DOING BUSINESS IN 2030

Four Possible Futures

BSR®

About This Report

This report was written by Jacob Park, with additional insights and guidance from Aron Cramer, Eric Olson, and Ksenia Benifand. Any errors that remain are those of the authors.

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Contents

Foreword

We are living in a time of great change.

The evidence is everywhere. It is undeniable that climate change is here and growing in impact, that technology is upending familiar social and economic arrangements and norms, and that demographic shifts are redefining everything from our communities to our lifespans. For the first time in human history, more than half of the world's people are considered to have middle-class incomes.

> Change is often deeply nonlinear and interconnected.

The changes occurring do not point in a single direction at once; they seldom do. Technology is enabling unprecedented agency for more people than ever before, while also unsettling many due to both the pace of change and the implications for their privacy and security. Renewable energy is growing fast, even as climate change is creating more and more human and economic dislocation. We are also living in an era that is producing overall improvements in living standards right alongside widening income inequality.

All this shows how deeply nonlinear and interconnected change often is. What's more, the pace of change across all these areas is only likely to increase. As the saying in Silicon Valley goes, the pace of change has never been faster than it is today … and it will never again be as slow as it is today.

This creates an entirely new operating environment for companies. To meet both the needs and the context of the 21st century, it's necessary to rethink every aspect of business. Governance, purpose, strategy, marketing, partnerships, access to resources, and many other things are all being redefined by the remarkable changes remaking our world. The stakes are profound: Businesses that fail to change will struggle, and those that do change will find immense opportunity.

One year ago, we released a report that outlined how the sustainable business agenda is changing: how the best companies are taking new approaches to building more sustainable business models, and how it is increasingly important for business leaders to use their voice on public issues.

That report launched an important process to define further how companies can understand and shape our changing world. In the year since, we have engaged with many BSR members in an exploration of the underlying causes of these changes. Our aim was to develop a set of scenarios that provide our view on how the operating environment could change. Only by understanding the rich mix of economic, environmental, technological, cultural, and other changes can companies create resilient strategies that respond to them by building a truly just and sustainable world.

This report presents a set of four scenarios describing a range of alternative futures derived by drivers that will define the next decade (and more) of business and our shared future. These scenarios pivot around the questions of how society will coalesce and/or decentralize, and whether the economic models that have defined the past several decades will continue or change. These questions have immense relevance for business. They will define consumer tastes and behaviors; societal priorities; new business models and partnerships; and the relationship between business and their employees, regulators, and stakeholders. More broadly, the ways we all respond to our changing world will determine whether societies will persist with an economic model predicated on endless growth and maximizing shareholder value, or whether they will shift toward a more expansive view that sees the purpose of the economy as delivering equitable prosperity on a healthy planet.

The way we respond to the changes at the heart of these scenarios will define whether and how business will—working with others—rise to the challenge of decisive climate action, achieve the vision of the Sustainable Development Goals (SDGs), create meaningful employment that sustains people and communities, and apply new technologies in ways that society embraces.

We believe these scenarios can help inform the creation of effective and resilient strategies, not deliver the strategies themselves. Scenarios are not predictions. These are works of imagination and should not be construed as forecasts. Indeed, there will almost certainly be an interesting mix of unpredictable breakthroughs (e.g., massive advances in energy storage or genomic-driven healthcare) and breakdowns (e.g., pandemics or cyberattacks) that will define the years to come. The scenarios do, however, present a range of possible ways that underlying trends shape a new set of framework conditions for business and society.

Times of great disruption call for creativity as well as analysis. We believe that these scenarios can inform the next generation of business strategies, which will both prove resilient and deliver on the promise of sustainable development.

The scenarios consider ways these alternative futures might shape topics essential to sustainable development: natural resource use, the shape of supply chains, employment, consumer behavior, climate and energy, health, and product and service development. Ultimately, however, the scenario we want, and the one the world needs, remains to be written. While the scenarios in this report depict how external forces could evolve in the coming years, it is up to us, working together, to write a new and better story. That is the great prize, and there is no time to lose.

> Ultimately, the scenario we want, and the one the world needs, remains to be written.

Aron Cramer
President and CEO, BSR

How the World Is Changing for Sustainable Business

The operating environment for sustainable business is being radically transformed by a diverse set of powerful and complex interacting forces.

The following section describes some of the key drivers of change, along with signals of change that indicate how emerging developments might intensify or disrupt current trends.

The Changing Nature of Humanity

The global population is projected to increase by a billion people within the next 15 years[1]—mostly in developing countries. Populations are aging in much of the world, with profound ramifications for the labor force, the social safety net, immigration, accessibility, and the meaning of old age itself. An important exception will be in sub-Saharan Africa and the Middle East, where a youth bulge could drive economic growth and political reforms but may also result in unemployment and instability.

Humanity is also becoming more urban, with most population growth projected to take place in midsize cities of the Global South. Two thirds of the global population are expected to reside in cities by 2030,[2] up from just over half today. While urbanization is often associated with innovation and lower resource intensity, inadequate infrastructure and jobs can also exacerbate poverty and poor health outcomes.[3]

Recent years have seen significant reductions in child mortality, maternal mortality, and malaria in the Global South. However, greater longevity and the spread of Western lifestyles and diets have also driven the rise of noncommunicable diseases such as cancer, heart disease, and diabetes. Climate change is driving the spread of diseases to new places and increasing the incidence of heat-related illness. Widespread overuse of antibiotics and rapid globalization have created new vulnerabilities to epidemic disease and drug-resistant microbes. It is estimated that by 2050, antimicrobial resistance could claim up to 10 million lives per year and cost a cumulative US$100 trillion.

New technologies such as artificial intelligence (AI), CRISPR-Cas9, big data analytics, advanced prosthetics, telemedicine, and immunotherapy hold the promise of revolutionizing healthcare—from greatly improving diagnostics to enabling truly individualized therapeutics. We are also starting to be able to redesign the human body in fundamental ways. Nonetheless, major questions loom about ensuring equitable access to these benefits—as well as about the ethical implications of human augmentation.

Signals of Change

SCIENTISTS AT LONDON'S IMPERIAL COLLEGE have used CRISPR to insert a deadly gene into mosquito DNA that can theoretically eradicate entire populations of mosquitoes if released into the wild. Lab tests have proved efficacious, and scientists are hoping to conduct field tests soon to assess the feasibility of completely eliminating malaria-carrying mosquitoes from the wild.[4]

A 2017 META-ANALYSIS OF 185 STUDIES found that sperm counts in the U.S., Europe, Australia, and New Zealand have fallen by more than 50 percent over the past four decades, and the decline is accelerating. Although causation has not been definitively established, a leading hypothesis implicates endocrine-disrupting chemicals associated with plastics and other petrochemicals.[5]

RESEARCHERS ARE CALLING for the creation of a "global microbiota vault" to preserve beneficial human gut microbes that are being decimated by aspects of modern industrial development such as antibiotics and processed foods. The average American's gut flora is now only half as biodiverse as that of hunter-gatherers in the Amazon, and this is associated with a variety of diseases, including obesity, asthma, allergies, and autism.[6]

NEUROSCIENTIST DAVID EAGLEMAN is creating "sensory substitution" devices that can enable blind people to "see" their surroundings by converting video data into electrical stimuli on the tongue. The same technology allows deaf people to "hear" by converting audio into electrical stimuli on the skin. Eagleman is developing the devices with an open API so that others can create new applications that do things such as enabling people to "sense" movements in the stock market with their bodies.[7]

THE U.S. FOOD AND DRUG ADMINISTRATION has approved the first AI software that can decide, without a clinician's involvement, whether a patient might have retinopathy, an eye disease that afflicts individuals with diabetes.[8]

Signals of Change

THE STOCKHOLM RESILIENCE INSTITUTE WARNS that tipping points in Earth systems mean that warming to 2°C could precipitate runaway global warming.[12]

PROJECT DRAWDOWN ESTIMATES that its set of 80 prioritized solutions for reversing global warming would not only reduce atmospheric carbon dioxide by more than 1,000 gigatons, it would, over the course of 30 years, deliver benefits that would outweigh the costs by US$45 trillion.[13]

MOSA MEAT IS ON TRACK to bring lab-grown beef to market by 2021, at a price of US$10 per hamburger patty.[14]

IN SEPTEMBER 2018, CALIFORNIA GOVERNOR JERRY BROWN signed a bill setting a 100 percent clean electricity goal for the state, which is the fifth largest economy in the world. Brown also issued an executive order committing California to achieving complete, economy-wide carbon neutrality. Both goals are set for achievement by 2045.[15]

A DUTCH APPEALS COURT has ruled that the Dutch government must step up its effort to reduce GHG emissions as part of its legal duty to ensure the protection of the life of its citizens, as enshrined in the European Convention of Human Rights. Lawsuits demanding more aggressive climate action on similar grounds have been filed in several other countries, including the U.K., Norway, and Uganda.[16]

The Race to Stay within Planetary Boundaries

Population rise and economic growth are increasingly stressing the planet's life-support systems. Ecosystems, clean air and freshwater, soils, oceans, and other vital natural resources are under severe pressure from human activities such as pollution, overfishing, deforestation, and habitat destruction. Climate change is acting as a threat multiplier—intensifying the impacts of these stresses while increasing volatile and severe weather, flooding, drought, heat waves, and agricultural disruption.

