
Ministry
of Defence
Global Strategic Trends
Out to 2055
Bite-size
Seventh Edition

Global Strategic Trends: Out to 2055

Seventh Edition

Bite-size

Conditions of release

Global Strategic Trends describes a strategic context for defence and security looking out to the middle of the century. It takes a comprehensive view of the future derived through research headed by the Development, Concepts and Doctrine Centre (DCDC).

This publication summarises the seventh edition of Global Strategic Trends. The findings and deductions contained in this publication do not represent the official policy of the UK government or that of the UK's Ministry of Defence (MOD).

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Introduction

Today's world is hyperconnected, rapidly changing and frequently chaotic. The pace of technological and social change, against a backdrop of interconnecting shocks and crises, makes the future more uncertain. Preparing for multiple potential outcomes, with finite resources and at a time of shifting global power relationships, is proving to be increasingly difficult.

Purpose. The Global Strategic Trends (GST) programme aims to provide long-term strategic context for decision-makers in the Ministry of Defence (MOD) and wider government, as well as for the UK's allies and partners. Publications are written at the lowest level of classification to enable use by the widest possible audience. The outputs of this programme are based on the premise that predicting the future is impossible. This publication therefore offers analysis, based on a range of strategic foresight tools, to help users minimise bias and reduce the likelihood of surprise or unwanted outcomes, while building preparedness and agility to meet alternative futures.

Twenty years of Global Strategic Trends. The 1998 Strategic Defence Review expressed the need for a dedicated Defence function to consider the role of the Armed Forces into the future. The MOD's 2001 *Future Strategic Context of Defence* and subsequent White Papers triggered the first edition of GST, which was published in 2003. Since then, each edition has served to inform the various iterations of top-level strategic documents, including the *National Security Strategy*, the *Strategic Defence and Security Review*, the *National Risk Assessment* and the *Integrated Review*.

Global Strategic Trends 7. This 'bite-sized' summary of *Global Strategic Trends: Out to 2055* (GST 7) starts with a glance of the key findings from the programme of work, together with an encapsulation of six global drivers of change, five core contradictions and an impact and uncertainty analysis. It is then structured into the following sections:

- the future world order;
- regions;
- shared spaces;
- thematic areas; and
- methodology.

The full version of GST 7 can be accessed online at: www.gov.uk/government/publications/global-strategic-trends-out-to-2055.

At a glance

In recent years, the world has witnessed a series of major shocks: a global pandemic, accelerating misinformation and disinformation, disruption as a result of technology advances, the war in Ukraine, and a growing crisis in Southwest Asia. Geopolitical tensions have increased across economic, diplomatic and security fronts; full-scale conflict with worldwide ramifications is now considered plausible. The current international order is also undergoing significant change, with a growth in the influence of a range of state and non-state actors and an increasing diffusion of power. The Global South and small island states are demanding a greater voice, while middle powers, city networks, corporate bodies and powerful elites, as well as violent extremist and criminal networks, are exerting increasing influence.

All of this is taking place in the context of global economic transformation and energy transitions, shifts in resource demands, changing demographic structures, further advances in disruptive technologies and growing evidence on the impact of climate change. With actors and their actions increasingly interconnected at the global level, the pace and scale of such events acts as a reminder that change, both positive and negative, can be volatile and sometimes abrupt, with global ramifications.

The six global drivers of change identified in GST 7 are intended to inform decision-makers of the key trends that will shape the future strategic context of the world overall. Global power competition will continue, but the balance of power will change and the range of competing actors will increase. The world's population will continue to grow, although the overall rate will slow and there will be significant variation between regions and countries, with some experiencing spikes, plateaus and even decline. Climate and environmental change will put pressure on societies, economies, power structures and ecosystems; the way in which states, global bodies and individuals respond (or in some cases fail to act) will have a profound effect on global relations. Technology advances and increasing global connectivity will have an impact on virtually every area of human life, transforming the way we work, interact and access services. Energy transitions, new forms of manufacturing and changing production and consumption patterns will transform the economies of some states and regions; while the speed and scale of transition will create strategic advantage for some, others will struggle to adapt, potentially leading to societal disruption and a decline in their economic competitiveness. Global inequality will continue to rise, and a growing awareness of inequities could exacerbate tensions, increasing the risk of insecurity and conflict.

The promise afforded by human curiosity and creativity, global connectivity and new forms of multilateralism has the potential to assist governments and societies in tackling many of these challenges, helping them to adapt to change, reduce the impact of shock and surprise, and increase their chances of success. Hence, in 30 years' time, humanity may have exploited its many strengths and opportunities to create a more equitable and sustainable future. Shifts in energy provision may have been achieved, today's emerging technologies may have matured in ways that bring multiple benefits to economies and societies, and further technological developments may be enabling humans to explore and understand the depths of the oceans and further into space. Conversely, the world may have become overwhelmed by multiple challenges, including conflict.

GST 7 attempts to postulate pathways to these and other worlds. However, one thing seems certain: those who are prepared not only to adapt to change but also embrace it seem most likely to succeed in this uncertain future.

Global drivers of change

One of the key purposes of GST 7 is to identify the drivers of change that are most likely to determine what the future might look like. Looking across regional and thematic analysis, six global drivers of change have been identified, which connect to one another, along with 22 underlying trends. Taken together, these drivers and trends represent a complex set of dynamics that may influence, counteract or accelerate each other, often in unexpected ways. The six global drivers of change are as follows.

1. **Global power competition.** Competition will continue and the balance of power will almost certainly change. Competing actors will include major powers as well as a range of smaller state and non-state actors, which will interact with each other in different ways as they seek to advance their interests and influence.

2. **Demographic pressures.** The global population will continue to grow and age, although the rate of increase will be spread unevenly across the globe. Africa, South Asia and some parts of Southeast Asia and Oceania will experience rapid growth in their populations, while East Asia and Europe will see slower rates of growth and in some cases population decline. Increasing migration, including to urban areas, and the growth of the global middle class population will all have an influence on global and regional demographic structures.

3. **Climate change and pressure on the environment.** The effects of climate change will become increasingly evident and more extreme. Increasing demand for resources will place additional pressures on the natural world, including in the shared spaces. Efforts to mitigate and adapt to climate change will increasingly occupy societies, economies and governments across the globe.

4. **Technological advances and connectivity.** The exponential growth in sensors, data, storage, processing power, connectivity, advanced data analytics, automation and artificial intelligence will have an impact on virtually every area of human endeavour and lifestyle. The desire to secure technological advantage will play a central role in global power competition in future decades, influencing international relations and trade.

5. **Economic transformation and energy transition.** Technological advances will have a huge impact on future economic activity and energy systems. While the speed and scale of the transition will result in significant strategic advantage for some, for others it will place pressure on adaptive capacity. A failure to adapt could potentially lead to societal disruption, grievances and tensions. The resources required to enable the digital and energy transition – notably metals and critical minerals – will become of increasing geopolitical importance.

6. **Inequality and pressure on governance.** Global inequality will continue to rise. This will be driven by technological transformation and the increasing concentration of wealth, as well as slowdowns in economic growth. In addition, increasing intolerance and discrimination, and enduring corruption, insecurity and conflict in some parts of the world, will compound this issue. Growing awareness of inequities, alongside rising migration and demographic change, will put increasing pressure on state and international governance structures and capacity.

Taken together, the six global drivers of change will redefine societies, economies, governance, security and defence, as well the natural world itself. However, sitting alongside the six drivers are five core, interacting and dynamic contradictions, as illustrated in Figure 1.

