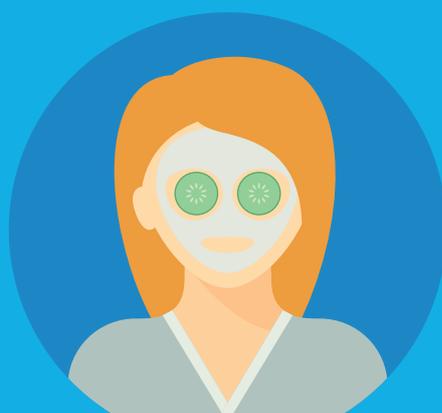


# THE FUTURE OF HEALTH AND WELLBEING IN THE WORKPLACE





*These scenarios describing health and wellbeing in the workplace were developed by Forum for the Future in 2015.*

**Team:** Joy Green, Alisha Bhagat, Charlene Collison, Heidi Hauf, Charity Hanley, with Helen Clarkson and Sally Uren

Enquiries: Charlene Collison on [c.collison@forumforthefuture.org](mailto:c.collison@forumforthefuture.org)

**Forum for the Future** is an independent non-profit that works globally with business, government and other organisations to solve complex sustainability challenges.

*We work to transform the critical systems that we all depend on, such as food and energy, to make them fit for the challenges of the 21st century. We have over 20 years' experience inspiring new thinking, building creative partnerships and developing practical innovations to change our world. We share what we learn from our work to help empower others to become more sustainable.*

*System innovation is at the heart of our strategy. One of our key approaches is creating powerful coalitions, bringing together groups to solve bigger sustainability challenges - including those that work across whole value chains. Another of our approaches is helping pioneering individual businesses go further, faster.*

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**Registered office:** Overseas House, 19-23 Ironmonger Row, London, EC1V 3QN, United Kingdom

**Registered charity number** 1040519

# INTRODUCTION

## The future of health and wellbeing in the workplace

In 2015-16, Forum for the Future explored the potential of business to improve the health and wellbeing of millions of people.

The following scenarios explore multiple possible futures for this important area in order to inspire, to generate and test robust interventions.

## What might the future of health and wellbeing in the workplace look like by 2036?

We live in times of uncertainty and volatility, full of challenges and opportunities. The areas of work, health and wellbeing seem particularly poised for disruption by the rapid pace of change in technology and many other external drivers, such as demographics. We identified over fifty relevant such factors during the course of our project research. In order to explore how these could develop in a systemic and integrated way, we used these factors to create four scenarios for 2036.

These scenarios depict possibilities for the future of the workplace at a global level, as well as health, healthcare systems, and wider contextual factors. The scenarios are not intended to be predictions or visions of desired futures. Instead they explore how global trends may change our world, our health and our workplaces.

To create our scenarios, we used an 'archetypes' method to provide the basic narrative framework, and then developed and refined their content by means of extensive research and expert interviews. To develop the scenarios, we liaised with external experts to review and test them from multiple perspectives. The group explored 51 'change drivers' that emerged from the futures research and prioritised the top 11 that they believe will have the biggest impact on the future of workplace health and wellbeing over the next 15 years. In order to bring the scenarios to life we have also created 'personas' - characters who might live in these future worlds - and illustrated how their lives might be in and shaped by each scenario.

## The four scenarios are:

**Business Monopoly** – a world dominated by big business and vast technological efficiencies. Half the global workforce has been disrupted by automation and inequality is high. Individual consumption and the accumulation of wealth drives the economy; security is precarious for most in the absence of social or economic safety nets, and high levels of anxiety are the norm.

**Service Transformation** – a decentralised, entrepreneurial and fast moving world characterised by constant innovation and hi-tech focused on the green economy. Work and health networks are global and fluid in a world where workers need to be self-directed and flexible to thrive.

**In the National Interest** – a reactive world dealing with serious systemic crisis and trying to stave off collapse. Business and healthcare have been subordinated to the national interest as countries enforce strict policy reform to limit consumption and waste, and the value of work is measured according to its contribution to the nation's survival.

**Redeining Progress** - a world in transition to a new economic paradigm, triggered by a huge shift in mind-sets that has strongly pressed governments to prioritise wellbeing and sustainability over growth and consumption. A focus on human connection and community life builds economic and social resilience, with corresponding restrictions on individual choice.

# USING THE SCENARIOS

Futures scenarios are an invaluable tool for planning ahead. They help identify risks and opportunities, inform strategy development, and stimulate innovation.

Scenarios present alternative descriptions of possible, plausible future worlds in which we can explore the challenges and opportunities we are likely to face over the coming decades and identify the long term material issues around which to innovate potential solutions.

So what might they mean for your business, organisation or sector? The implications will vary for each. These scenarios, and the questions below, might be used as the basis for a workshop or other discussion, a springboard for ideas to explore possible challenges and opportunities, as basis for developing innovations, or as a stimulus for building partnership to change health and workplace systems to make them fit to meet the needs of the future.

This toolkit includes two versions of the scenarios. The summary version is designed for use in workshops and presentations; the information is punchy, giving readers the key aspects of each possible future world. The full scenarios are a detailed and in-depth exploration of each scenario; they provide the reader with enough information to allow immersion in, and a deeper understanding of, each future world. When creating scenarios, we often look for 'signals' that point towards the future world we are imagining. Each scenario includes several 'Signals of change', these can be thought of as seeds of future change - ideas, innovations or events that either potentially indicate new trajectories, or highlight the strengthening of existing trends. This toolkit also includes personas; these are useful tools for exploring the nuances of each scenario through the lives of fictional characters.

## 1. Think about future risks and opportunities

How successful would your current strategy be in each of the scenarios? Use the scenarios to identify the opportunities and threats presented in each one. How could the strategy change to make it more robust in 2036; how might you need to adapt to manage the risks and capitalise on the opportunities?

## 2. Innovate to meet the needs of the future

What kind of strategies or innovations could you develop to best serve the needs of these potential future worlds? Which innovations are most needed or effective across not just one, but multiple scenarios? Examine developing innovations within each scenario to identify its potential strengths and weaknesses, and develop ways to improve it. Identify which strategies are most likely to succeed across multiple scenarios – bear in mind that the future is likely to be a combination of all the scenarios in some form.

## 3. Build partnerships to change systems

Building a world that supports health and wellbeing through the workplace can only be achieved by many organisations working in partnership across multiple sectors. Use these scenarios to stimulate partnership working. What might be some common aims and challenges in the scenarios? Identify which ones you could address together, and ask what collaboration between partners could achieve? Look at what actions or innovations are common across the different scenarios as a way of prioritising and planning next steps.

# IMPLICATIONS

Exploring the scenarios helps us see implications of our actions, strategies or of particular trends. The implications that emerge will depend on the questions you are asking within the scenarios, and process you use.

The challenges and opportunities listed below featured in the explorations by experts across many or all of the scenarios. Where possible, you may wish to consider all of the themes below when designing comprehensive health and wellbeing propositions.

## Challenges

- Mental health and related challenges of loneliness, isolation, anxiety, stress, and depression
- Poor lifestyle habits: notably unhealthy diets and lack of opportunity and incentive to exercise were consistent issues
- Insecurity of employment and income featured in most scenarios (also linked with stress and anxiety)

## Opportunities

### Making preventative care the norm

- Building incentives and rewards for healthy behaviours and practices
- Building cultures and practices to grow mindfulness and manage stress
- Holding people accountable for their health and behaviours that impact on it

### Creating healthy workplaces and employment structures

- Building structures to physically bring people together to interact
- Creating healthy buildings and environments for people to work and interact in
- Blending virtual and physical environments in ways that promote health

### Building supporting peer networks and community interaction

- Giving support for families and for those with responsibilities (e.g. caring children and parents)
- Connecting people with peers to help them meet essential health related needs (e.g. buying healthy food, cooking, exercise)

### Developing human centred approaches and leadership

- Differentiating what only humans can offer vs. what the non-human/robot can do “better”
- Focusing on developing human skills and meeting human needs, including through human centred leadership

### Using technology and big data

- Employing technology for monitoring, sharing of health information and solutions
- Developing technology that supports learning, health tracking and peer networking

We strongly suggest you also use the scenarios to make your own explorations, coming to your own set of risks, opportunities and possible implications, based on your own clearly defined questions.

# THE SCENARIOS

**BUSINESS  
MONOPOLY**



**SERVICE  
TRANSFOR-  
MATION**



**NATIONAL  
INTEREST**



**REDEFINING  
PROGRESS**



**summaries**

# BUSINESS MONOPOLY

monopolies, inequality, big business, anxiety, efficiency



SUMMARY

*In this world, individual consumption and the accumulation of wealth drives the economy and there is a similar consumerist and individualist mind-set to the early 21st century. Technology has driven vast efficiencies across industry and agriculture, addressing the predicted scarcity crisis in food, water and energy. Carbon emissions are declining, driven mainly by decisive action from big business, and climate change has been declared 'nearly solved' despite ongoing impacts.*

*Nearly half the global workforce has been disrupted by automation, leading to a large and growing 'preariat' surviving on piecemeal work in both developed and developing countries. Inequality is high as the fortunate few in secure jobs enjoy attractive benefits while national safety nets are non-existent or threadbare. Many turn to the informal economy to supplement their income. The global middle class uses technology to access affordable but impersonal healthcare that tends to favour treatment of illness over prevention, while the rich are served by highly profitable personal health optimisation services. Daily life is ever more complex as companies continue to push risks onto individuals in order to cut costs. High levels of anxiety are common and many fear this world could be heading for collapse.*

## 2016-2030

Pre- 2020 international climate change agreements are weak and non-binding targets lead to piecemeal action on carbon emissions reductions

## 2025

The UN Global Goals for 2030 are used by business to drive a stronger role in society to 'solve' many sustainability issues through efficiency. Business and the market become the prime vehicle for delivering most major policy goals

## 2029

Record low public funds lead to governments renegotiating their societal role, stepping back to only provide basic services and working closely with business to build and maintain infrastructure

## 2015-2035

TTIP/TPP negotiations are passed and businesses soon begin holding government to account for monetary losses

## 2027

A record hurricane season in 2027 causes nearly \$1 trillion in damages in the US alone, sparking crisis in the global insurance industry; this combines with sharply rising resource costs to tip the world into a prolonged recession

## 2032

Big business emerges well from the recession, using the opportunities provided by automation and the necessity of response to resource scarcity to transform the market. A small group of powerful businesses creates monopolies and dominates the global economy

## World in detail

**What is the global outlook?** This is a multi-polar world held together by economic agreements and free trade; 60% of the population lives in dense cities and one third live in a slum; extreme poverty has fallen but median living standards are stagnant and civil unrest is common.

**What is the environmental and resource context?** Carbon emissions are falling but climate change has made several regions near-unliveable and migration is rising. Resource costs are soaring; water is expensive, supplied by desalination; geo-engineering is causing unintended impacts and liability issues; business maintain some ecosystem services.

**What is the state of the economy?** The economy is globalised, capitalist, and dominated by a few large corporations; risk is pushed down to individuals; the informal economy is huge and employs much of the global middle classes; new trading markets exploit personal tracking data.

**What is the role of government?** Governments have stepped back, allowing businesses to find efficient solutions to issues such as clean energy and resource efficiency; there is public distrust of the close government and business relationship; government investment is limited by chronically low public funds.

**How has infrastructure changed?** Infrastructure is centralised; energy comes from nuclear and renewables; transport remains car-based but fuels are low carbon; business is responsible for most key infrastructure which is run on a for-profit basis; users who cannot pay or live remotely are largely shut out.