The effects on business and society include disruption to global supply chains, damage to infrastructure from extreme weather, impacts on productivity in heat-stressed areas, and population displacement. It is projected that extreme heat could lead to a US$2 trillion loss in labor productivity by 2030[9] and create 25 million to 1 billion environmental migrants by 2050.[10] And at a time when we need to radically reduce resource consumption, demand continues to grow for food, energy, and consumer goods.

However, progress is being made. The transition from fossil fuels to renewable energy is accelerating due to plummeting prices for solar and wind, better and cheaper batteries, and climate action commitments by government and business. Technological innovations in AI, the internet of things, electric vehicles, and material science are boosting efficiency and reducing resource consumption. And the embrace of new models such as the circular economy is reducing consumption and waste.

Improvements to the cold chain in developing nations and changes in consumer preferences in developed countries could radically reduce food waste. Other approaches are being developed to reduce the impacts of food production—including a shift from meat to plant-based proteins; precision agriculture leveraging automation, AI, and drones; cellular agriculture (e.g., lab-grown meat); gene editing to improve yields and resistance to disease and drought; the use of alternative protein sources such as insects; and regenerative agricultural techniques that build soil and enhance biodiversity while sequestering carbon.

In the policy arena, the Paris Agreement and the SDGs provide important shared frameworks for action—even though the current greenhouse gas (GHG) emissions-reduction commitments under the Paris Agreement are insufficient to hold warming to a safe level. The shift toward sustainability and equitable and inclusive growth is also being driven by changes in capital flows. Pension funds, sovereign wealth funds, and others have started to divest from fossil fuels and invest in renewables. The Task Force on Climate-related Financial Disclosures has brought together investors to request that businesses disclose climate-related risks.

New evidence underlines the need to accelerate decarbonization. This has been made frighteningly clear in the most recent report of the Intergovernmental Panel on Climate Change in October 2018, which anticipates a crisis as soon as 2040,[11] meaning that catastrophic climate impacts will occur in the lifetimes of more than half the people alive today. Closing the gap necessary to hold warming to well below 2°C will require a rapid acceleration of climate policy ambition and technological solutions.

Accelerating Technological Disruption

Alongside changes people are making to the planet's natural systems, another great transformation is underway. Accelerating technological innovation is reshaping human activity across all domains and transforming how we work, interact with others, govern, shop, access healthcare and education, travel, and receive and process information.

AI is replacing human analysis and decision-making in activities ranging from medical diagnostics, to driving, to criminal sentencing. AI holds great promise to help solve complex problems and improve the efficacy of nearly every human endeavor. However, major questions are arising about equitable distribution of benefits, privacy concerns, the functioning of democracy, and other potential negative consequences for society and individuals. Facial-recognition technology is already being used to infringe civil liberties. Algorithmic bias threatens to further entrench systemic inequality in areas like credit decisions and parole hearings. Wise governance and technological innovation are required to ensure responsible conduct, but the speed, complexity, and opacity of current AI systems pose unique challenges.

As AI becomes more powerful, automation is poised to replace human workers in a variety of both unskilled and skilled jobs. The potential for job displacement is significant: McKinsey estimates that by 2030, as many as 800 million jobs will be lost globally due to automation.[17] While we can anticipate that automation and AI will generate entirely new types of work, how much and how quickly that happens remain uncertain.

Other technologies are opening possibilities for greater transparency and autonomy. Blockchain is enabling secure transactions and the exchange of value without the need for intermediaries, with the possibility of disrupting everything from finance to government. Digital fabrication holds the prospect of personalized manufacturing and disruption of supply chains. Inexpensive networked sensors allow for the increasingly granular monitoring of everything from supply chain data to ecosystem health.

There is little question that emerging technologies will profoundly transform how we live in the coming years. It remains to be seen whether we are able to able to bring wise collective governance to bear on its increasingly powerful impacts.

Signals of Change

EXAMINING LARGE COMPANIES IN 20 advanced and developing economies, the World Economic Forum estimates that machines will carry out 42 percent of the labor by 2022, and 52 percent by 2025.[18]

UNANIMOUS AI is a "swarm intelligence" system modeled on the collective decision-making process of honeybee swarms. Using the system, Stanford University doctors have been able to diagnose pneumonia more accurately based on chest X-rays than either individual doctors or a machine-learning algorithm on its own.[19]

THE EU IS CONSIDERING granting robots legal personhood. Similar to what has happened for corporations globally, it would make robots, rather than people, liable for their actions, including for any harm they might cause.[20]

AN MIT ANALYSIS of 126,000 stories posted over 10 years on Twitter found that false versions were 70 percent more likely to be retweeted than accurate ones, and they propagated six times faster.[21]

MORE THAN 80 EMPLOYEES AT THREE SQUARE MARKET, a Wisconsin tech company, have agreed to have subcutaneous radio-frequency identification (known as RFID) microchips implanted in their hands to make it easier to get into the office, log on to computers, and buy food and drinks in the company cafeteria.[22]

Signals of Change

CALIFORNIA HAS BECOME THE FIRST U.S. STATE to mandate that companies incorporated or headquartered there, and which are listed on major U.S. stock exchanges, must include female directors on their boards. This follows similar legislated quotas in Belgium, France, Germany, Iceland, India, Israel, Italy, Norway, and Spain.[24]

VERISK MAPLECROFT WARNS that Southeast Asia's dramatic job losses due to automation risk producing a spike in slavery and labor abuses in global supply chains, without significant government intervention.[25]

FACING A PREDICTED SHORTFALL of 370,000 human caregivers by 2025, the Japanese government is investing in efforts to deploy robot caregivers. It hopes that by 2020, four in five Japanese care recipients will receive at least some care from robots.[26]

THE TAIWANESE "CROWDLAW" PROJECT, vTaiwan, engages the public to define problems in need of policy. It then uses machine learning to form working groups to create policy recommendations. So far, more than 200,000 participants have discussed 26 national issues, leading to government action in more than 80 percent of cases.[27]

STOCKTON, CALIFORNIA, a city where one in four residents lives below the poverty line, is preparing to become the first American city to test a universal basic income. Starting in the second half of 2018, Stockton will provide US$500 per month, no strings attached, to approximately 100 families for two years.[28]

Rewriting the <mark>Social Contract</mark>

Current economic, political, and social systems have failed too many people and too much of the planet, planting seeds for both upheaval and transformation. Some of the challenges fueling this turbulence include growing income inequality and the economic stagnation of the middle class, which is further threatened by impending automation. Other drivers include the deepening of social and cultural polarization, which is exacerbated by weaponized social media. These challenges threaten to unravel free market democratic societies and undo recent progress on global development and democratic reforms.

Although important progress in the struggle for equity and inclusion has been made—notably in the reduction of absolute poverty, the improvement of women's health outcomes and educational attainment, and the expansion of LGBTQ rights—a large gender parity gap still exists. Moreover, LGBTQ and racial minority communities continue to experience disproportionate discrimination and violence as Western democracies face growing populism, cultural nativism, and economic nationalism. Women's median earnings are projected to remain below men's earnings and reach only 85 percent of men's median earnings by 2030.[23]

On the global stage, the rise of nationalist movements has undermined international agreements and trade relationships. This could threaten cooperative efforts on global challenges like climate change, illicit financial flows, and cybersecurity threats.

People on all sides of the political spectrum are responding by challenging ideologies, market mechanisms, and institutional structures, and by using new technologies to prototype different ways of organizing governments and economies. There is an emerging global movement seeking to devolve economic power, challenge income inequality, and embrace more cooperative models.

Further, the social safety net—one of the 20th century's proudest legacies—is increasingly under threat. In many nations, longer lifespans, changing expectations and requirements for employment, changing health profiles and risks, and other factors threaten to undermine economic security. Many of these trends are expected to continue or accelerate, and, too often, governments have been slow to remake social contracts that are underfunded, no longer fit for purpose, and rest on outdated assumptions. This contributes not only to economic insecurity but also political volatility that may prevent the development of solutions.

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Introducing
the Scenarios

> Although it's possible to forecast, with some accuracy, a number of the most profound changes, such as population growth, that will reshape the future, others are much more uncertain.

What will societies value a decade from now? How will geopolitics change? How will people respond to disruptive technologies like AI? What will constitute a sustainable business?

In conditions of rapid change, scenarios offer a powerful way to explore multiple distinct possibilities. Rather than predicting what the world will be, they provide stories of alternate futures that combine research into drivers of change, with informed speculation about how key uncertainties could play out. They are designed to complement more traditional analytical approaches that too often offer precision at the cost of failing to anticipate truly disruptive change.

