2040
Exploring society's future challenges

An AXA Foresight Report

Table of contents

Foreword

At AXA we believe insurance is a force for progress. In 2020, "Acting for human progress by protecting what matters" was established as our new purpose, further committing AXA to pursuing the best initiatives to safeguard essential resources such as health and nature to continue a sustainable future.

Scientific achievements, economic development, medical advances and technological empowerment are contributing to build a world towards prosperity and wellbeing. However, the world continues to face evolving challenges, often increasingly interconnected. This requires more attention to understand the trends that are shaping the future and a better assessment of the paths that lay ahead so as to be better prepared to respond and to adapt.

Strategic Foresight is a tool that allows exactly that — to study current signals and trends and project and analyze the possible outcomes in the not so immediate future. Foresight analysis is based on knowledge from complementary disciplines, including science, humanities and arts, is a tool that can help us better understand the "possible futures" to best navigate times of crises and uncertainty and provide a variety of pathways towards progress given the obstacles or opportunities that may be part of the landscape ahead.

This report uses Strategic Foresight methodologies to explore the specific futures that are at the heart of our business in the areas of the environment, socioeconomics and health. The goal is to inform our thinking about the avenues to progress and ultimately, stimulate action to build a sustainable future.

Olivier Desbiey
GROUP HEAD OF FORESIGHT

Executive summary

Insurance is built on future potential events. Its success is based on understanding and anticipating them through the best possible vision of tomorrow. This is the aim of strategic foresight, which helps provide a lens into possible futures by identifying main trends likely to emerge in the years ahead and allowing to better navigate uncertain times. Examining long-term transformations and their related challenges allows to explore the ways in which our societies may be affected in the future and what role insurers might play in a fast-changing world.

Cooperation and trust emerge as the key factors in tomorrow's successful response to the rising challenges of climate change, socio-economic disruption, and stress on health care systems.

Over the next few years, the response to the rapid pace of global warming and biodiversity loss relies on effective international cooperation on climate issues and on a more holistic approach towards the sustainability of the environment and economic growth in the future. Furthermore, the development and adoption of more stringent environmental regulation is expected to drastically transform the economy through a shift away from carbon-intensive related products and services.

On the economic front, redistribution is likely to remain at the top of the political agenda. With deeper domestic disparities and concerns over wealth redistribution, creating a strong, safe and more equal society will depend on the degree of effective cooperation between the state and the private sector. The result of wealth inequality could well be a continued backlash against globalization and a drive towards increased regional decision-making with more resilient local supply chains.

Major changes in the health sector will be accelerated by the Covid crisis. The health industry will rapidly find itself at the crossroads between high-tech medicine and traditional hands-on care. This tech-driven medicine will raise important questions about data privacy and ethics, raising the issue of trust and cooperation between the players in the field, governments and the public — this will be essential for an optimization of the human/tech blend. The adoption of measures to foster trust and the construction of a holistic approach of preventative practices and treatment will be key in facing the issues of aging populations, access to affordable care and the management of future epidemics. A tech- and data-driven health contributes to open the market to new players and goes with an increasing redistribution of responsibilities between public and private , and individuals. This fragmentation exacerbates the need for a relevant coordinator.

In a world where human-induced climate change will impact everyday life, where localization will counter the globalization of yesteryear and be defined by stronger inequalities and where tech-driven healthcare will provide the opportunity for healthier and longer lives, the insurance industry will need to adapt but will also be provided the opportunity to be a leader of change and resilience.

In a suggested scenario of a +1.4°C hike in global temperatures, rise in sea levels, more intense weather events and a loss in biodiversity, insurance has the potential to play a catalytic role for a greener and more sustainable world. Based on its unique risk expertise, the insurance sector will continue developing innovative financial instruments towards a green transition, products that support the preservation and restoration of the natural world,

the integration of nature-based solutions in risk-modelling and the promotion of greener and more resilient infrastructures and processes within its ecosystem.

In a 2040 world where globalization would be replaced by increased localization, increased fragmentation due to stronger inequality would put more focus on insurance's role as an "invisible force" for economic stability. It will then be crucial to provide access to insurance products to "emerging" customers, not only in emerging markets but in higher income economies through tailored offers and the opportunity of digital distribution channels. This will go hand in hand with higher expectations from the private sector on issues such as financial exclusion — probably more so for the insurance sector with its special role in recovery, risk prevention and pooling that are conducive to economic stability and growth.

In the health realm, a scenario where prevention through data management has taken center stage by 2040 highlights a unique role for insurers in strengthening integration and partnership across the health sector. By building on their unique position between the medical system and patients, insurers can ensure optimal orchestration of the health chain to ensure customers have easy access to the treatment and care they need.

The world faces growing future challenges in the increasingly interconnected areas of climate, the economy, and health. Just like the Covid-19 crisis, future ones are increasingly likely to be multi-dimensional. In this 2040 version of the world, there will be ample need for adaptation of the insurance industry but also plenty of space for opportunity. Insurance is about resilience, rebuilding and enabling — all three will be increasingly important to face the challenges ahead and help seize the related opportunities for society.

Introduction

By January 2021, Covid-19 had claimed more than 2 million lives worldwide. It is a reminder that, when change happens, it can happen fast. The world was already facing climate change, a technological shift and renewed political tensions — particularly between China and the US. The pandemic is also a reminder that, in today's complex world, all risks are connected. In the short term, Covid-19 also means economic recession, increased poverty, a rise in mental ill health, social discontent — and, very probably, a deepening gender divide.

It is important, therefore, that we look forward — that we learn the lessons of this crisis, and see clearly the risks and opportunities ahead of us. This foresight publication seeks to do just that. In Chapter 1, we set out the main trends[1] in three interconnected key areas: the environment, socio-economics and health. These trends help us "frame the future." Based on them, we have developed three possible pathways for each area, covering what may happen over the next twenty years — from the merely plausible to the probable.

Then — in the second part of this Report — we have imagined a world where human-induced climate change has become a reality, where globalization goes into reverse, and where tech-driven healthcare helps us all live longer, healthier lives. In Chapter 2, we also look in detail at how the insurance industry can adapt to these changes — and the role insurers might play in the society of the future. These are scenarios, not predictions — our aim is not to forecast the future, but to identify priorities for action today, so that — over the next twenty years — we can build a fairer, safer, more resilient world.

> " It is difficult to make predictions, especially about the future. "

Niels Bohr, winner of the Nobel Prize in Physics, 1922

Framing the future space

Probable: What we assume will happen.
Plausible: What could happen.
Possible: What is unlikely to happen.
Preferable: The future we aim towards.

Preferable

Probable

Plausible

Possible

Time
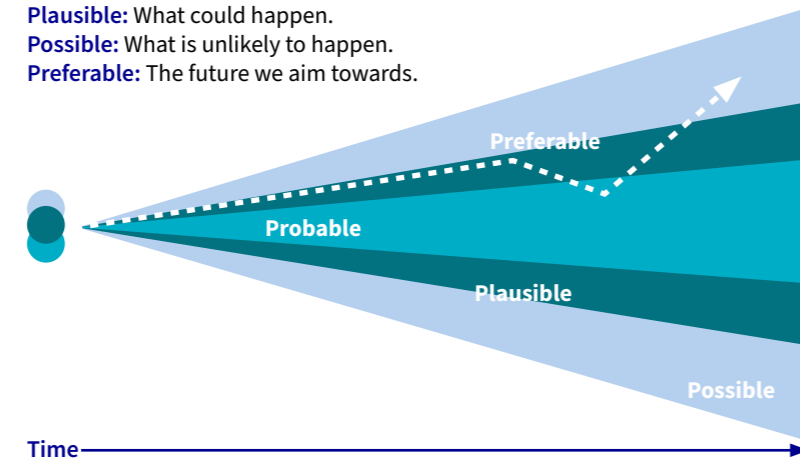
Futures cone adapted from Dr. Joseph Voros, Swineburne University
(Source: Changeist)

Pathways
to the future

Foresight is not about predicting the future — it is about mapping out plausible scenarios and using those scenarios to make strategic choices. The first step is identifying the main trends that will shape the world as we emerge from unprecedented crisis: Will the economic recovery push us toward a greener future? Will social discontent worsen? Will mistrust of authority become mainstream? Will progress in healthcare continue at the same electrifying pace? Will technology take over? Will the Covid-19 crisis bring permanent change to our societies?

There is no single answer to any of these questions — our future will be determined by a combination of trends and events. We live in a complex world — increasingly, these trends are interconnected. What happens to climate and biodiversity, for example, has a direct effect on human health, as we have seen to our cost with Covid-19.

Chapter 1.1 presents what we see as the mega trends in three areas: the environment, socio-economics and health. These mega trends, we believe, are the real drivers of change in the world. For each area, we have set out three alternative pathways depicting the period from today to 2040, based on extensive research, data and qualitative analysis.

In Chapter 1.2, we delve deeper, and examine some of the other trends — the undercurrents — we expect to emerge (or accelerate) in the years ahead. These, too, will influence the path humanity finally takes.

Chapter
1

1.1 Key trends shaping our world

Finding the right pace
for a greener future

Redistribution at the top
of the political agenda

Healthcare at the crossroads:
High-tech and human care

1.2 The rise of interconnected risks

Emerging risks

Geopolitical risks

Environment

Finding the right pace for a greener future

Climate change is accelerating — and it is widely recognized now that human activity is increasingly contributing to it. All indicators tell the same story: global temperatures are rising, so are sea levels. Our eco-systems are badly degraded. The consequences are becoming clearer for scientists: because of climate change, extreme weather events are becoming more intense and frequent[2]. In the 2010s, there were three times as many floods worldwide as thirty years before[3]. Nineteen of the twenty warmest years ever recorded have occurred since 2001. Even if we take drastic measures, we would not see an improvement by 2040; the carbon absorption cycle is simply too long.

The good news is we are more aware of human-induced climate change than we were ten or twenty years ago. In many countries, young people have taken to the streets, demanding action. Across Europe, green parties have increased their share of the vote. As individuals, we are taking steps to reduce our environmental footprint. Governments have responded to this — they have strengthened their commitments to reducing CO_2 emissions as part of the Paris Climate Agreement. In September 2020, the European Parliament approved plans to cut greenhouse emissions over the next ten years by 55%. China, meanwhile, has promised it will be carbon neutral by 2060. Business is also playing its part: leading banks, oil & gas producers and airlines are among those pledging to reach net-zero by the middle of the century.

That said, international cooperation has often fallen short. The 2019 UN Climate Summit ended in disappointment. Efforts to protect biodiversity have also failed: none of the twenty Aichi biodiversity targets, agreed in 2010, have been met in full. Pressure is now on to agree new measures — first at the UN's Biodiversity Conference in Kunming, China, then at COP26 in Glasgow.

