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The global forces inspiring a new narrative of progress

Growth is shifting, disruption is accelerating, and societal tensions are rising. Confronting these dynamics will help you craft a better strategy, and forge a brighter future.

by Ezra Greenberg, Martin Hirt, and Sven Smit

"The trend is your friend." It's the oldest adage in investing, and it applies to corporate performance, too. We've found through our work on the empirics of strategy that capturing tailwinds created by industry and geographic trends is a pivotal contributor to business results: a company benefiting from such tailwinds is four to eight times more likely to rise to the top of the economic-profit performance charts than one that is facing headwinds.

It's easy, however, to lose sight of long-term trends amid short-term gyrations, and there are moments when the nature and direction of those trends become less clear. Today, for example, technology is delivering astounding advances, and more people are healthy, reading, and entering the global middle class than at any period in human history. At the same time, the post–Cold War narrative of progress fueled by competitive markets, globalization, and innovation has lost some luster.

Those contradictions are showing up in politics, and the long-term trends underlying them are reshaping the business environment. Corporate leaders today need to rethink where and how they compete, and also must cooperate in the crafting of a new societal deal that helps individuals cope with disruptive technological change.

That broad narrative of intensifying competition, as well as the growing need for cooperation, contains challenges, but also great opportunity. We hear about the challenges every day in our conversations with global business leaders: How long can their traditional sources of competitive advantage survive in the face of technological shifts? How will changing consumer and societal expectations affect their business models? What does it mean to be a global company when the benefits of international integration are under intense scrutiny?

All good questions. But they should not distract from the extraordinary opportunities available to leaders who understand the changes under way and who convert them into positive momentum for their businesses. Our hope in this article is to help leaders spot those opportunities by clarifying nine major global forces and their interactions. Significant tension runs through each of them, so much that we'd characterize them as "crucibles," or spaces in which concentrated forces interact and where the direction of the reactions under way is unclear. These crucibles, therefore, are spaces to watch, in which innovation "temperature" is high.

- The first three crucibles reflect today's **global growth shifts.** The globalization of digital products and services is surging, but traditional trade and financial flows have stalled, moving us *beyond globalization.* We're also seeing new growth dynamics, with the mental model of BRIC (Brazil, Russia, India, and China) countries giving way to a regional emphasis on *ICASA* (India, China, Africa, and Southeast Asia). Finally, the world's natural-resource equation is changing as technology boosts resource productivity, new bottlenecks emerge, and fresh questions arise about *"resources (un)limited?"*

- The next three tensions highlight **accelerating industry disruption.** Digitization, machine learning, and the life sciences are advancing and combining with one another to redefine what companies do and where industry boundaries lie. We're not just being invaded by a few technologies, in other words, but rather are experiencing a *combinatorial technology explosion.* Customers are reaping some of the rewards, and our notions of value delivery are changing. In the words of Alibaba's Jack Ma, B2C is becoming "*C2B,*" as customers enjoy "free" goods and services, personalization, and variety. And the terms of competition are changing: as interconnected networks of partners, platforms, customers, and suppliers become more important, we are experiencing a business *ecosystem revolution.*

- The final three forces underscore the need for cooperation to strike a new societal deal in many countries. We must cooperate to safeguard ourselves against a *"dark side"* of malevolent actors, including cybercriminals and terrorists. Collaboration between business and government also will be critical to spur *middle-class progress* and to undertake the *economic experiments* needed to accelerate growth. This is not just a developed-market issue; many countries must strive for a "next deal" to sustain progress.

These tensions seem acute today because of fast-moving political events and social unease. But earlier times of transition provide encouraging precedents: the Industrial Revolution gave rise to social-insurance programs in Western Europe and the Progressive movement in the United States, for example. Progress has won out over most of the past two centuries—indeed, at an accelerating rate since World War II, which has seen global growth rates more than double the average of the preceding 125 years. As business leaders strive to compete and cooperate in new ways, they should take heart: if history is any guide, we're operating in crucibles of progress that can help create an exciting tomorrow.

GLOBAL GROWTH SHIFTS

No developed country has recaptured the growth momentum we expected before the financial crisis of 2008–09. World GDP as a whole, while ahead of some long-term historical trends, remains below what we had thought to be our economic potential. Moderated growth has challenged individuals, and it has also made it more important for companies to take a granular approach to identifying opportunities, placing bets, and backing them with sufficient resources. The opportunities are large, particularly for leaders who understand how the dynamics of global growth are shifting as the nature of globalization changes, the largest emerging markets grow in importance, and technology reshapes our resource trade-offs.

Beyond globalization

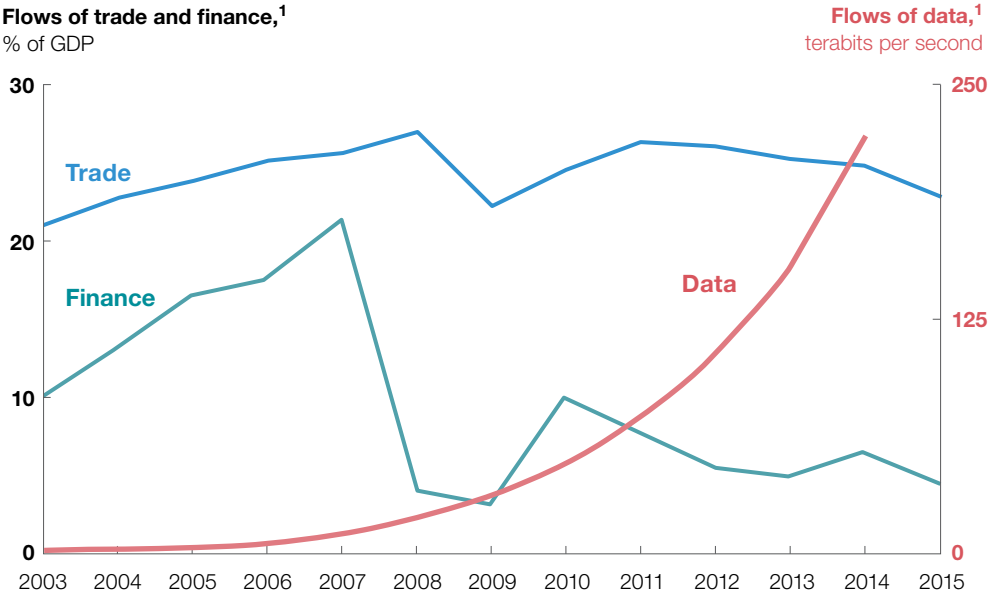
Globalization is still progressing, but also facing powerful headwinds. "Anti-globalization" sentiments are growing, and governments are responding: the United Kingdom is moving ahead with Brexit implementation; the United States has already stepped back from the Trans-Pacific Partnership (TPP) and may now have changes to the North American Free Trade Agreement (NAFTA) in its sights. Meanwhile, traditional globalization metrics are slowing. The growth of trade compared with the growth of GDP in this decade has been half of that in the late 1990s and early 2000s, while global capital flows as a percentage of GDP have dropped precipitously since the 2008–09 financial crisis and have not returned to pre-crisis levels.

At the same time, there is evidence that other facets of globalization continue to advance, rapidly and at scale (Exhibit 1). Cross-border data flows are increasing at rates approaching 50 times those of last decade. Almost a billion social-networking users have at least one foreign connection, while 2.5 billion people have email accounts, and 200 billion emails are exchanged every day. About 250 million people are currently living outside of their home country, and more than 350 million people are cross-border e-commerce shoppers—expanding opportunities for small and medium-sized enterprises to become "micro-multinationals."

Operating in tandem with these crosscurrents are calls for localization and recognition of pronounced differences in local tastes, which are making it more costly and complicated to compete globally. Multinational companies need, in the words of GE's Jeff Immelt, "a local capability inside a global footprint." Many companies are trying to compete with the increasing number of world-class local players by carefully recognizing subtle differences in local taste and custom. Some fast-food chains, for example have global, iconic brands but also local menu options that are distinct. Estée Lauder in 2012 introduced Osiao, its first China-specific beauty brand, which it developed at the company's Shanghai R&D center. At the end of 2016,

Exhibit 1

Global flows of data have outpaced traditional trade and financial flows.



[1] Trade and finance are inflows; data flows are a proxy to inflows, based on total flows of data.

Source: IMF Balance of Payments Statistics; TeleGeography, Global Bandwidth Forecast Service; UNCTAD; World Bank; McKinsey Global Institute analysis

Hyundai announced it would be producing several new models in China to compete with local brands.

Globalization was never an unstoppable, monolithic force, as Pankaj Ghemawat of NYU has long said.[1] As globalization's complexities have become increasingly evident, the importance of competing with local precision at international scale continues to grow.

ICASA: The force of billion-person markets

It was more than 15 years ago that Goldman Sachs economist Jim O'Neil popularized the term "BRIC" in reference to the growth prospects of Brazil, Russia, India, and China. Since then, Brazil and Russia have sometimes faltered, while other emerging markets, particularly in Africa and Southeast Asia, have grown in importance. Although there will be more ups and downs in the years ahead, it's important not to get distracted and lose sight of the numbers. There are three geographic entities—India, China, and Africa—in which urbanization is empowering populations that exceed one billion people, and a fourth, Southeast Asia, with more than half a billion. Together, these enormous "ICASA" (India, China, Africa, and Southeast Asia) markets hold the potential for significant continued expansion (Exhibit 2). They also pose some of the biggest risks to global growth as they confront internal obstacles:

- In India, challenges include transitioning to more sustainable urbanization; building a manufacturing base in India, for India; substantially increasing women's participation in the general economy; and fully exploiting the country's technical brainpower to move up the value chain.

