

WORLD ECONOMIC FORUM

Business Strategy & Transformation

STRATEGIC INTELLIGENCE BRIEFING

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Executive summary

Explore the interactive version online

Business Transformation , Managing Transformation in Digital, Human, Sustainability Uncertainty Intelligence Map - insights and perspectives curated by Digoshen via World Economic Forum Strategic insights and contextual intelligence.

The key issues shaping and influencing Business Strategy & Transformation are as follows:

The Venture Lifecycle
Whether it remains independent or is acquired, a venture will follow its own development path

Deeper Intelligence
More ambitious, timely, and granular monitoring of policymaking and opportunities is essential in the Chinese market

Clear Strategic Choice
There are a few fundamental strategic options for foreign businesses to pursue in China

Strategy and Business Model Innovation
Firms need to zero in on the durability and sustainability of their designs and systems

Effective Execution
Decision making for a China-based subsidiary should not be taken in too self-referential a manner

Purpose-Driven Strategy and Capital Allocation
A focus on 'stakeholder capitalism' necessitates shifting away from seeing sustainability primarily as a marketing challenge

Business Model Innovation
Developing new business models can rewrite the rules of an industry

New Value and Markets
Technology is restructuring industries and redefining business value

Values, Ethics, and Integrity
Good faith efforts to do no harm and reduce negative externalities are necessary

New Digital Business Models
Technology-enabled models can help companies provide value and build resilience

Legal and Regulatory Evolution
Proactive engagement with global legal and regulatory developments can foster preparedness

The Business and Economy of Data
Legitimate questions have been raised about advantages afforded to digital incumbents

Edge AI
AI may soon be run directly in devices and IoT sensors more often

Integrated Decarbonization Technology Strategy
No single technical approach will successfully decarbonize all hard-to-abate sectors

5G Business Model Transformation
The technology is a critical enabler of driverless cars, efficient factories and smarter power use

Consumer Trust and Transparency
In countries where consumer spending is needed to fuel the global economy, trust in businesses is lagging

Technology Adoption

Cross Industry Partnerships
Developing technology, human and market solutions to accelerate the energy transition to the pace needed requires cross-sectoral, cross-geographic collaboration

Integrated Oversight and Disclosure
Compliance and sustainability issues tend to be siloed in the US, but companies in Europe generally take a more integrated approach

Shifting Mobility Demand Patterns
Shifting consumer preferences and higher costs have triggered speculation about 'peak auto'

Decoupling Growth from Resource Use
Science suggests breaking the destructive link between economic growth and natural resource use is possible

Behaviour and Governance
Behavioural insights are informing policy-making and encouraging civic participation

Successful Digital Transformation
Companies that double down on digital transformation may be better able to weather COVID-19

Digital and Sustainable Transformation of Industries
The pandemic has accelerated both digital immersion and a digital transformation gap

Sustainability Reporting and Assurance
Regulations are becoming more important to increase the consistency and reliability of sustainability information

Below is an excerpt from the transformation map for Business Strategy & Transformation , with key issues shown at the centre and related topics around the perimeter. You can find the full map later in this briefing.



In the following sections, we give a comprehensive summary of the latest **Insights and Trends** shaping the topic, a look at potential **Forecasts and Scenarios** based on current and emerging trends, and an overview of the **Strategic Context**.

1 Insights and trends

A synthesis of the most recent expert analysis.

1.1 Current perspectives

German Institute for International and Security Affairs

EU Climate Policy to 2040: Initial Steps towards More Flexibility and Effort Sharing

16 October 2026

The European Union has set a 90% emissions reduction target for 2040, marking a significant shift in its climate policy framework. The European Commission plans to introduce over a dozen legislative proposals addressing international emission reductions crediting within the EU Emissions Trading System, enhanced rules for land use and forestry, and integration of carbon dioxide removal strategies. A key political decision on the role of national targets remains pending. While the EU leads globally with its ambitious target, the use of flexibilities in meeting it raises concerns about policy credibility and effectiveness, highlighting the urgency for the Commission to detail proposals on international carbon credits and regulatory updates.

Nature

China's AI research is booming. Where is it headed?

14 October 2026

China's AI research is rapidly advancing, with a growing number of researchers opting to stay in or return to China rather than pursue careers in the United States. China now trains more AI talent than any other country, boasting 51,000 active AI researchers compared to 14,000 in the U.S. Chinese researchers dominate global AI publications, and firms are producing advanced AI models at lower costs. However, challenges include lower access to computing resources and a less distinct separation between academia and industry. U.S. visa restrictions and geopolitical tensions have reduced its appeal as a destination for Chinese AI talent, contributing to China's increasing self-reliance and leadership in the field.

Wharton School of the University of Pennsylvania - Knowledge@Wharton

2026 AI Adoption Report

13 October 2026

The 2026 AI Adoption Report reveals that widespread AI adoption is now embedded in enterprise workflows, shifting focus from usage to value realization through workflow redesign, organizational alignment, and clear governance. Companies with strong AI returns emphasize growth-oriented metrics rather than just efficiency, standardize platforms, appoint Chief AI Officers, and adapt management structures. Leadership and employee perspectives often differ on AI strategy alignment, impacting performance. Departments integrating AI deeply and redesigning workflows around AI report significantly higher ROI, confirming that success depends on comprehensive, measured transformation beyond mere adoption.

GovLab - Living Library

Trust in Federal Government Sinks to New Depths

15 October 2026

Trust in the federal government has reached historic lows across five key measures. Only 33% or fewer U.S. adults express trust in the executive and legislative branches and the government's ability to manage international and domestic issues. Trust in the judicial branch, while higher at 46%, is also at its lowest point. Gallup's 2024 poll highlights sharp declines compared to previous years, including a 12-point drop in trust regarding international problem-solving and an eight-point decrease in confidence in the executive branch–the lowest since the Watergate era and linked to recent political events.

LSE Business Review

Ending modern slavery will take more than corporate reporting

16 October 2026

Modern slavery arises where global commercial pressures intersect with vulnerable local labor markets. Although UK companies have increased oversight and reporting on modern slavery, limitations remain in addressing abuses occurring deeper in complex supply chains, such as through intermediaries and subcontractors. The UK government's proposed mandatory reporting reforms improve transparency and extend duties to public authorities, signaling a shared responsibility. However, effective prevention requires stronger collaboration and information sharing between corporate supply-chain governance and local public bodies, which currently operate mostly in parallel. Coordinated efforts are essential to identify and address labor exploitation at both corporate and community levels.

The Conversation (French)

Greenwashing de type II : quand les entreprises exagèrent l'impact écologique de leurs actions

14 October 2026

Les entreprises pratiquent un greenwashing de type II, qui consiste à présenter leurs actions environnementales comme plus durables qu'elles ne le sont réellement. Contrairement au greenwashing classique qui exagère la quantité d'efforts, ce type joue sur la signification des mots, notamment en qualifiant des mesures limitées ou insuffisantes de "durables". Par exemple, l'usage de "carburants d'aviation durables" suggère une solution à long terme alors que leur impact réel est minime. Ce procédé trompeur est courant dans le marketing vert et affaiblit la notion même de durabilité, tout en étant peu surveillé par la législation.

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The Conversation

Councils that restrict harmful advertising won't lose out on profits

14 October 2026

Councils restricting harmful advertising–such as junk food, fossil fuels, ultra-fast fashion, and single-use plastics–do not suffer a loss in advertising revenue, according to research by the University of Portsmouth and Sustain. Analysis of UK councils' data from 2019-2023 shows those adopting healthier or environmentally conscious advertising policies maintained their income levels compared to councils without such policies. Councils can replace harmful product ads with socially beneficial campaigns without financial loss. This approach supports public health and environmental goals and is expanding beyond tobacco and alcohol to include high-carbon products. Examples include Bristol's ban on ultra-fast fashion ads and Portsmouth's inclusion of single-use plastics. The findings suggest councils can confidently implement stronger restrictions aligned with climate and health objectives.

Asian Development Bank

Key Performance Indicators for Kazakhstan's Heat Sector: Pathways to Decarbonization

14 October 2026

Kazakhstan's 2024 Law on Heating supports the development of a key performance indicator (KPI)-driven framework to enhance transparency, accountability, and performance in the heat sector. This framework integrates KPIs into local heat planning, monitoring, regulation, and investment, based on international best practices. By setting clear benchmarks linked to tariff setting and financing, it incentivizes continuous improvement, modernization, decarbonization, and long-term sustainability of Kazakhstan's heat sector. The publication provides a methodology for implementing KPIs to operationalize the law and stimulate sector decarbonization.

World Economic Forum

Japan is combining tech and human connection to help people live well until 100

15 October 2026

Japan has surpassed 100,000 centenarians, but a significant gap remains between life expectancy and healthy life expectancy, with older adults facing health challenges for about a decade. To address this, Japan integrates technology and social initiatives to promote healthy longevity and delay care needs. Efforts include AI-based cognitive assessments, digital co-living tools to maintain family connections, and mobile supermarkets that enhance social participation for seniors. National programs like the Moonshot Research and Development and Health Care 2035 vision focus on sustaining health and innovation amid demographic and workforce shifts. Extended work opportunities also support active aging.

NextBillion

Impact Entrepreneurship During the Polycrisis: An Interview with Laurie Lane-Zucker

15 October 2026

Impact entrepreneurship demonstrates that business can generate lasting social and environmental benefits by embedding mission into ownership, governance, and capital structures to sustain impact beyond founders or market changes. Laurie Lane-Zucker's book, "The Impact

Entrepreneur Breakthrough," serves as a practical field manual offering tools and exercises for impact-driven enterprises to navigate the polycrisis–interconnected crises threatening communities and ecosystems globally. Key advice includes designing systems that share power rather than entrench it and addressing root causes strategically, ensuring ventures remain regenerative and resilient across changing conditions.