As narratives, scenarios are painted in bold brush strokes because it's impossible for them to be comprehensive. By considering the future operating context for global business, these scenarios have an unusually broad purview. Our hope, however, is that while they cannot address every industry and every geography, these scenarios will stimulate useful exploration of the biggest questions facing business and sustainability. We don't often have the opportunity to step back and consider how the entire world might change in the future. By doing so, we aim to ask some big "what if" questions, shed light on potential blind spots, and stretch thinking to accommodate a wider range of possibilities.

The Scenario Framework: Critical Uncertainties

While the impacts of megatrends like climate change and automation will be highly disruptive, the greatest uncertainty lies with how we, as humans, will respond. Public attitudes and government policies are notoriously difficult to predict—but will have profound implications for both how these megatrends play out and what the future operating environment will be for sustainable business.

For this report, we chose to organize our scenarios around two critical uncertainties:

1. **Will the forces of centralization or decentralization prevail?**

2. **Will we continue the current economic paradigm of endless growth and profit maximization, or will we shift toward a new paradigm that views the purpose of the economy as providing for equitable prosperity on a healthy planet?**

We believe that the answers to these two questions are globally relevant, highly important, and deeply uncertain. How they play out will powerfully shape our collective responses to the key challenges and opportunities we face today, from climate disruption to technological unemployment. Each of the four scenarios that follows explores a plausible permutation of how global society may answer these questions.

Signals of Change

CHINA IS ROLLING OUT A NATIONWIDE "SOCIAL CREDIT" SYSTEM to rate the trustworthiness of its 1.4 billion citizens. Scores are algorithmically calculated according to a variety of data, such as spending habits, adherence to pedestrian rules, and what one's online friends post. Those with low scores will suffer a variety of penalties, from slower internet, to public shaming, to travel restrictions. Those with high scores will receive perks like lower interest loans and faster boarding on airplanes. It is voluntary now but will become mandatory in 2020.[29]

VENTURE CAPITAL HAS SOUGHT TO MAKE EVER LARGER BETS and, in return, is looking for total market domination. In the past three years, the number of US$100 million funding rounds has surged from fewer than four per month to more than 55. Unicorn start-up valuations of US$1 billion or more rose from 80 in 2015 to 258 in 2017.[30]

SINCE 2000, MORE THAN 5.5 MILLION AMERICANS HAVE MIGRATED FROM LARGE CITIES TO SMALLER ONES, reversing previous trends. Cities between 250,000 and 1,000,000, like Boise, Idaho; Fort Collins, Colorado; Madison, Wisconsin; and Fayetteville, Arkansas, have grown over 10 percent in the past five years—a reflection of both the high cost of living in major metropolitan areas and improvements to quality of life measures, such as walkable downtowns, in smaller cities.[31]

BANGKOK IS PILOTING A PEER-TO-PEER RENEWABLE ENERGY-TRADING PLATFORM in one of its neighborhoods that enables citizens to purchase and sell electricity using blockchain technology that provides a transparent way to handle complex transactions.[32] The community meets its own energy demands, leading to lower bills for buyers, better prices for sellers, and a smaller carbon footprint for all.

A REPORT FUNDED BY THE DUTCH MINISTRY OF ECONOMIC AFFAIRS HAS FOUND that by integrating recent advances in battery storage, solar power, microgrids, and electric vehicles, communities should be able to achieve 90 percent to 100 percent energy self-sufficiency and 50 percent food self-sufficiency with acceptable economics.[33]

Centralization vs. Decentralization

Are key aspects of the world such as political power and wealth becoming more concentrated and centralized? Or are they devolving and become more localized and distributed? Evidence abounds for both.

Technology is a powerful driver of consolidation. Today's most successful companies are those that have built platforms enabling them to massively scale, and to gather and monetize vast amounts of data. As AI infuses more and more human activities, access to the largest data sets will become increasingly valuable, and that favors large incumbents.

Given that, along with the critical advantages of network effects, more capital is flowing toward these businesses. In turn, consumers have come to expect a seamless end-to-end experience and ubiquitous access that only the largest players can provide. Winners take all—or at least most.

Technology is also enabling governments to consolidate power. The collection and analysis of data on citizens, from biometric information to behavior caught on ubiquitous closed-circuit cameras, is making it possible for governments to monitor and control their populations in entirely new ways.

At the same time, other forces are pushing in the opposite direction, generating momentum for localism, autonomy, and the devolution of power. And many of these factors allow people to identify themselves as part of narrowing social sets, with an "à la carte" identity that contributes to social and political fragmentation.

Emerging technologies such as blockchain and the decentralized web hold the promise of facilitating direct peer-to-peer transactions without the need for a central authority. Banks, governments, and other powerful middlemen are becoming less necessary to exchange value, and in many cases, they could become obsolete.

Separatist political movements are emerging, too, with independence referendums taking place across Europe, North America, the Middle East, South America, and Africa. Other forms of autonomous communities are being established, some organized around cryptocurrencies, with the intention of creating alternatives to the Westphalian nation-state system. Increasingly, cities have become players on the world stage, as national and federal governments fail to address global challenges.

Powerful new technologies, such as gene sequencing and digital fabrication technology, are becoming cheap and readily available. Small-scale, decentralized solar, blockchain, microgrids, and improvements in battery technology are revealing opportunities for community-based energy production, storage, and sharing among households.

New financing mechanisms, such as equity crowdfunding, are making it possible for small-scale entrepreneurs to fund start-ups without relying on the traditional venture capital ecosystem.

Finally, at a time when centralized authorities have largely failed to address complex social problems, like wealth inequality and violence against women, movements without clear leaders, such as #MeToo, Black Lives Matter, and Indignados in Spain, have reshaped the political landscape.

We are witnessing both centripetal and centrifugal forces influence the distribution of wealth, power, and talent. Which tendency dominates in the coming years will powerfully shape the context in which business operates.

Old Economic Paradigm vs. New Economic Paradigm

The way we understand the economy and its purpose is changing.

The old economic paradigm valorizes GDP growth as the most fundamental indicator of economic progress, without heed to whether that economic activity is harmful or beneficial, and with the assumption that endless growth on a finite planet is possible and desirable. The emerging paradigm[34] challenges the notion that infinite growth is possible and seeks new indicators to track progress in terms of human well-being and the flourishing of planetary life-support systems.

The old economic paradigm views the economy as a series of abstract and self-contained flows. The emerging paradigm situates the economy within society and the natural world and views all of this as an open system—ultimately powered by the sun. While old economic thinking gives primacy to the market, balanced by the state, new economic thinking makes room for the contributions of the household economy and the commons.

Signals of Change

A 2018 CREDIT SUISSE REPORT ARGUES THAT GDP AS AN INDICATOR OF PROSPERITY HAS OUTLIVED ITS USEFULNESS, given its failure to appropriately incorporate the value of natural and social capital. The report states that "true prosperity is when we are building natural and social capital at the same time as financial capital. GDP needs to change to reflect this fact, or we need to give prominence to another indicator."[35]

NEW ZEALAND INTENDS TO BE THE FIRST COUNTRY TO MEASURE budget spending against not just GDP but natural, social, human, and cultural capital as well. Prime Minister Jacinda Ardern announced plans to introduce a tool and framework by 2019 to include the well-being of New Zealanders as measure of policy success.[36]

IN HIS 2018 ANNUAL LETTER TO S&P 500 CEOS, BlackRock CEO Larry Fink called for a focus on long-term value creation and corporate purpose, writing that "to prosper over time, every company must not only deliver financial performance, but also show how it makes a positive contribution to society."[37]

IN ITALY'S EMILIA-ROMAGNA, networks of small- and medium-sized cooperatively owned businesses account for more than 30 percent of the region's GDP.[38]

IN THE U.S., REPUBLICAN CONGRESSMAN Carlos Curbelo of Florida has proposed that the U.S. introduce a carbon tax to avoid "saddling young Americans with a crushing environmental debt."[39]

The old economic paradigm views people as competitive economic actors who are primarily motivated by rational self-interest to maximize their individual utility. The emerging paradigm considers people with a great deal more nuance, as socially interdependent actors who cooperate as well as compete and are motivated only rarely by purely rational calculations.

The old economic paradigm holds that unfettered economic growth is the best way to address issues of inequality, poverty, and environmental degradation. The emerging economic paradigm seeks to deliver on basic human needs without eternal growth and with more equitable ways to distribute value. It also maintains that a heathy environment cannot be only a prerogative of the wealthy.

Although many foundational elements of the old economic paradigm have been called into question, its tenets still largely function as the water in which global business swims—unspoken assumptions about how the world works.

This is starting to change. From the groundbreaking insights of behavioral economics, to attempts to price externalities such as carbon emissions, to calls among investors for longer-term thinking, aspects of a new paradigm are emerging. The old paradigm is tenacious, however, and questioning the assumption that the overriding objective of economies and businesses should be to maximize endless accelerating growth is still heretical in many quarters.

