

# Boards Tackling Geopolitical Challenges

# STRATEGIC INTELLIGENCE BRIEFING



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# **Executive summary**



Explore the interactive version online

Insights for Boards tackling Geopolitical challenges

The key issues shaping and influencing Boards Tackling Geopolitical Challenges are as follows:

#### The EU's Geopolitical Position

Greater global instability brings greater EU geopolitical responsibility

#### **Environmental Dangers**

European efforts to reduce reliance on Russian energy demonstrate that conflict can drive innovation as much as cooperation

#### Strained Institutions and Alliances

In a multi-conceptual world vulnerable to pandemics and conflict, traditional global governance is under pressure

#### Deeper Intelligence

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

#### Shifting Geopolitics and Geo-economics

CCOs play integral roles in helping companies navigate an increasingly complex and uncertain global landscape

#### Semiconductors and Geopolitics

The startling advancements now being fuelled by semiconductors make geopolitical wrinkles unavoidable

#### Asia's Rising Geo-economic Influence

The number of firms from Asia in the Fortune Global 500 more than quadrupled between 2004 and 2020

#### Civilization Divide and Geopolitics

Geopolitical divides can worsen regional conflicts

#### Multipolar, Multi-conceptual

New power centres with differing values and visions are remaking the world order

#### **Changing Polarity**

The current international system has been deemed 'multipolar,' 'bipolar' and even 'apolar'

#### Cybercrime

The nature of ransomware attacks has shifted from annoyance to the disruption of key infrastructure

#### Conflict and Security Challenges

As conflict increasingly displaces populations, COVID-19 continues to create complications

#### Cyber Diplomacy and International Security

Cyber actors operate under the guise of nation-states whose stated aims are often in conflict with their observed activity

#### Military Modernization and New Kinds of War

Emerging technologies could help address longstanding issues, or hinder disarmament efforts

#### Security, Conflict and Social Cohesion

Business leaders can play a key stabilizing role by advocating for effective multilateralism

#### The Transformation of Warfare

Conflict increasingly blurs military and civilian dimensions as technology plays a more prominent role

#### Geopolitical Shifts and Conflict Displacement

The 2024 UN Summit of the Future will offer a chance to reinvigorate global governance in a perilous era

#### **Humanitarian Action in Response to Conflict**

Funding to address conflict with humanitarian aid falls well short of what is needed

#### **Technological Competition**

A global scramble for technological leadership is driving geostrategic competition

#### Re-mapping Energy Geopolitics

As the supply of fossil fuels is complicated by conflict, China is becoming a cleantech manufacturing powerhouse

#### Populism and Nationalism

Domestic politics can both fuel and feed off unresolved global issues

#### Geostrategic Competition and Security

Russia's Ukraine invasion demonstrates that competition with Moscow is a defining feature of security in Europe and beyond

#### Capture and Geopolitical Synergies

Global cooperation will be key to avoiding unnecessary setbacks for a vital new industry

#### **Economic Shifts**

There has been a resurgence in the use of economic and financial sanctions

#### Conflict Zones and Fragile States

Nuclear material and reactors in parts of the world prone to conflict are particularly vulnerable

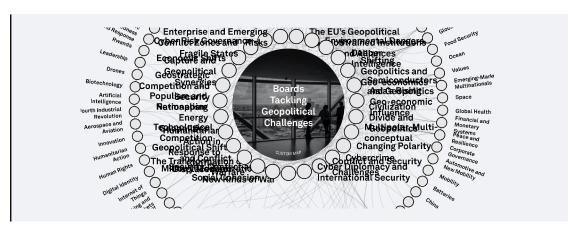
#### Cyber Risk Governance

The number of corporate boards with a dedicated cybersecurity committee is expected to increase sharply by 2025

#### **Enterprise and Emerging Risks**

Effective risk management is central to both legacy and emerging corporate governance models

Below is an excerpt from the transformation map for Boards Tackling Geopolitical Challenges, with key issues shown at the centre and related topics around the perimeter. You can find the full map later in this briefing.



# Latest insights

# A synthesis of the most recent expert analysis.

Below are your latest updates on the topic of Boards Tackling Geopolitical Challenges spanning 14 different sources.

### 1.1 Current perspectives



#### Project Syndicate

# A Baseline Scenario for the Global Economy in 2025

24 December 2024

By examining the intersection of economics, national politics, and global geopolitics, this article provides a baseline scenario for the global economy in 2025. It highlights significant weaknesses in Europe and China, as well as notable bright spots in the United States. The range of possible outcomes for the coming year is expected to broaden further.



German Institute for International and Security Affairs

# Reconfigurations in the Post-Soviet South

19 December 2024

Russia's invasion of Ukraine has had far-reaching effects on the post-Soviet South. While relations with Russia remain strong, the former subalterns in the region are asserting their independence and strengthening incumbent regimes. This has led to a widening radius of interaction and reduced incentives for political reform. The persistence of authoritarianism in the region mirrors the diminishing soft power of the EU and the West. The EU will need to offer credible incentives to strengthen relations with assertive Eurasian partners.



# Australian Strategic Policy Institute China's new social contract

18 December 2024

China's social contract is undergoing a shift, as the country's economy faces challenges and President Xi Jinping seeks to redefine the basis of his regime's legitimacy. The traditional contract, based on

strong economic growth and curbs on civil liberties, is no longer sustainable. Xi is now focusing on ensuring citizens' well-being, protecting the environment, and fostering common prosperity. China is positioning itself as a global climate leader, investing in renewable energy, and addressing citizens' concerns about environmental damage. Economic security is also a priority, as inequality increases and more people seek opportunities in cities.



#### War on the Rocks

# Alliance Networking in Europe and the Indo-Pacific - War on the Rocks

17 December 2024

Alliance Networking in Europe and the Indo-Pacific

Will Donald Trump's return to the White House lead to an unraveling of the security ties that the United States has cultivated in and between Europe and the Indo-Pacific? Interestingly, such growing cross-regional security cooperation among U.S. allies in distant regions is gaining ground at a time when the U.S.-led regional alliance systems in Europe and the Indo-Pacific are themselves exhibiting important changes, and evolving towards more nodal or flexible patterns of bilateral and "minilateral" defense cooperation. The 2023 Camp David agreements between the United States, Japan, and South Korea are a case in point.

These ongoing transformations challenge two longstanding assumptions about U.S.-led alliances.

#### Vienna Institute for International Economic Studies

#### Europe's Economic Dependencies Demand Pragmatic Solutions

13 December 2024

Europe's economic competitiveness requires a pragmatic approach and a Catalytic Industrial Policy to boost the green, digital, and social sectors. Europe's energy import dependency and lack of investment in green energy infrastructure have made it vulnerable to leverage by Russia. Additionally, Europe's high trade openness and reliance on exports highlight the need for policies that address declining export shares in certain countries. Demographic decline and population loss in Central, East, and Southeast Europe further exacerbate labor shortages and the need for specialized markets. Further investment in capital and technology, particularly in export-oriented sectors, is crucial for reaching global markets.



Australian Institute of International Affairs

#### East Asian States' Differing Options in Dealing with China

19 December 2024

Geography, democracy, and historical identity play key roles in shaping East Asian states' responses to China's rise. Proximity to China influences whether states balance or bandwagon with China, while democracies are more likely to balance and authoritarian states are more likely to bandwagon. Historical enmity also contributes to balancing against China. Factors such as national power, trade dependence, international institutions, and alliances have relatively little impact in East Asia. The study highlights the importance of geography, democracy, and identity in understanding East Asian states' strategic choices when dealing with China.



#### Harvard Business Review

# Navigating the New Geopolitics of Tech

11 November 2024

Breakthroughs in critical and emerging technologies are reshaping global power dynamics, economics, and security frameworks. Geopolitical instability is causing disruptions in supply chains and fueling competition over critical resources and technologies. Donald Trump's re-election is expected to intensify these dynamics.





Exploring Refugees'
Intentions to Return to
Ukraine: Data Insights and
Policy Responses - Ukraine

18 December 2024

Around 1 million Ukrainian refugees have returned to Ukraine, either permanently or temporarily, raising questions about future returns and policy responses. A new study explores the factors influencing refugees' intentions to return or remain abroad, including personal circumstances, host-country reception conditions, and security

conditions in Ukraine. The study found that 15% of surveyed refugees had concrete plans to return in the near term, with 91% hoping to do so in the long term. Factors driving return intentions include improved security conditions, host-country reception conditions, employment status, and family dynamics. The study emphasizes the need for continued international efforts to rebuild and restore security in war-torn Ukrainian communities and recommends flexible policies to facilitate integration and future returns.

#### World Economic Forum



#### Fossil fuel demand is high in Central Eastern Europe. Here's how it can make the energy transition

27 December 2024

Fossil fuel demand in Central Eastern Europe remains high, presenting challenges for the energy transition in the region. To navigate the complex geopolitical landscape, a consistent and credible approach is necessary. While the global energy sector faces ambitious net-zero targets, the CEE region has its own specific factors, including resilient economic growth and energy demand, geopolitical divisions, and limited infrastructure. As part of the EU's energy transition commitments, the region needs to define successful decarbonization pathways that fit its unique circumstances. The article emphasizes the importance of responsible energy transition, with a focus on low-carbon investments that align with the existing asset ecosystem and promote scalability. Strategic partnerships and selective investments in conventional business, such as gas and LNG, are also highlighted as part of the transition.