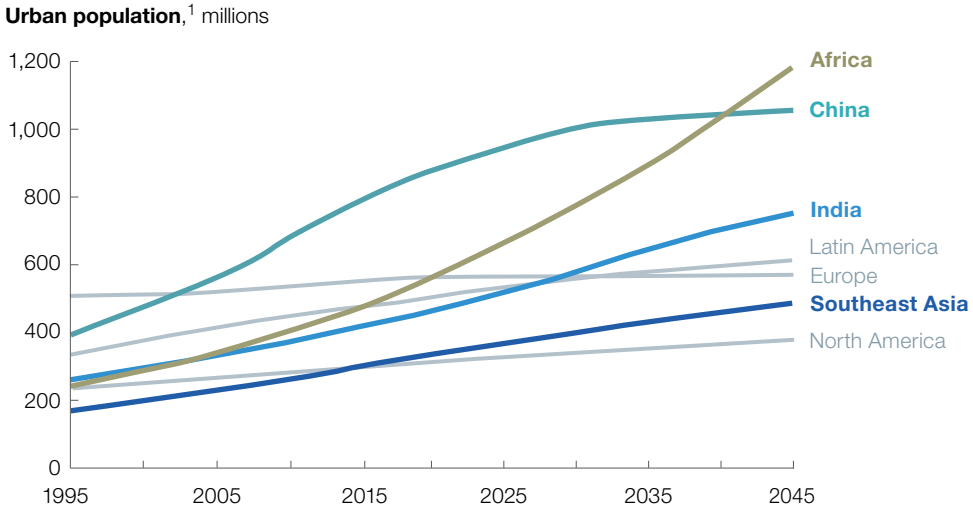
- China's growth rate has begun to taper, and despite substantial institutional changes over the past decade, the country needs to do more to complete its transition from an investment-led growth model to a productivity-led one. The demographic headwinds China will soon be facing amplify the need for this transition.

- Africa, whose working-age population is projected to top that of China and India before 2040, has the most unfilled potential. It also faces the greatest challenges: mobilizing its domestic resources, aggressively diversifying individual state economies, increasing sustainable urbanization, accelerating cross-border infrastructure development, and deepening regional integration. Failing to achieve any one of these could stall growth.

[1] See Pankaj Ghemawat, "Remapping your strategic mind-set," *McKinsey Quarterly*, August 2011, McKinsey.com.

Exhibit 2

Urbanization still has significant room to run in Africa, China, India, and Southeast Asia.



[1] Data for 2016–45 are projected.

Source: United Nations World Population Prospects; McKinsey Global Institute analysis

- Southeast Asia's impressive past growth has been driven by an expanding labor force and a shift of workers from agriculture to manufacturing. To continue growing as these factors fade, the region needs substantial investment in infrastructure that supports digitization and urbanization.

Economic power generates geopolitical power, as China's success has most recently confirmed. The more these markets overcome their unique challenges, the more central their role will be on the global stage. How these players assert that new power may not conform to approaches followed by OECD countries.[2] Institutions reflecting these markets' new clout, such as the Asian Infrastructure Investment Bank, are already emerging. So are economic arrangements that align with their interests, such as China's One Belt, One Road initiative, which seeks to connect, through maritime links and physical roads, more than half the world's population and roughly a quarter of the goods and services that move around the globe.

The opportunity remains enormous: we expect more than roughly half of global growth over the next ten years to come from these geographies. Whether a company is from one of these markets and already capturing

[2] Members of the Organisation for Economic Co-operation and Development.

regional growth or is seeking to enter one or more of them, its ability to reallocate resources, realign its footprint, and react to unexpected dips will shape whether it can successfully compete in the rebalancing global economy.

Resources (un)limited?

A modern-day Malthus might wring his hands at our world's ability to sustain billions more people emerging from poverty, eating more protein, driving carbon-emitting automobiles, and enjoying a fuller basket of other consumer goods. There is, however, a counterforce at work today, as technological advances change the resource equation in a variety of ways:

- Advances in analytics, automation, and the Internet of Things, along with innovations in areas such as materials science, are already showing great promise at reducing resource consumption. Cement-grinding plants can cut energy consumption by 5 percent or more with customized controls that predict peak demand. Algorithms that optimize robotic movements can reduce a manufacturing plant's energy consumption by as much as 30 percent. And smart lighting and intuitive thermostats are significantly reducing electricity consumption in businesses as well as homes.

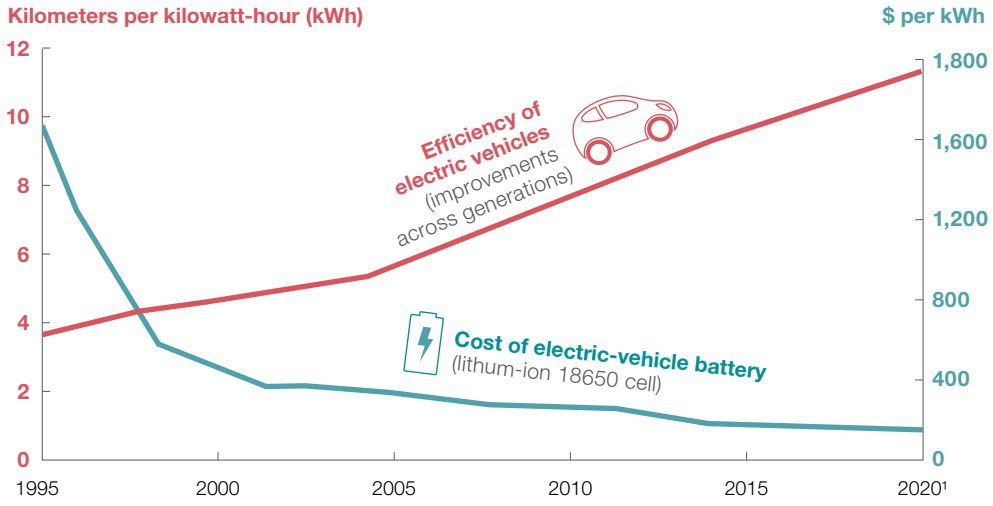
- Technology is transforming resource production. Gas and oil output has increased significantly because of advances in fracking, deepwater drilling, and enhanced oil recovery. Seawater desalination currently contributes hundreds of millions of cubic meters per year to Israel's water supply (up from less than 50 million in 2005), and the country now gets 55 percent of its domestic water from desalination.

- Technologies are combining in new ways, with the potential to reduce resource intensity dramatically (Exhibit 3). Vehicle electrification, ride sharing, driverless cars, vehicle-to-vehicle communications, and the use of new materials are rapidly coming together to reduce automobile weight, change driving patterns, and improve the utilization of cars and of road capacity. In fact, analysis by our colleagues suggests that global demand for oil could flatten by around 2025 under plausible scenarios regarding the adoption of light-vehicle technologies and slowing plastics consumption.

Technology isn't a panacea, of course; technological solutions come with external consequences. Fertilizers, for example, helped trigger a boom in agriculture, but fertilizer runoff polluted many water supplies. Fossil fuels lifted the standard of living for billions of people but have led to deteriorating

Exhibit 3

Electric vehicles are just one technology among many with the potential to reduce resource intensity dramatically.



[1] Estimates based on projected vehicle efficiency, battery costs, and performance.

Source: Stefan Heck, Matt Rogers, and Paul Carroll, *Resource Revolution: How to Capture the Biggest Business Opportunity in a Century* (New Harvest, 2014)

air quality, oil spills, and carbon dangers that are ecologically existential and drivers of investment to meet regulations and arrangements (such as the Paris Agreement) aimed at slowing the impact of climate change.

But there is also opportunity. While companies are working through the implications of resource constraints for their business models, they will generate new ideas—creating less resource-intensive processes, turning waste into raw materials, and building a more circular economy. We can expect an accelerating resource-innovation cycle: growth will strain supplies, technology will yield solutions, externalities will arise, and further ideas will emerge in response.

As technology continues to progress and data flows reveal efficiency opportunities across operations, companies should have more influence over their cost structure, and resource prices should be less correlated to one another and to macroeconomic growth than they were in the past. McKinsey research[3] suggests, for example, that iron-ore demand could decline over the next two decades as a result of softening demand for steel and increased

[3] See Scott Nyquist, Matt Rogers, and Jonathan Woetzel, "The future is now: How to win the resource revolution," *McKinsey Quarterly*, October 2016, McKinsey.com.

recycling, but copper demand could jump, given its role in a wide range of electronics and consumer goods. Resource-related business opportunities will turn up in unexpected places, and there's room for a multitude of new products and services. An example is new carbon-based materials that are lighter, cheaper, and conduct electricity with limited heat loss. They could transform entire industries, including automobiles, aviation, and electronics. Business leaders will have more opportunities to seize the initiative as they stretch their thinking about the changing nature of resource constraints.

ACCELERATING INDUSTRY DISRUPTION

"Disruption" isn't just one of the most overused words in management writing; it's also one of the most imprecisely used. When we say industry disruption is accelerating, we mean that in many sectors, critical foundations of industry structure—the economic fundamentals, the power balance between buyers and sellers, the role of assets, the types of competitors, even the borders of industries—are rapidly shifting. While that degree of change can be uncomfortable or even destructive, it can also contain the seeds of opportunity.

