DMA Current Affairs
Global Trends 2040: A More Contested World

Introduction.

This week we're going to talk about the report of the National Intelligence Council (NIC) on Global Trends 2040. As the report notes in its sobering introductory passages, during the past year, the COVID pandemic has reminded the world of its fragility and demonstrated the inherent risks of high levels of interdependence. In the coming years and decades, the world will face more intense and cascading global challenges ranging from disease to climate change to disruptions from new technologies and financial crises.

These challenges will repeatedly test the resilience and adaptability of communities, states and the international system, often exceeding the capacity of existing systems and models. This looming disequilibrium between existing and future challenges and the ability of institutions and systems to respond is likely to grow and produce greater contestation at every level.

In this more contested world, communities are increasingly fractured as people seek security with like-minded groups based on established and newly prominent identities; states of all types and in all regions are struggling to meet the needs and expectations of more connected, more urban, and more empowered populations; and the international system is more competitive – shaped in part by challenges from a rising China – and at greater risk of conflict as states and nonstate actors exploit new sources of power and erode longstanding norms and institutions that have provided some stability in past decades.

While I found tackling this report to be quite a humbling experience, I wanted us to take a shot at getting our arms around the material and share with one another our reactions: what we, ourselves, believe the long-term future may hold and what are the most significant forces at work that will determine the future of the globe. In order for us to have this discussion, I plan to spend about a half hour highlighting some of the most significant observations in the report, briefly describe the five plausible 2040 scenarios offered up by the NIC and then posit a series of questions intended to provide a framework for discussion.

At the end of the session, Mike Wheeler will present the results of the poll emailed to DMA participants a few days ago.

Four Major Structural Forces at Play.

Demographic, environmental, economic and technological developments will shape the world in the coming decades, providing both benefits and opportunities to individuals, communities and governments, but also fostering new and more intense challenges, straining the capacity of societies and governments to adapt.

- After decades of gains in human development, many countries are likely to struggle to build on or even sustain these successes, finding it difficult to move beyond the basics in education and healthcare, especially with larger populations and tighter resources

- The physical effects of more extreme weather, hotter temperatures, changing precipitation patterns and rising sea levels will affect all countries but disproportionately the developing world and poorer regions

- The pace and reach of technological developments are likely to increase and accelerate, transforming and improving human experiences but also creating new tensions and disruptions within and between societies, industries and states

- Several global economic trends, including rising sovereign debt, new employment disruptions, a more complex and fragmented trading environment and the rise of powerful companies, are likely to shape conditions within and between states

These structural drivers may redound in unpredictable ways, affording some countries the opportunity to rise and prosper, while others, burdened by a confluence of less supportive trends, will struggle.

Shifting global demographic trends will aggravate disparities in economic and political opportunity within and between countries, strain governance and fuel pressure for global migration – increasing friction between states.

State and nonstate rivals will compete for dominance in technology with risks for economic, military, diplomatic and society security. Many governments may find that they have reduced flexibility as they navigate greater debt burdens, diverse trading rules and a broader range of powerful state and corporate actors exerting influence. Asian economies appear poised to continue decades of growth.

A few highlights on each of these four forces:

Demographics and Human Development

- During the next 20 years, the world's population will continue to increase every year, adding approximately 1.4 billion people to reach an estimated 9.2 billion by 2040

- Slowing population growth and a rising global median age present potential economic opportunities for some developing countries, but rapidly aging and contracting populations in some developed economies and China will weigh on economic growth

    - Although India's population growth is slowing, it will overtake China as the world's most populous country by 2027. As birth rates remain low and the median age rises, most developed and a handful of emerging economies will see their populations peak and then start to shrink by 2040, including China, Japan, Russia and many European countries

- Relatively poor countries in Sub-Suharan African and South Asia will account for almost all global population growth and will be rapidly urbanizing at the same time, most likely overwhelming their capacity to provide the infrastructure and education systems necessary to fully harness their economic growth potential

    - The number of urban residents in poor countries is likely to rise by 1 billion to more than 2.5 billion by 2040

