandemic and preparing for future shocks will require access to clean water and sanitation for all. COVID-19 has reminded us that no one is safe from the virus until all are safe.

The theme for this year's World Water Day is "valuing water" — never has it been more important to do so. It is our most precious resource and the key to successfully delivering the SDGs in the critical decade ahead.

Brink News

About the Author

Kate Gibson
Global Director of Society at Diageo

Kate Gibson leads the Global Diageo in Society team, collaborating with leaders across the business to embed and deliver Society 2030: Spirit of Progress — Diageo's ten-year action plan to help create a more inclusive and sustainable world. photo in hopper

5 Ways to Transform Our Food System to Benefit People and the Planet

Petra Hans,
Head of Portfolio, Agricultural Livelihood at IKEA Foundation

Food is essential for our survival, a fundamental requirement of life and the provider of strength, vitality and energy. It is also the keeper of our cultural traditions and indispensable to our social lives — think of any celebration, and it will involve food.

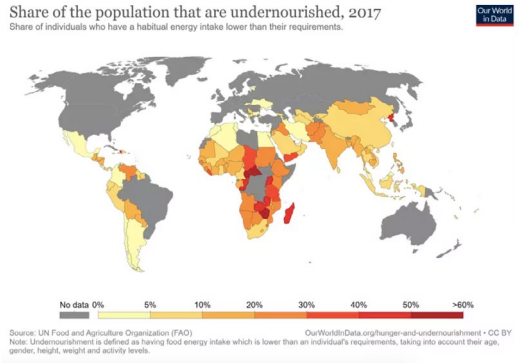
Residents tend to their crops in a football field that has been converted into a community farm in Manila, Philippines. Photo: Ezra Acayan/Getty Images

However, our relationship with food is dangerously imbalanced. We produce enough food but nearly one in 10 people still don't have sufficient to eat, and three billion cannot afford a healthy diet. At the same time, we waste one-third of all food produced along with the natural resources that went into its production.

Our food and agricultural systems stretch planetary boundaries beyond their limits. By valuing quantity over quality and driving farmers to produce monocrops for low prices, we use the natural resources needed for sustained production and degrade the land, leading to climate change and extreme weather events.

As the coronavirus crisis unfolded, we started to understand how fragile our food systems are. We saw news stories of food destroyed, milk dumped and crops rotting in the fields, while consumers faced empty shelves. Our complicated global supply chains couldn't adapt fast enough to our changing realities.

To mend our damaged relationship with food, there are critical questions we need to answer: How do we produce sufficient food that's healthy for both the people who produce it and the people who eat it? How do we ensure our food systems are fair, resilient and equitable? How can we feed our growing global population and protect our planet for generations to come?



We have a choice: We can continue to grow our food systems in a linear, exploitative and extractive way; or we can move to a system that promotes biodiversity, regeneration, nutritious food, equity and healthy people.

We believe the decision is clear. We must choose to work with the planet — not against it — for the benefit of people and the planet by following these principles:

Harness the Regenerative Power of Our Earth

This is critical to overcoming the biggest challenges of our time: a degrading environment, loss of biodiversity and climate change. Regenerative agriculture leads to healthy soil, capable of producing high quality, nutrient-dense food. It also improves rather than degrades the land and supports productive farms and healthy communities and economies. This helps safeguard farmers' livelihoods so they can grow the food we need now and in the future.

Build Stronger Local and Circular Food Systems

Building stronger local and circular food systems helps to keep valuable natural resources, minerals and nutrients in the loop. Circular agribusinesses not only provide excellent environmental solutions, they also create jobs and reduce countries' dependency on imports.

Wastewater, for example, can be treated to extract important finite minerals like phosphates. Food loss and waste can be composted so valuable nutrients return to the soil instead of being thrown away. And organic farm waste can be used for bioenergy to power homes and agribusinesses. New, nature-based technologies, such as the use of black soldier flies to compost waste, can generate multiple useful products including compost, fertilizer and animal feed.