London School of Economics and Political Science

Europe can still win the race to build the cars of the future

13 October 2026

Europe's automotive industry faces a pivotal transformation as electric, software-defined vehicles (ESDVs) replace internal combustion engine vehicles, with potentially profound implications for the continent's economy. Despite Europe's strong automotive sector, production has declined while global output, especially in China, has surged. Key technologies like batteries, semiconductors, AI, and robotics are central to this shift, where Europe currently lags behind Chinese and Korean competitors. However, the move from domain to zonal vehicle architectures offers opportunities for innovation in high-performance computing and software updates. Europe's success depends on coordinated yet decentralized public policies that support domestic demand and leverage regional experimentation, enabling the scaling of effective technologies and preserving Europe's industrial competitiveness.

LSE Business Review

The hidden uncertainty behind emissions data produced by British supermarkets

16 October 2026

British supermarkets report Scope 3 carbon emissions, covering the full value chain from production to customer use, which comprise nearly all their carbon footprints. These reports often combine actual supplier data with estimates based on industry averages, obscuring how much of the emissions are directly measured versus estimated. Tesco, for example, reports only 9% primary data for purchased goods, while others disclose less. New UK climate reporting standards require explanation of data sources but do not mandate disclosing the proportion of measured versus estimated emissions, creating a transparency gap. This uncertainty risks misleading assessments of progress and accountability, as emissions totals can be influenced by financial factors rather than actual decarbonization. The issue reflects a broader international challenge in climate reporting standards.

The Conversation

Here's how to find the learning strategy that makes AI work for you

13 October 2026

Generative AI offers vast learning opportunities by quickly explaining concepts and solving problems, but effective learning requires deliberate strategies beyond just obtaining answers. Successful use of AI involves metacognition–monitoring and regulating one's learning process–and choosing how to engage with AI tools, such as attempting problems first or seeking feedback instead of passively accepting answers. Studies show AI designed as a tutor promoting active learning prevents skill decline, unlike AI that simply supplies answers. Enhancing AI literacy alongside learning literacy–understanding how to learn effectively–is crucial. Educators and developers must design learning experiences and AI systems that encourage reflection, retrieval practice, and active problem-solving to maximize AI's educational benefits.

World Economic Forum

How to measure the energy, food and water nexus

15 October 2026

Energy, food, and water systems form a complex nexus where vulnerabilities and trade-offs in one can impact the others. Accurate hyperlocal data collection, such as rainfall measurement in Indian villages, is crucial to managing this nexus effectively. India's Atal Bhujal Yojana groundwater scheme highlights challenges of unreliable local data collection and the need for precise, small-scale research to inform resource management. Studies show that renewable energy development must consider local social, environmental, and resource constraints. Hyperlocal analyses reveal opportunities like agri-voltaics in horticultural zones and highlight nexus-related issues, such as energy shortages affecting dairy farming in drought-prone Madhya Pradesh. Tailored local solutions advance sustainable management of interconnected energy, food, and water resources.

Stockholm Environment Institute

EU sustainability reporting rules and municipal governance

13 October 2026

Recent changes to EU corporate sustainability reporting rules indirectly impact municipal governments by influencing the sustainability data obtained from municipal companies, banks, suppliers, and climate investment programs. Although municipalities are not directly required to report under EU law, these rules affect their reporting practices and decision-making processes. Municipalities can take practical steps to enhance

the quality of sustainability information for better governance and planning.

The Conversation (French)

Un « espace liminal » entre les humains et l'IA : la frontière sera-t-elle moins discernable qu'on voudrait le croire ?

14 October 2026

L'intelligence artificielle moderne brouille la distinction traditionnelle entre humains et machines en intégrant profondément nos souvenirs, décisions et émotions dans des interactions numériques internes. Les systèmes d'IA influencent et transforment notre pensée via des échanges itératifs, tandis qu'ils assimilent les traces humaines sans en faire véritablement l'expérience. Ce phénomène crée un « espace liminal » où la frontière entre intelligence humaine et artificielle devient floue et mouvante, affectant aussi bien l'identité humaine que les environnements hybrides. Les technologies d'augmentation corporelle illustrent ce lien ambigu, où humains et machines s'adaptent et se prolongent mutuellement.

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GovLab - Living Library

Professionalizing deliberation: a Social Network Analysis of UK climate mini-publics

14 October 2026

Deliberative mini-publics have become key in UK climate governance, leading to a professional field comprising facilitators, recruitment agencies, advisory bodies, experts, and networks. Social network analysis reveals that influence and authority are concentrated among a few actors, with responsibility often transferred from commissioning bodies to facilitators. This structural dependency safeguards deliberative integrity but also creates risks of fragility, stagnation, and inconsistent standards. Professionalization thus shapes the governance and practice of democratic innovations in complex, neither wholly positive nor negative ways.

Asian Development Bank

Closing the Mobile Connectivity Gap in Developing Asia and the Pacific

13 October 2026

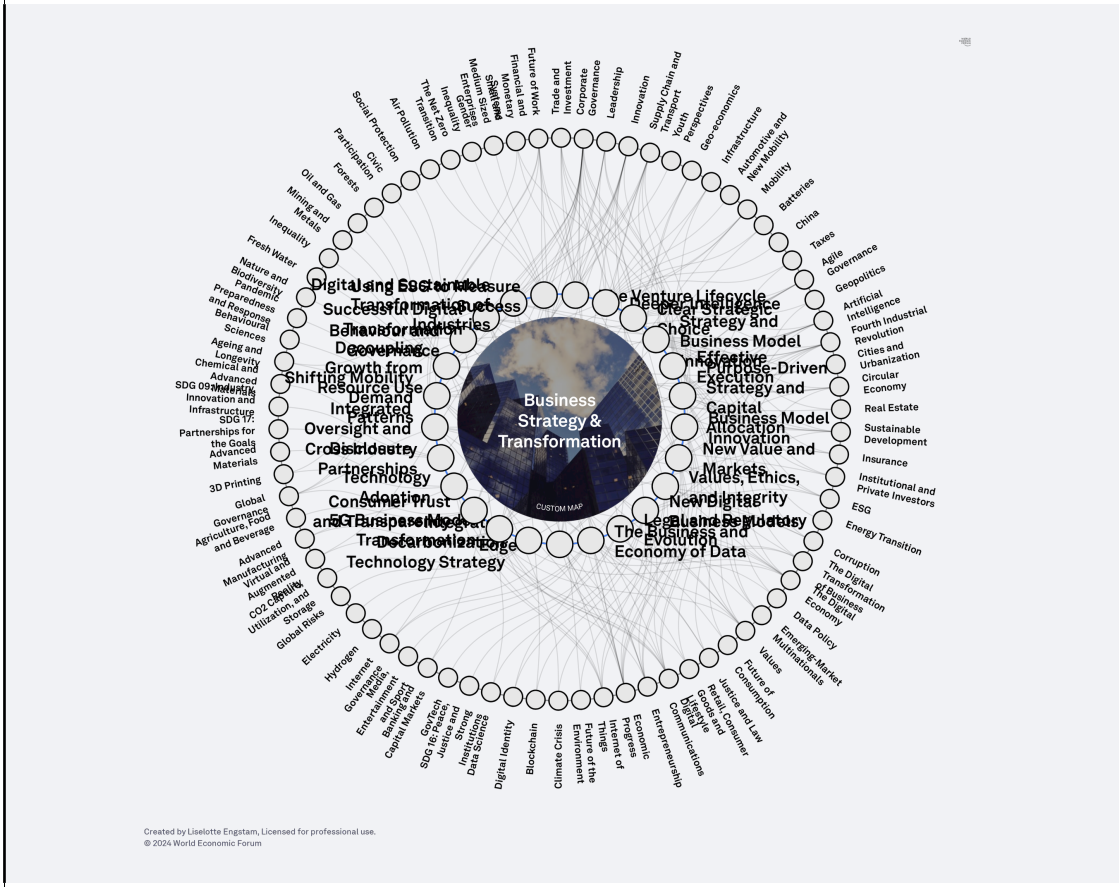
Asia and the Pacific require an additional $184 billion investment to close the mobile connectivity gap, aiming for universal coverage by 2030 at a total cost of $316 billion. Despite 98% 4G access, 1.2 billion people remain offline, with significant gender and rural disparities. Improving device affordability and digital literacy could generate a $230 billion economic uplift. Enhanced connectivity is projected to improve education, reduce emissions, and alleviate poverty across the region.

2 Strategic context

The key issues shaping Business Strategy & Transformation .

The following key issues represent the most strategic trends shaping the topic of Business Strategy & Transformation . These key issues are also influenced by the other topics depicted on the outer ring of the transformation map.

FIGURE 1 **Transformation map for Business Strategy & Transformation**



2.1 The Venture Lifecycle

Whether it remains independent or is acquired, a venture will follow its own development path

The typical lifecycle of an entrepreneurial venture begins with an initial idea stage and ends with either having to close down a failed company, getting acquired, or growing into a mature entity. Each stage of the lifecycle comes with associated risks and challenges - and while every company may have its own unique path, there are many common patterns and waypoints. Initial ideation is fundamental, and is ideally followed by founder

commitment and incorporation, product development and testing, pilot projects and customer feedback, business model development, market launch and initial sales, market expansion, product line expansion, and organizational growth. The details of any development process are both idiosyncratic and unpredictable, and final outcomes are inevitably influenced by the skills and ambitions of the venture's founding team. Lifecycle patterns also differ by industry and geographic location. At each stage, there are considerable potential risks. The same entrepreneurs who define their business plans, garner resources, and develop operations must also de-risk their venture by achieving milestones and gradually establishing the economic viability of a fledgling business.