    - In countries with fast growing and youthful populations, the growing gap between expectations of growing urban cohorts and their governments' ability to provide for their education, healthcare and job opportunities has the potential to increase political instability. In these countries, recruitment to radical extremist movements will be a major risk

- Demographic shifts and economic incentives are likely to increase pressure for migration out of developing countries, mostly from Sub-Suharan Africa, and primarily into aging, developed countries. Conflict and climate disruptions will compound these broader migration trends

- Demographic and human development trends will put pressure on governments to increase public investment and control migration, potentially fuel instability in some countries, contribute to a rising Asia and add to the agenda of already strained international development institutions

    - Although there is little certainty about the level of migration as government policies fluctuate, the push and pull factors for cross-border movements of people will endure globally – feeding debates in destination countries over migration and aggravating social divisions

Environment

- During the next twenty years, the physical effects from climate change of higher temperatures, sea level rise, and extreme weather events will impact every country. The costs and challenges will disproportionately fall on the developing world, intersecting with environmental degradation to intensify risks to food, water, health and energy security

    - Temperatures are warming at three times the global average in the Arctic, largely as a result of feedback loops from melting ice and snow cover. This has caused mass loss from ice sheets and glaciers as well as reductions in sea ice extent and thickness. Estimates of sea level rise in the next 20 years range from 3 to 14 inches, which would create problems for low lying coastal cities and islands. Outside the Arctic, the fastest warming is projected to occur in central and eastern North America, central Europe, the Mediterranean region, western and central Asia, and southern Africa. The tropics especially are expected to experience widespread extreme heatwaves

- There will be increased emphasis on mitigating greenhouse gas emissions to achieve net zero with new energy technologies and carbon dioxide removal techniques designed to meet the Paris Agreement goals. But as the world gets closer to exceeding the limit embodied in the Paris accords, calls will

increase for increasing geoengineering research and possible deployment to cool the planet, despite possibly dire consequences

  - On the current path, it is probable that within the next 20 years global warming will surpass 1.5 degrees Celsius while heading toward 2 degrees Celsius possibly in mid-century. Cumulative emissions already in the atmosphere will drive temperature increases in the next two decades even if emissions were to reach net zero immediately

  - Even though fossil fuels will continue will continue to supply the majority of energy needs over the next 20 years, wind and solar are almost certain to grow faster than any other energy source because of technological advances and falling costs, and nuclear power production may grow particularly if new, safe designs emerge. A range of current and future technological developments – as well as regulatory and investment choices by governments, businesses and consumers – will influence energy use in buildings, transportation and power, which together account for a majority of global emissions

- Debate will increase over how and how fast the world should reach net zero as countries face hard choices over how to implement drastic emissions cuts and adaptive measures. Neither the benefits nor the burdens will be distributed evenly within or between countries, heightening competition, contributing to instability, straining military readiness and encouraging political discord

Economics

- Rising national debt, a more complex and fragmented trading environment, the global spread of trade in services, new employment disruptions, and the continued rise of powerful firms are likely to shape conditions within and between states

  - National debt levels have risen in almost every country since the 2007-2008 financial crisis and are likely to continue to face upward pressure through at least 2040. Strong borrowing in response to the COVID pandemic, rising old-age dependency burdens in most of the largest economies, and increased demands on governments to spur economic growth as well as respond to other global challenges have all contributed to debt levels. During the next few decades, the economic costs of aging will strain public finances in all G20 countries, unless difficult decisions are made to reduce benefits or raise taxes.

- Studies have estimated that automation could eliminate 9 percent of existing jobs and radically change approximately one-third in the next 15 to 20 years. But the number of jobs created by new technologies is likely to surpass those destroyed. During the past two decades, automation has replaced mostly middle-skilled job professions, such as machine operators, metal workers and office clerks. Automation may increasingly affect more high-income professions, such as doctors, lawyers, engineers and university faculty

- As technology, including big data and machine learning, and intangibles, such as brand, become increasingly important drivers of value creation during the next two decades, the market dominance of superstar firms is likely to increase. Growth in superstar firms is likely to affect the division of economic gains between and within countries, potentially leading to friction and uneven regulation as host countries try to capture some of the value created by these firms. The power of these firms beyond business – including control of data and information flows – will encourage government efforts to regulate them or possibly break them up

