

CEOforesight

Whatever Next

July 2021



Whatever Next

Contents

Introduction	3
A brave new world.....	5
The skills and talent imperative	6
Economic scenarios: Stagnation, Trend or Roaring 20's?.....	6
Network of Networks.....	7
Customer change	8
Exponential era.....	9
Connectivity & Interactivity.....	10
Distributed everything	11
An era of enhanced regulation?	12
Decarbonisation.....	13
Circular economy & Materials revolution.....	14
Accelerated Health.....	15
Personal Manufacturing	16
Why Foresight makes all the difference	17
References.....	19

Introduction

The assumptions we were operating on in a pre-pandemic world were already straining at the seams. Sustainability, changing consumer wants and uncertain world order all created uncertainty and demanded change. At the same time, the friction from advanced technologies with legacy business, political and economic systems under strain began to expose the opportunities and challenges of the digital age. Given that ‘pandemics change history by transforming populations, states, societies, economies, norms, and governing structures’ many assumptions are now actively being reworked or else are broken.

"the assumptions on which the organization has been built and is being run no longer fit reality."

Peter Drucker

While the impacts of the pandemic will reverberate for years, many of the short-term trends we see offer at best a glimpse, and at worst a misrepresentation of the deep-seated mega-trends that will ultimately impose a greater degree of change for most companies. Forces larger and more complex than many standard industry-level trends, that are interrogated by tools such as Porter’s Five Forces, are now a part of our operating environment. A yearly competitive analysis of predefined competitors no longer suffices. New processes, new sources of competition and cooperation, not to mention new sources of advantage are emerging and cannot be ignored.

McKinsey suggests that in the next decade we will experience more progress than in the last 100 years combined as technology reshapes health and material sciences, energy, transportation and a wide range of other industries and domains. The implications for corporations are broadⁱⁱ. Despite such potential change we are still trying to compete in the 2010’s. Between 2010-2020, business and governments worldwide spent an estimated \$35trillion on Information Technology (IT). Around 3/4 went to operating and maintaining existing IT systems. \$2.5tn was spent trying to replace ageing, inappropriate and legacy IT systems, of which \$720bn was wasted on failed effortsⁱⁱⁱ. In a world that has just witnessed 5.3 years of digital transformation in just one year, and is ripe for the use of machine learning, advanced analytics and widespread sensors (internet of Things), this imbalance towards legacy is unsustainable – for our customers, our workforce and our corporate survival.

The Root causes of decline in public firms:

- *60% strategic risks.*
- *30% operational risks.*
- *10% financial risks.*

The Society of Actuaries

The compression of this tech horizon, and convergence of very many human trends – such as demographics and changing values or demands, mean that every company needs a plan to deal with these trends. Given the complex interplay between so many trends, pathways are needed for transforming the underlying organisation and business model. This is where foresight is used to great effect, to help create a more effective early-warning radar of the opportunities and challenges that will likely arise and help instil the agility needed to operate in an era of discontinuity. In this piece, we will guide you through some of the key megatrends impacting us, point out a selection of their disruptive implications and propose a way of systematically dealing with this ever-accelerating challenge.



A brave new world

US/China, Brexit et al, Politicisation of everything including business

Beyond the day-to-day and even year-to-year churn of politics, fundamental changes to what we have become accustomed to as our operating environment are underway, and far from finished. Nearly three-quarters of the earth's people now live in a country where democracy is declining^{iv}. Partly facilitated by the rise of China, the rule of law is becoming imperilled in more places, fundamentally challenging global regulatory standards^v. The assumption of a rising global economic tide is also being questioned; the NIC for one sees regional growth differences as growing more pronounced by 2040^{vi}. Indeed, the global stock of financial wealth could grow in the next five years from \$250tn to \$315tn, with N.America contributing \$25tn of the forecast \$65tn increase in global wealth to 2025, followed by Asia on \$22tn^{vii}. The knock on for regional stability, international migration and geopolitics could be profound. In the longer term – say by 2050 – ‘growth in distributed systems, quantum computing, 3D printing, crypto currencies, biotech and climate change will cause drastic shifts. Nation-state power could decline considerably, giving way to autonomous regions, megacities and private interests^{viii}.’ Interestingly, Futurist, Alvin Toffler foresaw this in 1973 in his book ‘Future Shock’.

'Brands can no longer please both China and the West. They're going to have to pick a side, and there will be fallout whatever they choose¹.'

Fast Company.