There is a learning process for any entrepreneur, which involves testing different hypotheses and responding to feedback by either pushing ahead with the original plan, pivoting in a new direction, or abandoning ship. Company leadership will learn over time whether it should remain independent, or would benefit from being acquired. Even after an acquisition, a venture will continue along its own development path - though that becomes part of the acquiring company's lifecycle. For ventures that remain independent, staged financing usually keeps step with development. The most successful ventures reach an "exit" event, where investors reap a return either through an acquisition or an initial public offering of stock. The startup lifecycle is sometimes linked to broader industry cycles, particularly when there is a parallel development of new ventures and new markets. The latter requires establishing some necessary infrastructure and a sufficient understanding of the benefits and risks of a new product category. The innovation introduced by entrepreneurial companies must often compete with - and sometimes displace - the mainstays of industry incumbents. That process is commonly referred to as "creative destruction."

Related topics: Trade and Investment, Corporate Governance, Financial and Monetary Systems, Logistics, Innovation, Future of Work, Youth Perspectives, Future of Leadership

2.2 Deeper Intelligence

More ambitious, timely, and granular monitoring of policymaking and opportunities is essential in the Chinese market

Foreign businesses may clearly understand their value chains, though they primarily see them as strictly made up of direct customers, suppliers, distributors, or important industry events like trade fairs. However, deeper intelligence is needed to detect the strategic shifts in China's broader business environment that can create opportunities, challenges, or risks. Even gaining conventional market and competitive intelligence in China can be demanding, due to its relatively fast market dynamics, the unusually large number of players spread across a large (yet integrated) geography, as well as extraordinary local entrepreneurial energy and risk-taking. However, deeper intelligence can be gained through a more ambitious, timely, and granular monitoring - especially of policy and international affairs factors - and through scenario thinking. Some factors that can make a difference for foreign businesses include a more conscious observation of top-level policymaking, network formations in value chains, strategic growth drivers, digital economy opportunities, or simply shifts in the business model practices of peers. For example, clearly understanding impacts on specific business sectors in China due to government "de-risking" of trade in Europe and elsewhere usually won't be possible unless top-level policymaking and articulation are monitored and analysed. With the Chinese government taking a more proactive role since the 14th Five-Year-Plan in 2021, it has become even more critical to understand how supplier relationships can be forged in ways that exclude foreign business. As China's growth model evolves to "high-quality" development at the expense of GDP growth, deeper intelligence is required to grasp strategic demand drivers; the country's digital economy is shifting business models, players, and content preferences, in ways that challenge the go-to-market habits of foreign businesses, while digital marketing through social media has reached ever-larger degrees of concentration. To gain competitive related intelligence, legally and fairly, it is crucial to go beyond hearsay and anecdotal evidence from ex-employees of competitors, or certain media reporting, and track changes systematically along a detailed framework of business model practices. Scenario thinking (for domestic policy development, for example, or geopolitics and supplier strategies) is a form of forward-looking intelligence exercise where a precisely argued, fact-checked baseline is used to generate rational extrapolation that can yield critical insights.

Related topics: Trade and Investment, Logistics, Geo-economics, Taxes, Corporate Governance, Batteries, Mobility Solutions, Infrastructure

2.3 Clear Strategic Choice

There are a few fundamental strategic options for foreign businesses to pursue in China

A core element of strategy-making is to make fundamental choices. These create clarity to guide resource allocation and execution. Aside from exiting the Chinese market all-together, a foreign business's fundamental strategic options include: engaging in and with China opportunistically, including for those business models that are competing for survival in sectors faced with newly enforced policies (such as anti-monopoly measures) or novel market governance instruments (like volume-based procurement); doubling down on an "in China for China" strategy; or additionally leveraging the Chinese market for value creation beyond China-based operations. The first option makes sense for latecomers, firms with weaker innovation capacity, or those lacking differentiation and with a utility not (yet) recognized in China's policy system. China's financial system, for example, is seen to "serve the real economy," and is not an economic sector per se, and China's healthcare system has only recently moved from being seen as a core governmental function to a private-sector service where market liberalization to foreign players is as yet limited to free trade zones such as in Shanghai or Hainan. The second fundamental strategy, "in China for China," essentially creates self-sufficient China operations serving China-based customers, fit for the Chinese jurisdiction. It can be necessitated by market, domestic policy, or corporate risk management factors - these include a need for more locally tailored products and innovation, higher customer proximity, more local decision-making and faster speed, plus generally more effective local engagement. One key policy factor is China's need for more "self-reliance" (????) in designated sectors - which means rules or incentives driving import substitution or requiring local content. Corporate de-risking under this second strategy is about ring-fencing operations and localizing supply chains, plus identifying "no regret" moves that make China operations less vulnerable to geopolitical escalation and supply chain risk. To identify such no-regret moves it is useful to work with distinct, fundamental scenarios (such as geoeconomic fragmentation). From an HQ perspective, diversifying into a third market (such as ASEAN) is also an option. It should be noted that this second strategy does not need to be limited to the Chinese domestic market - it can include the pursuit of opportunities through China's (policy-backed) corporate "going out." The third fundamental strategy is to be ambitious domestically, while unlocking value-add from China operations globally or regionally. Value-add levers include (inter-company) supply, exports, R&D, products and innovation, talent, corporate services, and governance functions. These are all premised on the absence of policy-driven "decoupling" that could affect entire sectors.

Related topics: Geo-economics, Logistics, Trade and Investment, Artificial Intelligence, Corporate Governance, Agile Governance, Geopolitics

2.4 Strategy and Business Model Innovation

Firms need to zero in on the durability and sustainability of their designs and systems

Companies in the engineering and construction industry are faced with a pressing need to more clearly distinguish their respective services, because they operate in a highly competitive market shaped by commoditization and stringent bidding procedures. These companies have been handed the critical task of strategically defining both their own sector and the value chains that bring their particular wares all the way from raw materials on one part of the world to finished products in another, while balancing specialization with the a coinciding pursuit of economies of scale and risk diversification. Greater collaboration and partnership-building are essential responses to evolving and increasingly complex customer demands; combining efforts is imperative. As traditional industry boundaries have blurred amid these dynamics, new and more disruptive business models have emerged - models that emphasize the use of more sustainable products that benefit from long-term lifecycle optimization. Surprisingly, lifecycle cost optimization continues to be a generally neglected focus area, despite the significant cost of operating and maintaining a building over its lifespan; this is at least partly due to conflicting interests among stakeholders.

In order to properly address this continued neglect, the industry must increase its collective investment in designs and systems that prioritize and enable longer-term performance and greater sustainability. Construction companies can play a pivotal role in this regard, and significantly contribute to a more sustainable global economy, by making sure to implement closed-loop circular design principles (such as crafting a more durable product design, or assembling products in ways that make them easier to disassemble for the purposes of reuse or recycling), and simply by more deeply integrating sustainability into their overall business models. In order to best capture related opportunities and achieve economies of scale, the industry must look to further internationalize - particularly as new construction markets open up around

the world. Firms exploring options overseas should consider collaboration with locally based peers through alliances, joint ventures, or even mergers and acquisitions, to leverage local expertise and establish a firmer foothold in a new market. The choice of local partners is a pivotal and potentially complex undertaking, particularly if knowledge of local conditions and potential partners is limited.

Related topics: Infrastructure, Innovation, Sustainable Development, Energy Transition Index, Circular Economy, Corruption, Cities and Urbanization, Sustainability Reporting, Logistics

2.5 Effective Execution

Decision making for a China-based subsidiary should not be taken in too self-referential a manner

Execution is the crystallization of strategy-making. The role of the headquarters of a foreign business operating in China at this stage is, broadly speaking, to let go (and not micro-manage). And by doing so, to avoid distorted decision-making due to HQ-centricity, multiple layers away from the end-client and the real dynamics in the value chain. However, factors that nonetheless command HQ attention in terms of strategy execution include corporate culture, compliance, and cross-functional dialectics. The texture, paradigms, and incentives of a subsidiary-level corporate culture need to be actively understood and guided, not least as a part of building HQ-subsidiary trust. Legal and regulatory compliance in China at a time of legislative dynamism, local standards drafting, or the use of the corporate social credit system (CSCS) as a governance instrument requires interfacing with HQ to gain a mutual understanding. HQs certainly cannot simply prescribe how influence among corporate functions should be distributed within the subsidiary, though cross-functional dialectics should be actively shaped - via smart HR decisions and strategic visibility, for example - to ensure that all functions can command resources and deliver impact effectively, in line with their mandate.

Related topics: Agile Governance, Data Policy, The Digital Economy, Future of Leadership, Emerging-Market Multinationals, Trade and Investment, Corporate Governance, The Digital Transformation of Business

2.6 Purpose-Driven Strategy and Capital Allocation

A focus on 'stakeholder capitalism' necessitates shifting away from seeing sustainability primarily as a marketing challenge

The legacy approach to strategy and capital allocation has narrowly focused on demonstrable links to shareholder value - while tending to treat societal dynamics and stakeholder demands separately (as narrower, public relations-related matters of reputational risk management). The challenge for leadership teams currently is to both articulate a long-term strategy, and deliver short-term returns that ensure support and continued investment. A fundamental shift in corporate purpose to the "stakeholder capitalism" model puts the impacts on stakeholders (the environment, customers, local communities) at the centre of corporate strategy, in the understanding that these should shape risk management and long-term value creation. This necessitates shifting away from treating sustainability and stakeholder pressures primarily as marketing or messaging challenges. Truly having a purpose-driven strategy means maintaining a clearer focus on how a business creates value for society. Issues like climate change can present a mix of pressures and imperatives that make a rigorous differentiation between related risks, opportunities, and impacts important. When corporate purpose and strategy are in alignment, this needs to be reflected in management structures, capital allocation decisions, and incentives for senior leaders.