- Many governments may have reduced flexibility as they navigate greater debt burdens, diverse trading rules and public pressure to deal with challenges that range from demographic shifts to climate change

  - Current trade rules are inadequate for new types of flows, including e-commerce and other services. As WTO rules become increasingly antiquated, future regional agreements are likely to establish new rules and standards, especially for new types of commercial transactions, resulting in further fragmentation of global trading rules

  - The anticipated increase in job losses in manufacturing during the next two decades is likely to place pressure on governments, particularly those in advanced and manufacturing dependent emerging economies, to take protective actions. In addition, a recognition that technologies, such as AI, could lead to sustainable first mover advantages – in which being the first to market a new product provides a competitive advantage – might lead some governments to intensify their use of trade restrictions as they jockey for global position. And protecting critical inputs and strategic supplies, especially pharmaceuticals in the wake of the pandemic, could lead to greater trade restrictions for these industries

- Productivity growth will be a key variable globally; increased growth in OECD countries would help governments deal with economic, demographic and other challenges; and increased growth rate in Asia could help countries avoid the “middle income trap”

Technology

- During the next two decades, the pace and impact of technological developments are likely to increase, transforming and improving human experiences and capabilities and offering the potential to tackle challenges such as aging, climate change, and low productivity growth, while creating new tensions and disruptions within and between societies, industries and states

    - Artificial intelligence (AI) is the demonstration of cognition and creative problem solving by machines rather than humans, ranging from narrow AI, designed to solve specific problems, to Artificial General Intelligence, a system that in the future may match or exceed a human being's understanding and learning capacity. By 2040, AI applications, in combination with other technologies, will benefit almost every aspect of life, including improved healthcare, safer and more efficient transportation, personalized education, improved software for everyday tasks and increased agricultural crop yields. Political and business leaders world-wide are seeking global talent and pouring resources into developing AI, hoping to be among the first to use it to reshape societies, economies and even war. AI will challenge leaders to keep pace and reap the benefits while mitigating harmful effects, such as threats to privacy and liberty

    - AI dependent industries will require massive quantities of data to operate efficiently. Institutions, companies and countries already investing in ways to acquire, classify, store and monetize data will have advantages. The unprecedented amount of data available in 2040 will provide valuable insights and capabilities but also open up access, privacy, ownership and control of data as areas of increasing competition and conflict

    - AI will confer strong advantages to countries that incorporate AI into their military systems. AI will enhance the performance of existing weapons, defenses and security systems, both physical and cyber, while counter-AI techniques, designed to negate or confuse AI decision-making, are also likely to emerge. Widespread adoption of AI in warfare, however, increases the risk of intentional misuse or unintended engagement or escalation

    - Privacy and anonymity may effectively disappear by choice or government mandate, as all aspects of personal and professional lives are tracked by global networks. Real-time, manufactured or synthetic media could further distort truth and reality, destabilizing societies at a scale and speed that dwarfs current disinformation challenges. Greater connectivity will increase the vulnerability of

connected individuals, institutions and governments as the presence of hundreds of billions of connected devices increases the cyber-physical attack service

- The next decades will see increasing global competition for the core elements of technology supremacy, such as talent, knowledge and markets, potentially resulting in new technological leaders or hegemonies

    - Complex international supply chains, the global diffusion of innovation and investments by geopolitical rivals could further impede the unilateral use of technology by nations to achieve their goals. Conditions are ripe for both greater international cooperation as well as new types of multifaceted competition and conflict that could define the coming era

- The race for technological dominance is inextricably intertwined with evolving geopolitics and the broader U.S. – China rivalry, but at the same time, technological advantage will be augmented by companies that have a long-term focus, resources and global reach

- Spin-off technologies and applications will be available for rapid adoption, enabling developing countries to take advantage of the latest core advances, develop global applications in niche areas, and contribute to global supply chains

Emerging Dynamics

The story of the next 20 years will reflect choices made at the societal, state and international levels. Emerging dynamics at all levels point to greater debate and contestation. Personal and policy choices will determine the cohesiveness of societies, the resilience of states in all regions, and the types of interactions between states.