Our work on digitization highlights both sides of the coin. By reducing economic friction, digitization is enabling competition that pressures revenue and profit growth. It also is creating fresh opportunities to improve performance through supply-chain, product, process, and service improvements. Ensuring alignment between a company's digital and its corporate strategy appears to be one of the factors differentiating winners and losers—a useful reminder that leading today requires tough choices about big, disruptive forces.

Combinatorial-technology explosion

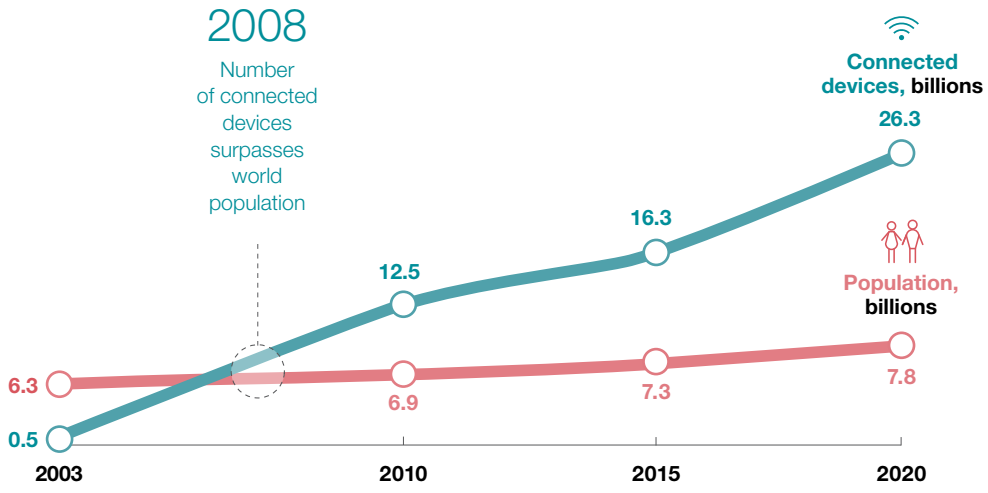
The most radical technological advances have not come from linear improvements within a single subject or expertise, but from the combination of seemingly disparate inventions and disciplines. As W. Brian Arthur has noted, "The overall collection of technologies bootstraps itself upward from the few to the many and from the simple to the complex."[4]

For example, consider how increased online connectivity (Exhibit 4), cryptography, and advanced analytics have combined to create a distributed, global database for transactions called blockchain. It's potentially a game changer, because transaction costs represent a substantial share of the world's commercial costs. In fact, the desire to avoid transaction costs such

[4] W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves*, New York, NY: Simon & Schuster, 2009.

Exhibit 4

Online connectivity—including a plethora of connected devices—is growing exponentially.



Source: Cisco; United Nations

as the negotiating and writing of contracts helps explain why firms exist, according to Nobel laureate Ronald Coase. Since blockchains can process transactions without intermediaries, their potential impact on costs and competition is profound.

Or consider machine learning, whose potential we have barely begun to tap. It is starting to combine with other technologies in a variety of unexpected ways. Recently, a team from Houston Methodist Hospital developed an algorithm that translates text from the hospital's patient charts into a prediction of breast-cancer risk 30 times as fast as a human can.

Combinatorial effects are revolutionizing many aspects of biological technologies. Low-cost genetic sequencing enabled by massive computing power is laying a foundation for developing "precision medicine" and providing people with facts that can influence life choices. Advances in materials science have allowed the development of stents (widely used to expand clogged arteries) that naturally dissolve after their job is done, potentially freeing patients from longer-term medications. Wearable and ingestible sensors, meanwhile, are being developed to increase the effectiveness of drug therapies by helping ensure medications are taken and physiological responses monitored.

The effects of technology combining can go beyond the products or services a company provides to alter the very definition of what a company does. The automotive industry, for example, isn't just about building cars anymore. As artificial intelligence and computational power merge with advanced automobiles and consumer products, companies are thinking about how they can provide "mobility solutions," or even utility solutions, given the size of batteries in electric cars. This is disruption writ large.

And everything is accelerating. Arthur's combinatorial effects are compounding the impact of Moore's law, creating more scope to innovate and to conceive new businesses. Leaders with imagination and foresight who can keep up with the pace of change have unprecedented opportunities.

C2B: Customer in the driver's seat

Digitization has brought consumers an ever-expanding menu of goods and services to choose from, some of which are free. Many goods and services consumers once paid for are now available online at a swipe or a click. Wikipedia's English-language pages alone would fill the equivalent of more than 2,300 encyclopedias if printed. Skype, which allows users to make free video and audio calls to other Skype users, provides over two billion minutes of calls every day. And infinite variety means that just about any taste or preference is being catered to. Think of detergents on Amazon, where customers can find a selection of strawberry-scented washing powders exclusively meant for black clothes.

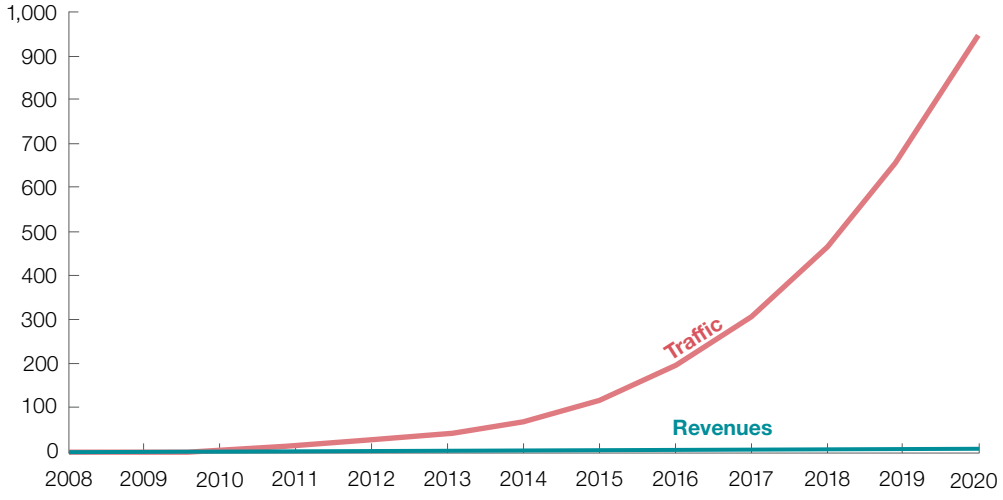
In an environment where so much costs so little and proliferating variety fragments markets, customers are capturing more of the surplus. In the United States alone, the Internet provides consumers with an estimated unpaid annual welfare gain of $100 billion. Take, for example, global mobile-data traffic and revenues: from 2008 to 2020, mobile data are expected to expand by more than 900-fold, while revenues from the data are forecast to grow by a factor of only 3.25 (Exhibit 5).

Customers also are taking the driver's seat in steering the products that companies develop. They are able to communicate with companies directly and in large numbers for the first time. What they want is more variety, more specificity, and greater self-expression. Google is renowned for its practice of rapidly incorporating direct customer feedback in product design. Chinese mobile-phone maker Xiaomi engages directly with consumers in person or online. Adidas has even built robot-operated "SpeedFactories," which create sneakers designed by individual consumers, while Doob Group enables consumers to scan their bodies and create unique, 3-D-printed figurines.

Exhibit 5

Digitization and the Internet have put consumers in the driver's seat.

Example: Traffic vs revenues for global mobile data[1]; index: 2008 = 0



	2008	2020	CAGR, 2008–20
Traffic, petabytes per month	37	35,054	77%
Revenues, $ billion	177.7	578.3	10%

[1] For traffic, data are estimated; for revenues, 2016 data are estimated and 2017–20 data are projected.

Source: Cisco; Analysys Mason

It remains to be seen how the willingness of customers to pay a premium will evolve. Right now, as Ray Kurzweil, the futurist and now a director of engineering at Google, recently noted, "There is an open-source market with millions of free products, but people still spend money to read *Harry Potter*, see the latest blockbuster, or buy music from their favorite artist." Those examples may seem like outliers, but as Kurzweil pointed out, "coexistence of a free open-source market and a proprietary market" is also "the direction we're moving in with clothing."[5] In such a world, it won't be just customers who have more choices; companies, too, have more decisions to make about their business models and how they create value.

Ecosystem revolution

In a classic 1960 *Harvard Business Review* article, Theodore Levitt asked readers to consider, "What business are you really in?" Because of digitization and the blurring of industry boundaries, Levitt's question needs

[5] Elizabeth Paton, "Fashion's future, printed to order," *New York Times*, December 5, 2016, nytimes.com.

an addendum: "And what's your ecosystem?" Businesses can broadly be grouped into three categories, with ecosystems emerging as both a powerful source of value creation and a heated competitive arena:

- Linear value chains, which dominated for most of the 20th century, comprise a series of value-adding steps with the goal of producing and selling products: think automotive assembly.

- Horizontal platforms, which gained prominence with the rise of personal computing and the Internet, cut across value chains. Companies operating under this model own hard assets and sophisticated architecture, typically built around value-adding software and technology stacks.

- "Any-to-any" ecosystems, such as those of Uber and Airbnb, have emerged most recently. These companies also operate at the center of platforms, but they are distinctly asset-light.

The horizontal platforms of players such as Google, Amazon, and Facebook have been creating value for years and currently account for five of the ten largest US companies by market cap (Exhibit 6). And horizontal plays aren't just digital. Companies of all stripes still ship their designs to Taiwan Semiconductor Manufacturing Company (TSMC), which relies on its sophisticated semiconductor factories to turn brilliant designs into high-performance chips.