This points to a need for a particularly close relationship between a company's chief financial officer and its chief sustainability officer (or whichever senior leader is responsible for ESG issues); the former must oversee current corporate performance while the latter is tasked with shaping a long-term strategic vision grounded in creating societal value. Both the CFO and CSO should be closely involved in conversations with investors, to articulate a shared, long-term vision for the future of the business. They should also be involved in devising incentives and performance metrics for the senior leadership team that drive clarity and accountability. Integrated governance also necessitates a close relationship and increased awareness of (and familiarity with) the different functions that manage sustainability efforts, including governance, risk, and compliance teams - not least because regulatory risk itself is transforming. To be effective, integrated governance needs an integrated assurance system within a corporation; that means having a comprehensive and consistent taxonomy and accountability across policies and internal controls, risk management, compliance, and audit, all based on an appropriate organizational set-up that avoids becoming siloed and dysfunctional.

Related topics: Financial and Monetary Systems, Sustainability Reporting, Justice and Law, Circular Economy, Taxes, Future of Leadership, Logistics, Future of Consumption, Sustainable Development

2.7 Business Model Innovation

Developing new business models can rewrite the rules of an industry

The internet spawned Airbnb, Amazon, Netflix, Uber and many other companies that have used business model innovation to rewrite the rules of their industry. That means they managed to change accepted ways of doing business, challenged the status quo, and served new customer needs while meeting existing needs in new ways. In doing so, they created enormous wealth for shareholders while providing useful services for customers. They have also been sources of inspiration for more established firms like Bosch, IKEA, or Philips as they assess and update their own business models. To better understand business model innovation, it helps to define what a business model is. As noted in the 2021 book Business Model Innovation Strategy, these core elements characterize a business model: what, how, who and why. More specifically, what activities does a business model encompass; how are these activities linked (for example, in terms of sequencing or exchange mechanisms), who performs the activities (which are performed by the focal firm versus those performed by partners, suppliers, or customers), and lastly why does the business model create value and enhance value appropriation for the focal firm?

Firms can innovate the ”what” by adding or eliminating activities (for example, when Apple began selling and distributing content for electronic devices in addition to designing and manufacturing those devices). They can innovate the ”how” by linking activities in new ways (Netflix first competed against video-rental stores through postal distribution, then via online streaming). Firms can also innovate the ”who” by changing who performs certain activities (Tesla performs the sales function in-house instead of outsourcing it to dealers). Lastly, firms can innovate the ”why” by adopting new revenue models and value logic (for example, Dropbox makes basic file storage free but charges for additional capacity). Much business model innovation has been driven by advanced information and communication technologies that enable new ways of doing business, though it is distinct from technology and product innovation. Business model innovation often flows from a unique take on customer needs and the best ways to satisfy them. The idea of software-as-a-service, for example, represented by firms like Salesforce, was driven by a realization that customers do not necessarily care about owning software outright. Such business model innovation can be a powerful source of competitive advantage, though it requires astute implementation and simultaneous change in multiple parts of the organization.

Related topics: Entrepreneurship, Corporate Governance, Economic Growth, Digital Communications, Emerging-Market Multinationals

2.8 New Value and Markets

Technology is restructuring industries and redefining business value

The average tenure of a company in the S&P 500 Index of large, US-traded firms is expected to decline to just 12 years by 2027, from 24 years in 2016. Companies are increasingly being disrupted by more digitally-innovative peers, or by new entrants able to create business value in novel ways - and corporate leaders face an unprecedented combination of disruptive technologies, changing customer behaviour, and social and environmental issues. However, these leaders also have a significant opportunity to help create new value; the use of artificial intelligence will generate an estimated $2.9 trillion in business value in the year 2021 (the equivalent of 6.2 billion hours of worker productivity), advanced 5G telecom networks are expected to generate more than $600 billion in new business by 2026, and the market for distributed ”edge” computing is expected to more than triple to $9 billion between 2019 and 2024. By 2025, 75% of the world’s population will be interacting with data every day, according to one estimate, and everyone online will have at least one data interaction every 18 seconds. New value is already emerging in previously only theoretical scenarios, like readily-available virtual meetings.

Customer expectations are changing as technology is embedded in everyday life (according to an Accenture study, more than half of consumers say technology plays a prominent role or is ingrained in almost all aspects of their daily lives). As a result, people increasingly expect technology to be personalized and on-demand. This has altered traditional roles and shifted the distribution of value. For example, the producers of digital entertainment, like Hollywood studios, can increasingly build a direct, online relationship

with audiences, while traditional distributors of content like Amazon or Netflix increasingly look to create their own. People also increasingly want transparency on how companies source their products and ensure safe working conditions, and clarity on their stances regarding environmental and social issues. Accenture has found that a decline in stakeholder trust can severely impact an organization's competitiveness, and significantly undercut revenue. While this dynamic may vary according to customer needs, income levels, and geography, organizations everywhere need to come up with new ways to identify and create a genuine appeal for people, while helping secure a future for more than just their own profit.

Related topics: Artificial Intelligence, Entrepreneurship, Digital Communications, Innovation, Economic Growth, The Digital Economy, Internet of Things, Future of Work, Corporate Governance

2.9 Values, Ethics, and Integrity

Good faith efforts to do no harm and reduce negative externalities are necessary

Sound corporate governance is increasingly important for any company that wants to establish and execute a coherent integrity agenda - one that adequately encompasses its values, regulatory obligations, and voluntary commitments. Solid governance is the critical underlying bedrock for any strategic decision-making when it comes to executing environmental and social commitments. This means aligning rhetoric with action - and ensuring that leaders understand their responsibility for shaping employee behaviour and conduct, and for designing incentives and allocating power and resources in ways that effectively build a culture of integrity. These efforts require organizations to break down departmental divisions, and create more deliberate alignment and collaboration across critical functions, including environmental, social and governance (ESG) and sustainability, public affairs, risk, ethics, and compliance. Prevailing public concern about corporate hypocrisy and greenwashing is necessitating more carefully-planned and coordinated approaches to integrity commitments. Companies are being pressured as never before to take stands on social and environmental issues, but if that rhetoric is not accompanied by concrete, measurable action, allegations of duplicity and insincerity will only become more prominent.

One crucial imperative for companies is that they tie their integrity commitments directly to the ways in which they create value for stakeholders. This means making good-faith efforts to do no harm, and reduce negative "externalities" (another way of saying negative outcomes). The most visible evidence to date of efforts to tackle contemporary, multifaceted challenges has been the emergence of a designated senior leader at companies who is entrusted with the responsibility of overseeing the totality of integrity efforts and commitments. For other organizations, however, the aim may be not to appoint one, single individual to direct and lead integrity efforts, but to instead consciously drive broader alignment among departments including risk, compliance, governance, sustainability, investor relations, human resources, government affairs, and corporate affairs, in ways that have each setting both internal and external strategic organizational priorities. Integrity efforts need to be supported by strong oversight - to prevent systemic misconduct, and to sufficiently deter employees from breaking the law and thereby expose the organization to legal risk.

Related topics: Future of Leadership, Climate Crisis, Corruption, Economic Growth, Sustainable Development, Sustainability Reporting, Future of the Environment

2.10 New Digital Business Models

Technology-enabled models can help companies provide value and build resilience

Most executives see innovation as critical for their business. And, according to the McKinsey Global Innovation Survey, 80% think their current business models are at risk of disruption. COVID-19 has only accelerated the shift to online and touchless experiences, and spurred innovative uses of technology and data that will increasingly underpin business models. Digital subscription models, like Dollar Shave Club or Netflix, have already risen to prominence, as have on demand models like Uber or TaskRabbit - while technology has made it increasingly easy to adopt platform models upon which users and even other companies can build their own presence (examples include Facebook or YouTube). The World Economic Forum estimates that 70% of the value created over the coming decade will be based on digitally-enabled platform business models, due to the rapid digitalization of economies around the world. Collaboration can also unlock value - research shows that digital "ecosystems" are expected to account for more than 30% of global corporate revenue by 2025. One example is Project Connected Home, a joint effort led by Amazon, Apple, Google and the Zigbee Alliance to set standards for smart home technology.

”As-a-service” business models are an increasingly prevalent and effective way for companies to turn what might otherwise be one-off purchases into more predictable, longer-term, and typically larger revenue streams. Microsoft, for example, now offers its Office 365 product through software-as-a-service subscriptions, as an alternative to purchasing an entirely new version of Office version every few years. Meanwhile Amazon offers its AWS product in a way that provides infrastructure as a service (IaaS) on a subscription basis. Thanks to increased digital connectivity and internet use, there has been a surge of data that can potentially provide value not just to companies but to society in general. Many companies are exploring innovative ways to unlock the value of this data in a responsible way by embedding trust, privacy, and security into their models. A company called Points Technology has for example used a confidential computing framework based on TEE (trusted execution environment) and other encryption technology to make data usable but not visible - in order to ensure privacy, security, and compliance when it comes to banking, government-led data-sharing initiatives, and marketing campaigns.

Related topics: Internet of Things, Circular Economy, Digital Identity, Digital Communications, Economic Growth, Innovation, Entrepreneurship, Blockchain, The Digital Economy

2.11 Legal and Regulatory Evolution

Proactive engagement with global legal and regulatory developments can foster preparedness

Ethical practices are no longer just good to have, they are a must-have. Companies have realized that a lack of ethics and integrity not only creates regulatory risk, it can pose existential risk. They must keep pace with constant regulatory change related to matters including trade sanctions, anti-bribery and competition laws, ESG, anti-money laundering, and legislation like the EU’s General Data Protection Regulation (GDPR). As more regional efforts emerge to promote sustainability and human rights, and regulate the use of artificial intelligence, it is crucial for companies to offer thoughtful input. This should align with corporate strategy, and ensure proactive, constructive engagement between industries and governments. Being proactive means staying abreast of legal changes, constantly adapting compliance programmes, and fostering greater collaboration both between departments and functions, and externally. Continuous monitoring of global regulatory changes is essential, as is consistently updating employees on new regulations to ensure everyone has up-to-date compliance knowledge. Integrated assurance can be a powerful means to ensure compliance programmes are linked to enterprise risk management and internal controls throughout the enterprise - as opposed to a siloed approach that creates a risk of blind spots and unclear responsibilities.