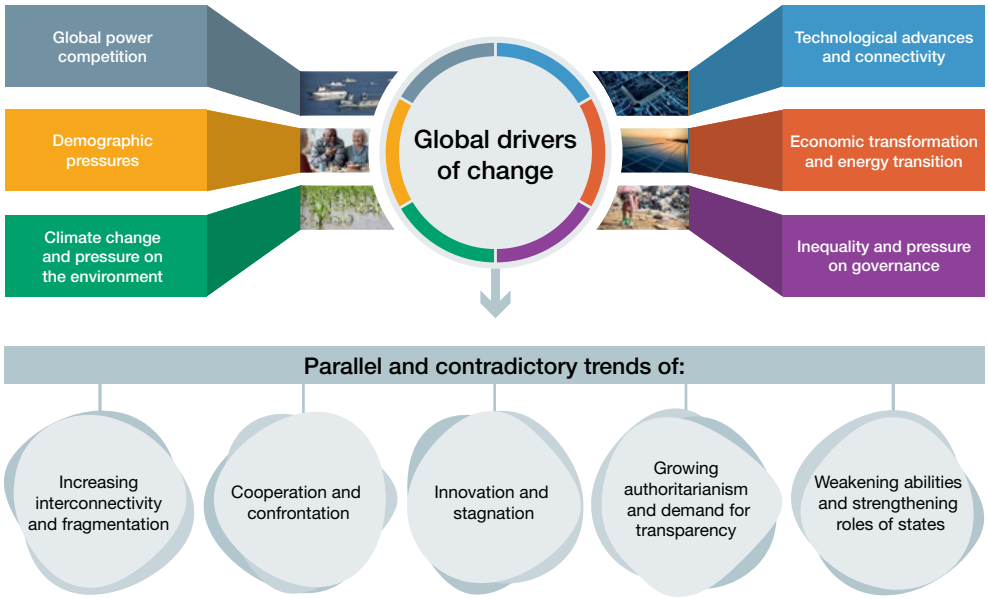


Figure 1 – Six global drivers of change and the five contradictions

The world is witnessing increasing **interconnectivity**, resulting in part from new levels of digital connection and an increase in digital trade, but also **fragmentation** as a result of disruptions and shifts in global value chains and an increase in economic protectionism. **Cooperation and confrontation** sit side by side, with the North Atlantic Treaty Organization (NATO) enlargement and a new United Nations initiative on the protection of the high seas alongside increasing competition between states, new conflict outbreaks and a deepening divide between the developed world and the Global South. **Innovation** continues to revolutionise societies and economies, while the world is experiencing **stagnation** in the areas of poverty reduction and its ability to tackle irregular migration and refugee flows. Recent years have seen democratic declines and **growing authoritarianism** in some states, just as rising human empowerment is boosting the potential for public mobilisation and **demand for transparency**. Finally, while new technologies may lead to an increase in government capacity and **strengthening roles of states**, ageing populations, stretched state finances and the growing prevalence of serious and organised crime may result in an increase in **state fragility and instability** in some parts of the world.

Impact, uncertainty and the 'big questions'

Impact and uncertainty. The extent to which the six global drivers of change and their associated contradictions shape the future will be determined by how they play out in practice. A driver's influence will vary over time, and interact with other developments in different, often complex ways. The contradictions will shape and reshape the underlying context of the drivers of change, and a number of associated trends within the drivers will influence their speed and direction and the possible disruption they cause. As a result, a simple extrapolation of one or even a few indicators of change will not give a comprehensive picture of the future. No matter how strong the signals are, there will always be a degree of uncertainty about the direction change will take, particularly over a long period of time.

Figure 2 represents some of this complexity. It presents perceived uncertainty about the actual manifestation of trends and how they relate to the impact they might have in the future. The outliers with a higher or lower element of (subjective) uncertainty and impact may require particular attention.

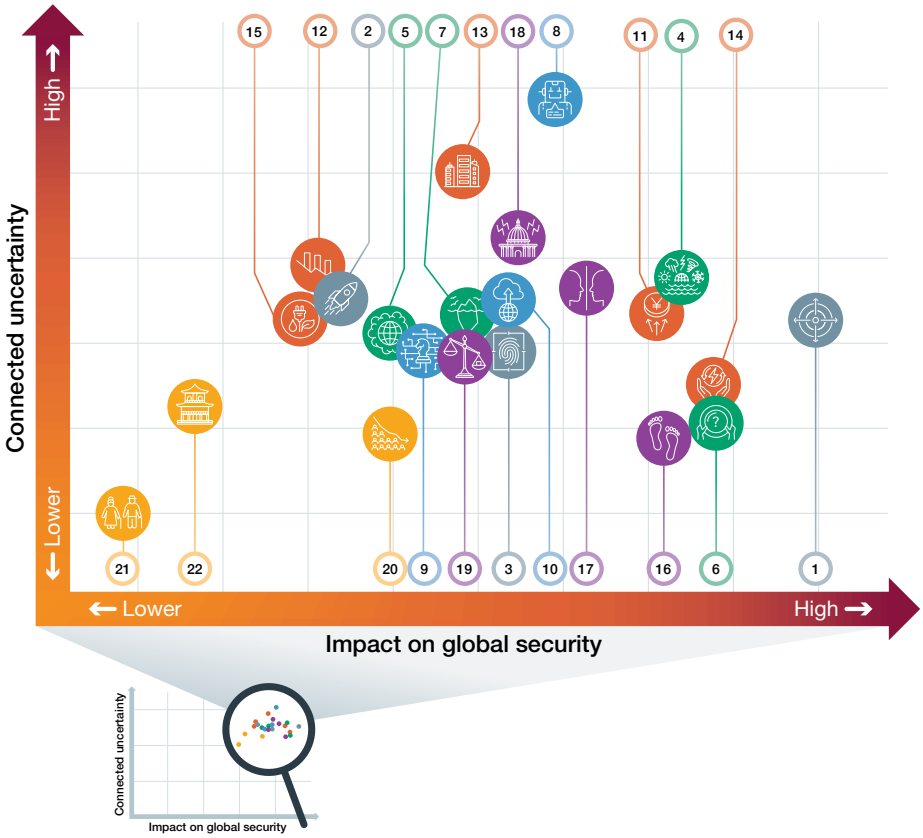
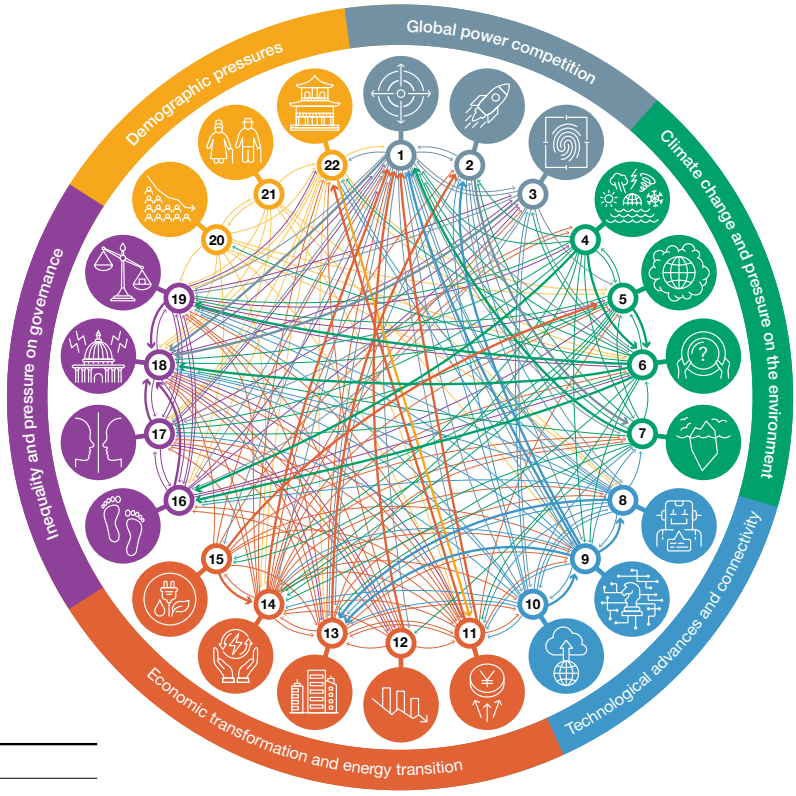