#### **Eco-Business**

# Who are climate migrants and what can the world do for them?

19 December 2024

Climate migration is becoming a significant issue due to the growing impact of climate change. Last year, 26 million people were internally displaced by climate-related disasters, and by 2050, that number could reach 216 million. However, identifying climate migrants is complex, as they may have multiple motives for moving. Many climate migrants relocate within their own country, with cities being a common destination. While some countries are offering support and opportunities to climate migrants, others face challenges in providing adequate resources. It is crucial to prioritize disaster risk reduction and support integration to prevent further displacement and ensure the well-being of climate migrants.



#### **UNIDIR**

#### Cloud Computing and International Security: Risks, Opportunities and Governance Challenges

18 December 2024

Cloud computing has revolutionized the global digital economy by enabling innovation and connectivity. However, it also poses risks and challenges. This report examines the benefits and risks of cloud computing, its impact on international security, and the governance challenges it presents. The report provides a technology primer and a governance primer, offering technical insights and policy analysis. Cascading failures and concentration of services are identified as potential sources of severe consequences. The report aims to understand the implications of this critical technology on international security and its relevance to arms control.



#### **IESE**

# What should boards of directors prioritize in 2024?

11 June 2024

A survey conducted by IESE Business School has shown boards of directors need to focus and develop strategies for the challenges of the future. The key areas in which boards need to upskill include cultivating a company culture, structuring boards that prioritise diversity and good governance, and preparing for CEO succession and transitions. Plans to keep up with and respond to intensifying competition and technological disruption were called for, but the authors found customer data was rarely consulted. Respondents were largely lukewarm over conducting geopolitical risk analyses, particularly among non-listed companies.



#### Harvard Business Review

#### 5 Rules for Companies Navigating Geopolitical Volatility

28 October 2024

Corporate leadership in the face of geopolitical volatility requires following five key rules: 1) Seek a seat at the table and shape one's role; 2) Embrace geopolitical "swing states"; 3) Avoid compartmentalizing crises; 4) Plan around inflection points rather than relying on predictions; and 5) Understand the limits of commerce in geopolitics. In an increasingly turbulent and unpredictable world, these rules are crucial for businesses to adapt, innovate, and grow.



#### World Economic Forum

The top energy stories of 2024

20 December 2024

Artificial intelligence (AI) and nuclear energy can revolutionize energy systems by optimizing renewable energy sources, boosting energy storage capabilities, and reducing greenhouse gas emissions. Countries are making progress in their energy transition, with over 40% of the world's electricity generation coming from zero-carbon sources. However, there is still work to be done to address emissions in the heavy industry sector. Investments totaling \$30 trillion, including \$13 trillion from industries and \$17 trillion from the wider ecosystem, are needed to achieve net-zero emissions by 2050.



# Geneva Centre for Security Sector Governance (DCAF)

#### Accountability in Cybersecurity

19 December 2024

This book delves into the roles and responsibilities of state actors in cyberspace and the implications of accountability. It explores topics such as parliamentary oversight of cybersecurity policies, Ombuds Institutions and oversight of cybersecurity, accountability for cyber attacks, and the role of civil society in ensuring accountability in cybersecurity. The authors provide insights and suggestions for improving government approaches to cyber related issues.



# Australian Institute of International Affairs

#### India-China Economic Interdependence: Collaboration Amid Rivalry in Global Supply Chains

18 December 2024

India and China have a paradoxical relationship of economic interdependence despite escalating geopolitical tensions. The two countries maintain both cooperation and competition, with trade being a significant aspect. China is one of India's largest trading partners, with bilateral trade reaching billions of dollars. The trade relationship includes sectors such as manufacturing, pharmaceuticals, and technology. Chinese imports provide essential components for India's consumer market, while China benefits from a large export market. The technology sector sees collaborations between Indian and Chinese companies, with Chinese investments playing a crucial role in India's startup ecosystem. The pharmaceutical industry also relies heavily on imported APIs from China, contributing to the global supply of affordable generic medicines. In the renewable energy sector, collaboration is vital for India's ambitious targets, with China being a significant player in the solar market. This economic interdependence between India and China has important implications for global supply chains and consumer markets.



#### TRENDS Research & Advisory

#### Evaluating the Green Premium: Challenges and Opportunities in the Transition to Sustainable Energy Solutions

16 December 2024

The concept of the "green premium" refers to the additional cost of adopting renewable energy technologies compared to traditional fossil fuels. This poses challenges for oil-rich countries that heavily rely on fossil fuel production, as transitioning to sustainable energy systems can have significant economic implications. The upfront costs of renewable energy infrastructure are often viewed as obstacles to maintaining economic stability and growth. However, the green premium also presents opportunities for innovation and investment, as the decreasing costs of renewable energy production and the global emphasis on addressing climate change drive interest in renewable technologies. Policy frameworks and international climate agreements play a crucial role in navigating the balance between environmental goals and economic growth in these countries.

#### ReliefWeb



#### Asia-Pacific Migration Report 2024: Assessing Implementation of the Global Compact for Migration - World

16 December 2024

Asia and the Pacific region is a significant source and destination for international migration, with one-third of global migrants coming from this region. Migration in the region is driven by various factors such as poverty, inequality, conflicts, climate change, and disasters. While migration can bring benefits in terms of demographic, social, and economic development, migrants and their families often face challenges and human rights violations. The Asia-Pacific Migration Report 2024 assesses the implementation of the Global Compact for Safe, Orderly and Regular Migration (GCM) in ESCAP member States over the past four years. The report highlights the scale of migration, the contributions of migrants to sustainable development, and the need for adequate support and social inclusion for migrants. Regional reviews on GCM implementation are being conducted in all regions.

### 1.2 Potential scenarios

In this section, we use experimental artificial intelligence to surface a range of scenarios related to the topic. These are not predictions but are provided to anchor discussions and help you think through and anticipate potential opportunities and risks.

Please note that this section is part of our ongoing trials using experimental artificial intelligence technology to enrich our user experience and bring our members the very latest developments and trends. We'll continue to innovate and refine our efforts based on these pilots.

#### 1. A rapid transition to renewable energy

A major breakthrough in renewable energy technology leads to a rapid transition away from fossil fuels, with many countries committing to ambitious targets for reducing carbon emissions. The transition creates new economic opportunities and helps to address environmental dangers, but also leads to significant social and political upheaval as traditional industries are disrupted.

Related topics: Environmental Dangers, Strained Institutions and Alliances, Multipolar, Multi-conceptual, Economic Shifts

# 3. Global Pact on Renewable Energy Sparks Economic Boom

In a historic move, world leaders have signed a global pact to accelerate the transition to renewable energy, leading to an unprecedented economic boom. The agreement includes massive investments in solar and wind technologies, creating millions of jobs worldwide. As countries collaborate on shared energy projects, geopolitical tensions ease, fostering a new era of international cooperation. The pact also addresses energy access in developing regions, ensuring that no country is left behind in the energy transition. This landmark agreement is hailed as a turning point in the fight against climate change.

Related topics: Re-mapping Energy Geopolitics

# 5. A new technology is developed for humanitarian aid delivery

A new technology is developed that has the potential to revolutionize the way humanitarian aid is delivered in conflict zones. The technology is designed to be locally-owned and operated, and it allows aid organizations to reach more people in need while minimizing the risk to aid workers.

Related topics: Humanitarian Action in Response to Conflict

# 2. A group of hackers successfully infiltrate a major corporation

A group of hackers successfully infiltrate a major corporation, stealing sensitive data and causing significant financial damage. The attack highlights the need for better cyber risk governance and the development of stronger cybersecurity measures to protect against cybercrime. The corporation faces significant reputational damage and legal consequences, leading to a renewed focus on cybersecurity across the industry.

Related topics: Cybercrime, Cyber Risk Governance

# 4. A major power withdraws from a key disarmament treaty

A major power withdraws from a key disarmament treaty, citing concerns over the actions of other countries. This leads to increased tensions and a renewed focus on military modernization and new kinds of war.

Related topics: Military Modernization and New Kinds of War

#### A country's power grid is hit by a major cyberattack

A major cyberattack on a country's power grid causes widespread blackouts and disrupts transportation systems, leading to economic damage and loss of life. The attack is traced back to a state actor seeking to gain an advantage in the global competition for power.