**How has technology affected this world?** Technology is integrated into all aspects of life; automation has driven high corporate profits but has increased unemployment in the formal economy, creating a vast underclass beside an extremely wealthy elite; monitoring technology is used to drive efficiency and productivity; biotech is key to agricultural productivity.

**How has society changed?** Societies are consumerist, status-driven and underpinned by high levels of personal debt; remote interactions dominate to save costs; the most affluent invest in themselves with augmentation technology and there are concerns about a 'super-class'; the old are working ever longer as pensions keep being whittled back.

**What is the role of civil society and individuals?** Civil society channels frustration but feels comparatively powerless; trade unions are weak; most individuals are exhausted by long working hours or enervated by prolonged unemployment; a small counterculture tries to live life 'outside the system'.

**What is the state of global health?** Unhealthy lifestyles are widespread due to reliance on processed food and increased sedentary behaviour; NCDs continue to rise; mental health problems such as anxiety and stress are pervasive.

**How has healthcare changed?** Private healthcare has increased and is the dominant global model; public health services are basic and mostly automated for efficiency; prevention is not high priority; 'end of pipe' solutions are promoted instead such as gastric bands; personalised medicine and self-augmentation is available for the wealthy.

**What is the role and purpose of business in society?** Big business is credited with 'solving' climate change and being the engine of growth; it is extremely powerful and regularly frames societal issues in a way that suits its interests; "philanthrocapitalism" is high and sets the aid agenda.

**What is the business operating context?** Business investment is driven by efficiency and short-term organisational gain; the supply of labour far exceeds demand making labour cheap; light regulation enables near carte-blanche control to big business; SMEs struggle to compete and are subject to arduous supply chain requirements.

**How has the workplace changed?** Work is a necessity for survival but conditions vary hugely; highly paid jobs have excellent benefits but are heavily monitored and high pressure; most workers are on short-term contracts and receive few benefits; remote working is common; the informal economy is the largest source of employment globally.

# SERVICE TRANSFORMATION

sharing, ingenuity, hi-tech, virtual, disruptive



SUMMARY

In 'Service Transformation', a clear steer towards clean tech and a 'green economy' drives high levels of innovation, transforming both business and society.

This is a world with a collaborative and entrepreneurial spirit, but also shaped by mistrust towards traditional institutions. Clear policy and market signals on climate change, waste and other key issues have sparked intense innovation, a surge in new business ideas, and an upwelling of emergent solutions from the grassroots. Scarcity of global resources is viewed as a stimulating design challenge and the sharing economy has responded to it with gusto.

Decentralised networks provide new forms of energy and water infrastructure and new distribution systems. Access trumps ownership when it comes to consumer goods, and the 'digital native' mind-set is now mainstream as the majority of the world population is younger than the internet. Technology is seen as a massive enabler for progress in this context. Though there has been a move away from traditional big business, there are high levels of business and social innovation and social entrepreneurship is booming. Global interconnectedness and the sharing of ideas is high in this fast-paced, high energy world.

## 2016-2020

A strong pre-2020 climate deal is agreed leading to a clear, lighttouch framework for transition to a low carbon economy, incorporating a carbon tax escalator in most nations

## 2021

Solar power is cheaper than gas across most of the world – installation rates accelerate exponentially

## 2025

New Chinese environmental regulations for energy and resource efficiency effectively ban petrol vehicles and drive intense global innovation

## 2030

Barcelona becomes the first closed loop 'FAB city' as resource shortages of key minerals loom; Bangalore rapidly becomes the second

## 2035

First virtual tourism company breaks IPO records while the airline sector shrinks

## 2020

The whole world is online by 2020 and new products and innovation from developing countries surges

## 2023

Peer to peer (p2p) lending disrupts traditional retail banking as SMEs turn en-masse to new platforms

## 2027

Climate events cause successive poor harvests, sparking a massive South Asian food crisis; famine is only just averted by an emergent new distribution system that cuts post-harvest waste for smallholders

## 2032

Competition between land for crops and other uses intensifies; meat taxes come into force in the EU despite resistance from the farm sector

## World in detail

**What is the global outlook?** This is an open, highly interconnected and multipolar world with effective global governance - there is a sense that the world can pull together when it really counts; global trade is multilateral but regionalised.

**What is the environmental and resource context?** Energy, water, food and resource scarcity is being kept only just at bay by constant innovation; there are citizen-led attempts to monitor and restore key ecosystems.

**What is the state of the economy?** The peer-to-peer sharing economy has reconfigured whole global sectors and distributed manufacturing is re-localising production; low-carbon innovation is driving growth across the world.

**What is the role of government?** Policy makers try to keep networks healthy and primed for innovation, but traditional government institutions are mistrusted, lag the pace of change and are often left to deal with those excluded from sharing systems.

**How has infrastructure changed?** Decentralisation and resource efficiency are the watchwords for new infrastructure and energy production is shifting rapidly to renewables and smart grid solutions.

**How has technology affected this world?** Virtual Reality (VR) has affected work, education and tourism; ubiquitous sensors feed data to the global commons, citizen networks access and

act on it; digital fabrication is upending notions of production; biotech and synthetic biology is disrupting food processing and agriculture.

**How has society changed?** Access trumps ownership and the cost of living has stabilised due to sharing networks where trust is enabled via reputation systems; loyalties are easily shift-able and people's sense of belonging is fragile; the distinction between virtual and physical reality is increasingly blurred.

**What is the role of civil society and individuals?** Networked civil society is powerful and has great influence on the direction of policy; civic groups enforce transparency on governments and business; innovative individuals are empowered and thriving.

**What is the state of global health?** NCDs remain a problem due to the growing global middle class and lifestyle factors; purposeful work boosts mental health for many, but the fast pace of life and 'junk virtual worlds' take their toll on others.

**How has healthcare changed?** Self-monitoring, big data and genetics have driven personalised healthcare and subscription wellbeing services; telemedicine has vastly increased access to healthcare; national healthcare focuses mainly on the elderly to maximise their years of health and activity.

*What is the role and purpose of business in society?* Business is seen as a source of innovation and a force for progress; it has an important 'custodian' role, taking care of quality and repairs in a post-ownership world; however, big business has a diminished role.

*What is the business operating context?* Most companies are now the co-ordinators of globalised networks rather than mass-employers; physical supply chains have regionalised; multinationals are finding it difficult to compete with agile, innovative SMEs.

*How has the workplace changed?* Work is flexible, self-directed but irregular and self-employment is the norm; most people belong to several work networks and virtual reality is used extensively for remote working.

# NATIONAL INTEREST

restrictive, patriotic, centralised, crisis, urgent



SUMMARY

*This is a reactive world that is trying to cope with resource shortages and to stave off collapse.*

*A convergence of crises in food, water and energy and the climate has sharply concentrated minds on urgent action to head-off a worst case scenario. The world is in danger of fracturing into protectionist blocs as issues like water and food security bite. Governments are doing everything possible to strengthen their countries and secure necessary resources for the long term. Forceful policy is enacted to produce quick behaviour change, such as meat taxes, carbon taxes, penalties for food and water wastage, and bans of the most wasteful consumer goods.*

*Business is subordinated to 'the national interest' and there is much heavier regulation of commercial activity. Patriotism is purposefully stoked by governments to build national unity and the purpose of work is to 'do your bit' for your country. Technology is heavily used for tracking, monitoring, and enabling efficiency in food, water, carbon and energy use. Healthcare is focused on providing the basics of physical health and prevention for all.*

## 2016-2020

The pre-2020 climate talks produce no lasting deal and countries renege on their pledges; carbon emissions accelerate as global use of fossil fuels continues to rise

## 2023

Continual harvest failures drive prolonged record prices for wheat and rice, causing massive unrest; famine reappears in South Asia and North Africa; Western nations send aid, but close their borders to refugees

## 2028

Energy prices soar as Russia cuts off gas supplies to the EU for an entire 'black winter'; blackouts average at one a week and a record number of deaths are caused by hypothermia

## 2031

Increasing Arctic methane emissions alarm climate scientists who warn the world is now at risk of tipping into irreversible 'runaway warming'

## 2034

An emergency climate summit agrees 'unprecedented and forceful measures' to pull the world back from the brink

## 2019

A 'new dustbowl' emerges in the Western US as aquifers run dry, forcing abandonment of towns and farms; the Australian interior faces the same fate

## 2026

India introduces a 'license for children' to curb population growth; citizen credits must be earned to permit the birth of each child

## 2029

Mandatory smart energy meters are fitted throughout the EU to curb demand; non-essential devices can be switched off remotely by national grid algorithms

## 2032

China attempts unilateral geo-engineering with sulphate aerosols in a bid to delay the worst effects of climate change

## World in detail

**What is the global outlook?** This is a multi-polar world with a zero-sum mind-set, where countries are forced to work together to combat crisis and key energy and water resources are becoming dangerous flash points.

**What is the environmental and resource context?** Climate change and water scarcity are severely affecting global harvests and food security; the world is at risk of runaway climate change; ecosystems are near collapse .

**What is the state of the economy?** Globalisation is breaking down and economies are strongly directed by governments 'in the national interest'; global GDP is falling and the black economy is resurgent.

**What is the role of government?** Governments dominate and are very directive and interventionist; policies such as rationing and meat and sugar taxes are common.

**How has infrastructure changed?** Infrastructure remains centralised; energy mainly comes from nuclear and gas; forceful energy and carbon policy has sharply reduced petrol vehicle use and public transport is the norm.

**How has technology affected this world?** Monitoring technology ensures compliance on energy efficiency, food conser-

vation and water-saving while virtual reality (VR) is used as a societal escape valve.

**How has society changed?** Societies are more patriotic and conformist and a 'war mind-set' has been invoked to tackle the crisis; efficiency is lauded and life is restrictive but a sense of collective purpose feeds local community.

**What is the role of civil society and individuals?** Civil society acts as the counter-weight to government and is adversarial; individuals are expected to subordinate their needs to those of their community and national service is resurgent.

**What is the state of global health?** Meat and sugar taxes and less sedentary lifestyles are reducing the impact of NCDs but malnutrition is resurging in many countries.

**How has healthcare changed?** Public healthcare focuses on the basics and strongly on prevention, and self-care is strongly encouraged; private healthcare has been nationalised in some countries.

**What is the role and purpose of business in society?** Business is expected to serve the 'national interest' as an employer and tax payer; work is a patriotic duty.

*What is the business operating context?* Multinationals have broken up into national components; consumer demand has fallen and there is a 'make do and mend' attitude; large workforces are strongly encouraged as mass layoffs can cause social unrest.

*How has the workplace changed?* Centralised, hierarchical structures are back; employee needs and concerns are secondary to energy, water and resource efficiency; ageing workers are expected to continue in employment.

# REDEFINING PROGRESS



holistic, human-centred, slow growth, purposeful, community focused

SUMMARY

*This is a world in transition to a new economic paradigm, triggered by a huge shift in mind-set that strongly prioritises wellbeing and sustainability over growth and consumption. GDP is no longer the main measure of success, and new metrics that look at quality of life are preferred. Societies value economic and social resilience, but growth and innovation are low. Mature economies are very low growth, while emerging economies experiment with different routes to social wellbeing, with mixed results, and some social instability in places. The scarcity crisis in water and energy has been held back so far by scaling back Western consumption and increasing resource efficiency, but it is unclear how long this will continue to work as the global population continues to rise.*

*There is widespread recognition that people need purposeful work. Automation works in tandem with meaningful employment so that greater numbers of people are employed in professions that require a human touch. There is a large focus on life outside work, and job-sharing is common in many countries to reduce unemployment. Life is slower paced. Technology develops at a more gradual rate and is largely focused on connection, wellbeing and sustainability. There is a holistic focus on health and wellbeing, emphasising the human element in healthcare over technology.*

## 2006-2020

The world is hit by another massive financial crisis in 2019 leading to a widespread global depression. Taxpayers refuse to bail out the existing system, leading to deep reforms such as a Tobin Tax on financial speculation

## 2020

The Paris 2015 climate deal holds up despite the economic situation as the costs of renewables keep falling; tobin tax proceeds are directed to mitigation and adaptation in developing countries

## 2022

A widespread resurgence in spirituality, religion, and secular versions such as mindfulness puts renewed focus on common human values and practical community action; Sufism makes a comeback in the Islamic world and starts drawing support away from extremism

## 2026

Increasing automation is linked to record unemployment worldwide; fears rise about 'a generation without work'

## 2029

Universal basic citizen income replaces benefits across the EU in 2028 and tax regimes are restructured to reduce both inequality and environmental impact; many US states follow suit but Texas breaks away in opposition.

