cognizant

The future of us

Amid climate catastrophe and pandemic-induced disruption, a new era is taking shape. Here's a field guide to navigating the 'net zero era,' in which successful businesses will lead with digital, empower consumers and act with purpose.

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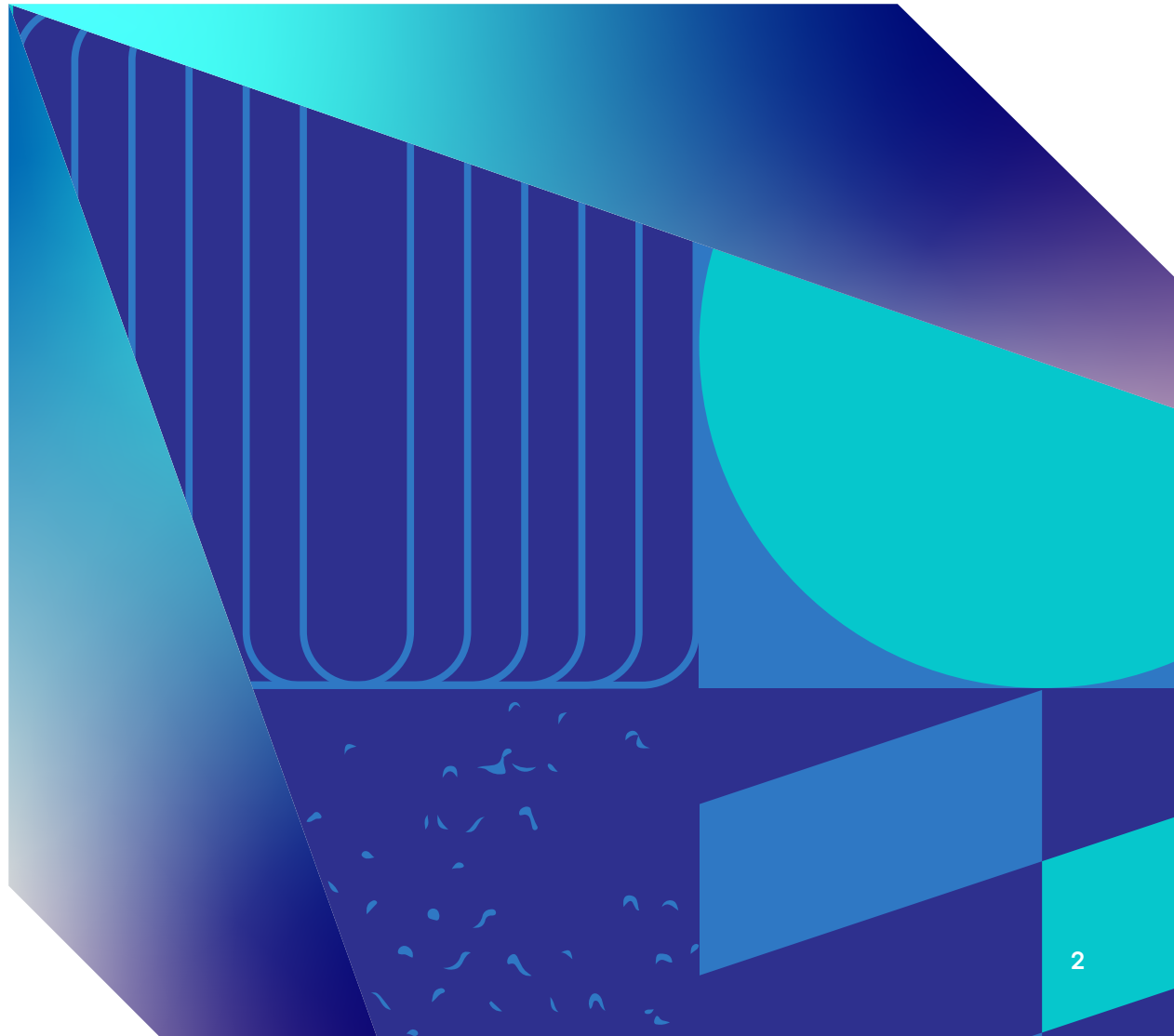


Introduction

Most of us would agree the world no longer functions as it once did. Environmental consequences, particularly those stemming from the climate crisis, are no longer concerns of the future. We've moved past the time of relying on the familiar modes and certainties of a stable climate and a pre-pandemic reality.

Amid the widespread dysfunction — from unprecedented weather events and snarled supply chains, to rampant labor shortages and new health protocols — it's easy to sense the old world fading away, never to return. Less obvious, but also as certain, is the dawning of a new era. This new reality will be defined by a volatile planet whose citizens, businesses and governments discover new ways of functioning productively, safely and meaningfully in a world beset by environmental disruption and global illness. Equally and just as importantly, however, it will also be infused with huge technological progress and innovation and hope.

Call it the "net zero era"— not because carbon reduction is the only need of the day but because the term encapsulates the many challenges the world faces, the most threatening of which is sustaining a planet healthy enough for humans to keep calling home. For business leaders everywhere, it will be essential to recognize the glimmers of this new era and grasp what's important and what's possible.