Figure 2 – Impact and uncertainty assessment, based on in-depth analysis of the regional and thematic areas, and engagement with the Development, Concepts and Doctrine Centre's global network of strategy and foresight practitioners

However, the drivers and trends do not exist in isolation to one another and they may vary in relevance depending on the thematic or regional perspective. As such, the extent to which they influence each other is another factor to consider when setting strategic priorities with limited resources. It is therefore not only necessary to monitor trends with major impact and high uncertainty, but also to consider the interaction of these trends. Some are likely to have a greater effect on others, thereby indirectly amplifying their impact. It should be noted that analysis clearly shows that almost all underlying trends are connected in some way and influence each other to varying degrees, as illustrated in Figure 3. This visualisation only shows the 'medium influence' and 'high influence' links (thinner and thicker lines).



Influence

High ——————

Medium ——————

1. Regional and global power competition will become increasingly prevalent.
2. The democratisation of space will enable commercial entities and non-state actors to become the forefront of space exploration.
3. The capability of violent extremist organisations and organised crime groups to do harm will increase.
4. Climate change will cause more extreme weather events and rising sea levels globally.
5. The pollution and degradation of the environment will increase.
6. Food and water insecurity will become increasingly prevalent.
7. Climate change and technological advances will open up access to new regions, domains and resources.
8. Societies and economies will become increasingly automated and artificial intelligence-dependent.
9. The competition for technological edge between companies as well as between states will be increasingly evident and intense.
10. Global digital connectivity will continue to increase along with the rising value of data.
11. The relative economic influence of Asia will grow.
12. Geopolitical competition will lead to a slowdown in global trade.
13. The power and influence of big corporations will continue to grow.
14. The global demand for energy and natural resources will increase.
15. The world will become less reliant on fossil fuel energy.
16. The number of migrants will increase globally.
17. Political and social polarisation will increase.
18. A growing number of parallel stress factors will increase pressure on traditional governance structures.
19. Socio-economic inequalities will increase.
20. Global population growth will slow down with some regions experiencing a decline.
21. The average age of the world population will increase.
22. The Asian middle class will continue to grow significantly.

Figure 3 – Cross-impact analysis, showing the links between different trends and the six drivers of change

The 'big questions'. From this analysis it can be argued that there is an overarching set of global themes of uncertainty, which prompts a series of big questions.

The pace of research and development in the technology sector always creates a degree of uncertainty when trying to anticipate technological progress. Will Moore's Law[1] be relevant into the future? To what extent will the physical and virtual worlds blur? However, it is not only the technical aspects of new science and technology developments that are uncertain. Perhaps more important is how people, societies and states will adapt to developments, and whether the way humans think and behave fundamentally changes in response.

Over the past two decades, the need to adapt to and mitigate the effects of climate change has become widely accepted. The question is how states will balance the desire for economic prosperity and social stability with the need to address the climate crisis. There are now energy transition policies in place in most developed and developing countries. However, while there is a drive to reduce the use of fossil fuels, there is not yet a full understanding of what their remaining share of the overall energy mix will be by 2055. What will be the critical natural resources over which states and corporate actors compete? How will this impact global and regional trade dynamics? Will there be a significant deglobalisation and decoupling of the world's economies as competition increases and international trade appears to be slowing down? Will the climate crisis be magnified as governments come under increasing pressure on a range of other issues, including, for some, the need to adapt to a peaking and ageing population? Or, will governments embrace the opportunity to drive a low carbon economic transition?

It has become increasingly clear that a vast number of uncertainties surround the future landscape of global governance. Central to this is the question of how great power competition will influence international relations and thereby alter the course of events. What will be the impact of global power competition on middle powers? Is the likelihood of regional conflicts rising amid escalating global competition? Will China emerge as the world's leading power, possibly surpassing the United States (US)? What is the future global influence of the US; what is the political evolution of Russia; what will be the fate of multilateral institutions such as the United Nations; and what are the underlying factors that could lead to greater cooperation between states? Finally, increasing pressure on state governments leads to the pressing question, for Western countries in particular, of the future of democracy as a form of governance.

1 Moore's Law states that the number of transistors on a microchip doubles about every two years, though the cost of computers is halved.

The future world order

A broad range of influential actors, including states, international organisations and non-state actors, will continue to shape global and regional developments out to 2055. The US is likely to remain one of the world's most powerful states and will still be relied on by many as the leader of a huge network of alliances and partnerships, although its relative global influence may continue to decline. In recent years, China's significant resources and its remarkable economic growth have brought it to prominence as a global power; its reach is likely to continue to extend in the future as it pursues its ambition to restore its status in a reformed global order, putting it in direct competition with the US for global hegemony and influence. How each of these powers respond to the economic, social, political and environmental pressures that they face will determine their geopolitical trajectory.

Russia's future status in the international order is likely to depend on the outcome of its war in Ukraine and its ability to manage the consequences across social, political and economic sectors, but it is likely to remain ambitious and the desire to retain or regain great power status will continue to drive its behaviour. India's influence as a global economic power may continue to grow and could be advanced further if it can capitalise on its likely demographic dividend; however, it will continue to face a range of challenges at the domestic level, and its enduring border disputes with neighbouring states are unlikely to

be settled. Established middle powers such as the UK, France, Germany, Japan, South Korea, Canada and Australia will use a combination of their diplomatic outreach, economic influence and military power to influence the global balance. At the same time, emerging middle powers such as Indonesia, Pakistan, Saudi Arabia, Iran, Turkey, South Africa, Nigeria and Brazil may see their influence grow. Middle powers may also wield influence through regional economic, political and military organisations such as the European Union, NATO, the African Union, the Association of Southeast Asian Nations and the BRICS group, and some of these organisations may see their power and influence grow. In addition, a diverse range of other actors, including multinational corporations, transnational organised crime networks, increasingly powerful city governance structures and super-empowered individuals and religious leaders, will each play a role in global and regional power balances.

Taken together, these developments may see the continued diffusion of global power beyond major state actors, and possibly a blurring of the boundaries between state and non-state actors. As the international order evolves, multilateral institutions may find their effectiveness and support altered or eroded. Major powers may become increasingly selective in their engagement with global institutions, and there may be an increasing trend towards 'withdrawalism' from international treaties and frameworks in favour of smaller and more agile issue-centred coalitions and partnerships. Despite these challenges, support for multilateralism to promote mutual interests, resilience, prosperity and sustainable development seems likely to endure, making some form of enduring institutional cooperation likely.

The dynamics of relationships between states, whether cooperative or confrontational, are likely to be defined by six areas of national power and influence. The power of attraction – being a partner of choice, resting on status, standing, prestige and reliability – will be key in a world of increasing diffusion of power. Linked to this, technological leadership and advantage will remain hugely important and will depend very much on the ability to attract talent. Economic shaping power and access to resources will remain vital, but will become more complex due to growing competition and the development of new technologies. Given the magnitude of the global climate challenge, climate change mitigation, adaptation and the ability to steer the green transition will provide decisive advantage and influence. With space and cyberspace becoming increasingly central in everyday life and a key factor contributing to success in combat, influence in the shared spaces will be yet another vital area of power. Finally, military shaping power and arms control will remain the ultimate lever of power, although technology developments will see it transformed in unexpected ways and become increasingly complex.