Covid-19 has exposed our vulnerability to climate change — the pandemic possibly originated from the destruction of natural habitats[4]. The virus has also shown us just how much work is required to reach our net-zero goal and it has pushed resilience to the top of the agenda for both government and the private sector. Recently, the EU Commission made resilience its "new compass" for policymaking[5]. Businesses, meanwhile, are looking to make their processes and supply chains more sustainable. In 2020, CO_2 emissions are expected to decrease by 7%[6] as an effect of lockdowns in many countries. If we are to comply with the Paris Climate Agreement however, we need to reduce emissions by 7% every year[7]. As we saw in 2020, that comes at a significant social and economic cost. We still have time to reverse the trend — to protect the natural world that we rely on — but that window of opportunity is narrowing. If we do not act quickly, we could tip the climate into potential abrupt and irreversible change within a few decades[8].

Of course, it is impossible to predict the future — it depends on multiple economic, geopolitical and technological factors — but we do know that two questions will be key.

First, effective international cooperation. After Covid-19, will the world move toward unilateralism? Will governments prefer an "every country for itself" approach? Or will we see the re-emergence of the kind of multilateralism needed to tackle climate change?

Second, economic growth. Will most of the world continue to pursue growth at any cost? Or will it re-think its economic and development models? Will it take into account the need to protect the environment?

Pathway 1
Green growth

The world remains in a race for economic growth, but massive investments are made in new, green technologies.
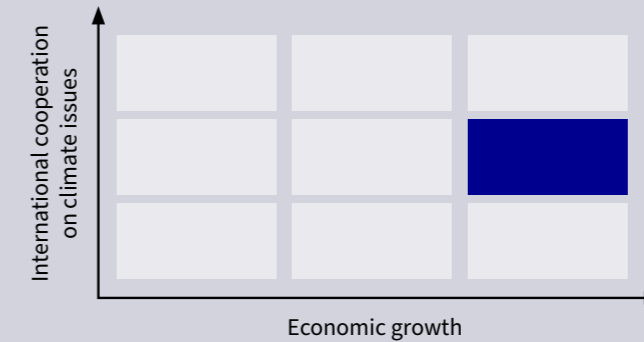
Over the next twenty years, governments have continued to pursue economic growth, based on investment and consumption. However, they also encourage new, low-carbon technologies to comply with the Paris Climate Agreement. Progress is made with the use of renewable energy, which becomes a reliable, cheap source of energy — more so than either fossil fuels[9] or even nuclear power[10]. The costs had already been declining: between 2010 and 2019, the price of energy from wind farms, for example, fell by 39%[11]; over the same period, the efficiency of solar panels doubled[12]. Even the problem of energy storage is solved thanks to massive investment of $620 billion[13] in battery technology.

As a result, there is a shift in the global energy mix. From the mid-21st century, almost half the world's energy is sourced from renewables. Leading companies such as Microsoft, HSBC, Shell and Qatar Airways have reached net zero — so have Japan and many European countries. China and the US, though positioning themselves as leaders in the energy transition, are lagging, but they are still expected to reach carbon neutrality by 2070.

Other sectors embrace innovation: aircraft manufacturers continue to work on hydrogen planes[14], US oil majors turn more of their resources to carbon sequestration[15], and China leads an international geo-engineering coalition to find a way to cool the planet[16].

The increase in green technologies does develop a downside, however, as solar panels, wind turbines and vehicle batteries all require rare metals and mining inevitably adds to pollution. Carbon capture and storage, meanwhile, consume large amounts of energy[17]. In effect, the environmental cost is re-located — rich countries reduce their carbon footprint and improve air quality while poorer countries bear the cost of producing these "clean" technologies.

Meanwhile, squabbling between countries delays the introduction of a carbon tax on imports. New environmental standards for production and plans for a global carbon emission authority suffer a similar fate. Despite some success, economists begin to question just how sustainable the "green growth" model really is.

Pathway 2
Business as usual

International cooperation on climate issues fails — countries turn inwards and focus on maximizing economic growth.

International cooperation on climate issues / Economic growth
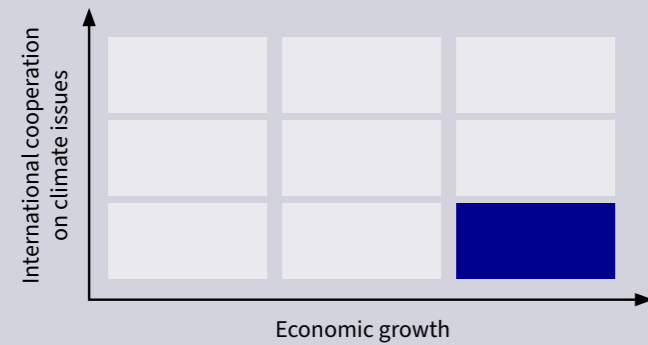
After 2020, international initiatives begin to founder. Policymakers give up on cooperation. Throughout the decade, a string of COPs end in acrimony and disagreement — much like the collapse of the Copenhagen UN Climate Change Conference in 2009. The UN Sustainable Development Goals also fail[18]. It is clear by 2030 that international cooperation is not working. Despite good intentions, countries fall short of their commitments. Targets are set, but too few details provided on how these can possibly be achieved. Sanctions do nothing to bring

countries into line. Green recovery plans are met with opposition — the result is a return to "business as usual."

There is a widespread belief in "technological solutionism" — the idea that advances in technology will save the world from climate disaster. Considerable faith is placed in carbon capture and sequestration — even though, by the early 2040s, no significant progress has been made. Nuclear fusion is also hailed as a possible breakthrough — but it becomes clear that this will not be available for commercial use before 2080. Other ambitious plans are put forward: fertilizing the ocean, for example, to absorb more carbon — or injecting gases into the atmosphere to reflect sunlight. In reality, these plans have little chance of succeeding. Countries continue to postpone meaningful action, leaving an entire generation to face the consequences of future climate change.

Decision-makers persist with this "business as usual" approach. Individuals continue to put short-term economic considerations ahead of the environment. Covid-19 brings this short-termism to the fore: Central & Eastern European countries contest the EU's ambitious plans for a green recovery. Gradually, world leaders roll back efforts to stop climate change — they cling to the "old world model" in a bid to save jobs, many in polluting industries that are unprofitable and over-reliant on government subsidies. In the wake of Covid-19, governments favor "catch-up" strategies that prioritize the economy over the environment or even public health. In the end, changes in behavior come too late — and are too marginal to head off possible climate catastrophe.

Pathway 3
Doughnut economics

The world adopts a new economic model. The race for growth is dismissed as "detrimental" to human development.

International cooperation on climate issues / Economic growth
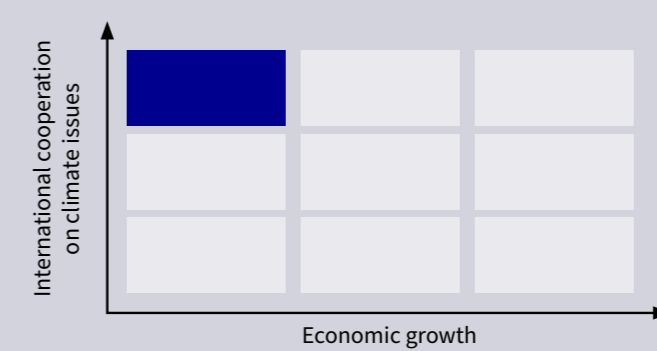
After 2020, the old linear model — based on production and consumption — is gradually abandoned. A new, "circular" model emerges — one which considers the limits of natural resources. As we enter the 2030s, economists take up Kate Raworth's theory of "doughnut economics"[19] — which supposes a reduction in consumption and a shift away from growth as the central measure of economic success. The EU declares that economic growth "cannot be an end in itself"[20]. Other countries have followed New

Zealand's "living standards framework", a comprehensive well-being indicator which replaces GDP[21].

Progressively, the new circular model is taken up in more countries, beginning in Scandinavia in the 2020s. Using this model, Denmark achieves carbon neutrality by 2025, Norway just five years later. EU countries outside Scandinavia follow suit, as do some states in the US. Eventually, the model's influence reaches Asia, South America and Africa, supported by the World Bank and International Monetary Fund (IMF). In 2020, the Covid-19 crisis had already shown the effectiveness of coordinated, international action — paving the way for a shift toward a more collective economic model.

As part of this shift, radical action is taken to protect the environment. From the mid-2020s, individual behavior begins to change. People travel and consume less; they adopt healthier diets. Industry is increasingly decarbonized. Agriculture becomes more sustainable — more food is produced locally. Production and consumption are more tightly controlled — new accounting methods are agreed for carbon emissions and biodiversity loss.

Socio-economics

Redistribution at the top of the political agenda

Over the past thirty years, more than a billion people have been released from poverty[22]: The Golden Age of Capitalism[23] brought economic growth — but it also brought an increase in inequality. Around the world, the gap between rich and poor is widening — between 1990 and 2016, income inequality worsened in countries home to more than 70% of the world's population — including the two most populous, China and India[24]. In 2019, growing inequality was the cause of protests in the Middle East, Asia, Latin America and Europe, demanding equal rights and a redistribution of wealth[25]. In many countries, middle classes are under pressure. In OECD countries, 70% of baby boomers were middle class[26]. For Generation Y — the next generation — that figure has shrunk to just 60%, the result of job losses, rising costs and the current pandemic threatening to reverse years of economic progress. It is clear that, given mounting within-country inequalities, worsening poverty and an economic recession in the wake of Covid-19[27], we will need a concerted effort to redistribute wealth in our societies.

Increasingly, wealth is concentrated in fewer hands. Despite a lack of reliable data from large

areas of the world[28], estimates show that the world's richest 10% own more than 70% of total wealth in China, Europe and the US combined; the bottom 50%, by contrast, own less than 2%. Since the 1980s, governments have shied away from redistribution — particularly through increased taxation. Instead, they've reduced public spending — and taken on more debt. The result has been to undermine the international liberal order[29], jeopardizing the relevance of international organizations and cooperation — and encouraging a return in many countries to nationalist or right-wing populism.

Meanwhile, corporations have grown in power. In some cases, their earnings exceed the GDP of entire countries. Production is more concentrated as a result — big corporations enjoy considerable political influence and this creates growing mistrust of both governments and the corporate sector, especially among younger generations, who demand meaningful social change. According to the latest Edelman Trust Barometer, half the world's population now mistrusts government; one third does not believe current leaders can be relied on to overcome[30] society's challenges.

Meanwhile, Gallup's Confidence in Institutions poll shows that in the US, the public's view of big business has worsened. Nearly a third — 32% — say they have "very little confidence" in big business, up from 22% in 2000.

Fears are also growing the consequences of automation in the jobs market. It's estimated that, in OECD countries, 30% of jobs may be automated by the mid-2030s[31]; those with low skills could find themselves out of work. An economic recession will only make matters worse. The latest Edelman Trust Barometer shows distrust and increasing anxiety — 83% of respondents said they are afraid they will lose their jobs because of economic recession or a lack of skills. In recent decades, the jobs market has become severely fragmented — in low and middle-income countries, but also in the US. Gig economy jobs may suit some people, but in many cases they lack full employee rights and benefits.

