

Welcome

Klaus Schwab

Founder and Executive Chairman,
World Economic Forum



The nature of the challenges we face today is increasingly complex. In the 12 months since we launched last year's Outlook on the Global Agenda, the world has continued to undergo a series of transformational shifts.

While the global financial crisis and its after-effects appear to have subsided, the magnitude of other significant global issues continues to increase in scale and scope, such as jobless growth and income inequality. Particularly in developing economies, periods of strong growth have helped close the wealth gap between countries, but severe imbalances persist. In the realm of international politics, we have seen terrorist forces – often appearing without warning – continue to impede progress, threatening stability, peace and prosperity. Innovations in technology are accelerating. Our natural environment remains seriously threatened.

In short, it is increasingly difficult to effectively design policy and drive coherent decision-making. Our fast-moving, interconnected world requires

policy-makers to respond quickly to global challenges and adopt an integrated approach when choosing solutions.

It is this context of complexity and constant change that led the World Economic Forum to create the Network of Global Agenda Councils in 2008. Today's challenges, which are global in scope, heavily interlinked in nature and critical in urgency, require a system by which we can promote greater understanding and stronger collaboration.

Our 80 Global Agenda Councils, coupled with six Meta-Councils on wider, more encompassing issues, are each formed from a collection of experts from around the world. These experts are renowned not only for their thought leadership, but also for their desire to find solutions that will improve the state of the world.

The Outlook on the Global Agenda 2015 reflects the thought leadership of the world's foremost intelligence

network – a community of over 1,500 global experts. This report offers a comprehensive overview of the world today, as well as an analysis of how these experts expect it to develop in the coming 12-18 months. It also outlines the nature of global trends, regional challenges, global leadership and governance, as well as the emerging issues that should be on the agendas of global leaders. In the spirit of the Forum, we have offered solutions to these issues that have been developed by members of the Global Agenda Councils.

The Outlook 2015 will be launched on the occasion of the Summit on the Global Agenda, which brings together the community of Global Agenda Councils and is held in Dubai from 9-11 November 2014 in partnership with the Government of the United Arab Emirates. We hope that this year's Outlook provides valuable insights to better understand the important global issues of our time in support of our common efforts to improve the state of the world ■

Introduction

Martina Larkin

Senior Director, Head of Global Knowledge Networks,
World Economic Forum

This fourth edition of the Outlook on the Global Agenda features the insights of the Network of Global Agenda Councils, the world's foremost community of thought leaders. It is informed by data from our Survey on the Global Agenda, which polled an extensive sample of Council Members and also incorporates the views of the next generation, the Young Global Leaders and Global Shapers.



The report features an analysis of the Top 10 trends which will preoccupy our experts for the next 12-18 months as well as the key challenges facing the world's regions, an overview of global leadership and governance, and the emerging issues that will define our future.

This year, the global agenda is shaped by a much more strained global geopolitical situation, which is characterized by a new level of volatility and complexity as events in East Asia, Ukraine and the Middle East have shown. Last year's number one trend – Rising Societal Tensions in the Middle East and North Africa – rose to prominence across Gaza, Iraq and Syria to such an extent that we explore it in depth in our Regional challenges chapter. For the first time since the launch of the report in 2010 we also see the growing importance of health in the economy making it to the Top 10 trends, a topic which we explore in more detail in the health trend chapter, with a special focus on the current Ebola crisis.

However, topping the list of concerns are economic woes, especially the rise of income inequality, which has made it to the number one trend after it first emerged as the most underestimated issue in our 2011 edition, as well as the risk of a persistent jobless growth. These two socio-economic trends are creating a dangerous cycle: Stagnant wages and the lack of employment are contributing to rising inequality, as well as holding back consumer spending and therefore growth in advanced economies.

And while we are seeing a much better integration of the economic system worldwide, the global political system is fragmented and becoming increasingly more so. There is an increased backlash against globalization and a retreat to nationalism or regionalism. This disconnect between the economic and political structures is a great concern, as it creates a world that is more and more interconnected, allowing shocks to spread quickly, but also a world where no-one is in charge.

This global leadership crisis is a trend which cuts across all the other issues,

and it is rising sharply, from seventh to third place. The danger is that instead of innovating and collaborating to tackle societal and economic challenges, nations and leaders will continue to retreat into isolationism, further exacerbated by nationalist rhetoric and a reversion to old paradigms of geopolitical power-play. Today's challenges require bold leadership and courage, and progress can only be achieved through enhanced cooperation between business, government, academia and civil society.

This year's report features a Global Leadership Index to examine where trust is lacking in 2015, and what leaders need to do to regain it. Among other interesting findings, we see more than two-and-a-half times the amount of confidence in business leaders compared to religious ones. This shows a massive shake-up of traditional values, which is underlined by civil society emerging as the most trusted stakeholder. Our findings show that communication and collaboration remain vital leadership skills, but they must also be underpinned by a global perspective.

But we are also seeing some positive developments which are influencing our outlook: technology and science continue to innovate. The harvesting of new resource frontiers, including unexplored deep seabeds, will offer economies a new source of energy and minerals. The ability to control the structures of our DNA and new brain research promise exciting new opportunities for the way we live and work.

The Global Agenda Councils will work together in the coming months, producing ideas and recommendations to address some of the aforementioned challenges. The World Economic Forum is committed to integrating the outcomes of their work into its activities, including at the upcoming Annual Meeting 2015 in Davos-Klosters, to ensure that they find their way into global decision-making processes.

We would like to express our sincere gratitude to all the Members of Global Agenda Councils, and special thanks are due to the main authors of the chapters for their contributions ■

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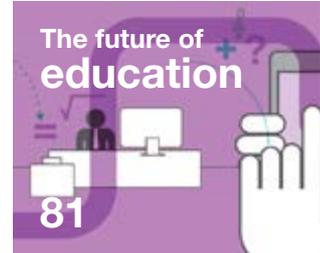
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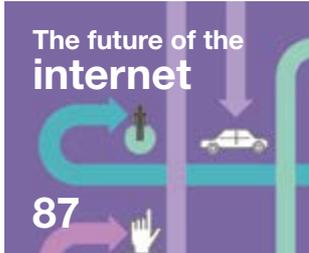
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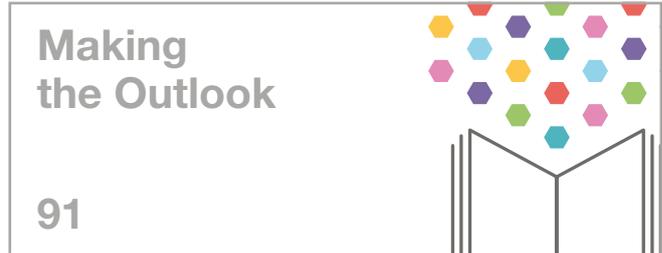
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Top 10 trends of 2015



What are the top trends facing the world in 2015? By exploring the challenges we face today, together we can progress towards a better future.

Al Gore
Co-founder and Chairman,
Generation Investment
Management, and Chair of
the Meta-Council on the New
Architecture of Governance

In the coming year, we face a number of diverse and significant challenges: growing income inequality, heightened geostrategic tensions, the unsustainable use of our planet's natural resources and, of course, the climate crisis.

Every year the World Economic Forum taps into the knowledge, observations and experiences of its Global Agenda Council Members, asking them to identify the issues that they believe will have the biggest impact on the world over the coming 12 to 18 months. The resulting insights, gathered with the help of the Survey on the Global Agenda, ultimately generate the Top 10 trends – a forecast of the key social, economic and political issues that reside on our collective horizon.

At the top of this year's list is worsening income inequality. As the world's rich continue to accumulate wealth at record rates, the middle class is struggling. Today, the top 1% of the population receives a quarter of the income in the United States. Over the last 25 years, the average income of the top 0.1% has grown 20 times compared to that of the average citizen. Last year, this trend ranked second place in the Outlook; this year, it rises to the top.

Ongoing unemployment concerns, another recurring theme from the previous report, have risen to second place – this time in the form of 'Persistent jobless growth'. Our economies may be growing,

“ We are at a critical fork in the road, a period of decision that will dictate the health and viability of our civilization for decades to come.



but the number of available jobs is largely failing to keep pace. For many, the situation is urgent and popular dissatisfaction at governmental response is reflected in two subsequent trends – 'Lack of leadership' and 'The weakening of representative democracy', both of which suggest a troubling

disconnect between the public and the authorities that govern them.

Third on the list, rising security concerns around the world threaten the stability of states and their citizens. From renewed violence in Gaza to Russia's intervention in Ukraine and the rise of Islamic State, geopolitical tensions have dominated headlines for much of 2014. Dedicated efforts are being taken to defuse these conflicts, yet it seems all but certain that two related trends, 'Rising geostrategic competition' and 'Intensifying nationalism', will continue to propel global concerns over the next 18 months.

This year, two major themes dominate this list: economic and environmental. These two areas of focus are inextricably linked. Long-term economic prosperity depends on environmental sustainability. Today, we see the consequences of short-term economic thinking and the reckless use of our planet's resources: water disputes between neighbouring nations, more frequent and powerful extreme weather events brought on by our warming climate, an ongoing global deforestation crisis, a rapidly acidifying ocean, eroding topsoil and agricultural capacity, and an alarming biodiversity crisis unparalleled in modern history.

Now, more than ever before, environmental concerns are coming to the forefront of our global dialogue. We are at a critical fork in the road, a period of decision that will dictate the health and viability of our civilization for decades to come. In 2015, the nations of the world will gather in Paris to negotiate the next global climate agreement. The stakes could not be higher, but I have hope.

To reiterate, the issues we must confront are imposing in their scale and expansive in their reach, but they must be faced with fortitude and with a cooperative, collaborative spirit. The pages that follow contain discussions that highlight the threats – and the opportunities – that dwell at the heart of our Top 10 trends, and explore some of the directions for progress. By acknowledging the issues we face today, we can begin to understand those that may yet lie ahead ■

- 1 Deepening income inequality
- 2 Persistent jobless growth
- 3 Lack of leadership
- 4 Rising geostrategic competition
- 5 Weakening of representative democracy
- 6 Rising pollution in the developing world
- 7 Increasing occurrence of severe weather events
- 8 Intensifying nationalism
- 9 Increasing water stress
- 10 Growing importance of health in the economy

1



Deepening income inequality

The low-income neighborhood of Boca la Caja, near the business district in Panama City
© REUTERS/Carlos Jasso



Amina Mohammed

Secretary-General's Special Adviser on Post-2015 Development Planning, United Nations, and Vice-Chair of the Global Agenda Council on Sustainable Development

Inequality is one of the key challenges of our time. Income inequality specifically is one of the most visible aspects of a broader and more complex issue, one that entails inequality of opportunity and extends to gender, ethnicity, disability, and age, among others. Ranking second in last year's Outlook, it was identified as the most significant trend of 2015 by our Network's experts. This affects all countries around the world. In developed and developing countries alike, the poorest half of the population often controls less than 10% of its wealth. This is a universal challenge that the whole world must address.

While it is true that around the world economic growth is picking up pace, deep challenges remain, including poverty, environmental degradation, persistent unemployment, political instability, violence and conflict. These problems, which are reflected in many parts of this report, are often closely related to inequality.

“ In developed and developing countries alike, the poorest half of the population often controls less than 10% of its wealth. ”

The inherent dangers of neglecting inequality are obvious. People, especially young people, excluded from the mainstream end up feeling disenfranchised and become easy fodder of conflict. This, in turn, reduces the sustainability of economic growth, weakens social cohesion and security, encourages inequitable access to and use of global commons, undermines our democracies, and cripples our hopes for sustainable development and peaceful societies.

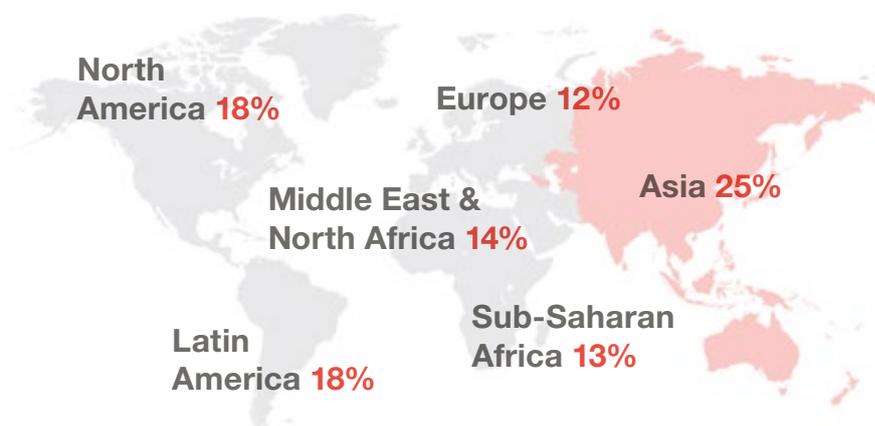
According to the 2014 Pew Global Attitudes Survey, in the seven Sub-Saharan African nations polled over 90% of respondents regard the gap between rich and poor as a big problem; in the United States, almost 80% do. Political leaders increasingly share these concerns. We are already seeing better policies in some countries, such as Rwanda, Brazil and Mexico, where access to resources are being shared more evenly, and where effective targeting for cash transfers have changed behaviours and bolstered progress in the lives of marginalized groups. But to do this on a larger scale will require stronger national institutions in many countries, adequate resources, more responsive leadership, and better policy making. Some countries have made progress in addressing the structural drivers of inequalities through a range of equity-focused and rights-based policy, legal and programme initiatives, which they have kept in place over time.