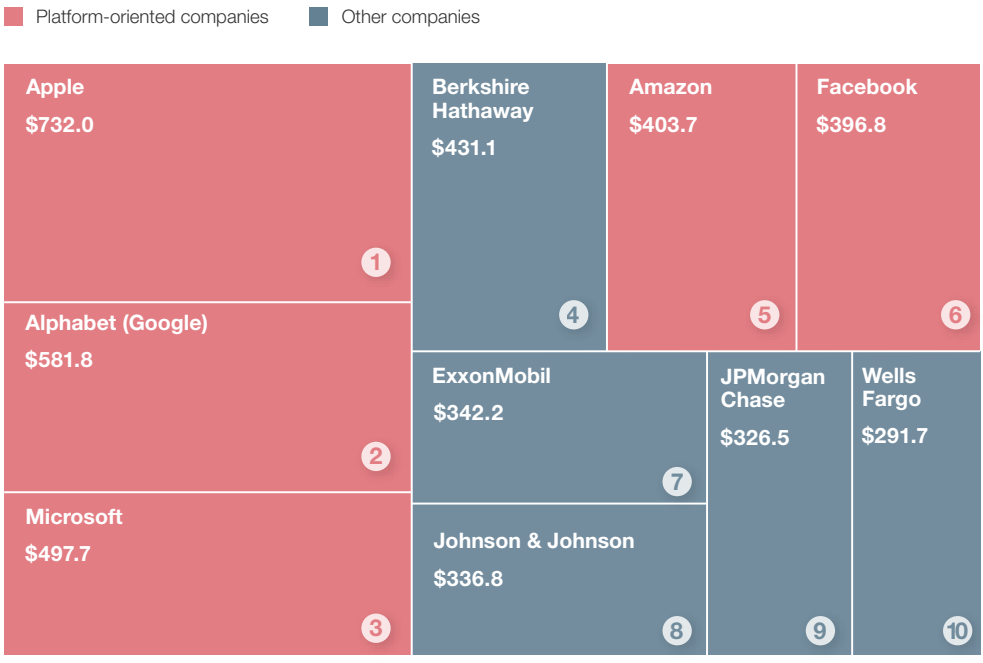
Leading horizontal platforms have shifted value pools quickly and unpredictably. The shrinkage of the compact-disc industry from $17 billion in US sales in 2001 to $2 billion a dozen years later, as sales from music downloads, subscriptions, and synchronizations have soared, is one well-known example of how disruptors "destroy billions to create millions." So far, many of the traditional industries that have endured these disruptions still exist, but their structure, and the players capturing most of the value, are often unrecognizable relative to the pre-platform era.

Now any-to-any models have taken the fore. These companies are at the center of platform-based ecosystems, and unlike horizontal players, they are distinctly asset-light. Alibaba is the world's largest retailer measured by gross merchandise volume, and it does not own any warehouses. The world's largest accommodation provider, Airbnb, does not own rooms; the world's largest taxi company, Uber, does not own cars—and neither company existed ten years ago. That's disruption, although the staying power of any-to-

Exhibit 6

Platform-oriented companies represent half of the top ten US public companies by market cap.

March 8, 2017, market capitalization, $ billion



Source: Corporate Performance Analytics by McKinsey

any models remains to be seen, given the low barriers to creating software-based platforms.

The lines of demarcation between categories are beginning to blur as value chains, platforms, and ecosystems open, expand, and combine. Linear value chains aren't immune: Under Armour, a leader in sports apparel and accessories, has announced plans to build the biggest connected fitness platform in the world.

In today's rapidly evolving landscape, leaders face a continuum of possibilities: build an ecosystem, use someone else's platform, stick to one's linear-value-chain knitting, or fashion some combination of the above. Navigating this crucible ultimately comes down to asking hard questions about a company's sources of differentiation and positional advantage, and placing all options on the table, even if that means disrupting or cannibalizing one's own business.

A NEW SOCIETAL DEAL

The biggest opportunity of all—and arguably the biggest need—transcends companies and competition. If private-, public-, and social-sector leaders can cooperate to create a new societal deal, they will forge a brighter future for individuals and for a wide range of institutions. Collaboration will be critical to overcome forces undermining openness, to drive middle-class progress, and to encourage experimentation that recharges growth and redresses income inequality.

Business leaders typically spend about 30 percent of their time on external engagement, but by their own assessment, few do so effectively. For more business leaders to "step up to the plate" and "play a key role in driving solutions," as Unilever CEO Paul Polman says,[6] they will need to do more to embed society's concerns in their business priorities, to make external engagement an integral part of their strategy, and to adopt a long-term mind-set.

The dark side

Progress thrives on openness, and openness almost by definition means exposure. The Internet, for example, has brought critical dangers even as it has unleashed a business and social miracle. Everyday acts, such as connecting your phone to your car via Bluetooth, create vulnerabilities most of us do not yet consciously consider. The costs of fighting cyberthreats are rising into the trillions. Meanwhile, rogue states continue to frustrate the global community, and the strains from combating terrorism are reverberating worldwide. The number of terrorist incidents and casualties remains relatively small but has been rising; global terrorism death levels by the end of 2015 were more than five times higher than they were in 2001.

Sometimes, international cooperation can counteract destructive power that is concentrated in the hands of a few. Consider how multiple states came together to beat back pirates in the Somali basin beginning in 2010, saving the world economy about $18 billion per year (Exhibit 7).

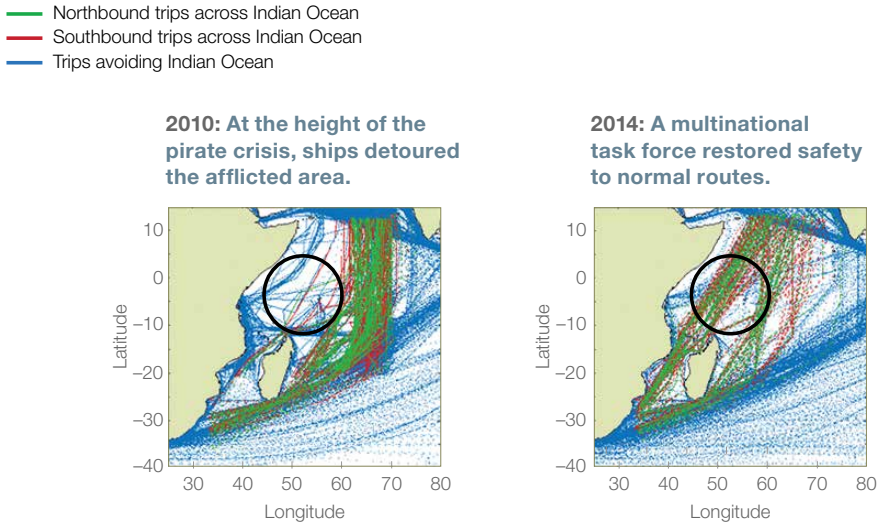
The achievement of digital resilience also requires collaboration. At a minimum, more collaboration is needed between the broad cross-functional leaders responsible for security-related decisions within a business. In an interconnected world, companies may also need to explore shared platforms and data sharing about cybersecurity threats across the boundaries of their own businesses and industries. As leaders figure out how to strike the right

[6] See Paul Polman, "Business, society, and the future of capitalism," *McKinsey Quarterly*, May 2014, McKinsey.com.

Exhibit 7

Multinational cooperation in addressing the Somali pirate crisis saved the world economy approximately $18 billion a year.

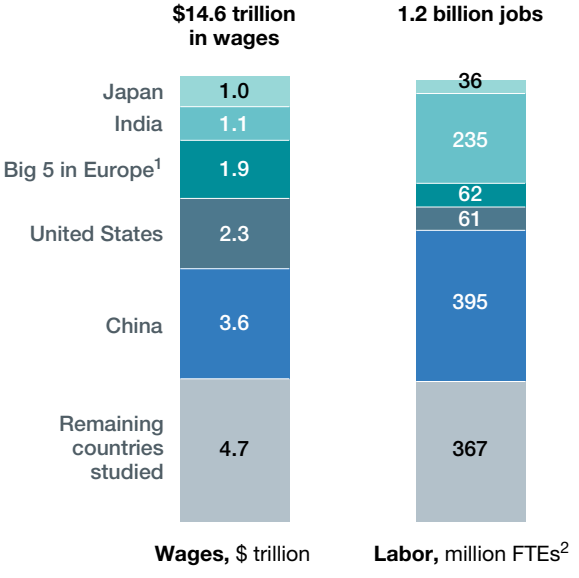
Time series of shipping traffic, January to June



Source: Michele Vespe, Harm Greidanus, and Marlene Alvarez Alvarez, "The declining impact of piracy on maritime transport in the Indian Ocean: Statistical analysis of 5-year vessel tracking data," *Marine Policy*, Volume 59, September 2015; Eurostat; OECD Migration Policy Debates, November 2015; Quy-Toan Do, "The pirates of Somalia: Ending the threat, rebuilding a nation," World Bank, 2013

Exhibit 8

Using currently demonstrated technologies, the number of tasks that can be automated would affect $14 trillion in wages and a billion jobs.



[1] France, Germany, Italy, Spain, and United Kingdom.
[2] FTEs = full-time equivalents.