The net zero era emerges

From our vantage point, three glimmers in particular will define the net zero era. We're seeing:

The major pillars of society rapidly digitizing products, services and experiences to remake how we learn, govern, heal, manage our finances, protect ourselves and spread opportunity. Sustainability is a key driver of this digitization, with four-fifths of the global economy now subject to a net zero emissions target, and increased pressure and regulatory requirement to disclose and substantiate environmental, social and governance (ESG) claims.[1]

Consumers acting with increased self-agency and in accordance with their values. As traditional purveyors and processes become unavailable, unreliable or out of alignment with their individual needs or values, consumers are seeking new ways to source goods, services and information. Consumers are now aware they can use their purchasing power to direct companies toward products and services that represent their personal or political beliefs.

A new generation of citizens and workers turning to their own sense of what matters to energize their personal and professional endeavors, as well as those of their employers. As with consumer choices, employees are choosing to align their talent and time with employers that reflect their purpose.

In some ways, our current time is reminiscent of the Bauhaus movement of a century ago, which unfolded in a similar era of profound disruption and embraced the forces of innovation, technological acceleration, and rapidly changing customer sentiment to deliver products and services with a new sensibility into people's everyday lives.

In some ways, our current time is reminiscent of the Bauhaus movement of a century ago, which unfolded in a similar era of disruption.

A field guide for the net zero era

What you, as steward of your enterprise, do next is critical. How the future ultimately unfolds is up to the collective "us" and our response to the dizzying pace of social, environmental and technological change and stakeholder demands. This is what will define society, commerce and organizations for decades to come.

That's why we've developed this field guide to what the net zero era entails, one we hope will help business leaders see ahead, get ahead and stay ahead of the drivers shaping the future.

We've organized the guide into three main sections that explore the essential drivers for forward-thinking businesses to embrace, why each is vital and how they can ensure they are future-fit:

1. Digital+

View everything through a digital lens. From processes and systems, to customer and partner interactions and entire value chains, nearly everything can be rethought with digital at the core. Advanced technologies and modernized ways of operating and collaborating across value chains will be critical for building new business models that meet sustainability targets and ensure the health of the planet. We will need data-driven intelligence and visibility to shift supply chains, design and behaviors to low-impact, circular modes of operation.

2. Consumer empowerment

Understand the newly "conscious," self-reliant consumer. The old customer relationship is broken. Consumers not only want to be known by the businesses they interact with through personalization initiatives; increasingly, they also demand agency over the formulation of the end products they buy, the services they consume, the choices they make and the experiences they choose. Businesses need to provide the transparency, trust and control consumers increasingly demand.

3. Purpose

Promote and support a sense of purpose and belonging. Shareholders, regulators and consumers are asking institutions to tap into a deep sense of purpose to persevere and thrive in a world redefined by illness and natural calamity but also refreshed by technological advancement and innovation. Attracting the next generation of talent and building closer relationships with customers will depend on developing and acting on a corporate ethos that guarantees workers of all stripes a supportive work environment.

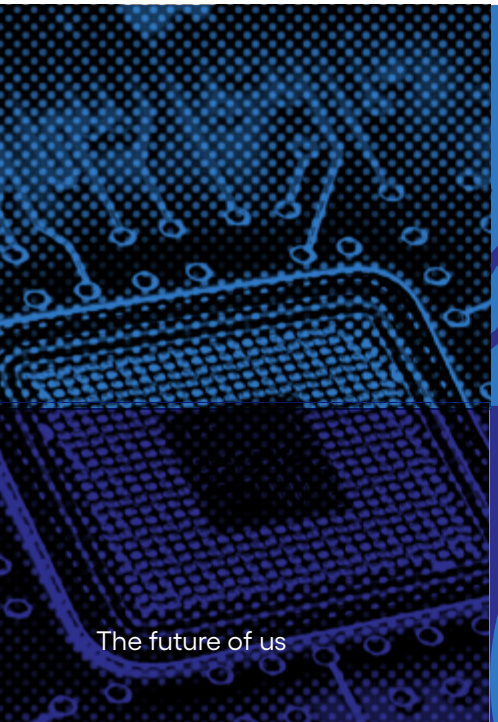
Digital+ **Empowerment** **Purpose**

To illustrate these three drivers in our field guide, we've created hypothetical scenarios on what life and work might look like in the net zero era we foresee. These scenarios are designed to reflect the life of a young millennial or Gen Z worker, as these are the people most impacted by — and most influential in shaping — the future.

Facing the challenges of the net zero era will require targeted investment, innovative thinking and quick action. In the end, the future holds no guarantees — it's our own actions that will create a future that's healthy and productive.

The pandemic has brought down the curtain on digital's first act, and now the second is about to begin. A new era is unfolding — the net zero era. This is the Future of Us.

*A new era is unfolding — the net zero era. This is the **Future of Us.***



Digital+

Net zero demands a digital-first mindset

The complex solutions needed to solve our interconnected social, economic, health and environmental challenges will rely on the speed, automation, intelligence and connectedness that only a digital-first mindset can bring. New business and operational models — from "everything as a service" (XaaS), to circular business models, to systems-thinking — will be supported by advanced modes of information sharing, collaboration and intensive analytics.

To understand where changes are needed and how to execute them, businesses will instrument their assets, products and spaces with sensors, gather massive amounts of data about everything, and use artificial intelligence (AI) and machine learning to sift and mine for meaning. Meanwhile, they will accelerate innovation through application programming interface (API)-driven ecosystems that lead to new ways of operating, inspired by net zero needs and ideals.