Incorporating horizon scanning into a proactive stance can empower organizations to detect early signs of potentially significant developments. This sort of systematic examination of potential threats and opportunities, focused in particular on new technologies and their impacts, can serve as a strategic tool to anticipate future regulatory challenges and trends. Horizon scanning enables companies to adapt more swiftly and effectively to emerging regulations, and to mitigate potential risks before they materialize. Understanding the legal nuances and ensuring compliance are necessary before a company can effectively contribute to regulatory discussions - and assessing how proposed regulation might impact business operations, finances, and reputation is equally critical. Engaging with a broad spectrum of stakeholders can lend a more comprehensive perspective that helps companies account for diverse viewpoints. Adherence to industry standards and best practices is a necessary benchmark for regulatory engagement, and collaboration with like-minded organizations tends to amplify the benefits of collective contributions. Ultimately, adept management of the effects of regulatory evolution can help ensure that an organization’s actions reflect its expressed commitment to sustainability and equity.

Related topics: GovTech, SDG 16: Peace, Justice and Strong Institutions, Justice and Law, Data Policy, Trade and Investment, Geopolitics, Geo-economics

2.12 The Business and Economy of Data

Legitimate questions have been raised about advantages afforded to digital incumbents

The global economy is now largely built on a foundation of data. It is completely redefining the ways business is done, economies function, and societies interact. Data has a number of unique properties that distinguish it from the physical resources that have traditionally shaped economies in recent centuries, which have created new possibilities but also new threats and troubling consequences. While social media platforms like Facebook and TikTok have grown exponentially in recent years, enabling people to find each other and

information quickly and often at no direct cost, the related rise of online advertising has made people the product - more specifically, their personal data. As a result of the ascendance of related business models and services, relatively novel ethical considerations have come into play (according to one estimate, digital ads accounted for 58% of all media ad spending by 2020). Legitimate questions have been raised about advantages afforded to digital incumbents, based on network effects and economies of scale, unequal access to user data, a general lack of transparency, conflicts of interest, and vertical integration.

The collective nature of data means most people are more impacted by other people's than their own. Much like climate change, the threats stemming from the collection and use of data are both globe-spanning and personal. On one end of the spectrum, companies have been accused of misusing data and exploiting the public's lack of understanding about the subject, while on the other organizations are trying to act more responsibly and finding ways to create shared value (many are doing a bit of both, intentionally and unintentionally). Regardless of motivation, the practices common in the data economy raise difficult questions, including whether businesses are mere stewards or owners of data, what their proper role is in terms of enforcing data rights, and whether data should be treated as a utility, an asset, or something else entirely. Finding the right answers demands that we - as consumers, citizens, corporations, and civil society - actively engage with the troubling issues at hand to ensure that data-based economies benefit everyone, while protecting them from the unintended and intended harm omnipresent in the digital realm.

Related topics: The Digital Transformation of Business, The Digital Economy, Corporate Governance, Digital Identity, Economic Growth, Artificial Intelligence

2.13 Edge AI

AI may soon be run directly in devices and IoT sensors more often

The emergence of Large Language Models (LLMs) like OpenAI's ChatGPT and Google's Gemini has surfaced a key question about the role of artificial intelligence at the edge - that is, in mobile phones, smart home devices, and other Internet of Things sensors. LLMs typically require significant server computational resources, making them unfeasible for deployment in the edge. In principle, data could be collected from the edge and sent to the cloud for AI processing. However, there are multiple reasons to run AI directly at the edge, including connectivity, energy efficiency, and privacy. For example, streaming videos for AI analytics is too bandwidth-intensive, and may require unavailable high-bandwidth connections or incur high-latency while sending data to the cloud and then waiting for the result to be received at the edge device; it may also be too energy-intensive, and drain the battery of a mobile device. Ultimately, it may be less-than-desirable to send one's raw data to the cloud for privacy reasons.

Multiple trends have been emerging that address these challenges and complement the usability of LLMs. One is tinyML, which refers to tiny machine learning (ML) models that can run on edge devices. These are trimmed-down versions of large models that typically target more specialized, rather than general, tasks. These models can also be personalized by training on the edge without sending data to the cloud - enabling more personalized and private data processing. Another trend is the emergence of on-device accelerators - integrated chips or GPUs which can efficiently run tasks at low-power on an edge device without requiring cloud support. Yet another trend is distributed, federated, or split learning - instead of sending all the data to the cloud for training, the data and models are distributed across multiple edge devices (or partly in the edge, and partly in the cloud) for partial training in distinct settings. This means the final model is fine-tuned, and personalized at each device, while still maintaining data privacy and integrity locally.

Related topics: Innovation, Artificial Intelligence, The Digital Transformation of Business, Logistics, Economic Growth, Digital Communications, Future of Work

2.14 Integrated Decarbonization Technology Strategy

No single technical approach will successfully decarbonize all hard-to-abate sectors

The Transitioning Industrial Clusters towards Net Zero initiative supports a multi-technology approach in assessing and implementing decarbonization technologies in cross-sectoral industrial clusters. No single technology or decarbonization level will abate all industrial emissions; it is necessary that a spectrum of technology levers - applied within a holistic value approach – work in tandem to optimize emission reduction.

Factors such as technology readiness, environmental performance, community equity, and cost

effectiveness should be incorporated into a multi-phase decarbonization technology deployment roadmap. The Transitioning Industrial Clusters initiative has identified four key decarbonization levers – supported by digital technology – with the highest impact potential in abating industrial emissions.

The first lever - Systemic Efficiency and Circularity – captures opportunities to increase circularity within an industrial cluster through cross-entity waste utilization as well as to integrate processes within an industrial cluster to share energy and material streams. For more on Systemic Efficiency and Circularity, read about Signatory Industrial Cluster Brightlands Circular Space.

The second lever - Direct Electrification and Renewable Heat – includes programs to electrify low-to-medium temperature and pressure processes, to generate low-cost renewable electricity and heat onsite, and to pursue shared energy infrastructure. For more on Direct Electrification and Renewable Heat, read about Signatory Industrial Cluster Net-Zero Basque Industrial Super Cluster.

The third lever – Hydrogen – represents initiatives which leverage electricity and heat from nearby zero carbon sources to produce low-to-zero carbon hydrogen from the most economical source. This hydrogen can then be used as an alternative fuel for hard-to-electrify industrial processes, building heating, and transport. For more on Hydrogen, read about Signatory Industrial Cluster Zero Carbon Humber.

The final lever - Carbon Capture, Utilization, and Sequestration (CCUS) – encompasses all opportunities to capture carbon from energy and hydrogen production, to use captured carbon for industrial and manufacturing processes, and to store carbon underground where feasible. For more on CCUS, read about Signatory Industrial Cluster HyNet North West.

Related topics: CO2 Capture, Utilization and Storage, Hydrogen, Global Risks, Future of Electricity, Circular Economy

2.15 5G Business Model Transformation

The technology is a critical enabler of driverless cars, efficient factories and smarter power use

5G is a potential game changer for a number of industries, though they will have to adapt their business models in order to harness its true potential. The technology will initially exist as an overlay on existing 4G networks, and will likely only start achieving meaningful scale sometime in the early 2020s. Some important services made possible by 5G will include ”digital twin” technology that creates a digital mirror of a physical object in order to predict its performance, augmented and virtual reality (thanks to better download and upload speeds), and predictive maintenance in factories. 5G is also expected to support high-density autonomous vehicle platooning (to improve aerodynamic performance and traffic flow), remote vehicle control, remote driver health monitoring, in-car infotainment, and smart traffic control. The energy sector could meanwhile use 5G for the real-time monitoring of utility networks with drones, sensing hazards and maintenance needs, and monitoring residential smart meters. Each individual use case has the potential to impact additional industries; autonomous vehicles will not only have an impact in the automotive sector, but may also impact the mobility space more broadly. The insurance industry, for example, may benefit as vehicle accident rates decrease.

Ride-hailing platforms like Uber, Lyft, and Didi are expected transition within the next decade from human-driven, internal combustion engine cars to autonomous electric vehicles - potentially spawning millions of driverless cars on the roads, and potentially thousands of pilot-less vertical take-off and landing aircraft. An aggressive transition to self-driving vehicles is not a given, however. For such a transition to occur, political and regulatory support will be required. This will in turn largely determine the investment available for necessary infrastructure like vehicle charging stations and 5G connectivity. Intel has predicted the rise of a ”passenger economy” worth $800 billion by 2035, as people in cars have more time on their hands to shop and secure everything from entertainment to doctors’ appointments. As related technologies like artificial intelligence and virtual reality come to the fore, software companies and other industry players are expected to play a major role in designing new 5G business models. Those models will in turn rely on having a set of standardized regulations for 5G data monetization, related to cross-border data and services-sharing.

Related topics: Corporate Governance, Infrastructure, Future of Manufacturing, Batteries, Agile Governance, Entrepreneurship, Virtual and Augmented Reality, The Digital Economy, Innovation, Internet of Things, Digital Communications

2.16 Consumer Trust and Transparency

In countries where consumer spending is needed to fuel the global economy, trust in businesses is lagging

Large emerging markets like India and China, where an expanding middle class is expected to buoy the global economy with growing consumer spending in the coming years, are home to notable lags in public trust among the ”mass population” in businesses and government, according to the 2019 Edelman Trust Barometer - a survey of 33,000 respondents conducted in more than two dozen markets. According to the barometer, more than two-thirds of respondents agreed that they might be encouraged to buy products from a company with a good reputation - but unless they genuinely came to trust the company behind the product, they would stop buying it. As global consumers become more connected and empowered thanks to digital innovation, they will only place more scrutiny on businesses. For corporate leaders, this means having to strike the right balance between short-term gains and long-term value creation. According to the Edelman Trust Barometer, one means of winning external trust is by investing internally in employees; 78% of barometer respondents agreed with the idea that the way a company treats its employees is one of the best indicators of its level of trustworthiness.