## 2018

A 'lost decade' of stagnation in the US and Europe ensues as the costs of the crisis unravel; rates of depression and suicide skyrocket and national debates begin in earnest about quality of life

## 2021

China and India grow only fitfully due to internal problems; many developing nations, mired in low growth and hit by increasing climate change, start to seek alternative routes to social progress.

## 2023

The near loss of US honeybees in 2023 coincides with European drought to cause major ecosystem shocks and a food crisis; the use of environmental full cost accounting rises in response and several pesticides are banned.

## 2028

Japan, now approaching its fourth 'lost decade' and facing a rapidly declining population, pioneers a new economic paradigm of low growth within planetary limits and prioritization of wellbeing over consumption, with impressive-seeming results. Scandinavia follows, and a massive worldwide movement builds, calling for a true wellbeing economy; political parties pivot to respond.

## World in detail

**What is the global outlook?** This is a multipolar and interconnected world in transition to a new economic paradigm; a few countries hold out as havens of 'real capitalism' but they are outside the mainstream. Global trade is becoming more regional.

**What is the environmental and resource context?** Resource scarcity is constantly on the horizon and is largely managed by decreased per capita Western consumption, and advances in efficiencies and recycling. Climate change impacts are hitting the poorest countries hard and sustainability is seen as one of the most pressing global issues.

**What is the state of the economy?** This is a low growth world with more regionalised economies due to a higher cost of transport and travel; wealth taxes discourage excessive accumulation and there is much less inequality.

**What is the role of government?** Governments prioritise resilience, wellbeing and sustainability and are more responsive and participatory; public services tend to be delivered locally in partnership with citizen volunteers.

**How has infrastructure changed?** There is a push towards decentralized, community based renewable energy; transport fuel is expensive; water is scarce and often allocated via needs-based systems; circular waste systems are developing.

**How has technology affected this world?** People use technology to connect and engage with one another; Virtual reality (VR) for empathy has increased a sense of interconnection and common humanity; technology is developing more slowly as more durable devices become common and the culture of mass consumption fades.

**How has society changed?** People mostly "work to live" and invest in their local communities; empathy is the dominant value and time with family and on creative or spiritual pursuits is highly valued. A counter-culture nostalgic for 'unfettered capitalism' creates a social discord in some countries where corruption is impeding the transition.

**What is the role of civil society and individuals?** Civil society groups are strong and there is some blurring between them and local government; innovative individuals tend to respond to local issues and focus on developing sustainable solutions.

**What is the state of global health?** ? Health is regarded across the world as a key component of wellbeing; obesity levels are falling due to less sedentary lifestyles and the end of cheap food, but malnutrition remains a problem; mental health is improving as local communities strengthen.

**How has healthcare changed?** Healthy citizens are a government priority and healthcare is more holistic; there is more access to mental health care; developed countries project soft power via medical and healthcare aid.

***What is the role and purpose of business in society?*** Businesses have a key role as the providers of meaningful employment and the producers of low-impact goods and services; all businesses are expected to have a strong purpose apart from profit generation.

***What is the business operating context?*** Businesses have had to shift their models to accommodate the new paradigm, tracking their externalities via full-cost accounting; shareholder relationships focus on long-term value; local context is much more important for products and services.

***How has the workplace changed?*** Businesses build personal relationships with employees and focus on worker wellbeing. Workplaces are collaborative; most office workers work part-time and expect to work into their seventies; manufacturing is mostly automated and agriculture remains a key sector for workers in developing countries.

# THE SCENARIOS

**BUSINESS  
MONOPOLY**



**SERVICE  
TRANSFOR-  
MATION**



**NATIONAL  
INTEREST**



**REDEFINING  
PROGRESS**



**full version**

# MEETING THE WORKERS OF 2036

To get a deeper sense of what workplace health and wellbeing might be like in 2036, we developed five “personas”; fictional people who we might typically meet in that time, and explored what their lives might be like in each scenario. For each scenario, we asked:

What work is this person doing and where?

What is their relationship with the organisation they work with?

What characterises their lifestyle?

How does the employer support the health and wellbeing of this worker?

What support do they need for health and wellbeing?

What are the impacts of their work on their health and wellbeing – positive and negative?

## JOHN

John is a health-care worker (40) living in the US. He's single, lives alone, and likes playing basketball (he used to be a star player in his regional team).



## RICHARD

Richard is a 60 year old engineer in the UK. He is proud of his long track record of excellent work. He is a widower and showing early signs of dementia.



## CLAIRE

Claire is a 25 year old successful entrepreneur living in Europe. She loves art and funky interior design, and making homes beautiful.



## SITA

Sita, 35, lives in India and has 2 children in secondary school. She loves socialising and family gatherings.



## JAHAR

Jahar, 20 is a migrant worker in India. He came to the city from the countryside after his father's cotton farm failed.



# BUSINESS MONOPOLY

monopolies, inequality, big business, anxiety, efficiency



SUMMARY

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A record hurricane season in 2027 causes nearly \$1 trillion in damages in the US alone, sparking crisis in the global insurance industry; this combines with sharply rising resource costs to tip the world into a prolonged recession

## 2032

Big business emerges well from the recession, using the opportunities provided by automation and the necessity of response to resource scarcity to transform the market. A small group of powerful businesses creates monopolies and dominates the global economy

## Wider context

### Global outlook and economy:

The world is multi-polar and capitalist with regional blocs held together by ideological ties and free trade economic agreements; large corporations are dominant. Massive urban centres contain most of the world's 8.5 billion people: 60% of the world's population lives in cities and one in three people live in a slum. Many cities have pockets of well-planned urban design fringed by densely packed slums and informal camps.

All economies have been transformed by the automation of manufacturing, driving, agriculture and many knowledge economy jobs, and inequality has risen globally as millions of jobs have been replaced. Despite a fall in extreme poverty as developing economies have grown, unemployment is high worldwide and piecemeal employment is the norm – most jobs are task specific, short tenure and insecure; corporate risk has been pushed down to the individual level. As a result there is a growing underclass living alongside a precarious 'global middle class' employed in a mixture of formal and informal economy jobs mostly in hospitality, education, the knowledge economy and IT.

Most societies are two-tier, even in the developed world, and function within an unstable peace with regular civil unrest.

Governments have stepped back to allow businesses to find efficient solutions to issues such as clean energy and resource efficiency; government investment is limited by chronically low public funds caused by widespread tax-inefficiency by business and the growing untaxed informal economy.

Once-public assets in the developed world have been privatised and there is public distrust of the close government and business relationship; the private sector plays a dominant role in providing services, especially in the developing world.

Personal debt is an essential component of most societies as wages are sporadic and rates of saving are low; high levels of debt support consumer demand; this is then monetised and highly leveraged by the international financial sector to generate more profits. Complex algorithms are trusted to manage risk levels and memories of the 2008 crash have faded.

### Environment and resources:

Climate change is considered to be 'solved' due to falling emissions, but Sub-Saharan Africa and small island nations have been hit hard by ongoing impacts such as loss of arable land, chronic drought and sea-level rise, causing mass migration.

Resource costs are soaring due to increasing demand; water is very expensive due to the need for it to be recycled, desalinated and transported in support of huge urban centres and intensive agriculture. Massive schemes are necessary such as the energy agreement between Europe and North Africa where gigantic solar farms provide EU electricity and local desalinated water.

There have been mixed results from the first attempts at controversial large-scale geoengineering - Indian agriculture companies are threatening to sue the Chinese government for affecting the monsoon.

Some ecosystem services have been recognised by big business and are being closely managed, such as the North Sea and Pacific fisheries and the Amazon and Boreal forests; in consequence the decline of core ecosystems has slowed but others are near collapse.

### Infrastructure and travel:

Energy is centralised and increasingly renewable but many countries rely on nuclear generation and some carbon capture and storage (CCS) as fossil fuel based energy is being phased out. High resource costs have driven effective waste collection systems and waste has become a resource itself, demanding high prices and providing many jobs in the global informal economy.

Transport within the dense urban centres is electrified but often car-based and congestion is commonplace. Long-distance air travel is common for the wealthy but out of reach for everyone else. Supply chain transport has been optimised for efficiency. Private cities for the affluent with entirely separate infrastructure are increasingly common in Africa and Asia.

Governments rely on businesses to invest in key infrastructure areas such as water, resource recycling and energy. Public services have mostly been privatised, operate a 'user pays' system and are automated wherever possible – for example many postal services are delivered by drones.

Users who cannot pay for public services like energy and water are largely shut out and have to obtain what they need informally via unsafe solutions. Slums have become accepted permanent features of most world mega-cities; many have basic services and are being slowly upgraded by their inhabitants and CSR outreach programmes

## Technology:

Technology is integrated into all aspects of life and is 'always-on'; it is affordable but also aspirational - there are devices for every market segment - and alongside water and food is seen by most people as a necessity for living. Virtual environments for meeting, working and entertainment are commonplace.

The biotech sector is hugely important - much food and medicine is brewed efficiently in vats, freeing up arable land; GM crops increase agricultural productivity; gene-editing technology is well-understood and is starting to be used on human babies via IVF.

Complex artificial intelligence (AI), automation and sophisticated algo-

rithms are in widespread use, governing everything from urban traffic flow to business decisions, and new trading markets have emerged to exploit personal data. Monitoring and self-quantification technology is mainstream and the affluent use this to improve their employability; big data is used by business to drive efficiency and worker productivity.

Technology continues to co-exist with deprivation in many countries; slum-dwellers commonly have access to the internet, low cost consumables and virtual entertainment despite lacking effective infrastructure for sanitation.

Wealthy expansionists are exploring frontiers in space and projects to test the feasibility of moon-mining are underway.

## Society and health

*...are unequal. Societies are consumerist, materialist and success is defined by ownership of the latest consumer goods, low cost consumables meet every day needs. Fast fashion and fast technology churn rapid cycles of 'must-have' consumer goods that are obsolete within six months then recovered and recycled by big business. Leisure time is spent in hedonistic activity to counteract the stress of everyday life and people connect remotely, even within the same city, to reduce transport time and cost. Mental health problems are common in all parts of society, and 'end of pipe' healthcare solutions tend to be promoted such as gastric bands for obesity.*

### Society:

The global middle class has grown but feels estranged from the elite and uncomfortably close to the underclass due to widespread precarious work patterns; trade unions are weak due to a poor bargaining position for labour; civil society channels frustration among the middle and poorer classes but feels comparatively powerless and often focuses on ameliorating symptoms rather than addressing systemic causes. Many increasingly feel controlled by technology rather than empowered by it; short-lived rebellions and civil campaigns protest against the power of big business and wealth inequality.

Entertainment is an extremely profitable global sector and nearly all societies are more permissive; virtual worlds focus on fulfilling fantasies and alcohol and synthetic stimulant use is high globally. Developing countries continue to follow the 'Western' model of development and their societies are increasingly individualist and consumerist and led by the desires of an aspirational middle class; the poor take on debt to invest in their children's education and access to technology.