In cities, more people are living on the margins — cities concentrate poverty, as well as wealth. These populations have problems accessing basic social services or, in some cases, even

clean drinking water. Many are refugees or informal workers. In richer countries, cities are struggling to accommodate the "working homeless," unable to afford local rents. In the US, it's estimated that, 30% of homeless people have jobs[32]. Improving urban life is important: cities are home to more than half the world's population — yet the infrastructure is often old, inadequate and lacking the right investment.

No doubt technology has brought immense social progress — in everything from medicine to communications, but it's also given birth to new concerns. What should be done about the digital divide, for example, between those with access to technology and those without? How do we ensure authoritarian governments don't use technology to suppress opposition[33]? Or that artificial intelligence[34] continues to work with us rather than against us? What will be critical, in determining the future, is the effectiveness of the state — in working with the private sector, and in providing a strong and safe society.

Pathway 1
Political failure

By 2040, the pandemic-induced socio-economic crisis has reversed decades of social progress. The world has become more unstable. Political tensions increase and the international liberal order has given place to a geopolitical system of tension, constant threats between countries — and little to no cooperation.

Trust between business and governments has also given way. Global issues — such as climate change and public health — are neglected. Against this backdrop, states face mounting debts — and have less fiscal leeway to spend on public services or address social inequalities. People are distrustful of government and the private sector — protests and deep social divisions are the consequences. Over the past twenty years, economic and social policies have failed to reshape society, and within-country inequalities have continued to rise steadily as they have since 1980, now reaching alarming levels. Both lower and middle classes have become poorer, hit by a severe housing crisis and
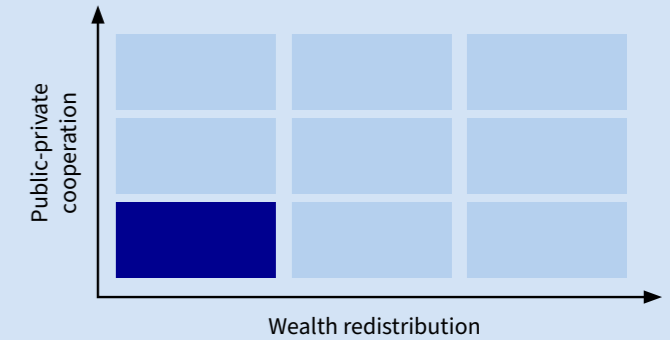
increased vulnerability to unemployment. City centers have become distressed environments, with lower-income populations struggling to live within city limits. Homelessness is also on the rise.

Governments have failed to invest in new skills and training — more jobs are automated, fueling a rise in unemployment. The gig economy continues to expand, threatening the formal sector in many areas. Job market disputes turn technology into the symbol of social division, overwhelming people rather than improving their lives — a feeling only enhanced by governments' pervasive use of data for surveillance.

Public-private cooperation (vertical axis) / Wealth redistribution (horizontal axis)

Pathway **2**
Growing tensions

Politicians show concern over growing social inequalities — but can't reach a consensus for effective reform. Distrust in politics continues to gain ground.

Public-private cooperation / Wealth redistribution
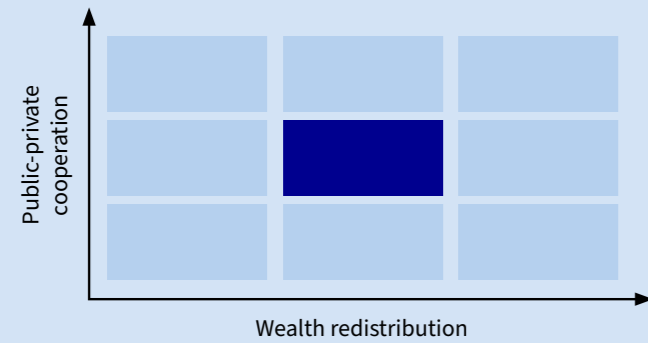
During the 2020s, politicians have been sympathetic to calls for meaningful change — however, they have not been able to reach agreement on new policies. Inequality continues to worsen, though at a much slower rate[35]. Public and private sectors are at loggerheads, with frequent disagreements over policymaking, regulation or consensus on how to define social well-being. Poorly performing institutions stifle investment, undermine commitment to reform and lead to growing public mistrust. Public-private partnership also underperform — public frustration leads to more litigation in the courts.

The international system, consequently, has become disordered. Western countries struggle to reach consensus on institutional change. Differences emerge between Europe and the US, and decisions are often blocked by countries taking a more short-term protectionist view. East Asian states, by contrast, take an internationalist approach, optimizing trade in the region — and taking on more of a leadership role. For the first time, a former Chinese Finance Minister is appointed head of the International Monetary Fund.

Local political leaders, meanwhile, step into the vacuum. An empowered international network of cities is in the forefront of multilateral cooperation. Urban resilience improves as a result: technology solutions reduce air pollution in cities like New Delhi and in the Paris metro; or they end traffic congestion in Mexico City[36]. Despite a few local successes, there is a lack of international cooperation. Cities find they cannot act in isolation — without national government support, public-private partnerships start to found.

Pathway **3**
Radical change

Repetitive social and economic crises in the 2020s generated instability. A global perception that risks have become systemic pushed for stronger commitment from public and private sectors. The result is far-reaching political and institutional change.

Public-private cooperation / Wealth redistribution
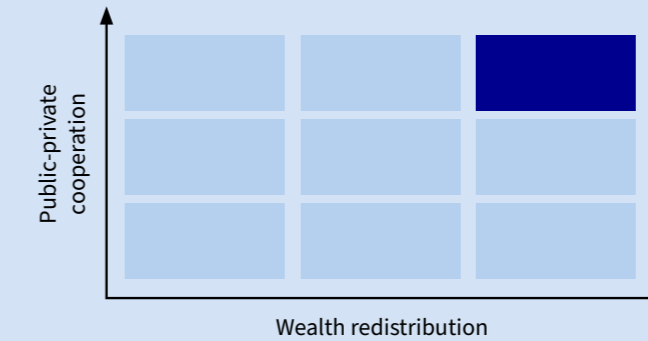
In many countries, governments make social change a clear priority. Inequality levels within countries begin to come down. Meanwhile, the private sector works constructively with government to fill social gaps — for example, by introducing protection plans for informal workers. Regulatory incentives are brought in to encourage greater financial inclusion. Additional schemes are launched to create jobs for low-income families; in one such scheme, street vendors are given access — through the private sector — to basic services like health cover, banking and professional training. After being identified by the public sector, the private sector steps in to help vulnerable groups in society — and provides the means to lift them out of poverty. Increasingly, public policies and innovation are driven by public and privately funded scientific research[38].

Eventually, mistrust in business and government — a cause of social division in the 2020s — begins to recede through more transparency and public debate, and consideration of the public as an external shareholder. Acknowledging the public's expectations when assessing environmental and social impacts for large-scale projects was an emerging trend — it has now become a requirement under new public-private engagements. Repurposing low-skilled jobs — done decades ago as a long-term solution — proved to be an effective way of avoiding strife over increased automation — it also highlights how technology can indeed improve people's quality of life. Finally, a more cohesive society emerges as the end result of public and private sectors working more effectively together.

Health

Healthcare at the crossroads: High-tech and human care

Since the 1970s, medicine has made immense progress — in both treatment and access. The result has been a steady increase in life expectancy. Currently, there are one billion people worldwide over the age of 60; by 2050, that number is expected to double.

As populations get older, we have — proportionally — fewer young people to support them. Fertility rates have already started to come down. In many countries, we may see a shortage of carers[39]. Pressure will grow on our health and retirement systems. The percentage of working-age people — those paying the taxes — will continue to fall. At the beginning of the 1990s, in wealthy countries, the number of workers to non-workers was above 5.0; in Japan, the country with the highest population of over-65s, the ratio is now 1.8. By 2050, 48 countries in Europe, North America and East Asia will have support ratios below 2.0[40]. In emerging economies, populations are also aging — but there are exceptions; in Africa, for example, by 2050, more than half the continent's inhabitants will still be under 25.

An aging population also implies an increase in chronic illnesses, like cancer, heart disease and diabetes. Finding effective treatments for these Non-Communicable Diseases (NCDs) will be one of the biggest challenges in healthcare in the years ahead, especially as the rate of co-morbidities increases with life expectancy. Currently, NCDs cause two-thirds of premature deaths worldwide[41]. By 2030 — if nothing is done — NCDs will have cost the global economy an estimated $47 trillion. In the US, people with NCDs or disabilities face much higher out-of-pocket health expenses[42]. Unhealthy lifestyles are adding to pressure on our public healthcare systems — poor eating habits, increased stress, and a lack of physical exercise are also major contributors to NCDs.

In recent years, healthcare has made huge technological advances[43] — the expansion of genomics, for example, and the increased use of AI, 3D bioprinting and virtual reality[44]. Entire branches of medicine have moved from theory to practice. The use of technology has opened up new visions of "augmented humans." As a result of these changes, medicine has become more personalized — more focused on prevention rather than cure. A holistic approach to health is emerging — one that takes into account all factors that may affect an individual's physical or mental well-being, including diet, environment, stress and lifestyle.

With Covid-19 — and the subsequent lockdowns — there is more awareness of the importance of mental health. During the crisis, critical mental health services in most countries — 93% — were disrupted or shut down altogether[45]. Lack of access to these services could have serious, long-term repercussions. The pandemic also showed our reliance on the basics of healthcare: the availability of medical equipment and trained nurses and doctors. In future, we'll need to balance technology with an approach that values personal care.

With these changes, patients are empowered; they have greater control over their own health — for good or ill. Technology is part of the explanation for this — in coming years, wearables and connected devices are likely to become more common. A focus on prevention puts the onus on individuals to adopt healthier lifestyles — and reduce risk of ill health in later life. Coordinated efforts between public and private sectors will also be essential — particularly in supporting research, new technology and a more coordinated approach to patient care.

Two main factors will determine the future of healthcare. First, the level of trust people place in their healthcare systems. Without this trust, people will be less willing to cooperate with health players — less willing, for example, to share personal data, or follow lifestyle advice. The second factor is the growth in tech-based medicine. Over recent years, technology has expanded treatment, brought down costs, and opened up access to healthcare — the question is: will it continue to do so in the years ahead?

Pathway 1
Tech solutionism

By 2040, health technology has become part of everyday life. Treatment is more remote; data is widely used by health professionals to develop new medicines. Technology has taken over health and people increasingly believe in this all-powerful solution.