Source: *A future that works: Automation, employment, and productivity*, McKinsey Global Institute, January 2017

balance between competing effectively, guarding the corporate ramparts, and cooperating in self-defense, they will be helping to redefine what it means to live together, safely, in our interdependent world.

Middle-class progress

The rising tide of progress has not lifted all boats equally. Globalization and automation are polarizing the labor market, with more on the way as expanding machine-learning capabilities increase the automatability of a wide range of tasks in developed and emerging markets alike (Exhibit 8). As middle-wage workers are displaced, many are forced to "trade down," reducing their income and putting pressure on existing lower-wage workers. There is also widening earnings disparity. Workers with advanced degrees have generally seen their earnings rise, while wages for those with only high-school diplomas have stagnated, and wages for those who do not hold a high-school diploma have declined. Youth unemployment has reached 50 percent or more in several major developed economies.

Demographic trends are exacerbating matters. The number of workers earning income for each dependent is falling as populations age, making it harder for society to support the young and the old. Entitlement programs such as pension plans are woefully underfunded.

Trust has fallen among the threatened middle class. Significant segments within Western democracies now have a negative view toward immigration and blame their governments for failed policies. Globally, 60 percent of working-age, college-educated, upper-income individuals express trust in business, government, media, and nongovernmental organizations (NGOs). Yet only 45 percent of the remaining population do so. This trust gap is largest in France, the United Kingdom, and the United States, and overall trust throughout scores of countries has declined to the lowest levels in more than five years.

A central part of the narrative behind the "Leave" campaign in the United Kingdom and the Trump campaign in the United States was that the leaders of major institutions had forgotten about the middle class. Business leaders can help rebuild that trust. In fact, citizens expect this from them. In a 2015 survey,[7] more than 80 percent of employees agreed that a business can "take specific actions that both increase profits and improve the economic and social conditions in the community where it operates."

[7] *2015 Edelman Trust Barometer*, Edelman, 2015, edelman.com.

The need for middle-class progress isn't just a developed-markets issue. As the emerging world's new consuming class comes to the fore, it is striving for opportunity beyond entry-level roles, and observing the income polarization that often accompanies industrialization. Some of the ICASA balancing acts previously described, such as China's transition from an investment-led to a productivity-led growth model, will determine the success of the middle classes in those markets.

Economic-growth experiments

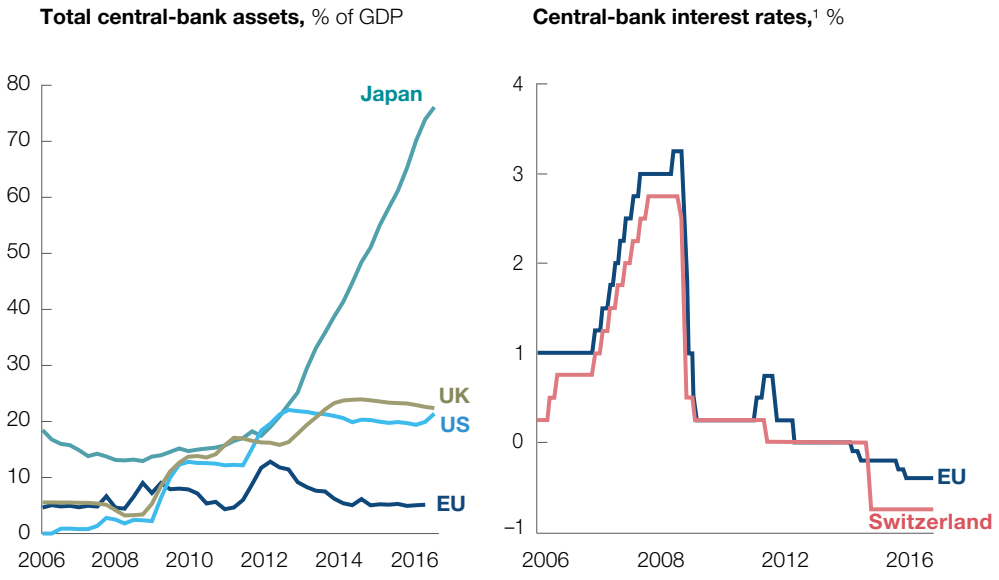
While running for president in 1932 during the depths of the Great Depression, Franklin Roosevelt remarked, "The country needs and, unless I mistake its temper, the country demands, bold, persistent experimentation." We are on the cusp of a new wave of experimentation today, because there are no clear answers to some of the challenges looming before us.

Exhibit one is growth. There is no consensus as to why it has been stuck in lower gear for years, or where it is headed. Northwestern University economist Robert Gordon argued in his 2016 book, *The Rise and Fall of American Growth*, that the productivity slowdown that started in 1970 is likely to continue and hamper growth. Other researchers, including our colleagues at the McKinsey Global Institute, argue that automation enabled by artificial intelligence, robotics, and other advances will likely raise productivity—which would increase growth, provided that those productivity gains go hand-in-hand with jobs and demand for goods and services, as they have in the past. Will they?

One thing that does seem clear is that many growth policy tools have reached their limits. Central banks and governments in the developed world responded to the financial crisis by slashing interest rates (Exhibit 9), creating innovative facilities to try to keep the credit flowing, and in some cases bailing out financial and nonfinancial players. Different mixes of austerity and structural reforms also were tried. When these proved insufficient to restart growth, leaders around the world turned to new, sometimes overlapping policy experiments, in search of a more effective solution. And they continue to debate alternatives, some as yet untried. The combined list is long and includes quantitative easing (QE), helicopter money (also called "the people's QE"), debt mutualization (Europe), debt monetization (Japan), guaranteed minimum income (Brazil), and massive stimulus programs combined with a regulatory rethink (the United States).

Exhibit 9

Quantitative easing and negative interest rates are two fairly recent monetary experiments.



[1] European Central Bank facility rate for EU, Swiss National Bank 3-month Libor target rate for Switzerland.

Source: Bank of England; Bank of Japan; European Central Bank; Federal Reserve Bank; national statistical offices; Swiss National Bank

We're entering uncharted territory in other areas, too. As the world ages, new approaches will be needed to support retirees who haven't saved enough or are counting on pension and healthcare benefits that seem unsustainable without placing crushing burdens on the workers of today and tomorrow. Or consider infrastructure spending. The McKinsey Global Institute (MGI) finds that the world will need to spend $3.3 trillion annually between 2016 and 2030 to keep up with projected growth—nearly $1 trillion more than we have been spending annually. MGI research also suggests that infrastructure spending can be cut by as much as 40 percent through better project design and execution—areas ripe for public–private experimentation.

The results of experimentation—with respect to growth, aging, infrastructure, income inequality, and more—will have dramatic implications for our world, for the business environment, and for corporate performance. Analysis by our colleagues suggests that 30 percent of corporate profits can be traced to social and regulatory issues, and

that shares of companies that connect effectively with *all* stakeholders outperform their competitors' by more than 2 percent per year on average. Employees, too, will reward companies that are part of the experiments ahead. About 85 percent of employees working at companies engaged in societal issues said they are committed to achieving their leadership's strategy, motivated to perform and have confidence in the future of their company—some 20 percent more in each case than employees of companies not engaged.[8]

Growth shifts. Accelerating disruption. A new societal deal. These are powerful forces that demand thoughtful responses and contain the seeds of extraordinary opportunity. Leaders reaching for these opportunities will need to question their own assumptions and imagine new possibilities. Those who do will compete more effectively; they also will be better able to contribute to broader solutions, and ultimately to a new and more inclusive narrative of progress. Q

[8] *2016 Edelman Trust Barometer*, Edelman, 2016, edelman.com.

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Geostrategic risks on the rise

In a new survey on globalization, the share of executives identifying geopolitical instability as a very important business trend has doubled in two years.

Executives are likelier than ever to believe that geopolitical and domestic political instability will affect global business and their own companies in coming years, according to the newest McKinsey Global Survey on globalization.[1] In two years' time, the share of respondents identifying geopolitical instability as a very important factor affecting their businesses has doubled—the largest increase for a given trend since we began surveying executives on this topic a decade ago.

Most respondents expect that geopolitical, political, and macroeconomic instability—which, taken together, we call geostrategic risks—will affect their companies, with decidedly negative implications for profits. Yet a vast majority say their organizations are not yet taking active steps to address these issues. They also say that among the other trends that have risen in importance since the previous survey, technological developments present their businesses with both challenges (such as cybersecurity) and opportunities (such as the use of big data and data-driven management techniques).