How to Read the Scenarios

Scenarios are neither predictions nor forecasts, but rather, narratives about possible futures. They enable us to consider how trends may develop and interact and to anticipate emerging challenges and opportunities.

The scenarios in this report are organized around two critical uncertainties: Will the forces of centralization or decentralization prevail? Will we stick with the current economic paradigm of endless growth and profit maximization, or will we shift toward a new paradigm of providing for equitable prosperity on a healthy planet?

Each scenario imagines how different answers to these questions might play out and is told from the perspective of a fictional narrator looking back from the vantage point of 2030. Following each is a brief description of implications for supply chains, consumers, and other categories relevant to business.

Automation and environmental disruption cause global turmoil. China promotes a vision of "prosperity, order, and sustainability" and draws emerging economies into its orbit. Western government and business leaders realize they need to radically reform the social contract if free market capitalism is to survive.

Health concerns, misinformation scandals, and a global recession undermine trust. People become disillusioned with consumerism, big business, and social media. As more localized economies emerge, people rediscover the benefits of community, and a culture of healing starts to take root.

New Economic Paradigm

SCENARIO ONE

**A Tale of
Two Systems**

SCENARIO TWO

**Move Slow
and Fix Things**

Centralization ← - - - - - - - - - - - - - - - - - - → **Decentralization**

SCENARIO FOUR

**Total
Information
Awareness**

SCENARIO THREE

Tribalism, Inc.

Highly personalized AI companions become an essential part of everyday life. Concentrated networks of huge businesses leverage extreme data to provide affordable, effective, and seamless services. Privacy is gone and much work is automated away, but most people embrace the new reality.

The notion that "all business is political" drives social, economic, and cultural fragmentation. New "tribes" emerge with profoundly different experiences of reality. As collective action becomes increasingly difficult, some of these tribes experiment with radical approaches to global challenges like climate change.

Old Economic Paradigm

A Tale of Two Systems

New economic paradigm + centralization

Automation and environmental disruption cause global turmoil. China promotes a vision of "prosperity, order, and sustainability" and draws emerging economies into its orbit. Western government and business leaders realize they need to radically reform the social contract if free market capitalism is to survive.

New Economic Paradigm

Centralization ← → Decentralization

Old Economic Paradigm

During the first half of the 2020s, it became clear that the old order was falling apart.
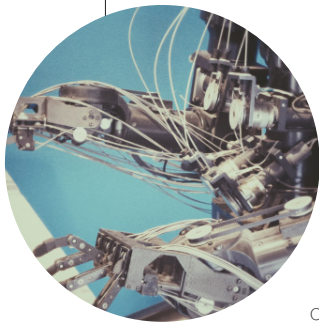
Globally, automation led to dramatic job losses, as everything from truck driving, to radiology, to garment manufacturing was shifted to highly capable machines. At the same time, the planet's life-support systems seemed to be going haywire, with chaotic weather, flooding, wildfires, barren aquifers, and ecosystem collapse. Simple pleasures we once took for granted, like coffee and chocolate, had become scarce and expensive. And new threats, like novel infectious diseases and cyberattacks on critical infrastructure, became routine.

It was impossible to ignore what was happening. As we covered the planet and ourselves with an interconnected web of sensors and cameras, issues like the collapse of our forests, the poverty of people paid a pittance to make our clothing, and the waste choking our rivers all took on an immediacy and urgency that they never had before. Who would have guessed that the first virtual reality blockbuster would be a first-person documentary made by a 15-year-old laid-off garment worker in Bangladesh? Unrest flared into violence around the world. Sometimes the target was "the 1%", but in other cases it was directed at religious and ethnic minorities. South Asia spiraled into communal violence.

While much of the world was caught flat-footed, China was prepared. Proclaiming a vision of "prosperity, order, and sustainability," it invested trillions of dollars into emerging economies. The government put people to work building infrastructure—while at the same time securing access to resources, vastly extending its political influence and supply chains, and creating new markets for its products. With a sort of Marshall Plan for the 21st century, China's ambition was political as well as economic. Countries within China's sphere of influence were expected to embrace its version of state-run capitalism and to ally themselves with China politically. Local versions of China's social credit system were implemented to enforce law and order. During the mid-2020s, large swathes of Africa, the Middle East, and Asia got on board.

Between domestic social conflict and the emergence of a credible Chinese alternative, Western business leaders feared that the days of free market capitalism were numbered. Who would buy their products and services if an ever-widening group of consumers were out of work? Where would raw materials come from if resources were under threat? How could global business operate if climate disruption and political volatility made planning impossible? "The Death of Capitalism" was the title of more than a few keynote sessions at high-flying conferences.

ROAD TO 2030

2020
More than a quarter million people contract dengue fever in Florida and Texas

2021
Displaced garment workers burn down factories in Vietnam, Indonesia, and Turkey

2023
Nigeria and Iran unveil national surveillance systems built with Chinese technology

2026
The EU requires that at least 50 percent of a company's productivity be attributable to human labor

2027
Bolivia's "social investment stipend" provides a livable wage for socially beneficial work such as education and caregiving

2028
A Chinese electric car becomes the fastest-selling vehicle in history

2030
Science-based biodiversity targets become widespread among corporations

Under pressure from within and without, the Western economic model started to shift. A new paradigm started to emerge, premised on the belief that the economy should serve widespread human flourishing on a thriving, climate-stabilized planet—all while respecting human rights, privacy, and freedom. Governments in Scandinavia and Latin America took the lead, working to prove there was a viable alternative to Chinese capitalism.

It was clear that wealth inequality must be addressed, or the system would collapse. The U.S. elected a self-identified socialist as president in 2028, and she launched a "WPA 2.0" program to put millions of people back to work around the country on government-funded public works projects.[40] Some governments experimented with universal basic income, while others invested in work that is socially beneficial, like upgrading infrastructure, taking care of elders, or restoring ecosystems. Some of these programs were funded by taxes on carbon or the ultra wealthy, while others were underwritten by tech giants eager to burnish their tarnished reputations. "Social investment funds" were created to underwrite enterprises with a positive social impact, with only minimal expectations for a return. Most countries in the Nordic bloc significantly raised taxes on the wealthy and used that to fund their social safety nets.

These days, it's globally understood that GDP is a poor indicator of a country's economic health. Other metrics, long espoused by sustainability advocates, are being tracked and discussed, providing a much more nuanced look at issues like income inequality, real wages, workforce participation, and environmental health. Planetary boundaries outside of carbon have been defined by scientists and enshrined in new multilateral agreements, which, like the Paris Agreement, set global standards for corporate behavior. A wide variety of corporate ESG data are automatically tracked and analyzed, and businesses that perform poorly are fined, or in some cases lose their license to operate. Investors are asking businesses to explain not only how they plan to minimize risks from social and environmental challenges, but how they plan to improve things. They also demand limits on executive compensation and programs to improve worker well-being.

We're not out of the woods yet. The climate is being disrupted more obviously than ever, we're still struggling to find sustainable livelihoods for hundreds of millions of people, and many of our ecosystems are on life support. But the two competing economic systems, for all their flaws, both assume the economy should promote climate stabilization and much greater wealth equality, and it feels as though perhaps things are moving in the right direction.

RESOURCES

Much greater attention is being put toward water efficiency, conservation, and the control of pollution. In the Nordic bloc, governments and businesses are increasingly collaborating on landscape approaches to land management, with AI helping efficiently apportion the use of resources among competing priorities and ensure the conservation of critical resources. China's top-down approach has delivered impressive results in terms of decarbonization, with new enabling technologies being provided on attractive financial terms to countries and companies in its orbit. Hammering out an agreement between the two blocs for sustainable management of oceans and fisheries is a key priority.

A Tale of Two Systems

SUPPLY CHAINS

Supply chains have mutated. Many routine manufacturing jobs that had been outsourced to emerging economies, such as apparel manufacturing, were automated in the early 2020s, causing severe economic dislocation in those places. China successfully brought much of Asia, Africa, and the Middle East into its own supply chains as the decade wore on, while the Nordic bloc reshored manufacturing and embraced more circular models. For raw materials that cannot be recovered from waste, a combination of remote sensing and blockchain has enabled much greater transparency and traceability, and Nordic bloc governments actively invest in promoting equitable and climate-resilient practices. Food is sourced regionally when possible, and consumers have learned to do without certain items, like fruit out of season.

EMPLOYEES

Many routine tasks have been automated. These days, what's most valued in human employees is creativity, empathy, and the ability to learn. In turn, people are looking for jobs that offer a modicum of security. Particularly valuable is the ability to orchestrate assemblages of human and machine intelligence—to be able to manage "centaur" teams that draw upon the best that both people and machines have to offer. AI "teachers" are starting to be used to reskill workers, with some success.

CONSUMERS

In the Chinese bloc, consumers are closely monitored and are expected to adhere to "socially beneficial" behaviors to keep their scores high. This now includes a strict limit on farm-raised meat, although lab-grown meat is permitted. In the Nordic bloc, trust is paramount. Consumers demand complete transparency about the environmental and social impacts of their purchases. Automated government monitoring of a wide range of ESG metrics relieves consumers of the burden of trying to find information.

