

749

689

786

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SCENARIO ONE

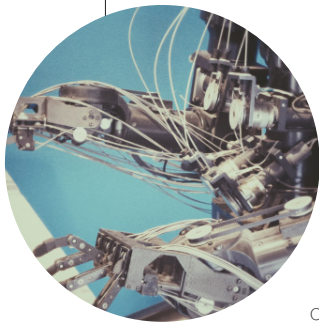
A Tale of Two Systems

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.



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.

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.

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.

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.

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.

SCENARIO ONE

A Tale of Two Systems

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.

PRODUCTS AND SERVICES

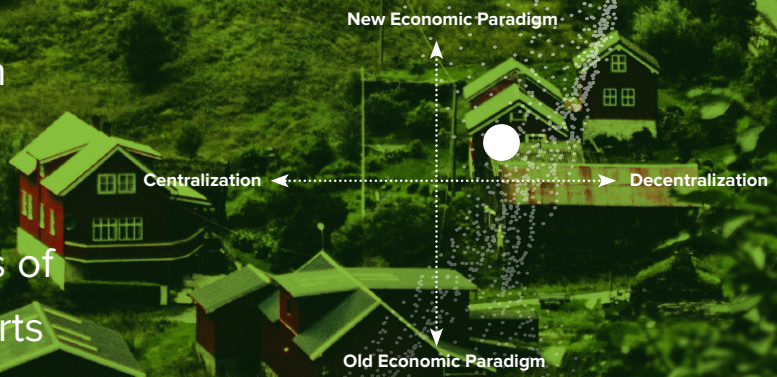
In the Nordic bloc, consumers want products that have been ethically sourced, produced in a way that positively benefits people and the environment, and designed for circularity. Although not always the case, that is the norm. There also has been a significant shift toward use rather than ownership models, 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.

SCENARIO TWO

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.



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.

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.

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 doing 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.

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.

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.

SCENARIO TWO

Move Slow and Fix Things

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.

PRODUCTS AND SERVICES

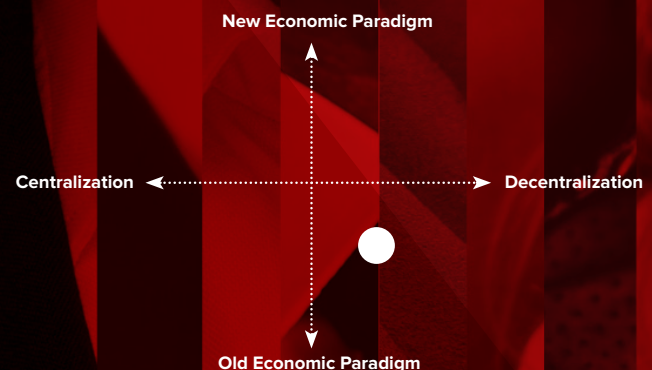
Western consumers, especially Millennial and Gen Z consumers, want products that are safe, healthy, and durable. Experiences, as well as unique or limited-batch products, are particularly prized. Many big-ticket items are available to borrow from community "libraries of things," and people pride themselves 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.

SCENARIO THREE

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.



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.

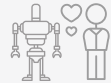
ROAD TO 2030

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.

SCENARIO THREE

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

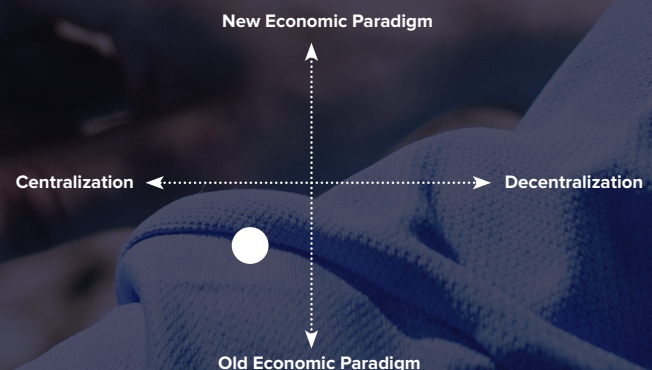
Products and services are highly varied, depending on the priorities of a tribe and the businesses that supply them. Some tribes are looking for high-tech products, while others seek low-tech wares or prefer experiences. The quality of products differs considerably based on the size and sophistication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

SCENARIO FOUR

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.



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.

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.



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.

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.

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.

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.

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.

SCENARIO FOUR

Total Information Awareness

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.

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.