Trust in the healthcare system

High-tech medicine
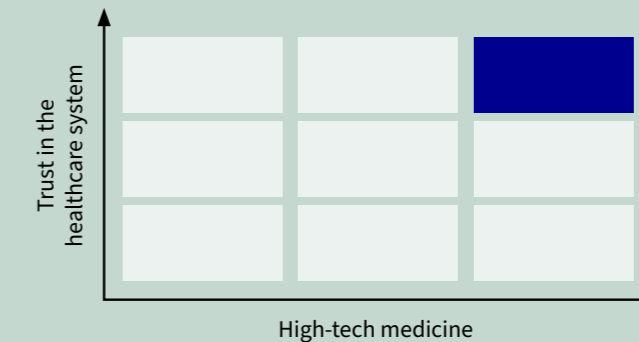
Wearables provide a steady stream of real-time data, giving doctors and researchers access to genuine databases, which can be used to develop new treatments. Genomics and gene testing continue to advance, allowing doctors to identify genetic risk factors and prevent hereditary diseases before they develop. Chronic illnesses are no longer treated by doctors — instead, patients are monitored remotely, using pre-set algorithms. As a result, the doctor-patient relationship becomes far less personal. Preventative medicine becomes normal practice — high-performing robotics drastically reduces errors in surgery and treatment. Meanwhile, 3D bioprinting can now produce perfect replica organs, eliminating any risk of organ shortages. Artificial limbs and other prosthetics continue to improve — in some cases, they become more efficient, accurate and powerful than their biological counterparts. Technological advances open up the possibility of "augmented humans"— through the use of new wearables, implants and smart drugs. In elderly care, companion robots are widely used, helping with household chores and sounding the alarm in case of emergency.

Leading tech companies have invested heavily in healthcare. Facebook, Amazon, Microsoft, Google and Apple — known collectively as FAMGA — all develop new healthcare products and services. Logistics systems are fine-tuned to offer last-mile delivery. Tech companies pour money into R&D, in-house clinics, as well as low-price health insurance and access to telemedicine[46]. CEOs encourage new developments — Elon Musk, for example, fast-tracks his Neuralink brain chips[47]. Gradually, the idea that the human condition can be enhanced through technology — transhumanism — begins to gain ground.

As a result of these changes, human-to-human care is increasingly sidelined. Emphasis is put on prevention and efficiency. Even patients prioritize access and affordability over data privacy. It is widely accepted that hospitals, governments and private companies will share data — trust remains as long as the healthcare system continues to deliver cutting-edge treatment and services.

Pathway 2
Tech backlash

In the two decades since 2020, technology has continued to advance, but it has led to growing public mistrust. Increasingly, technology is blamed for keeping people apart[48].

Trust in the healthcare system (vertical axis)

High-tech medicine (horizontal axis)
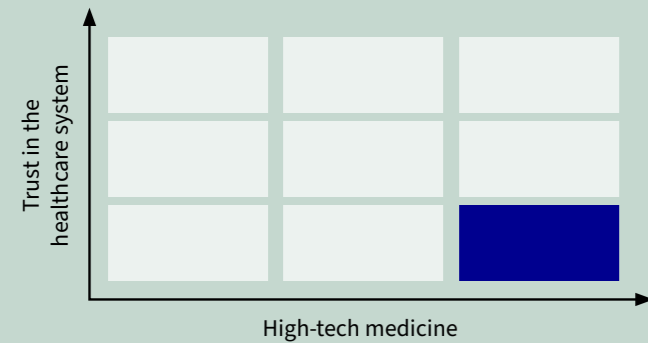
Because of technology, people feel a sense of alienation — there is a reluctance to accept "full-tech" medicine. Healthcare has become less personal — and more reliant on remote technology. Eventually, the loss in human contact leads to an increase in mental health issues — even, in some cases, physical illness.

At the same time, governments increase surveillance, using genetic testing, for example, to compile personal profiles[49]. Implants, meanwhile, transmit constant, real-time health data to the authorities[50]. Increasingly, service companies tap into the same information to assess risk and price products[51].

The public begins to see technology as a threat. There is widespread mistrust of science and politicians — this mistrust was compounded by the perception of governments' mishandling of Covid-19, encouraging people toward a more reluctant and isolationist approach. Support for international research efforts dwindles — despite the global nature of possible pandemics. Around the world, anti-tracking movements — inherited from the anti-vaxxer movements — continue to gain ground, comprising people who refuse to share their data with health practitioners. National healthcare systems are put at risk — as more individuals take responsibility for their own care.

People start to worry about using smart equipment such as wearables or implants for fear of device hacking — either to control or steal data. Genetic testing companies are unable to guarantee their systems are fully "cyber-proof"[52]. Public opinion increasingly voices ethical concerns over advances in health. There are fierce disputes over the use of gene modification, particularly with the prospect of genetically-modified children[53]. Do genetically-modified people own their bodies in the same way as others? Or do they belong to the society which created them?

Pathway 3
Patients first

By 2040, healthcare has become more collaborative. Technology has improved access to care, but the relationship between doctor and patient remains strong. Patients have taken on a more active role in managing their own health.

Trust in the healthcare system (vertical axis)

High-tech medicine (horizontal axis)
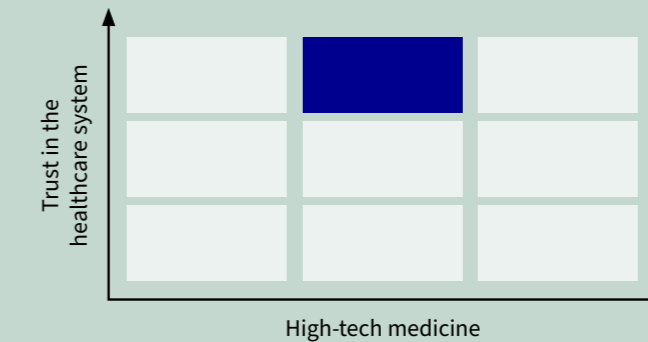
Use of technology continues to expand. Even so, medical professionals remain at the heart of healthcare; they play a major role in treating patients who cannot access technology, or choose not to. AI, automation and 3D bioprinting enhance healthcare and improve efficiency — but they are no longer regarded as "silver bullets."

Medical professionals acquire a range of digital skills — they learn to operate new technologies, and carry out remote diagnosis and treatment. They also learn to interpret data from patients' wearables, digital records, and gene testing.

At the same time, patients become more responsible for their own health — for monitoring what they eat and drink, and for making sure they sleep well and take regular exercise. Gradually, patients learn more about what determines their health — and their risk of long-term illness. New technologies, meanwhile, improve patient follow-up[54]. The purpose of healthcare begins to shift: it becomes about keeping patients well, rather than just treating the sick.

Symbolizing this collaborative approach are the new care hubs[55]. These hubs acts like flight control centers, collecting real-time data from patients and their health records — and identifying possible issues before it is too late for effective treatment. Not surprisingly, data privacy becomes more important. Questions are asked — not least who, ultimately, owns health data, who can it be shared with — and to what extent should governments have access?

Technology brings other advantages. Remote areas now have better access to healthcare. Patients are able to consult doctors many miles away, even in other continents — a practice made possible by technology. Public-private partnerships begin to blossom — new, structural projects are launched to coordinate healthcare efforts, reducing pressure on government health spending. Trust in healthcare increases; people recognize the benefits of technology — and of a more collective approach.

The rise of interconnected risks

The mega trends we have identified come against a backdrop of rapid change in our societies. In the years ahead, other challenges may arise from a geopolitical, technological, and economic point of view. These challenges will further undermine multilateralism and usher in a new era of competition. At the same time, a lack of international cooperation will hamper efforts to tackle climate change. Increased tensions will also make it harder for businesses and policymakers to chart a way through social, economic and political change. In this section, we will look at emerging risks — and at what may happen to geopolitics over the next twenty years.

Emerging risks

Highlights from AXA's 2020 Future Risks Report

Every year, AXA carries out a survey to identify emerging risks. This survey focuses on risk perception — in other words, what risks respondents believe will most shape society over the next 5-10 years. AXA's 2020 Future Risks Report pinpointed pandemics and infectious disease, climate change and cyber security as the main risks[56].

Prior to 2019, **pandemics and infectious disease** was seen as a less immediate risk — Covid-19 has changed that. Experts surveyed now rank it as the greatest threat to society between now and 2030. The general public also lists health concerns as the risk to which they feel most vulnerable — alongside cyber risk.

In this survey, **climate change** was rated second — the first time since 2015 that it has not come in first. More importantly, the survey showed significant disparities between countries. In Europe, experts still rank climate change as the most urgent threat to society; only 46% of experts in North America agree, however (down from 71% the previous year). Experts in Asia were also less concerned about climate change than the average. Worryingly, countries that downplay climate risk in the survey are among those that contribute most to it — and are most likely to feel its effects. Clearly, there is a danger that, by focusing on Covid-19, decision-makers and the public are taking their eye off long-term threats like climate change — in the Future Risks survey, respondents also marked down risks to natural resources, despite growing challenges to biodiversity.

In many cases, Covid-19 has acted as an accelerant — exacerbating risks that existed before the pandemic. **Cyber security** — ranking third in our survey — is one example. With Covid-19, more people are working from home. Businesses are more reliant on online or mobile sales. Phishing emails, for example, have surged in recent months. Meanwhile, **geopolitical instability** — which ranks fourth — has worsened. During the pandemic, more governments have sought to control vital medical supplies, and protect strategic industries. The fifth-ranked issue — **social discontent and local conflicts** — could also worsen as the pandemic aggravates social and economic inequalities.

Covid-19 has also devastated our **economies**. In many countries, lockdowns brought businesses to a near standstill. Going into 2021, the economic fall-out could increase as government support measures are withdrawn. It may be worse still if the pandemic undermines long-term consumer confidence. In our survey, almost three-quarters of the general public said they felt more vulnerable than they did five years ago.

Most of all, the Future Risks survey shows just how interconnected these risks are — this was also one of the key findings from the previous 2019 Report. To tackle these risks, we'll need a global response, based on cooperation across sectors, countries and disciplines.

In addition to the most important risks, the AXA Future Risks Report also identifies risks that may have slipped under the radar — in 2019, we flagged pandemics and infectious disease as an "overlooked" risk. This year, we have marked out misinformation and mental health as possible future threats.

Misinformation, we believe, merits close attention. In recent years, we have seen the rapid spread of "fake news." Politicians around the world have accused other countries of election interference — in February 2020, the World Health Organization warned that misinformation was making it difficult for people to get reliable advice about Covid-19.

Mental health issues should not be overlooked either. Depression affects an estimated 264 million people worldwide. Suicide is already the second-leading cause of death among young people. The human cost is vast, but so too is the economic impact: depression and anxiety cost the global economy more than $1 trillion a year[57]. According to the UN, Covid-19 has the "seeds of a mental health crisis."

The nature of emerging risks

Emerging risks are, by their very nature, hard to assess. It is difficult to be specific about the timing of such risks — to say, for example, how quickly a particular risk might develop. Risks on which there is consensus tend to be those that are most immediate — whose impact, in other words, is likely to be felt in the next five years. Generally, these are the risks that score the highest in our survey.

There are other risks, of course, that may be less immediate, but which, over time, could prove just as important. For example, risks associated with outer space, or long-term exposure to harmful substances. Attitudes toward new technologies provide a good illustration of how perception of risk varies. This year, new technologies dropped six places in the ranking, not because their impact will not be significant, but because fewer experts consider them to be a "rapidly emerging" risk (down 15% compared with 2019). The question is: why do experts consider tech-related risk to be less important? It is possible that individuals and businesses are now more familiar with technology, and also better understand its benefits. As a result, they are more accepting of the risks. Even so, we should not lose sight of tech-related risk. It is still evolving, and the increased use of new technologies, such as AI, still constitutes a serious risk for individuals and businesses — for example, in terms of data management, or the "black box" effect resulting from machine-made decisions.