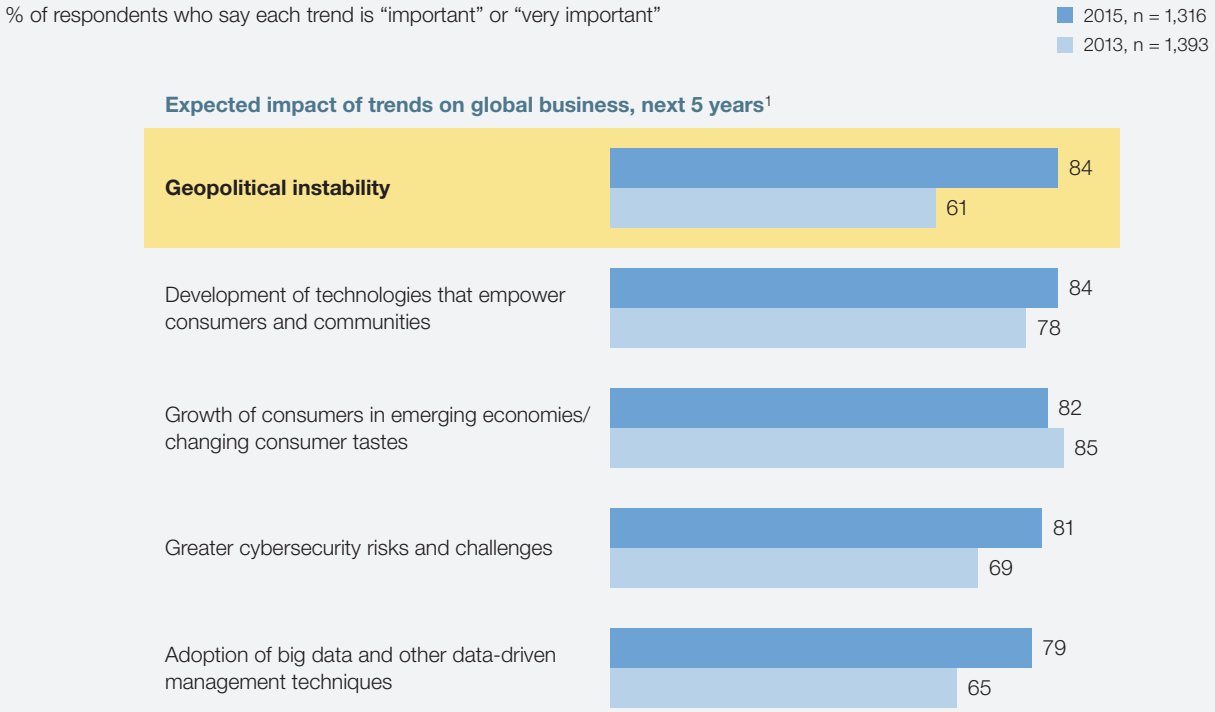
An uncertain world

This year's results suggest an even more fundamental shift in the way executives and their companies view globalization. Over the next five years, nearly all respondents expect a disruption in the global economy

due to volatility. And they are much likelier now—43 percent, up from 29 percent in 2013—to expect that potential disruptions to the economy will be very severe. This is a greater share even than those who expected very severe disruptions in 2010, in the wake of the global financial crisis.

Equally striking is the impact that executives anticipate from rising geopolitical instability, one of two trends that respondents most often believe will have an effect on global business in the next five years. Eighty-four percent of executives (and the largest share in the survey's history) now believe geopolitical instability will have an important or very important impact on global business, up from 61 percent previously (Exhibit 1). Forty-nine percent cite this trend as very important, more than doubling the share (23 percent) who said the same two years ago. Indeed, geopolitical instability is now just as

Exhibit 1 **Respondents increasingly expect geopolitical instability will have an effect on global business.**

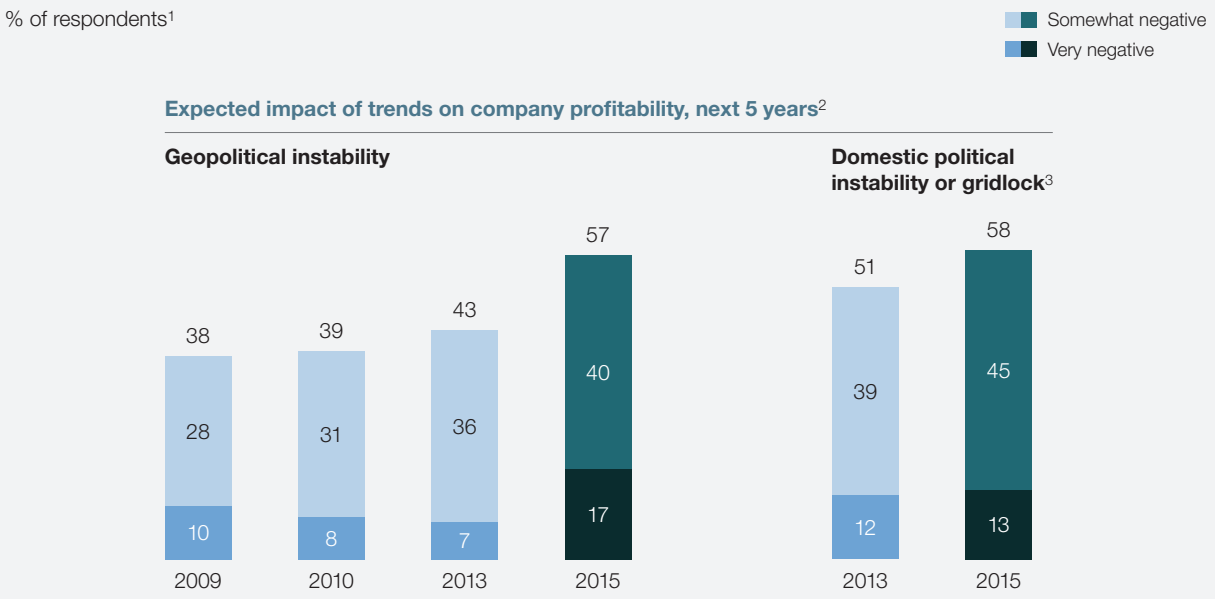


[1] Out of 13 trends the survey asked about.

important as trends that have ranked highest in previous surveys, such as the growth of consumers in emerging economies (cited most often as an important trend in the past five surveys) and consumer-empowering technologies. Domestic instability, too, is increasingly top of mind: two-thirds cite domestic political instability or gridlock (up from 57 percent previously) as an important or very important trend.

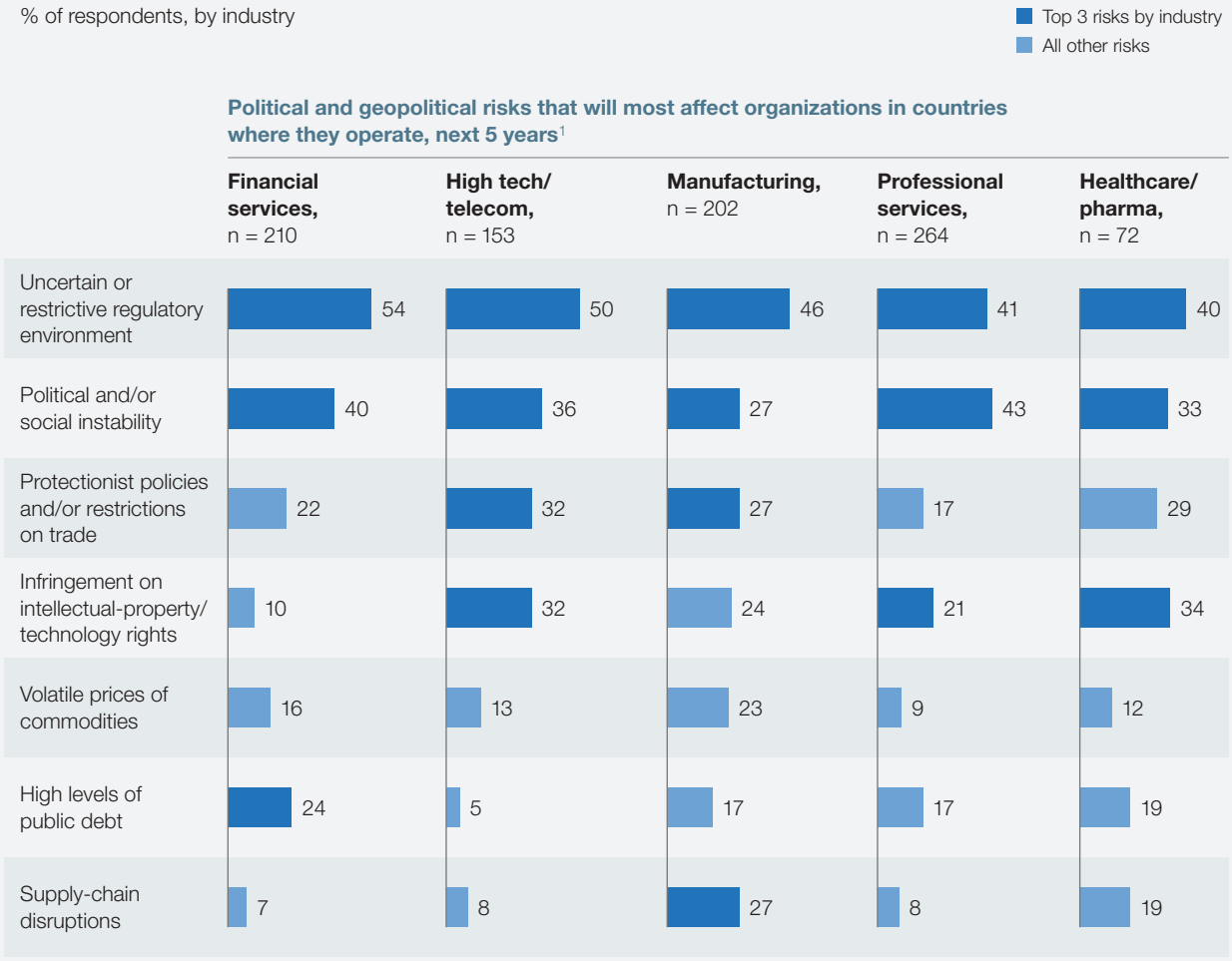
What's more, executives are likelier than ever to believe that political instability, both at home and abroad, will hurt their companies' profitability (Exhibit 2). Among the 13 trends we asked about, respondents most often expect that domestic political instability, as well as slowing growth in developed economies, will pose a threat to profits in the next five years.