In order to effectively address inequality, countries need to embrace an integrated agenda that looks at the problem across the social, economic and environmental dimensions, including access to education, healthcare and resources. Central to these solutions is a basket of interventions that promotes equitable access to resources and services, as well as inclusive growth with decent jobs and livelihoods for all people within society. To enhance impact, disaggregated, high-quality and more transparent data is needed in order to target investments and channel resources where they are needed most.

The role of business cannot be overstated in the drive towards greater equality. Data from Pew shows people tend to believe

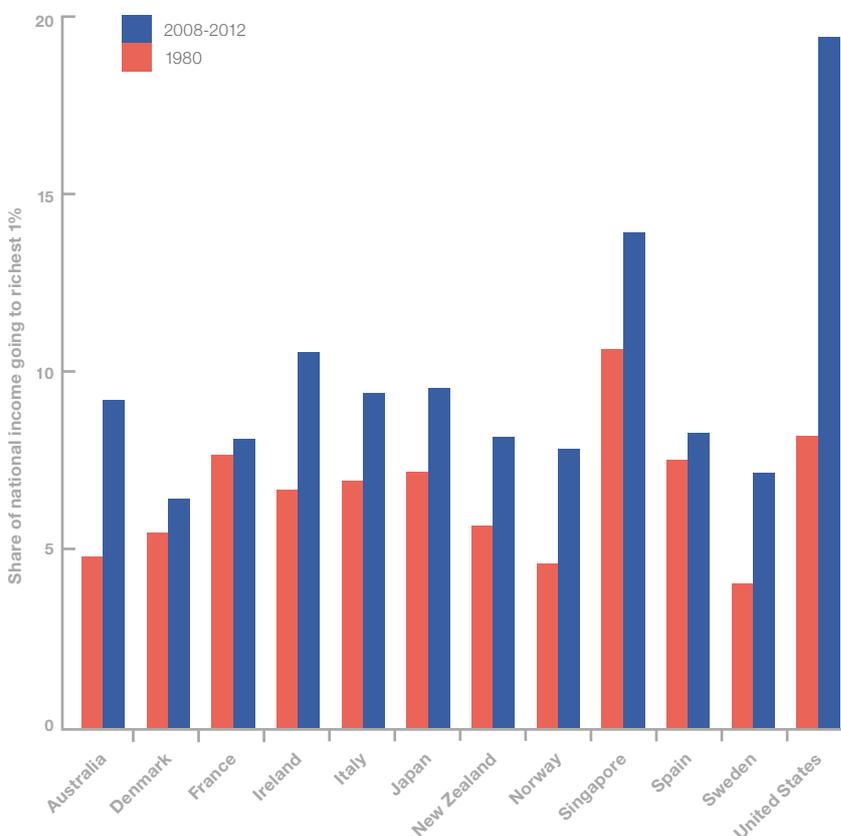
Deepening income inequality: Inside the data

Which region will be most affected by **deepening income inequality** in the next 12-18 months?



Source: Survey on the Global Agenda 2014

How has the percentage share of national income of the richest 1% changed over time?



Source: F. Alvaredo, A. B. Atkinson, T. Piketty and E. Saez, 2013. 'The World Top Incomes Database'

governments are responsible for the wealth gap – but governments cannot solve the problem on their own. Addressing inequality is not only a responsibility but also an opportunity. Addressing inequality is good for business as it creates a new demographic of consumers, thus widening the market for profits and services and increasing profit opportunities, especially for women. Efforts to reduce inequalities and achieve inclusion are a multistakeholder responsibility which will require concerted action at all levels, from local to national, and regional to global.

We are all aware of the vulnerabilities and perils that define daily life across the world. We know what we need: inclusive economies in which men and women have access to decent employment, legal identification, financial services, infrastructure and social protection, as well as societies where all people can contribute and participate in global, national and local governance. It is now time for action, in order to leave no one behind and bring everyone forward with a life of dignity ■

What are the top solutions to **income inequality**?

Asia



- #1 **Improved education**
- #2 **Tax policy**
- #3 **Redistribution**

Europe



- #1 **Tax policy**
- #2 **Improved education**
- #3 **Redistribution**

Latin America



- #1 **Improved education**
- #2 **Tax policy**
- #3 **Social welfare policy**

Middle East & North Africa



- #1 **Job creation**
- #2 **Tax policy**
- #3 **Social welfare policy**

North America



- #1 **Tax policy**
- #2 **Improved education**
- #3 **Redistribution**

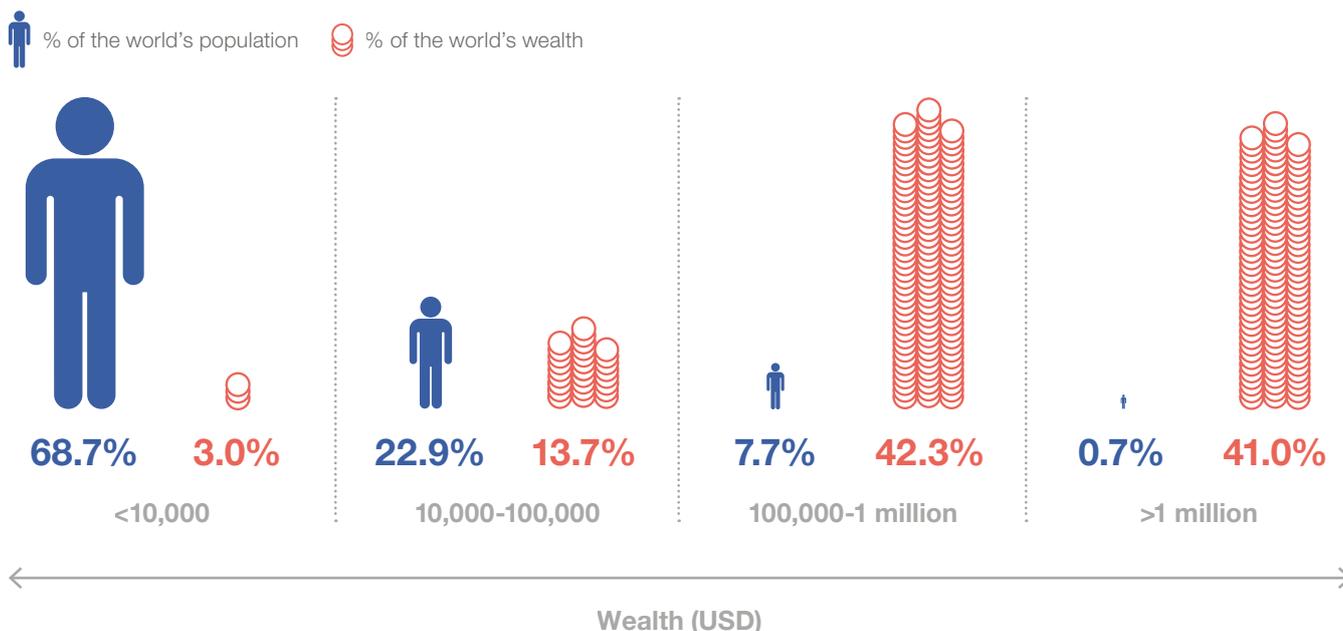
Sub-Saharan Africa



- #1 **Job creation**
- #2 **Workforce development**
- #3 **Improved education**

Source: Survey on the Global Agenda 2014

How is the world's wealth shared amongst its population?

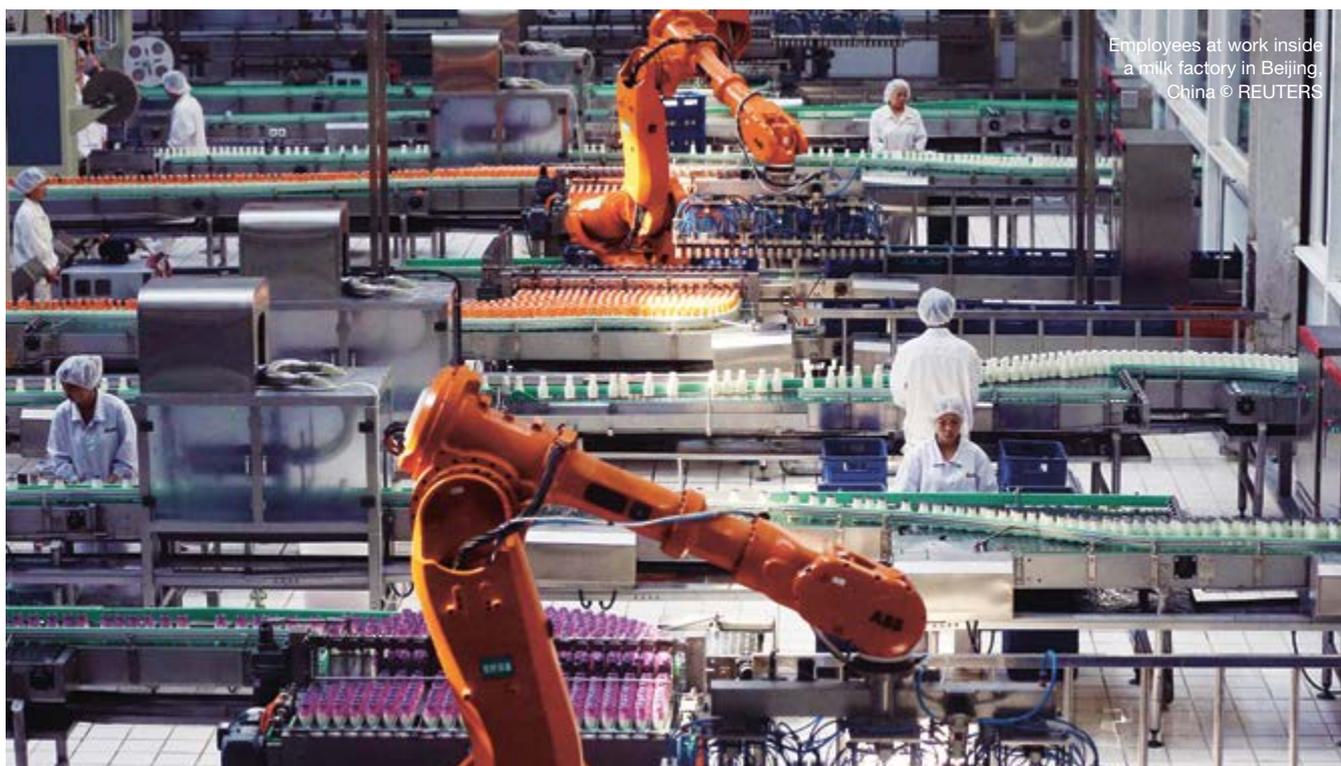


"Wealth" is defined as the marketable value of financial assets plus non-financial assets (principally housing and land) owned by an adult, less debts.
Source: Global Wealth Report 2013. Zurich: Crédit Suisse

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Persistent jobless growth



Employees at work inside a milk factory in Beijing, China © REUTERS



Larry Summers

Charles W. Eliot University Professor, Harvard University. Harvard University is a member of the Global University Leaders Forum

The term ‘persistent jobless growth’ refers to the phenomenon in which economies exiting recessions demonstrate economic growth while merely maintaining – or, in some cases, decreasing – their level of employment. The scale and significance of this problem is evident in the high placing of this trend, an increase even over last year’s report, when persistent structural employment was ranked as the third most concerning trend.

The transformations and job displacements associated with technological progress are happening faster, and may even be more dramatic in their impact than anything we’ve experienced before, and the task of providing a meaningful, substantial role for everyone is going to be hugely important. But I believe that this

presents us with a huge opportunity to take advantage of current low costs of borrowing and under-utilized labour resources, and embark on large-scale projects to build and repair essential

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There is a huge opportunity to use this period to remedy infrastructure deficiencies.”

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infrastructure in our developed and emerging economies.

If we look at the data on workers aged 25 to 54 – the group we think of as a backbone of the workforce – the percentage of those who are not working has risen by a factor of more than three

over the course of my lifetime, and that trend seems inexorably upward. If current trends continue, it could well be that a generation from now a quarter of the middle-aged demographic will be out of work at any given moment. Even China, which has enjoyed unprecedented growth in competitiveness and exports, has seen manufacturing employment decline over the last 20 years, thanks to its rapid industrialization and use technology and automation. This is a long-term trend and we are likely to observe these phenomena across the world, even among emerging economies as they travel the well-trodden path of industrialization. The robotics and 3D printing revolutions could accelerate this trend still further, as the comparatively low entry cost for these disruptive technologies makes them widely accessible to everyone, including developing economies.