Virtual networks are strong, and remote and home working is commonplace; most traditional physical meeting places and institutions have been transformed or become obsolete.

The most affluent invest heavily in themselves, using the latest augmentation technology to improve their health, looks, cognitive function etc. There is some public discourse around the emergence of a 'super class'. The elderly are encouraged to keep working, relying on technology to live productive lives and remain in work; retirement ages have been pushed back and pensions whittled down; social care is expensive and unequal; care is often provided by robot carers for those who can afford it.

Most individuals are exhausted by long working hours or enervated by prolonged unemployment;

a small counterculture tries to live life 'outside the system', using only small businesses and the informal economy; the vast underclass survives in a 'grey area' between formal and informal worlds characterised by self-reliance, unenforced regulation, petty corruption and informal deals.

### Health:

Unhealthy lifestyles are widespread due to reliance on processed food and increased sedentary behaviour enabled by remote working; obesity and NCDs continue to rise, particularly in developing countries with a shrinking manual labour workforce.

Business and government pay lip-service to wellbeing but it is not high priority; individuals are held responsible for their own poor health and little attention is given to environmental factors.

Epidemic loneliness and high suicide rates are blamed on too little physical and social interaction; stress related health issues such as heart attack and stroke are high; rates of addiction are at record levels in many countries and alcoholism is becoming a societal problem in previously less-affected countries such as India.

The wealthy have good physical health but are not protected from mental health problems; anxiety and depression are pervasive at every level of society.

### Healthcare:

Most public health services have been automated for efficiency with AI, and universal access to basic services has increased globally; private healthcare has increased strongly and is the dominant global model; private health cover for acute care is lucrative and has developed into big business; the underclass remains largely uncovered for anything outside basic public health services.

Prevention is not a priority and remains limited to areas such as vaccination; treating disease is seen as easier and more profitable; wellbeing remains on the fringe of health systems with interventions such as personalised health optimisation only affordable to the wealthy.

Self-augmentation and gene editing is available to the most affluent, allowing them to minimise risks of contracting some diseases, and select genetic traits for their children; the wealthiest are able to considerably extend healthy lifespans and youthful appearance.

## Business and the workplace

*... Big business, aided by light regulation by governments, has a strong influence on policy in most developing countries. Businesses employ a select few high-value individuals; everyone else is a short-term contractor as the supply of labour far exceeds demand making labour costs cheap. Work is a necessity for survival but there are highly varied working conditions. Centralised physical workplaces are rare and remote working is common. The job market is constantly changing as technological efficiencies become mainstream, making it essential for workers to remain flexible. The informal economy is a large source of employment globally.*

### Business in society:

Big business is credited with 'solving' climate change and being the engine of growth; it is extremely powerful and regularly gets to frame societal issues in a way that suits its interests. Most people cannot really imagine an alternative 'sustainable' system although many would like to dilute the power of the biggest companies.

"Philanthropic capitalism" is dominant and sets the aid agenda, and CSR is prominent; companies also provide for-profit solutions to society's material problems which fit their business model or provide opportunities for competitive advantage.

### The business context:

Business investment is driven by efficiency and organisational or personal gain; shareholders remain fixated on short-term value.

Competition is high among SMEs, who struggle to compete with big business due to the need for efficiency; most are suppliers and subject to the ever-changing requirements of supply chains. Most small businesses that are innovative are quickly bought-out by large companies that take ideas to scale.

Automation is present in nearly all sectors; big business no longer needs to be located in countries with low cost labour, although manufacturing is often sited near key resource bases to maximise production efficiency.

### Workplace:

Highly paid jobs provide excellent conditions and benefits but such workers are expected to be highly productive and are heavily monitored and assessed; competition for good jobs is extremely high and draws from talent across the world. The organisational structure of big companies has changed; there are a few, very powerful people at the top and fewer people are in middle management positions; the main workforce is largely 'on tap' at the convenience of business. Workforces are diverse, mixed in race and age in most parts of the world and businesses have benefited from this, taking advantage of a range of experience and skills to grow their human capital in support of business aims.

Virtual matchmakers connecting needs for contractors and those offering services are essential, and membership of these organisations is competitive and an important definition of a person's success and level of achievement.

Manual labour-based workplaces such as agriculture and apparel have been transformed by automation; people work alongside machines in these sectors and there are far fewer jobs.

Many people in developed countries work in both the formal and informal economy, moonlighting to make ends meet. SMEs in developing countries are still mostly informal and serve the needs of local communities, particularly in slums. Those in the precariat, working in short term jobs, receive very little from their employers and rely on basic public services.

# BUSINESS MONOPOLY



**JOHN**

John works full time as a consultant in a high-end private hospital. He's comfortably off and well paid, on a two-year contract; he also gets commissions from pharma companies. Though he has a relatively high disposable income he gets little opportunity to take time to enjoy spending it. He works long, unsociable hours, so has little leisure time and not much social life. John gets private health insurance as a benefit from his employer, and health care from a personalised health optimisation service. He enjoys his high status but the social isolation and lack of community contributes to depression; he's putting on weight and his employers are beginning to express concern that the extra pounds will lower his ability to live up to the demands of the job. He is frustrated that he can't make regular time outside of work to take part in a sports team.



**RICHARD**

Richard works remotely and on-site on for a private contractor on civil energy infrastructure projects. He's a full-time contractor on a 6 month rolling contract. Richard has a small pension and feels he needs to work to at least 67; work fills his life. His employers are aware of his incipient dementia due to tracking software; he does not yet know that they are not going to renew his contract. He knows he is easily disposable; he is already very anxious about his future and wants advice and reassurance.



**CLAIRE**

Claire runs a micro SME supplying a multinational retailer with designer homewares. She's an independent contractor, but entirely subject to the changing whims of the multinational's buyers; their tough terms have locked her into accepting low margins. To keep on top of the business she works constantly with only occasional breaks to socialise or for exercise. She rarely has time to cook, and snacks irregularly on poor quality synthetically manufactured food which is the staple diet of most people.



**SITA**

Sita works as a call centre operator in customer service for a multinational company, over-seeing automated responses and stepping in whenever a complex issue requires a human to solve it. She's a full time contractor on a rolling 1 month contract. Her lifestyle is extremely busy, with long working hours and little family time. She often has to work unsocial shifts as the call centre is open 24 hours. She lives in a notified slum and works hard to afford a good quality education for her children, who she wants to escape the slum and become successful business directors one day.

Sita wears a tracking wristband at work as part of company performance monitoring; a health tracker app is included on it which she is allowed to use for free, on condition that the data gathered by it can be sold on by the company; she is also given basic health insurance that covers herself and her children. She is stressed, anxious and chronically tired. Work pays reasonably well and she feels lucky compared to many others, but the lifestyle is very stressful and often leaves her exhausted and anxious about the future.



**JAHAR**

Jahar works at the docks doing manual labour. He is an informal worker, and though he works for a registered company he doesn't receive any employee protections or benefits. Jahar came to the city to earn enough to pay off his family's debt and intends to return to his village as soon as it is repaid. He lives in the cheapest housing he can find, sleeping in a derelict room with other workers in an unrecognised slum. His employer takes no responsibility at all for his health and wellbeing, and if there are health and safety standards they are not enforced. For example, though he needs basic protective equipment at work nothing is provided. If an accident happens to him at work he knows he will be blamed for it and have to pay any costs for treatment himself; and there is no one to help him if things go wrong. Jahar is given very few days off and knows they overwork him, but doesn't dare complain; he is glad to have work of any kind. But he worries that he can't earn enough to escape the growing interest on his family's debt and he is beginning to feel trapped.

## Signals of change



More big businesses are pushing for policy frameworks to enable them to address global challenges as commercial opportunities; for example the “Business Manifesto” presented at Davos in 2015 called on governments to create ambitious new Sustainable Development Goals so that companies can help deliver them.

(source: The Guardian)

©David McIntyre/Crossroads Foundation Ltd.  
source: Flickr

Avasa is the first city in India that’s been conceived, executed and run entirely by a private company; aimed at the new middle classes, its creators see it as a blueprint for Indian ‘smart cities’ of the future.

(source: Futures Centre)



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source: Flickr



Research finds that a “robot revolution” is likely to transform the global economy over the next 20 years, cutting the costs of doing business but exacerbating social inequality as nearly 50% of US workers risk being displaced by technology.

(source: The Guardian)

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source: Flickr

# SERVICE TRANSFORMATION

sharing, ingenuity, hi-tech, virtual, disruptive



SUMMARY

In 'Service Transformation', a clear steer towards clean tech and a 'green economy' drives high levels of innovation, transforming both business and society.

This is a world with a collaborative and entrepreneurial spirit, but also shaped by mistrust towards traditional institutions. Clear policy and market signals on climate change, waste and other key issues have sparked intense innovation, a surge in new business ideas, and an upwelling of emergent solutions from the grassroots. Scarcity of global resources is viewed as a stimulating design challenge and the sharing economy has responded to it with gusto.

Decentralised networks provide new forms of energy and water infrastructure and new distribution systems. Access trumps ownership when it comes to consumer goods, and the 'digital native' mind-set is now mainstream as the majority of the world population is younger than the internet. Technology is seen as a massive enabler for progress in this context. Though there has been a move away from traditional big business, there are high levels of business and social innovation and social entrepreneurship is booming. Global interconnectedness and the sharing of ideas is high in this fast-paced, high energy world.

## 2016-2020

A strong pre-2020 climate deal is agreed leading to a clear, lighttouch framework for transition to a low carbon economy, incorporating a carbon tax escalator in most nations

## 2021

Solar power is cheaper than gas across most of the world – installation rates accelerate exponentially

## 2025

New Chinese environmental regulations for energy and resource efficiency effectively ban petrol vehicles and drive intense global innovation

## 2030

Barcelona becomes the first closed loop 'FAB city' as resource shortages of key minerals loom; Bangalore rapidly becomes the second

## 2035

First virtual tourism company breaks IPO records while the airline sector shrinks

## 2020

The whole world is online by 2020 and new products and innovation from developing countries surges

## 2023

Peer to peer (p2p) lending disrupts traditional retail banking as SMEs turn en masse to new platforms

## 2027

Climate events cause successive poor harvests, sparking a massive South Asian food crisis; famine is only just averted by an emergent new distribution system that cuts post-harvest waste for smallholders

## 2032

Competition between land for crops and other uses intensifies; meat taxes come into force in the EU despite resistance from the farm sector

## Wider context

### Global outlook and economy:

This is a multi-polar world where global governance was boosted by the robust and lasting climate deal; Although wrangles at the UN continue, there is a sense that the world can pull together when it really counts.

China is a near-mature economy levelling up as Europe and North America level down and consume smaller shares of global resources. Global trade is multilateral but has become more regionalised due to high transportation costs and the rise of distributed manufacturing; there continues to be a thriving international trade in designs and ideas.

The rapid growth of the sharing economy has reconfigured whole sectors in the industrialised world, including banking, retail, energy and transport. Peer to peer (p2p) processes are mainstream and easy to use, with a focus on maximising resource efficiency and social benefit. Many generate a financial return for their members. There is a mix of profit and non-profit ownership structures.

Distributed manufacturing and digital fabrication are disrupting manufacturing worldwide and re-localising production.

Low carbon innovation is driving growth across the world, particularly in developing countries. The informal economy is particularly innovative in the face of scarcity. 'Solidarity entrepreneurialism' (like a peer to peer guild system) is boosting SMEs in the informal sector in emerging economies.

The global knowledge economy has become much more distributed and graduates in well-connected developing countries such as India take advantage of virtual platforms to work globally on multiple projects.