In many countries, people are pessimistic about the future and growing more distrustful of leaders and institutions they see as unable or unwilling to deal with disruptive economic, technological and demographic trends. At the same time, governments are struggling under mounting pressures and tighter resources, and they are finding it difficult to meet the challenges of a globally interconnected, technologically advanced, and diverse world. The result is a growing disequilibrium

between public demands and governments' ability to deliver welfare and security, portending greater political volatility and increasing risks for democracy.

Unmet needs and expectations are encouraging a flourishing marketplace of additional actors providing governance, security and services, including NGOs, churches, corporations and even criminal organizations. States that adapt to the mounting governance challenges probably will be better positioned to rebuild trust and legitimacy.

Power in the international system will evolve to include a broader set of sources and features, with expanding technological, network and information power complementing more traditional military and economic power. The rivalry between the U.S. and China is likely to set the broad parameters for the geopolitical environment, forcing starker choices on other actors. States will leverage these diverse sources of power to jockey over global norms, rules and institutions, with regional powers and nonstate actors exerting more influence within individual regions and leading on issues left unattended by major powers.

The increased competition over international rules and norms, together with untested technological military advancements, is likely to undermine global multilateralism, broaden the mismatch between transnational challenges and institutional arrangements to tackle them, and increase the risk of conflict.

Societal: Disillusioned, Informed and Divided

- Slowing economic growth and gains in human development, coupled with rapid societal changes, have left large segments of the global population feeling insecure, uncertain about the future, and distrustful of institutions and governments they view as corrupt or ineffective

- Many people are gravitating toward familiar and like-minded groups for community and security, including ethnic, religious and cultural identities as well as groupings around interests and causes. These groups are more prominent and in conflict, creating a cacophony of competing visions, goals and beliefs

- The combination of newly prominent transnational identities, the resurgence of established allegiances and a siloed information environment is creating and exposing fault lines within states, undermining civic nationalism and increasing volatility

- Populations of every region are becoming better equipped with the tools, capacity and incentive to agitate for social and political change and to demand resources, services and recognition from their governments

State: Tensions, Turbulence and Transformation

- Governments in all regions will face mounting pressures from economic constraints and a mix of demographic, environmental and other challenges. Meanwhile, populations will demand more, and they are empowered to push for their conflicting goals and priorities

- The relationships between societies and their governments are likely to face persistent tensions because of a growing mismatch between what publics expect and what governments deliver. This widening gap portends more political volatility, risks for democracy and expanding roles for alternate sources of governance

- Growing public discontent, if accompanied by a catalyzing crisis and inspired leadership, could spur significant shifts or transformations in how people govern

International: More Contested, Uncertain and Conflict-Prone

- Power in the international system will evolve to include a broader set of resources and features with expanding technological, network and information power complementing more traditional military, economic and cultural soft power. No single state is likely to be positioned to dominate across all regions or domains, opening the door for a broader range of actors to advance their interests

- The U.S. and China will have the greatest influence on global dynamics, supporting competing visions of the international system and governance that reflect their core interests and ideologies. This rivalry will affect most domains, straining and in some cases reshaping existing alliances, international organizations and the norms and rules that have underpinned the international order

- In this more competitive global environment, the risk of interstate conflict is likely to rise because of advances in technology and an expanding range of targets, new frontiers for conflict and a greater variety of actors, more difficult deterrence, and a weakening or lack of treaties and norms on acceptable use

Scenarios for 2040: Charting the Future Amid Uncertainty

Having described how key structural forces are laying the foundations for our future world and explored the emerging dynamics within societies, states and the international system as communities and leaders respond to them, the NIC concludes that the world is increasingly "out of balance and contested" at every level, but the trajectory is not set in stone. To understand how these conditions might play out differently over the next 20 years, the NIC developed five scenarios describing a range of possible global futures. These scenarios, briefly outlined below, are not intended to be predictions but to widen the aperture as to the possibilities, exploring various combinations of how the structural forces, emerging dynamics and key uncertainties might play out.