Related topics: The Transformation of Warfare, Geostrategic Competition and Security

A variety of articles have been used by our artificial intelligence in order to formulate these scenarios. These acted as our "signposts" and provide clues or hints about what the future may entail. We recommend reading them for further context:

- Scientific and Technological Flows Between the United States and China, RAND Corporation
- A troubling turn in Darfur violence, Ethiopia food aid suspension fallout, and the EU's deadly borders: The Cheat Sheet, The New Humanitarian
- Renewable relations: A strategic approach to European energy cooperation with the Gulf states, European Council on Foreign Relations
- Is your industry at risk of a cyberattack?, World Economic Forum
- Global Governance in an Age of Fracture LSE Phelan US Centre Event Review, London School of Economics and Political Science
- Tech Companies Are Fighting for Ukraine. But Will They Help Save Lives in Other Global Conflicts?, International Crisis Group
- China and Russia May Be Expanding Natural Gas Cooperation Just Not Via Power of Siberia 2, The Diplomat
- Central banks' rate push a risk to growth, and other economy stories to read this week, World Economic Forum
- Why U.S. Regional Banks Are Still in Crisis, Kellogg School of Management
- What the GDPR can teach us about Al regulation, World Economic Forum
- Preserving forests to protect deep soil from warming, Science Daily
- DeBriefed 16 June 2023: Bonn talks close; Shell sticks to fossil fuels; Record ocean heat, Carbon Brief
- Bonn climate talks: Key outcomes from the June 2023 UN climate conference, Carbon Brief
- How to Scale Local Innovations in Big Companies, Harvard Business Review
- 6 ways to make energy more affordable, efficient and accessible, World Economic Forum
- Yerevan Dialogue 2024 Il Rethinking Energy Transitions: Powering Tomorrow's Growth Il Live, Observer Research Foundation
- Geopolitics of the Energy Transition, Istituto Affari Internazionali

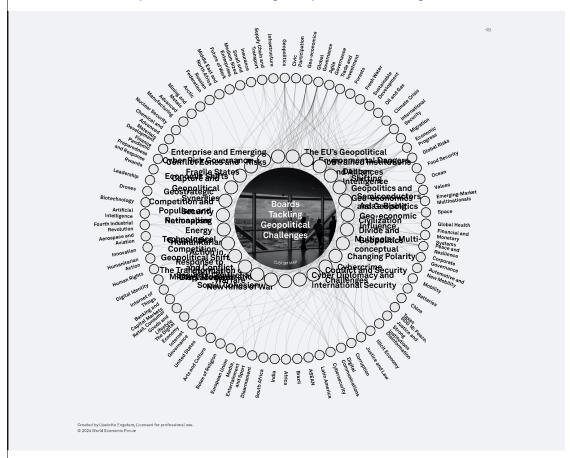
# 2 Strategic context

# The key issues shaping Boards Tackling Geopolitical Challenges.

The following key issues represent the most strategic trends shaping the topic of Boards Tackling Geopolitical Challenges. These key issues are also influenced by the other topics depicted on the outer ring of the transformation map.

#### FIGURE 1

#### Transformation map for Boards Tackling Geopolitical Challenges



#### 2.1 The EU's Geopolitical Position

Greater global instability brings greater EU geopolitical responsibility

Russia's invasion of Ukraine in 2022 has proven to be a turning point for the EU as an actor in international relations. After COVID-19 had pushed the EU to strategically reconsider its position in the world in terms of production, logistics, and partnerships, the war on its eastern flank triggered an equally pressing need to bring a unified voice to global affairs. This need has only intensified, due to the uncertainty created by US

domestic politics, the increased dependence of Russia on China, the war in Gaza, the volatile situation in Libya and the Sahel, and political radicalization around the world. A so-called "Team Europe" approach has been proposed to help get all members on the same track, and efficiently utilize EU resources to have a real global impact and serve as a beacon of rules-based multilateralism. Team Europe has been working within the framework of the "Global Gateway" strategy presented by the EU Commission in 2021; the aim has been to build bridges with different regions (particularly in the Global South), and to grapple with global challenges including climate change, the green and digital transitions, and supply chain security.

Through its global interventions and investments in health, research, education, digital connectivity, and raw materials, the Global Gateway has sought to build partnerships in the context of EU values and interests: transparency, democracy, equality, and sustainability. Related cooperation agreements and packages with countries, regions, and regional blocs have been negotiated or are in negotiation. There have been programmes in Africa, Latin America and the Caribbean, Asia-Pacific, the Balkans, and the Middle East. They have been positioned to serve as counterweights to China's increasingly prominent role in trade and development in the Global South - particularly in Africa and Latin America. In order to create truly lasting and mutually beneficial partnerships with these regions, however, the EU must overcome challenges related to ugly historical legacies, mutual mistrust, and - in many cases - a lack of cultural respect. For example, conflicting perspectives on the conflicts in Ukraine and Gaza have generated misgivings and made interaction and communication more difficult. To avoid such hindrances, the EU must begin to fully acknowledge and recognize the legacy issues that pose potential roadblocks to the support it can (and should) provide for the development of more sustainable economies and functional state institutions in the Global South.

Related topics: Supply Chain and Transport, Infrastructure, Geopolitics, Civic Participation, Geo-economics, Global Governance, Agile Governance, Trade and Investment

### 2.2 Environmental Dangers

European efforts to reduce reliance on Russian energy demonstrate that conflict can drive innovation as much as cooperation

The decline and fall of some of the world's most sophisticated civilizations has been linked to environmental factors - from the Mayans succumbing to deforestation and drought, to the food supply network disruptions that befell the Romans. Human activity has already warmed the planet by more than 1°C since the industrial revolution, and global temperature rise has wrought increasingly destructive fires, floods, and storms. The intersection of environmental pressures with issues like migration and conflict illustrates just how vulnerable modern, globally-integrated societies can be to a shock to one of their component parts. Humanity's ecological impact is both increasingly visible and increasingly deadly; while ancient civilizations faced localized ecological crises, and had relatively few tools to soften the resulting economic and social impacts, contemporary societies are pushing against planetary boundaries even though we have the scientific and technical know-how required to understand and mitigate destructive behaviour. The global cooperation required to develop necessary solutions remains aspirational. From food security to climate change, the spiralling environmental pressures that we increasingly face are not being met by system-level policy responses.

In some ways, the world appears more politically fragmented than ever. Coupled with worsening environmental threats, this is causing fragility on a grand scale. The unpredictable and profound nature of these threats magnify vulnerabilities, as was the case in 2018 when changing rainfall patterns sparked an international dispute over the Tigris and Euphrates rivers - and forced Iraqi farmers to abandon their land. Rising sea levels may displace millions of people, while the loss of biodiversity could lead to the collapse of fragile states. The economic transformation required to adapt to these threats and decarbonize the global economy in a matter of decades will disrupt countries dependent on fossil fuels. In this way, the geopolitics of environmental challenges will become increasingly existential - as they fuel conflict over whose interests are to be served. Hardening geopolitical divisions worsen these risks and inhibit collective solutions. At the same time, conflict can drive innovation; European efforts to reduce reliance on Russian energy accelerated following the invasion of Ukraine, for example. In a world of divergent values, mitigating environmental damage will be shaped as much by competition as cooperation.

Related topics: Forests, Fresh Water, Sustainable Development, Oil and Gas, Climate Crisis, International Security, Migration, Economic Progress, Global Risks, Food Security, Global Governance, Ocean

### 2.3 Strained Institutions and Alliances

In a multi-conceptual world vulnerable to pandemics and conflict, traditional global governance is under pressure

One consequence of the new, multipolar and multi-conceptual geopolitical era we find ourselves in is weakened support for core institutions like the United Nations, the World Trade Organization, and the World Health Organization. Proponents of multilateralism tend to lament this erosion of faith in a framework designed to help the world collectively take on global challenges, and peacefully settle differences. Still, some critics argue that the world's legacy institutions have been far too closely aligned with a small number of powerful states - or have descended into unhealthy gridlock and are therefore no longer able to accommodate diverging interests and values. Another criticism (made notably during the Trump administration in the US) suggests that multilateralism runs counter to the interests of people even in those relatively privileged states that have long been at the heart of the global system. One result of this fraying support for multilateralism is the emergence of a more ad-hoc approach to international cooperation. This has entailed a shift from rules to deals, and from global to regional and bilateral agreements.

Institutional competition has also increased, as countries attempt to create alternative centres of gravity like the China-led Asian Infrastructure Investment Bank, or the Russia-centred Eurasian Economic Union. There are arguments to be made in support of more distributed global governance. Greater responsiveness to discrete local conditions could potentially better foster resilience, for example. But as institutional fragmentation occurs alongside deepening geopolitical fissures, a narrowed space for global problem-solving is likely to be a source of fragility. This has been echoed in the security realm, amid a loss of faith in traditional collective security mechanisms and arms control treaties. At the same time, increasing geopolitical friction is reinforcing some alliances - this is evident in the rejuvenation of NATO following Russia's invasion in Ukraine, and in the deepening cooperation between Russia and China in challenging aspects of the US-led world order. As the world's geopolitical tectonic plates have shifted, it has caused many states to reconsider security strategies, to hedge against possible future abandonment by their traditional allies, and to explore the acquisition of new weapons capabilities.

Related topics: Values, Geo-economics, Emerging-Market Multinationals, Space, Global Health, Financial and Monetary Systems, Trade and Investment, Peace and Resilience, Global Governance, Agile Governance

# 2.4 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: Corporate Governance, Geo-economics, Infrastructure, Automotive and New Mobility, Mobility, Batteries, Supply Chain and Transport, China, Taxes, Trade and Investment

# 2.5 Shifting Geopolitics and Geo-economics

CCOs play integral roles in helping companies navigate an increasingly complex and uncertain global landscape

Significant geopolitical and geo-economic shifts have Chief Compliance Officers leading companies through turbulent times. This requires a multifaceted approach combining external strategies with internal cohesion - a balance that can help ensure that strategic decisions are grounded in both commercial viability and integrity, which is a necessity for any corporation aiming to thrive in the current global marketplace. The evolving regulatory landscape, characterized by changing trade policies and extensive sanctions, poses a particularly dynamic challenge. It calls for agile compliance strategies that enable quick adaptation. CCOs are tasked with not only anticipating sudden shifts, but also integrating related strategies into their organization's compliance framework in ways that ensure operational resilience and adherence to global standards. Corporations are now under increased scrutiny not just from regulatory bodies, but also investors and the public - making transparency, ethical conduct, and a strong compliance culture essential for building trust and maintaining reputation.