This shift toward synthesized and collaborative efforts echoes the notion of "Gesamtkunstwerk" (where different art forms combine into a cohesive whole) that underpinned the Bauhaus movement 100 years ago.[2]

Future Views: The new stakeholder

Zac is always busy. Being climate conscious, captivated by tech and social media savvy, he's switched on and connected from morning to late night, from updating his followers on what he thinks of the latest big tech hardware release to socializing with friends in a collaborative virtual space. He's easily frustrated when he can't access services, products or information he wants digitally.

His latest annoyance is his inability to quickly obtain information on the sustainable sourcing of his groceries and the comparative environmental cost to repair his laptop rather than buy a new one. When he hits these obstacles, Zac always lets his communities know so they can help spread the word on which companies to avoid or promote when it comes to sustainable consciousness.

From auditing carbon to removing carbon

Each element of our consumption comes with a cost — not just the price tag, but also the many other elements involved: energy, carbon, fresh water, land, chemicals added (and released again). These inputs and their externalities are embedded in companies' products and value chains. With everything on the line, will you wait for stakeholders to drive strategy or get ahead with your own path to net zero and beyond?

This deeply embedded problem is why many companies have gone beyond the traditional gestures of charitable donations and office recycling. Corporate-wide sustainability initiatives must now extend beyond small actions and mere reporting, to thoughtful analysis of which sustainability issues are most relevant to a company's key profit drivers. To set targets and track progress toward them, businesses will require a sophisticated approach to data collection, data management, data analysis and data interpretation.

Why now

Business's supply chains and — most importantly — the communities they serve have already felt the burn of the climate crisis. In every country, extreme weather is forcing horrific floods, fires and storms into people's lives.

Western countries are busy legislating for net zero emissions — the European Union has set ambitious goals and adopted legislation across multiple policy areas to implement international commitments on climate change, and their impact on industry will be profound. A case in point is the European Commission's taxonomy established to meet the objectives of the European green deal.[3]

What to look for

Corporate sustainability commitments are proliferating: from luxury goods maker Kering's commitment to biodiversity, to Unilever's introduction of carbon footprint labels on its food,[4] to Nestle's investment in regenerative farming practices.[5] Even energy-hungry and carbon-dependent brands like Formula 1 are considering future F1 races featuring hydrogen-powered cars.[6]

Further change will be driven by increased taxation, higher resource costs, regulatory compliance mandates, fines — and business risk, such as for industries that rely on fresh water in their production processes, and those that find themselves "too dirty" for insurance companies to underwrite.[7]

How to get ready

Many solutions are emerging that measure, reduce and offset a range of environmental and social impacts.[8] Within the workplace itself, Internet of Things (IoT) sensors enable "always-on" data feeds to accurately monitor anything from air and water quality to power use.

Beyond the physical workplace, IoT sensors embedded in products will further the emergence of XaaS models, enabling providers to better manage product lifecycles with repairs and reuse, and customers to better control their environmental footprint.

Analytics technologies — driven by AI and machine learning — will be needed to correlate the different variables and get new insights into steering interventions for maximized co-benefits and minimized cost. By creating digital twins, businesses can test and reconfigure their supply chain or logistics networks to remove carbon, redesign their water management systems and realize more responsible sourcing strategies.

Of course, all these sensors, data and analytics technologies will have an environmental impact themselves. Digital technology will require environmental footprinting as well, to prevent it from adding more impact than it seeks to reduce. Business should avoid the old trap of looking for a perfect or energy-free solution — one does not exist. Instead, look for data centers, clouds and other computing resources that run off renewable energy, as many increasingly do.

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From solo endeavors to collaborative ecosystems

For the daunting and multidisciplinary challenges of the net zero era, organizations won't find solutions in isolation — they'll need deeper collaboration through tech-enabled ecosystems that pool ideas, opportunities, capabilities and risk.

Businesses can learn from the example of a group of companies in mechanical and plant engineering in Austria, Germany and Switzerland. In 2017, these companies stopped fiercely guarding their intellectual property and created Adaptive Manufacturing Open Solutions (ADAMOS), an open and non-proprietary platform for sharing resources and tech knowledge for the benefit of all participants.[9]

With fast emerging needs — and the need to meet them in real-time — open collaboration enabled by digital tools will increasingly be the name of the game.

Why now

The race is on to meet consumer standards, grow economies and protect the little time we have left to do so in a still-stable climate. By forging collaborative ecosystems, sellers and producers can align themselves around the greater good as they allow unique insights, capabilities, data and knowledge to flow through a value chain. Large-scale, interconnected databases of API-driven environmental parameters could underpin joint actions aimed at preserving the environment, as well as automating the next best action through smart data governance.

This could take the form of farmers using AI-driven analytics on third-party meteorological data to identify harmful weather patterns and plant diseases, and to understand what will sell — and for how much — at a virtual market.

IoT projects will have huge potential to help companies collaborate. It's not just about connecting machines together to improve productivity through automation at scale; it's also about better collection of data from your own and third-party processes, operations and spaces to drive transparency, trust and better decision making.

What to look for

Digital ecosystems will reshape an array of industries, from the manufacturing of sustainable consumer products, to the rise of interconnected healthcare services that leverage patient data across wellness specialists, nutritionists and doctors.

A future example could come from utilities, with a holistic and systemic vision to restore natural water cycles by collaborating with equipment manufacturers, city designers and researchers to make the places where people live green, healthy and future-proof.[10]

How to get ready

Empower dedicated teams to swarm around a specific challenge, and connect these teams with other industry partners and innovative startups to unlock new insights about the art of the possible. These teams should comprise a diverse mix of expertise drawn across functional boundaries: product specialists working alongside material specialists, data scientists and user experience (UX) experts focused on a shared strategic goal.