Risks relating to medical advances and innovation have also dropped down the ranking. At first glance, that seems counter-intuitive, but it may be that tolerance for these risks has increased because of Covid-19, especially if medical advances allow for quicker, more effective treatment of the illness. There is no reason the risk will not re-emerge in future years — progress, in any field, tends to bring new risks.

Geopolitical risks

Contribution from The German Marshall Fund

The German Marshall Fund is a non-partisan think tank dedicated to transatlantic geopolitcal issues.

Less cooperation, more competition

By 2040, the world order is characterized by less cooperation and more competition, both between China and the US, and among regional powers, as the world has shifted to a multipolar system. Global challenges are addressed mainly at the regional level. This shift, coupled with climate change and population growth, has resulted in a period of instability in international relations, accompanied by intense geopolitical competition between major powers.

A desire to control new technologies has led to intense competition and rivalry, exacerbating global tensions. By 2040, China's rapid catch-up on technology and India's expanding workforce make them the biggest contributors to global growth. The ability of the West to influence international affairs is challenged as its share of world population and GDP is shrinking. The European Union is more fractured and potentially smaller, redefined as a more modest trade zone, while US global engagement continues to be more selective.

With the diffusion of political power, it has become harder to forge internationally binding treaties, and non-compliance and subversion of international laws have multiplied. It has become increasingly difficult to focus collectively on systemic issues such as poverty and environmental degradation. As a result, more ad hoc coalitions are created, involving cities and big companies as well as states, to provide critical mass on specific issues or in designated regions.

The technology-security nexus

The Covid-19 crisis accelerated the global digital transformation and, over the next two decades, this trend framed the strategies of governments, cities, and companies. New data and cyber security risks have emerged; these have changed the nature of governance, both nationally and internationally. The increased connectivity of critical infrastructure and the lack of a global consensus on cyberspace have increased nation states' vulnerability to external attacks. Given their open societies, democratic states are disproportionately affected by cyber attacks. Authoritarian regimes — with considerable support from Beijing — have established near-perfect systems of digital authoritarianism, putting their citizens under permanent surveillance. By 2040, technological competition has become a deeply ideological battle, opposing democratic and authoritarian states.

The diffusion of power within states: The competing power of cities and big tech companies

Power has shifted between states — within states, meanwhile, power has become more diffuse. Nation states face competition from cities and big tech companies. Many cities and regions have grown in power economically, demographically and politically; this has led to demands for devolution from central administrations — or at least greater recognition of local government. Following recent health and environmental crises, big tech companies have become indispensable as providers of public services. By 2040, a hybrid system of governance has emerged — more complex and more decentralized.

Environmental challenges and the increase in multi-dimensional crises

Following Covid-19, governments and cities concentrated on economic recovery, switching investment away from climate action and renewable energy. As a result, climate targets were missed — the move toward carbon neutrality stalled and failed. By 2040, rapid urbanization and population growth mean that, in many regions, diseases spread more quickly — pandemics have also become more frequent. The old way of dealing with crises has been overturned. Security crises now follow health, environmental or migration issues. Water, for example, has become a cause of war between states, with many parts of the world now suffering from chronic shortages. Crises have become multi-dimensional, requiring better forward-planning by policymakers, and a more comprehensive approach to crisis management — involving both private and public sectors.

Vision 2040

In Chapter 1, we defined our main trends and emerging risks — and set out the possible pathways for humanity over the next twenty years through to 2040. In this chapter, we'll go further, and imagine what that future might look like.

Chapter 2 projects these trends to 2040 and describes a future with a growing need for social protection, where healthcare is based on prevention, and where climate change is happening, just as the models predicted. This future is fictional yet rooted in real science and historical fact.

Designed press releases, broker reports, and customer profiles give a flavor of this 2040 future whilst finally, an analysis provides some of the implications for the insurance industry in this environment.

Chapter

2

Environment:
Reality bites

Socio-economics:
Globalization goes into reverse

Health:
Prevention takes center stage

Reality bites

In 2040, the effects of human induced climate change have become reality. Temperatures are 1.4°C higher than pre-industrial levels[58] — just as climate scientists predicted. Sea levels have risen[59]; weather disasters — like heavy rainfall, heatwaves and droughts — have become more frequent and more severe; biodiversity loss has slowed, but Nature remains under pressure.

Awareness of climate change has continued to grow. The Covid-19 pandemic in 2020 exposed serious flaws in the world's economic model — particularly its harmful impact on health and the environment. During the 2030s, there are constant news reports from around the world on droughts, heatwaves and floods — in 2034, Australia is hit by its worst drought in half a century, with a massive loss of crops and livestock. The rise in sea levels threatens the homes of an estimated forty million people. In many countries, those who have the means start to migrate away from the coast. Scientists say the loss of Greenland's ice cap is now irreversible — in parts of Antarctica, marine life is almost non-existent. Climate change is wrecking millions of lives; some regions are facing extreme conditions and can no longer be inhabited.

In response, governments are taking measures — but they are not enough. The +1.5°C target, set out in the Paris Climate Agreement, was recalibrated in 2025 to +2°C. To support this target, governments introduce new carbon taxes on imports, and bring in incentives to encourage investment in "green" assets. Coal-generated power had been banned ten years before — now regulators impose compulsory carbon budgets on businesses, restricting the use of oil and gas.

> "Temperatures are 1.4°C higher than pre-industrial levels"

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Vision 2040

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A new body is created to monitor carbon emissions — the International Carbon Accounting Organization (ICAO). Carbon footprint data is made public — to encourage positive competition between companies and to "shame" those not complying. In such an environment, bigger companies often have an advantage — they have the resources to anticipate regulatory change.

By 2040, the energy sector has been turned upside down. Electricity utilities have shifted to renewables — thanks to massive investment from oil majors, pledging to reach net-zero by 2050. Energy production has become local — investment has poured into new complex smart grids. Homes are fitted with Tesla's Powerwall-inspired batteries, allowing homeowners to store power from solar panels or windmills. Some countries have switched to nuclear to wean themselves off fossil fuels — though there's still widespread political and public opposition to nuclear power.

> **"A new international body is created to monitor carbon emissions"**

International trade has slowed — strategic industries have been brought "on shore," while carbon taxes have significantly reduced trading profits in sectors like electronics and heavy industry. The volume of air freight has plummeted, with more goods being transported by sea and rail, encouraged by government tax breaks. New sea routes in the Arctic have also opened up because of global warming. That is good news for exporters in East Asia, now able to avoid the contentious Strait of Malacca — the main shipping route between the Indian and Pacific Oceans. At the same time, tourists have ditched long-haul travel in favor of local holidays by train or sea that will do less damage to the environment.

Governments and businesses have shown they can adapt to climate change. The environmental threat remains, however. New risks are constantly emerging from shortages of natural resources, severe weather, pollution from micro-plastics — even the risk of new disease. In the next few years further, urgent adaptation is needed.

FINANCE ALL TIMES

RWon aims to shake up Europe's power market with new quota system

Essen, Germany — RWon, one of Germany's big four power utilities, is to introduce a new quota system for industrial customers — in a move that will radically change how electricity is bought and sold in two of Europe's largest economies.

Under the new system, customers in Germany will be allocated an initial quota based on their sector — any additional consumption will trigger substantially higher prices.

In a statement, RWon said nearly a third of customers had already signed up for the scheme — but some are furious with the move, which they say will add billions of euros to already costly energy bills.

The quotas are part of RWon's ambitious plans for the company's "green transition". More than

CEO Karl-Heinz Neuer said the new quotas would help establish RWon as "an energy steward".

"We need to rethink how we consume electricity — our resources are finite. This is a way of supporting our clients, of helping them make the adjustment to lower consumption — and, in doing so, helping in the fight against climate change."

RWon expects the introduction of quotas will result in lower electricity production — but will increase the average KwH price the company receives as customers exceeding their initial quotas will be forced to draw on higher-priced power.

Over time, RWon also plans to reduce the size of each quota to encourage clients to continue reducing consumption in line with EU emissions targets.

RWon's move is a further sign that resource companies are willing to ration supplies in the face of worsening climate change and growing raw material shortages. Other European power companies, including Engia and AVA Energy, have already indicated they may follow RWon's lead.

40% of RWon's power is still generated using coal. Over the next ten years, the company wants to phase out fossil fuels altogether — a plan that has become more urgent with the implementation earlier this year of the EU's carbon tax reform.

"This is the world turned upside down," said one German industrial consumer, "how can we possibly allow our supplier to determine how much energy we need — and the price we pay for it? What happened to supply and demand?"

COP42 delegates sign historic new climate agreement

Dubai-Africa, 28 March 2036 — Delegates to the UN Climate Change Conference (COP42) have signed an historic agreement to ensure continued investment in low-carbon technologies — critical in the fight against global climate change.

The Dubai-Africa Climate Agreement focuses on reform of the financial sector — and completes a process first initiated in 2021.

Under the Articles of the Agreement, signatories agree to prohibit the sale of any bonds or securities that imply a warming potential of +2°C or more to ensure investments are fully aligned with objectives set out in the 2015 Paris Climate Agreement.

Developing countries may be granted temporary rights, under the Agreement, to exchange bonds with a warming potential of up to +3°C to support the continued energy transition in these countries. The International Carbon Accounting Organization (ICAO) will create a special "transition" market to allow these bonds to be freely exchanged — the ICAO must also approve all bonds prior to issue.

Delegates also approved proposals for mandatory carbon reporting for all asset owners — and agreed fines and other sanctions for financial institutions investing in companies found to be responsible for environmental damage.

Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC), Gabriela Hoyos, commented:
"The Dubai-Africa Climate Agreement is an important step in international climate cooperation. We know that, if we are to successfully reverse climate change, we must stop investing in activities that cause harm to our environment. This Agreement will ensure that happens — by fully aligning the objectives of financial investors with those set out in Paris more than twenty years ago."

Vice President of the United Arab Emirates and Ruler of Dubai-Africa, Sheikh Khalifa bin Tahnun, commented:
"Dubai-Africa put every effort into achieving this Agreement. We are delighted that the world has come together to combat climate change in this way. It is not too late for action — I am convinced the Dubai-Africa Climate Agreement will help accelerate the transition to a low-carbon future."

Notes for editors:

- The Dubai-Africa Climate Agreement completes the PrivateFinance Agenda, initiated at COP26 in Glasgow in 2021. The Agenda aims at mobilizing private finance in support of the global transition to net-zero greenhouse gas emissions. It recognizes the necessity for companies, banks, insurers and investors to adopt sustainable business models and financial targets linked to specific climate objectives.
- Implementation will be based on the new, harmonized carbon accounting protocols agreed at COP36 in Guangzhou, China. The ICAO will cooperate closely with national financial authorities to monitor these flows.
- Investors failing to disclose data will be subject to penalties, including the confiscation of profits from such investments.
- The Dubai-Africa Climate Agreement will enter into force after ratification by national governments.