Geopolitical tensions and economic uncertainty have also complicated global supply chains, with implications for both trade and regulation. This necessitates proactive risk management, and a clear understanding of ways to mitigate supply chain vulnerabilities to ensure compliance and continuity. Political instability and economic fluctuation have affected everything from labour laws to financial reporting; for global companies, managing these risks means navigating sanctions, trade restrictions, and other political factors that can directly impact operations and client relationships. Fostering an inclusive internal environment is meanwhile essential; being sensitive to the diverse backgrounds of employees can help maintain harmony, while managing external complexities. A CCO's success hinges on an ability to integrate a comprehensive understanding of the geopolitical and economic landscape with strategic agility and internal cohesion. By recognizing external pressures and risks while remaining steadfast in fostering an agile and inclusive corporate culture, companies can better manage global complexities - and ensure that they remain competitive, compliant, and coherent in terms of both operations and ethos.

Related topics: Global Governance, Peace and Resilience, SDG 16: Peace, Justice and Strong Institutions, Geopolitics, Corporate Governance, Global Risks, Geo-economics, International Security, Disinformation, Illicit Economy, Financial and Monetary Systems, Justice and Law, Corruption, Trade and Investment, Agile Governance

### 2.6 Semiconductors and Geopolitics

The startling advancements now being fuelled by semiconductors make geopolitical wrinkles unavoidable

Geopolitics is now deeply enmeshed in the semiconductor industry, and in complex ways - exerting a profound influence on global dynamics and strategic decision-making. Chipmaking, extensively globalized in terms of R&D, is nonetheless centred on pivotal manufacturing hubs such as Taiwan, China and South Korea, making it particularly vulnerable to geopolitical tensions. These tensions pose a significant risk of disruption to the many industries worldwide that depend in turn on semiconductor components, from consumer electronics to automotive manufacturing. The world has has now become well familiar with the fact that trade tensions between major players like the US and China can escalate into the imposition of tariffs and other restrictions on semiconductor products - in ways that threaten to trigger broader economic conflict, and undermine the competitiveness of individual semiconductor companies. National security concerns add a decisive twist to semiconductor geopolitics, as chips have become central to defense systems, telecommunications infrastructure, and other sectors deemed critical. As a result, countries are liable to implement measures intended to safeguard their semiconductor industries, including investment restrictions, export controls, and technology transfer regulations, while citing national security needs.

The pursuit of technological supremacy is also a key facet of geopolitical competition; countries are vying for dominance in semiconductor manufacturing and R&D in order to gain economic advantage, and to shape

global standards and regulations. Alliances and collaboration have emerged as strategies to bolster the industry, as some countries pool resources, expertise, and research to increase competitiveness and reduce dependence on specific regions. Intellectual property protection is a crucial aspect of this - geopolitical tensions heighten concerns about espionage, cyber theft, and unauthorized technology transfer. Patents, copyrights, and trade secrets are all central to the semiconductor sector's innovation and competitiveness, which means that disputes over IP rights can significantly impact industry dynamics. Geopolitical tensions often manifest in legal challenges related to IP enforcement and access, in ways that can influence strategic decision-making on the part of governments, corporations, and investors. Regional hotspots, exemplified by Taiwan, China's pivotal semiconductor industry, underscore the geopolitical dynamics of the sector. Sufficiently comprehending and navigating these intricate industry dynamics is imperative for any stakeholder hoping to anticipate risk, capitalize on related opportunities, and foster greater resilience in an ever-evolving landscape.

Related topics: International Security, Digital Communications, Geopolitics, Economic Progress, Cybersecurity, Justice and Law, Geo-economics, Trade and Investment, Global Risks

# 2.7 Asia's Rising Geo-economic Influence

The number of firms from Asia in the Fortune Global 500 more than quadrupled between 2004 and 2020

Emerging economies in Asia have become a driving force in the global economy, rising in tandem with their homegrown corporations. In fact, the expansion of these economies over the past two decades has been one of the most remarkable aspects of international trade and geopolitics in the first part of this century. While China has led the charge, other emerging economies such as India, Indonesia, and Thailand have also seen their outward foreign direct investment increase, albeit in much smaller amounts. Asian emerging-market multinationals (especially those from China) have made remarkable progress in numerous fields - for example, in 2020, 169 firms from Asia were listed in the Fortune Global 500, compared with barely 40 when the list was first published in 2004. The number of Chinese firms (124) exceeded the number of US firms (121) in the 2020 Fortune Global 500 for the first time ever. In parallel, there has been a push to increase Asian soft power, with the creation of development banks like the Asian Infrastructure Investment Bank and the New Development Bank, and with China's massive Belt and Road infrastructure-building initiative.

Members from emerging and developing Asia hold about 75% of the voting rights in the Asian Infrastructure Investment Bank; China alone holds almost 27%, and India - the second-largest shareholder - has close to 8%. By way of comparison, China has 4.4% of the voting rights in the World Bank, and India has 3%. At the New Development Bank, which is tied to the BRICS countries (Brazil, Russia, India, China, and South Africa), China and India, two of five founding members, hold 20% of the voting shares. These initiatives provide an alternative to the traditional, Bretton Woods Institutions-led system of development finance in place for the past half-century, and point to a shift in political clout and influence eastwards. Asian firms are also likely to benefit from the Regional Comprehensive Economic Partnership, formed in 2020 by 15 countries from the Asia-Pacific region. It is the largest free trade agreement in history and covers approximately 30% of both the world's population and GDP. The pact is likely to make Asian economies more efficient, and incentivize supply chains across the region.

Related topics: Latin America, ASEAN, Geopolitics, Brazil, Global Governance, Economic Progress, Global Risks, Africa, India, South Africa, China, International Security

# 2.8 Civilization Divide and Geopolitics

Geopolitical divides can worsen regional conflicts

Global political power is shifting, creating tensions between major powers in the West and East, and new opportunities for emerging economies. The projected GDP total of the "E7" countries (the highest economically performing emerging economies) for 2050 was \$138 trillion, which would surpass the G7. This is occurring as conflict based on religion, history, and politics is rife in many regions. Geopolitical tensions can hinder international cooperation on critical issues such as climate change, public health, and the circular economy - making global stability more precarious. Without peace, mutual understanding, and the elimination of bias and barriers, no progress can be made in any of these crucial issues. Geopolitical divides can worsen regional conflicts and economic instability, and lead to a breakdown of international norms and agreements.

Related topics: Global Governance, Geopolitics, International Security, Disarmament, Trade and Investment, Economic Progress, Geo-economics

# 2.9 Multipolar, Multi-conceptual

New power centres with differing values and visions are remaking the world order

The geopolitical landscape is undergoing a profound transformation, giving rise to a world order that is both multipolar and multi-conceptual. As global power has shifted, the differences in norms and values among geopolitical heavyweights have become more glaring. The period following World War II, first characterized by the bipolarity of the Cold War and then the unipolarity of US hegemony, has given way to a phase in which power is more diffused. At the centre of this upheaval is an evolution of the respective roles played by the US and China, and a changing relationship between these two economic behemoths. Patterns of influence, cooperation and competition are also changing among a broader group of countries that includes Russia, India, a number of states in Europe and the Middle East, and the Global South (which includes much of Africa, Latin America and the Caribbean, and Asia). Decades ago the political scientist Francis Fukuyama predicted that in the wake of the Cold War liberal democracy would prove to be "the" model for governance in these places.

Similar assumptions about a convergence on Western norms have underpinned many geopolitical and geo-economic developments. However, these assumptions only masked differences that have become increasingly prominent. Many of today's emergent (or resurgent) centres of power have diverse political values, governance systems, historical legacies, and societal conventions (consider, for example, the contrasting historical narratives of China, India, Russia, and Saudi Arabia). This constrains the extent to which some influential states are willing to sign up to a world order that appears to grant primacy to the legacy powers. It also informs how shared challenges are addressed - as illustrated by the global response to COVID-19, and the difficulties plaguing many multilateral institutions. This is not simply a story of the West against the rest; the multi-conceptual turn in world politics is also evident in Western disagreements about core political values, including hardening differences among European Union members. Many of the institutions that have shaped global politics and economics since the middle of the 20th century must now be reimagined, to prepare for a multipolar and multi-conceptual 21st century.

Related topics: Peace and Resilience, Media, Entertainment and Sport, Global Governance, Financial and Monetary Systems, International Security, European Union, Economic Progress, Values, Roles of Religion, Arts and Culture, United States

# 2.10 Changing Polarity

The current international system has been deemed 'multipolar,' 'bipolar' and even 'apolar'

The bipolar world of the Cold War gave way to the subsequent unipolar order driven by the US. Now, we are faced with a redistribution of polarity - as some see China as a second pole to the US in a bipolar world, some see a multipolar world with many regional powers, and still others see an apolar world where different players are only powerful within regional spheres of influence. The war in Ukraine adds another dimension to the seismic change roiling geopolitics of the 21st century, drawing a line under the end of the unipolar moment and hastening a more contested era where revisionist powers seek to create a new balance of power. The return of war in Europe has similarly brought power-politics back into sharp focus, and spurred fresh plans for re-armament in European countries and revisions of long-held defence policies. The return of great-power dynamics does not, however, mean that the new geopolitical developments of recent decades - which have included the emergence of hybrid threats, asymmetric warfare, and the greater involvement of non-state actors - are a thing of the past.