Businesses can also improve the value and effectiveness of their collaborations through the use of "systems thinking," in which they map the impact of their business decisions beyond the immediate next step in the value chain and optimize processes to meet the objectives of a larger subset of players. This goes beyond the traditional approach of maximizing the performance or benefit of an individual component or element.

Businesses can also improve the value and effectiveness of their collaborations through the use of "systems thinking."

From linear value chains to circular business models

Few companies or people consider what happens to their products after selling or buying them. This is hardly a surprise given that we have created an economy based on ensuring the consumer doesn't see the waste. (Think of the waiter who has been carefully instructed to clear your buffet plate between each course.) The inconvenient truth is that people eventually throw away their purchases and buy shiny new replacements, with waste collectors taking care of the discards.

Circular business models can build economic, natural and social capital by designing out waste, keeping products and components in use and returning materials to the product lifecycle. Through IoT and XaaS, it is now possible to digitally track, measure and conserve assets and materials so producers and customers can derive the maximum value from them.

Why now

An array of trends — including supply chain disruptions, new "green" legislation, carbon taxes, the service economy. and consumer preference for partial/temporary ownership models — are driving a rethink of traditional product lifecycles.

Product stewardship programs are now emerging worldwide, from "Swap and Sell" Whatsapp groups popping up in cities and regions around the world, to business-led moves such as IKEA's Circular Hub.[11] Government-sponsored initiatives are also emerging, including procurement programs in cities like Toronto[12] and wider national strategies such as France's 50-measure roadmap for a 100% circular economy[13] and the Netherlands, plan to become totally waste-free by 2050.[14] At the root of these initiatives is recognition that businesses and the planet are approaching a consumption-based tipping point.

Innovative companies have identified business opportunities in the transition to circularity. For example, Paris-based Back Market, which runs a marketplace platform for sophisticated refurbished electronics, has reached a valuation of $5.7 billion that made it France's most valuable startup.[15]

What to look for

New business models are emerging based on mixed ownership, reuse and remanufacturing. And it's not the usual consumer brands like IKEA making all the plays: Schneider Electric's circularity strategy avoided 157,000 tons of primary resource consumption in 2020.[16]

The secondary market for mobile phones hints at the opportunity for companies to retain more of the value of the material and energy used to make their products. It also points to the business model changes required to seize that opportunity — such as new processes and systems for helping customers when products wear out, approach obsolescence, fail or no longer provide satisfaction.

How to get ready

Businesses need deeper collaboration across the value chain to develop products that can be managed over their lifecycle. Waste at one end of a value chain could be fresh input for another (using worn-out car tires to make padded floors in a children's playground, for instance).

Understanding the possibilities associated with circular business models requires collaboration among multiple players inside and outside the business. This is why, again, systems thinking is required. Whether it's quantifying all the transactions involved across the supply chain to put a price on the final product, or enabling new services and opportunities around the product along its lifecycle, businesses will need to coordinate their actions and decisions with others in the ecosystem.

*Understanding the possibilities associated with **circular business models** requires collaboration among multiple players inside and outside the business.*

Quick Take

Toward a second Bauhaus

"Together let us desire, conceive and create the new structure of the future."

— Walter Gropius, Bauhaus founder

The Bauhaus movement came of age at the intersection of new technologies, new materials and roiling societal change. Sound familiar? We think the world is due a second Bauhaus movement, 100 years after the original, whose principles could provide a clue to a corporate philosophy fit for the net zero era.

The first Bauhaus movement responded to innovation opportunities made possible by new construction materials (steel, poured concrete), electrification, telephones and motorcars, as well as the first stirrings of industrial mass consumption that ultimately grew into our late 20th-century consumer-based economy. The Bauhaus battle cry, "art into industry," revealed a desire to extend beauty and quality (i.e., into every home) through well-designed, industrially produced objects.

The second Bauhaus will borrow from the original movement's drivers but within the context of the opportunities that digitizing our physical world brings. The most important of these opportunities, perhaps, is improving the ability to understand the world we live in through increased quantification and better real-time insights into what needs to be reengineered to reduce environmental impact.

Bringing this new Bauhaus iteration to life will require embracing the modernized forces of innovation, technological acceleration and rapidly changing customer sentiment to create the products, services and business models that deliver the sensibility of the net zero era into people's everyday lives.

The maxim of this movement will be "green into industry," reflecting the crucial need to extend sustainability, consumer agency and purpose into every company, through intelligent systems, data-led insights, collaborative approaches, radical business models and, of course, well-crafted experiences.

Imagine: building digital twins, "systems of systems" or "ecosystems of ecosystems" that could model and lessen the impact of climate change; buying personalized and tailored products and services that guarantee the transaction's ecological impact is minimized; working for a company that puts sustainability at the center of its value proposition.

The new Bauhaus could provide an aesthetic for a modern business that everyone understands instantly, just as the old Bauhaus logo does today.

Consumer empowerment

Net zero means harnessing the empowered consumer

The last decade has seen businesses tripping over each other to find more personalized and customized ways of transacting and interacting with customers through advanced analytics and AI. This obsession with customization is now being paired with, if not ever so slightly dethroned by, the need to customize for product sustainability.