FOR MORE INFORMATION:

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Risk expertise to make the world greener

As we have seen, by 2040, the world will be warmer, more polluted and regularly shaken by extreme weather. Governments have brought in new, tougher regulations. Increasingly, civil society expects business to help in the fight against climate change.

As a result, the cost of insuring these risks has gone up. Climate change has been a priority for insurers for decades[60] — that will not change. Economic losses from natural disasters leapt from just $27 billion a year in the 1970s to more than $200 billion forty years later. The rise in losses is due partly to some natural disasters becoming more frequent and more severe — including heatwaves, droughts and floods. But it is also because of economic growth — as economies grow, so does the value at risk.

In 2017, only 42% of economic losses from natural disasters were covered by insurance[61]. If we do not act quickly, this protection gap may be much higher by 2040. For insurers, the risk does not stop at the environment — disasters often trigger social or health crises as well. Increased losses may require a more innovative approach to risk pooling — in this respect, the pooling of climate risk between insurers could be particularly significant in the Caribbean and South-East Asia — two regions susceptible to tropical storms. The future of such high-risk areas is at stake — as illustrated by the example of California in 2019, where local authorities and the insurance industry worked together to prevent non-renewals of home insurance — which had been rising[62].

The energy transition, meanwhile, will bring risks of its own: more lawsuits against oil and gas producers claiming they are liable for climate change, for example, or cyber attacks targeting off-grid networks — even incidents of eco-terrorism at airports, banks or oil rigs. Clients will expect insurers to cover all these risks, no matter how difficult they are to assess.

What role for the insurance industry?

Making the most of its risk expertise

Risk is defined as being a function of hazard, exposure and vulnerability. This relationship is non-linear and it is how these three components change in the future that will determine the impact that a changing climate has on the risk insurers take on. Insurers can react to climate change effects by preventative measures such as the dissemination of risk information. They could advise clients on how the three components of the risk equation are evolving and regularly advise clients on how to reduce risk and increase their resilience to natural disasters. Resilient infrastructure and processes reduce the initial impact of disasters, and speed up recovery after. Research shows that every dollar spent on mitigation saves at least four dollars in future disaster costs[63]. In order to remain at the forefront of risk expertise, insurers collaborate with a range of external stakeholders including NGOs, scientific institutions, public

and private sector players. The AXA Ocean Risk Initiative[64] is an example of such multi-sectoral research approach.

Integrating nature-based solutions in risk models

Nature offers a multitude of services, called ecosystem services. Some of them contribute significantly to the resilience of human territories. Mangroves, for example, protect millions people from flooding[65] while also trapping and storing of carbon. Recognizing our dependence on Nature's services is more critical than ever. Through scientific research and public-private partnerships, insurers could cost-effectively help protect and restore strategic ecosystems. Public-private partnerships, by offering a stable financial framework and enabling members to share data and technical expertise, create enabling environments — in which investable and innovative projects can be developed. Integrating nature-based solutions alongside more traditional resilience infrastructure will be a pivotal component of disaster risk management and climate adaptation with numerous benefits from providing natural resilience to sequestering carbon and promoting economies in local communities.

Supporting a more responsible approach to business

By not providing insurance to carbon-intensive energy sources or businesses that cause biodiversity losses, insurers are already supporting the transition to a low carbon economy. Accelerating this change and combining it with information collection on clients will allow insurers to incentivize clients to make changes in the way they transact their business to the benefit of the climate. Not only this, but insurers have substantial assets under management and can direct more money into projects and initiatives that promote resilience, reduce biodiversity loss, promote a transition to a low carbon economy — and are in line with

the 2015 Paris Climate Agreement targets. The challenge of decarbonizing the economy requires all parties to reorient their investments, and insurers could act as catalysts for such a shift.

Expanding the use of parametric insurance

Parametric insurance allows for more efficient handling of claims — with better clarity of coverage and quicker claims payments. With parametric insurance, processing claims can be fully automated. Data can be gathered using new technologies — including sensors, satellites and drones. That means more climate risks can be covered both for businesses and individuals — it also means fairer pricing since premiums are tied directly to the client's own risk exposure. Parametric risk is structured such that data and a clearer understanding of what drives losses provide a close match to the potential risk of a peril. Future parametric insurance schemes can also provide clients with early alerting systems, improving their overall resilience.

Ultimately, the modern nature of insurance is reinforced: beyond simply paying out claims when there is damage, we believe insurers will have a much broader function — identifying and assessing risk, providing regular information to clients, and advising them on how to avoid or reduce risk. By definition, insurers are risk experts — they take a forward-looking view, which means they have a unique ability to influence behavior for the better, both as an insurer and an investor.

Food for thought

The most pessimistic pathway established by the Intergovernmental Panel on Climate Change (IPCC) (known as RCP 8.5) entails a global warming of +2.0°C in 2040, and +3.7°C in 2100. It would occur in the absence of any climate mitigation. This scenario would bring extreme consequences: 1.1-meter sea level rise, violent heatwaves, severe drought, major floods, etc., putting at risk most human activities. Under these conditions, it is difficult to imagine how insurers could continue to cover people and businesses at a reasonable price. However, to see the whole picture, it is essential to think of risk not only as a function of hazards but also of vulnerability and exposure. While certain natural hazards are likely to become stronger, vulnerability — of properties, for example — along with exposure, may change in the future as well, because of an improvement in risk reduction techniques and risk modeling. Therefore, the challenge may be to adapt economic models and insurance, in partnership with all stakeholders, to support investment in both climate mitigation and resilience.

Globalization goes into reverse

In 2040, we are living in a much more localized world. In many countries, self-sufficiency has become the order of the day.

The Covid-19 pandemic — twenty years prior — sent globalization into reverse. Worldwide, protests[66] urged political and economic reform. The crisis resulted in shortages of essential goods[67], and growing inequalities.

National governments have begun to rethink their policies — slowly, the old international system is being dismantled. Trade wars ensue; countries impose new tariffs to protect local industries. In strategic areas, like pharmaceuticals and medical supplies, production is brought back on shore. By the 2030s, international supply chains begin to fall apart — under pressure from increased duties and stricter trade regulations. Governments put more emphasis on national sovereignty. What had started in a handful of countries — among them, the US and China — soon spreads to the rest of the world. Local politicians begin to advocate a more protectionist approach; cities, now home to nearly two thirds of the world's population, become more influential as drivers of economic and environmental policies.

> **"By the 2030s, international supply chains begin to fall apart"**

In the meantime, on-shoring has completely transformed the jobs market. Money pours into training and product re-design[68] — much of it through new public-private partnerships. Businesses can no longer rely on labor from abroad and increasingly, skills are sourced locally, and workers trained for the emerging "low-touch" economy[69]. With a strong development during the pandemic, the low-touch economy leads to businesses now operating mostly remotely — online or via mobile devices. Workplaces have also brought in more automation — in most cases, robots work alongside humans[70], while retraining has become essential for low-skilled workers to keep them in the workforce.

...

Overall, the jobs market remains highly fragmented: two thirds of workers have only informal contracts, without access to training or social benefits; most are employed in the ever-expanding gig economy. In cities, many workers struggle to find affordable housing. Local community groups have sprung up to help the most vulnerable; increasingly, these groups — comprising social workers, mental health professionals and conflict resolution specialists — act as go-betweens with national governments.

Since 2020, cities have continued to grow, as forecast. Worldwide, there are now more than forty mega-cities, with populations exceeding ten million people[71]. Urbanization, however, is leading to increased social issues — three billion of the world's inhabitants now live in informal settlements[72], with poor healthcare and, in many cases, no access to basic services such as clean water. Tackling urban poverty has become a political priority — a fall-out from the 2020 Covid-19 crisis, which led to questions over the number of people in cities living in unhealthy conditions.

> "In many mega cities, urban planners have adopted the idea of a '15-minute city'"

Urbanization has brought other consequences. More people move to smaller and mid-sized cities in search of a better lifestyle. Local politicians, mayors and governors have become important. Cooperation between cities in different countries has increased, often independent of national governments[73]. Operating in networks[74], more cities are promoting resilient urbanization — an approach that combines environmental, health and social well-being[75]. In many cities, on-shoring has opened up opportunities to be more sustainable. Previously abandoned and derelict factories have been brought back into production; there is also a new emphasis on protecting the local environment.

In the past two decades, cities have also seen a massive expansion in the use of digital technologies[76]. Residents are better connected and have access to real-time public information — vital in the event of a natural disaster or terrorist attack. Shared mobility and bicycles have supplanted individual cars — the old cross-city commute has become a thing of the past. In many mega cities, urban planners have adopted the idea of a "15-minute city"[77] — where there is access to goods and services, shops, offices and green space, within a 15-minute walk of any location in the city.

Vision 2040

2040 digital citizens portraits

By 2040, we will see the emergence of new, digital citizens. Our first portrait is María, who lives in Mexico City, fighting the digital divide in society. Our second — Obinze — believes nature-based solutions are the best way to tackle climate change.

María Elena González

"Modern life is full of risks. Trust matters more than ever before."

María belongs to GenZ — she is engaged on social and environmental causes. She buys only organic food, and tries her best to shop sustainably, enjoying the slow-tech farm located just five minutes from her home. Mexico City is committed to tackling the digital divide, using technology to bring people together and fight social inequalities. María works in one of the main government offices dealing with these issues.

Recommendations:
- Easy-to-manage, low-cost daily micro-coverage
- Usage-based insurance (UBI), such as Pay-as-you-drive or behavior-driven coverage

Profile characteristics:
- Familiar with technology — uses it to make her life easier
- ALWAYS prefers to buy from trusted insurers — i.e. those that reflect her values

Relevant industry trends:
- Changing consumer behavior
- Digital divide
- Social inequalities

Profile

AGE	41
GENDER	Female
HOME	Mexico City, Mexico
JOB	Business Coordinator at the Federal Office for Technological Well-Being
FAMILY STATUS	Civil partnership, one child
GOALS IN LIFE	Protect my family Get ahead professionally
PERSONAL MOTTO	Love technology — and it will love you back!

Profile

AGE	30
GENDER	Male
HOME	Lagos, Nigeria
JOB	Customer Happiness Officer at the local online bank
FAMILY STATUS	Single
GOALS IN LIFE	Be happy Find love Get a new job
PERSONAL MOTTO	Tomorrow is another day!

Obinze Okereke

"Tomorrow will be better — and greener!"

Obinze has just turned 30. He lives in the center of Lagos, works from home — and loves R&B. He struggles to meet the rent on his apartment — located in Lagos' newest satellite city because of all the amenities available in the city's newly renovated suburbs. In recent years, Lagos has made significant improvements to adapt to climate change, with greener spaces and infrastructure, along with more access to basic public services. Obinze's ambition is to find a new, better-paid job related to his true passion: green finance and nature-based solutions, a field which has gained traction in Africa in past years. He is currently following an online course to improve his qualifications.