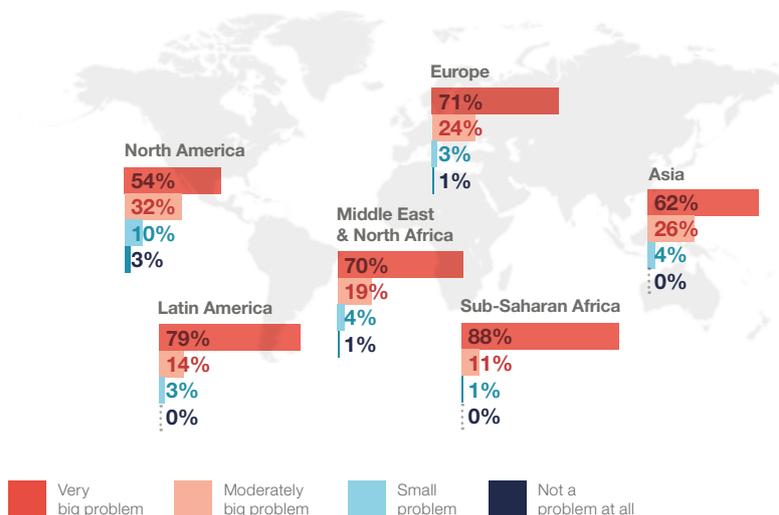
Automation is certainly the biggest single contributing factor. Technology can, of course, help with the creation of jobs – but I don't think there is anything automatic about the process. In United States history, the two Roosevelts and Wilson recognised the challenges and brought about a transformation in the role of the federal government in addressing the needs of average and less-than-average income workers. Influential factors ranged from the creation of the Tennessee Valley Authority to the pervasiveness of electricity, from the building of interstate highway system to fibre optic networks. They all contributed to making progress possible.

If we consider the totality of it, we are much better off thanks to technological progress. But if we do not act, we run the risk of enjoying fewer improvements in the standard of living and more people will be left behind. There could be a greater sense of loss of legitimacy and confidence in government, greater recourse by political leaders to nationalism and surlier and angrier populations, who are more likely to turn on minorities within, and perceived enemies without. This is likely to be one of the reasons we see many of these interconnected issues appearing in the remaining global trends.

I don't think any of us fully know what kind of policy our governments should be undertaking – I'm not sure

Persistent jobless growth: Inside the data

How great a problem does a **lack of employment opportunities** pose in your country?



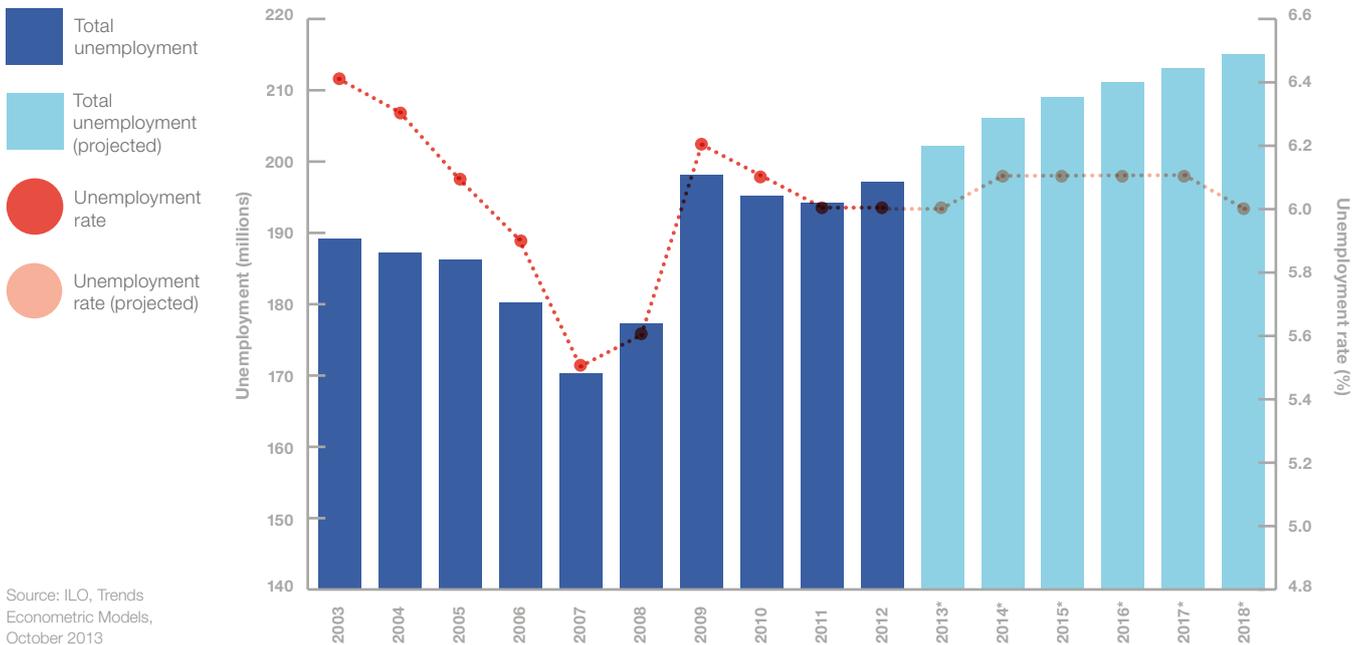
Source: Pew Research Center Global Attitudes Project, 2014

What are the top solutions to **persistent jobless growth**?



Source: Survey on the Global Agenda 2014

Global unemployment trends and projections 2003-2018



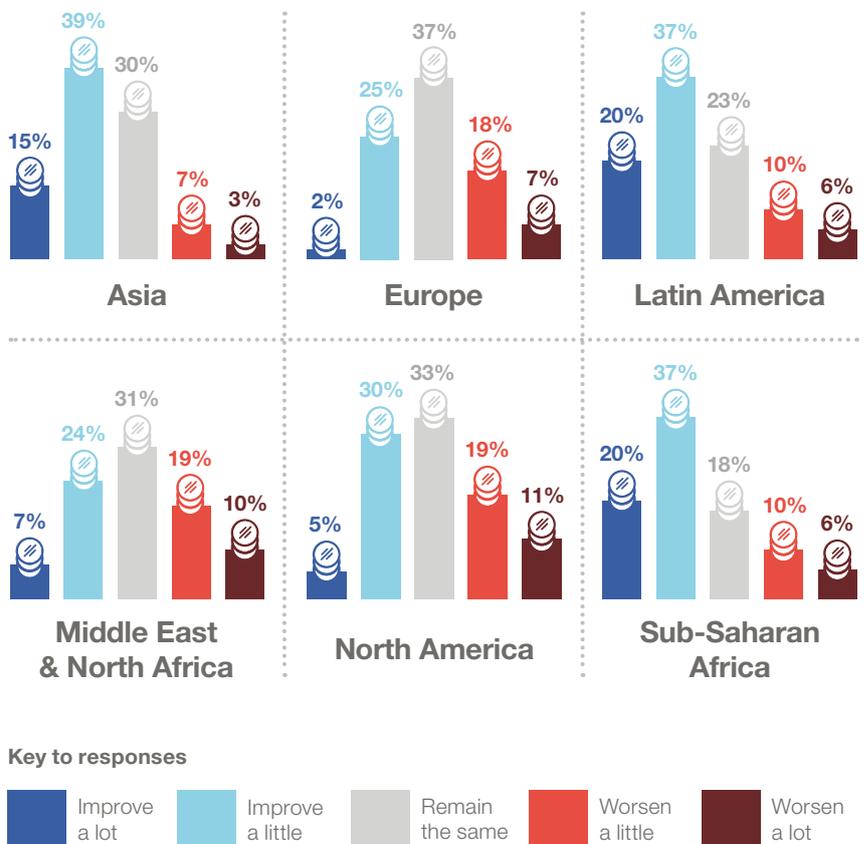
Source: ILO, Trends Econometric Models, October 2013

that this era has yet seen its Bismarck or its Gladstone, someone who will rise to this challenge and transform government policy to meet the needs of this age. Among the key areas that will have to change is education, so that our schools, colleges and universities place a premium on doing the tasks that machines cannot do: collaboration, creation and leading. And at the same time, they must place less emphasis on the tasks that machines can do: the monitoring, calculation and execution.

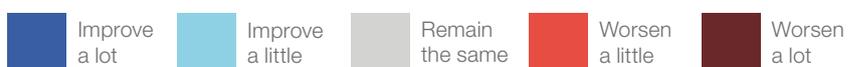
The upside of this trend is that those losing jobs due to increased productivity will be freed up to do things in other sectors. There is, for example, a huge opportunity here to use this period to remedy infrastructure deficiencies. On the one hand we have decaying infrastructures across the West – airports, rail systems, pipelines and systems of telecommunications. And on the other hand, we have record low interest costs of borrowing, near record high levels of construction unemployment and unused resources.

Ultimately I'm an optimist, but I'm a believer in optimism through raising the alarm. I don't take a position that is automatically optimistic, because I believe history teaches us that complacency is a self-denying prophecy ■

How do you expect the economic situation in your country to change over the next 12 months?



Key to responses



Source: Pew Research Center Global Attitudes Project, 2014

3



Lack of leadership



Members of the European Parliament debate the European Council's negotiations on the economic crisis in Strasbourg, France © REUTERS/Vincent Kessler



Shiza Shahid
Co-Founder and Global Ambassador, Malala Fund, and a Member of the Global Agenda Council on Education

A startling 86% of respondents to the Survey on the Global Agenda agree that we have a leadership crisis in the world today. Why would they say this? Perhaps because the international community has largely failed to address any major global issue in recent years. It has failed to deal with global warming, then barely dealt with the failure of the global economy, which has caused such severe problems in North America and Europe. Meanwhile violence has been left to fester in the Middle East, the region our Survey showed is most affected by, and concerned about this problem. So why are we suffering such a lack of leadership?

Well, as our governments have grown, their mechanisms have been plagued by decades of factional alignment,

dynasty and deep corruption. In China, for example, 90% of people surveyed by Pew said corruption was a problem; separate studies found that 78% of Brazilian respondents and 83% of those in India regard dishonest leadership as a serious issue.

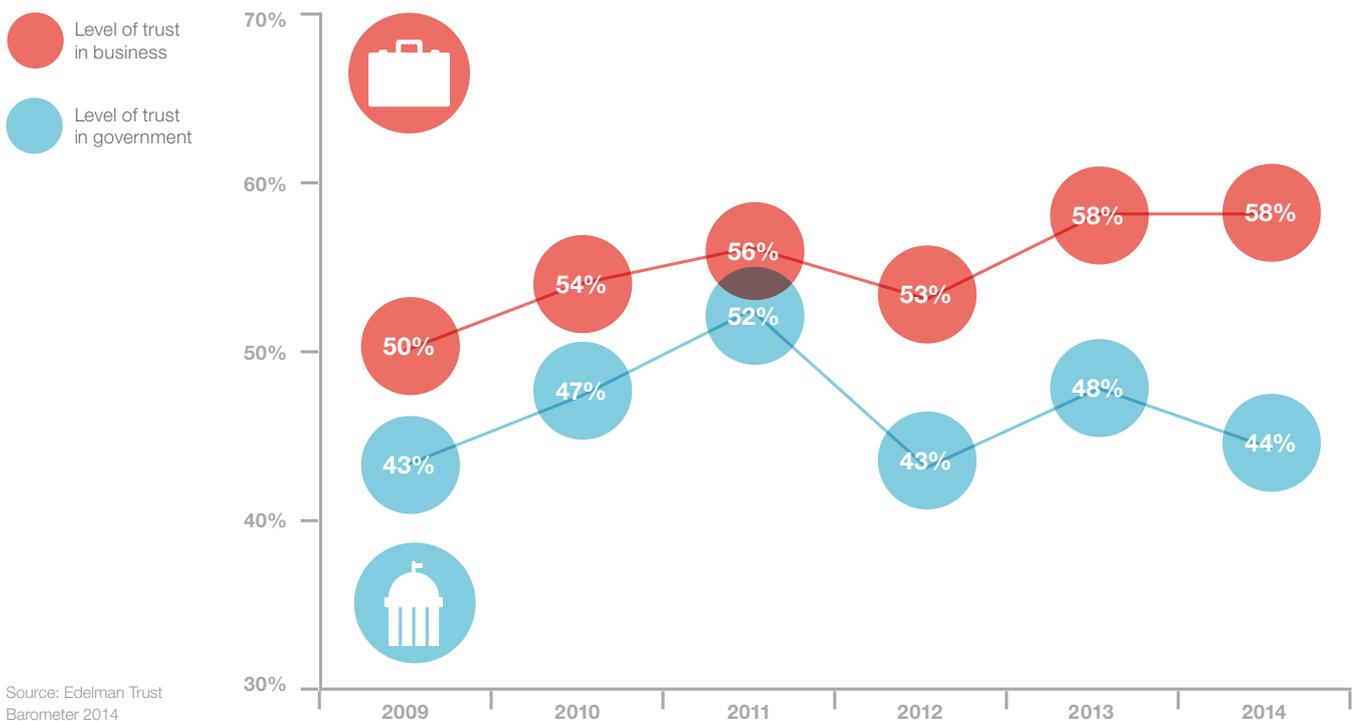
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One is forced to play the game the way it's built – which is inevitably in the interest of the system.