At the same time, consumers have changed dramatically since the pandemic broke — a time defined by product outages, labor shortages, broken processes and a growing sense that meeting the challenges of the day will require breaking from old habits and behaviors. And they're not waiting around for businesses to help with those changes. They're finding and developing their own process workarounds, estimating carbon footprints, turning to DIY if it seems "greener," discovering alternative sources and creating their own knowledge bases — through social media channels or even by creating their own apps — to get the products, services and information they need.

Businesses need to meet these new consumers where they are and accept they're no longer in the driver's seat. Just as the original Bauhaus movement dissolved the boundaries between artist and craftsman, we'll see the lines blur between business and consumer as new paradigms like co-creation, XaaS and distributed ledger technologies redefine ownership and power models. Customers will take the helm of the relationship and increasingly expect more say in their overall experience, from how they minimize their ecological footprint to the ingredients they want in their cologne.

Future Views: The co-creator

Charlie is feeling newly re-energized by her current career track. Not only has the tracking app she created in her spare time to locate rare and unique fashion items been licensed by a well-known US fashion chain, but it's also trending on social media.

When the head of strategic sourcing at her company saw the item on Charlie's newsfeed, she asked Charlie for her thoughts on how to ensure compliance across the company's key supplier relationships and inspire these vendors to proactively consider environmental efficiencies they can make to their products and factories.

She invited Charlie to join a team of technology specialists, researchers and project managers to bring the concept to life. Whereas Charlie always thought this was a stopgap job to tide her over until she could create apps full time, working for a community-focused, trustworthy and forward-thinking company has made her think twice.

From personalization to co-creation

Rather than consumers always being at the receiving end of the product development process, forward-thinking businesses are including them as partners in co-creating goods and services so that the end product is completely personalized to their lifestyle and particular concerns, whether it's reducing their environmental impact or getting the exact product for their needs or tastes.

Why now

Using lower cost and more widely accessible technology, consumers are taking a greater role in creating the products or experiences they value. Through social platforms like TikTok and Instagram, consumers are becoming more influential than traditional marketers, building and marketing their own content in the form of beauty hacks, game streaming, wellness lifestyles and more. Businesses and social media platforms are working to monetize this "creator economy" through subscription services and even offering content stars their own shows.[17]

Meanwhile, frustrated consumers have taken matters into their own hands by creating tracking apps for needed goods like at-home COVID tests, household essentials and medical supplies.[18] One teenager in the US created a bot that tracks the comings and goings of business titans' private jets and publishes the information on Twitter, even after being offered a reward to stop.[19]

What to look for

With their increased influence over product and service composition, and the ability to create their own tools to find out what businesses aren't ready (or can't or don't want) to divulge, the consumer-as-creator could ultimately influence businesses' sourcing decisions around clothing, furniture and electronics, pricing environmental and social factors into the final cost and reshaping the value chain along the way.

Even before that happens, businesses can no longer overlook the opportunities of consumer co-creation. Fast-food giant McDonald's, for example, has added a "menu hacks" section to its menu, enabling customers to order some of the most popular combinations that have emerged on TikTok.[20] Proven Skincare, meanwhile, allows customers to formulate their own products by applying an AI-based tool to a database of over 23,200 ingredients and including information on their specific concerns, their lifestyle and where they spend most of their time.

Both companies are striving to give customers more agency over the final makeup of the products and services they want to buy.

How to get ready

To see where co-creation can fit into their strategy, businesses need to identify whether their current market segmentation offers enough insight about their customers' values to engage them in a hands-on co-creation process. They also need to consider which technologies could make it easier to obtain consumers' input at different parts of the value creation process and product lifecycle.

For example, AI-enabled mass conversation tools such as Remesh's software allows businesses to "talk" to hundreds of people at once and then organize their thinking, using a combination of qualitative and quantitative research techniques that generate superior insights.[21]

With XaaS models, businesses can retain ownership over the product and its lifecycle, giving them more incentive, opportunity and flexibility to focus on and respond to what the user needs from the product, whether it's better quality, easier maintenance or the best way to recycle it.

Businesses need to identify whether their current market segmentation offers enough insight about their customers' values to engage them in a hands-on co-creation process.

From individual experiences to community affiliations

The relentless pursuit of personalization has traditionally been about better understanding the individual consumer. But in doing so, businesses can miss the insights that can be gleaned from correlating these insights with the passions and interests of their wider circle (and thus producing an even more compelling experience).

Depending on whom we perceive ourselves to be and what we stand for, our communities of interest — and the technology platforms that enable them — play a big role in how we part with our hard-earned money.

Why now

In an age of ubiquitous opinion and information available through social media, consumers seek out like-minded people to guide their decisions on how to spend ethically and sustainably, what to do and where to go. Finding an ethical pension fund that commits to diversity and inclusion is less often about contacting your financial advisor and more often about posting on social media to see what thousands of others recommend. Community affiliations for food choices, sustainable fashion, low-carbon insurance and much more provide a workaround for the modern consumer.

What to look for

The Robinhood-GameStop stock controversy is a modern parable for the redistribution of power between businesses and consumer groups. Not only did a group of users on the popular social media outlet Reddit realize they could defy the logic of the market by banding together to drive up GameStop's value, but the company also seriously damaged its brand image when its response — to freeze trades — turned it from "for the people" to "against the people."[22] When the crowd speaks, it's best for companies to not just listen but also gain insight into these groups of common interest, and monetize the ties that bind them.