Renaissance of Democracies (Scenario 1)

The world is in the midst of a resurgence of open democracies led by the U.S. and its allies. Rapid technological advancements fostered by public-private partnerships in the U.S. and other democratic societies are transforming the global economy, raising incomes and improving the quality of life for millions around the globe. The rising tide of economic growth and technological achievement enables responses to global challenges, eases societal divisions and renews public trust in democratic institutions.

In contrast, years of increasing societal controls and monitoring in China and Russia have stifled innovation as leading scientists and entrepreneurs have sought asylum in the U.S. and Europe.

- Open democratic systems prove better able to foster scientific research and technological innovation, catalyzing an economic boom. Strong economic growth in turn enabled democracies to meet many domestic needs, address global challenges and counter rivals

- The combination of better service provision and anti-corruption efforts helped to restore public trust in institutions and eventually mended many fractured societies. Strong differences in public preferences and beliefs remained but these were addressed democratically

- U.S. leadership proved central to multilateral coordination and focus on global challenges, building on established alliances and international institutions. A revival in the EU and UK, spurred on by technological innovation and economic growth, was a key to broader success

- Over time, the combination of severe repression, stalled economic growth and mounting demographic pressures undermined established authoritarian regimes in China and Russia, making them less predictable and more aggressive in their neighborhoods

A World Adrift (Scenario 2)

In 2040 the international system is directionless, chaotic and volatile as international rules and institutions are largely ignored by major powers such as China, regional players and nonstate actors. OECD countries are plagued by slower economic growth, widening societal divisions and political paralysis.

China is taking advantage of the West's troubles to expand its international influence, especially in Asia, but lacks the will and military might to take on global leadership, leaving many global challenges, such as climate change and instability in developing countries largely unaddressed.

- This is a directionless world in which international rules of behavior are no longer followed, global cooperation is limited and technology fails to provide solutions

- China's increasingly aggressive moves in Asia elevate the risk of armed conflict with other regional powers, especially over critical resources. In contrast, developing countries with large unemployed youthful populations feel compelled to appease Chinese demands in hopes of securing much needed investment aid

- Regional powers and nonstate actors, including corporations, have more influence over domains like cyber, space and other technologies, but they lack the power to dominate the system

- Weakened rules and lack of international cooperation leave the world more vulnerable to individual hackers, terrorists and criminal groups. Belligerents feel more emboldened to pursue their goals with force, particularly in the Middle East and Africa

- Large global problems, particularly climate change and health challenges, fester as states lack incentives to pursue collective actions and instead apply a patchwork of mismatched approaches. Nonetheless, some states, companies and private organizations use the freedom to discover novel ways to enhance human health and worker productivity and to experiment with new approaches to economic development and governance

Competitive Coexistence (Scenario 3)

In 2040, the U.S. and China have prioritized economic growth and restored a robust trading relationship, but this economic interdependence exists alongside competition over political influence, governance models, technological dominance, and strategic advantage.

The risk of major war is low, and international cooperation and technological innovation make global problems manageable over the near term for advanced economies, but longer term climate challenges remain.

- The U.S.-China rivalry and other state-to-state relations are channeled into competition for markets, resources and brand reputation within mutually accepted rules in these areas. Publics rally around their governments in the competition, tempering societal fragmentation

- Strengthening economic interdependence lowers the risk of the major powers pursuing armed conflict; most of them engage in influence operations, corporate espionage and cyber attacks that allow them to achieve goals without risking destructive wars

- The central security challenge is how to keep the geopolitical competition between the U.S. and China from undermining economic cooperation upon which their prosperity and the global economy depends

- Long-term stability remains at risk from growing climate challenges that were ignored in favor of near-term economic gains; technological innovations and economic prosperity have lulled leaders into believing that they can put off making hard choices on climate change

Separate Silos (Scenario 4)

In 2040 the world is fragmented into several economic and security blocs of varying size and strength, centered on the U.S., China, the EU, Russia and a few regional powers, and focused on self-sufficiency, resiliency and defense. Information flows within separate cyber-sovereign enclaves, supply chains are reoriented, and international trade is disrupted.