Defining poles is now more difficult, as power can be exercised in many different ways. The 21st-century international system is generally becoming less state-centric as more actors empowered by technology and globalization are able to exert influence. Large private companies, for example, can no longer avoid discussions about their own impact on geopolitical polarity. Amid the multiplication of actors taking part in geopolitics, states have not necessarily been entirely sidelined; the demise of US hegemony has spawned regional powers that increasingly exert influence on select issues. The international environment has become increasingly complex as conflicts come to include not only more actors but also added layers and threat vectors. It is now almost impossible for a single hegemonic power to dominate every aspect of the

international system and influence every conflict, though countries like Turkey are becoming major players within discrete regions like the Mediterranean and in conflicts such as those in Syria, Libya, or Nagorno Karabakh. Another prominent example is the conflict in Yemen, which has been highly influenced by regional actors including the United Arab Emirates, Saudi Arabia, and Iran.

Related topics: Internet Governance, Geo-economics, Corporate Governance, Supply Chain and Transport, Agile Governance, The Digital Economy, Global Governance, Geopolitics, Trade and Investment

# 2.11 Cybercrime

The nature of ransomware attacks has shifted from annoyance to the disruption of key infrastructure

The annual cost of cybercrime will likely increase by 15% every year until it hits \$10.5 trillion in 2025, according to one estimate. An increasingly connected world brings with it unprecedented cyber challenges, potentially impacting just about every type of digital operation, undermining financial stability and security, and robbing us of our privacy. News stories about data breaches, ransomware, and malware attacks are a seemingly daily occurrence, and the criminal compromise of the digital devices and networks we now depend upon severely diminishes their reliability - and the trust we place in them. Everyone and every organization is a potential cybercrime victim; as people and businesses demand greater efficiency and productivity through internet-connected devices, what is collected for analysis can be targeted by cyber criminals - for leverage, to inflict damage, or to steal money (indeed, just as Willie Sutton once robbed banks because "that's where the money is," the digital world now fills that role). In the wake of COVID-19, many people have only increased their online presence for remote work purposes or entertainment, creating even bigger targets for criminal activity.

As a growing universe of connected Internet of Things devices has increased the number of available digital targets for would-be attackers, it has also amplified the ability to inflict harm more broadly and deeply. Gartner has estimated that there are now some two billion IoT devices in operation, and high-profile examples of damage inflicted through these targets include the Mirai botnet - which compromised more than 600,000 of them, including cameras, routers, and network storage devices (it then leveraged its control of the devices to launch distributed denial-of-service attacks on a variety of organizations). Researchers at Verizon have found that nearly a third of all malware now being discovered is ransomware; the nature of attacks has meanwhile shifted from pervasive annoyance to the significant disruption of key infrastructure. This was underscored by the Colonial Pipeline and JBS Foods ransomware incidents in 2021 - both organizations capitulated to attackers and paid out millions of dollars (though much of what Colonial Pipeline paid was later recovered). Cybercrime is clearly not going away anytime soon, and people and businesses should prepare for how to best deal with it.

Related topics: Values, Retail, Consumer Goods and Lifestyle, Illicit Economy, Justice and Law, Banking and Capital Markets, Corruption, Internet Governance, Internet of Things, Geopolitics, Global Governance

# 2.12 Conflict and Security Challenges

As conflict increasingly displaces populations, COVID-19 continues to create complications

Armed conflict is becoming increasingly complex, and the number of countries becoming embroiled in extreme conflict is rising. By 2019, according to the UN Refugee Agency, more people were being uprooted by war, violence, and persecution than at any time since the end of World War II. Existential threats in many areas of the world, in combination with economic stagnation, food insecurity, and disease have led to greater displacement and migration. By March 2023, for example, more than 8 million Ukrainian refugees had been recorded across Europe after fleeing their country due to Russia's invasion. Most were residing in neighbouring countries such as Poland, Romania, and the Czech Republic. Meanwhile, in Venezuela, over 7 million people had been displaced by January 2023 due to ongoing economic and political crises. The large majority were hosted in neighbouring countries such as Colombia, Peru, Ecuador, Chile, Brazil and Argentina. At the height of the COVID-19 pandemic, the travel restrictions imposed to curb the spread of the virus limited the ability of people to move - leaving those displaced often in facilities that did not allow for social distancing and had limited health services.

Increasingly, migrant smugglers and brokers, non-governmental organizations, and the media are challenging the influence of states when it comes to responding to migration and displacement. This presents downsides, in the form of increasingly-prevalent smuggling networks and other illicit practices. But it can also

have positive effects; one example is the increased development of apps that help migrants integrate more quickly in locations such as Germany, or help report war crimes (the eyeWitness to Atrocities app, developed by the eyeWitness Project to help human rights investigators and journalists create recordings in war zones that include GPS coordinates, time, and location, is a good example), according to the International Organization for Migration's World Migration Report 2018. Technology innovation in general is better enabling cross-border networking. Global access to mobile phones, for example, has risen to nearly 100 subscriptions per 100 people, from about 10 subscriptions per 100 people in 2000, according to the IOM's report. This can enable virtual connectedness for migrants, though physical isolation remains a problem - the report cites a lifelong resident of the Dadaab refugee camp in Kenya describing her sometimes frustrating efforts to stay abreast of global developments through a temperamental internet connection on her phone.

Related topics: Digital Identity, International Security, Roles of Religion, Climate Crisis, Africa, Corruption, Digital Communications, Peace and Resilience, Human Rights, Humanitarian Action, Illicit Economy

# 2.13 Cyber Diplomacy and International Security

Cyber actors operate under the guise of nation-states whose stated aims are often in conflict with their observed activity

The confidence and trust binding the global community results from visibility - being able to observe actual current conditions, and to understand the actual mission. Proof comes via the attestation of a true and accurate promise of intent. In the cyber domain, these elements are often difficult to ascertain. Countries closely guard their technology secrets, and the very methods they use to guard them. Cyber actors operate under the guise - if not the direction - of nation-states whose stated aims are often in conflict with their observed activity. The basis of cyber diplomacy is that we are one international entity sharing the same goals - the preservation of infrastructure, the protection of critical public and private technology processes, respect for digital data ownership rights, and the authority of data guardianship. Cyber risk does not observe national boundaries, and a cyber aggressor one day may become a cyber victim the next. Cyber missions can overreach and affect untargeted prey, and malware can proliferate in unexpected and unintended ways. Examples include the WannaCry ransomware attack in 2017, and the SolarWinds attack identified at the end of 2020.

Often, what might otherwise have been discrete, malicious acts have evolved into global incidents. Someday, one of these attacks may accidentally cause a devastating cyber calamity, and the global technology community will have to pick up the pieces. According to the United Nations Office of Disarmament Affairs, international peace and security are at risk; clearly, the decisions made by the global community about the rules of cyber engagement and necessary protections could have far-reaching consequences. The UN office works on five related pillars: existing and emerging threats; international law; norms, rules and principles; confidence building measures; and international cooperation and assistance in capacity building. Member states should contribute to this work and then agree to the recommendations that result. All nations should, at the minimum, consent to a common set of behaviours so that regardless of their objective, cyber-offensive activities remain within the limits of international norms that bridge local interests with global expectations. As some nation-states seek to leverage cyber action to gain advantages, these norms should be sustained and remain inviolate - for the global good.

Related topics: Infrastructure, Agile Governance, Global Risks, Values, International Security, Geo-economics, Peace and Resilience, Space, Geopolitics, Global Governance

## 2.14 Military Modernization and New Kinds of War

Emerging technologies could help address longstanding issues, or hinder disarmament efforts

As they modernize their nuclear arsenals, countries have integrated advanced technologies including anti-missile defences, advanced long-range missiles (including hypersonic weapons intended in some cases to evade or target those defences), anti-satellite weapons, offensive cyber capabilities, and artificial intelligence. The ramifications of this integration have yet to be fully understood, but it could have far-reaching implications for nuclear deterrence and strategic stability. Meanwhile advances in biotechnology and the convergence of biotechnologies with nanotechnology and machine learning could help address issues associated with previous generations of biological weapons. However, they could also help create a new generation of biological weapons, and revive military interest in biological warfare more generally - which, if

unchecked, could spur a biological arms race with damaging consequences for disarmament. While some helpful technologies related to modern weapons of mass destruction are advancing, traditional armaments are still being used. Indeed, the Chlorine deployed relatively recently in the war in Syria is the same chemical weapon used more than a century ago on the battlefields of Europe during World War I. New forms of warfare create new uses for familiar weapons.