Disruptive Implications:

- Trust in institutions from governments to civil society organisations will wane, shifting more pressure onto companies to speak out on various causes.
- Growing global uncertainty likely to lead to increased conflict and volatility, necessitating more agile supply chains.
- Regional strategies will need to become ever more granular, perhaps even down to the city level.
- Businesses will increasingly need to build for resiliency, be able to scale quickly when opportunities arise, and devise a foreign policy of sorts.
- On the other hand, being asset-light in risky geographies may become a commonplace strategy.

The skills and talent imperative

Around half of executives believe that the pandemic and its aftermath will destroy traditional non-digital businesses^{ix}. Contemporary skills will not be good enough for the jobs of tomorrow, as even newly acquired skills quickly become obsolete^x. New ways of working, team formation, collaboration across multiple industries and public-private spaces will all demand a new range of skills. Charged by the pandemic, this shift could accelerate the prediction that by 2024, more than one-third of the skills believed essential for today's workforce will change^{xi}.

Disruptive implications:

- What we do, how we do it, where we do it and who we do it with, will change.
- New talent pools, talent platforms and forms of borderless global work will appear.
- Over half of HR execs say that if their department doesn't modernise its approach, it will become irrelevant within the modern and future organisation^{xii}.
- Just 23 percent of companies that have already started a skill transformation programme say that they have implemented dynamic tracking of the workforce's performance and overall impact on the business^{xiii}.
- New skills require new metrics and new organisation structures.

'In advanced economies by 2030, around a quarter more people will likely need to change their field of work than was predicted before the pandemic, with 'a markedly different mix of occupations,' emerging'

McKinsey. Across the eight largest economies, this could impact around 100m people¹.

Economic scenarios: Stagnation, Trend or Roaring 20's?

Of the three future economic scenarios of GDP growth, created by CEOforesight's Chief Economist, Graeme Leach, the most likely outcome is the 'Trend' growth scenario of around 2 percent per annum GDP growth from 2023 onwards.

In the first scenario, 'Stagnation', which describes the weakest economic scenario with post-pandemic recovery of just 1 percent per annum GDP growth over the period 2023-2030. Constant fears of further virus mutations undermines business and consumer confidence. Significant scarring occurs – a permanent reduction in output growth from lost capacity - over the course of the pandemic, in particularly vulnerable sectors such as travel and tourism.

In the second scenario, 'Trend', we see GDP growth of 2 percent per annum over the 2023-2030 period, following a post-pandemic bounce. Herd immunity is obtained by the Autumn of 2021 and vaccines continue to be effective against mutations of the Covid-19 virus. Minimal scarring effects occur.

In the third scenario, the 'Roaring Twenties', we see the strongest economic scenario with post-pandemic recovery of 3 percent per annum GDP growth over the 2023-2030 period, after extraordinarily strong recovery in 2021-22. In place of scarring the pandemic accelerates the digital technological revolution and triggers a significant acceleration in productivity growth.

Disruptive implications:

- A wider range of outcomes needs to be accounted and planned for via scenarios.
- A wide range consumer demands are likely to hinge, to some extent, on the strength of the economic recovery (such as demands for sustainable products).
- Assumptions of business as usual are eroded through all scenarios – not even the 'Trend' scenario should be considered a continuation. Change is guaranteed – only the direction and pace is somewhat uncertain.

Network of Networks

'Ecosystems can provide fast access to external capabilities that may be too expensive to build within a single company. However, less than 15% of ecosystems end up being sustainable in the long run'

MIT Sloan.

Ecosystems are becoming key concepts for extending reach and collaborating. By 2025, 30 percent of global GDP is forecast to be generated via ecosystems^{xiv}. Another suggestion is that some 70 percent of new value created in the economy over the next decade will be based on digitally enabled platform business models^{xv}. Whether a company pursues its own plans for forming an ecosystem or else joins an existing effort depends largely on its starting point, ability to scale capabilities to fulfil new roles and ultimately, its desired goals.

Disruptive implications:

- Collaboration is key to ecosystem success, which often has underappreciated technical aspects to it. There can be little meaningful collaboration in an

operational sense if data systems cannot talk to one another, or if different standards are in use. In fact, this very issue has prevented many opportunities.

- As technologies, ecosystems and start-ups converge, we have the ability to redefine not just how we do things, but what it is we actually do.
- In pivoting away from traditional supply chains and stockpiles, manufacturing and services could coalesce into on-demand digital ecosystems that offer companies a more robust and flexible value chain, and new revenue streams.
- There is no guaranteed or set role for companies working in ecosystems – they must bring and demonstrate value to a wide range of stakeholders.