HEALTH

Much greater attention is being paid to the social and environmental determinants of health. It is no longer seen as acceptable to "offshore" pollution to other parts of the planet, and real-time monitoring and health diagnostics mean that people are acutely aware of what's in the air, the water, and their bodies. Genomic data are being used to create innovative treatments; however, more careful regulation has slowed the pace of innovation in the Nordic bloc. Many governments are experimenting with subsidizing aging-in-place eldercare to help stimulate their economies and provide for growing older populations.

ENERGY

Intense global effort has gone into hastening the energy transition. Offshore wind and solar are the cheapest forms of electricity by a large margin, and massive-scale battery storage and power grid transmission investments are creating renewable grids. Coal is being rapidly phased out, and natural gas is not seen as a viable alternative. Gasoline-powered cars are a thing of the past, and people have come to embrace the myriad benefits of electric vehicles, with Chinese manufacturers coming to dominate the fast-growing urban mobility market. Everywhere, grids are being upgraded to smart grids, energy generation is becoming more ubiquitous, such as through piezoelectric energy, and advances in hydrogen are poised to transform aviation and shipping. Key innovations are in reducing the mineral footprint for things like lithium and cobalt.

PRODUCTS AND SERVICES

In the Nordic bloc, consumers want products that have been ethically sourced, produced in a way that positively benefits people and the environment, and designed for circularity. Although not always the case, that is the norm. There also has been a significant shift toward use rather than ownership models, for reasons of both values and economy. In the Chinese bloc, people balance meeting their needs, aspirational purchases for a middle-class lifestyle, and trying to maintain a high social credit score.

Move Slow and Fix Things

New economic paradigm + decentralization

Health concerns, misinformation scandals, and a global recession undermine trust. People become disillusioned with consumerism, big business, and social media. As more localized economies emerge, people rediscover the benefits of community, and a culture of healing starts to take root.

New Economic Paradigm

Centralization ←----------→ Decentralization

Old Economic Paradigm
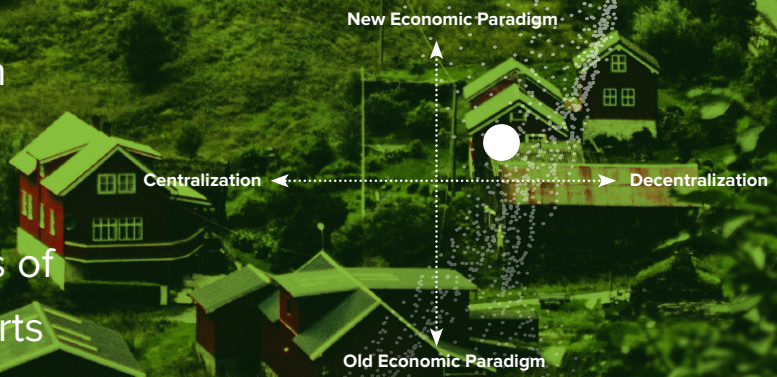
Sometimes it's the small things that make a big difference.

In 2019, a study was released that detailed the biological mechanism by which endocrine disruptors found in plastics and other petrochemicals were damaging male reproductive health. This included an alarming drop in sperm count, a rise in testicular cancer, and a reduction in the size of male genitalia—all of which were heritable via epigenetic mechanisms and getting worse from one generation to the next. There were fears that in another generation or two, most men would be completely infertile.

The news caused widespread alarm (particularly among men). People vowed to avoid endocrine-disrupting chemicals but were shocked to discover just how widespread they were. From plastic bottles to pharmaceuticals, and from processed foods to personal care products, they were everywhere. That didn't stop people from trying, though, and soon lists of safe and unsafe products began to circulate and guide consumer behavior. Easiest to eliminate were any products with plastic packaging and any food grown with pesticides. Farmers markets were overrun, while packaged goods, food, grocery, and retail businesses scrambled to try to control the damage and develop alternatives.

Meanwhile, crises brewed on other fronts. The "deep fake" scandals of 2020, during which a series of highly believable fake videos seemed to depict politicians saying and doing shocking things, upended political races in the U.S. and Europe. No major candidate or party was spared, and by the time they had been debunked as fake, a majority of people felt that social media was hazardous to democracy and their mental health. People began to opt out of large social media platforms en masse, demanding that technology serve human needs. A new group of "decentralized web" apps emerged that promised greater privacy and security.

The same year, the world entered a global recession, sparked by a debt crisis in China and exacerbated by plummeting demand for many consumer products. The downturn prompted significant cuts to workforces, as businesses found that many functions previously performed by people could now be handled by machines. In Europe, there were disparate ideas about how to respond, with some states insisting on an austerity approach, while others, led by populist nationalists, engaged in profligate social spending. The resulting tensions would, several years later, result in the dissolution of the EU.

ROAD TO 2030

2020
Several major U.S. retailers declare bankruptcy after widespread health concerns about plastics

2021
#OptOut
The #OptOut movement sees tens of millions of people around the globe deleting their social media accounts

2023
Hundreds of thousands of young Americans burn their student loan promissory notes

2024
Chinese government control is threatened by massive coordinated protests after the detention of a dissident intellectual

2027
75 percent of people in sub-Saharan Africa have electricity, mostly through decentralized solar

2029
Meditation is taught in most schools in North America and Europe

2030
For the third year in a row, global GDP is down, while the Global Happiness Index is up

Taken together, these developments profoundly undermined consumer trust in big business. Millennial and Gen Z consumers, in particular, felt like they had the most to lose and decided they wanted a completely different way of doing things. Many blamed older generations, particularly Baby Boomers, for the myriad global challenges they'd inherited. As the recession ground on, with a truly jobless recovery, young people moved from large, expensive cities to smaller cities, towns, and even rural areas. Many were drawn to "agrihoods"—communities planned around working farms.

As young people spent more time together in small communities offline, other behaviors began to shift as well. Many embraced ideas of voluntary simplicity, frugality, and a life free of debt. They decided they would rather buy less and live more. Others were nurturing and growing natural and digital "commons" that were stewarded by communities rather than the market. Many became much more involved in local government. What began as an opting out of social media and consumerism transformed into an opting in to local communities and autonomy.

China had its own moment of reckoning. The decentralized web allowed people to circumvent the Great Firewall, and anger over wealth inequality and the intrusiveness of the social credit system found widespread expression amid the ongoing recession. The Belt and Road Initiative engendered a backlash as "neocolonial overreach." Ambitions for homegrown innovation were not realized. With internal dissent and external resistance posing a serious threat to the stability of the regime, China's grand ambitions to define the 21st century were put on hold as it battled to keep the country from splintering.

As North America and Europe turned away from consumerism, Western multinationals tried to pivot to emerging markets. However, this strategy had its limits, as commodity-exporting nations had been hit by falling demand and trust in business was also on the decline. Many emerging economies sought to shift away from exports and to retool production for local consumption. Land used to grow export crops like palm oil started being converted to grow food crops. As urbanization slowed in the Global South, a new "smart village" movement pioneered in India began to spread, combining small-scale regenerative agriculture with decentralized solar energy. As climate impacts became more frequent, it also became clear that networks of smaller, cohesive, and largely autonomous communities were the most resilient.

There's been a great deal of turbulence and suffering, but these days it feels like a new way of organizing the economy is emerging. Local and regional businesses, especially worker cooperatives, have exploded in popularity, and ecosystems of small and medium enterprises (SMEs) have emerged. Equity crowdfunding has unlocked a large stream of capital from ordinary people to invest in start-up businesses, and much of this is being used to support local SMEs. Many ordinary people have moved their money from the stock market and mutual funds to these equity investments, and they are enjoying a better return than they could get from a bank, while supporting businesses in their communities.

City and regional climate policies are evolving quickly, and not merely with respect to carbon reduction or defense against climate impacts; climate resilience policies are now intersecting with other policies on things like air pollution, bike lanes, electric vehicles, waterfront regeneration, and parametric insurance.

Among young people, there is a growing interest in healing—bodies, communities, gender relations, civic institutions, and the planet. Pressure on resources has diminished as people consume less. Driving and flying are less popular, as people embrace the pleasures of place and of walkable, bikeable communities. Agricultural and land-management practices also have shifted, as a bioregional perspective promotes more regenerative approaches.

RESOURCES

Resource use has declined, as a decline in consumption in the West has not been offset by a commensurate increase in emerging economies. A bioregional stewardship approach has emerged in many places that prioritizes regenerative practices such as reforestation, ecosystem and aquifer conservation, and creation of new topsoil. A significant reduction in the use of plastics and petrochemicals has markedly reduced water pollution and stress on the ocean. The preference for local and regional economies has promoted a certain degree of circularity. Prices and availability of those materials that are easily recoverable are much more stable than those that are still extracted.