Exhibit 2 **Executives are likelier than ever to believe that political instability—abroad and at home—will hurt company profits.**



[1] 2009, n = 1,088; 2010, n = 1,416; 2013, n = 1,393; 2015, n = 1,316.
[2] Respondents who answered "neutral," "somewhat positive," "very positive," or "don't know/not applicable" are not shown.
[3] This trend was first offered as an option in the 2013 survey.

Exhibit 3 **Concerns about specific political and geopolitical risks vary by industry.**



[1] Out of 13 risks that were presented as answer choices. Risks are arranged in descending order, based on the total-level responses to the question.

When respondents were asked about specific political and geopolitical risks, their biggest concerns vary by industry (Exhibit 3). An uncertain or restrictive regulatory environment, cited most often by all respondents, is an outsize concern for executives in financial services and in high tech and telecommunications. Political and social instability is, on average, the second-most-cited concern. But those in healthcare and pharma and in manufacturing are somewhat less concerned than their peers.

Inaction on geopolitical risks

Despite the growing focus on political and geopolitical uncertainties, most respondents report that their organizations haven't done much to tackle these risks. Compared with 2013, a greater share now say it is very or extremely important for their organizations to understand these risks. Furthermore, nearly two-thirds of executives say their organizations view geopolitical and political risks as more or much more important than they did five years ago. Yet less than one-third of executives say an understanding of these factors is extremely or very well integrated into overall strategy—and only 13 percent say their companies have taken active steps to address the risks from either geopolitical or domestic political instability (Exhibit 4).

Exhibit 4 **Few executives say their companies have taken steps to address geopolitical or political risks.**

[1] Respondents who answered "none" or "don't know" are not shown.

By contrast, companies are most likely to have taken action on technology trends: big data, technologies that empower consumers, and cybersecurity. Since the last survey, cybersecurity is the trend where respondents report the biggest increase in action taken.

The inaction on geostrategic risks may owe to the fact that, since 2013, many companies haven't made much progress in developing capabilities or processes to manage the uncertainties that respondents foresee. Executives aren't any likelier now than two years ago to say political and geopolitical risks are well integrated into their companies' overall strategies. This may be because companies tend to evaluate these risks using methods that executives believe are less effective, and they are least likely to use the methods executives consider most effective. On the one hand, ad hoc methods—internal analyses or dialogue with external experts—are the most common approach, cited by 43 percent of respondents (Exhibit 5).

Exhibit 5 **The most popular methods for addressing geostrategic risks are often the least effective, according to respondents.**

[1] Respondents who answered "none" or "don't know" are not shown.
[2] Respondents who answered "somewhat effective," "somewhat ineffective," "very ineffective," or "don't know" are not shown. This question was asked only of respondents who said their organizations were currently using each method.

Yet just 29 percent of executives rate ad hoc internal analyses as very effective. On the other hand, executives are least likely to report the use of comprehensive scenarios, the approach they most often see as very effective.

The double-edged sword of technological trends

Although political and geopolitical issues now take precedence, they're not the only trends that have risen in importance in the past two years. Executives are increasingly aware, too, of the impact that technological developments could have on global business and on their companies' profitability. There are two sides to these technology trends, which represent both challenges and opportunities for companies in the years ahead.

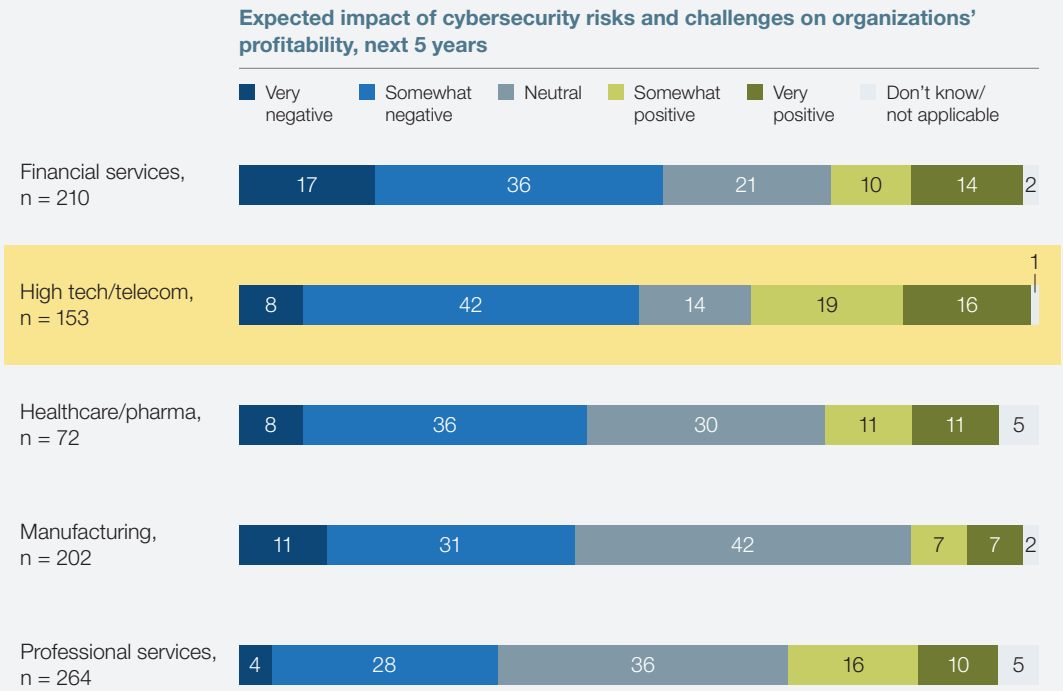
Cybersecurity is one such challenge. Roughly eight out of ten executives say greater cybersecurity risks will have an important impact on business in the coming years, citing this risk most often after geopolitical instability and the development of consumer-empowering technologies. Nearly half of respondents, up from 34 percent two years ago, now rate cybersecurity as a very important trend.

While most executives tend to believe cybersecurity's impact on company profits will be negative, some hold a different view. Across regions, those in India are the most likely to expect cybersecurity will have a positive effect on their organizations' profitability: 31 percent there say so, compared with 22 percent of the global average. Across industries, respondents in high tech and telecommunications hold the strongest

Representing both challenges and opportunities for companies, technology trends (cybersecurity and big data, specifically) will be among the most important to global business in the coming years.

Exhibit 6 **In several industries, executives expect cybersecurity will hurt their companies' profits—though in high tech, views are mixed, and few are neutral on the topic.**

% of respondents,[1] by industry



[1] Figures may not sum to 100%, because of rounding.

views on cybersecurity's profit potential. They are much likelier than their peers in other sectors to expect either a positive or a negative impact over the next five years, and they are less likely to be neutral on the topic (Exhibit 6).

Big data and data-driven management techniques, in contrast, present a much clearer opportunity for companies in all regions and sectors. The share of executives citing big data as an important trend continues to grow: 79 percent now say so, up from 65 percent two years ago and 47 percent in 2009. With respect to profitability, big data is one of the two trends about which respondents express the most optimism. Along with technologies that empower consumers and communities, 68 percent of respondents believe it will have a positive impact on company profits.

The good news is that, according to respondents, many companies have already taken action on each of these technology trends. More than half of executives say their companies are addressing the adoption of big data and data-driven management techniques; majorities also say the same about cybersecurity risks and about technologies that empower consumers.

Looking ahead

- *Get ahead of risks*. While geostrategic risks are complex issues—and may be outside the comfort zone of many executives—they are not fundamentally unknowable or unmanageable business problems. They could even be a potential source of competitive advantage for companies that develop better capabilities to manage these risks. To stay ahead of geostrategic uncertainty, executives will want to take the following steps: identifying trends and disruptions that are specific to their organizations and markets, assessing the potential market impact of risks across a range of scenarios, developing initiatives to mitigate risks or capture opportunities, establishing a decision-making process that prioritizes initiatives *and* ensures executives are aligned on their implementation, and embedding the capabilities for geostrategic analysis into regular decision-making and planning processes. Executives should also monitor these trends for new developments that would require a reassessment of strategic initiatives.

- *Tackle both sides of the technology coin*. Since our previous survey, more executives have come to understand that there are two sides to the increasing collection and use of data. One is the positive force of big data, which is rapidly redefining priorities and opportunities across sectors, and the other is the growing challenge of cybersecurity. While the exact implications will vary by industry, executives must continue to embrace big data's potential and explore new ways to adopt big data and consumer-empowering technologies. Cybersecurity's effects also vary across sectors, but its prominence in the latest survey underscores that security must be a default mind-set for all executives, regardless of what business they're in. While companies tend to guard their technological expertise (and their vulnerabilities in particular), an important way to confront the cybersecurity challenge is collaborating with other companies—even their competitors—by reporting breaches, identifying common trends and technological weaknesses, and sharing best practices on how to address them. ■

[1] The online survey was in the field from November 3 to November 13, 2015, and garnered responses from 1,316 respondents representing the full range of regions, industries, company sizes, functional specialties, and tenures. To adjust for differences in response rates, the data are weighted by the contribution of each respondent's nation to global GDP.

The contributors to the development and analysis of this survey include **Drew Erdmann,** a principal in McKinsey's Washington, DC office; **Ezra Greenberg,** a senior expert in the Stamford office; and **Ryan Harper,** a consultant in the Washington, DC office.

They wish to thank Spence Nichol for his contributions to this article.