Customer change

Demographics, Tech-use, Lifestyles, Ageing, Trust, GenZ

Processes and systems, especially in the intelligent age, must be based around people first. Customers, first and foremost, want problems solved – something that often goes beyond individual business silos or indeed, even an app. New data infrastructures will be required. Real-time, multidirectional data will deliver contextual information and insight, demanding a unified view of the customer and appropriate data flows across the organisation. Regaining consumer trust is a prerequisite in the coming era, that could see consumers treat their data as the asset it is.

‘AI is central to such efforts, with consumers expecting interactions with brands to be on their terms and full of personalised experiences.’

Increasingly, consumers are expecting their tech to do more, for example: 56 percent of global consumers are saying that they expect telecom service providers to anticipate their needs even before they know themselves^{xvi}. Indeed, the next decade will be shaped by Generation Z reaching maturity, the largest generational cohort in history^{xvii}. However, only 31 percent of execs are completely confident in their ability to foresee, and respond to, behavioural changes that affect demand^{xviii}. The emergence of the behavioural economy will also require entrants to have empathy with new thinking opinionated cohorts.

Disruptive implications:

- Consumer data may not be as easily harvested as before. 67 percent of consumers express a wish to be able to decide how and what data is shared online^{xix}.
- Corporate and organisational use of tech must advance to the level of their customers.
- Choosing when to engage customers will become problematic.

- Consumers could become more willing to switch brands or service providers if prompted to by their personal virtual assistant or other data aggregators.
- Consumer demands will enable services and products to be deconstructed and then reconstructed from the ground up. ‘What is the core aim of a given product or service and how best could it be satisfied?’ is likely to yield a very different result from asking ‘How do we innovate our current offerings?’

Exponential era

Digital becomes intelligent, and then biological

McKinsey analysis shows that the speed of tech adoption is a key variable that puts distance between front-runners, followers, and laggards^{xx}. Only 7 percent of organisations today have made the necessary investments in data science and Artificial Intelligence (AI) to be considered ‘future-ready.’ In three years, about one-third of firms are forecast as being ‘future-ready^{xxi}.’ The bio era is thought by some to have the potential to equal the advances made in the industrial revolution and dwarf that even of the digital era. One less ambitious estimate still suggests the direct annual global impact of the bio revolution could be \$2 trillion to \$4 trillion in 2030-40.

Disruptive implications:

- AI compels strategic and operational change. How to engage customers, workers and third parties will be forever changed.
- AI and workforce interactions will require a new level of change management, a renewed drive for creating ‘learning organisations,’ and a deeper, strategic consideration of future workforce composition.
- AI will redefine the nature of relationships companies have with others in the value-chain. It will enable companies previously considered inconsequential to a given market to quickly establish a position and role should they wish to.

‘90 percent of executives agree that the crisis will fundamentally change the way they do business over the next four years. The main driver of this? 85 percent foresee major changes to their customers’ needs and wants’

McKinsey.

Connectivity & Interactivity

56, 6G, IoT, VR

This ‘transformational impact,’ of the IoT is said by Gartner to be just one to four years away. ‘In a future world, we won’t need to initiate contact with technology – it will initiate and maintain contact with us.’

SAP¹.

How we interact with the world – both physical and digital - is changing. An ambient work environment, sensing everyone and everything ubiquitously, will require new ways of thinking and succeeding. Real-time business will shift the nature of competitive advantage^{xxii}, and require whole new gauges of success. Today’s efforts at personalisation will likely fall well-short of what will be possible this decade. An Ericsson study suggests that by 2030, 62 percent think game consoles will make original games based on users – and close to 70 percent believe that social network AI will understand your

personality and build up a circle of friends that is good for your mental and physical wellbeing^{xxiii}. Highly personalised and responsive offers will become commonplace and make static offers irrelevant.

Disruptive implications:

- Ambient connectivity redraws the where, why, how, and what of business in fundamental ways.
- Over 1 billion people use apps or software that augment or simulate reality today, and two-thirds say they let augmented reality sway their buying decisions^{xxiv}.
- New markets will appear at the intersection of two or more traditional market segments, enabled by ambient connectivity and interactivity.
- Enhanced coverage will enable new services (e.g. remote services), business models (e.g. connected services) and next generation customer experiences (e.g. live Virtual Reality (VR))^{xxv}.
- Data, and access to external data, will become critical.

‘Edge computing is necessary to enable the next-generation industrial revolution,’ with AI and other automation tech dependent on it.

MIT Tech Review.

‘Blockchain (DLT) can change not just how a company works, but what a company can actually do.’

Harvard Business Review.