Give Farmers a Voice and Support Their Planet-Positive Choices

As the world's population continues to grow, people will depend upon farmers for food — more than ever before. We must empower farmers to drive solutions and be at the forefront of a global regenerative revolution by making them an integral part of policy discussions. They can help build the system of products and services that are locally relevant and reduce dependency on patented and/or chemical inputs.

Move From Low Cost to True Cost

Paradoxically, cheap food is expensive for people and the planet. It keeps us locked into an unsustainable food system that costs the global economy significant amounts of money. The current price of food does not factor in the health bill generated by unhealthy diets or the cost of land degradation and biodiversity loss.

Furthermore, low wages for farmers make agriculture an unpredictable and often unsafe sector. To get back on track, we need greater consumer awareness and public policies that value nutritious diets, a healthy environment and farmers who practice regenerative agriculture.

Foster Radical Collaboration

Though we're hopeful for the future, we are quickly running out of time. We

urgently need to remove the barriers that prevent us from transforming the way we produce and consume food. This involves changing mindsets, trying new things and learning fast.

We don't yet know all the answers, but we do know that business-as-usual is the problem. We must change course and do it now. This is only possible through collaboration between farmers, consumers, funders, governments, businesses and NGOs.

Together, we can work toward a food system that not only feeds us but also celebrates life — one that nurtures people, adds color and flavor to our plates and palates and, most importantly, ensures a future for ourselves on this planet.

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Automated Freight Transport Is Transforming Global Logistics

Jorge Hurtado,
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Critical automation technology is starting to upend global transportation systems, impacting every stage of the goods flow from a point of origin to a point of consumption.

The COVID-19 pandemic has exposed the vulnerabilities and fragilities of the global supply chain and, at the same time, accelerated the adoption of automated logistics technologies that enable more secure and efficient cargo transportation, as well as contactless delivery.

The way in which technological advances, such as artificial intelligence, machine learning, autonomous control technologies, user interfaces and smart multimodal communication systems are being integrated and complemented with one another is also revealing vulnerabilities across different industry sectors. As they learn the lessons, logistics companies have started applying better project discipline to ensure that investment in automation can help them to remain competitive.

What Do Automated Logistics Look Like?

To cite some of the most recent developments, here's what the future of automated logistics looks like.

In aerial freight, we are seeing the deployment of drones with an easy-to-use interface for sending and receiving packages 24/7/365, designed to carry payloads of about 4.5 pounds and deliver packages over distances of up to 12.5 miles.

Large-scale aircraft drones, with a wingspan of 30 feet and a cargo capacity of 700 tons, are also being designed for intercontinental cargo delivery services. Large, remotely operated and heavy-lift freight airplane prototypes, powered with turbo-electric propulsion, are being tested for carrying even larger payloads.

On the sea, autonomous shipping vessels are being equipped with advanced sensors that allow them to build a detailed picture of their surroundings in real time and with a level of accuracy well beyond that of humans. A combination of sensor fusion and artificial intelligence provides the vessels with object detection and collision avoidance for navigation and automated berthing.

Autonomous freight trains are the third leg of the stool. They are currently operational and being used to deliver iron ore in Western Australia. The locomotive unit is fitted with an onboard module that sends automatic reports on its position, speed and direction of travel to the control center located more than 1,500 km away. The locomotives and all public crossings are also fitted with cameras, allowing for constant monitoring.

Speaking the Same Language

Automated logistics systems are built to achieve high efficiency, which

translates into time savings in terms of performance, which, for companies, translates into profit. With a highly efficient system, logistics companies are capable of meeting peak demands. Automated freight, when adopted, can offer increased efficiency in delivery and the lowering of transportation costs.

Automated logistics systems have similar technological capabilities, with some differences in the type of applications to be performed. Any automated vehicle requires a sophisticated control system that makes it move and decides with autonomy using an intricate system (e.g., AI, machine learning, sensors, connectivity). This system will monitor and establish communications with other systems to perform any required task.