Network effects are now better understood by policy-makers and many governments now see their role as keeping networks healthy. This includes preventing large peer to peer providers becoming quasi-monopolies - the marketplace is seen as a commons that should not be monopolised or this stifles innovation; priority is also put on providing fertile conditions for entrepreneurs, SMEs, and community initiatives.

### Environment and resources:

Energy, water and resource scarcity is being kept only just at bay by constant innovation and climate change is affecting global agriculture yields. Innovation in food distribution, biotech and farming practices is bridging the gap but cannot do so indefinitely; all countries are investing heavily in agriculture and trying to reduce meat consumption.

Carbon emissions are coming down fast due to high carbon prices. The

world is currently on a trajectory for 2.5 degrees of warming by 2100. Myriad 'carbon negative' schemes to capture atmospheric carbon via processes like ocean pumps, seaweed farming and biochar are starting to scale up in a race to stay below 1.5 degrees warming.

Ecosystems are heavily stressed; massive citizen-led campaigns monitor core areas such as the Amazon. Some key fisheries are well-managed and recovering due to growth in sustainable aquaculture; however others are close to collapse and the UN is trying to negotiate a global concord to enable pervasive recovery where this is possible.

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### Technology:

Societies are generally optimistic about technology but there is a growing 'unplugged' counterculture fed by concerns about health and detachment from nature and physical reality.

Monitoring and self-quantification technology is solidly mainstream and a great deal of anonymised big data from these sources is available to the creative commons. Concerns about privacy have dissipated as the older, pre-internet generations have lost influence. The internet of things is ubiquitous; sensors tracking everything from air quality to traffic are everywhere and citizen networks access and act on their data.

Virtual reality (VR) has massively taken off in entertainment, work and education in industrialised nations. Immersive VR has displaced cinema and traditional gaming. Short VR holidays to exotic and fantastical worlds are increasingly popular as lower cost alternatives to being phys-

ically on holiday. VR workplaces have replaced large offices – the majority of people work from home or their local hub.

Automation has tended to be used where it dovetails with energy efficiency, such as driverless taxis or heat and lighting systems. Developing countries still employ people as a cheaper option to automation in areas like agriculture and transport.

Distributed manufacturing and digital fabrication are upending notions of production across the world. Digital fabrication is allowing a 'make on demand' system to arise in developed countries; open-source libraries of designs have transformed local manufacturing in emerging

economies – informal maker-spaces built from salvaged equipment and shared by 'solidarity entrepreneurs' churn out millions of 'good enough' consumer items for bottom of pyramid consumers, boosting local growth and consumption massively. Local informal recycling networks keep resource use efficient, but are often hazardous to worker health and the local environment.

Rapid developments in synthetic biology are transforming food and farming processes, but also starting to cause concern as it becomes apparent that new start-ups are creating novel lifeforms on a daily basis.

## Society and health

*...are empowered. Societies are split between those who thrive in this entrepreneurial world and others who find it exhausting. This can be a destabilising world for the elderly and families, but it's well suited to young adults. Despite high food prices, the cost of living has stabilised for those prepared to engage fully with the sharing economy. Life feels insecure and isolated for those excluded from sharing systems, but innovative individuals are empowered. NCDs remain a massive problem due to the growing global middle class and associated lifestyle factors. National health systems are delivered by a mix of public and private providers.*

### Society:

Attitudes to ownership have changed across the world, giving priority to access; micro-rental and sharing systems for consumer goods are the norm. Status is tied to access levels, while ownership is increasingly associated with the hassle of full life-cycle costs. Technology enables trust via reputation systems. While peer-to-peer networks create a sense of community, they also fuel polarisation and self-segregation. Loyalties are easily shift-able and peoples' sense of belonging is fragile. Peer-to-peer networks in developing countries tend to operate outside government control and many are based in the informal economy; this reduces bureaucracy and some forms of corruption, but can also cause problems with accountability.

Developing nation citizens are finding it easier to adjust to the entrepreneurial global economy and a great deal of innovation comes from countries like India and Kenya. Slums are increasingly renowned as sources of educated, creative and resilient workers and in India pioneering companies are setting up innovation centres in some of them. Some developing countries are experiencing a demographic and gender dividend as the Millennial generation matures and uses its increasing empowerment to force more accountability from business and government. Others are subject to 'virtual brain drain' as their best graduates are diverted to projects that benefit only the wealthy or developed countries.

Co-housing is on the rise in the developed world as a way for families to share living costs and childcare duties; the elderly also increasingly use it as a way to stay socially connected and independent for longer.

Wellbeing is strongly linked to work; creative, fulfilling work that improves society is seen as the ideal and there is a premium on innovation and creativity; long-term unemployment is stigmatised and overwork is common as people over-identify with what they do.

There is blurred distinction between physical and virtual reality. The elderly are almost a counterculture; most use technology much less and

emphasise the importance of physical reality to the younger generation.

Traditional government institutions (e.g. dealing with education) find it difficult to keep up with the pace of change and are generally mistrusted or considered ineffective; government is often left with the harder problems and those excluded from sharing systems. Networked civil society is powerful and has great influence on the direction of policy.

### Health:

Many people in rich countries still eat too much meat; civil society across the world is campaigning to reduce meat consumption in order to kill three birds with one stone – NCD risks, rising food demand and climate change mitigation; some governments are trialling meat taxes.

Mental health is a mixed picture; those with good networking abilities tend to have fulfilling work and a sense of community to draw on; however isolation and loneliness remains a big problem for many others; 'junk virtual worlds' full of vapid bots and mindless violence are blamed for causing new levels of social maladaptation and narcissism; family life feels more squeezed than ever between competing pressures.

Mental health is increasingly recognised as an issue in developing countries as urbanisation, development and social disruption frays traditional support structures such as the extended family.

### Healthcare:

Most public health services have been automated for efficiency with AI, Self-monitoring and advances in big data and genetics have led to a boom in personalised healthcare in the developed world. Subscription wellbeing services offer tailored diet and exercise packages to maximise prevention of NCDs and to optimise physical and mental health.

National health systems have become more decentralised, and more focused around the needs of the elderly. More self-care and self-diagnosis is expected of the young and able-bodied – first aid is taught at school and sophisticated apps assist with diagnosis and treatment of common illnesses and minor injuries. Doctors are an expensive resource and are expected to be reserved for more serious problems.

Telemedicine has massively increased access to healthcare in the developing world, as have self-care kits, although quality varies widely.

VR is used for dementia therapy – calming interactive environments soothe and engage sufferers. Some workplaces use specialist VR environments to help employees with mild dementia stay working for longer.

## Business and the workplace

*...is seen as a source of innovation and a force for progress. Multinationals and big business in general are seen as slow moving compared to SMEs and have a diminished role due to the constant disruption of sectors by innovation. Most people belong to several work networks and companies have to work hard to keep the interest of the best. Physical workplaces are small and act more as a core hub, with most activity occurring outside them, enabled via virtual workplaces. Large factories are a thing of the past due to distributed manufacturing.*

### Business in society:

Companies that provide ingenious solutions to society's needs attract plaudits and the best talent. The social enterprise/ benefit corporation model is mainstream and there is a widespread sense that the most radical solutions come from start-ups and SMEs. There is a growing crisis in large-scale R&D as a consequence.

Subscription and service models to everything from clothing to transport are the dominant business model in many sectors. As a result, business has an important 'custodian' role for consumers, taking care of quality and repairs, and the full environmental life-cycle costs of item creation, recycling and disposal.

There is little distinction between the private and public sectors in many countries – public service providers rely on a variety of funding and ownership models (depending on risk etc.) and the private sector is often involved in delivery.

### The business context:

Supply chains have regionalised with trade patterns; workforces have become more virtual and globalised. Many companies have shifted to become the co-ordinators of networks rather than mass-employers.

Demand for physical consumer goods has been semi-disrupted by the sharing economy and is now being further disrupted by digital fabrica-

tion in developed countries and the explosion of informal maker-space entrepreneurs in developing countries. Successful companies sell access, info and services rather than physical goods.

The rapidly shifting business environment favours agile, innovative companies; multinationals are finding it difficult to compete with swarms of enabled SMEs.

### Workplace:

Work is flexible and self-directed for many workers, but also irregular – it requires an entrepreneurial mind-set, constant learning, and a 'portfolio' approach to a career; engaging for the young, but a difficult shift for older workers; getting long periods of time off (e.g. for parental leave) can be tricky as lapsing from networks for too long can mean you have to start over again. Self-employment is the norm in many sectors and people increasingly use AI agents and assistants to find and win the work opportunities they are most suited to. Virtual management algorithms are used to help coordinate vast networks of activity.

Low-skilled workers have insecure pay and conditions with much less self-direction than skilled and knowledge workers; underemployment is a constant worry for them.

VR is used extensively for office work – it enabled an explosion of home-working once good-quality VR meetings became routine. VR is also used for training a wide assortment of professions such as plumbers and surgeons, and for enabling remote working.

External workplaces like docks and mines remain and still rely heavily on cheap labour in much of the developing world; unions and activists have forced more accountability via technology, but many workers still endure poor conditions. Agriculture has been partially disrupted by automation – however many tasks still remain more energy efficient when done by hand.

# SERVICE TRANSFORMATION



## JOHN

John works as a self-employed consultant on a telemedicine health network 3 days a week and takes private patients two days a week. He spends a lot of time in virtual environments for work. He gets regular health screening for conditions flagged on his genetic profile through a medics wellbeing network made available through his employer. But his sedentary lifestyle exacerbates his depression and his weight is impacting his fitness. Even for leisure, he's got into the habit of playing virtual sports with others in his professional network rather than going to the gym. He likes his work, and being self-directed; the virtual environments can both help and hinder his depression, and he struggles at times to manage it to stay competitive.



## RICHARD

Richard runs a small energy consultancy with 2 other colleagues. He is monitoring 3 decentralised energy networks remotely and pitching for a 4th. While he likes the challenge, he craves a long holiday; he hasn't taken more than a week off at a time for years. He tracks his own health and has noticed the signs of early dementia; he is currently self-managing and hasn't told his colleagues. He feels isolated and in need of advice, but doesn't know who to turn to; he knows he can't afford to retire yet and with his son working overseas has no safety net for when he's no longer able to support himself.



## CLAIRE

Claire runs a national sharing/rental service for designer homewares, furniture and home decor. Self-employed and self-directed, she works long hours and most days, even weekends, to respond to the needs of her business. Like everyone, she uses sharing and rental services for everything from clothing to transport and gets her food ready-cooked from a meals network. Claire belongs to a health network that tracks her data and makes diet and exercise recommendations; when she can get time she takes part in virtual exercise coaching sessions. She spends most of her time on her own in virtual working with distant colleagues. Occasionally she talks remotely with her parents who lives far away. Most of the time she feels purposeful and in control; however the uncertainty causes anxiety sometimes, and it's in those moments that she misses the face-to-face contact with colleagues or community that would help her feel less vulnerable and alone.



## SITA

Sita is working as a freelancer remotely performing discreet 'human intelligence tasks' routed to her via her networks; the tasks are optimised to her particular skill-set and educational background. She is self-employed, currently working for 4 clients. She works from the local tech hub that was built when their slum got upgraded. She tries to fit work around her family commitments; however work is very variable and her income is unpredictable. She manages her own healthcare via a women's wellbeing network that she accesses from work that she accesses from the tech hub where she works; she also accesses family health services and basic health insurance.

Sita finds it difficult to switch off and is often anxious about maintaining the 'right level' of work that fits with her family responsibilities whilst providing enough income. She also worries about her children spending so much time engaged in a virtual world while she's away. Her work feels self-directed and empowering and she often appreciates the flexibility; however it feels insecure in the long term and she hopes her children will have more secure livelihoods.