Distributed everything

DeFi, Edge computing, DLT (Blockchain)

Several technologies are coalescing to decentralise processes, businesses and life itself. Machine-to-machine connections are expected to account for 51 percent of global devices and connections in 2021^{vi}, necessitating consideration of the cloud, edge computing and even blockchain, for example. Every second, there are 127 Internet of Things (IoT) devices that are getting connected to the internet^{vii}. Real time IoT data will become central to business models across a range of sectors, and both involve and instigate a range of other technologies, from edge computing, artificial intelligence, and various user interfaces to engage with this data at the point of origin (the edge) – enabling real time interaction, insight and decision making.

Disruptive implications:

- DLT (Distributed Ledger Technology) offers the potential for mutualised infrastructure for managing shared data and workflows^{xxvi}.
- Demand for on-premises IT infrastructure and need for IT setup/ maintenance could decline, while the democratisation of infrastructure shifts competitive advantage towards software development and talent: McKinsey^{xxvii}.
- External data will become key for developing (contextual) customer-centric products and services.
- The Edge could also reshape what it is that industries do. Edge computing will likely shift the nature of the insurance industry from 'compensation,' to 'prevention,' for example, and in doing so draw new players into the space.



An era of enhanced regulation?

Data, Sustainability, AI

Our regulatory standards are ill equipped to deal with a wave of technological and sustainability related issues. As a result we are likely to see regulatory sandboxes appear that make room for innovation in controlled spaces, soft laws that allow government to quickly adapt to issues as they arise (but not legally binding) while

With ‘...everything now sending data signals, companies need to have a way to future-proof their ability to manipulate this data.’

risk-based regulations could allow government to assess on a case-by-case basis^{xxviii}. AI regulation is undoubtedly coming, but clarity is missing as to what organisations can or should do^{xxix}. 46 percent of regular users of virtual assistants say that, by 2030, AI devices will be required by law to explain what they do^{xxx}. The wider nature of digital business also creates a host of challenges regarding the nature of risk

changes as third parties are brought into new ecosystems, while compliance and regulations also shift accordingly - especially regarding data.

Externalities may also increasingly appear on balance sheets and investor reports, while consumers show an appetite for moving beyond polluting products and processes. There is a good chance climate-related financial disclosures will become mandatory at some stage in the first half of the decade. Technologies that enable greater transparency into asset-level data are also developing fast^{xxxi}. The U.K. has already introduced legislation that requires companies to report on their climate change impact by 2025^{xxxii}.

Disruptive implications:

- With most IoT using organisations having limited visibility to their network, let alone their exposure to IoT cyber risk, new standards will likely be needed. While today only about 20 percent of enterprise data is being produced and processed outside of centralised data-centres, by 2025, that is expected to rise to 75 percent and could even reach 90 percent around 2030 or later^{xxxiii}.
- Issues of liability abound, and cybersecurity should be a key component of any assembled ecosystem that organisations participate in.
- AI is not only a new type of software but also an entirely new type of corporate risk. The looming legal liability surrounding biased data or a faulty decision made by an automated system poses a risk to businesses^{xxxiv}.

‘The very data we use to inform strategy could prove a liability if such contextual data reveals privacy invasion or poor data management practices.’

Decarbonisation

Sustainability is a key regulatory, investor, consumer and in some cases, ecosystem driver of change. Although the sustainability agenda is arguably wider, for many the focus will be on de-carbonising products, services and the value chain. The main levers of this transformation, notes Ernst & Young 'are cost competitive renewables, the "electrification of everything" (transportation, heating, industrial operations, etc.) with clean energy, digitally-optimized efficiency and the adoption of decentralised energy generation, particularly by corporates^{xxxv}.' A new industry dedicated to decarbonisation could become a major player, with Heirloom Carbon Technologies believing it can pull off carbon removal for \$50 a tonne and aiming to remove one billion tonnes by 2035^{xxxvi}.

More than half of companies are not making carbon neutral changes fast enough, putting their Net Zero by 2050 goals in jeopardy. Most are delaying significant action until after 2030, making the next few years a 'lost decade'.

Standard Chartered

Disruptive implications:

- Radical transparency is coming, whether individual organisations prompt it or are prepared for it. Oversight into third party and supply chain are no longer optional.
- When sustainability is mandated or widespread, it no longer forms a source of competitive advantage. The need to demonstrate higher purpose will become pressing.
- Sustainability is increasingly likely to form a key KPI, not just for investors, but consumers becoming more aware of the impact and link between humans and the natural world.
- New partnerships, both within and external to a given industry are likely necessary.
- \$1.26Tn in revenue losses anticipated for suppliers by 2026 due to climate change, deforestation, and water insecurity. Corporate buyers also stand to inherit \$120bn in increased environmental costs by 2026^{xxxvii}.