Alternative future world orders

The current escalation in global power competition, which has already resulted in a shift to a more multipolar world, is likely to continue in the near term at least. However, the precise way in which the global drivers of change and contradicting trends will impact on each other in practice, and how actors will react to them, remains unknown, and creates major uncertainties as to what global order might look like in 30 years' time. To better understand how alternative developments may play out is therefore hugely important as the future is not likely to be linear.

The 'four future worlds' is a scenario model used to facilitate discussions about the future of global order and geopolitics, as illustrated in Figure 4. Developed for GST 6, it uses two variables – distribution of power, and relations between actors – to define four future worlds. The 'distribution of power' axis ranges from centralised power, where states are the predominant actors, to diffused power, where state power has eroded, leading to an increase in the influence of non-state actors. The 'relations between actors' axis ranges from high levels of cooperation at one end of the spectrum to intense competition at the other.

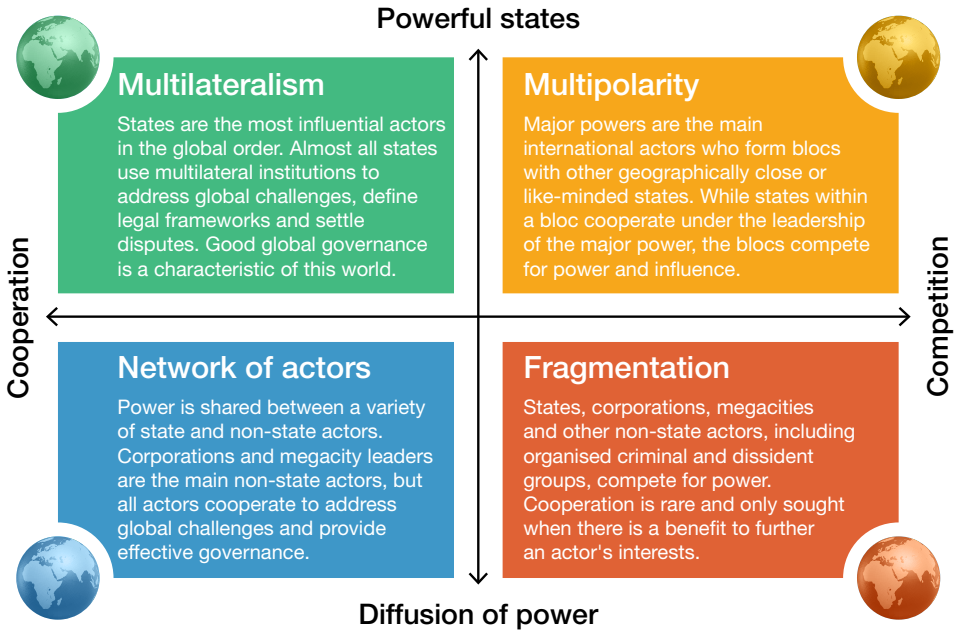


Figure 4 – The four future worlds are characterising the pathways to the future

However, what is clear is that a future world will not appear in the purist way in which it is described in the model. Furthermore the path may result in the emergence of a very different world order than that anticipated, shaped by various shocks, developments and the responses of global actors.

To better reflect how various shocks and developments might influence global actors and drive future trajectories five hypothetical pathways have been developed. Each pathway results in the emergence of a different world order, shaped by changes in the balance of power and the international system and characterised by aspects of the 'four future worlds'.

The five pathway scenarios are as follows, and illustrated in Figure 5.

1. Existential threats drive a new multilateral accommodation.
2. The current system endures in a multipolar world.
3. Changing spheres of influence.
4. Competition and decoupling leads to conflict and a deglobalised world.
5. Incremental instability leads to a new networked order.

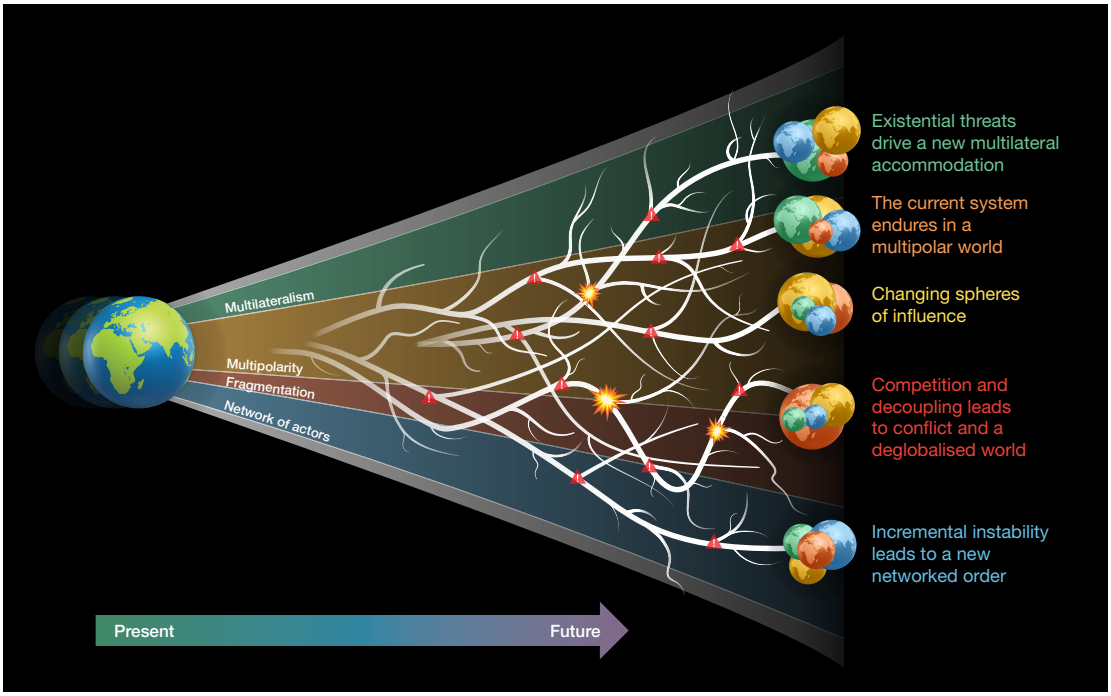


Figure 5 – Global pathway scenarios illustrate five hypothetical scenarios of a future world order

Pathway 1 – Existential threats drive a new multilateral accommodation

Scenario. Global competition over geopolitical influence, resources and values accelerates. The US and China dominate, but other powers and groupings of states avoid picking sides. The impact of climate change causes unprecedented social and economic disruption, which leads to a new wave of global activism, placing further pressure on states. The expansion of serious and organised crime, proliferation of weapons of mass effect, a new lethal pandemic and severe disruptions of space-based functions add to the incentives for states to work together. A new multilateral accommodation emerges that is better suited to the needs of the planet and all its occupants.

Watchpoints and indicators

- Increasing levels and outreach of global activist movements.
- A more powerful African Union gives African countries a unified voice and drives the development of a climate change agenda.
- Emerging and middle powers demand more influence over global issues.
- Reform of the United Nations Security Council provides a better balance of influence.
- Global agreement on technology regulation and knowledge-sharing.
- Multilateral institutions deliver successful interventions for financial stability, confidence-building measures, tackling serious and organised crime and sustainability.
- US–European Union–India–China initiative for global cooperation on space governance.
- New series of arms control talks among major powers.
- China invests in global security and internationalism.