Less controversial is the tie-up between Nissan and Atlas Obscura, which during the pandemic combined the interests of rugged car owners and restless travelers into one experience. The companies staged socially distanced livestreaming events at off-the-beaten-path locales that drivers of Nissan's Rogue crossover vehicles could view from their cars — but only after passing through rough terrain that emphasized the features of their car.[23]

What might at first seem like a cute product tie-in actually exemplifies the ability to transform industry dynamics and power structures by marshalling, and thus exponentially increasing, the enthusiasm of two communities for the brands involved.

How to get ready

When companies comprehend customer affiliations at a deeper level, they can start creating products and services that are embraced by like-minded communities whose influence spreads to even more enthusiasts. By combining data-based insights with qualitative, ethnographic analysis on not just individuals but also those they interact with, businesses can create a virtual hotline into how to contextually align their products and services with the power of the crowd.

Businesses can create a virtual hotline into how to contextually align their products and services with the power of the crowd.

From growing mistrust to shared authority

The challenges and opportunities of the net zero era have taught consumers that institutions and organizations don't always have the answers and solutions to their most pressing needs, at least not in a timely fashion. So along with the shift in power from businesses to consumers comes another change: a shift in trust.

Enter blockchain, whose distributed ledger architecture replaces (or, in some cases, may reduce) the need for a centralized authority or intermediary with an automated, secured, transparent and trusted way to process, validate and authenticate transactions across a decentralized platform. Whether in finance, contract management, supply chains, product provenance or even corporate management practices, blockchain points to the reality that consumers don't necessarily believe centralized authorities have their best interests at heart.

Why now

Developers are seeking to rebuild both the financial system and the internet economy from the ground up using blockchain: databases distributed over many computers and kept secure through cryptography. The goal is to replace intermediaries like global banks and tech platforms with software built on top of networks that, in the case of cryptocurrency, incentivize the users who run them by proportionally distributing the value they generate among them.

During the pandemic, several governments experimented with blockchain to ensure the vaccine status of their population.[24] More entertaining is Decentraland,[25] a virtual-reality platform built on the Ethereum blockchain, part of the rapidly expanding metaverse. Decentraland's applications and functions are run not by a single centralized entity or company, but are user-operated, decentralized and autonomous — and they give their members control.

What to look for

Because it eliminates the need for a trusted authority, blockchain will increasingly be used to certify activities such as sustainability reporting, carbon offsetting, carbon credit, waste management, carbon consumption management and product provenance.

By enabling immutability, traceability and accessibility, distributed ledger architectures could also enable a sharing economy in which buyers and sellers directly interact with each other to procure goods and services, leading to a more sustainable use of resources.

Through smart contracts, which remove the need for notary and other such authorities, buyers and sellers could more easily and securely interact with each other. Achieving full privacy in transactions, where even the authority is not able to access it, is another aspect of such zero-knowledge digital protocols.

How to get ready

Ask yourself how the logic of decentralization can improve different areas of your business and seek out use cases in which trust, transparency and provenance are crucial to success. Bold companies are even experimenting with decentralized autonomous operations to manage their own work. A daring example comes from London, where AI company Satalia has fully embraced a "swarm-like" operating model; it has no managers or key performance indicators, and employees vote on each others' salaries.[26]

Businesses should use pilots to explore the trust dividend that comes with blockchain innovations, such as automated market makers, arbitrage systems and self-stabilizing currency regimes.

Bold companies are even experimenting with decentralized autonomous operations to manage their own work.

Quick Take

A golden era of tech will power the net zero era

The past two years have served as a reminder that adversity often forces societies to progress. Here are advancements we see emerging that, when combined, will provide the foundation for a more resilient, sustainable and innovative world:

1 **Recent transformative discoveries.** The success of the messenger RNA technique behind the Pfizer and Moderna COVID vaccines holds out the tantalizing possibility of bespoke treatments or diets configured precisely to your genome. We can (almost) bend biology to our will, treating diseases, editing genes or growing meat in a lab that is entirely carbon neutral.

And then there is AI, which shows impressive progress in a range of contexts, from predicting protein folding[27] to creating GPT-3,[28] the best natural-language algorithm created to date. (For more on this topic, see our report, "The True Meaning of AI: Action and Insight.")

2 **Booming tech investment.** According to some estimates,[29] the private sector now spends more on computers, software and R&D than on buildings and industrial gear. Government-funded R&D spending began growing before the pandemic,[30] and investor enthusiasm for technology firmly extends into climate change, medical diagnostics, logistics, biotechnology and semiconductors.

Meanwhile, geopolitics and new global risks are highlighting the need for domesticizing spending on key technologies, such as semiconductors, with impacts on both resource governance and supply chains. Such focused investments will spur innovation and technology accelerations.

3 **Mass technology adoption.** The pandemic accelerated fundamental change in how we live our lives, including rampant adoption of digital payments, telemedicine, industrial-scale automation and machine learning in everything from farming to manufacturing. Meanwhile, accessible and low-cost wireless communications, whether WiFi or 5G, as well as advancements in technology miniaturization, nano technologies, low-cost computation and cloud all add up to higher maturity of technology enablers at lower cost.