Profile characteristics:
- Insurance not seen as a priority
- Limited financial resources
- Works alone — with little to no access to career support
- Has clear, long-term goals

Recommendations:
- Long-term "protection partner"
- Flexible payment products with additional services (e.g. mentorship program developed through public-private partnership)

Relevant industry trends:
- Future of work
- Resilient cities
- Risk transfer to the individual

Building on the invisible force of insurance in the economy

Covid-19 is exacerbating inequalities. It is not just about income — it is also about access to health, education, services and opportunity. Increasingly, governments are wrestling with the issue of inequality. Insurance has a clear role to play as the economic stabilizer it is. It enables societies to recover from external shocks and provides an additional safety net to individuals, often as a complement to state welfare systems. In the future, the role of insurance as an "invisible force" and as an economic stabilizer is likely to be reinforced.

Previous crises have shown that, as economies slip back, the protection gap widens. Households make cutbacks, they reduce spending, stop investing in education or sell property. Consequently, more people are pushed into poverty — those already in poverty will stay in poverty longer. It is the less wealthy that need most protection, yet they are the ones with the least access to insurance because they cannot afford it, do not realize they may need it, or dismiss it as an unnecessary additional expense.

Insurance is not just a financial calculation, it also brings communities closer together. National welfare systems work by redistributing incomes (mainly through taxation). Insurance complements this by pooling risk. Together, they help maintain a sense of solidarity within society — which, in turn, supports growth and economic stability.

What role for the insurance industry?

Playing a stronger stabilizer role

With a potentially more fragmented world and deeper inequality, the role of insurance as an enabler of development will be more important still. Without insurance, an unpredictable future would be a major concern — people would be afraid to take new risks or make decisions. Economic analysis shows a general correlation between formal insurance penetration and GDP growth[78]. Insurance is most beneficial if extended to more people. Currently, inclusive insurance provides low-cost cover to new customers in emerging economies who have no access to insurance — this concept could be extended to developed economies. Indeed, the market size potential for micro-insurance is estimated to be around four billion people — most live in countries which have little or no functioning welfare state. Inclusive insurance opens up opportunities for innovation including through new partnerships with government or civil society, or new forms of distribution channels. Technology has an important part to play. Digital channels have made it possible for insurers to speed up claims processing and improve communications with customers, allowing to reach out to a larger number of clients, including lower-income prospects. Digital channels have also allowed to offer more tailored or simplified products, thus helping financial inclusion. Mobile phones allow more people to access insurance, even in remote areas. Worldwide, more than five billion people now own a mobile phone; in emerging economies, mobile phone ownership averages close to 80%[79].

Leadership on key societal issues

In the years ahead, socio-economic risks are geared to become more complex and more "systemic." Increasingly, governments will not be able to afford costly welfare programs and carry the management of negative externalities alone — the private sector will increasingly have to complement public action and play a leading role in society including on issues such as financial exclusion and mental health. Ultimately, public trust will depend on private and public sectors working effectively together to make the invisible hand of insurance more tangible, enhancing formal and efficient safety nets for more customers.

Food for thought

Technology can contribute to the development of solutions toward more inclusive insurance, especially through digital distribution channels. It provides the potential for more tailored and simplified — and often more affordable — insurance products thanks to lower underwriting costs generated by AI and better pricing of risks. Furthermore, technology allows to educate more people about risk and also allows easier access to services and quicker claims management.

But tech will not be a silver bullet and raises questions of its own, especially data privacy. The degree of data sharing will determine the capacity to tailor and price. Will tech and data lead to more individualization of coverage and less mutualization – which may end up being less inclusive? Furthermore, with the increased use of technology within large ecosystems how will insurers ensure they maintain their relationship with their customers?

Health

Prevention takes center stage

In 2040, people are living longer — medical science continues to make progress. New cures are discovered for previously untreatable diseases. Generally, people are healthier than they were twenty years before.

Worldwide, life expectancy now stands at 76[80]; in Spain and Japan, it is closer to 86[81]. Aging populations have put tremendous strain on government health budgets. A series of health and environmental crises in the 2020s and 2030s makes matters worse. There are more pandemics, though nothing on the scale of Covid-19. Increasingly, policymakers focus on two key questions: how can we continue to provide healthcare for all? And how can we keep our populations healthy and immune to new epidemics — particularly in an aging society where more people suffer from chronic conditions, like cancer and heart disease.

In response, countries put more emphasis on disease prevention — rather than cure. The P4

"Countries put more emphasis on disease prevention – rather than cure"

concept of health — predictive, preventative, personalized and participatory — is widely adopted. Gradually, governments are engaging much less than before — as a result, healthcare has become a matter of personal responsibility. Where governments are still involved, it is through partnerships with private healthcare providers. There is more focus on mental health — seen by many experts as a precursor for more serious conditions. Alternative approaches to health become popular, including yoga and naturopathy — what matters most is wellness. Households spend much more on healthcare and health insurance, though this leaves those on low incomes at a significant disadvantage.

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Vision 2040

Technology has made a big difference — in many countries, robotics is fast-tracked into use to combat a persistent shortage of nurses and other care workers. Medical professionals have learnt new skills related to digital technology and data management. Genetic information is now also widely used — to authenticate access to personal medical records, for example, or to allow private healthcare providers to carry out risk assessments. Implanted devices provide a steady flow of real-time health information — something that was only feasible ten years ago through wearables. Even so, technology is not a panacea — recent pandemics have shown the continued need for the healthcare basics: hospitals, dedicated care workers and medical equipment.

With epidemics becoming more frequent, most people are willing to share personal data if it will improve their healthcare. The subject — the fourth P in the P4 approach — remains contentious, however. Some refuse implants and smart drugs, usually for philosophical, financial or access reasons. There are clear risks with respect to data privacy and cyber-hacking which, with implants, could mean anything from loss of privacy to fatal injury[82]. The popular anti-vaxxer movement of the 2030s has also left its trace[83] — on health issues, there is still a deep mistrust of governments in some quarters. Skeptics, however, are outnumbered by "augmented humans", as implants, smart drugs and other health devices become commonplace.

What if healthcare was based on a digital score?

Our chart opposite shows a possible future health management system, where health is measured by a numerical index. Health data is collected and analyzed through tech devices, providing individuals with a score that helps them adjust their behavior and stay healthy. Individuals are therefore more responsible for their own health. Places around the city are connected to the system, so data can be fed into the health index, creating a healthcare system based on prevention.

1 Health score index is the cornerstone

The health score index is computed using individual and collective real-time data based on connected devices. All purchases, eating, physical activity or time spent relaxing have an impact on the index, which can be shown at both the individual and family level.

2 Family is considered as the best unit for monitoring health

Though composed of members with different ages and preoccupations, families are the most effective unit for health monitoring since members share the same diet, environment, and genetic background.

3 Public-private synergy to maximize data exploitation and protection

Local health centers develop the health score index in partnership with tech providers and health authorities. The aim is to build a better health policy strategy: the score changes depending on the situation (heatwaves, epidemics, anxiety level) which in turn should influence behavior.
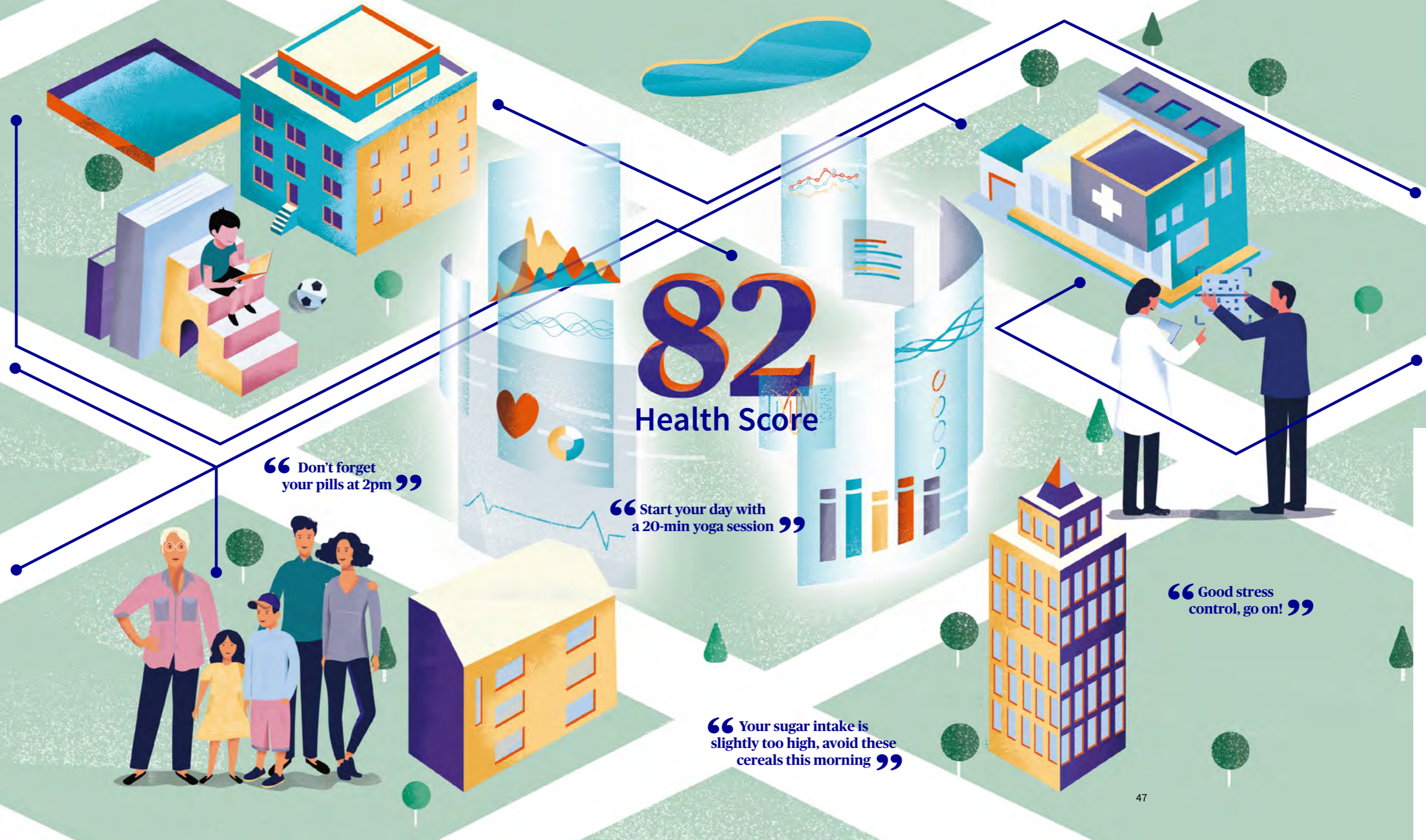
4 A holistic approach to health

At the local school, mindfulness is taught from an early age — alongside healthy diets, nutrition and the benefits of regular physical exercise. Many children suffer from new forms of stress, such as eco-anxiety. To combat this, mental health programs are more easily accessible.