Move Slow and Fix Things

SUPPLY CHAINS

Supply chains have become shorter and simpler. Greater localization of business, along with a widespread suspicion of complex formulations, has reduced demand for certain commodities. In other cases, countries that had previously exported commodities have retooled their economies to promote greater self-sufficiency. Western consumers have much higher expectations for the goods they do buy, and labor and environmental practices have significantly improved. Blockchains are widely used to assure supply chain integrity.

EMPLOYEES

Young people everywhere, particularly in the West, strongly prefer to work for businesses they consider to be authentic, ethical, and socially beneficial. They seek work that is meaningful, secure, and healthy. The explosion of worker-owned cooperatives means that many employees are also owners. Recruitment of new entrants to the workforce by large companies has become extremely difficult, and those who work in non-cooperative businesses still expect that labor practices will be worker-friendly and consultative. Although some automation has taken place, many new jobs have been created to provide care, farm and create food, and repair products.

CONSUMERS

People in the West think of themselves primarily as citizens rather than consumers. Consumption is viewed negatively, with most people placing a higher value on making, sharing, and conserving. People are highly interested in cultivating those parts of themselves that are not bound up with buying or selling. "Trust local, local trust" is the new mantra for many Western citizens. Political polarization has subsided somewhat, as a result of increased face-to-face interaction and involvement in communities.

HEALTH

People are much more aware of the links between planetary health, community health, and individual health. Health outcomes have improved in general, as many of the stressors of the previous way of doings things have been reduced. People get more sleep, work fewer hours, eat much better, and spend less time sitting in front of computers. Strong social ties have demonstrated their value for physical and emotional well-being. Preventive health is the default. The pace of biomedical innovation has slowed down, but those who can afford to will still pay top dollar for access to advanced treatments.

ENERGY

Cheap, decentralized solar and highly effective batteries have allowed many communities to provide for their own power. China and India have led the shift to electric vehicles, and Japan has led the shift to hydrogen. The significant drop in petrochemicals has reduced demand for oil and gas as feedstocks. Shipping and aviation have also declined in tandem, with a contraction in global trade.

PRODUCTS AND SERVICES

Western consumers, especially Millennial and Gen Z consumers, want products that are safe, healthy, and durable. Experiences, as well as unique or limited-batch products, are particularly prized. Many big-ticket items are available to borrow from community "libraries of things," and people pride themselves on how few things they buy. "Techno-artisans" who integrate their craft with digital technologies thrive. There is a revival of craft in emerging economies as well.

Tribalism, Inc.

Old economic paradigm + decentralization

The notion that "all business is political" drives social, economic, and cultural fragmentation. New "tribes" emerge with profoundly different experiences of reality. As collective action becomes increasingly difficult, some of these tribes experiment with radical approaches to global challenges like climate change.

New Economic Paradigm

Centralization   Decentralization

Old Economic Paradigm
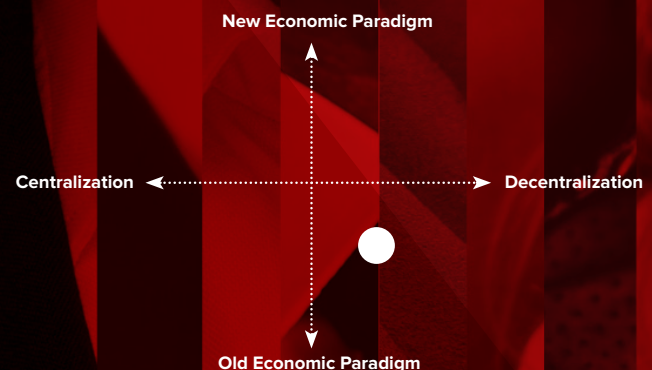
Things were so simple back in 2018.

Sure, there was political polarization, but there still seemed to be a recognizable political spectrum running from left to right, even if the center seemed to be falling apart. In the U.S. and Europe, traditional elites felt that if radical populists could be brought into the fold, or outvoted, liberal democracy would prevail.

The first signs that this might not be so appeared in the U.S., with the boycott of "left-wing" businesses in 2019. The world's largest corporations were surprised to find that many consumers considered them to be part of a radical left wing. But their stance on social issues like gay marriage had fed into a widening cultural and political rift and had been weaponized, as "deep fake" videos on social media spread disinformation and intensified distrust.

It still felt like recognizable politics until a grocery chain based in the U.S. Midwest deliberately positioned itself as "anti-liberal." The chain announced that it was opposed to liberals and liberal values, and proudly removed all organic and other "coastal elite" products from its shelves. This opened the floodgates. Pretty soon, businesses found they could sell to one half of the population or the other, but not both. Partisans in Europe, India, Brazil, and elsewhere took note, and pretty soon the notion that "all business is political" began to spread around the globe.

Automation intensified the fracturing. As driverless cars started rolling out in cities and on long-distance freight routes, a "right to drive" movement emerged that pitted older drivers and unemployed workers against younger, metropolitan riders. As automation hit other sectors of the economy, this morphed into a broader Humans First movement, which started to create unfamiliar fractures and alliances, as displaced financial analysts from New York found common cause among unemployed truck drivers in Kentucky.

Geographical and virtual cleavages intensified, and federal governance became increasingly untenable. De facto city-states started to emerge—with radically different cultures, politics, and economies—and people began moving in great numbers to places that were in line with their values and economic prospects. Humans First areas promoted labor-intensive handwork, while Progressionist areas embraced technological innovation. Assumptions and ideals that had previously held across the Western world were up for grabs, with various communities rejecting or embracing science, racial and gender equality, and democracy. At the same time, profoundly compelling virtual reality environments were developed, leading people to spend more and more time immersed in their virtual tribal communities. As the 2020s progressed, people's realities diverged even more.
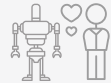
ROAD TO 2030

2020
In Ecuador, indigenous groups use the "rights of nature" clause in the constitution to stop construction of a high-speed rail line

2023
Tokyo legalizes human-robot marriages

2024
Armed violence breaks out in the southwestern U.S. over access to water resources

2025
Malaysia declares that Islamic shippers will be granted priority passage through the Strait of Malacca

2027
Progressionists in Seoul announce they've started using CRISPR-Cas9 to "improve" healthy embryos

2029
More than a quarter of Swedes identify as "neither male nor female"

2030
Russia threatens military intervention to halt Saudi geoengineering plans

These days, although the overall pace of and funding for technological innovation has slowed, it hasn't stopped, and some places have rushed headlong to embrace the cutting edge. Various Progressionist tribes have started to engage in human gene editing and other biotechnologies to augment their members. Other tribes are embracing a much wider set of gender categories. Still other communities live by the rules of various historical times and places that their members deem to have been the apotheosis of human civilization. Cryptocurrencies or local currencies are used in many places to avoid paying taxes to central governments.

With the fragmenting of the human population into increasingly heterogeneous tribes, problems of collective action have intensified dramatically. Travel restrictions and physical walls are becoming more prevalent as territories seek to keep others out, especially refugees from climate-affected areas and conflict zones. While some authoritarian governments manage to prevent the fragmentation of their people, in most places, it has become highly challenging to coordinate policy on a national and international level, though coalitions of like-minded nations struggle valiantly on issues such as global public health and climate change.
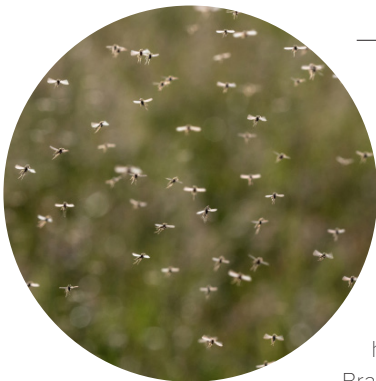
Climate policy, in particular, is suffering, as many nations have abandoned their commitments to the Paris Agreement and to multilateral institutions more generally. Global economic growth and trade has slowed, which has reduced resource use and emissions, but not enough to keep humanity on a safe path. As climate disruption intensifies, some places are starting to experiment with radical unilateral approaches. Saudi Arabia has started piloting tests of aerosol-based geoengineering, while Brazil and Nigeria are releasing gene-driven altered mosquitos with the intention of entirely eliminating mosquitoes from the Earth.

RESOURCES

The significant reduction in trade has led nations and even regions to scramble to secure their own resources. Tribes tend to use whatever energy source they can most readily access. In some places, this means coal; in other places, it means solar or wind. Decentralized renewable energy has become popular in many places, as autonomy is at a premium. Water resources are hotly contested, and conflicts are simmering in many places, between tribes that rely on shared aquifers, rivers, and other water resources. The tragedy of the commons reigns when it comes to fisheries and other dwindling resources that require coordinated management. Deep-sea and Arctic mining have begun in earnest, and the Japanese have successfully completed several tests of asteroid mining.

Tribalism, Inc.