4 **New approaches to ensuring trust and transparency.** Distributed ledger technology will provide the reliable, trustworthy and transparent data sharing needed to drive sustainability initiatives. Already, it's seen as an enabler for removing Scope 3 emissions[31] — previously considered an intractable problem because they involve multiple players upstream and downstream in the supply chain

Purpose

Energizing the soul of the net zero enterprise

Navigating the changes and challenges ahead will only be possible with energy and a keen sense of purpose from senior leaders and the people they manage. Businesses need to lure the next generation of talent, and that will mean delivering a workplace experience that fits their lifestyle needs, desires and choices, as well as their commitment to wider social goals.

Young skilled workers on which businesses depend increasingly are unwilling to join companies that don't share their personal commitment to sustainability and a supportive work environment for people of all races, genders, nationalities and abilities.

Following the original Bauhaus principle of "form follows function," the workplace itself increasingly should reflect the business purpose. This is as true for its physical design and the diversity of its workforce as it is for the design of its processes, policies and organizational culture.

Future Views: The employee

Sadie is driven by a strong moral compass in her personal and professional life. Two years before completing her dual degree in computer science and law, she founded a close-knit community of thinkers and doers on campus committed to starting impactful organizations, businesses and funds designed to change the corporate status quo. The group created a manifesto around technology equity, algorithmic justice and responsible use of AI.

After Sadie connected with other high-performing colleagues at her law firm, the group formulated a plan for challenging the executive team about the company's lack of real action toward its stated sustainability goals and its lackluster commitment to diversity.

As concerned as she is about her own career progress, Sadie is equally committed to accelerating a modern work environment — whether at her current workplace or one that is more aligned with her principles. While Sadie plans to cut her teeth in corporate by navigating the gray area between ethics and technology, her ultimate goal is to leave the corporate world and push for the seismic changes in operations and corporate culture she feels are necessary now.

From money matters to money matters less

We all have bills to pay, but for the next generation, financial compensation for work performed is no longer enough. The youngest generation of workers has grown up watching the threat of climate change evolve from a distant scientific theory to a tangible and terrifying reality, and income inequality and social injustice tear at the fabric of society. Top talent wants to work for companies that help tackle these stark realities and bring about positive change in communities, societies and the planet.

Why now

Conversations about these issues are global, fueled in part by ubiquitous social media interactions, star activists (think Greta), unprecedented natural catastrophes and unrelenting headlines.

A watershed moment came in 2019, when more than 180 US CEOs signed a letter published by the Business Roundtable signaling a move away from "shareholder capitalism" and toward the "stakeholder" variety.[32] That was followed by the Climate Pledge in September 2021, an open commitment by global companies to report, offset and eliminate their carbon emissions.[33] All the while, ESG investment has grown rapidly, with funds in this segment now capturing at least $120 billion in new investment.[34]

What to look for

Educated young workers have lived their formative years losing sleep as the scale of climate change and its risks permeate their lives. Young talent is now voting with its feet, refusing to work for a company considered dirty or out of touch with the global zeitgeist.[35] As talented workers increasingly shun companies with poor ESG credentials,[36] businesses will strive to outdo each other on how transparently they showcase their sustainability metrics. (For more on this topic, see our report, "The Purpose Gap.")

How to get ready

Companies need to demonstrate purpose beyond profit generation. In addition to properly quantifying, measuring and reporting on ESG impacts in an auditable way, businesses will need clear, coherent and authentic communication about company action, as well as honest acknowledgment of difficulties encountered.

Businesses can also adopt a “net positive” posture, in which they strive to give more to society and the environment than they take. This could range from food companies helping customers stay healthy, to mobility companies focusing on inclusive and environmentally friendly ways of transporting people, rather than just selling vehicles.

Companies need to demonstrate purpose beyond profit generation.

From workplaces to working spaces

People's relationship with work — and thus the relationship between employers and employees — is changing. Talented workers, more so than in previous generations, don't live to work; they work to live. That includes setting their own work schedule to accommodate family and personal needs, as well as combining personal and professional interests. Autonomy, including where, when and how work happens, is a mandate.

Why now

The COVID-19 pandemic took autonomy to the next level. "Digital nomads" sought beautiful, often remote, spots to socially isolate while working remotely. Companies are making it easier for a newly distributed work force to work the way they want to work when they want to work.

As Salesforce President & Chief People Officer, Brent Hyder, summarized, "the 9-to-5 workday is dead; and the employee experience is about more than ping-pong tables and snacks."[37] Nice as they undoubtedly are, such perks are no replacement for giving employees the freedom to fit work into their lives rather than vice-versa.

What to look for

While not every aspect of a transformed world of work has clearly emerged, one thing is indisputable: increasingly talented people can, and will, work from anywhere. Witness Airbnb enabling longer-term rentals[38] and the number of countries that offer special visas for digital nomads, including Iceland and Barbados.[39] Businesses will increasingly build a strategy for harnessing the best talent, no matter where they want to work.

How to get ready

Businesses not only need to ensure their policies don't create unnecessary location restrictions that put off talented workers, but they're also challenged to nurture cohesive teams when members are scattered across different places and rarely — or never — see each other. Managers must spend a higher share of their time interacting with team members to understand their personal needs, identify the skills they can bring to the group and ensure team cohesiveness and belonging.

"Metaverse" platforms and other extended-reality tools will likely see uptake to optimize team dynamics, while HR will need to adopt new ways of managing the challenges and opportunities people face when working remotely with colleagues across the world. (For more on XR, see our report, "Infusing XR into Remote Collaboration.")

Managers must spend a higher share of their time interacting with team members to understand their personal needs.