## JAHAR

Jahar works informally at the docks doing manual labour. He has joined a local 'guild' of informal dock workers that pool savings to support each other in times of crisis and monitor employers to make sure that basic health and safety standards are enforced. He has come to the city to earn money to help pay for his education so he can start his own business. He lives in a cheap slum for the moment to keep his costs down. His employer enforces basic health and safety standards after being embarrassed by action taken by his 'guild' of fellow workers. If an accident happens at work, Jahar knows that his 'guild' will press strongly for the company to cover the medical costs. Still, Jahar is chronically overworked and given very few days off, he is determined to leave as soon as he has saved enough money. Although work is hard and demanding, he feels empowered by his guild and that he may have better prospects in the future.

## Signals of change



Peer-to-peer lending is surging in the US; in 2015 analysts warned that the sector's growth could hurt traditional lenders.  
(source: Business Insider)

© Lendingmemo  
source: Flickr

The Paris climate deal is expected to ignite a \$90trillion clean energy revolution; China and India in particular submitted ambitious climate pledges that could trigger a rapid transition in the global energy system towards decentralised renewables.  
(source: The Telegraph)



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source: Flickr

USING  
BUSINESS  
AS A  
FORCE FOR GOOD

A recent study found that eighty percent of 13-25 year olds want to work for a 'purposeful' company that cares about its impacts; Millennials are thought to be reshaping the values of the business world.  
(source: Brand Channel)

source: Triodos bank

# NATIONAL INTEREST

restrictive, patriotic, centralised, crisis, urgent



*This is a reactive world that is trying to cope with resource shortages and to stave off collapse.*

*A convergence of crises in food, water and energy and the climate has sharply concentrated minds on urgent action to head-off a worst case scenario. The world is in danger of fracturing into protectionist blocs as issues like water and food security bite. Governments are doing everything possible to strengthen their countries and secure necessary resources for the long term. Forceful policy is enacted to produce quick behaviour change, such as meat taxes, carbon taxes, penalties for food and water wastage, and bans of the most wasteful consumer goods.*

*Business is subordinated to 'the national interest' and there is much heavier regulation of commercial activity. Patriotism is purposefully stoked by governments to build national unity and the purpose of work is to 'do your bit' for your country. Technology is heavily used for tracking, monitoring, and enabling efficiency in food, water, carbon and energy use. Healthcare is focused on providing the basics of physical health and prevention for all.*

## 2016-2020

The pre-2020 climate talks produce no lasting deal and countries renege on their pledges; carbon emissions accelerate as global use of fossil fuels continues to rise

## 2023

Continual harvest failures drive prolonged record prices for wheat and rice, causing massive unrest; famine reappears in South Asia and North Africa; Western nations send aid, but close their borders to refugees

## 2028

Energy prices soar as Russia cuts off gas supplies to the EU for an entire 'black winter'; blackouts average at one a week and a record number of deaths are caused by hypothermia

## 2031

Increasing Arctic methane emissions alarm climate scientists who warn the world is now at risk of tipping into irreversible 'runaway warming'

## 2034

An emergency climate summit agrees 'unprecedented and forceful measures' to pull the world back from the brink

## 2019

A 'new dustbowl' emerges in the Western US as aquifers run dry, forcing abandonment of towns and farms; the Australian interior faces the same fate

## 2026

India introduces a 'license for children' to curb population growth; citizen credits must be earned to permit the birth of each child

## 2029

Mandatory smart energy meters are fitted throughout the EU to curb demand; non-essential devices can be switched off remotely by national grid algorithms

## 2032

China attempts unilateral geo-engineering with sulphate aerosols in a bid to delay the worst effects of climate change

## Wider context

### Global outlook and economy:

The world is in crisis and globalisation is breaking down. There is a zero-sum mind-set, a growing sense that national gain is only possible via another's loss, but governments are also keenly aware that the challenges are too great to tackle alone.

Regional groupings try to act together and there is also a late worldwide attempt to act on climate change after a spate of shocking disasters and crises; countries that refuse to do so are isolated and punished with sanctions.

Bilateral trade predominates; there is a high and ongoing risk of protectionism, particularly with regards to food. Countries constantly manoeuvre for access to key energy and water resources, some of which are becoming dangerous flash points.

Most economies are strongly directed by governments 'in the national interest' and growth is mainly driven by government investment programmes. GDP is low everywhere and living standards are falling; no one has enough energy and efficiency is key. Automation is mainly used for energy efficiency; most governments have purposefully limited its impact on jobs as full employment is felt necessary for national cohesion.

The internet has fractured into linked regional networks that serve US/Europe, Asia/Oceania, Africa/Middle East and South and Central America; these are tightly monitored and controlled by local governments; links between networks are often severed without notice.

Many urban areas in middle-income countries are becoming new slums as individual incomes and government spending fall; as a result the black economy is strongly resurgent in many countries, particularly those where rationing is in place.

Public services are generally delivered by government agencies or under their close supervision; profiting from public service delivery is not socially acceptable in much of the world – there are however ongoing problems with corruption in many countries.

### Environment and resources:

Energy, water and resource scarcity is being kept only just at bay by Climate change impacts are a massive problem, causing a regular global shortfall in food; severe flooding affects many cities and climate refugees are common. The world is currently on a trajectory for 6 degrees

of global warming by 2100, an apocalyptic prospect that governments are trying to reverse.

Water crises are common across the world and are affecting agriculture in particular. Some regions are doing better than others – Russia has plenty of energy and fertile farmland; US has enough domestic resources in theory and is acting swiftly on efficiency of food, energy and water to ensure self-sufficiency; The EU is Fortress Europe but still dependent on Russia for gas and is desperately acting on efficiency and new energy.

China risks serious shortages and is projecting might to gain access to enough food, water and energy; many emerging economies are struggling and trying to retain control over local resources.

Ecosystems are collapsing; the few remaining fisheries are patrolled by the local dominant nations.

### Infrastructure and travel:

The dominant energy model remains of centralised infrastructure; nuclear power is newly resurgent, as is carbon capture technology; gas predominates in North America. The EU has a mix of renewables, fossil, nuclear and is now scrambling to phase out gas via forced energy cut-backs, phased industry and even phased internet availability. Emerging countries are using local energy resources – generally renewables and coal with jerry-rigged CCS.

Water is expensive across the world; water-saving infrastructure is prioritised by industrialised countries; many developing countries endure severe shortages.

Forceful policy on energy and carbon has led to a rapid fall in petrol vehicles worldwide; public transport is now the norm in most countries as personal cars are too expensive; informal transport networks dominate in developing countries and the cycle rickshaw is making a comeback in many cities.

### Technology:

Many manufacturing jobs have come back 'on-shore' as supply chains have shortened, digital production methods have cut costs and governments have incentivised local employment. However digital fabrication has been discouraged at the local community level – it is reserved for the large companies that can afford to pay for the equipment.

Sophisticated monitoring systems in many OECD nations track individu-

als' energy and resource footprints in real-time, even down to the foods they eat. 'Credits' are earned for staying within prescribed limits, which can be gradually accumulated and put towards high footprint activities such as long distance holidays or having children.

Most technology is now developed for government and business use; consumer technology is very slow moving and focuses on durability and energy efficiency as disposable incomes are low and energy use is cir-

cumscribed. All new consumer electronic devices are mandated to have a 'back-door' accessible by government agencies for monitoring.

Black and grey market technology is common across the developing world as the poor seek access to cheap technology; black market 'citizen credits' command high prices and incentivise hackers across the world; innovation is markedly stronger in the black market than the mainstream.

## Society and health

*...are nationally focused. Societies are generally more closed and conformist, localism is rising as travel falls and people feel greater connection to their local regions, although a counter-culture resists and tries to maintain global links. Efficiency is lauded and rewarded, and monitoring technology has been normalised and socially accepted as a necessary evil to ensure compliance with efficiency measures. There has been an unwelcome increase in malnutrition in developing countries as food costs have risen. Public healthcare focuses on the basics and prevention is highly prioritised in most countries. People with 'lifestyle' diseases are expected to pay towards the cost of their care.*

### Society:

Governments are very directive and interventionist and policies such as rationing and meat and sugar taxes are common; this is generally accepted due to the severe nature of the challenges that this world faces. A patriotic 'war mind-set' is invoked in many countries to tackle climate change, food and energy problems; living standards have fallen across much of the world and migrants are not welcomed. Civil society has shrunk but is an essential counter-weight to government in many countries to ensure accountability; their relationship is adversarial.

Regional cultures and dialects are strengthening and provide some counterpoint to the more artificial nationalism promoted by governments. Inequality has fallen as the rich have been heavily taxed; many sections of society feel that life is fairer now, but others feel that too much freedom has been relinquished. There is increased community spirit at local level, a sense of collective purpose and the need to pull together. People share skills such as horticulture and midwifery in local networks.

Many slum communities in countries such as India are surprisingly resilient during this time of crisis due to strong informal networks; however migrant workers without family or government support in the lowest 'tier' of slums are hit hard by the poor economy and are desperate for jobs.

The web is used to track the energy usage of every individual in industrialised countries, and much else besides. Freedom of expression feels stifled by the constant sense being watched and escapism is highly sought after; many governments encourage virtual reality (VR) as an outlet – VR centres (centralised for energy efficiency) are the new cinemas. Individuals are expected to subordinate their needs to those of their community; national service has returned across most of the world and volunteer corps are encouraged.

Health and wellbeing is a matter of patriotic duty and is framed mainly in terms of physical health; sport is exalted as a virtuous and low energy

activity; the overweight are shamed as gluttons in a time of food crisis; meat is rationed or taxed heavily in many countries.

The elderly are encouraged to keep on contributing to their countries' economies; retirement ages have been pushed back or in some cases abolished. Social care policy for the very old often requires forced sale of property to pay for it.

### Health:

Forceful government policy is having an effect on NCDs – high meat and sugar taxes, and in some cases, rationing of basic foodstuffs; also the decline in living standards has led to less sedentary lifestyles as car use has dropped across the world. However there is increasing malnutrition and many families keep vegetable gardens to supplement their diet, even in cities; governments are fortifying flour and bread.

The mental health picture is complex; many people respond well to the new sense of national purpose; however the endless news of crises and ecosystem collapse is causing big increases in anxiety; the loss of freedom, although mostly accepted, grates on older generations who remember life in previous decades.

Dementia is increasingly common due to ageing populations; community care schemes are encouraged as an affordable way of dealing with the problem.

### Healthcare:

Health policy often forcefully encourages physical health – for example the unfit are assigned to energetic 'community duty' such as digging, and the overweight are obliged to join diet clubs. Refuseniks and persistent offenders lose their 'citizen credits' or are fined.

Private healthcare is accessible through insurance and workplace schemes; some countries have nationalised private healthcare in order to extend public provision and reduce inequality.

Self-care and self-monitoring is encouraged - a lot of diagnosis is done by AI - you have to pay for the 'personal touch'. 'Fivolous use' of emergency services such as ambulances is fined heavily and culprits are often publically shamed. Telemedicine of very variable quality is the norm in developing countries.

'Big Pharma' has been cowed by compulsory licensing in most countries, even OECD nations, which circumvents patents to permit cheap generics of socially important medicines. As a consequence, most pharmaceutical R&D spending has fallen outside the US and is now largely funded by the public sector.

## Business and the workplace

*...is increasingly local. Business are expected to fully contribute to society by providing local employment and paying full national taxes. People on unemployment benefit are required to do community service or voluntary work to 'earn' it. Consumer demand has fallen and there is a 'make do and mend' attitude. Work is exalted as an end in itself that strengthens the nation.*

### Business in society:

Business is subordinated to the 'national interest', similar to in time of war, and is expected to do its patriotic duty as employer and tax payer; international businesses are increasingly mistrusted. Local and national businesses are increasingly important for their role in building identity and morale.