Circular economy & Materials revolution

A circular economy goes beyond the pursuit of waste prevention and waste reduction to inspire technological, organisational, and social innovation across and within value chains. A circular economy is one that is restorative and regenerative by design – it is about optimisation of value circulation, not the prevention of waste generation per se. The shift to a sustainable, low-carbon, circular bioeconomy represents a business opportunity worth \$7.7 trillion by 2030. Materials could soon be designed with reuse in mind, or even as energy efficient inputs into secondary processes

'By 2029, the circular economy will be the only economy, replacing wasteful linear economies.'

Gartner

Disruptive implications:

- '90 percent of companies feel as though they need to change their core business model at least somewhat to operate within a truly sustainable economy, and 38 percent feel that their core business model will need to change radically^{xxxviii}.'
- Collaboration up and down stream will be required, perhaps with cross-industry solutions emerging via new ecosystem partnerships.
- Executives need to recognise that all future business models will be part of greater networks, all of which need to be rooted in sustainability.
- By changing the economics of a wide range of products and services, next-gen materials will likely change industry economics and reconfigure companies within them.



Accelerated Health

Healthcare is moving toward patient-centric models that seek to prevent disease as much as cure it. Although new regulatory, organisational, and business models are needed, 96 percent agree that the future of healthcare will be people-driven^{xxxix}, while 68 percent expect this scenario to be the norm in major healthcare markets by 2030.

'...we're going to see Apple and Amazon and Google and all the data-driven companies that are in our homes right now become our healthcare providers.'

Peter Diamandis

The pandemic will likely come to be regarded as a time of great scientific and healthcare progress. In 2019, close to 80 percent of health spending went to care and treatment. By 2040, we may see 60 percent of spending tilted toward improving healthcare and wellbeing^{xl}. The mRNA technology used for the vaccine could serve as the solution for HIV, sickle cell, and malaria^{xli}. Indeed, the bio-revolution could address around 45 percent of global diseases using science and technology that already exists^{xlii}. Patient-centric, personalised healthcare will give rise to an

enlarged healthcare ecosystem, encompassing food (nutraceuticals), leisure, big tech, construction companies and more non-traditional players

Disruptive implications:

- 'Patients and healthcare workers will demand a better, more flexible experience all around...in an interconnected world employees have choices and patients have choices^{xliii},' says Dr. Sam Amirfar, CIO of the Brooklyn Hospital Center
- Homes – and other places (both physical and digital) could become key health, wellbeing and convalescence settings.
- The value of healthcare data will increase, requiring a new value proposition to be given to customers in exchange.
- Different medical and health scenarios will be explored with digital twins^{xliiv}, opening the space for personal health consultants.
- Once the notion of personalised healthcare is established and accepted, human augmentation looms as a an ethical, moral and regulatory conundrum.

Personal Manufacturing

3D printing/ 4D printing / Nanofactories / Personalisation

How, where and what we manufacture is set to change. Additive manufacturing, or AM (3D or 4D printing), for example, could radically redraw manufacturing geographies. Pre-pandemic studies from 2019 estimate the impact of AM on global trade range anywhere from lowering it by 10 percent to 40 percent by 2030^{xiv}. This could prove conservative since it only accounts for direct impacts on enabling production closer to end consumers; the lower calculation does not account for the likely event that these very same dynamics drive more regionalisation, more reshoring, and a general shift in what and how we trade^{xvi}. Meanwhile, Unilever's new nano-factories fit in a shipping container and are designed to make small batches of products with local sources^{xvii}. AM plus distributed manufacturing could integrate into existing workflows, significantly shifting the ways in which we develop, create and source goods. This vision is closer than many think – it is already possible to personalise medications using 3D printing^{xviii}.

Disruptive implications:

- Organisations should start thinking of co-creation as an output, by designing tools and platforms that enable people to create for themselves and contribute^{xlix}.
- Despite 90 percent of manufacturers regarding tech to improve productivity, only about one in four see opportunities to use these advances to build new revenue streams^l.
- Intellectual property rights, trade in services and data transfer are all areas 3D printing is likely to disrupt^{li}.
- Smash-up businesses and sectors will ensue^{lii}, with new capabilities and skills required.

'We're fast approaching a world where AI can find an optimal product design, determine if and how to manufacture it, and reconfigure factories for these one-off products,'

MIT Technology Review¹.