The deeper you go into these endemic failures, the harder it is for anyone to emerge as a strong leader; one is forced to play the game the way it's built – which is inevitably in the interest of the system, and rarely in the interest

Lack of leadership: Inside the data

How has the **gap in trust between business and government** changed over time?



of the people. In many countries, the only people with the institutional power to break through are strong military leaders or radicals like Narendra Modi in India. Yet, given the rise of independent and social media, populations with democratic experience swiftly become disillusioned with the excesses of these military authorities.

Why is this happening today, when we've had universal suffrage for over a hundred years in many countries? Perhaps we've finally realized we can do better. We have a surge of incredibly smart, enabled people coming out of education, building great companies and showing us the radical pace of innovation; this could explain why Survey respondents ranked business leaders second only to non-profit organizations in our Global Leadership Index. By contrast, when we look at our governments and international institutions, it is tempting to only see ritual, politics and little progress, and to wonder if these systems are just holding us back.

How does confidence vary in **leaders of different sectors**?



55%

of respondents have confidence in **leaders of non-profit and charitable organizations** to advocate for the marginalised and under-represented



56%

of respondents do not have confidence in **religious leaders** to be active partners in addressing global problems



58%

of respondents do not have confidence in **government leaders** to not abuse their position of authority and power

The phrase "**Have confidence**" groups together the responses of "Complete confidence" and "Significant confidence"
The phrase "**Do not have confidence**" groups the responses of "No confidence at all" and "Not much confidence"

Source: Survey on the Global Agenda 2014

86%

of respondents think that there is a **leadership crisis** in the world today.

Source: Survey on the Global Agenda 2014

Indeed, the only people to rank lower than government leaders in our Survey were religious leaders. 58% of respondents had concerns that religious leaders would abuse their positions, and 56% thought that they were unlikely to be of help in addressing global problems. I think there's been such a swell in religious violence recently, with the rise of terrorism, that people are becoming wary of religious leaders and are pushing for religion to be a personal matter.

The question, then, is what skills do our leaders need to win back the confidence of their populations?

The Survey respondents identified several virtues: a global interdisciplinary perspective; long-term, empirical planning; strong communication skills; a prioritization of social justice and well-being over financial growth; empathy; courage; morality; and a collaborative nature.

Looking at the person emerging from this profile, it's not enough to simply be inspirational; the best leaders know they must mediate, listen and include the opinions of others before making a decision. Execution, team-building and delegation are key, as is the ability to

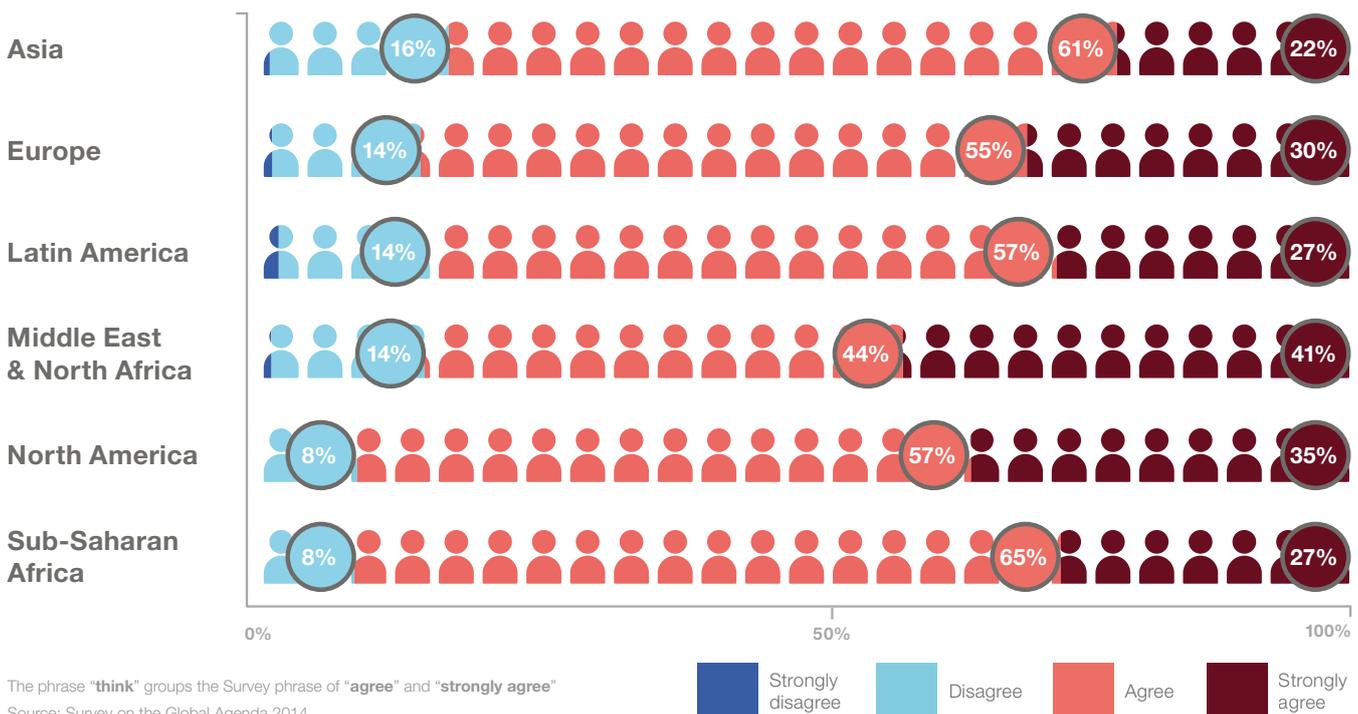
remain positive in the face of adversity – the power of optimism is inspiring in itself.

Ultimately, these leadership qualities have to be cultivated. In the Survey, four out of the five regions prioritized training, coaching and mentoring as the best way to develop tomorrow's leaders. There is a consensus that improved education of our polity will result in better leadership. African respondents also highlighted a need to involve youth more strongly in leadership development.

I met Malala Yousafzai when she was 11. She was from a remote part of Afghanistan that no-one cared about, even when the Taliban took over. Six years later, they shot her for speaking up and she survived, which somehow made her into one of the most powerful moral figures of today. Now she is the winner of the Nobel Peace Prize.

This shows us that we need to foster a culture where people see integrity and empathy as key character traits, where talent can rise up. Then the power of ordinary people will grow, great things will happen, and great leaders will emerge ■

Is there a **leadership crisis** in the world today?



4



Rising geostrategic competition



A woman adjusts a Chinese flag before the US-China Strategic and Economic Dialogue in Beijing, China © REUTERS/Ng Han Guan/Pool



Espen Barth Eide

Managing Director and Member of the Managing Board, World Economic Forum

In the years following the Cold War, the prevailing view was that the world had moved towards a liberal, democratic consensus. The break-up of the Soviet bloc, the integration of Russia and China into the global economic system and a fresh wave of democratic transitions, from Latin America to Eastern Europe, led many to believe that superpower rivalries were finished. Globalization, the free market and the 'interdependence' of countries would make wars less likely, while a greater role was forecast for multilateral bodies like the United Nations in responding to issues that put everyone at risk.

This did not relieve us of security concerns, but from the 1990s onward, the so-called new challenges were regarded as asymmetric. Rather than fearing strong, opposing states, we worried about state weakness,

the breakup of countries, or the global reach of non-state, terrorist networks.

Today, however, renewed competition between key actors is a concern. According to the Survey on the Global Agenda, both Asian and European respondents ranked the rise of geostrategic competition as the second most important global trend. While the old Cold War is not making



Geopolitics – and realpolitik – is once again taking centre stage.



a resurgence, recent developments have led to tectonic shifts in state interaction. Geopolitics – and realpolitik – is once again taking centre stage, with potential wide-ranging

consequences for the global economy, politics, and society.

The obvious illustration of these changes is the worsening tension between Russia and the West. The Obama Administration's attempts to improve relations between America and Russia were already faltering when the collapse of the Ukrainian government and rise of separatist movements brought to the fore a clash of fundamentally opposing worldviews. The perspective of 'Europe whole and free' collides with a world of 'zero-sum games and spheres of influence'. With the exchange of economic sanctions, and Russia attempting to lead a Eurasian Union as a counterweight to the European Union, the next decade could be marked by Russia complaining of 'encirclement' and attempting to revise developments that took place during the years when it was perceived as weak and vulnerable. At the same time, the West may be moving away from the economic interdependence with Russia that was once hailed as a guarantor of regional peace and stability.

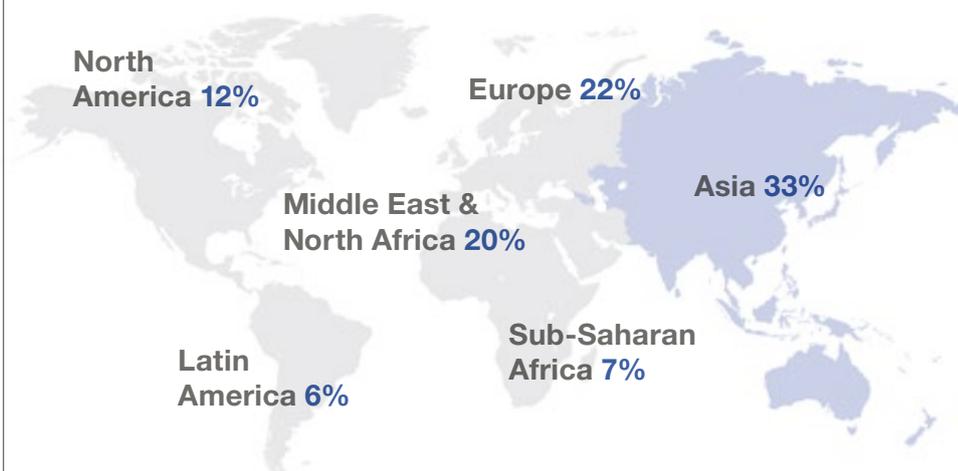
A potentially more important development is taking place in Asia. A shift in the global political order is evident in the rise of China and its uncertain role on the world stage. According to a study by the Pew Research Center, almost half of respondents across all regions believe China has overtaken the US as the world's leading superpower, or will eventually.

A realpolitik dynamic between Japan and China – fuelled by a significant loss of trust, rising nationalism, weak institutions and maritime disputes – affects the world's second and third largest economies, and threatens to directly involve the largest, the United States. The management of China's rise, by its neighbours and by China itself, is of crucial importance in the coming decades.

The Middle East has also taken a turn for the worse, with the breakdown of a state system hastily imposed by the victors of the First World War. Cross-border insurgent group Islamic State – which aims to establish a caliphate in parts of the region – threatens to render traditional peace mediation efforts irrelevant. The situation is exacerbated by regional powers exploiting the chaos –

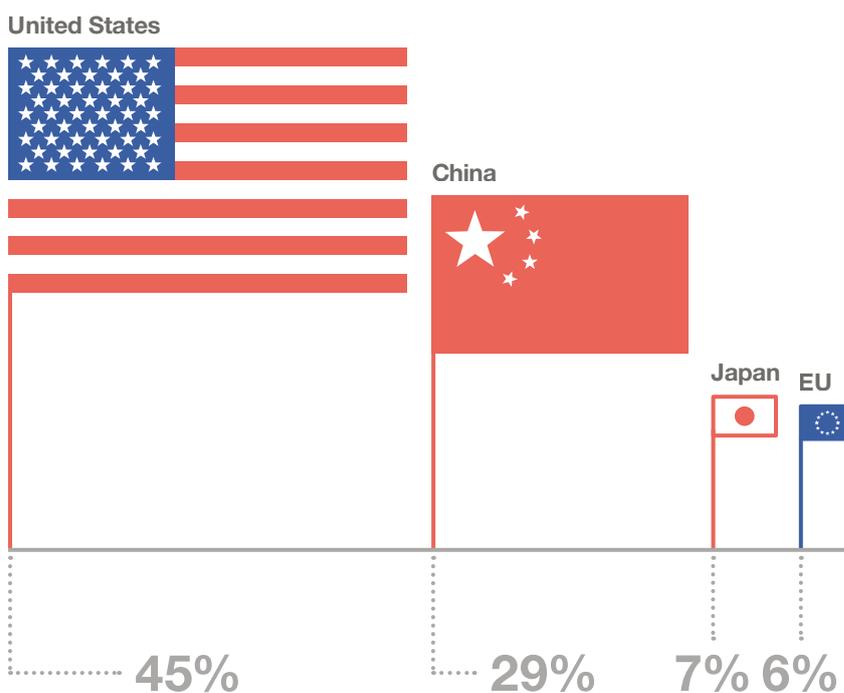
Rising geostrategic competition: Inside the data

Which region will be most affected by rising geostrategic competition in the next 12-18 months?