Technology in business can have little effect in the long term if other parts of the value chain, such as contract manufacturers, third-party logistics providers, warehousing firms, resellers and retailers, are unable to form partnerships. Automation can help suppliers and retailers to speak the same business language, with both being able to visualize deviations and identify risks early so supply chains can be fine tuned in real time.

A Bumpy Road Ahead

The field of automated freight is still in development. Bringing autonomous vehicles, especially on the road, remains an enormous challenge for companies. For automated freight to reach its full potential, governments and the public will need to be ready for mainstream use, and regulations will need to address data privacy and security concerns. With the responsibility to regulate the future of automated technologies, governments will have to create policies that ensure the safety and functionality of autonomous vehicles, establish protocols that can guarantee that data can be managed safely and securely, and help to gradually integrate the new systems into the existing ones.

There is also a need to consider that goods are transported not only within but also across national boundaries, thus cooperation in the development of international policies could help to address a system with a wide perspective. Finally, technology developers need to provide flawless operational and mechanical safety records that can help to prove that the implementation of technology is not only efficient, but is secure anywhere, so that the public can be assured that the adoption of automated technologies offers more benefits than problems.

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Jorge Hurtado is a researcher at PreScouter, helping provide clients high-quality information and analysis about the latest insights into disruptive technologies. Jorge performs research in developmental and environmental sustainability. He holds a Ph.D. in Biology and a M.A. in Conservation Biology.

How to Make Remote Work in Manufacturing a Reality

Graham Immerman,
Vice-President of Marketing at MachineMetrics

Workers sewing at factory making hazardous material suits to be used in the COVID-19 in Wenzhou. Photo: Noel Celis/ AFP via Getty Images

COVID-19 hit upon a major pain point separating the manufacturing industry from other industries. As a majority of U.S. employees shifted to working from home, many manufacturing operations were simply shut down — or were forced to operate with minimal staff on the shop floor.

A growing number of organizations are considering remote work as a permanent solution after the pandemic as well, because it offers benefits including productivity advantages and can also help attract talent. Given the available communication and performance management technologies already available in most industries, the switch from office to remote work has been relatively seamless.

However, in contrast to digital-first industries, the physical nature of the manufacturing industry has made the switch from in-person to remote a challenge. The industry must adopt remote connectivity solutions in order to enable remote work while retaining and improving production efficiency.

The State of Remote Work

Even before the COVID-19 pandemic, remote work was on the rise when companies started to understand that remote employees were often cheaper and happier. But in light of the quarantine measures, the world has embraced remote work in a way that, while perhaps inevitable, was likely still years away. Survey data from Gallup shows that in April 2021, more than 60% of people were working remotely all or part of the time. Today that number remains high at 56%.

In April of 2020, just 41% of manufacturing employees were able to telework, according to the U.S. Bureau of Labor Statistics. Just 46% of the industry has enabled remote monitoring processes to ensure visibility of production when not at the plant.

This problem is even more troubling when we consider that a majority of employees are seeking remote work, and the manufacturing industry has had difficulty hiring skilled workers. While demand for labor increases, the skills gap in manufacturing may leave approximately 2.4 million positions unfilled between 2018 and 2028 — a potential economic impact of $2.5 trillion. This compounds the problem, because as more people join the workforce, they will be less incentivized to join an industry that is averse to remote work.

How Manufacturers Can Enable Remote Work

The good news is that the industry is actively working to solve this problem. More solutions than ever before are being developed and implemented to tackle this challenge, and manufacturing leaders are open to exploring these solutions.

There are a few specific challenges that manufacturing leaders must address as they free their workforce from the office and shop floor.

First, they must monitor the status of production. It's a reassurance to walk the shop floor and see all machines humming away productively, manned by skilled operators who are on top of part counts and ensuring quality specs are met.

The problem is, if you remove the manager from the shop floor, they have little to no insight into the status of production. Not only are manually filed reports delayed and inaccurate, but they force manufacturing leaders to be on-site, spending more of their time observing and analyzing what is going on, rather than making decisions.