Why Foresight makes all the difference

Dealing with one of these trends is difficult enough; combining the impact of multiples of them requires a new approach. Foresight complements existing strategic processes and models. While the latter are often internally generated, foresight can be both internally and externally generated. In fact, evidence suggests that externally generated foresight can prove extremely valuable for organisations. A Harvard Business Review study of 284 forecasters – over 20 years – found that ‘experts were found to be less accurate than non-experts in their areas of expertise^{liii}.’ Standard forecasting no longer works in marketplaces featuring more external influence than ever and so expertise in one given domain cannot accurately predict future developments. An outside-in perspective delivers superior results.

Even when internally funded and sustained, foresight has a clear business rationale. One of the most recent, large-scale surveys conducted, of 145 major European multinationals, found that 89 percent have had special corporate foresight function for at least one year, and 65 percent for more than six years^{liv}. More than 80 percent of CEOs agreed (fully or partially) that corporate foresight had made tangible contribution to enhancing their strategic functionality^{lv}.

The Aarhus University Business School found that future vigilant firms achieved, on average, 16 percent profitability, which surpassed the overall industry average profitability of 12 percent, and made future vigilant firms 33 percent more profitable than the average^{lvi}.

Flowing from the last global crisis of 2008, longitudinal research has shown that ‘...firms that implemented appropriate corporate foresight practices related to their business environment in 2008 were more profitable and enjoyed a significantly higher market capitalisation in 2015 than those that didn’t^{lvii}.’ These organisations are on average better prepared for the future(s) that could unfold and therefore stand an increased chance of long-term sustainability and success.

Another study of over 300 multinational companies found that companies who are the most future prepared are 44 percent more likely to be outperformers in their markets.

Aarhus University Business School

Foresight can also help in improving the intangible. Culture, quite rightly, is often held as both a block on transformation and a key reason for inertia, as well as a key criterion for enabling change. Cultural change is notoriously slow and difficult, and there are few proven ways of directly improving it. However, a report from the Royal Society of Arts (RSA) suggests that ‘...organisations that question the long-term role

they play in a system and that continue to change to be relevant and supportive of that future are more adaptive and resilient as a result^{lviii}.’ This notion is supported by those who have instilled foresight at leading corporate practitioners of it. Yvette Salvatico, one of the founders of the foresight division at Walt Disney, says that ‘...the power of strategic foresight lies not primarily...in its ability to alter minds and perspectives (and it’s) ability to truly alter their organisational culture^{lix}.’

‘If the core business is marching toward oblivion, there is no sense in trying to improve it.’

The adoption of foresight at the centre of an organisation can help redress the imbalance in our thinking and models biased towards the short-term and based on the past. Deep-seated change is needed, and while foresight doesn’t guarantee survival, futures thinking done well can help, in:

- Challenging your view of the world and your base assumptions.
- Preventing institutional blindness.
- Constantly assessing the wider context in which your business operates.
- Prevent rigidity throughout the organisation and developing agility.

Futurism isn’t an exact science but it’s better to be roughly write than precisely wrong, while working in an era of uncertainty frequently requires us to ask the right questions as opposed to always having the right answers.

The goal of futures thinking is not to predict the future per se. At its core, futures thinking lends us a sort of mental flexibility, as well as the ability to think through trends and possibilities that are outside mainstream thought and hence easily dismissed. This allows stakeholders to have structured conversations about uncertainty.

We would love to be involved in your discussions or see how we can help prompt such conversations internally, contact myself, David Smith, CEO of CEOforesight, at david.smith@thegff.com or give me a call at +44 (0)7932 408901 or contact Graeme Leach, Chief Economist, CEOforesight at Graeme.Leach@thegff.com or on (0)7446 879958.