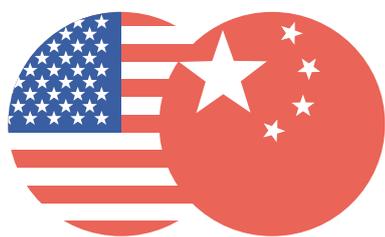
Source: Survey on the Global Agenda 2014

Who is considered to be the world's leading economic power?



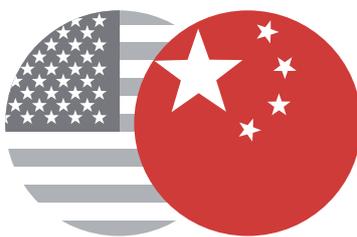
Source: Pew Research Center Global Attitudes Project, 2014

Will China eventually replace the USA as the world's leading superpower?



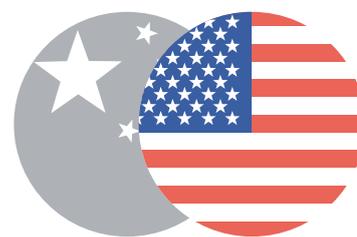
31%

think China will eventually replace USA



15%

think China has already replaced USA



34%

think China will never replace USA

Source: Pew Research Center Global Attitudes Project, 2014

even fuelling it – in order to promote their own self-interest.

What we see today is a pattern of persistent, multidimensional competition and the simultaneous weakening of established relationships, a trend that trickles down and spills over into multiple sectors and issues. In this fluid, amorphous world order, we must manage both asymmetric and symmetric challenges together. The changing relationship between world powers has reduced the political energy available for tackling shared problems like climate change and global health, not to mention second-order crises. Chaos has festered.

Yet in the face of potential globalization (and indeed de-globalization), rising nationalism and a deepening disbelief in multilateralism, the most important lesson from 2014 is that we cannot remain passive. We need more international cooperation, not less. Regional and global intergovernmental organizations will be put to greater tests; meanwhile institutions like the World Economic Forum must continue to create a confluence of private and public actors, civil society and academia to impress upon political leaders the importance of collective reflection. Far from improving conditions for its participants, the current pattern of geostrategic competition threatens to harm us all ■

What are the top 5 solutions to rising geostrategic competition?



#1

Negotiation and understanding



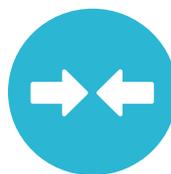
#2

Structures for governance



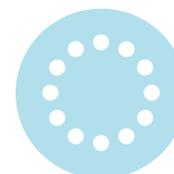
#3

Pro-cooperation foreign policy



#4

Resolve conflicts and tensions



#5

Improve multilateral organizations

Source: Survey on the Global Agenda 2014

5



The weakening of representative democracy



An anti-government protester warms himself at a fire drum in Kiev, Ukraine
© REUTERS/Thomas Peter



Jorge Soto

Founder, Data4, and a Member of the Global Agenda Council on the Future of Government

Since the global economy crashed in 2008, there has been an erosion of trust in political institutions and processes. Citizens now place more faith in companies than in their own leaders, and even then they don't particularly trust the private sector, with the latest Edelman Trust Barometer showing global trust in business at 58% while trust in government has sunk to 44%. As a Global Shaper of the World Economic Forum, this is an issue that resonates with those of my demographic: the world's youth.

In the last two years, citizen protest has dominated the headlines in many countries around the globe. Greece

“
Mechanisms are in place for systems to be more democratic than ever, yet there's a disconnect between citizens and the officials that represent them.

”

and Spain have seen unrest in the aftermath of the Eurozone crisis. Ukrainians occupied central Kiev. Few nations from North Africa to the Middle East remain unaffected by the fallout from the Arab Spring, as citizens of the digital age grow ever more confident to mobilize in the

face of a democratic deficit. Hong Kong is the latest place to experience large-scale protest. Indeed, the Survey on the Global Agenda showed that in Latin America, the region I'm from, this trend has a much greater significance than in any other region. This was exemplified in Brazil, which in summer 2014 saw upheaval as people protested against income disparity and public spending on the World Cup and 2016 Olympic Games.

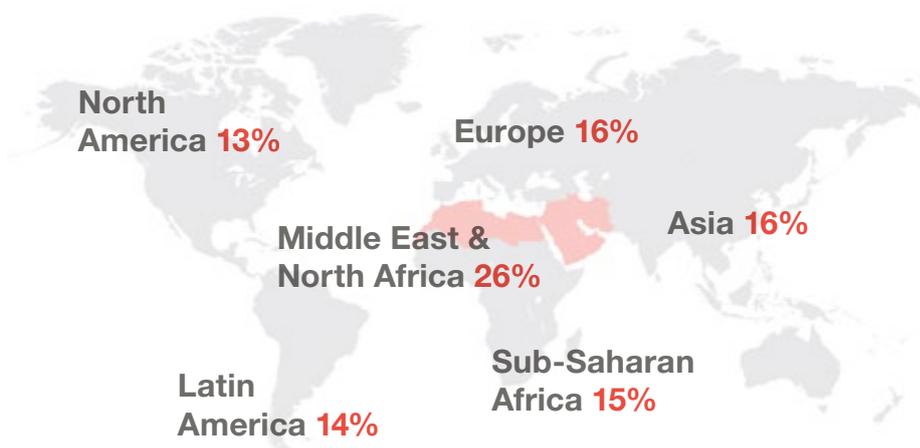
The mechanisms are in place for systems to be more democratic than they have ever been, yet there is a fundamental disconnect between citizens around the world and the elected officials that supposedly represent them. Thanks to the internet, the public can identify people with the same values and fears, exchange ideas, and build relationships faster than ever before. Our governments are simply not part of that conversation: we have 19th century institutions with 20th century mindsets, attempting to communicate with 21st century citizens. Our governments are elected, dissolved and re-elected only to pursue short-term agendas, yet the cycles that innovate and build trust with voters require long-term investment. It's little wonder that people see the system as broken.

I think it's clear that the old way of doing politics will definitely change, yet representative democracy itself will not – nor should it. As powerful as the online world may be, a social media-like structure for democracy, where everybody shares and discusses their opinions at once, would simply lead to anarchy.

Instead, representative democracy needs to modernise itself and actively involve citizens in decision-making processes. Rather than seeing themselves as 'pure' problem solvers, governments should position themselves as the bodies that articulate the issues faced by society, and then strive to create the right environment for private enterprise and academia to find the solutions, providing the necessary data, policies and funding to support these stakeholders. If our elected representatives were to do this, they would restore the public trust and challenge the sense that little of consequence has actually changed in that time.

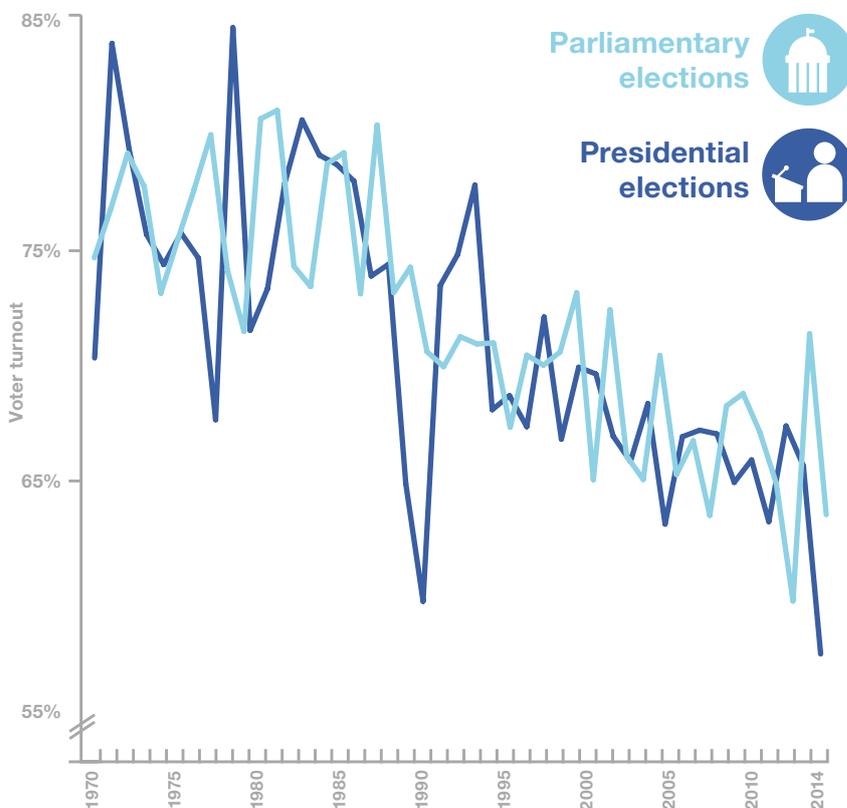
Weakening of representative democracy: Inside the data

Which region will be most affected by the **weakening of representative democracy** in the next 12-18 months?



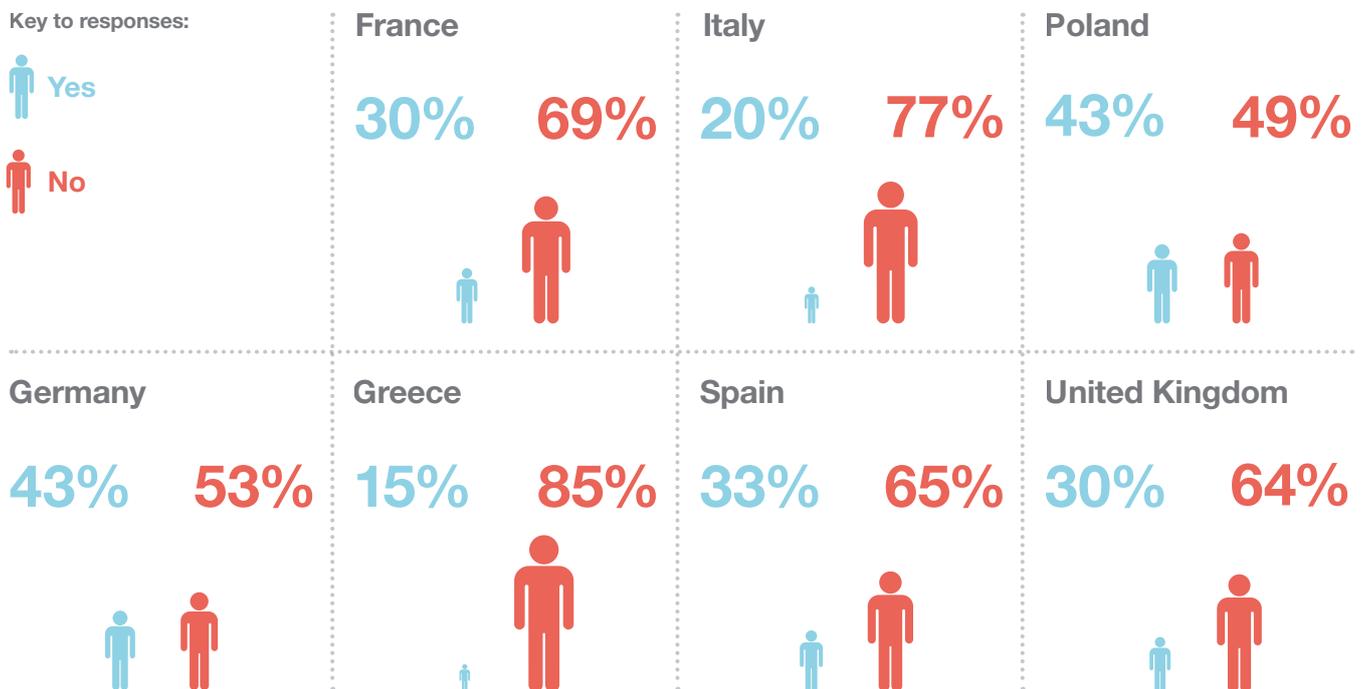
Source: Survey on the Global Agenda 2014

How has worldwide voter turnout changed over time?



Source: Institute for Democracy and Electoral Assistance, Voter Turnout Database, 2014. Graph shows average voter turnout for countries in which data is available.

Do member states believe that the European Union understands the needs of its citizens?