On one hand, the rapid pace of technological development has led to a new generation of weapon systems with increase speed, endurance, accuracy, and lethality. On the other hand, there has been a progressive evolution of the concept of warfighting that makes the most out of new (and old) technologies, and the introduction of "multi-domain operations." One of the most disruptive military innovations of the past decade has been the introduction at scale of drones - armed or otherwise - and remote warfare. Artificial intelligence may prompt an even more significant shift; whether it is used as an enabler of autonomous functions or as a decision-support tool, it has the potential to fundamentally change conflict (multilateral disarmament discussions have so far exclusively focussed on lethal autonomous weapon systems within the context of the Convention on Certain Conventional Weapons). There is also potential for increased activity below the threshold of armed conflict that nonetheless enables countries to achieve political objectives, via cyber and information operations, or the use of legal tools to achieve similar goals ("lawfare").

Related topics: Innovation, International Security, Cybersecurity, Aerospace and Aviation, Space, Fourth Industrial Revolution, Artificial Intelligence, Biotechnology

# 2.15 Security, Conflict and Social Cohesion

Business leaders can play a key stabilizing role by advocating for effective multilateralism

The world is faced with a rising tide of security threats and active conflict, both in old forms and new. Cyber warfare is becoming increasingly sophisticated and prevalent, and social cohesion is deteriorating while polarization increases. These trends pose a significant risk to businesses operating in an increasingly uncertain global landscape. Effective multilateralism can play a vital role in addressing these challenges - by working together, governments can craft norms and rules for responsible state behaviour in cyberspace, promote greater dialogue and cooperation, and build resilience to conflict. Business leaders can play a key role by advocating for effective multilateralism and implementing responsible cyber practices. However, if these trends continue unchecked, the world could face a future of increased hostility and fragility.

One potential scenario is a major cyber conflict between nation-states that disrupts critical infrastructure, and unleashes widespread economic damage. This could lead to a further breakdown of international cooperation and a hasty retreat from globalization. Increased international tensions driven by cyber warfare and fueled by social polarization could lead to a comprehensive breakdown of diplomatic relations. Nations heavily reliant on technology may then find themselves in a precarious position, as their critical infrastructure becomes a target. In this scenario, business leaders, thinking long-term, would have to navigate a landscape where geopolitical considerations more comprehensively impact their operations. Effective multilateralism is crucial for mitigating the risks of escalation, and fostering a collaborative approach to addressing the intertwined challenges of technology-driven conflicts and social polarization.

Related topics: Global Health, International Security, Global Governance, Cybersecurity, Agile Governance, Sustainable Development, Geo-economics, Civic Participation, Geopolitics, Disarmament, Peace and Resilience

### 2.16 The Transformation of Warfare

Conflict increasingly blurs military and civilian dimensions as technology plays a more prominent role

Countries may now have to include public backlash in their war calculus. Globalized information means states can be culturally and economically isolated, and subjected to widespread international condemnation, at a scale never before seen - as the case of Russia following its invasion of Ukraine demonstrates. Though the inter-state conflict in Ukraine is conventional, states are increasingly losing their monopoly on war and violence, and often find themselves fighting non-state actors and ill-defined foes. Both state and non-state actors utilize overt and covert actions spanning the social, economic, and technological domains. Iran reportedly uses a network of Shia militias across the Middle East to exert influence and indirectly confront other countries, for example; Hezbollah is seen as Iran's senior surrogate and a primary vector of influence, used against Israel and in the Syrian Civil War. Similarly, Russia has reportedly used hacktivists to influence

US elections. Non-state actors also delegate to the surrogates they cooperate with, creating a complex web of actors difficult to understand or control. For example, Hezbollah is believed to provide training, technological, and operational support to other non-state actors such as the Houthis in Yemen.

Technology is changing conflict in myriad ways. The increased prevalence of autonomous weapons and drones has altered the human, political, and economic costs of war. Meanwhile advances in neuro-technology are enabling human-machine combinations, with enhanced soldiers likely to appear on battlefields in the near future. Autonomous weapons raise serious ethical questions; soon they may be able to identify, select, and kill human targets with little or no human oversight. This creates a legitimate concern that they will fall into the hands of malicious actors. In fact, the algorithms behind automation can be easily copied and diffused around the world, and the low cost of easily-accessible drones is already enabling smaller players to inflict significant damage on traditional armed forces. For example, it is estimated that the Islamic State flew more than 300 drone missions in one month alone during the battle for Mosul in 2017. With the possibility of full autonomy looming, these attacks could become even more destructive and render traditional air defence systems ineffective. More importantly, the prospect of full autonomy implies potential technological surrogates - which could play a decisive role in future wars.

Related topics: Geo-economics, Artificial Intelligence, Space, Agile Governance, Global Governance, Drones, Geopolitics, Global Risks, Cybersecurity, Media, Entertainment and Sport, Peace and Resilience

# 2.17 Geopolitical Shifts and Conflict Displacement

The 2024 UN Summit of the Future will offer a chance to reinvigorate global governance in a perilous era

Increased global competition is resulting in heightened geopolitical tension and conflict - and risking the erosion of multilateral cooperation. Economic, political, and military power has radically shifted in the past two decades, as it has become more evenly distributed throughout the international system. One result of this is increasing geopolitical rivalry, especially among global powers, and often played out via proxies. The Geopolitical Risk Index reflects a world that has relatively recently entered into a period of high geopolitical risk, punctuated by Russia's full-scale invasion of Ukraine and a major escalation of the Israel-Gaza conflict. But we are also seeing other hot spots around the world that increasingly demand our attention. One indicator of this is that global military expenditure rose by 3.7% in real terms in 2022 to reach a record \$2.2 trillion, according to the Stockholm International Peace Research Institute, on the eve of a year that saw global peace further deteriorate.

The immediate outlook is bleak. Geopolitical change is translating into conflict, human displacement, and major humanitarian responses that are reaching unsettling new levels. The trend is clear: 2023 has witnessed another record high of an estimated 62.5 million people internally displaced by conflict and violence across 65 countries, which is the highest recorded since the Internal Displacement Monitoring Centre began its observations in 1998. An environment of intensifying competition among key states that involves a larger total number of states is undermining international cooperation through multilateral mechanisms, such as those of the United Nations. We are living in a period when the core values underpinning global governance are being challenged. The 2024 UN Summit of the Future will therefore offer an opportunity to reinvigorate global governance, and to reaffirm the rules-based system which was founded on human rights and the furthering of human development globally.

Related topics: Migration, International Security, Global Governance, Disarmament, Trade and Investment, Geo-economics, Leadership, Geopolitics, Peace and Resilience, Global Risks

## 2.18 Humanitarian Action in Response to Conflict

Funding to address conflict with humanitarian aid falls well short of what is needed

Increasing incidences of deadly conflict around the world mean efforts to deliver crucial humanitarian aid face a new operational reality. Roughly 85% of all humanitarian relief operations are conducted in response to conditions created by violent conflict - and more than two-thirds of humanitarian relief spending is directed at protracted crises that last eight years or more. Ceaseless conflict continues to create more humanitarian needs than current spending can address. According to a report published by the United Nations Office for the Coordination of Humanitarian Affairs, a record 68.5 million people were forcibly displaced by conflict in 2017, and the economic cost of conflict and violence rose to \$14.8 trillion that year - equal to 12.4% of global GDP. Meanwhile the amount requested through UN-coordinated humanitarian appeals rose to more

than \$23 billion by 2017 (up from \$4.8 billion as recently as 2006), targeting slightly more than 100 million people worldwide. However, while funding for consolidated appeals made for humanitarian aid amounted to \$14.2 billion in 2017, that left more than \$9 billion in unmet requirements, according to the report.

The scale of current political and humanitarian challenges demands a fundamental change in the way that aid is delivered - as well as in the ways we think about how to best make any required changes. Humanitarian action has a tremendous impact on current and future peace and conflict dynamics, and on the resilience and capacity of local communities. Without addressing the root causes of conflict and violence, humanitarian needs will only continue to grow at an unsustainable pace. There must be a greater focus not only on "Do No Harm" practices (which are borrowed from the medical practice, emerged in the wake of situations such as the genocide in Rwanda, and include ways to prevent the negative effects of some types of intervention), but also on their potential long-term impacts on resilience and sustainable peace. The health of the "humanitarian, development and peace nexus" formed by key institutions of global governance, and the UN system in particular, is critical for transforming the way international actors deliver aid - and for helping them address long term peace and resilience.

Related topics: Values, Rwanda, Global Governance, International Security, Pandemic Preparedness and Response, Human Rights, Illicit Economy, Development Finance, Humanitarian Action, Taxes

# 2.19 Technological Competition

A global scramble for technological leadership is driving geostrategic competition

The transformative potential of emerging technologies underpinning the Fourth Industrial Revolution - and the economic and military power they can confer - are making technological innovation central to geopolitical competition. This is impacting the ways in which the international system works, as traditional centres of power shift and political ideologies and once-shared values fracture. In the same way that the first industrial revolution created a decades-long progress gap between Britain and even its closest rivals, and the second industrial revolution and third helped spawn a period in which the US was globally pre-eminent, the Fourth Industrial Revolution and its convergence of digital technologies will have a marked influence on geopolitical relationships. There will likely be three primary channels for this. The first is through the economic gains for countries that emerge as technology leaders, particularly as a winner-takes-all dynamic characterizes key sectors. The second is the application of new technologies to new types of weapons, and new types of conflict. And the third is the way access to critical technologies, and the supply chains that produce them, create conditions for interdependence to be weaponized.