See more at <http://www.CEOforesight.com>

References

- ⁱ Source: Center For Strategic & International Studies, 2020 <https://www.csis.org/analysis/covid-19-reshapes-future>
- ⁱⁱ Source: McKinsey, 2021 <https://www.mckinsey.com/~media/mckinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/The%20top%20trends%20in%20tech%20final/echTrendsExecSummary>
- ⁱⁱⁱ Source: IEEE, 2021 <https://spectrum.ieee.org/computing/it/inside-hidden-world-legacy-it-systems>
- ^{iv} Source: Fast Company, 2021 <https://www.fastcompany.com/90610614/the-worlds-dramatic-retreat-from-democracy-in-one-chart>
- ^v Source: Nikkei Asia, 2021 <https://asia.nikkei.com/Opinion/The-dangerous-legal-war-posing-a-new-threat-to-China-US-relations>
- ^{vi} Source: NIC, accessed via New Security Beat, 2021, <https://www.newsecuritybeat.org/2021/06/nics-global-trends-2040-report-development-outlook/>
- ^{vii} Source: Financial Times, 2021 <https://www.ft.com/content/3bb1a400-2303-4157-b89d-5b3f281fb04>
- ^{viii} Source: Interesting Engineering, 2021 <https://interestingengineering.com/warfare-in-2050-what-to-expect>
- ^{ix} Source: Forbes, 2021 <https://www.forbes.com/sites/cognizant/2021/05/04/how-to-embrace-the-post-pandemic-digital-driven-future-of-work/?sh=2c4bdd725ac4&sf143326425=1>
- ^x Source: Harvard Business Review, 2020 <https://hbr.org/2020/07/what-would-it-take-to-reskill-entire-industries>
- ^{xi} Source: Forbes, 2019 <https://www.forbes.com/sites/bernardmarr/2019/04/29/the-10-vital-skills-you-will-need-for-the-future-of-work/#248766693f5b>
- ^{xii} Source: Business2Community, citing KPMG, 2020 <https://www.business2community.com/human-resources/the-future-of-hr-requires-talent-optimization-02275155>
- ^{xiii} Source: McKinsey, 2021 <https://www.mckinsey.com/business-functions/organization/our-insights/building-workforce-skills-at-scale-to-thrive-during-and-after-the-covid-19-crisis>
- ^{xiv} Source: McKinsey, 2018 <https://www.mckinsey.com/industries/financial-services/our-insights/insurance-beyond-digital-the-rise-of-ecosystems-and-platforms>
- ^{xv} Source: World Economic Forum, retrieved 2021 <https://www.weforum.org/platforms/shaping-the-future-of-digital-economy-and-new-value-creation>
- ^{xvi} Source: Ericsson, 2019 <https://www.ericsson.com/en/blog/2019/6/ai-in-telecom>
- ^{xvii} Source: EY, 2020 https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/megatrends/ey-megatrends-2020-report.pdf
- ^{xviii} Source: Accenture, 2021 <https://www.accenture.com/us-en/insights/consulting/business-change>
- ^{xix} Source: Ericsson, 2021 <https://www.ericsson.com/en/blog/2021/5/online-security-consumer-perspectives>
- ^{xx} Source: McKinsey, 2021 <https://www.mckinsey.com/~media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/a%20manufacturers%20guide%20to%20generating%20value%20at%20scale%20with%20iiot/leveraging-industrial-iiot-and-advanced-technologies-for-digital-transformation.pdf>
- ^{xxi} Source: Datanami, 2021 <https://www.datanami.com/2021/02/18/the-data-and-ai-habits-of-future-ready-companies/>
- ^{xxii} Source: Sap Insights, 2021 <https://insights.sap.com/sensors-extending-the-reach-of-human-perception/>
- ^{xxiii} Source: Ericsson, 2020 <https://www.ericsson.com/en/press-releases/2020/12/intelligent-connected-machines-to-be-a-major-part-of-life-by-2030-consumers-predict>
- ^{xxiv} Source: BDEX, retrieved 2021 <https://www.bdex.com/ar-vr-social-media-marketing/>
- ^{xxv} Source: McKinsey, 2021 <https://www.mckinsey.com/~media/mckinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/The%20top%20trends%20in%20tech%20final/echTrendsExecSummary>
- ^{xxvi} Source: World Economic Forum, 2021 <https://www.weforum.org/reports/digital-assets-distributed-ledger-technology-and-the-future-of-capital-markets?linkid=117981620>
- ^{xxvii} Source: Harvard Business Review, 2021 <https://www.mckinsey.com/~media/mckinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/The%20top%20trends%20in%20tech%20final/echTrendsExecSummary>
- ^{xxviii} Source: Deloitte, 2021 <https://www2.deloitte.com/us/en/insights/industry/public-sector/government-trends/2021/agile-at-scale-in-government.html>