Analysis and implications. This scenario sees the opening of a new cooperative space, permitting the generation of global and inclusive solutions to the creeping crises and existential threats that the world faces. The assumption is that cooperation will be driven by common global challenges, such as climate change, threats to the global financial system from transnational serious and organised crime, the onset of new and potentially more lethal pandemics, the proliferation of weapons of mass effect, and concerns over possible disruption to space-based systems. It is also assumed under this scenario that high levels of interconnectivity are allowing non-state actors and interest groups to develop influential networks to extend their reach. A new multilateral order built out of novel accommodations will inevitably look different from the one in place today – and will need to balance the interests of the West, China, and the Global South in particular.

Pathway 2 – The current system endures in a multipolar world

Scenario. Despite the ambitions of some states to reshape the world order, leading powers, led by a resurgent US, redouble their diplomatic, economic and military efforts to preserve the existing international order. Democracies and open societies are seen as increasingly attractive. Geostrategic competition remains a driving factor, impacting economics, trade and responses to common challenges; however, a major conflict is avoided.

Watchpoints and indicators

- The European Union continues to integrate and attract new members.
- New member states are admitted to NATO.
- The US invests heavily in the United Nations and multilateral institutions.
- The US remains the biggest economy with the US dollar being the leading global currency.
- A US-led coalition takes the initiative in tackling global issues and governance of shared spaces.
- Compromises allow for reform of current global institutions.
- Increasing numbers of students attend educational institutions in democratic countries.
- Authoritarian states continue to develop parallel institutions, but these fail to attract new membership applications from non-aligned states.

Analysis and implications. This scenario sees the US retaining its active role on the global stage, and open and democratic societies maintaining their cohesion. It takes its starting point in a situation where Ukraine is able to prevail as a free state, strongly supported by a unified West. A global coalition redoubles efforts to tackle global challenges and preserve the current institutions, frameworks and rule of law. A major factor behind this is the continued 'power of attraction' exercised by open and democratic societies, as well as global desires for free market access, technology-sharing and the free flow of information. A pragmatic approach and a willingness to compromise will be key to winning over neutral and hedging actors, as well as allowing for flexible cooperation with opposing powers where appropriate. Nevertheless, the ability to counter military threats and address security challenges remains important, and helps to deter major conflict.

Pathway 3 – Changing spheres of influence

Scenario. Western democracies struggle under multiple pressures while China manages its internal challenges successfully and increases its soft power. A Eurasian bloc under China's leadership evolves into an embryonic new global order. Other states and coalitions are drawn in through economic coercion and dependencies.

Watchpoints and indicators

- Russia wins the war in Ukraine.
- China becomes the biggest economy and the renminbi becomes the leading global currency.
- Emerging middle powers cooperate more closely with China.
- There is an expansion and deepening of Chinese-led trade agreements.
- The US retreats from international institutions and its global presence declines.
- China takes the lead in tackling global issues, including technology standard setting and governance of the shared spaces.
- A new China–Russia–India space initiative is developed.
- The Shanghai Cooperation Organisation develops into a military alliance.

Analysis and implications. This scenario envisages a China that has managed to deal with its many domestic challenges and has seen its economy start to grow again, at the same time as Western democracies are struggling to maintain prosperity and social cohesion. In this scenario, China gains influence over a weakened Russia, and succeeds in building a Eurasian bloc, involving a number of emerging powers, which then evolves into a new world order operating under strong Chinese influence. A Russian victory in Ukraine is not a prerequisite for this scenario; however, it would suggest Western weakness, and allow China to rally the Global South behind a concept of a more equitable world order where their interests are better accommodated. Although China's influence would be strong under this scenario, it is important to note that other powers will still act in their own interests. This is likely to be a value-neutral, transaction-oriented world divided into different spheres of influence. In such a scenario, China achieves its ambition to reunify with Taiwan.

Pathway 4 – Competition and decoupling leads to conflict and a deglobalised world

Scenario. A series of crises and conflicts in Europe, the Indo-Pacific region and elsewhere accelerates competition over resources, influence and values. Protectionism and resource nationalism become the norm, leading to regionalised and fragmented trade and energy markets. The US' role is more unpredictable, while China, India and other Asian powers expand their outreach. Rising multipolarity sees the proliferation of new weapons of mass effect. Following intensified competition over influence in the Global South, tensions escalate into a devastating regional conflict with global ramifications. Unable to agree on a common global approach after the conflict, the world retreats into deglobalisation.

Watchpoints and indicators

- Attempts to de-escalate tensions and arms control talks fail.
- The world sees escalating trade wars and substantial decoupling of value chains.
- There is an increase in the weaponisation of space.
- Freedom of navigation is reduced and challenged in several regions.
- There is extensive proliferation of weapons of mass effect and the emergence of new nuclear powers.
- There is a rise in the number of enduring conflicts and military incidents.
- The current international order collapses.
- Increasing competition undermines the US dollar's position as the leading global currency.
- A number of states abandon their policies of non-alignment.

Analysis and implications. In this scenario, rising global power competition leads to increased tensions, a decline in trust and the decoupling of global value chains, eventually spiralling into a major regional conflict with global ramifications. It is a scenario that the world has witnessed in the past to some extent. However, with the increasing diffusion of power and the proliferation of novel weapons and weapons of mass effect, the question is whether nuclear arms will continue to act as the ultimate deterrent. The scenario also demonstrates that the current competition between the US and China should not be allowed to overshadow developments at a regional level. A question connected to the scenario is whether and how islands of stability could develop in a fragmented world.

Pathway 5 – Incremental instability leads to a new networked order

Scenario. A range of creeping crises leads to rising discontent with state governments and increasing instability. In a world dominated by persistent competition, state governments and international organisations are unable to address the challenges that the world faces. Serious and organised crime groups and violent extremist organisations expand their outreach. Alliances and partnerships unravel, treaties and trade agreements become unworkable, and multilateral institutions are dysfunctional and ineffective. Impatient with these failings in state capacity, new actors, including networked commercial bodies, powerful cities, belief networks and serious and organised crime groups, fill the void.

Watchpoints and indicators

- An increasing number of states downscale their ambitions on climate change.
- Decreasing state finances mean that governments are unable to deal with the impact of financial crises and climate change.
- There is an increasing number of non-state actors in the shared spaces.
- More powerful private military and security companies take over state functions.
- A network of commercial actors takes the lead on technology regulation.
- Non-state actors and multinational corporations become increasingly active in discussions on climate change.
- Regional organisations become increasingly ineffective and in some cases collapse.

Analysis and implications. This scenario sees a series of small shocks and crises driving a gradual increase in instability, until ultimately this reaches a point where states lose control and begin to fail. A constant focus on short-term priorities inhibits cooperation and leads to a chaotic, fragmented world, at immense cost to economies and societies. Networks of non-state actors emerge to provide a viable alternative to the old model of states and institutions, proving themselves to be more agile and innovative than less adaptable state structures. Indeed, there are significant parts of the world where this scenario is already occurring to some degree, with informal structures delivering services that the state is unable to provide.

Summary of Global Strategic Trends 7

Regions

East and South Asia

The populous and industrious states of East and South Asia will remain major centres of economic, diplomatic and cultural power, although all will face pressures due to changing demographics, global economic shifts and increasing geostrategic tensions. China is likely to dominate global attention in the region as it increasingly challenges the US for global power and influence; India may also become increasingly influential. The responses of regional and external powers to this rising competition could heighten the potential for further tension in the region. Population growth will continue to vary across states. East Asia may increasingly look to automation and other technology advances to compensate for ageing and shrinking populations. In contrast, some South Asian states will continue to see high levels of population growth, potentially boosting economies but also placing pressure on state governments and education systems. With the region already highly vulnerable to the impact of natural disasters, the effects of climate change are likely to exert an increasing toll on economies and societies. While states are likely to remain dominant, rapid urbanisation and economic transformation could see some of the region's powerful cities taking on a more prominent role.