Work is a patriotic duty for the individual; everyone is expected to pull their weight and contribute to the national economy.

Subscription and service models to everything from clothing to transport are the dominant business model in many sectors. As a result, business has an important 'custodian' role for consumers, taking care of quality and repairs, and the full environmental life-cycle costs of item creation, recycling and disposal.

There is little distinction between the private and public sectors in many countries; public service providers rely on a variety of funding and ownership models (depending on risk etc.) and the private sector is often involved in delivery.

### The business context:

This is a very difficult environment for multinationals – most have broken up into national components and are multinational in name only.

Tax avoidance of any kind is not tolerated by societies – all businesses are expected to pay their full share and boycotts quickly spring up against companies that are thought not to; punitive action by the government often follows, and is popular.

Employers are strongly encouraged to have large workforces; mass layoffs can cause social unrest; as a counterpoint, health and safety legislation and similar employee protection laws are less strictly enforced in many countries

### Workplace:

Centralised, hierarchical command and control structures have returned in a more subtle and pervasive form, enabled by ubiquitous monitoring; business and other employers feel entitled to track employees near-continuously to improve efficiency, even noting sleep habits.

Workplaces are managed for energy, water and resource efficiency – this determines the mix of physical and virtual space, homeworking etc.; employee needs and concerns are secondary.

Companies are expected to accommodate ageing workers to allow them to continue in employment for as long as possible.

# NATIONAL INTEREST



**JOHN**

John is employed full time at the main city hospital on a permanent contract. His work keeps him busy, and he's an important figure in the local community. He misses the global interaction that he used to have through meeting with medical colleagues from around the world – all conferences are virtual now and sharing is highly controlled and monitored. He lives near the hospital, a short cycle ride away. As a high value employee his health is constantly monitored. He enjoys his high status; but the stress of the job and the external sense of crisis tends to worsen his depression.



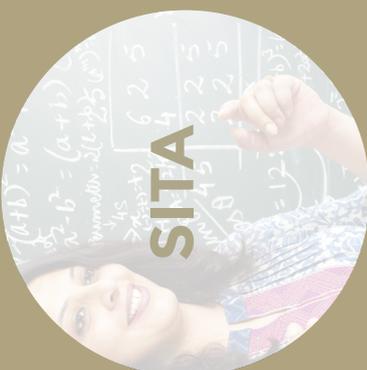
**RICHARD**

Richard works directly for the government on civil energy infrastructure as a full-time employee on a permanent contract. National health monitoring flagged his dementia, and the government gives him access to support to help him stay economically active for longer. He likes feeling useful and is anxious about his dementia affecting his contribution. Richard feels supported but wishes he could work less as he grows older and spend more time with his grandchildren.



**CLAIRE**

Claire runs a local repair, recycling and reuse service for homewares and furniture. The service is government funded, and she has to ensure it meets strict requirements which are stringently monitored. She still lives with her parents, which both helps her to save money and gains them credits for efficient energy use at home. Her health data is monitored by the local doctor's surgery who sends constant health advice remotely to make sure her fitness meets national guidelines. She enjoys feeling useful in the community but finds the responsibility stressful at times and misses a creative outlet. She wishes she could have more training and tailored support with the demands of running a busy local service, and wonders when she'll manage to save enough resources to get a home of her own.



**SITA**

Sita works as a centre operator for an Indian company, dealing with domestic customer service. She's a full time employee and works long days; she never feels like she has enough time for her family and is lucky that her sister is able to help out at home and with the children. Having help was especially important when her youngest got ill recently, as Sita still had to go to work. Like all employees she's given access to diet and exercise plans for healthy living; health insurance is provided for 'non-lifestyle conditions' such as communicable diseases and accidents. Her work is sedentary and she struggles to make time for exercise to keep fit, but manages a class once or twice a week: she risks being fined if she doesn't meet a certain standard of health and fitness. The work environment inflexible and authoritarian, and the need to balance expectations with the needs of her children can make her feel isolated and anxious.



**JAHAR**

Jahar works informally at the docks doing manual labour. He doesn't receive employee protections or benefits, though his employer enforces basic health and safety standards, otherwise it faces punitive fines from the local government. He lives in the cheapest housing he can find, in an unrecognised slum, so he can pay off the family debt and return to his village as soon as possible. Once back home, he knows he can work on the government run farm, but the pay would be much lower there. Jahar is chronically overworked and is given very few days off. He is glad to have a job but is desperate to get one that pays even more so that he can pay off the debt quicker, and he is anxious that his situation may not improve in the long term.

## Signals of change



Forceful state water policy in California forced steep usage cuts in 2015 as the drought entered its fourth year, with unprecedented restrictions for both farmers and urban dwellers.  
(source: The Guardian)

© John Weiss  
source: Flickr

Sweden is currently actively considering a 'meat tax' to address the environmental impact of meat consumption and drive changes in farming and diet.  
(source: Futures Centre)



© Sheila  
source: Flickr



Melting sea ice in the Arctic is currently increasing global methane emissions, risking a vicious cycle that exacerbates climate change further and in turn releases more methane from warming tundra.  
(source: UPI)

© NASA  
source: Flickr

# REDEFINING PROGRESS



## Holistic, human-centred, slow growth, purposeful, community focused

SUMMARY

*This is a world in transition to a new economic paradigm, triggered by a huge shift in mind-set that strongly prioritises wellbeing and sustainability over growth and consumption. GDP is no longer the main measure of success, and new metrics that look at quality of life are preferred. Societies value economic and social resilience, but growth and innovation are low. Mature economies are very low growth, while emerging economies experiment with different routes to social wellbeing, with mixed results, and some social instability in places. The scarcity crisis in water and energy has been held back so far by scaling back Western consumption and increasing resource efficiency, but it is unclear how long this will continue to work as the global population continues to rise.*

*There is widespread recognition that people need purposeful work. Automation works in tandem with meaningful employment so that greater numbers of people are employed in professions that require a human touch. There is a large focus on life outside work, and job-sharing is common in many countries to reduce unemployment. Life is slower paced. Technology develops at a more gradual rate and is largely focused on connection, wellbeing and sustainability. There is a holistic focus on health and wellbeing, emphasising the human element in healthcare over technology.*

### 2006-2020

The world is hit by another massive financial crisis in 2019 leading to a widespread global depression. Taxpayers refuse to bail out the existing system, leading to deep reforms such as a Tobin Tax on financial speculation

### 2020

The Paris 2015 climate deal holds up despite the economic situation as the costs of renewables keep falling; tobin tax proceeds are directed to mitigation and adaptation in developing countries

### 2022

A widespread resurgence in spirituality, religion, and secular versions such as mindfulness puts renewed focus on common human values and practical community action; Sufism makes a comeback in the Islamic world and starts drawing support away from extremism

### 2026

Increasing automation is linked to record unemployment worldwide; fears rise about 'a generation without work'

### 2029

Universal basic citizen income replaces benefits across the EU in 2028 and tax regimes are restructured to reduce both inequality and environmental impact; many US states follow suit but Texas breaks away in opposition.

### 2018

A 'lost decade' of stagnation in the US and Europe ensues as the costs of the crisis unravel; rates of depression and suicide skyrocket and national debates begin in earnest about quality of life

### 2021

China and India grow only fitfully due to internal problems; many developing nations, mired in low growth and hit by increasing climate change, start to seek alternative routes to social progress.

### 2023

The near loss of US honeybees in 2023 coincides with European drought to cause major ecosystem shocks and a food crisis; the use of environmental full cost accounting rises in response and several pesticides are banned.

### 2028

Japan, now approaching its fourth 'lost decade' and facing a rapidly declining population, pioneers a new economic paradigm of low growth within planetary limits and prioritization of wellbeing over consumption, with impressive-seeming results. Scandinavia follows, and a massive worldwide movement builds, calling for a true wellbeing economy; political parties pivot to respond.

## Wider context

### Global outlook and economy:

This is a multi-polar world where global governance was boosted by the robust and lasting climate deal; Although wrangles at the UN continue, there is a sense that the world can pull together when it really counts.

China is a near-mature economy levelling up as Europe and North America level down and consume smaller shares of global resources. Global trade is multilateral but has become more regionalised due to high transportation costs and the rise of distributed manufacturing; there continues to be a thriving international trade in designs and ideas.

The rapid growth of the sharing economy has reconfigured whole sectors in the industrialised world, including banking, retail, energy and transport. Peer to peer (p2p) processes are mainstream and easy to use, with a focus on maximising resource efficiency and social benefit. Many generate a financial return for their members. There is a mix of profit and non-profit ownership structures.

Distributed manufacturing and digital fabrication are disrupting manufacturing worldwide and re-localising production.

Low carbon innovation is driving growth across the world, particularly in developing countries. The informal economy is particularly innovative in the face of scarcity. 'Solidarity entrepreneurialism' (like a peer to peer guild system) is boosting SMEs in the informal sector in emerging economies.

The global knowledge economy has become much more distributed and graduates in well-connected developing countries such as India take advantage of virtual platforms to work globally on multiple projects.

Network effects are now better understood by policy-makers and many governments now see their role as keeping networks healthy. This includes preventing large peer to peer providers becoming quasi-monopolies - the marketplace is seen as a commons that should not be monopolised or this stifles innovation; priority is also put on providing fertile conditions for entrepreneurs, SMEs, and community initiatives.

### Environment and Resources:

Energy, water and resource scarcity is being kept only just at bay by constant innovation and climate change is affecting global agriculture yields. Innovation in food distribution, biotech and farming practices is bridging the gap but cannot do so indefinitely; all countries are investing heavily in agriculture and trying to reduce meat consumption.

Carbon emissions are coming down fast due to high carbon prices. The world is currently on a trajectory for 2.5 degrees of warming by 2100. Myriad 'carbon negative' schemes to capture atmospheric carbon via

processes like ocean pumps, seaweed farming and biochar are starting to scale up in a race to stay below 1.5 degrees warming.

Ecosystems are heavily stressed; massive citizen-led campaigns monitor core areas such as the Amazon. Some key fisheries are well-managed and recovering due to growth in sustainable aquaculture; however others are close to collapse and the UN is trying to negotiate a global concord to enable pervasive recovery where this is possible.

### Infrastructure and Travel:

Energy, water and resource scarcity is being kept only just at bay by Energy has shifted to a decentralised system much more rapidly than expected, driven by the falling costs of solar panels and the expense of fossil fuels; there is massive emphasis on microgeneration and efficiency. Energy is not abundant everywhere, but ingenious sharing and trading solutions and demand-side management ensure that there is just about enough. Decentralisation is the watchword for new infrastructure, especially in developing countries where ad-hoc networks quickly spring up around multiple small-scale solutions for energy, water purification etc.

Water is similarly prized due to scarcity pressures; there is much greater emphasis on rainwater collection, grey water reuse and efficiency; microbiome products are reducing water use for personal care.

Transport is focused on energy efficient and low carbon solutions and sales of petrol cars have plummeted. Rentable electric driverless car systems are mainstream in many world cities, as are bike and electric scooter hire; ad-hoc informal transport networks in the developing world are digitally-enabled and often powered by cheaper local energy from waste, such as biodiesel and biogas. Long-distance rail is strongly resurgent as air-travel becomes more expensive.

### Technology:

Societies are generally optimistic about technology but there is a growing 'unplugged' counterculture fed by concerns about health and detachment from nature and physical reality.