People have fundamental concerns about the safety and quality of the goods they consume. In China, for example, worries about food and medicine safety have become significant (particularly among wealthier consumers) in recent years, according to a report published by the World Economic Forum in 2018. In addition, these affluent, urban-dwelling consumers in China have particular concerns related to the historical role of fake products in the country, according to the report. Another growing area of consumer concern is related to transparency in supply chains - whether it’s tied to sustainable sourcing or ethical labour standards. In the apparel sector, efforts have been made by the Sustainable Apparel Coalition and Better Work, a collaboration between the UN’s International Labour Organization and the International Finance Corporation, to improve working conditions and sustainability by, for example, introducing standards to measure social and environmental impact. Data privacy is also a serious consumer concern. A relatively small group of companies including Facebook and Amazon (or, in China, Alibaba and JD.com) control large amounts of consumer data - which will present trust issues, as new means of refining and selling that data emerge.

Related topics: Artificial Intelligence, Global Governance, Digital Communications, Internet of Things, Future of Leadership, Corporate Governance

2.17 Technology Adoption

None

· Introducing digital technologies into manufacturing processes has the potential to unlock new pathways for value creation, sustainability, and resilience.

· One of the major challenges to unlock this potential is the scaling of technology throughout manufacturing operations – up to 70% of projects get stuck in ”pilot purgatory”

· Frameworks to help manufacturers of all sizes and industries to measure readiness and to provide guidance for scaling up technology transformation are crucial

· At the same time, new production paradigms such as additive manufacturing or biomanufacturing are continuing to grow and are starting to impact value chains

Technology Adoption – Related Initiatives

1. The Global Lighthouse Network

Objective

· Accelerate inclusive technology adoption and dissemination in manufacturing by building a cross-industry network that includes some of the most advanced factories and connected value chains worldwide

· Provide the current community of 103 Lighthouses with a unique global learning journey and opportunity for collaborative projects

· Share first-hand insights, strategies, and challenges from the Lighthouses' digital transformations

Deliverables

· 2 White papers in 2022, latest is "The Global Lighthouse Network Playbook for Responsible Industry Transformation" (Mar 2022)

· 2 rounds of GLN assessments in 2022

· 8 Go & See Workshops and 1 CxOWorkshop for 2022

· 2 Lighthouses Live 2022 (livestreamed event) to engage community and public audience (e.g. Lighthouses Live 2022)

How to engage

· Submit one of your production sites or value chain to be assessed and designated as a Lighthouse

· Join the project Steering Committee and collaborate in the Global Lighthouse Network Workshop Series to learn from existing Lighthouses and share your own learnings

· Propose a new collaboration to amplify ongoing efforts from your organization in this field

2. Global Smart Industry Readiness Index Initiative

Objective

· Accelerate the deployment and adoption of SIRI as the internationally recognized standard for Industry 4.0 benchmarking and transformation.

· Catalyze the adoption of new methodologies and technologies across the global manufacturing community

· Provide quantitative indicators for international benchmarking

Deliverables

· >200 Certified SIRI Assessors by end of 2022

· >1,000 companies to undertake the Official SIRI Assessment (OSA) by the end of 2022.

· Sharing of the insights, findings, and benchmarks from the 2021 Manufacturing Transformation Insights white paper published during the Annual Meeting 2022

· Identify and compile successful case studies of SIRI applications by manufacturers, technology companies, industrial associations, and governments

How to engage

· Manufacturers: Nominate your manufacturing sites to undertake the Official SIRI Assessment (OSA)

· Technology Providers/Consultancies: Send your business experts to be trained and qualified as Certified SIRI Assessor (CSA)

· Community Leaders: Organize seminars and conferences to raise awareness of the SIRI Initiative among your network and partners

· Industry Associations/Governments: leverage the SIRI Insights to design and develop more targeted industrial policies and programmes for your manufacturing communities

3. Industrializing Additive Manufacturing

Objective

· Build a community of end-users, OEMs, materials producers, software and design companies, certification organizations, public sector officials, academia, NGOs, and service providers to drive action through new pilots, proofs of concept and policy recommendations for regulators

· Share and exchange learnings to address major roadblocks for the growth of the whole AM ecosystem and repeat success stories from different local communities around the world

Deliverables

· White paper presenting a new ROI-based narratives for 3DP - including operational, resiliency, sustainability and workforce perspectives – provides a realistic analysis of potential future applications and how they can be achieved more rapidly

· New collaborations and partnerships to accelerate adoption of additive manufacturing at an industrial scale and overcome roadblocks

How to engage

· Join our AM community to inform a new global narrative around additive manufacturing as a driver for sustainability, resilience, and workforce engagement

· Take part in workshops and executive round tables to share insights and shape the future of the ecosystem

· Help validate ”future use cases” for the most plausible future applications of industrial AM

· Engage in 1-on-1 conversations and interviews with the project team to help shape the future strategy and objectives of this initiative

4. Accelerating the Biomanufacturing Revolution

Objective

· Identify emerging opportunities where biomanufacturing could impact sustainability, economics, and/or innovate new product development in the manufacturing and industrial space

· Identify top priorities for public-private sector collaboration to facilitate emerging bioeconomy

· Convene manufacturing leaders with biomanufacturing pioneers to forge new collaborations and incubate pilot programs

Deliverables

· White Paper detailing leading biomanufacturing use cases, emerging opportunities, and key actionable steps industry leaders can take to engage biomanufacturing solutions.

How to engage

· Share pioneering industry use cases, knowledge and best practices demonstrating the impact of biomanufacturing in new markets

· Engage in workshops for peer-to-peer interactions and take a leading role shaping the initiative

Suggest and co-develop pilot programs applying biomanufacturing solutions to current manufacturing needs.

Related topics: Future of Manufacturing, The Digital Economy, Advanced Materials, Internet of Things, Digital Communications, Innovation, Corporate Governance

2.18 Cross Industry Partnerships

Developing technology, human and market solutions to accelerate the energy transition to the pace needed requires cross-sectoral, cross-geographic collaboration

The Transitioning Industrial Clusters towards Net Zero initiative supports rapid industrial decarbonization across the hardest-to-abate sectors through promoting and enabling collaboration across industries and geographies. Multi-stakeholder partnerships spanning sectors are necessary to seed and scale new complex emissions-reduction solutions, especially those where new markets and regional infrastructure are required, such as in the case of clean hydrogen or carbon.

Core to the Accelerating Industrial Clusters Playbook is the value of beginning all decarbonization initiatives with collaborative business model development to map our funding, technology responsibility, and proactive offtake agreements, where possible. Derisking investment through this kind of collaboration is demonstrably one of the most effective means by which to accelerate clean technologies and processes.

In each Industrial Cluster, active representatives and participants in the initiative are intentionally engaged across the value chain – accelerating use case development, secured commitments, removal of regulatory hurdles and de-risked capital deployment. These stakeholders are broadly categorized as: Off-taker (energy off-taker and end-user; virtual off-taker); Developer / Asset Owner (project developer and asset owner); Parts Supplier (equipment & parts manufacturer); Labor & Community Stakeholders (workforce, local government, NGOs); Financier (debt / equity investor from public or private sector); and Local Development Agency (public, private, and third sector actors).

Partnerships within and across the stakeholder groups are commonly manifested across six themes: shared infrastructure development; industrial cluster infrastructure planning; shared commercial projects; cross-industry funding; knowledge sharing; and reskilling the workforce. Each Industrial Cluster will collaborate on a subset of these themes based on the unique stakeholder makeup and System Value prioritization.

Related topics: SDG 09: Industry, Innovation and Infrastructure, SDG 17: Partnerships for the Goals, Logistics

2.19 Integrated Oversight and Disclosure

Compliance and sustainability issues tend to be siloed in the US, but companies in Europe generally take a more integrated approach

Without meaningful oversight of ethical and legal issues - supported by rigorous assurance and clear disclosure - it would now be difficult for any organization to secure and retain stakeholder trust. If there is impunity when it comes to wrongdoing within an organization, especially at senior levels, it will rapidly

degrade organizational culture. Best-practice oversight means having an ethics and compliance function with seniority and independence, policies and training that are relevant to actual employee roles and clear and easy to find, a credible internal channel for employees to speak up and raise concerns, and disclosures that encompass both regulatory requirements and environmental and social performance. Traditionally, compliance and sustainability issues have often been treated in siloes - especially in the US. Meanwhile in Europe there tends to be a more integrated approach to corporate governance, as issues like climate change and human rights become more tightly integrated into legal regimes, environmental, social and governance (ESG) reporting frameworks are professionalized, and corporations are increasingly believed to to have responsibilities to stakeholders and not just shareholders.

As a result of these trends, it is a mistake to cling to legacy frameworks that treat compliance as a "must have" and sustainability merely as a "nice to have." Taking a more integrated approach to ESG issues means adopting a holistic view of corporate strategic and ethical commitments, and ensuring that a company can support its statements with concrete actions, assign its employees clear roles and responsibilities, and effectively convey transparent disclosures to stakeholders. The compliance function and related teams must be fully educated on sustainability and ESG issues - at the very least, on those that are most material for a company's particular sector, because sustainability teams need to understand in fine-grained detail proper compliance roles and functions and how they can aid their own work on aligning the "walk" and the "talk" of sustainability efforts. Many companies are moving towards more integrated disclosure and assurance that clearly details risks, opportunities, ethical imperatives, and strategic priorities - and ensures that both data and narrative tell an accurate story about an organization's achievements and challenges.