Southeast Asia and Oceania

Southeast Asia and Oceania is likely to become the focus of increasing global power competition, with multiple powers vying to secure economic, diplomatic and military advantage and access to resources. Regional states will seek to balance their economic and security interests, but may come under pressure to choose sides on a range of issues. In Southeast Asia, populations are expected to grow and become increasingly urbanised and connected; in contrast, population growth in most of Oceania will slow, and migration out of the region may increase due to the effects of climate change. The ongoing diffusion of global economic power could see Southeast Asia expand its global economic influence; countries such as Indonesia could emerge as new regional leaders, although growing inequality and other pressures could hinder progress across the region. The region will remain intensely affected by extreme weather events, as well as volcanoes and earthquakes; droughts, floods and fires will impact rural and urban areas, while the Western Pacific could become the first part of the world to experience the loss of a state due to the combined impacts of climate change.

Russia

The future of Russia remains highly uncertain, with the outcome of its war in Ukraine and the implications of this for its economic, societal and political trajectory likely to be key determinants of its future power and status. Russia could become more unpredictable in the coming decades; however, an ageing and shrinking population, alongside growing environmental challenges and governance pressures, could see it increasingly weakened and forced to turn inwards to focus on domestic priorities. By diverting its energy exports to new markets such as China and India, Russia has bolstered its economy in the short term, but this revenue may become increasingly uncertain in the long term as the green energy transition gathers pace. Russia may see increasing internal and external competition for control of its resources and strategic territories in future decades, which may be a potential source of tension with China in particular. Given that Russia is likely to retain many of its military capabilities, an increasingly weak and unstable state could become a source of considerable global risk. Conversely, a Russia that is able to strengthen and diversify its global relationships could continue to sustain its economic, political and security postures in the future.

Central Asia

Central Asia is likely to retain its geostrategic importance and remain an arena for intense power competition. While the potential growth in competition between Russia and China is the current focus, other powers such as India, Turkey and countries in the West could also emerge as significant actors in the region. The population is projected to grow, age and urbanise, although more slowly than other regions. Authoritarianism and corruption are likely to remain significant challenges for some regional states, although increased connectivity may boost awareness of injustices and poor government performance and drive calls for greater transparency. Reducing demand for fossil fuels is likely to have a major impact on some states in the region; efforts to diversify into other economic sectors may prove only partially successful. Pressures on shared water resources for both food and energy production may increase tensions in the region, and water security is likely to be a key concern for governments. However, if recent moves to establish effective dialogue on this and other issues continue, tensions may reduce and the region may see an increase in cooperation, leading to improvements in regional trade flows, prosperity and security.

Southwest Asia and the South Caucasus

Southwest Asia and the South Caucasus are likely to remain characterised by religious, cultural and political rivalry, impacting all aspects of their internal and external relations. Sitting between major seaways and home to some of the largest and most accessible global hydrocarbon deposits in the world, the region could continue to exert considerable influence over the global economy and energy markets in the coming decades. However, the regional balance of power may see multiple shifts, as states face the challenge of moving their economies away from hydrocarbons in the face of decreasing demand. Some states have already started to achieve greater economic diversification and should endure and thrive; however, in other parts of the region tensions and instability are likely to remain a concern. The rate and extent of the global green energy transition, as well as the ability to meet the expectations of its significant youth population and address the impact of climate change, will play major roles in the region's medium-term fortunes, as well as its relations with global powers.

Africa

A young and rapidly expanding population could drive the economic transformation of the region, if governments succeed in providing these young people with the education and employment opportunities they desire. However, increasing environmental stress and a continued lack of infrastructure, as well as growing inequality, weak governance and enduring political and security tensions in some parts of the region, could challenge the ability of states to capitalise on this potential. Given Africa's wealth of resources, external actors will increasingly compete for influence and access, for example, by providing investment and support to infrastructure development, which in some cases could lead to new partnerships and influences. This could see the continent becoming divided and weakened by competing alignments, leading to an increase in tensions and potentially hampering regional integration ambitions. However, an increase in African integration could boost the continent's economic power and political influence out to 2055, and could see it play an increasing role on the international stage.

Europe

Europe is likely to remain prosperous by international standards and enjoy significant cultural and scientific influence. However, while retaining significant global weight, Europe's share of the world economy may decrease. In the future, Europe may be subject to a range of potentially major shocks, including the expansion of Russian aggression, uncertainty regarding the ability to rely on US support, ongoing insecurity in Africa, Southwest Asia and the South Caucasus, and growing US–China rivalry. The region faces challenges in the form of an ageing population, shrinking workforce and increased migration, as well as the growing cost and impact of climate change. The combined impact of these pressures could result in increasing polarisation within as well as between countries, thereby weakening responses to shocks as well as resolve in the face of external threats. However, Europe may find a way to overcome these challenges, and play an increasingly influential role in the global balance of power.

Latin America and the Caribbean

Economic and social pressures, inequality, poor governance and corruption are likely to remain enduring challenges for Latin America and the Caribbean. Serious and organised crime, driven by the trade in narcotics, will continue to challenge the authority of some state governments, whilst also increasing its regional and global reach. The region's vast resource wealth, including 60% of the world's currently accessible lithium, will see an increasing range of external actors competing with established powers in the region through growing investment and infrastructure offers. Enduring tensions and growing competition between external actors could see the region increasingly divided, undermining coordinated action on climate change and environmental degradation. The coming decades are likely to see economic fortunes vary as states seek to diversify away from volatile commodity markets and the impacts of environmental change are increasingly felt. Political polarisation is likely to remain a key challenge for governments, hampering the region's social and economic development. However, new forms of innovation could see the region become a leader across the Global South on environmental protection, agrotechnology and other developments, boosting the economic performance and political influence of regional states.

Northern America

Both the US and Canada are likely to maintain their global economic and security footprints out to 2055. The US will strive to retain its economic and military lead, and both countries are likely to remain strong supporters of multilateralism and retain positions of global leadership. While strong transatlantic relationships are likely to endure, the future relationship between Northern America and Europe will be affected by both US security priorities and the strength of Europe. The US and Canada will also remain engaged in the Indo-Pacific region and Latin America, and increasingly the High North as its geography is altered by climate change. The region's wealth and institutional capacity indicate that it should be able to manage the impacts from climate change better than some others, but food and water supply, as well as internal and inward migration, are likely to present increasing challenges, alongside socio-economic inequality and demographic pressures. Technology is likely to remain a strength for the region, and regional states should continue to perform strongly across a wide range of technology sectors, with the potential to drive advances in automation and other disruptive technologies.

Shared spaces

The Arctic

The Arctic region will come under increasing pressure out to 2055. Climate change is having a more rapid and visible impact on the Arctic than anywhere else in the world. Over the next three decades, this could cause the geophysical characteristics of the region to change dramatically with major ramifications, including the alteration of ocean currents and weather systems, and impacts on biodiversity and fish stocks. Tourism, inward migration and urbanisation are also projected to increase. A growing array of states and companies will seek to exploit this emerging frontier, attracting economic migrants to a currently sparsely populated region with implications for societal dynamics. The effects of climate change and new technology advances could result in an increase in access to the region and lead to growing competition for Arctic resources, including on the part of commercial actors, as well as growing militarisation, placing increasing pressure on the Arctic Council. The willingness to collaborate on scientific research, protection of biodiversity and the rights of indigenous people could diminish.