5 Conventional medicine opens for alternative practices

Many workplaces feature a yoga room. Recommendations from the health index system include not only science-based medicine, but also traditional Asian practices, such as acupuncture, naturopathic diets, etc.

Transparency at the forefront

This chart shows a possible — not necessarily desirable — vision of the future, inspired by the rapid development of data collection and analytics. While empowering people with comprehensive health data and how they can take actions on it, such a system also raises ethical and political issues. To be effective, such a system would need to deal with two risks: that data is misused for commercial purposes or that governments use data to increase surveillance of the population.

82
Health Score

"Don't forget your pills at 2pm"

"Start your day with a 20-min yoga session"

"Good stress control, go on!"

"Your sugar intake is slightly too high, avoid these cereals this morning"

Health capabilities coordination to reinforce trust

It is clear that health, in the future, will be driven by technology. Wearables, sensors, implants and AI will all become commonplace. Diagnosis and treatment will be based more and more on real-time data. People will bear more personal responsibility for their own health; different players will have to cooperate to deliver effective health. Technology companies, in particular, will have an important role to play.

The focus of health will also shift, becoming more holistic; healthcare will be about prevention, not just cure — a vital change in a society that is rapidly aging. Mental health will be more prominent, as will healthy diets, lifestyles and regular exercise — to stave off long-term illness.

Technology, of course, will bring immense opportunity — not least more access to healthcare. It also brings new risks, however — data protection will become a priority as its use increases. Governments will impose new regulations to prevent data leaks and cyber attacks. In addition, litigation may become more frequent — if technology fails to offer the right diagnosis. For insurers, stiff competiton will come from tech companies, often regarded as more agile and more innovative.

What role for the insurance industry?

Taking on the role of coordinator

The health sector will be more fragmented — insurers can help by guiding customers to the right doctor or the right hospital. They can also secure data from wearables and other devices — and ensure that data is properly protected, not just for individuals, but also for businesses or governments. Insurers are well-placed to bring about more vertical integration within the health sector.

Forging a new relationship with customers

Insurers can become genuine "health partners," complementing state health systems. In 2040, successful health insurers will be "cradle to grave" partners, providing a range of increasingly personalized care, advice and on-demand services — all based on real-time data. They'll help customers move toward usage-based insurance, with flexible pricing that will make healthcare more accessible. There is also scope to link coverage to devices like wearables or implants, opening the way to more personalized insurance. Focusing on prevention will help insurers stay competitive.

Considering the human dimension

Technology can enhance healthcare — there is no doubt future health insurers will need to be agile and innovative in their approach. Technology cannot replace competent doctors, efficient care centers and personal care, however. To work successfully, healthcare requires considerable financial and human resources. By 2040, individuals will have much more responsibility for their own health. This should not be a burden. By providing personal support and advice, insurers can make sure this responsibility does not become overwhelming.

Food for thought

We have talked several times about "augmented humans" — using implanted trackers and other devices. The idea raises tricky ethical questions. Hypothetically, human beings could use implants in the brain to improve their productivity. Legally, should this be allowed? Would it detract from a person's essential humanity? Even if it was allowed, how could such a delicate and vital organ be insured? Chances are cyborgs will still belong to science fiction even in twenty years' time — but, with implanted devices, are we unconsciously taking the first steps toward half man-half robot? Are cyborgs really that far-fetched?

Conclusion

2040, what role for insurers in society?

Though we cannot predict the future, one probable version of it is a world in which climate change impact on daily lives will become reality, where inequalities will threaten to reverse globalization and where healthcare, while more fragmented in provision, is driven by new technologies.

Our analysis points to a world that faces growing future challenges in the increasingly interconnected areas of climate, the economy, and health; just like the Covid-19 crisis, future ones are increasingly likely to be multi-dimensional.

Foresight is about anticipating change and being prepared to act on potential pathways of change. To solve the challenges and harness the opportunities ahead will require trust and cooperation between all economic and societal players — local and national governments, public and private sectors, tech firms and insurers.

The future trends of climate change impact, social fragmentation and inequality and a combination of health and tech point to a potentially stronger role for insurance across areas:

- In the climate realm, insurance can play a catalytic role for a greener and more sustainable world. Through the continued development of innovative financial instruments towards a green transition, products that support the preservation and restoration of the natural world, the integration of nature-based solutions in risk-modelling and the promotion of greener and more resilient infrastructures and processes within their ecosystem.

- In the socio-economic realm, increased localization and fragmentation accompanied by stronger inequalities will shed light on insurance's role as an "invisible force" for economic stability. The provision of access to insurance products for "emerging" customers, not only in emerging markets but in higher income economies, will be crucial and go hand in hand with more expectations from the private sector on issues such as financial exclusion or even mental health – probably more so for the insurance sector with its unique role in recovery, risk pooling conducive to economic stability and growth.

- In health, insurers are in unique position within the health system, with their strong relationships to medical providers and patients, to ensure proper orchestration of the health chain and access to the treatment and care they need to their customers. Those who know to best manage their partnerships and data are geared to act as trusted coordinators and to play a key role in strengthening integration and partnership across the health sector.

Insurance is about resilience, rebuilding and enabling — all three will be increasingly important to face the challenges ahead and help seize the related opportunities for society.

Note on methodology

• Principle of Foresight

Foresight helps us identify future risks, trends and opportunities. This "foresight" way of thinking provides the basis for this Report. Working with our consultants at Changeist, we have identified the environmental, health and socio-economic trends we believe will shape the next twenty years. By doing so, our aim is to help AXA prepare for the future, and to build a forward-looking company that can respond quickly to changes in its markets and operating environment.

• Methodology

To compile this Report, we worked closely with Changeist. We organized a series of dedicated sessions with internal experts at AXA to determine content. Changeist has developed its own foresight methodology, called "How to Future," based on five steps (see below). The main objective of this approach is to conceive, structure, design and communicate possible future scenarios, which can then be used in developing new strategies, initiatives or products and services.

STEP 1 - Mapping:
First, we identified initial trends and drivers. To do this, we carried out an extensive review of reports, white papers, opinion articles, news items, academic journals and newsletters. We focused on long-term trends — and sought to identify patterns and connections between trends. We also looked at their "likelihood" and "time horizon" — i.e. how likely it was that a particular trend would emerge, and for what period of time.

STEP 2 - The Implications Wheel:
From our initial list, we chose the most important trends for further assessment. This assessment focused on the potential STEEP (social, technological, environmental, economic, political or cultural /values) impact of each trend.

STEP 3 - Canvas:
Relevant trends were then linked together to develop future scenarios.

STEP 4 - Storytelling:
Each scenario is then translated into specific insights for the business. Examples and future design elements are added to illustrate the effect of each scenario.
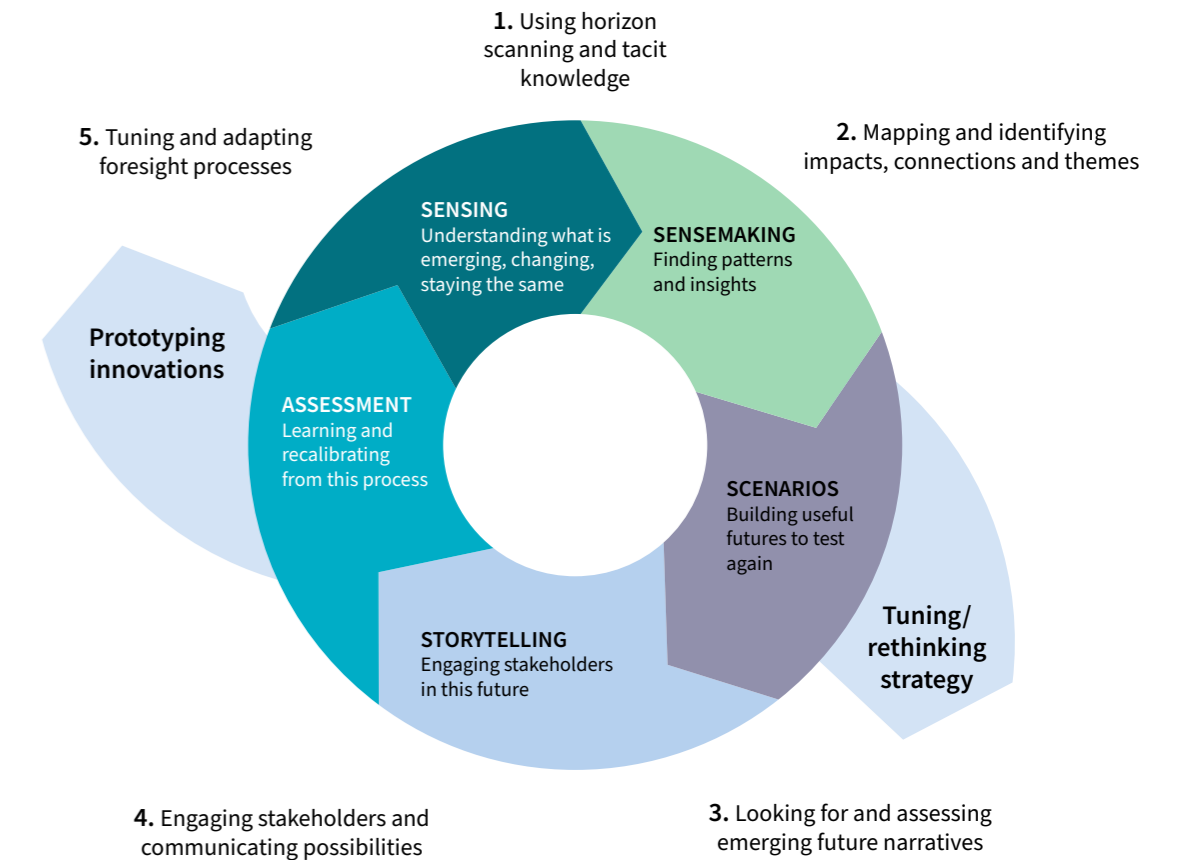
STEP 5 - Assessment:
The results are analyzed and lessons applied to the company's business.

• Process

Producing this report has been a collaborative process; it has involved more than thirty internal experts (aside from AXA's dedicated Foresight Team). This Report reflects AXA's commitment to constant improvement — even if that involves directly challenging the company's future. The process began in January 2020 during the AXA Days, with a sprint workshop, organized by the Foresight Team to present initial ideas for the Report. Internal experts were then invited to provide feedback — experts were drawn from different regions, backgrounds, and professional disciplines.

The "How to Future" Model

1. Using horizon scanning and tacit knowledge

2. Mapping and identifying impacts, connections and themes

5. Tuning and adapting foresight processes

SENSING
Understanding what is emerging, changing, staying the same

SENSEMAKING
Finding patterns and insights

Prototyping innovations

ASSESSMENT
Learning and recalibrating from this process

SCENARIOS
Building useful futures to test again

Tuning/ rethinking strategy

STORYTELLING
Engaging stakeholders in this future

4. Engaging stakeholders and communicating possibilities

3. Looking for and assessing emerging future narratives

(Source: Changeist)

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