Related topics: Sustainability Reporting, Financial and Monetary Systems, Economic Growth, Sustainable Development, Future of Work, Justice and Law, Global Governance, Corruption

2.20 Shifting Mobility Demand Patterns

Shifting consumer preferences and higher costs have triggered speculation about 'peak auto'

COVID-19 disrupted long-established mobility patterns in two important ways: it changed how we commute to work, and where we are able to live. In many places around the world, a hybrid model - working from home, working from the office, or even working from another location like a coffee shop or friend's house - has been more firmly established. For example, in the US, the portion of paid full days of work done from home has stabilized at about 30%, according to data published by WFH Research. Meanwhile the pandemic has also changed where we tend to live. In the US, large urban counties have generally not recovered from their significant population outflows during 2020 and 2021. City leaders are therefore increasingly pushing concepts like the 15-minute city, and have a renewed interest in urban morphology and structure. The connections between the built environment, zoning and land use regulations and practices, the design of city streets, and urban mobility is increasingly emphasized. A movement of citizen urbanists is pushing for more mobility options beyond the car - like bike lanes, micromobility, and more investment in public transportation.

Consumer sentiment is also shifting when it comes to mobility. Research published by MIT suggests that people in more developed economies have lower levels of "car pride" than in less developed economies, which does not bode well for the long-term future of the car as a status symbol (the US is a notable exception). In many places, younger people are now less likely to own a car or have a driver's license than their parents, though some studies attribute this more to an increasing total cost of ownership rather than shifting preferences. The idea of "peak auto," or that global automotive sales have peaked and will now slowly decline, has been debated in automotive circles at least since 2018. Some argue that we are transitioning away from the historically dominant model of the personally-owned automobile (for those wealthy enough to buy one, anyway). Evidence supporting the peak auto theory includes increased urbanization leading to global gridlock, an ageing population in combination with studies indicating that older people tend to drive less, and emerging alternatives to ownership such as carsharing, ridehailing, and shorter-term leasing options like e-bikes and micromobility.

Related topics: Behavioural Sciences, Future of Consumption, Agile Governance, Entrepreneurship, Cities and Urbanization, Pandemic Preparedness and Response, Future of Work, Longevity Economy, Corporate Governance

2.21 Decoupling Growth from Resource Use

Science suggests breaking the destructive link between economic growth and natural resource use is possible

Natural resources underpin the global economy, as biomass, fossil fuels, metals, minerals, arable land, and water supply everything from the food we eat to the buildings we live in. These resources are also a bridge between economic activity and climate change, biodiversity loss, pollution, and poor health. As the global economy and population have expanded, the use of natural resources has more than tripled over the past five decades - with dire consequences for the environment and human health and well-being. According to the International Resource Panel's report Global Resources Outlook 2019, the extraction and processing of materials including metals, minerals, fossil fuels and biomass are responsible for half of all global climate change, more than 80% of water stress and land-related biodiversity loss, and a third of all air pollution. According to IRP estimates, barring drastic change, global resource consumption will double by 2060. This rate of growth would not only be catastrophic for the climate and for biodiversity, it would also further undermine notions of fairness and equality - as these resources would be used up inordinately by high-income countries, while related negative impacts are primarily absorbed by the less fortunate.

The average person living in a high-income country consumes 60% more natural resources than their counterpart in an upper-middle-income country, and more than 13 times that of a counterpart in a low-income country. In every type of economy, the decoupling of natural-resource use (and related environmental impacts) from economic growth and human well-being is necessary to transition to a more sustainable future. Better resource management is key in this regard - for example, IRP modelling shows that by implementing proper resource efficiency, circular economy practices, and sustainable consumption and production policies, the growth of global resource use could slow by 25%, greenhouse gas emissions could decrease by 90%, forested areas and natural habitats could increase by 11%, and the global economy could grow by 8%, all by the year 2060. In particular, by managing natural resource use in more efficient and sustainable ways along some of the most resource-intensive value chains, such as those used for food, construction, mobility systems, and textiles (among others), we can better ensure economic competitiveness, bolster social equality, more aggressively tackle environmental challenges, and advance the Agenda 2030 Sustainable Development Goals.

Related topics: Cities and Urbanization, Climate Crisis, Modern Mining, Water, Circular Economy, Corporate Governance, Nature and Biodiversity, Global Governance, Forests, Economic Growth, Logistics, Inequality, Emerging-Market Multinationals

2.22 Behaviour and Governance

Behavioural insights are informing policy-making and encouraging civic participation

The design of health, safety, financial, and education-related public systems and services can benefit from taking into account the psychological traits of the people meant to benefit from them. Past approaches to policy-making often relied too much on simple financial rewards and punishments. Now, the behavioural-science toolkit has expanded significantly; it includes social incentives like "nudges," or subtle changes in the environment that gently push people to make better decisions while retaining their freedom of choice. These behavioural tools take into account the fact that decisions do not always result from a purely rational weighing of cost versus benefit, but instead are often influenced by simplistic reasoning, intuition, and social motives. Behavioural designs are often more effective, and less costly, than traditional approaches that rely on financial incentives or persuasion. For example, millions of people in the United Kingdom and the US have increased their retirement savings in response to a simple change in the way certain pension plans are being presented to them. These new "Save More TomorrowTM" plans have people commit to allocating a portion of future salary increases towards their retirement savings. The sting of these paycheck reductions is dulled by the fact that they only kick in after raises, making people much more willing to agree to them.

Behavioural science can also help increase civic participation, by motivating people to volunteer, donate, sign petitions, participate in rallies, interact with their government representatives, and vote. Leveraging people's sense of identity can increase voter turnout, for example; in a study published in Proceedings of the National Academy of Sciences in 2011, researchers demonstrated that when items in a pre-election survey were phrased to invoke the respondent's identity (by asking, "How important is it to you to be a voter in the upcoming election?" as opposed to, "How important is it to you to vote in the upcoming election?"), respondents were in fact more likely to vote, according to records associated with two state-wide elections in

the US. Another study on increasing voter turnout, published in 2010 in Psychological Science, was based on the 2008 US presidential election; it showed that if calls made to potential voters not only encouraged them to vote but also prompted them to make a specific plan for casting their ballot, turnout increased among single-eligible-voter households by 9%. Other ways that the behavioural sciences can inform the design of better-functioning societies include motivating people to pay their taxes, preventing people from dropping out of college, increasing vaccination rates, and promoting recycling and the consumption of healthier food. Further collaboration between behavioural science researchers, governments, and civil society institutions could ultimately foster a more successful journey through the Fourth Industrial Revolution.

Related topics: Longevity Economy, Civic Participation, Corporate Governance, Agile Governance, Global Governance, Social Protection, Sustainable Development

2.23 Successful Digital Transformation

Companies that double down on digital transformation may be better able to weather COVID-19

According to the results of a survey published by SAP, while nearly all corporate leaders think digital technologies will drastically disrupt their industry, just 44% believe they are prepared for that disruption. Soon, just about every company will need to think like a technology company - or risk extinction. Many companies struggle to realize a return on their investment in digital transformation. Companies collectively spent an estimated $1.2 trillion on transformation efforts in 2019, according to IDC, yet research published by MIT found that only 13% of business leaders believe their organizations are truly equipped to compete in the digital age. Evidence suggests that the most successful efforts do not approach transformation simply as a way to experiment or cut costs, but rather as a fundamental tool to create new value. Artificial intelligence, 5G, and autonomous vehicles have all amplified opportunities to create value; an estimated 80% of all emerging technologies will have foundations in AI by 2021, while the number of 5G connections in the world is expected to triple by 2023, and more than half of all passenger vehicles will be electric by 2040.

As the financial and business impact of COVID-19 spreads, companies that double down on responsible digital transformation efforts may be better able to thrive. However, strong leadership will be required. Fostering cultural changes and a ”digital at the core” mindset will be necessary, as will crowdsourcing and co-creating and piloting new ideas and business models among different teams. Large companies that are not digital natives often find it difficult to replace legacy structures and processes with digital-first approaches. At all of these companies, leaders need to be equipped with digital skills to keep pace with technology advancements, and to make timely decisions. However, according to the results of a survey published by the MIT Sloan School of Management, only 9% of executives strongly believed their leaders had the right skills to thrive in a digital economy. The need for digital skills at all levels applies to even the most traditional of businesses; the European Central Bank, for example, has recommended that banks need to adopt new and diverse skills and experience when it comes to technology and digital innovation - especially at the board level.

Related topics: Innovation, Entrepreneurship, Sustainable Development, Digital Communications, Future of Work, The Digital Economy, Internet of Things, Artificial Intelligence

2.24 Digital and Sustainable Transformation of Industries

The pandemic has accelerated both digital immersion and a digital transformation gap

COVID-19 catapulted organizations everywhere into the digital-first world. Greater access to connectivity and digital services had already been reshaping industries, business models, and supply chains; the pandemic accelerated these trends, requiring organizations of all types to rely more heavily on digital operations and business models to create new value and experiences. But while some organizations are making progress on their digital transformation goals, others have not. The pandemic widened this digital transformation gap; as some speed ahead, others struggle to survive, let alone thrive. Without a comprehensive government approach to digitally equipping an economy, including sustainable investment in connectivity infrastructure and services, inequalities widen. A complete and responsible digital transformation of industries requires careful consideration of digital infrastructure investments and related policies, to enable a transition across an entire economy - in ways that benefit society as a whole, and not just now but for years to come.

Governments have an opportunity to make step changes in terms of technological advancement across industries and in their own operations, through sound policy and investments in digital skills and infrastructure. Research shows that digital transformation could help reduce emissions in hard-to-abate sectors by as much as 20% by 2050. In addition, the World Bank estimates that the digital economy is equivalent to 15.5% of global GDP, having grown two-and-a-half times faster than global GDP over the past 15 years. Low productivity and scaled back growth, coupled with an inability to fully (and responsibly) benefit from technologies such as cloud computing, 5G, artificial intelligence, and high-performance computing will lead to a deteriorating quality of essential services - and block the transition to a more advanced economy. Interoperability will be vital for ensuring information exchange, and enabling collaboration.

Priorities for collaboration:

-Encourage a cross-sector, public-private dialogue on value creation to design new frameworks around sustainable investments in connectivity infrastructure and services.

-Stimulate growth through digitally enabled collaboration models that enable transformation of industries.