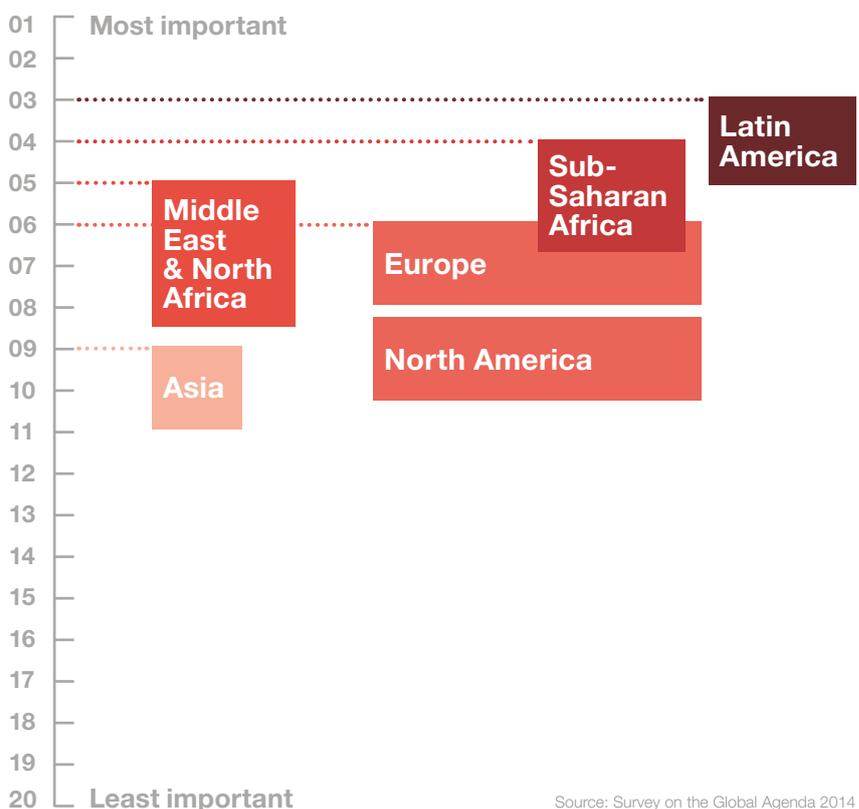


Source: Pew Research Center Global Attitudes Project, 2014

As a starting point, our governments must treat people as individuals and communicate with them through the most appropriate means. Social media is not a panacea for this and, when used by traditional institutions such as the state, there tends to be a disparity between the messages that are circulated and events that are actually occurring at a local level. Even so, technology has the potential to ensure people feel truly represented. All sorts of democratic processes can be enhanced with technology: voting online, e-petitions, and surveys via smartphones are just three examples.

Above all else, our leaders must use technology – and their broader expertise – to really understand their citizens' incentives, fears and motivations, and then communicate clearly how considered policies will address these factors. When governments stop being the centre of everything, and the people perceive that they have become the problem solvers, that is when things will change. What we are seeing is not the death of democracy; rather, representative democracy must adapt to our times ■

How did different regions rank **weakening of representative democracy** among the list of 20 trends in the Survey on the Global Agenda?



Source: Survey on the Global Agenda 2014

6



Rising pollution in the developing world

Vehicles and buildings are seen through a haze in Beijing's central business district, China
© REUTERS/Jason Lee



Zou Ji

Deputy Director-General, National Centre for Climate Change Strategy and International Cooperation, China, and a Member of the Global Agenda Council on Climate Change

The industrialization of the developing world is creating unsustainable pollution levels. The solution requires a technological and an intellectual revolution; an alternative route to economic prosperity that preserves resources and limits carbon emissions has to be developed before it's too late.

The developing world has learned a lot about commercial models, infrastructure and technology from Europe and North America. Those patterns worked well economically, but the world's carbon capacity cannot allow us to continue on this path.



Air pollution in China contributed to 1.2 million premature deaths in 2010, representing a loss of 25 million years of healthy life.



Rising pollution in the developing world is ranked as the sixth most significant global trend this year – and in Asia it's the third. China became the largest greenhouse gas emitter in 2005 and remains in this position, followed by the United States and

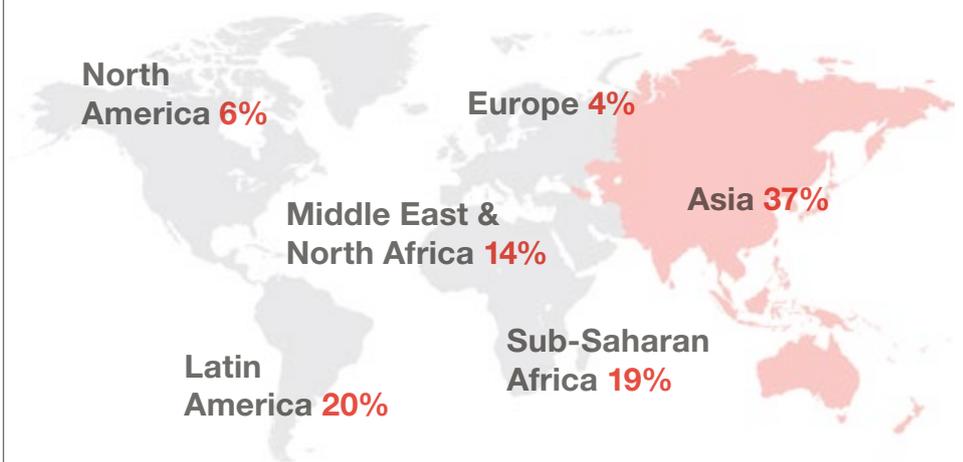
the European Union, according to the World Resources Institute. Brazil and India are the fifth and the eighth biggest polluters.

Developing countries will suffer the most from the weather-related disasters and increased water stress caused by global warming, consequences outlined in our other trend chapters. Even 2°C warming above pre-industrial temperatures – the minimum the world will experience – would result in 4-5% of African and South Asian GDP being lost and developing countries are expected to bear 75-80% of impact costs.

China's burgeoning manufacturing sector produced one of the biggest historical increases in power generation capacity – but this has come at a huge cost. According to analysis by the Global Burden of Disease Study, air pollution in China contributed to 1.2 million premature deaths in 2010, representing a loss of 25 million years of healthy life. We need to find a means to continue the country's expansion while reducing fossil fuel use. This means investing in a power

Rising pollution in the developing world: Inside the data

Which region will be most affected by **rising pollution in the developing world** in the next 12-18 months?



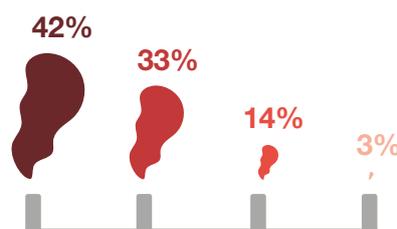
Source: Survey on the Global Agenda 2014

How great a problem does **rising pollution in the developing world** pose for regions around the world?

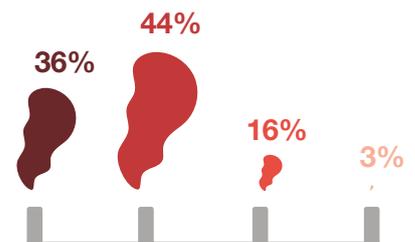
Key to responses



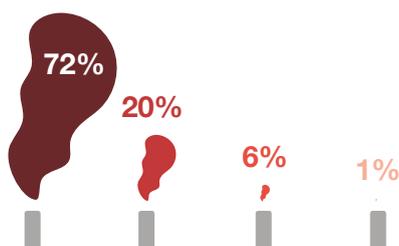
Asia



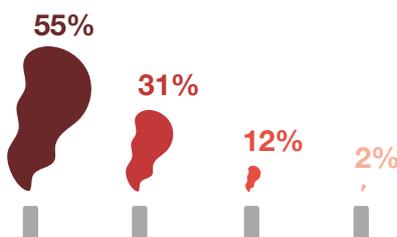
Europe



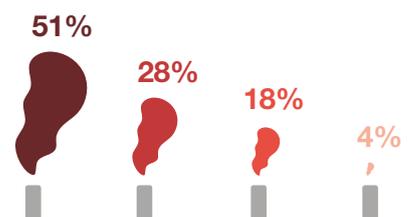
Latin America



Middle East & North Africa



Sub-Saharan Africa



Source: Pew Research Center Global Attitudes Project, 2014

generation network that can replace coal, including renewables, nuclear and gas, and phasing out low-efficiency generators. Progress needs to be measured by something other than GDP, which does not include environmental conditions or quality of life.

As important as China's role will be, the developing world must stick to targets set for renewable power generation, ensure high-polluting industries are properly regulated, and promote clean energy. As the biggest emitter of greenhouse gases, China's policies are critical in addressing global warming, and are also influential for other developing nations. The latter have the most work to do to reduce greenhouse gas emissions and will bear the impacts of global warming, yet the responsibility for the crisis can't rest with them alone; World Bank research estimates high-income countries are responsible for two-thirds of the CO₂ released into the atmosphere since 1850.

There are two main ways developed countries need to help with this process. There needs to be a flow of funding to the developing world, providing the means to finance change, and we must cooperate to develop new low-carbon technologies. It's crucial that countries such as China build up their research and development capacity for solar power, wind turbines and carbon capture, and international cooperation can help developed countries become involved higher up the supply chain.

The 2010 Cancun accord, which set long-term funding arrangements, is the second part of the puzzle. The Green Climate Fund, formalized at the conference, provides a mechanism for helping developing nations adapt and reduce their carbon emissions. Even so, we still need to ensure that the money flows to these projects, and developed countries need to make clear how to achieve this financial assistance target.

It's important to understand that once high-carbon solutions have been implemented, they are difficult to replace. This means the decisions being made today on power generation, and the way our cities and transport networks are designed, are absolutely crucial. There's a potential to have a big impact now, but the window of opportunity will close very soon ■

How will urban air pollution change over time around the world?

Projected PM10 (particles in air) concentration in major cities, µg/m³, 2010-2050

● 2010
● 2050

World Health Organization recommended maximum concentration: 20 µg/m³



Africa

9

1



Brazil

33

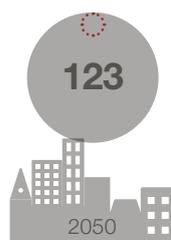
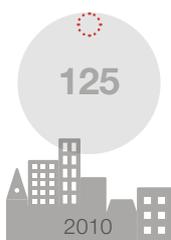
30



China

125

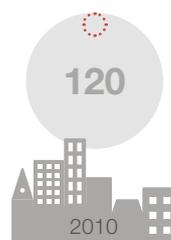
123



India

120

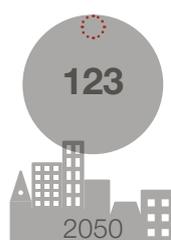
146



Indonesia

118

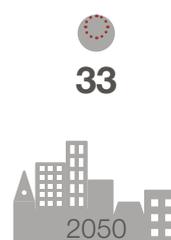
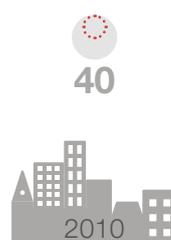
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OECD

40

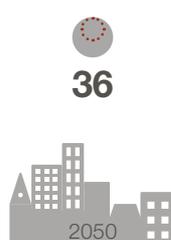
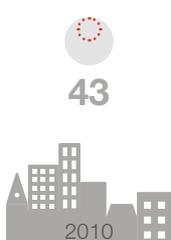
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Russia

43

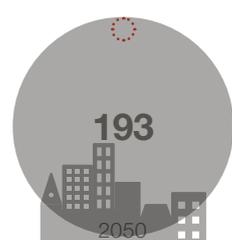
36



South Asia*

142

193



* South Asia excludes India. Source: OECD Environmental Outlook Baseline, 2012

7



Increasing occurrence of severe weather events



Houses are submerged in flood waters after Hurricane Isaac hit Braithwaite, Louisiana in 2012 © REUTERS/Sean Gardner



Adil Najam
Dean, The Frederick S. Pardee School of Global Studies, Boston University, and a Member of the Global Agenda Council on Climate Change

Extreme weather events are a major consequence of climate change, and are becoming more frequent, powerful and erratic. What is needed is not just relief when disaster strikes, but adaptation to the massive effects these phenomena produce, including disease, political unrest and economic stress – issues explored elsewhere in this report. It’s obvious that adapting to – or ideally, preventing severe weather events – results in a better outcome for everyone.

Severe weather events have dominated headlines recently, causing immense devastation. Every continent has been affected, from one of the world’s strongest storms hitting the Philippines and the widest tornado ever seen in the



Severe weather events are changing people’s perception about climate change. Unfortunately, climate change gets reduced to a discussion about carbon management.



United States, to extreme droughts gripping central Africa, Brazil and Australia and a series of massive floods in Pakistan.

Improved computer modelling facilitates scientists’ assessment of man-made climate change on individual severe weather events,

a task that's been difficult in the past. The Intergovernmental Panel on Climate Change's 2014 report on climate change mitigation provided new evidence linking extreme weather events and climate change. The American Meteorological Society combined research from 92 scientists to examine 16 of the biggest weather events from 2013, concluding that global warming greatly increased the risk of severe heat waves occurring. Despite this, there's a real failure to grasp the problem at hand. A lack of international leadership has definitely affected the development of this trend.

The irony and cruelty of climate change is that the costs of extreme weather events are highest for society's poorest.

They are those least able to cope and least able to afford insurance. Over 90% of respondents to this year's Survey on the Global Agenda expect Asia to be most affected by increasing severe weather events. This is significantly higher when compared to the other regions, which are rated at between 10% and 51% (each respondent named up to three regions).