This raises questions about how we should think about and prepare for war. Cyberattacks on critical infrastructure, drone swarms, or new methods of disrupting an adversary's domestic political system could alter the global balance of power in unexpected ways. There are already abundant examples of government-backed cyber armies carrying out attacks in pursuit of national interests. According to the McKinsey Global Institute, the scramble to secure the technological high ground has largely become a two-horse race - as the 20 largest technology companies in the world are now either American or Chinese. In terms of artificial intelligence, for example, these two countries are far ahead of peers on key indicators such as patents, funding, and talent. A 2018 report from the University of Oxford's Future of Humanity Institute found that China still trailed the US in every Al driver except for data, though this could change; the Chinese government issued a strategy document in 2017 resolving to position the country as the global leader in Al by 2030 by funnelling significant public funding into the sector and helping startups attract more venture capital.

Related topics: Internet of Things, Chemical and Advanced Materials, Global Governance, Nuclear Security, Innovation, International Security, Artificial Intelligence, Geo-economics, Fourth Industrial Revolution, Peace and Resilience

### 2.20 Re-mapping Energy Geopolitics

As the supply of fossil fuels is complicated by conflict, China is becoming a cleantech manufacturing powerhouse

An energy system based on geographically-concentrated fossil fuel resources has traditionally enabled resource-rich countries to exercise geopolitical power. As a result, governance systems such as the Organization of the Petroleum Exporting Countries (OPEC) were formed, shaping fossil fuel-dominated energy markets for decades. This dynamic fundamentally shifted in recent years, however, as the US

re-emerged as a net energy exporter, as new clean energy technologies matured, and as Russia's invasion of Ukraine triggered a coordinated response. The emergence of shale oil and gas resources had already fundamentally reshuffled the traditional power balance between oil-producing and oil-consuming countries; the US, formerly a large net importer, became incentivized to cooperate with other oil-producing nations like Russia and Saudi Arabia. The production cuts negotiated between the three countries in response to the supply-demand imbalances and declining oil prices caused in part by COVID-19 restrictions, for example, were unprecedented. War in Ukraine, however, seriously disrupted such coordination. Meanwhile the manufacturing of clean energy technologies like solar and wind remain largely concentrated within just a few nations, even as worldwide installed capacity continues to expand.

The relative abundance of the natural resources powering renewables, in contrast to oil and gas resources, means they are available globally - enabling many different nations and localities to reduce their dependence on international markets and potentially objectionable suppliers. However, even the most renewables-heavy economies remain tied to international oil and gas markets in order to maintain transportation and industrial processes. In addition, the concentration of renewable technology manufacturing has had its own geopolitical impact. China has emerged as the primary manufacturing centre for clean energy technologies such as solar panels, wind turbines, and batteries for electric cars - and the pandemic vividly demonstrated how severe disruptions to the few economies that are centres of such manufacturing can lead to global supply chain bottlenecks. The energy transition to a net zero emissions future is also likely to create its own, unique geopolitical dynamic, as certain minerals (like lithium and cobalt) and rare earths become increasingly valuable. Supply dynamics, and concerns about the methods of extracting these resources in certain countries, have already led to industry and political collaborations such as the Global Battery Alliance.

Related topics: International Security, Geopolitics, Supply Chain and Transport, Oil and Gas, Advanced Manufacturing, Emerging-Market Multinationals, Mining and Metals, Human Rights, Fourth Industrial Revolution, Global Governance, Geo-economics, Batteries

# 2.21 Populism and Nationalism

Domestic politics can both fuel and feed off unresolved global issues

In many countries, the politics of national identity are creating potentially destabilizing feedback loops. Many politicians have secured power (or are seeking it) by promising to redress imbalances they attribute to globalization, and to prioritize local demands - particularly in relation to jobs and migration. In a growing number of places, populist platforms have been blended with the identity politics, aggravating grievances and exacerbating fears. Examples can be found in recent years in a number of states, including the world's biggest economies. These efforts have been intensified by social media, which has become an important driver of political mobilization, and COVID-19 enabled some leaders to further scapegoat foreigners or claim new emergency powers. Domestic identity politics is both cause and effect when it comes to tumultuous geopolitics; a growing number of political leaders who owe their domestic positions to nationalist or protectionist stances are now shaping interaction among states. This has eroded global institutions and alliances. For example, populist leaders undercut the response to COVID-19 both in their own countries and globally, and the rise of vaccine nationalism undermined the cooperation needed to effectively control the pandemic.

There is increasing evidence that intensifying geopolitical competition has made domestic politics more divisive. This is partly because competition encourages leaders to double down on nationalist narratives - and shift blame for domestic problems to "outsiders." It also reflects the fact that there can be geopolitical incentives to exploit political, social, and ethno-religious divisions in other countries. Foreign intervention of this kind can take many forms, such as active support for a preferred political candidate, or efforts to destabilize entire political systems in rival states. Increasingly prevalent technologies and tools including social media platforms and big data analysis are an important part of this story - particularly with respect to cyberattacks and the spread of disinformation. For example, experts tracked a rise in disinformation dispersed via social media as COVID-19 spread, including from state-backed sources that have sought to cast doubt on other countries' vaccines and sow division. The ability to affect the domestic politics of other, fragile states is especially problematic, as it tends to sustain and harden existing divisions. This can provoke political or even violent conflict, diminish the odds for reconciliation, and sometimes reverse a country's transition to democracy.

Related topics: Peace and Resilience, Media, Entertainment and Sport, International Security, Global Governance, Values, Corruption, Cybersecurity, Agile Governance, Civic Participation

# 2.22 Geostrategic Competition and Security

Russia's Ukraine invasion demonstrates that competition with Moscow is a defining feature of security in Europe and beyond

Total global military spending reached \$1.98 trillion in 2020, the highest level since 1988. A 4.4% increase in the US compared with the prior year was accompanied by a 2.5% increase in Russia and a 1.9% increase in China. The abrupt exit of the US from Afghanistan in 2021 is symptomatic of a new American era focused less on nation-building and more on vying with China and Russia. Russia's invasion of Ukraine demonstrated that strategic and regional competition with Moscow is a defining feature of security in Europe and beyond; with a war the likes of which have not been experienced in Europe since World War II on its borders, NATO found new relevance. Shockwaves were felt in European countries, as illustrated by Germany's decision to boost defense spending by €100 billion. Meanwhile the AUKUS pact announced in 2021 transferring nuclear-submarine technology from the UK and the US to Australia illustrates the growing strategic importance of the Indo-Pacific region. The US aims to bolster Australia as a partner to counter what it perceives as an aggressive China - where survey results indicate the public sees US power and influence as the top international threat facing their country.

Geo-economics has become a far bigger factor in international security. The West's response to Russia's invasion of Ukraine has shown how sanctions have become a tool of choice in the geopolitical arena, as they enable economic isolation. In terms of technological competition, the US and China have been banning one another's companies (such as Huawei and Google), and the threat of a decoupling of the two economies still looms. COVID-19 only compounded related anxieties - when the pandemic hit, mostly-Chinese-made facemasks and other equipment were in short supply, highlighting the danger of depending on a single foreign source. Demand for broader, more inclusive power-sharing arrangements has been evident in the increased prominence of the G20 relative to the G7, and in the emergence of institutions like the Shanghai-based New Development Bank. Standards have become a geopolitical frontline - in 2019, China submitted more technical proposals to the International Telecommunication Union (ITU) than any other country, and in 2020 the ITU approved blockchain standards developed by Huawei and the People's Bank of China, and facial-recognition standards from companies like Dahua and China Telecom. This creates economic value for China, while lending it soft power.

Related topics: Emerging-Market Multinationals, Geo-economics, Financial and Monetary Systems, Geopolitics, Nuclear Security, Global Risks, Arctic, Trade and Investment, Global Governance

# 2.23 Capture and Geopolitical Synergies

Global cooperation will be key to avoiding unnecessary setbacks for a vital new industry

The growing carbon dioxide capture, utilization and storage (CCUS) industry will benefit from international collaboration. On the other hand, a lack of coordination could result in unnecessary setbacks; working together is therefore crucially important when it comes to how CO2 emissions reduction, avoidance, and removal efforts are accounted for. Much can be learned from experiences with the European Emissions Trading System (EU ETS), which aims to reduce emissions by pricing greenhouse gas pollution, and from the international implications of the Carbon Border Adjustment Mechanism included in the European Union's "Fit for 55" package. Efforts like these can both trigger the substantial transformation of industries, as well as disrupt global supply chains due to their associated impacts on regional (and even global) economies. It is important to note that the availability of necessary resources for carbon dioxide capture, storage and utilization are not distributed according to the need for carbon management - that is, at storage sites, as part of the build-up of capability to utilize raw materials for industrial purposes, as part of energy availability considerations, or as part of space considerations.

Related questions have emerged in terms of how best to set up, manage, and review the essential contributions that CCUS is making to the achievement and maintenance of net-zero carbon economies around the world. Carbon accounting will become a central issue, and calls for a globally-coordinated process capable of accurately assessing and certifying CCUS activity - that is, the entities that are charged with carrying out this work, the use of the next-generation Greenhouse Gas Protocol for the accounting of greenhouse gases, nationally declared contributions towards each countries' reduction of emissions, and their planned adaptations to the impacts of climate change. It is also necessary to consider the specific role CCUS can play in delivering on the outcomes of global climate talks like the COP meetings, in particular in terms of intentions to develop a support system for the developing nations that are most affected by climate

change. The development of zero-carbon energy and clean hydrogen, and of CO2 capture, utilization, and storage may well become opportunities to help build more resilient economies in face of potentially catastrophic climate change.