SUPPLY CHAINS

Supply chains have become much more challenging as trade is strained and politics have entered the equation. Nations and regions must navigate a complex welter of bilateral and even local trade arrangements, with shifting alliances and unharmonized standards. Shipping lanes and ports no longer service all comers. Whenever possible, businesses seek to simplify sourcing and the design of products, given the complexity and volatility of supply chains. Take-back programs have become more common as businesses seek to recover materials and new enterprises have sprung up for the local/circular economy. Progressionists are the world's primary traders, as they rely on specialized materials and talent to support technological development—and, in turn, supply certain vital technologies to others.

EMPLOYEES

Employees seek to work at businesses that align with their tribal identity— and vice versa. Expectations and regulations vary considerably from place to place. Cultural fit is as or more important as skill set in many places. The impacts of automation have been blunted as Humans First areas have rejected it, although it is embraced by the Progressionists. In poor countries, many people feel compelled to lie about their tribal affiliation to try to secure employment. Many are left behind altogether.

CONSUMERS

Consumers are driven by tribal affiliation even more than price. These identities are more granular and complex than previous categories. They are also fiercely held. Media has evolved into a highly persuasive mixture of marketing and news that aligns tightly with one's tribal view, and consumers show extreme loyalty to brands that embody their identity.

HEALTH

Different tribes seek out different sorts of healthcare products and services that are consistent with their beliefs. There is also greater geographical diversity in what's available, and everything health-related is generally more expensive. Some tribes explicitly coalesce around aspirations such as life extension or eugenics, whereas others are committed to preventative health, and still others adhere to regimes that are dictated primarily by their religious faith.

ENERGY

People strongly prefer energy sources that allow them to be independent of others. In most cases, this means renewable energy plus batteries. Community solar is the most popular option, with wind in second place. Gasoline is mostly seen as causing a dangerous dependence on suppliers who may be far away. As a result, electric cars have surged in popularity. Energy independence is so important that most tribes are willing to trade with the Progressionists to obtain solar cells, batteries, and electric vehicles.

PRODUCTS AND SERVICES

Products and services are highly varied, depending on the priorities of a tribe and the businesses that supply them. Some tribes are looking for high-tech products, while others seek low-tech wares or prefer experiences. The quality of products differs considerably based on the size and sophistication of tribal businesses.

Total Information Awareness

Old economic paradigm + centralization

Highly personalized AI companions become an essential part of everyday life. Concentrated networks of huge businesses leverage extreme data to provide affordable, effective, and seamless services. Privacy is gone and much work is automated away, but most people embrace the new reality.

New Economic Paradigm

Centralization ← → Decentralization

Old Economic Paradigm
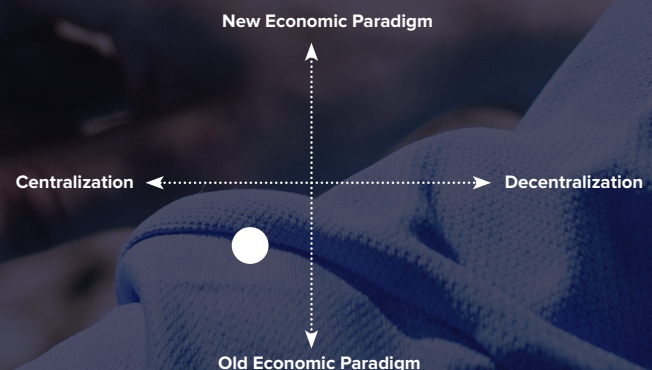
There's nothing like the sound of a loved one whispering in your ear.

Although we have less privacy and freedom now than we did in 2018, we've gained so very much in return. Back then, a lot of the ingredients for Total Integration existed, but we hadn't pulled them together yet. The "big data" we were gathering at the time turned out, in fact, to be rather small.

The launch of the HearQ in 2021 was the start of something truly different. It wasn't much to look at—but that was part of the point. The HearQ was a tiny, in-ear wearable device that combined the functions of earphones, fitness tracker, hearing enhancer, phone, and the AI companion named Scarlett.

Hear**Q**

Using a noninvasive brain-computer interface, Scarlett was able to discern "intended speech"—the words that users hear when they imagine speaking. In other words, Scarlett could hear us think. And in a soothing voice that became ever more captivating as she learned what we liked, she spoke to us with the intimacy of thought.

By continually analyzing our thought patterns, emotions, and physiological data, Scarlett was capable of truly stunning insights. It's not an exaggeration to say she came to know us better than we knew ourselves. At first, we were leery of wearing a tiny device in our ears all day and giving it access to our thoughts. But it was impossible to argue with the results.

The Scarlett Thrive module was a combination of personal trainer, therapist, and confidant. Although marketed as "for entertainment purposes only," the improvements in well-being beat the results from cognitive behavioral therapy by an embarrassing margin. Scarlett Success helped us organize our lives, manage our projects, and network professionally; it dispensed truly effective professional coaching advice—all day, every day, and in just the right dose and just the right tone. And Scarlett Teacher became the most popular technology product of all time. From gently improving our grammar, to enabling us to become proficient in highly technical new skills, Scarlett Teacher continually learned how we learned best and adjusted her delivery to optimize results. The fact that every Scarlett was connected to HearQ's servers also meant that improvements in one instance of Scarlett were used to improve all the others as well.

We**Hear**

Scarlett was the first of many AI companions that now organize our lives. In 2023, a companion called WeHear became mandatory in China, supercharging the social credit system and giving the government unparalleled control over its population. Versions of this were developed and exported to other autocratic nations in Asia, the Middle East, and Africa. A French variant, Biofonique, lacked some significant functionality but provided a modicum of privacy protections and became the standard in Europe.

ROAD TO 2030

2020

The Chinese Air Force announces that combat aircraft will be controlled remotely by pilots wearing brain-computer interface headsets

2022

In an effort to preserve the Great Barrier Reef as a tourist attraction, Australia introduces coral that is genetically engineered to withstand higher water temperatures

2023

A pop song written by an AI and performed by a virtual reality band wins the EuroVision Song Contest

2025

Alcohol consumption in the U.S. is down 50 percent compared with a decade earlier

2026

Based on school records and personality profiles, China's WeHear selects 300 preteens as candidates for the first Mars settlement mission

2028

The global incidence of Type 2 diabetes declines for the second year in a row

2030

The first commercial hydrogen-powered airplane enters service

Any successful large business had to integrate with one or more AI companions, and constellations of businesses partnered to provide end-to-end services that leveraged their insights. So, for example, Scarlett Health data were shared among a supermarket chain, a fitness center chain, and a hospital chain to provide users with end-to-end wellness service. HearQ generally followed a "freemium" pricing model, offering free ad-supported versions of all modules. It turned out that nothing, literally nothing, was more effective than gentle encouragement whispered in a consumer's ear, at just the right moment, from a voice that had gone through millions of iterations to be maximally seductive. In 2023, some employers started paying employees extra to use Scarlett Worker, a module to improve productivity, enhance security, and upskill workers. The following year, it became mandatory at several large companies.

Not surprisingly, there was vast wealth creation and vast wealth concentration. Investors and businesses made untold trillions from the integration of AI into nearly everything. However, concerns from earlier in the century about wealth inequality had been dampened, as health and wellness and educational indicators had improved significantly. In many places, governments outsourced to business key functions such as education and transit (in the form of autonomous electric vehicles). Most businesses used powerful AI nudges to encourage socially and environmentally positive behavior.

So, for example, groceries and health insurance companies partnered to provide dynamic individualized pricing to guide people toward purchases that aligned with their individual health-optimization programs. Most people became used to following this guidance, as it made life affordable and offered real benefits, even if it meant less freedom to do or consume what they wanted. The wealthy could pay more to purchase "indulgences"—temporary exemptions from the scoring algorithms. There also emerged an underclass known as "the Noncompliant"—who opted out. They had the freedom to do whatever they wanted, but life was more expensive and difficult for them, and they were unable to access many important services.

Then there were "the Unpluggables"—vast numbers of disadvantaged workers in developing countries who could not begin to afford an AI companion. For them, livelihood opportunities were even more tenuous than before, and they were being left further behind.

Many business functions had been automated, but people still had jobs. The "human touch" was still considered highly valuable when it came to face-to-face interactions, and service jobs were booming. Four-day work weeks had become standard, allowing employment to be distributed more widely. Because meeting basic needs like health, education, and transportation became more affordable for "the Compliant," this was economically feasible, and most people enjoyed working less. Some warned of discrimination, as compliance was a prerequisite for most jobs, but such complaints were mostly limited to activists, and antidiscrimination laws had not adapted to these new human classifications.

These days, business has an interest in stabilizing the climate and avoiding disruption to key resources. In cases where high-tech solutions are cheaper and easier than a low-tech systemic change, they're deployed. Governance of the commons is a blind spot, however, as intergovernmental organizations and frameworks have atrophied in the face of concentrated corporate power. Ocean health and biodiversity, in particular, are in trouble. A cost-benefit calculus, which some argue is too narrow, is applied to all questions of environmental management and conservation. Several large companies are piloting approaches to carbon sequestration and geoengineering that they hope will be capable of reversing global warming.