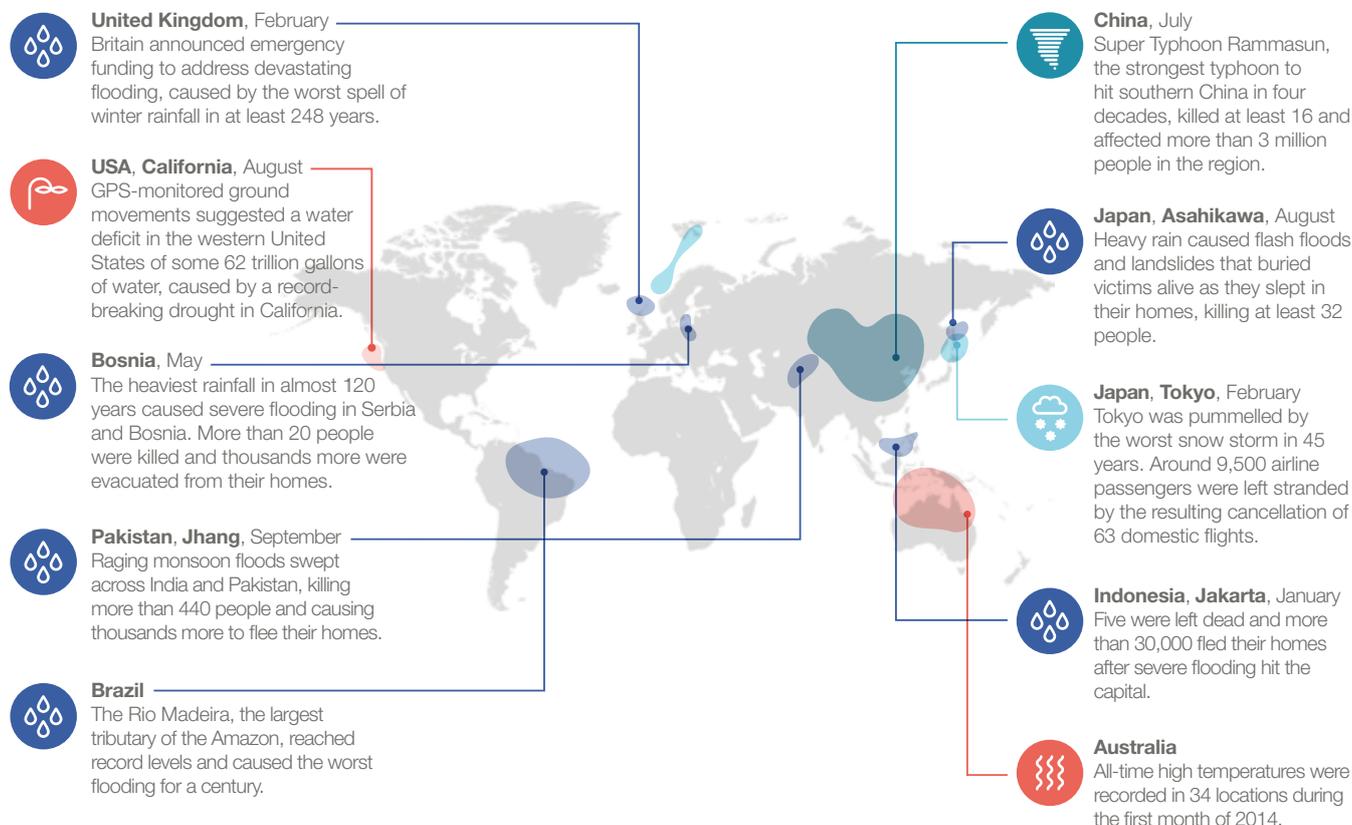
Severe weather events are changing perceptions about climate change. However, when we think of climate change we think less about its already evident impacts and instead more about emissions, particularly around energy production and carbon. Unfortunately, this means most climate change discussion gets

reduced to a discussion about carbon management. Carbon management is undoubtedly the essential challenge in mitigation, but in a world defined by climate impacts and adaptation – and that's the world we currently live in – it's not enough to focus on carbon management alone.

We need to do more, and I see a great opportunity for the private sector to take advantage. Since the challenge of response is the challenge of development, we need to turn this into an investment question. Presently, we're only putting band aids on the problem: the disaster happens, and we express sorrow. We raise funds and send aid. We try to relieve whatever pain we can with the best

Increasing occurrence of severe weather events: Inside the data

Where have **severe weather events** occurred in 2014?



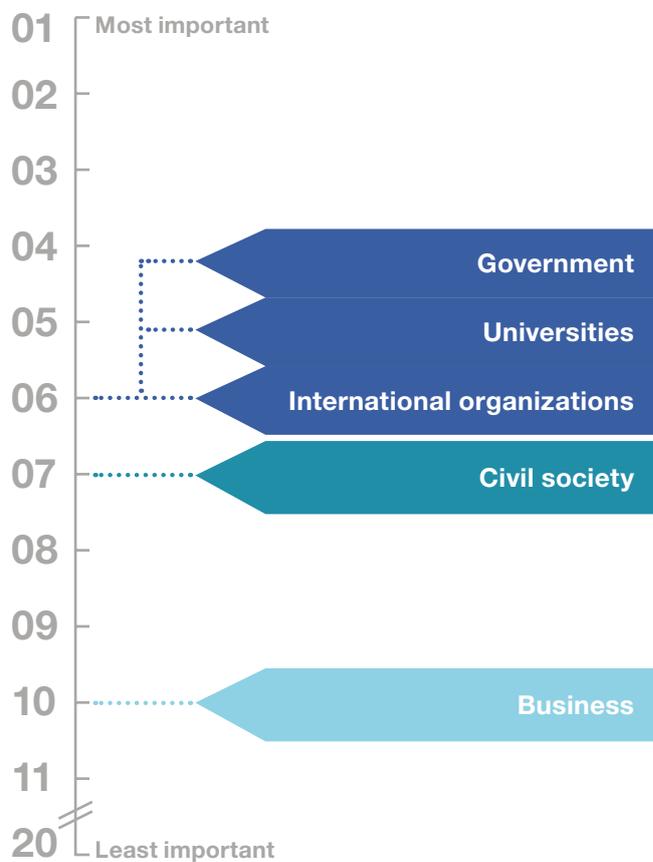
Source: World Economic Forum, 2014

intentions. Yet we still wait for the next crisis. Running from disaster to disaster just will not work.

The way to convince countries and companies to invest in climate resilience is the same as getting them to invest in mitigation. First of all, carry out 'no regret' spending: invest in policies that are good even if climate change adaptation wasn't needed – infrastructure, for example. Second, find low-hanging fruits: inexpensive policies with high net gains, including disaster preparedness and early warning activities. Finally, look at long-term costs and benefits. Adaptation investments in sustainable and resilient technologies (such as saline agriculture) are just as good as clean energy investments. The other point to make is that disasters are unpredictable. The cost of potentially gigantic disasters is what good adaptation policy protects us against.

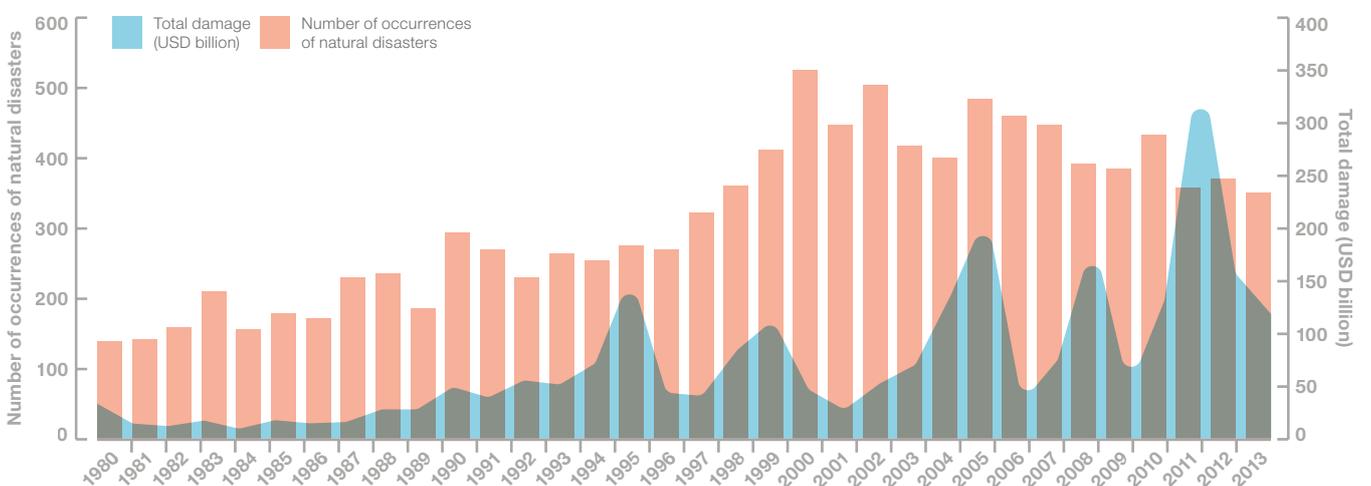
To sum up, the solution is to strengthen resilience before disaster strikes. That means investing in developments that work in the future, not just in the short-term. Costs can be high and speed of change can be slow, but long-term payoffs are impressive: for national economies, for business, and certainly for the poorest and most vulnerable populations who will suffer and pay if we fail to take these measures ■

How did different stakeholders rank **increasing occurrence of severe weather events** among the list of 20 trends in the Survey on the Global Agenda?



Source: Survey on the Global Agenda 2014

What have been the economic consequences of a global **increase in occurrence of severe weather events**?



Source: The International Disaster Database, EM-DAT database

8



Intensifying nationalism



'No' campaigners wave banners and a Union Flag during a rally in Glasgow, Scotland
© REUTERS/Dylan Martinez



Gordon Brown

Chair, World Economic Forum Global Strategic Infrastructure Initiative, and a Member of the Global Agenda Council on Infrastructure

Jean Cr tien, Prime Minister of Canada at the time of its divisive referendum on separation with Qu bec, wrote that it took six months before wounds between Canada and Qu bec, even started to heal. And with 45% voting for independence, Scotland will be a divided country for some time to come.

For just as in the years of the Industrial Revolution people turned to political nationalism to protect and shelter their communities against the uneven and inequitable patterns of growth so, too,

“

We don't need to sever connections between each other to thrive in the modern world.

”

people seem to be turning back to – and mobilizing around – old loyalties and traditional identities as they seek to insulate themselves; whether it be in Catalonia or Belgium or Lombardy, they are demanding

protection against what seems to be the economic disruption and social dislocation of globalization, which threatens to sweep aside long-established customs, values and ways of life.

But is 18th September's vote in Scotland not a moment of destiny? Not because nationalists have done so well, but because most Scots voted against an exit from the UK? Could the rejection of separation demonstrate that in this new global era nations can combine strong and vibrant identities with a willingness to engage in even deeper cooperation?

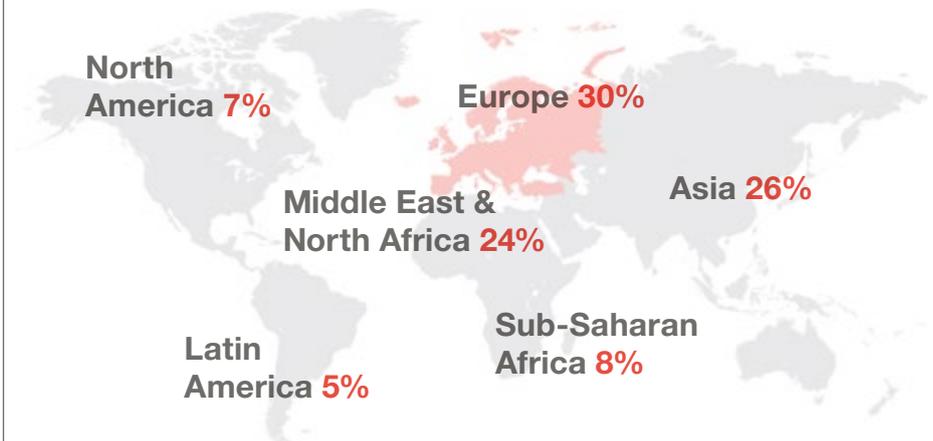
In short, could the referendum result become a turning point in favour of a connected world that is coming to recognise and act upon its interdependence? Could we not see Scotland as the first country to vote positively for, and to pioneer the idea of, an interdependent future? Could we not view Scotland as a beacon to the rest of the world for how nations living side by side with each other, can positively elect to cooperate and share?

The truth is that from the time of Scottish Enlightenment, when Adam Smith asked what it was not just to be a citizen of your local community but a citizen of the world, Scotland has always been far more internationalist, more outward-looking and more cosmopolitan than can be encapsulated in the ideas broadcast by narrow nationalisms.