McKinsey&Company

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The four global forces breaking all the trends

Richard Dobbs, James Manyika, and Jonathan Woetzel

The world economy's operating system is being rewritten. In this exclusive excerpt from the new book *No Ordinary Disruption*, its authors explain the trends reshaping the world and why leaders must adjust to a new reality.

In the Industrial Revolution of the late 18th and early 19th centuries, one new force changed everything. Today our world is undergoing an even more dramatic transition due to the confluence of *four* fundamental disruptive forces—any of which would rank among the greatest changes the global economy has ever seen. Compared with the Industrial Revolution, we estimate that this change is happening ten times faster and at 300 times the scale, or roughly 3,000 times the impact. Although we all know that these disruptions are happening, most of us fail to comprehend their full magnitude and the second- and third-order effects that will result. Much as waves can amplify one another, these trends are gaining strength, magnitude, and influence as they interact with, coincide with, and feed upon one another. Together, these four fundamental disruptive trends are producing monumental change.

1. Beyond Shanghai: The age of urbanization

The first trend is the shifting of the locus of economic activity and dynamism to emerging markets like China and to cities within those markets. These emerging markets are going through simultaneous industrial and urban revolutions, shifting the center of the world economy east and south at a speed never before witnessed. As recently as 2000, 95 percent of the Fortune Global 500—the world's largest international companies, including Airbus, IBM, Nestlé, Shell, and The Coca-Cola Company, to name a few—were headquartered in developed economies. By 2025, when China will be home to more large companies than either the United States or Europe, we expect nearly half of the world's large companies—defined as those with revenue of $1 billion or more—to be headquartered in emerging markets. "Over the years, people in our headquarters, in Frankfurt, started complaining to me, 'We don't see you much around here anymore,'" said Josef Ackermann, the former chief executive officer of Deutsche Bank. "Well, there was a reason why: growth has moved elsewhere—to Asia, Latin America, the Middle East."

Perhaps equally important, the locus of economic activity is shifting within these markets. The global urban population has been rising by an average of 65 million people annually during the past three decades, the equivalent of adding seven Chicagos a year, every year. Nearly half of global GDP growth between 2010 and 2025 will come from 440 cities in emerging markets—95 percent of them small and medium-size cities that many Western executives may not even have heard of and couldn't point to on a map.[1] Yes, Mumbai, Dubai, and Shanghai are familiar. But what about Hsinchu, in northern Taiwan? Brazil's Santa Catarina state, halfway between São Paulo and the Uruguayan border? Or Tianjin, a city that lies around 120 kilometers southeast of Beijing? In 2010, we estimated that the GDP of Tianjin was around $130 billion, making it around the same size as Stockholm, the capital of Sweden. By 2025, we estimate that the GDP of Tianjin will be around $625 billion—approximately that of all of Sweden.

2. The tip of the iceberg: Accelerating technological change

The second disruptive force is the acceleration in the scope, scale, and economic impact of technology. Technology—from the printing press to the steam engine and the Internet—has always been a great force in overturning the status quo. The difference today is the sheer ubiquity of technology in our lives and the speed of change. It took more than 50 years after the telephone was invented until half of American homes had one. It took radio 38 years to attract 50 million listeners. But Facebook attracted 6 million users in its first year and that number multiplied 100 times over the next five years. China's mobile text- and voice-messaging service WeChat has 300 million users, more than the entire adult population of the United States. Accelerated adoption invites accelerated innovation. In 2009, two years after the iPhone's launch, developers had created around 150,000 applications. By 2014, that number had hit 1.2 million, and users had downloaded more than 75 billion total apps, more than ten for every person on the planet. As fast as innovation has multiplied and spread in recent years, it is poised to change and grow at an exponential speed beyond the power of human intuition to anticipate.

Processing power and connectivity are only part of the story. Their impact is multiplied by the concomitant data revolution, which places unprecedented amounts of information in the hands of consumers and businesses alike, and the proliferation of technology-enabled business models, from online retail platforms like Alibaba to car-hailing apps like Uber. Thanks to these mutually amplifying forces, more and more people will enjoy a golden age of gadgetry, of instant communication, and of apparently boundless information. Technology offers the promise of economic progress for billions in emerging economies at a speed that would have been unimaginable without the mobile Internet. Twenty years ago, less than 3 percent of the world's population had a mobile phone; now two-thirds of the world's population has one, and one-third of all humans are able to communicate on the Internet.[2] Technology allows businesses such as WhatsApp to start and gain scale with stunning speed while using little capital. Entrepreneurs

[1] For more, see *Urban world: Cities and the rise of the consuming class*, McKinsey Global Institute, June 2012, on mckinsey.com.

[2] "Smartphone Users Worldwide Will Total 1.75 Billion in 2014," eMarketer, January 16, 2014, emarketer.com; *The state of broadband 2012: Achieving digital inclusion for all*, Broadband Commission September 2012, broadbandcommission.org.

and start-ups now frequently enjoy advantages over large, established businesses. The furious pace of technological adoption and innovation is shortening the life cycle of companies and forcing executives to make decisions and commit resources much more quickly.

3. Getting old isn't what it used to be: Responding to the challenges of an aging world

The human population is getting older. Fertility is falling, and the world's population is graying dramatically. While aging has been evident in developed economies for some time—Japan and Russia have seen their populations decline over the past few years—the demographic deficit is now spreading to China and soon will reach Latin America. For the first time in human history, aging could mean that the planet's population will plateau in most of the world. Thirty years ago, only a small share of the global population lived in the few countries with fertility rates substantially below those needed to replace each generation—2.1 children per woman. But by 2013, about 60 percent of the world's population lived in countries with fertility rates below the replacement rate. This is a sea change. The European Commission expects that by 2060, Germany's population will shrink by one-fifth, and the number of people of working age will fall from 54 million in 2010 to 36 million in 2060, a level that is forecast to be less than France's. China's labor force peaked in 2012, due to income-driven demographic trends. In Thailand, the fertility rate has fallen from 5 in the 1970s to 1.4 today. A smaller workforce will place a greater onus on productivity for driving growth and may cause us to rethink the economy's potential. Caring for large numbers of elderly people will put severe pressure on government finances.

4. Trade, people, finance, and data: Greater global connections

The final disruptive force is the degree to which the world is much more connected through trade and through movements in capital, people, and information (data and communication)—what we call "flows." Trade and finance have long been part of the globalization story but, in recent decades, there's been a significant shift. Instead of a series of lines connecting major trading hubs in Europe and North America, the global trading system has expanded into a complex, intricate, sprawling web. Asia is becoming the world's largest trading region. "South–south" flows between emerging markets have doubled their share of global trade over the past decade. The volume of trade between China and Africa rose from $9 billion in 2000 to $211 billion in 2012. Global capital flows expanded 25 times between 1980 and 2007. More than one billion people crossed borders in 2009, over five times the number in 1980. These three types of connections all paused during the global recession of 2008 and have recovered only slowly since. But the links forged by technology have marched on uninterrupted and with increasing speed, ushering in a dynamic new phase of globalization, creating unmatched opportunities, and fomenting unexpected volatility.

Resetting intuition

These four disruptions gathered pace, grew in scale, and started collectively to have a material impact on the world economy around the turn of the 21st century. Today, they are disrupting long-established patterns in virtually every market and every sector of the world economy—indeed, in every aspect of our lives. Everywhere we look, they are causing trends to break down, to break up, or simply to break. The fact that all four are happening at the same time means that our world is changing radically from the one in which many of us grew up, prospered, and formed the intuitions that are so vital to our decision making.

This can play havoc with forecasts and pro forma plans that were made simply by extrapolating recent experience into the near and distant future. Many of the assumptions, tendencies, and habits that had long proved so reliable have suddenly lost much of their resonance. We've never had more data and advice at our fingertips—literally. The iPhone or the Samsung Galaxy contains far more information and processing power than the original supercomputer. Yet we work in a world in which even, perhaps especially, professional forecasters are routinely caught unawares. That's partly because intuition still underpins much of our decision making.

Our intuition has been formed by a set of experiences and ideas about how things worked during a time when changes were incremental and somewhat predictable. Globalization benefited the well established and well connected, opening up new markets with relative ease. Labor markets functioned quite reliably. Resource prices fell. But that's not how things are working now—and it's not how they are likely to work in the future. If we look at the world through a rearview mirror and make decisions on the basis of the intuition built on our experience, we could well be wrong. In the new world, executives, policy makers, and individuals all need to scrutinize their intuitions from first principles and boldly reset them if necessary. This is especially true for organizations that have enjoyed great success.

While it is full of opportunities, this era is deeply unsettling. And there is a great deal of work to be done. We need to realize that much of what we think we know about how the world works is wrong; to get a handle on the disruptive forces transforming the global economy; to identify the long-standing trends that are breaking; to develop the courage and foresight to clear the intellectual decks and prepare to respond. These lessons apply as much to policy makers as to business executives, and the process of resetting your internal navigation system can't begin soon enough.

There is an urgent imperative to adjust to these new realities. Yet, for all the ingenuity, inventiveness, and imagination of the human race, we tend to be slow to adapt to change. There is a powerful human tendency to want the future to look much like the recent past. On these shoals, huge corporate vessels have repeatedly foundered. Revisiting our assumptions about the world we live in—and doing nothing—will leave many of us highly vulnerable. Gaining a clear-eyed perspective on how to negotiate the changing landscape will help us prepare to succeed.

This article is an edited excerpt from *No Ordinary Disruption: The Four Global Forces Breaking All the Trends* (PublicAffairs, May 2015).

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