Vulnerable developing countries are caught in the middle with some on the verge of becoming failed states. Global problems, notably climate change, are spottily addressed, if at all.

- Separating economies has dire consequences, including massive financial losses for countries and corporations, as supply chains fracture, markets are lost, and once lucrative sectors, like travel and tourism, decline. The resulting economies are less vulnerable to future supply chain disruptions but also less efficient

- Larger countries with abundant resources, few nearby enemies and defensible borders, such as the U.S. and Canada, are better able to adapt than most states. The focus on self-sufficiency makes some states more resilient as others founder

- To maintain domestic stability in this world, states adopt mixed political models combining elements of democracy and authoritarianism, increasing surveillance and potentially repression. Many states turn to exclusionary forms of nationalism to unify majority populations against perceived foreign enemies

- Unable to attract talent globally or sustain international collaboration, technology innovation atrophies. Wealthy countries begin to compensate by shifting resources to domestic education

- International organizations and collective action to tackle climate change, healthcare disparities and poverty falter. Countries independently adapt to the catastrophic impacts, significantly increasing the incentive for risky solutions

- Focused on internal security, the world's larger militaries avoid direct armed conflict. Rival blocs compete for control over scarce resources, leading to smaller wars and other means of diverting attention from domestic problems and rallying public support against foreign enemies. Nuclear weapons proliferate

Tragedy and Mobilization (Scenario 5)

In 2040, a global coalition led by the EU and China, working with NGOs and revitalized multilateral institutions, is implementing far-reaching changes designed

to address climate change, resource depletion and poverty, following a global food catastrophe caused by climate events and environmental degradation.

Richer countries shift to help poorer ones manage the crisis and then transition to low carbon economies through broad aid programs and transfers of advanced technologies, recognizing how rapidly these global challenges spread across borders.

- An existential threat catalyzes a bottom-up social movement that transforms multilateral cooperation, disrupts economic incentives and offers nonstate actors greater influence

- Major power competition among individual states is rechanneled to address more pressing global challenges; the geopolitical hierarchy is reshuffled, creating once unlikely partnerships between progressive European political parties and the Chinese Communist Party. Europe takes the lead in promoting sustainable development, while China adopts and promotes new energy technologies

- Countries beholden to fossil fuel industries are slowest to get on board with the global revolution, creating a global backlash to their leadership, products and brands. The second- and third- order implications of the new political movements create long-term challenges for their economies

- With broad popular support, NGOs, multilateral organizations and activist groups have unprecedented ability to influence standards, marshal resources, hold violators accountable and prod states to act. In some cases, global priorities take precedence over national interests

Suggested Discussion Topics

1. The NIC's report on Global Trends 2040 is a public document that was prepared for the benefit not only of the new Administration but for other policy makers and stakeholders both in the U.S. and around the world. What evidence have we seen that government and thought leaders in the U.S. or in other countries have taken the deep research presented seriously and considered incorporating the related analyses into their long-term planning efforts and policies?

2. Do you believe that the four major structural forces identified by the NIC as informing the emerging dynamics and driving the analyses are the correct main forces, or are there other fundamental factors that could significantly affect the future of the globe that should have been given equal weight in furtherance of the analyses conducted?

3. Do you believe that the five scenarios presented are plausible and well considered? Do you believe that there might be other scenarios that are more likely to describe the world in the year 2040? If so, what are they? Do you believe there is a reasonable chance that some of the scenarios posited could occur significantly sooner than 2040 and if so, what are the forces that could accelerate change?

4. Does the NIC report leave you more confident or less confident about the prospects for the U.S. as a continuing democratic leader in the world community in 2040?

5. In light of the analyses in the NIC report, what steps do you think the U.S. should consider to enhance its position in the world as a leading example of a successful democracy, and do you think that the U.S. may need to adapt to the structural forces and their effects by changing certain aspects as to how the country is governed? In this context, what role, if any, do you see for non-governmental entities?

Tom Igoe, January 2022