The Antarctic

Climate change is projected to cause significant loss of ice in the Antarctic region, contributing to sea level rise and impacting global weather systems. While Antarctica's abundant hydrocarbon and critical mineral resources will remain difficult to extract in the near term, ice melt and technology advances may reveal new opportunities in the longer term, and increased global resource demand could see growing competition for Antarctic resources, heightening geopolitical tensions. Human activity in the region is already growing and could expand further due to increased fishing and tourism, placing further pressure on the Antarctic environment. States and commercial actors may increasingly position themselves for future opportunities, capitalising on scientific research to stake commercial claims or to deploy additional infrastructure, in some cases with the potential for military use in the region. The willingness of global actors to view the Antarctic as a shared region of scientific endeavour is likely to come under increasing pressure. Future decades may see the increasing contestation of territorial claims. The 1991 Protocol on Environmental Protection will be open to review and potential modification from 2048 onwards; this could be a pivotal moment, potentially leading to an increase in extractive activity in the region.

Oceans

The world's oceans are likely to remain the dominant route for transporting goods and resources, with sea lanes and choke points remaining of geostrategic significance. However, the emergence of new economic centres of power, changing resource demands and the impact of climate and environmental change could result in altered routes and new zones of conflict and interest. Competition over maritime territories and resources is likely to increase, while a growth in offshore energy and digital infrastructure could create new pressures. Rising demand for deep ocean resources, including the abundant critical minerals which may be found on the ocean floor, may see these being increasingly contested, although the potential environmental impact of their extraction will remain poorly understood. Climate change and environmental pollution will continue to have a major impact on delicate marine ecosystems, as well as on the oceans' ability to modulate global weather patterns and atmospheric carbon. Emerging technologies could provide new options to monitor, mitigate and offset these impacts, as well as enabling access to new resources and potentially offering improved scientific understanding and expanded exploration of the deep oceans and seabeds. However, as competition in the maritime environment increases, rules and frameworks covering territorial claims and actions on the high seas may come under growing pressure, presenting challenges for maritime governance.

Space

Increasingly central to multiple aspects of modern life, space will become more congested and contested over the next three decades. As well as continuing to attract attention from the traditional space powers, space will become increasingly accessible to a wider range of state as well as non-state actors, resulting in new interests and alignments. Increasing competition in the space domain will see both state and commercial actors seeking to achieve dominance through technological breakthroughs, mindful of the potential for financial and strategic gain. The breadth of sectors supported by space will continue to expand, bringing new opportunities for environmental monitoring, agriculture and fishing, surface and sea mapping and communications, including increasingly widespread Internet access. The potential for resource extraction will also grow, including for use in off-planet activities. The dual-use character of many space-based capabilities may see the line between state, security and commercial actors becoming increasingly blurred. Competition could increasingly extend beyond Earth orbits, including to cislunar[2] space and other strategic locations. As space becomes increasingly congested and competition in the space domain grows, low Earth orbits could become unusable either due to accidental or deliberate action, potentially impacting on almost every aspect of modern life.

2 Cislunar is defined as: 'between the Earth and the Moon'. *Concise Oxford English Dictionary*, 12th Edition.

Cyberspace

While advances in processing and data storage technology will set the pace for the expansion of cyberspace, developments in advanced software incorporating features such as machine learning, artificial intelligence, quantum and other novel computing technologies will extend the possibilities for its use. As global connectivity continues to increase, this will offer opportunities for access to education, health care, entertainment and social interaction, with the potential to transform many aspects of everyday life. However, an enduring digital divide, affecting the rural poor in particular, will exacerbate other forms of inequality. The amount of time that individuals spend on activities in cyberspace is expected to increase, with digital identities and communities becoming increasingly relevant and influential, and a growing number of devices and infrastructure will be connected via the Internet, giving rise to an increasing prevalence of smart homes and smart cities. Cyberspace and cyber technologies may play an important role in mitigating and adapting to climate change, even as rising levels of cyber infrastructure contribute to its causes. Global power competition will play out in cyberspace alongside other domains, as control of data and advances in cyber technology become increasingly important tools. Cyberattacks are likely to become a growing feature of competition and conflict, with the lines between state and criminal actors becoming increasingly blurred.

Thematic areas

Society

A number of states will pass their demographic inflection points over the next three decades. In many of the world's developed countries, ageing and shrinking populations will pose challenges for economic growth models and social care. At the same time, many developing countries are projected to experience continued population growth, potentially offering new economic opportunities but also resulting in increased pressure on governments, and in some cases leading to rising levels of migration. Communities will become increasingly urbanised by 2055, but while some governments will invest in smart and sustainable city development, many people will continue to live in expanding informal housing settlements, presenting risks to health and security. Scientific and technology advances, as well as increasing access to human and societal data, are likely to see improvements in health and health care provision. However, rates of improvement will continue to vary, widening the gap between rich and poor, while non-communicable diseases, social care and mental health concerns will place an increasing burden on states. Increasing encroachment into animal habitats, as well as increasing interconnectedness and growing antimicrobial resistance, means that the risk of pandemics could grow. Middle class populations will expand across the globe, driving increased demand for resources, education and political influence; however, poverty and inequality will endure. History, culture, religion and family will remain important identity markers, but the growing use of cyberspace to generate new movements and drive or undermine social cohesion will grow significantly. This will place pressure on states and create new opportunities for manipulation by political and other elites.

Economy

Rising geopolitical tensions may lead to increasing economic volatility and uncertainty, casting doubt over previous projections for major economies whilst also resulting in the emergence of new centres of economic power. The global economy has not yet rebounded to pre-COVID-19 pandemic levels, and growth may continue to stall due to high levels of public debt in many states and growing geostrategic tensions that may potentially result in a widespread increase in protectionism. Moreover, sustainability and protection of the environment may surpass growth as a measure of success in the future. Automation and additive manufacturing (3D printing) will grow in importance. In the near term, however, traditional forms of mass production relying on extended global value chains are likely to continue to dominate manufacturing activity. The financial technology sector will continue to grow and may begin to surpass traditional financial institutions and structures, while digital goods and services are expected to gain significant economic weight. The use of cryptocurrencies may become increasingly widespread, although caution regarding their use may continue and regulation is likely to pose a challenge. The US dollar is likely to remain the world's primary reserve currency but may face increasing competition from other currencies. Approaches to economic governance may continue to diverge, potentially leading to increasingly regionalised approaches. Growing technology protectionism and an increased desire on the part of governments to de-risk critical supply chains may see states taking a more geostrategic approach to economic interdependencies, although in practice market forces will continue to dominate. The use of economic levers, including debt entrapment, de-risking activity and in more extreme cases sanctions and blockades, may increase as a tool of global power competition.

Environment

Atmospheric carbon dioxide levels, surface and ocean temperatures and sea levels are projected to rise significantly by 2055, with some regions experiencing more extreme changes. Climate change and other forms of environmental degradation will lead to shifts in rainfall patterns and a rise in the number and severity of extreme weather events. These will include droughts, floods and heatwaves, causing far-reaching and potentially permanent impacts, with some areas becoming uninhabitable. Combined with increasing urbanisation, this could lead to a 30% decrease in food yields and see 60% of the world's population suffering some degree of water stress by 2055. Expanding human activity, waste production and climate change are causing biodiversity loss at unprecedented rates, with implications for the natural environment and food chains. Demand for energy will continue to rise, but fossil fuel use is expected to peak before 2055, with other forms of energy, including nuclear, solar, wind, hydroelectric and potentially tidal and wave power, increasing their market share. A range of other technologies are also being developed that could offer additional solutions. In the near term, it is plausible that an increase in demand for the critical minerals that support the green energy and wider economic transitions could lead to new geostrategic rivalries and tensions. In the future, technologies to better monitor the environment, biodiversity and human activity, as well as re-greening strategies, carbon capture technologies and other forms of geoengineering, may offer ways to reduce the impacts of a shifting climate and changing natural world. While global power competition is likely to be a significant determinant of the rate and manner in which the world addresses climate and wider environmental challenges, the urgent need to address what many states have recognised as a climate emergency may offer a platform for cooperation.