To make the shift to remotely monitor production, machine and operator data needs to be collected and contextualized in real-time so managers can get insights on production no matter their location.

Second, they must analyze the health of equipment. The old phrase "if it ain't broke, don't fix it" is not a very efficient strategy — at least not for a world-class maintenance team.

Instead, enabling your equipment providers and service teams with machine condition data helps to diagnose and resolve machine issues faster, before they happen or even remotely. With real-time machine data, manufacturers gain insight into equipment health and conditions to get early warning signs of potential equipment failures and elevated risk areas that lead to downtimes.

Third, they must collaborate in real-time and provide autonomy to onsite workers. Providing fewer onsite workers with the tools and information they need to make decisions is far more efficient than having the complete workforce onsite simply for the sake of communicating information.

Remote work highlights the importance of real-time, automated communication and notifications to ensure the right information is in the hands of the right person at the right time.

For manufacturers, this means leveraging real-time production data to drive automated notifications. This can be as simple as alerting an operator when a machine goes down, or as advanced as predictively alerting a maintenance supervisor of an impending machine tool failure and automatically generating the work order in a computerized maintenance management system.

As manufacturers progress in their data maturity and remote work compatibility, they will be able to enable lights-out factories driven by automation, saving the highest value tasks for onsite production employees.

Manufacturing's Bright Future

This unprecedented time we are in will end soon, but the trend of remote work is only going to continue. The solutions exist; it's simply a matter of manufacturers adopting both a culture and technology infrastructure to support the transition to a

largely remote workforce.

Here are a few takeaways for manufacturing leaders who are beginning to blaze a trail towards remote work for their organizations:

Skills: Identify whose skills translate the best to scalable remote work. Certain skill sets make some roles more conducive to performing digitally.

Leaders must ask themselves: Who must work inside the factory? Conversely, who does a job that could or should be performed remotely? The answers to these questions aren't simple or obvious. Many manufacturers are broadening the skillsets of onsite teams to create more generalists. Populating the factory floor with people who, with the right guidance, can tackle many different jobs can help resolve a much wider range of issues.

Conversely, they should also find ways to utilize specialists remotely. Whether it's reliability, quality, engineering or other subject-matter experts, the specialized focus of their work makes it more conducive to performing digitally. Having these professionals offsite also lets them remotely serve multiple factories and cross-pollinate across the enterprise.

Data: The virtual shift will work only if the infrastructure for data collection, analytics and remote collaboration tools is up to par.

Training: Training and ongoing sharing of best practices are paramount for the success of remote collaboration.

The goods produced may remain physical, but the nature in which they are being produced will continue to be supported by digital methodologies, including remote work, that enable people to focus on only the highest value tasks while automating low-value production activities.

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The Global Economy Is About to Become the Climate Economy

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In the next 20 years, climate will move from being a sector of the economy to becoming the dominant force in macroeconomics. New forms of sustainability will disrupt virtually all industries: from manufacturing, the production and use of energy, food, fiber and material resources, to the expansion of transport options and consumer choices.

An electric windmill farm in Plomodiern, western France. Photo: Loic Venance/AFP via Getty Images

Many leaders suggest artificial intelligence will be the determining factor in the fate of the world in the coming years. While there is an argument to be made in support of this idea of an AI-controlled destiny, we believe that it will be climate that will ultimately define the global economic winners and losers of the next geopolitical era. The application of AI will then be viewed as either an important enabler or a limiting factor with respect to how nations adapt to climate variability in the decades ahead.

No aspect of the emerging 21st century global economy is likely to escape the influence of climate and sustainability factors; what we call the new climate economy will be the defining factor for companies, governments and societies alike.

The Shift From Clean Tech to Climate Tech

What was once a narrow purview around clean tech has recently morphed into the all-encompassing term of climate tech, and unlike the boom and bust cycle that accompanied the clean energy frenzy of the late 2000s, climate tech appears to have a sustainable presence in the minds of long-term investors.