From a place for commuting to a place to connect

Even with rampant shutdowns and slow return-to-office strategies, the idea of the office as a place for people to congregate is far from dead. COVID-19 has shown that while "heads-down work" can be done anywhere — typing, coding, form-filling, etc. — "heads-up work" is still best done face-to-face; there's nothing like being in the room when we want to create, collaborate and feel part of something bigger.

This gives the office a new meaning: Rather than being the only place work gets done, it's an attractive place to mentor and be mentored, exchange ideas and develop cultural cohesion and a sense of shared purpose.

Why now

Newly liberated employees will need good reason to leave their cozy homes and face the commute into work.[40] In the US, 39% of workers would consider resigning if compelled to return to full onsite work mode.[41]

There needs to be a good reason and a good environment for getting people together, which explains why Tishman Speyer Properties, one of the largest developers globally, completed more than $11 billion in deals in the high end of the commercial real estate market even while the pandemic raged.[42]

What to look for

In the future, offices will serve multiple purposes. They'll be made up of private spaces for people who for any reason need a quiet spot to do their heads-down work, as well as shared spaces for collaboration, client and prospect showrooms, R&D and social events (rather than the global/regional annual ones that many large multinationals traditionally hold).

All this combined will turn the office into a place to develop the culture, network and bonding over shared purpose. The new office, pioneered by WeWork before it blew itself up through avarice and greed, will be a better place to support all the various types of work needed to be done there.

How to get ready

As organizations shift into more flexible work structures, their success will hinge on adequately investing in the planning, preparation and execution phases of hybrid work. A major piece of a hybrid-work strategy is conducting a work-location assessment for every role.

Using a heads-up/heads-down model, work-redesign teams can estimate how much of a given role's time and responsibilities are spent on activities that are best facilitated in-office or remotely. The resulting flexible work structures should be customized, best-fit arrangements, based on employee input and guidance, and a work assessment based on activities instead of functional groupings.

(For more on this topic, see our report "A Guide to Modernizing Talent Management in the Hybrid Work World.")

A major piece of a hybrid-work strategy is conducting a work-location assessment for every role.

The dawn of a new age

The Bauhaus movement created a collection of radical ideas and visionary ambitions that were the very definition of innovation and optimism for the time. We believe the same energy is what will propel us successfully into the net zero era. The Bauhaus spirit, reset for a new age, will harness the forces of innovation, technological acceleration and rapidly changing consumer sentiment to meet the needs of the day.

Emerging from the swirl of change today, we see abundant opportunities for businesses with the foresight and boldness to find dramatically new ways of working, creating and interacting that prioritize healthy environmental and social outcomes.

Time and again, as old worlds fade, new eras dawn. How the next age unfolds is up to us — as businesses, professionals and citizens of a changing planet. The glimmers of the net zero era are coming rapidly into view. Let's start building the Future of Us.

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About the authors

Euan Davis

Associate Vice President

Cognizant

Euan Davis leads thought leadership worldwide at Cognizant. He determines the strategic thought leadership themes for the company, from shifting customer dynamics and accelerated digitization to sustainability and corporate resilience. He leads a team of thinkers and writers. Euan is a sought-after advisor and keynote presenter on issues, trends and emerging opportunities.

Euan joined Cognizant in 2013 to set up a think-tank called the Center for the Future of Work (Europe). He now assumes leadership of Cognizant Research globally.

Before joining Cognizant, Euan served as a Principal Analyst for Forrester Research based in London. He holds a BA degree from Portsmouth University and resides in Cambridge, UK.

Euan can be reached at Euan.Davis@cognizant.com | www.linkedin.com/in/euandavis/

Eduardo Plastino

Director

Cognizant Research

Eduardo Plastino is a thought leader focusing on the impact of digital transformation on the sustainability agenda, work, societies, organizations and economies throughout the world. He has published research on topics including workforce and purpose, skill-building in the digital age, innovation ecosystems and AI implementation strategies.

Before joining Cognizant, Eduardo worked for Accenture, British consultancy Oxford Analytica and Spain-based international news agency Agencia EFE. He is based in the UK.

Eduardo can be reached at Eduardo.Plastino@cognizant.com | www.linkedin.com/in/eduardoplastino

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Dr. Rouzbeh Amini
Head of Sustainability Practice
Global Growth Markets, Cognizant

Dr. Jan Konietzko
Sustainability Advisor
Global Growth Markets, Cognizant

Madison Hubbard
Experience Strategist
Zone London (a Cognizant Company)

Sophia Leonora Mendelsohn
Chief Sustainability Officer
Global Head of Environmental Social Governance, Cognizant

Stephanie Wan
Head of Experience Strategy, Banking and Financial Services at Cognizant Digital Experience and Partner, Idea Couture (a Cognizant Company)

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World Headquarters
300 Frank W. Burr Blvd.
Suite 36, 6th Floor
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277

European Headquarters
1 Kingdom Street
Paddington Central
London W2 6BD England
Phone: +44 (0) 20 7297 7600
Fax: +44 (0) 20 7121 0102

India Operations Headquarters
#5/535 Old Mahabalipuram Road
Okkiyam Pettai, Thoraipakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060

APAC Headquarters
1 Changi Business Park Crescent,
Plaza 8@CBP # 07-04/05/06,
Tower A, Singapore 486025
Phone: + 65 6812 4051
Fax: + 65 6324 4051

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