Related topics: Entrepreneurship, Corporate Governance, Innovation, Artificial Intelligence, Virtual and Augmented Reality, Future of Leadership, Economic Growth, The Digital Transformation of Business, Blockchain

2.25 Sustainability Reporting and Assurance

Regulations are becoming more important to increase the consistency and reliability of sustainability information

Corporate sustainability reporting has become common practice for large firms, and is the most widely used source of information about sustainability performance. A KPMG survey in 2024 found that 96% of the world's largest 250 firms report on sustainability, and 95% publish carbon targets. One major challenge regarding such reporting is related to inconsistencies in data, due to the different ways firms measure and reflect sustainability factors. For example, some firms may report only direct greenhouse gas emissions, while others include emissions from their entire supply chain. As a result, companies with more comprehensive and rigorous reporting can appear to perform worse than those using less thorough approaches. For this reason, standards have been essential for the development of sustainability reporting. The most relevant example of mandatory disclosure regulation is the EU's Corporate Sustainability Reporting Directive (CSRD), though it is still unclear as to which companies will finally be covered by the directive until legislative processes are finalized, which is slated for the end of 2025. The CSRD and similar regulations typically require disclosure across a broad set of topics, including climate risks, carbon emissions, social impacts and governance practices. In parallel, regulatory attention is expanding beyond climate to include nature and biodiversity, with the development of frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD). Reporting on biodiversity remains voluntary, apart from in the EU under the CSRD, but is steadily increasing as companies recognise the material risks associated with nature loss and ecosystem degradation.

Generating sustainability reports can be labour-intensive and costly. The necessary data collection often requires dedicated staff and consultants, making it more difficult for smaller firms with fewer resources. Many companies continue nevertheless to invest in sustainability reporting. Internally, companies may find that it aids in identifying inefficiencies, managing risks and aligning operations with long-term goals. Externally, transparent sustainability reporting can enhance a company's reputation, attract investment, build stakeholder trust and secure its social license to operate. Companies are also aware that in the longer term they will have no choice but to deal with the risks and opportunities related to the impacts of climate change and that mandatory reporting regulation is likely to increase. One key related development has been an increase in the auditing and assurance of corporate sustainability reporting. The CSRD, for example, requires companies to initially obtain limited assurance over their reported sustainability information, with a shift towards reasonable assurance expected over time, elevating the reliability and credibility of disclosures to a level closer to that of financial reporting. According to a KPMG 2024 survey, 54% of the top 100 companies in 49 countries are obtaining independent assurance on their sustainability information. As regulatory requirements for sustainability reporting increase, these figures are also likely to increase.

Related topics: Future of the Environment, Corporate Governance, Global Gender Gap, Small and Medium-Sized Enterprises, Economic Growth, Future of Work

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About Strategic Intelligence

Our approach

In today's world, it can be difficult to keep up with the latest trends or to make sense of the countless transformations taking place. How can you decipher the potential impact of rapidly unfolding changes when you're flooded with information - some of it misleading or unreliable? How do you continuously adapt your vision and strategy within a fast-evolving global context? We need new tools to help us make better strategic decisions in an increasingly complex and uncertain environment.

This live briefing on Business Strategy & Transformation , harnesses the World Economic Forum's Strategic Intelligence platform to bring you the very latest knowledge, data and context from our 300+ high quality knowledge sources. Its aim is to help you understand the global forces at play in relation to Business Strategy & Transformation and make more informed decisions in the future.

Each day, our Strategic Intelligence platform aggregates, distills and synthesizes thousands of articles from around the world. We blend the best of human curation with the power of machine learning to surface high-quality content on over two hundred global issues to our one million users globally. Our hand-picked network of content partners from around the world means that we automatically exclude much of the noisy clickbait, fake news, and poor quality content that plague the Internet at large. We work with hundreds of think tanks, universities, research institutions and independent publishers in all major regions of the world to provide a truly global perspective and we are confident that our data are well positioned when it comes to the intrinsic biases inherent to open text analysis on uncurated content from the Internet. For further context on our approach, you may be interested to read Strategic trend forecasting: anticipating the future with artificial intelligence and These Are The 3 Ways Knowledge Can Provide Strategic Advantage.

Overview of methodology

Our Transformation Maps are dynamic knowledge visualisations. They help users to explore and make sense of the complex and interlinked forces that are transforming economies, industries and global issues. The maps present insights written by experts along with machine-curated content. Together, this allows users to visualise and understand more than 250 topics and the connections and inter-dependencies between them, helping in turn to support more informed decision-making by leaders.

The maps harness the Forum network's collective intelligence as well as the knowledge and insights generated through our activities, communities and events. And because the Transformation Maps are interlinked, they provide a single place for users to understand each topic from multiple perspectives. Each of the maps has a feed with the latest research and analysis drawn from leading research institutions and media outlets around the world.

At the centre of each map is the topic itself. This is surrounded by its "key issues", the forces which are driving transformation in relation to the topic. Surrounding the key issues are the related topics which are also affected by them. By surfacing these connections, the map facilitates exploration of the topic and the landscape within which it sits.

The framework extends beyond mapping current trends by incorporating forecasts and scenarios to project potential future states of the system. Forecasts are based on observable patterns, while scenarios explore broader possibilities, including low-probability but high-impact events. These elements contextualize key issues and related topics within potential future trajectories, enhancing strategic thinking and decision-making.

Harnessing collective intelligence from the Forum network and leading research institutions, the maps synthesize diverse insights into a cohesive view. By integrating these insights with the latest research and analysis, the framework provides a comprehensive understanding of how transformations unfold and interrelate, empowering users to navigate the evolving landscape effectively.

Scenarios

In-line with best practice on the use of artificial intelligence in products and systems, in this section we provide full transparency on how artificial intelligence is used in our scenario generation automation.

In complex and fast-moving environments, it is difficult to maintain a clear view of what may change next, and which uncertainties deserve attention. Scenario planning helps by offering a structured way to explore alternative futures, test assumptions and clarify decisions under uncertainty.

We generate scenario packs using artificial intelligence within a defined methodology and on which we have been guided by our Global Strategic Foresight Community. The process follows the same broad logic used in scenario workshops: move from issue framing, to key uncertainties, to a 2×2 matrix, and then to four distinct scenario narratives. In an automated setting, each step includes validation to avoid weak axes and indistinct scenarios.

Each scenario pack included in our briefings includes a 2×2 scenario matrix defined by two critical uncertainties (axes), four scenario narratives and a *throughline* that connects each scenario back to the matrix.

Our process is as follows:

1. Topic framing and inputs. First, we ground our scenario design in our high-quality, expert curated content. Our topic summaries, key issues and related knowledge are used to anchor scenarios in the topic space.

2. Abstraction of underlying forces. Topic issues are often technical and uneven in granularity. Our AI agents abstract them into a small set of cross-cutting forces and tensions that can support scenario work across domains. This creates a conceptual frame that is usable for uncertainty and axis generation.

3. Identification of drivers and uncertainties. From that conceptual frame, an AI agent identifies drivers that could shape outcomes and that carry genuine uncertainty. Drivers are defined with directional poles so that they can support different regime logics rather than incremental variation.

4. Axis generation and validation. An AI agent then proposes multiple candidate axes of uncertainty and

another agent then evaluates them against criteria commonly used in facilitated scenario work: strength of the tension between poles, relevance to the topic and its drivers, and decision utility, meaning whether different positions would change strategic choices. Candidate axes are then combined into matrix pairs and tested for distinctiveness. This step is designed to avoid quadrant ”collapse”, where scenarios converge in practice despite different labels. Candidate pairs that do not yield clearly differentiated quadrants are rejected and alternatives are tried.

5. Quadrant blueprints using STEEPLE. Once an axis pair is selected, our AI develops a structured blueprint for each quadrant. Blueprints define the internal logic of that world and describe how the system behaves across STEEPLE domains (Social, Technological, Economic, Environmental, Political, Legal and Ethical), with attention focused on the domains that are most consequential for that quadrant. This stage is designed to establish coherence and contrast before narrative writing begins.

6. Grounding and counter-grounds. Our AI then builds an evidence set from the Strategic Intelligence knowledge base, drawing on our curated network of trusted content partners. Evidence is used to strengthen and challenge the emerging interpretation of each quadrant. In practice, our AI compiles supporting evidence for key mechanisms implied by the blueprint, as well as counter-evidence and constraints that suggest limits, failure modes or alternative dynamics. This step functions as a stress test. It identifies claims that are too thin, overly linear, or inconsistent with available knowledge, and it provides material used to refine the narrative direction before writing begins.

7. Narrative development within a constrained world. Once a narrative direction has been selected for a quadrant, our AI produces the scenario narrative within a constrained ”world”, mirroring workshop practice where participants explore a defined quadrant logic and then build out a coherent future state. At this stage, our models are instructed to remain consistent with the quadrant blueprint, incorporate supporting evidence where it adds credibility and specificity, reflect counter-evidence as tensions, constraints, trade-offs or contested dynamics, and describe a plausible future state rather than a transition story, prediction or recommendation. The result is a scenario that remains anchored to a defined structure while allowing creative exploration of how that structure could plausibly play out. Our AI also generates a short throughline for each scenario explaining how it expresses its position on the axes, as well as a matrix summary describing the uncertainty space and what differentiates the four futures.

8. Quality checks and transparency. Finally, an AI agent performs quality checks intended to prevent common failure modes in automated scenario generation: axes that lack meaningful tension or strategic relevance, quadrant ”collapse” where scenarios become minor variations of the same future, internally inconsistent causal logic across STEEPLE domains, and narratives that drift away from the quadrant blueprint. Intermediate artefacts (candidate axes, evaluations, quadrant blueprints, and grounding materials) are retained so results can be reviewed, compared over time, and improved.

We welcome feedback on our approach as we continue to refine and evolve our use of artificial intelligence in strategic foresight.

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