- ^{xxix} Source: Harvard Business Review, 2021 <https://hbr.org/2021/04/new-ai-regulations-are-coming-is-your-organization-ready>
- ^{xxx} Source: Ericsson, 2020 <https://www.ericsson.com/en/reports-and-papers/consumerlab/reports/10-hot-consumer-trends-2030-connected-intelligent-machines>
- ^{xxxi} Source: WBCSD, 2020 https://docs.wbcsd.org/2020/05/WBCSD_V2050IB_MacroTrends_Disruptions_20202030.pdf
- ^{xxxii} Source: Wall Street Journal, 2020 <https://www.wsj.com/articles/u-k-requires-companies-to-report-on-climate-change-by-2025-11604964183>
- ^{xxxiii} Source: Tucci, I 'The shift to edge computing is happening fast -- here's why,' 2019 <https://searchcio.techtarget.com/feature/The-shift-to-edge-computing-is-happening-fast-heres-why>
- ^{xxxiv} Source: SAP Insights, 2021 <https://insights.sap.com/ai-buyer-beware-ai-liability/>
- ^{xxxv} Source: Ernst&Young, 2020 https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/megatrends/ey-megatrends-2020-report.pdf
- ^{xxxvi} Source: MIT Technology Review, 2021 <https://www.technologyreview.com/2021/05/26/1025402/heirloom-stripe-breakthrough-energy-lowercarbon-carbon-removal>
- ^{xxxvii} Source: Forbes, 2021 <https://www.forbes.com/sites/rosecelestine/2021/03/05/climate-change-will-cost-companies-13-trillion-by-2026/?sh=2057052d6cdd>
- ^{xxxviii} Source: Bain, 2020 <https://www.bain.com/insights/sustainability-is-the-next-digital/>
- ^{xxxix} Source: Strategy&, 2020 <https://www.strategyand.pwc.com/gx/en/insights/future-of-health.html>
- ^{xl} Source: Deloitte, 2021 <https://www2.deloitte.com/us/en/insights/industry/health-care/future-health-care-spending.html>
- ^{xli} Source: MIT Technology Review, 2021 <https://www.technologyreview.com/2021/02/05/1017366/messenger-ma-vaccines-covid-hiv>
- ^{xlii} Source: World Economic Forum, 2021 <https://www.weforum.org/agenda/2021/05/the-biorevolution-is-kicking-off-heres-how-to-harness-its-opportunities-early-on>
- ^{xliii} Source: CIO.com <https://www.cio.com/article/3616598/the-future-of-work-phase-two.html>
- ^{xliiii} Source: Medical Xpress, 2021 <https://medicalxpress.com/news/2021-03-digital-twins-proactive-personalized-medicine.html>
- ^{xlv} Source: VOXEU, 2019 <https://voxeu.org/article/trade-effects-3d-printing>
- ^{xlvi} Source: McKinsey, 2019 <https://www.mckinsey.com/featured-insights/innovation-and-growth/globalization-in-transition-the-future-of-trade-and-value-chains>
- ^{xlvii} Source: Fast Company, 2021 <https://www.fastcompany.com/90597168/unilevers-new-nano-factories-fit-in-a-shipping-container-so-they-can-go-anywhere-in-the-world>
- ^{xlviii} Source: Medical Xpress, 2021 <https://medicalxpress.com/news/2021-05-personalized-medications-3d.html>
- ^{xlix} Source: Accenture, 2021 <https://www.accenture.com/us-en/insights/interactive/fjord-trends-do-it-yourself-innovation>
- ⁱ Source: IndustryWeek, 2016 <https://www.industryweek.com/technology-and-iiot/article/22006106/us-manufacturers-too-slow-to-adopt-industry-40-bcg-study>
- ⁱⁱ Source: Economist, 2021 <https://deliverchange.economist.com/article/unintended-consequences-unexpected-benefits/>
- ⁱⁱⁱ Source: strategy+business, 2019 <https://www.strategy-business.com/blog/Gain-trust-and-project-order-in-turbulent-times?gko=80c54&sf226248793=1>
- ^{iv} Source: Futures Platform, 2019 <https://www.futuresplatform.com/blog/why-broad-horizon-matters-foresight>
- ^{lv} Source: Higher School of Economics, 2019 <https://wp.hse.ru/data/2019/09/11/1537968307/97STI2019.pdf>
- ^{lv} Source: Higher School of Economics, 2019 <https://wp.hse.ru/data/2019/09/11/1537968307/97STI2019.pdf>
- ^{lvi} Source: Research Gate, 2018 https://www.researchgate.net/publication/325145321_Corporate_Foresight_Benchmarking_Report_2018_How_Leading_Firms_Build_a_Superior_Position_in_Markets_of_the_Future
- ^{lvii} Source: European Business Review, 2020 <https://www.europeanbusinessreview.com/corporate-foresight-in-an-ever-turbulent-era/>
- ^{lviii} Source: The RSA, 2020 <https://www.thersa.org/globalassets/foundation/new-site-blocks-and-images/reports/2020/10/rsa-stitch-in-time.pdf>
- ^{lix} Source: Higher School of Economics, 2019 <https://wp.hse.ru/data/2019/09/11/1537968307/97STI2019.pdf>