Information and technology

Future decades could see an exponential growth in the availability of data and reliance on its use, as well as in the capacity and reach of technology. As the volume of global data generation grows and storage and processing become more efficient, data is likely to be increasingly essential for government and business decision-making. As a result, access to data is likely to be a key component of global power for both state and non-state actors. Improvements in communications technology will boost connection speeds and reliability; and as Internet coverage becomes increasingly widespread, societies and economies could be transformed, seeing significant benefits. Quantum computing has the potential to substantially accelerate problem-solving. While artificial intelligence could bring significant benefits in a wide range of socio-economic areas, regulatory frameworks may struggle to keep pace, presenting a growing risk to individuals and societies. As a result of technology advances, a range of fields, including transport and logistics, manufacturing, health care, food and energy production and communication, could all look significantly different by 2055, and governments and societies will need to remain agile to keep pace with the societal, political and economic changes which will result from this.

Conflict and security

An increasing range of security actors, including non-state, is likely to lead to a more congested and complex landscape out to 2055. Global defence spending continues to rise; this, together with investment in new technologies, has the potential to fuel instability and increase the risk of miscalculation in future.
While many existing alliances are likely to endure, states may seek to diversify partnerships, in some cases through the use of proxies and clients, while retaining ties to multilateral organisations. Changing energy and resource demands and new centres of production and services could drive the emergence of new security interests in a wider array of regions and shared spaces. The impact of climate change on governments and societies, including potentially threats to the territorial integrity of some states, could lead to new and growing security challenges. In an increasingly interconnected world, social, economic, health and technological shocks could rapidly spread and prove major sources of instability. The increasing blurring of the boundaries between diplomatic, information, military and economic levers of power may undermine the global institutions and frameworks intended to prevent escalation into conflict. An expansion in the number of nuclear-armed states fielding more powerful weapons, combined with new weapons of mass effect, could create new challenges. Economic challenges, demographic changes, green energy transitions and technology advances could see states and other actors pursuing widely different forms of combat power in the future, although mass and conventional means of power projection will remain important. In an age of increasing uncertainty, the need to build resilience, agility and new forms of deterrence, while restoring trust amongst international actors, will be paramount.

Methodology

Approach. GST 7 employs a systems-based approach as the framework for analysis. This comprises three subsystems (society, economy and environment), plus a series of connecting 'ring roads', which for the purposes of this publication have been consolidated into the future world order (which includes governance, non-state actors, state actors, global power relations and uncertainties) and the thematic areas of information and technology, and conflict and security, as illustrated in Figure 6. Following a programme of regional analysis that explored the world as nine regions and five shared spaces, including cyberspace, identified trends were then examined through the lens of each of these subsystems and ring roads to provide context for developing global thematic trends. This helped to highlight areas of variation and commonality across the regions, following which the results were refined into the specific chapters contained in the publication. All findings, especially those involving emerging technology and technical scientific detail, were frequently tested for logic and quality of evidence with relevant stakeholders and subject matter experts, and then re-examined for contradictions and contraindications.

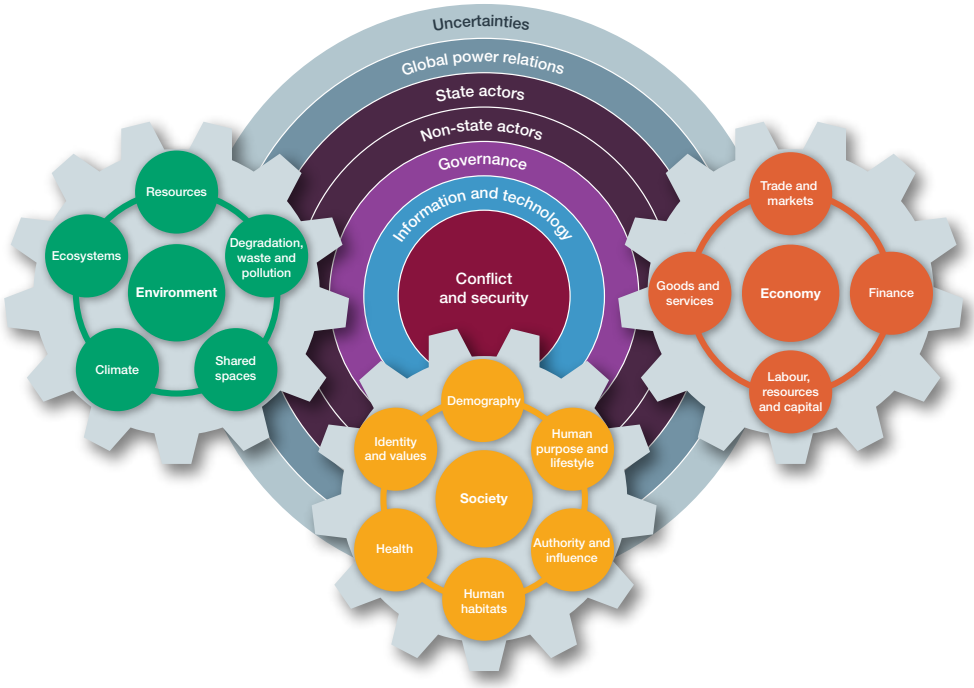


Figure 6 – The Global Strategic Trends 7 'system'

Research. Each thematic and regional topic was researched by a designated group, all members of the Development, Concepts and Doctrine Centre's Futures Team. The research phase involved collecting data points, conducting original research, and running a series of internal and external workshops to extrapolate key drivers and emerging trends. Throughout the research phase, the Futures Team employed a variety of specialist futures techniques, including statistical analysis and modelling, surveys, cross-impact and causal loop analysis, and an artificial intelligence-based literature review, to identify the second and third order consequences of these trends across all regional and thematic areas. Desk research was augmented by collecting statistical abstracts of various countries and engagement visits across most regions. Where face-to-face interviews were not possible, for example, when the COVID-19 pandemic lockdowns made international travel impossible, virtual meetings were arranged instead. Altogether, more than 60 research papers were produced to support the analysis of GST 7. In addition, the Development, Concepts and Doctrine Centre was also approved to test the potential of large language models during the course of this work (although the results were always cross-checked by the Futures Team), as well as several proprietary software tools for data analytics and management.

Collaboration. GST 7 has been produced with unprecedented cross-government support and transnational collaboration. With numerous meetings and a series of engagement visits (physical and virtual) to 40 countries and seven regions, a broad network of UK and global government departments, agencies and academic institutions informed the analysis throughout all stages of production, providing comment, advice and review. In total, 47 academic institutions were engaged throughout the process, providing background research, research papers and interviews. The Futures Team that produced GST 7 was made up not only of British military officers and civil servants, but also embedded officers and civilians from Australia, Brazil, Finland, Germany and Sweden. Finally, the Futures Team also worked widely with peer groups and foresight practitioners across the globe (in total over 10,000 individuals were engaged), including in Australia, Brazil, Canada, Chile, India, Japan, New Zealand, Singapore, South Africa and the US, as well as with teams in the European Union, the Organisation for Economic Co-operation and Development, NATO and the Geneva Centre for Security Policy. Between them, these collaborations provided a broad range of perspectives, ensuring that the final publication is robust and 'global' in its design.

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