Related topics: Climate Crisis, Agile Governance, International Security, Economic Progress, Trade and Investment, Geo-economics, Global Governance, Development Finance, Geopolitics

### 2.24 Economic Shifts

There has been a resurgence in the use of economic and financial sanctions

The tightened integration of the global economy has rebalanced power and created complex new financial interconnections. In the two decades leading up to 2017, the share of global economic output accounted for by developing countries jumped to 59.3% from 42.8%; much of that increase is attributable to China, which progressed from contributing 6.6% of total global output on its own to 18.7% over the two-decade period (China's dramatic integration into the global economy has been one of the most significant international developments since World War II). Increasingly, governments reach for economic and financial policy levers to advance national ambitions (or hinder others'), in both the economic and political realms. The dividing line between economics and national security has therefore blurred, sometimes as a matter of policy - as illustrated by the US Department of Commerce's strategic plan for 2018-22, which states that "economic security is national security." Meanwhile the increasingly domestic lens through which states assess their international economic policies and priorities has weakened support for the global economic governance framework that has been in place more than half a century.

Economic ties are now seen as a tool for advancing geopolitical goals through "weaponized interdependence." COVID-19 further underlined the fragility of supply chains, and global economic governance itself has long shown signs of systemic fragility; the US's blocking of appointments to the World Trade Organization's Appellate Body is one such sign (the body was crippled in late 2019 when it fell below the minimum number of members required to hear appeals). Some countries take relatively mercantilist approaches to trade, and see bilateral relations as a geopolitical zero-sum game - the tariffs levied by the US and China on one another during 2018 and 2019 provide an example. Trade is not the only means used to advance national ambitions; there has been a resurgence in the use of economic and financial sanctions (most prominently targeting Russia after its invasion of Ukraine), and foreign direct investment has also been affected. China's massive Belt and Road infrastructure-building initiative is a controversial example of outward investment with geopolitical ramifications, while on the flipside a growing number of countries are creating barriers to inward investment perceived as threatening.

Related topics: Financial and Monetary Systems, Global Risks, Trade and Investment, Global Governance, Supply Chain and Transport, Banking and Capital Markets, International Security, Geo-economics

## 2.25 Conflict Zones and Fragile States

Nuclear material and reactors in parts of the world prone to conflict are particularly vulnerable

The theft of nuclear material dates back at least to 1957, and the pilfering of uranium-235 from a nuclear scrap recycling plant in Pennsylvania at the height of the Cold War, according to the Nuclear Age Peace Foundation. During any period of conflict, there is an increased risk of the theft of nuclear material and weapons. Due to the proliferation of nuclear technology in recent years and heightened global instability, related risks have spread to some of the world's least stable territories. Reports made to the Nuclear Security Summit held in the US in 2016, for example, noted that conflict between Azerbaijan and Armenia, and within Ukraine, have ratcheted up the risk of nuclear material being smuggled across borders. Fragile or breakaway states like Transnistria, between the Dniester River and Ukraine, and South Ossetia (officially a part of Georgia), provide both a safe haven for smugglers and sources of illicit nuclear material; significant amounts of highly enriched uranium have gone unaccounted for in the region since the breakup of the Soviet Union. In 1995, the International Atomic Energy Agency began compiling related information about unauthorized movements of nuclear or other radioactive material, by establishing a dedicated Incident and Trafficking Database.

Nuclear reactors have become key targets. According to media reports, an aborted Islamic State attack in Belgium in 2016 was likely meant to target a nuclear power plant, and suspected state-sponsored Russian hackers targeted nuclear facilities in the US in 2017 - as tension mounted over alleged Russian meddling in

American elections. Live conflict zones add another layer of danger, as nuclear reactors can become targets of direct attacks. In 2014, Hamas, the Palestinian group that controls Gaza, launched three Iranian-designed rockets that targeted but narrowly missed the Dimona reactor in Israel. Amid renewed exchanges of violence during 2018 between Israel and Iranian proxies in Lebanon and Syria, and civil unrest in Gaza and the West Bank, a repeat attack became increasingly possible. The ongoing conflict in Syria is also a major risk factor, as nuclear material generated by the country's former nuclear weapons programme is largely unaccounted for. A March 2018 report published by the Institute for Science and International Security suggested that this material may include enriched uranium and related equipment, potentially providing the necessary elements for a so-called dirty bomb.

Related topics: Russian Federation, Human Rights, Middle East and North Africa, Global Risks, Geopolitics, International Security, Global Governance, Illicit Economy

# 2.26 Cyber Risk Governance

The number of corporate boards with a dedicated cybersecurity committee is expected to increase sharply by 2025

Governance relies on risk-based decision making as a fundamental means to both drive the efficient use of resources, and to improve confidence in an organization's ability to achieve strategic objectives. All organizations rely on their employees' ability to navigate a world of growing uncertainty, and to dodge threats to their ability to achieve its collective goals. Unfortunately, complex organizations can easily be overwhelmed; each risk demands a distinct analysis and potential investment of additional resources, to respond in ways that adequately reduce exposure. A good governance structure will provide a framework that enables the right managers to make the right decisions, which will help prioritize and allocate resources as needed. All risks don't necessarily require analytic rigour or subsequent investment - immediate hazards like icy sidewalks or commonplace cyber incidents like phishing emails can be addressed at lower management levels. That is not the case for strategic risks like global pandemics or advanced, persistent cyber threats that have the potential to disrupt or damage an organization indefinitely. A structure that effectively prioritizes and adjudicates risks to the right organizational level is required.

Responsibility for risks is typically apportioned in accordance with an organization's willingness to accept them, also called "risk appetite." A risk-appetite statement can be used to direct employees and clarify who has the necessary level of authority to decide how to respond to any given situation. The National Institute of Standards and Technology Special Publication 800-37 addresses the divvying up of risk with a three-tier structure including the organization, the mission, and the system. Meanwhile the ISO 27000 series of standards provides recommendations for the use of policy and organizational structure to reduce risk, and the COSO framework connects governance to culture by highlighting the importance of board oversight, culture requirements, core values, and human resource development. Vigorous, board-level engagement in risk governance is essential for success. Thankfully, boards are increasingly recognizing the importance of cyber risk governance; a study published by Ernst and Young in 2020 found that 81% of board members categorize cybersecurity as "highly relevant," and Gartner researchers predict that 40% of all boards will have a dedicated cybersecurity committee by the year 2025 (currently, just 10% of boards have one).

Related topics: The Digital Economy, Banking and Capital Markets, Leadership, Agile Governance, Corporate Governance, Internet Governance, Illicit Economy, Fourth Industrial Revolution, Future of Work, Global Risks

## 2.27 Enterprise and Emerging Risks

Effective risk management is central to both legacy and emerging corporate governance models

Historically, risk identification and mitigation at companies has tended to focus on addressing direct threats to a company's market value. These include preventable, internal issues (such as those related to the health and safety of employees, or to their potential involvement in bribery or fraud), where the goal is typically to get as close as possible to eliminating them entirely. However, companies must also consider strategic, external risks - such as shifting competitive and social dynamics, which can both pose threats and create new opportunities. Companies tend to struggle with managing contemporary, complex, emerging risks. This is due not least to the fact that current dynamics like climate disruption, geopolitical fragmentation, social unrest, rising inequality, polarization, and political dysfunction can accelerate and reinforce one other (some

have defined this as an era of "polycrisis"). Building resilience requires greater rigour when it comes to risk identification, monitoring, and remediation. Many companies now recognize that the societal and environmental impact of a business are at the root of that business's risk - and that the ways in which these risks emerge is unpredictable, non-linear, and intertwined.

The need to mitigate risk presents organizations with a range of cross-functional and inter-temporal challenges. Risks often first manifest within particular teams or regions that do not have any internal responsibility for managing the risk in question, and this has several implications. The first is that businesses need to exercise a more practical curiosity about the impacts that they are having on particular stakeholders and on the wider public, and they need to make good-faith efforts to reduce negative externalities while increasing positive ones. The second is that risk identification and mitigation efforts need to encompass and align with organizational efforts to identify material environmental, social, and governance (ESG) issues through a "double materiality" lens of ESG and financial matters - while clearly differentiating the risks and opportunities each present. The identification of material ESG issues should then become a constant, dynamic exercise of considering the inside-out and outside-in risk and opportunity dimensions of corporate performance. The third is that a clearer understanding of risks can inform strategic capital allocation, and the establishment of ethical guardrails and principles.

Related topics: Financial and Monetary Systems, Small and Medium Sized Enterprises, Civic Participation, Insurance, International Security, Development Finance, Illicit Economy, Cybersecurity, Banking and Capital Markets, Climate Crisis, Justice and Law, Global Risks, Corruption

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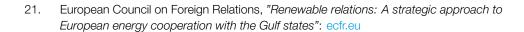
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The maps harness the Forum network's collective intelligence as well as the knowledge and insights generated through our activities, communities and events. And because the Transformation Maps are interlinked, they provide a single place for users 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.

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