Monitoring and self-quantification technology is solidly mainstream and a great deal of anonymised big data from these sources is available to the creative commons. Concerns about privacy have dissipated as the older, pre-internet generations have lost influence. The internet of things is ubiquitous; sensors tracking everything from air quality to traffic are everywhere and citizen networks access and act on their data.

Virtual reality (VR) has massively taken off in entertainment, work and education in industrialised nations. Immersive VR has displaced cinema and traditional gaming. Short VR holidays to exotic and fantastical worlds are increasingly popular as lower cost alternatives to being phys-

ically on holiday. VR workplaces have replaced large offices – the majority of people work from home or their local hub.

Automation has tended to be used where it dovetails with energy efficiency, such as driverless taxis or heat and lighting systems. Developing countries still employ people as a cheaper option to automation in areas like agriculture and transport.

Distributed manufacturing and digital fabrication are upending notions of production across the world. Digital fabrication is allowing a 'make on demand' system to arise in developed countries; open-source libraries of designs have transformed local manufacturing in emerging economies – informal maker-spaces built from salvaged equipment and shared by 'solidarity entrepreneurs' churn out millions of 'good enough' consumer items for bottom of pyramid consumers, boosting local growth and consumption massively. Local informal recycling networks keep resource use efficient, but are often hazardous to worker health and the local environment.

## Society and health

*...are empowered. Societies are split between those who thrive in this entrepreneurial world and others who find it exhausting. This can be a destabilising world for the elderly and families, but it's well suited to young adults. Despite high food prices, the cost of living has stabilised for those prepared to engage fully with the sharing economy. Life feels insecure and isolated for those excluded from sharing systems, but innovative individuals are empowered. NCDs remain a massive problem due to the growing global middle class and associated lifestyle factors. National health systems are delivered by a mix of public and private providers.*

### Society:

Attitudes to ownership have changed across the world, giving priority to access; micro-rental and sharing systems for consumer goods are the norm. Status is tied to access levels, while ownership is increasingly associated with the hassle of full life-cycle costs. Technology enables trust via reputation systems. While peer-to-peer networks create a sense of community, they also fuel polarisation and self-segregation. Loyalties are easily shift-able and peoples' sense of belonging is fragile. Peer-to-peer networks in developing countries tend to operate outside government control and many are based in the informal economy; this reduces bureaucracy and some forms of corruption, but can also cause problems with accountability.

Developing nation citizens are finding it easier to adjust to the entrepreneurial global economy and a great deal of innovation comes from countries like India and Kenya. Slums are increasingly renowned as sources of educated, creative and resilient workers and in India pioneering companies are setting up innovation centres in some of them. Some developing countries are experiencing a demographic and gender dividend as the Millennial generation matures and uses its increasing empowerment to force more accountability from business and government. Others are subject to 'virtual brain drain' as their best graduates are diverted to projects that benefit only the wealthy or developed countries.

Co-housing is on the rise in the developed world as a way for families to share living costs and childcare duties; the elderly also increasingly use it as a way to stay socially connected and independent for longer.

Wellbeing is strongly linked to work; creative, fulfilling work that improves society is seen as the ideal and there is a premium on innovation and creativity; long-term unemployment is stigmatised and overwork is common as people over-identify with what they do.

There is blurred distinction between physical and virtual reality. The el-

## Business and the workplace

*...is seen as a source of innovation and a force for progress. Multinationals and big business in general are seen as slow moving compared to SMEs and have a diminished role due to the constant disruption of sectors by innovation. Most people belong to several work networks and companies have to work hard to keep the interest of the best. Physical workplaces are small and act more as a core hub, with most activity occurring outside them, enabled via virtual workplaces. Large factories are a thing of the past due to distributed manufacturing.*

### Business in society:

Companies that provide ingenious solutions to society's needs attract plaudits and the best talent. The social enterprise/ benefit corporation model is mainstream and there is a widespread sense that the most radical solutions come from start-ups and SMEs. There is a growing crisis in large-scale R&D as a consequence.

Subscription and service models to everything from clothing to transport are the dominant business model in many sectors. As a result, business has an important 'custodian' role for consumers, taking care of quality and repairs, and the full environmental life-cycle costs of item creation, recycling and disposal.

There is little distinction between the private and public sectors in many countries – public service providers rely on a variety of funding and ownership models (depending on risk etc.) and the private sector is often involved in delivery.

### The business context:

Supply chains have regionalised with trade patterns; workforces have become more virtual and globalised. Many companies have shifted to become the co-ordinators of networks rather than mass-employers.

Demand for physical consumer goods has been semi-disrupted by the sharing economy and is now being further disrupted by digital fabrication in developed countries and the explosion of informal maker-space entrepreneurs in developing countries. Successful companies sell ac-

Rapid developments in synthetic biology are transforming food and farming processes, but also starting to cause concern as it becomes apparent that new start-ups are creating novel lifeforms on a daily basis.

Distributed manufacturing and digital fabrication are upending notions of production across the world. Digital fabrication is allowing a 'make on demand' system to arise in developed countries; open-source libraries of designs have transformed local manufacturing in emerging economies – informal maker-spaces built from salvaged equipment and shared by 'solidarity entrepreneurs' churn out millions of 'good enough' consumer items for bottom of pyramid consumers, boosting local growth and consumption massively. Local informal recycling networks keep resource use efficient, but are often hazardous to worker health and the local environment.

Rapid developments in synthetic biology are transforming food and farming processes, but also starting to cause concern as it becomes apparent that new start-ups are creating novel lifeforms on a daily basis.

derly are almost a counterculture; most use technology much less and emphasise the importance of physical reality to the younger generation.

Traditional government institutions (e.g. dealing with education) find it difficult to keep up with the pace of change and are generally mistrusted or considered ineffective; government is often left with the harder problems and those excluded from sharing systems. Networked civil society is powerful and has great influence on the direction of policy

### Health:

Many people in rich countries still eat too much meat; civil society across the world is campaigning to reduce meat consumption in order to kill three birds with one stone – NCD risks, rising food demand and climate change mitigation; some governments are trialling meat taxes.

Mental health is a mixed picture; those with good networking abilities tend to have fulfilling work and a sense of community to draw on; however isolation and loneliness remains a big problem for many others; 'junk virtual worlds' full of vapid bots and mindless violence are blamed for causing new levels of social maladaptation and narcissism; family life feels more squeezed than ever between competing pressures.

Mental health is increasingly recognised as an issue in developing countries as urbanisation, development and social disruption frays traditional support structures such as the extended family.

### Healthcare:

Self-monitoring and advances in big data and genetics have led to a boom in personalised healthcare in the developed world. Subscription wellbeing services offer tailored diet and exercise packages to maximise prevention of NCDs and to optimise physical and mental health.

National health systems have become more decentralised, and more focused around the needs of the elderly. More self-care and self-diagnosis is expected of the young and able-bodied – first aid is taught at school and sophisticated apps assist with diagnosis and treatment of common illnesses and minor injuries. Doctors are an expensive resource and are expected to be reserved for more serious problems.

Telemedicine has massively increased access to healthcare in the developing world, as have self-care kits, although quality varies widely.

VR is used for dementia therapy – calming interactive environments soothe and engage sufferers. Some workplaces use specialist VR environments to help employees with mild dementia stay working for longer.

cess, info and services rather than physical goods.

The rapidly shifting business environment favours agile, innovative companies; multinationals are finding it difficult to compete with swarms of enabled SMEs.

### Workplace:

Businesses have more personal relationships with their employees and focus on worker wellbeing and purposeful work; psychological wellbeing is prioritised.

Overall productivity gains due to automation mean people have to work less to produce the same; most office workers work part-time and share jobs; manufacturing is mostly automated and requires a few highly skilled workers.

Group work is highly valued and workplaces are more face-to-face and collaborative; there is a shift away from remote working; physical presence is prioritised but 'presentee-ism' is looked down on as a waste of time and many developed countries have caps on working hours.

Most people expect to continue working into their seventies as pension returns are low and universal incomes are set at survival levels; workplaces focus on being inclusive and supportive of older workers to make best use of their experience, and the old often job share with the young.

Worker health and safety and skill development are priorities in developing countries and companies work closely with rural smallholders to improve agricultural practices; multinationals are expected to provide systemic benefits to communities, especially in the areas of food security and medical care.

The informal sector remains large and unregulated in the Global South; a few countries such as India are attempting formalisation via inclusion of representatives in local government and staged extension and enforcement of regulation.

# REDEFINING PROGRESS



**JOHN**

John is employed 4 days a week for the local health co-op, on a permanent contract. He is well-known and liked in the local community; in his leisure time he volunteers with the local sports team and offers basketball coaching to youth. The health co-op gives him a quarterly check-up for preventive health and psychological wellbeing, which helps him manage his tendency to depression. He enjoys feeling useful but sometimes feels frustrated at the limited scope to progress his career.



**RICHARD**

Richard maintains the local 'combined heat and power' (CHP) network. He's a part-time employee working 3 days a week, and is busy training new engineers. He enjoys working with the young, though he has a lower income than he was previously used to. Health checks flagged dementia early; he is talking to his doctor and employer to help him delay the onset and stay in the workplace longer. He gets practical help to manage the dementia, both from the community and from his son and his family. This makes him feel supported, but he is anxious about being a burden on his community in the long term.



**CLAIRE**

Claire runs creative workshops teaching people how to upcycle old homewares and furniture. Self-employed, she has developed partnerships with other organisations such as community centres and colleges and has a full portfolio of courses. She lives in a creative community with a communal kitchen and shared workshop and studio space; they encourage each other to develop their own art and to share it at local exhibitions. Community members with children help each other out with childcare so everyone can participate in work and cultural life. Like everyone, she has a free annual health check at her local doctor's surgery; she takes part in regular mindfulness sessions at her local community centre. She enjoys working creatively with other people but is frustrated by the limited options for expanding her business.



**SITA**

Sita is a customer service executive at a local social enterprise; she often makes visits to customers to solve problems directly, and she likes being able to connect with people regularly as part of her work. She is well known in her community; she knows her work is helping people and that they appreciate her. Being employed part-time and job-sharing with another colleague gives her a good balance of work and time to spend with her children; she loves taking part in community events and festivals. Her health is okay; her line manager checks-in regularly on her wellbeing and put her in touch with a local women's work support group that also advises on health issues. Though she's grateful, she worries that she has little extra money to put aside for the future and would like a bit more support from her employer; she is asking them for a health insurance plan for her family.



**JAHAR**

Jahar works informally at the docks doing manual labour. He doesn't have a contract, but basic health and safety standards are respected; there is a company-provided workers adviser who helps with issues such as setting up a savings account and advising on how to get out of debt. Jahar has come to the city to earn enough money to help pay for his and his siblings' education to set up a farm co-operative back home. He lives in a cheap slum for the moment to keep his costs down. Basic health and safety standards are respected and the company workers adviser has shown him how to register at the local clinic so that he can access low cost healthcare when he needs it. Work is hard and demanding, and he is determined to leave as soon as he has saved enough money, but he is able to bear it as he feels his situation is temporary and that he is saving money for a good purpose.

## Signals of change



An immersive journalism project aims to boost empathy with Syrian refugees through the use of virtual reality (VR). Participants can 'experience' the war via elements like a realistic rocket attack and a refugee camp.

(source: Futures Centre)

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source: Flickr

Sweden is shifting to a 6 hour workday; companies and organisations from both private and public sectors have trialed the practice and reported positive results.

(source: FastCo Exist)



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source: Flickr



Several Dutch cities are experimenting with unconditional basic income payments; Utrecht and Tilburg are testing the policy and six other cities are considering pilot projects. In addition, a rural India pilot of an unconditional basic income scheme has recently been deemed a success that "transformed lives" by improving welfare and emancipation and boosting local economic activity.

(source: The Guardian)

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