During the boom and bust clean tech cycle, the narrow focus on energy production led to massive capital outflows when the market lost its legs. Venture-backed startups and their investors lost billions in this space, and the period following the crash kept capital out of the sector for years.

Today, the cost of capital outlay in climate-related innovation is becoming cheaper than the cost of climate-related impact on developed economies. More than 215 corporations are reporting climate-related costs to their businesses, at a cumulative cost of trillions of dollars. Unlike clean tech, climate tech opportunities are spread across all industrial and commercial sectors, rather than focusing solely on the supply side of the energy and/or transportation matrix.

Climate VC Activity Is Accelerating

Over the last seven years, climate tech investment has grown at five times the venture capital market rate, with venture capital and corporate investment in this sector growing faster than venture capital as a whole in the early 2010s.

Beyond investing in deep technology such as renewable energy, per the earlier clean tech movement, today's climate tech VCs are looking more broadly at agriculture and other food production, such as meatless burgers Beyond Meat; eco-friendly transportation, such as scooter startup Bird; and a wide variety of startups that can impact society's greenhouse gas emissions.

A number of recent early-stage investments into consumer and social tracking and sharing and optimizing personal climate-related contributions has also marked a technological shift into the consumer mainstream.

The Rise of the Chief Sustainability Officer

Environmental, social and governance (ESG) factors are now becoming standard parlance in the financial services sphere. What was once viewed as a fringe boutique industry has worked its way onto the agenda of nearly every global financial institution and risk manager as both a source of strategic competitive advantage and as an investment screening factor for discretionary and quantitative investors.

We have seen a significant rise to prominence of the chief sustainability officer; as corporate sustainability is no longer the domain of generalists, the CSO is an increasingly important member of the C-suite that can guide a transition to this new economic reality.

In the same way that the winners of the digital race were those organizations and economies that became digital-first, so this is likely to be replicated across the climate space, and the role of the chief sustainability officer is soon likely to permeate all other business units.

The Physical Environment Is a Primary Driver

Corporations and analysts continue to underestimate the impact that climate-driven volatility exerts on earnings, overall financial performance and broader downstream economic activity.

Whereas some corporations are beginning to include climate-related volatility in their projections, such as defense contractor Raytheon, which reports that 11%-20% of its future global revenue could be affected by water risk, there is upward of a trillion-dollar difference in unexpected global economic impact of climate change and reported corporate financial risk.

The growth of the global economy is currently focused in geographical regions that experience the most adverse of the climate impacts through both short-term disasters and long-term climate change. China and India, the world's two fastest-growing economies, are ranked second and third, respectively, for the highest number of natural disasters after the United States.

However, unlike the U.S., China and India's rapid economic development is outpacing their already limited capacity to withstand the impact of major disasters,

leaving them highly vulnerable to the highest health and economic threats from natural disasters.

Embedding Climate Risk Into Corporate Planning

Capturing opportunities within this climate-macro confluence needs to start with science and the data supporting the science. By using a combination of alternative and traditional data sources grounded in systems analysis and thinking, we can better understand the connections and risks associated with climate factors and material production, processing, physical flows and pricing as key drivers in order to predict directional macro performance.

For example, geographically indexing raw material exposures by sector and subsectors allows for early detection and signaling of climate-related cost changes.

Exploiting climate tech opportunities at the micro-level will require new sources of historical data, from meteorological data to reanalysis proxies. In turn, these can be used to back-test strategy formulation and to better characterize climate-induced financial and operational risk by quantifying its duration, magnitude and severity.

Supply chain mapping and network analysis will require the creation of a climate-first approach, with the forward-looking identification of physical supply derived from climate models.

Viewing the global economy through the new climate economy lens is a unique yet appropriate viewpoint to inform our view of the world, as we look to better anticipate and understand individual firm, market and economic behavior in the decades to come. Just as digital technology cemented long-standing winners and losers and ultimately created a new and more complex geopolitical order, we should expect climate to deliver similar opportunities.

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