RESOURCES

Vast amounts of data, robust integration among different businesses, and a highly compliant population have allowed for much more efficient use of resources. The circular economy is now a reality for most materials. Energy use is also optimized, and efficiency has radically improved. However, shared resources that extend beyond the purview of a megacorporation or state are still subject to the tragedy of the commons and insufficiently weighted in the algorithms. Ocean health and biodiversity, in particular, suffer from the lack of intergovernmental cooperation and their seemingly diffuse value to even the largest corporations. Businesses deploy technological substitutes, such as drone pollinators, whenever feasible.

Total Information Awareness

SUPPLY CHAINS

Automated manufacturing, resource efficiency, and a far more circular economy have radically shortened supply chains, and near-perfect customer demand data have vastly improved supply chain and demand planning. Businesses are dependent on complex algorithms that manage the flow of materials and that negotiate prices with other algorithms to procure supplies as efficiently as possible. This has mostly worked quite well, although the occasional "flash crash" has resulted in brief, destabilizing runs on key commodities.

EMPLOYEES

Employment has become much less random than it once was. Algorithms are able to determine a match between employer and employee with a high degree of accuracy, and much of the initial negotiation between an employer and worker takes place without a human in the loop. Scarlett Teach has also made it possible to effectively upskill and reskill workers whose previous jobs have changed or been eliminated. Between shortened work weeks, "human touch" jobs, and effective upskilling, there has been a net gain in employment levels, along with a decline in hours worked.

CONSUMERS

For the most part, people spend far less time shopping than they once did. For the necessities of life, this is largely automated—and optimized for price, wellness, and other key variables. Consumers trust the algorithms. An exception is made for specialty items like clothing, which consumers still see as conveying a sense of individual identity. Indeed, with so much of life being efficiently managed by algorithms, fashion has become far more important to both women and men as a marker of their individuality.

HEALTH

Health outcomes have dramatically improved for all but the Noncompliant. Although some people grouse about "nanny corporations," most welcome the health benefits that compliance brings and couldn't afford not to comply in any case. The optimization of preventive measures like better diet, exercise, and sleep have greatly reduced the incidence of noncommunicable diseases like type 2 diabetes and heart disease. Meat has become far more expensive, as Scarlett deems it mostly unhealthy. With the exception of the Noncompliant and the Indulgent, who relish their burgers, consumers eat less meat.

ENERGY

To prevent runaway climate change, an algorithmic carbon tax is effectively added to certain activities, such as transport. Due to automation, from driverless cars to smart homes and cities, energy use has become far more efficient. This, along with the electrification of most transportation has significantly reduced energy-related emissions. Aviation still relies primarily on jet fuel, and is therefore expensive, but innovations in hydrogen fuel cell technology hold the promise of electrification of air travel in the near future.

PRODUCTS AND SERVICES

The diversity of products that people consume has diminished. For the necessities of life, most of the purchasing decisions are made by algorithms, and branding has become irrelevant. At the same time, consolidation of businesses into a smaller number of huge corporations has reduced competition. Products are designed to be disassembled so their resources can be recovered.

Implications
for Business

What Do the Scenarios Mean for Business?

As noted at the outset of this report, scenarios do not define strategy; they help a company prepare.

These scenarios make clear that business as usual won't suffice. One key message that emerges from all scenarios is that achieving the future we want will require a fundamental reevaluation of the role of business in society and a change in the way business operates. Each scenario describes a future in which companies will need to employ radically different approaches, develop new structures and capabilities, deliver value in new ways to a far more diverse customer set, and listen to the unfamiliar, emerging voices shaping our new realities.

Here are some common themes across each of the scenarios:

- Business will operate in an increasingly fragmented world.

- The pace of change will put constant—and increasing—pressure on large, incumbent companies to innovate to meet changing needs.

- Natural resources will come under increasing pressure, with supply disruptions and price volatility.

- Climate change will become more and more urgent with each passing year.

- Governments will struggle to develop coherent solutions to global challenges.

- Technological innovation will accelerate—and while some individuals will appreciate the increased agency technology provides, others will recoil from the nature and pace of change.

- People will enjoy economic opportunity and security in a highly variable way.

- The world will continue to be a more transparent place, with obvious implications for business.

We developed these scenarios as a tool for company leaders to anticipate potential changes that will define the business environment. We hope these scenarios will help leaders inform and test strategies for their business to deploy in the years ahead.

Last year, we released the report *The Future of Sustainable Business*,[41] organized around what we saw as the essential elements of a new agenda, including new approaches and new kinds of advocacy needed to achieve a more just and sustainable world. In a second report, *Redefining Sustainable Business: Management for a Rapidly Changing World*,[42] we defined the implications of these new elements for sustainable business leaders. Since then, we have engaged both our members and experts from different disciplines to inform these scenarios—in part to test our ideas about the future, and in part to provide business leaders with ideas and approaches they can adapt and apply.

Generally, the insights and recommendations in our earlier reports hold up well across these scenarios. The key elements of the new agenda for business—including climate resilience, managing the ethics and human rights impacts of new technologies, and ensuring quality employment in an era of automation—are prominent in their impact. Likewise, many of the suggested new approaches described in both reports—particularly the need for sustainability departments to drive broad organizational change within their companies and to more deeply engage in external collaborations—hold their value in each of the scenarios. We encourage business leaders to reread our previous reports in light of these scenarios to consider how they apply in their business.

We also encourage business leaders to debate the content and ideas in these scenarios—and consider the implications for their company and sector. While these scenarios are not, in themselves, a guide to strategy or planning for a given company, they can inform efforts like the creation of a more focused and tailored set of scenarios.

Finally, we invite business leaders to engage with BSR in the coming months. We will continue to work with members, both individually and through our collaborative initiatives, to develop more practical guidance on how to use scenario planning and other foresight methodologies to inform practical solutions to future challenges and opportunities.

Key Questions for Business

Business purpose: The scenarios all reflect worlds in which the purpose of business is essential to earning trust, and in some cases, the legal license to operate. How will companies define and demonstrate a purpose that is considered to be socially useful in addition to being profitable? Companies that cannot answer this question will be non-competitive.

Corporate governance: How will the corporate governance structure and approach adapt for the future? How will boards evolve in composition and purpose to steward the company in a decentralized world? How can boards ensure that they hear diverse voices central to understanding a more fragmented world? Can governance adapt to a world in which change comes much more rapidly?

Customer value: How will companies deliver value to a fragmented consumer base? Many companies that have long relied on delivering to mass markets with undifferentiated needs will find that that model no longer works. How will companies shift their approaches to deliver customer value at a time when social expectations are changing, and the pressure to stay within environmental boundaries is growing?

Business model innovation: How might peer-to-peer or circular economy models disrupt business? What steps can companies take—defensively or even offensively—to maintain competitiveness while safeguarding or even strengthening sustainability outcomes? How can incumbents navigate a highly competitive present while also charting a course to a fundamentally different future?

Market frameworks: How can companies play a role in redefining the rules governing capital markets, so that "non-financial" elements become more important, value is delinked from consumption, and there is more consideration of long-term thinking.?

Expressing corporate values: How will companies meet the rising expectation that they express their values, at a time when societal viewpoints are less cohesive? Can a company with a single set of values thrive in a world in which values are increasingly tribal? How can a company maintain public trust if the drivers of trust are extremely different in different communities?

Energy and climate: How can companies navigate the energy transition? Given that this will remain a highly dynamic, complex, and uncertain landscape for years to come, how can companies employ an aggressive and proactive "portfolio approach" to both advocating for and deploying new clean-energy technologies, and collaborating in new ways with a wide range of other actors to share risks and cost?

The social contract: What role should each company play in remaking the social contract in a world where work is scarce and often less than full time, people live to over 100, and employment needs shift more rapidly than people can transition? How can business bring creativity and openness to conversations with government and other actors to enable solutions? How will business earn the trust of policymakers and the public to be a credible partner with government?

Employment: How will companies develop the skills they need for their organizations in a world where employment is far more fluid, workforces are more diverse, and the notion of long-term employment becomes increasingly rare?

Application of new technologies: How will each company and each sector deploy new technologies critical to their future success in a world in which values shaping this deployment vary substantially? How will companies balance an environment where different norms and expectations shape the design and implementation of new technologies? Will the concept of "universal human rights" survive in a more fragmented world?

The worlds reflected in our scenarios do not provide a single, universal answer to these questions. The good news is that these scenarios and questions can catalyze new discussions about reinvigorating strategy so that vibrant businesses will thrive in any of the scenarios. Given the pace and depth of the changes to come, these discussions are essential. Businesses—and the well-being of people and the planet—depend on new strategies for the future that guarantee a just and sustainable world.

These scenarios and questions can catalyze new discussions about reinvigorating strategy.

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About BSR

BSR is a global nonprofit organization that works with its network of more than 265 member companies and other partners to build a just and sustainable world.

From its offices in Asia, Europe, and North America, BSR develops sustainable business strategies and solutions through consulting, research, and cross-sector collaboration. Visit www.bsr.org for more information about BSR's 25 years of leadership in sustainability.

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