Scots led the way in the Enlightenment, not only with Adam Smith's idea in his *Wealth of Nations* of an open, free trade world that breaks free from mercantilism, but with his even more powerful idea in his *Theory of Moral Sentiments* of a world linked together by empathy; his idea that we were able to put ourselves in other peoples' shoes – what was called 'the circle of empathy' – led people to feel beyond their immediate family circle, however distantly and faintly, feel the pain of others. This underpinned the Scots' achievement in partnering England and Wales in the world's first industrial revolution. Scotland not only produced some of the world's greatest inventors, starting with James Watt and his invention of the steam engine, but it also produced some of the world's great reformers. For Scots led the way in civilizing the industrial

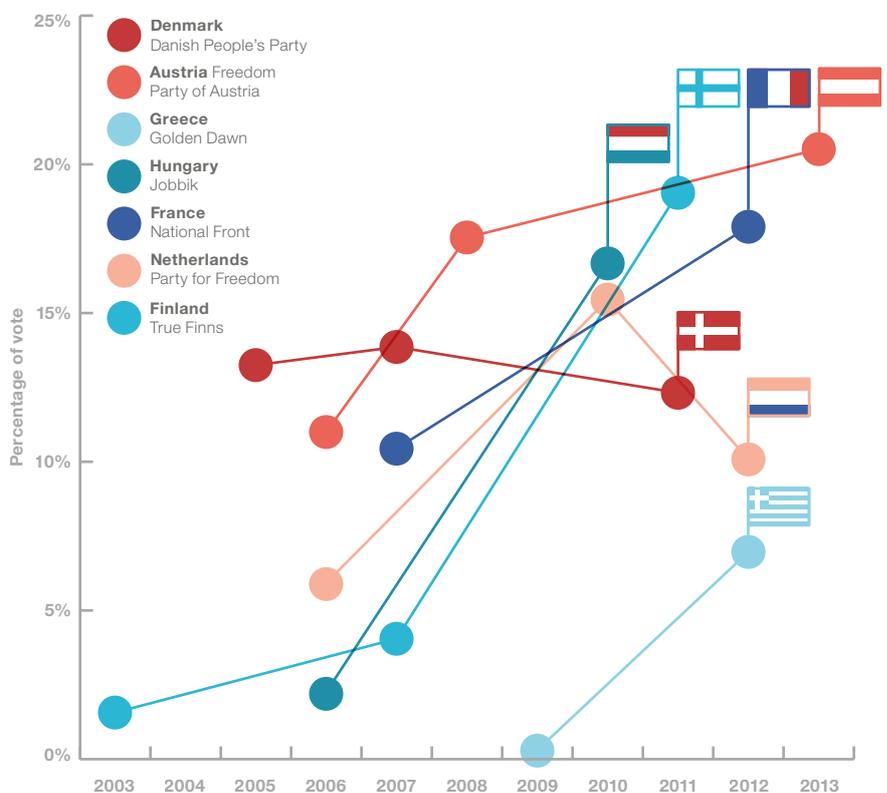
Intensifying nationalism: Inside the data

Which region will be most affected by intensifying nationalism in the next 12-18 months?



Source: Survey on the Global Agenda 2014

How has the electoral performance of nationalist parties in Europe changed over time?



Source: Stratfor / European Elections Database

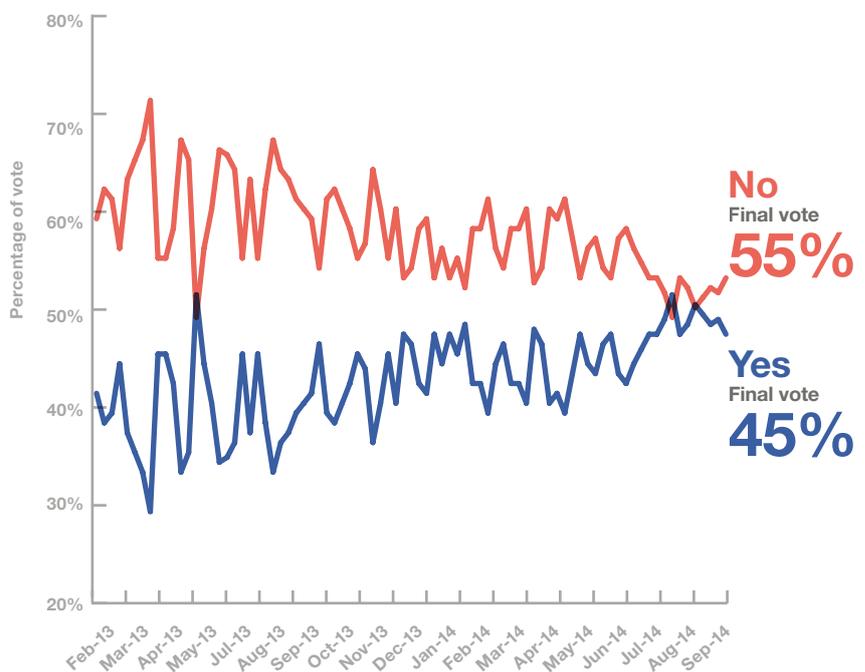
economy by demanding and planning the creation of the British welfare state. And we did do so by abandoning our own distinctive Scottish social institutions, abolishing our 300-year-old Scottish Poor Law and calling for a United Kingdom NHS and welfare state, founded on equal treatment for every citizen – when sick, disabled, unemployed or elderly – across the UK. No other group of nations has managed to achieve what the joint efforts of the Scots, Welsh, Northern Irish and English managed: equal civil, political, social and economic rights for all, irrespective of nationality.

Scots who have argued for the benefit of sharing and cooperation are well placed to lead the way again as icons of the era of globalization. However, today the challenge is even more profound. In the last century we had to show how we could share the same rights when decisions were being made within a multinational state. Now we are part of a world where the global sourcing of goods has replaced their national sourcing, and where global flows have replaced national flows. In 2014 we have to show how we can share and cooperate when we are not just part of a multinational state but part of a more integrated, connected and interdependent global economy.

Can we show that neighbours of different cultures, traditions and identities can work with each other not just in a confined multinational state – but even in a more open and exposed global environment? Can we show that we don't need to sever the connections between each other to thrive in the modern world, but can find ways of living together by not just sharing rights to services and benefits but by sharing sovereignty? In our case, we must do this through a strong Scottish Parliament as part of, not apart from, the rest of the UK and Europe.

In 1962 President Kennedy called for the US Declaration of Independence of the 1770s to be complemented by a Declaration of Interdependence of the 1960s. By answering those who claim that independence can make a difference with policies that show interdependence can make the difference and is thus a bigger idea, we can show the way forward for Scotland is to do what we have always done best: to think big and not small ■

How did opinions on Scottish independence change in the run-up to the referendum on independence?



Source: What Scotland Thinks, 2014

What are the top solutions to intensifying nationalism?

Asia



- #1 Partnerships and cooperation
- #2 Issue awareness
- #3 Education for citizenry

Middle East & North Africa



- #1 Partnerships and cooperation
- #2 Issue awareness
- #3 Education for citizenry

Europe



- #1 Issue awareness
- #2 Partnerships and cooperation
- #3 Education for citizenry

North America



- #1 Partnerships and cooperation
- #2 Issue awareness
- #3 Education for citizenry

Latin America



- #1 Partnerships and cooperation
- #2 Issue awareness
- #3 Education for citizenry

Sub-Saharan Africa



- #1 Education for citizenry
- #2 Issue awareness
- #3 Stakeholder forums

Source: Survey on the Global Agenda 2014

9



Increasing water stress

“
Resource-constrained water stress will be the norm for Asia, while finance-constrained water stress will be the norm for Africa.

– Matt Damon

”



Matt Damon

Actor and Co-Founder, Water.org, and winner of the World Economic Forum 2014 Crystal Award

Having been in the field, most recently in India, I have seen that access to safe water is just a few dollars away for many people. A small loan can create a pathway to a household water tap. Making access to capital ubiquitous and affordable for those living in poverty would go a long way towards eliminating water stress.



A Palestinian boy sits on water containers filled from public taps in the northern Gaza Strip
© REUTERS/Mohammed Salem

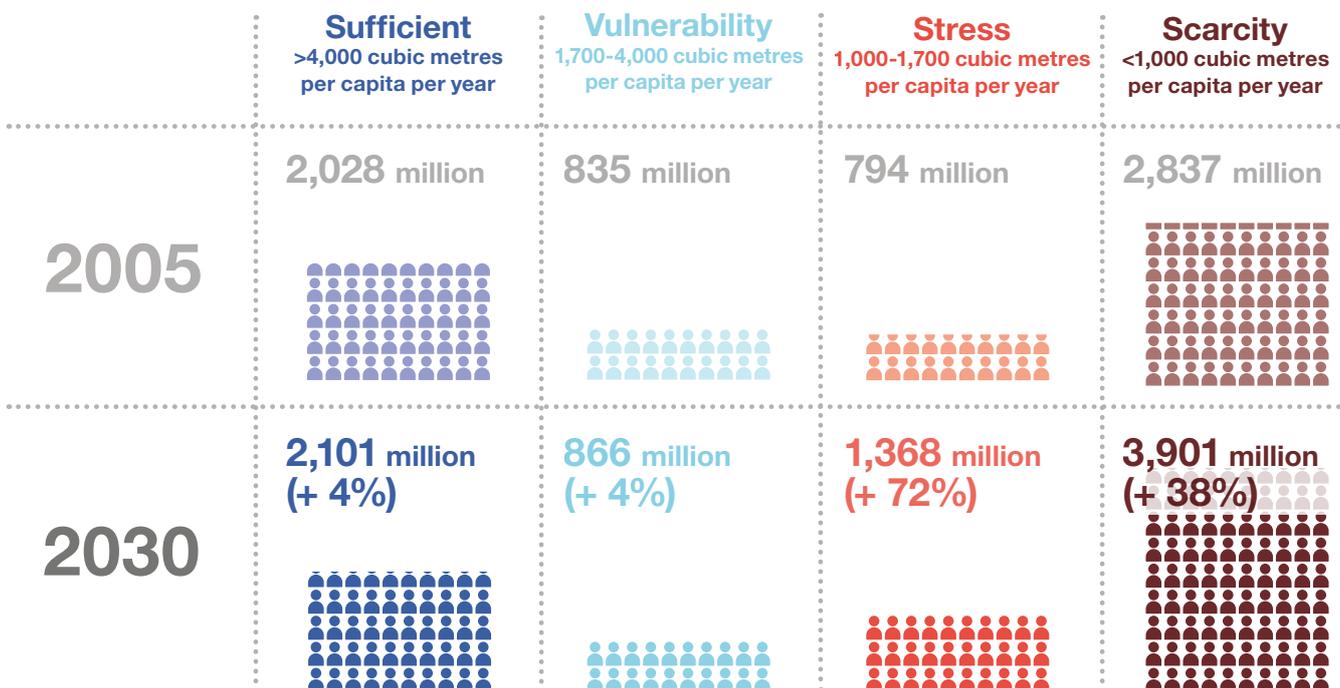
Due to a combination of problems, including rapid population growth, constrained water supplies and high levels of poverty, countries such as India, Indonesia, Bangladesh and Nigeria will be hit the hardest by this trend. Resource-constrained water stress will be the norm for many countries in Asia, while finance-constrained water stress will be the norm for many countries in Africa. This is reflected in the fact that experts surveyed by the World Economic Forum expect Sub-Saharan Africa to be the most affected region, closely followed by Asia.

Despite the obstacles we face, there is room for optimism. We believe that more will be done to increase the efficiency of water in agriculture,

which accounts for more than 70% of water use. Awareness about the global water crisis is also set to keep growing over the next year, and the private sector is already looking closely at how it can play a stronger role in helping the communities in which they operate, especially in emerging markets.

The health crises of HIV/AIDS, malaria, tuberculosis and now Ebola have spurred the global community. I believe that this issue will become every bit as important. The misconception that everyone affected is equally poor and waiting for top-down charity is one of the biggest obstacles preventing universal access to safe water. People must urgently recognize that, for 750 million of us, the water crisis is very real ■

How many more people will be living under **severe water stress** by 2030?



Source: "Environmental Outlook 2030", OECD, 2008



Gary White

Chief Executive Officer and Co-founder, Water.org, and a Member of the Global Agenda Council on Water

Perceptions and misconceptions are certainly invoked by 'the water crisis'. Sub-Saharan Africa, for example, is often seen as an arid environment. Yet this notion obscures the fact that huge swathes of the African continent have abundant water resources – this may explain why, of all the regions surveyed by the World Economic Forum, African respondents ranked water stress lower on their list of global trends for 2015. Although there may be lots of water in the region, lack of access by people to improved water supply is a crisis now.

Right here are the two main components of water crisis: water resource and water access. We tend to focus on the former when considering

the concept of water crisis, particularly in places where water is scarce.

Even where resources are plentiful, there are millions of people who lack access. While the United Arab Emirates has very little in the way of water resources, for example, they have the financial means to ensure the provision of clean water. Ethiopia, on the other hand, is known as the water tower of Africa, but more than half its population do not have access to a safe and reliable source.

In Asia, resource constraint may not be the key driver, but those resources can be depleted quickly given high population density. Crises emerge where there is poverty and a lack of financial resources to combat the problem. In India, there are more than 100 million people without access to improved water supplies, and this is primarily due to poverty.

Climate change will undoubtedly be a big factor in the future, as it will have a dramatic effect on water distribution. As sea levels rise in Bangladesh, salt water intrusion is going to be very problematic for the significant number of people living in areas of low elevation – especially as there is little capacity for treating water. If you imagine living in a water-rich area that becomes

water-stressed in the space of a decade, it's easy to expect crises to emerge quickly.

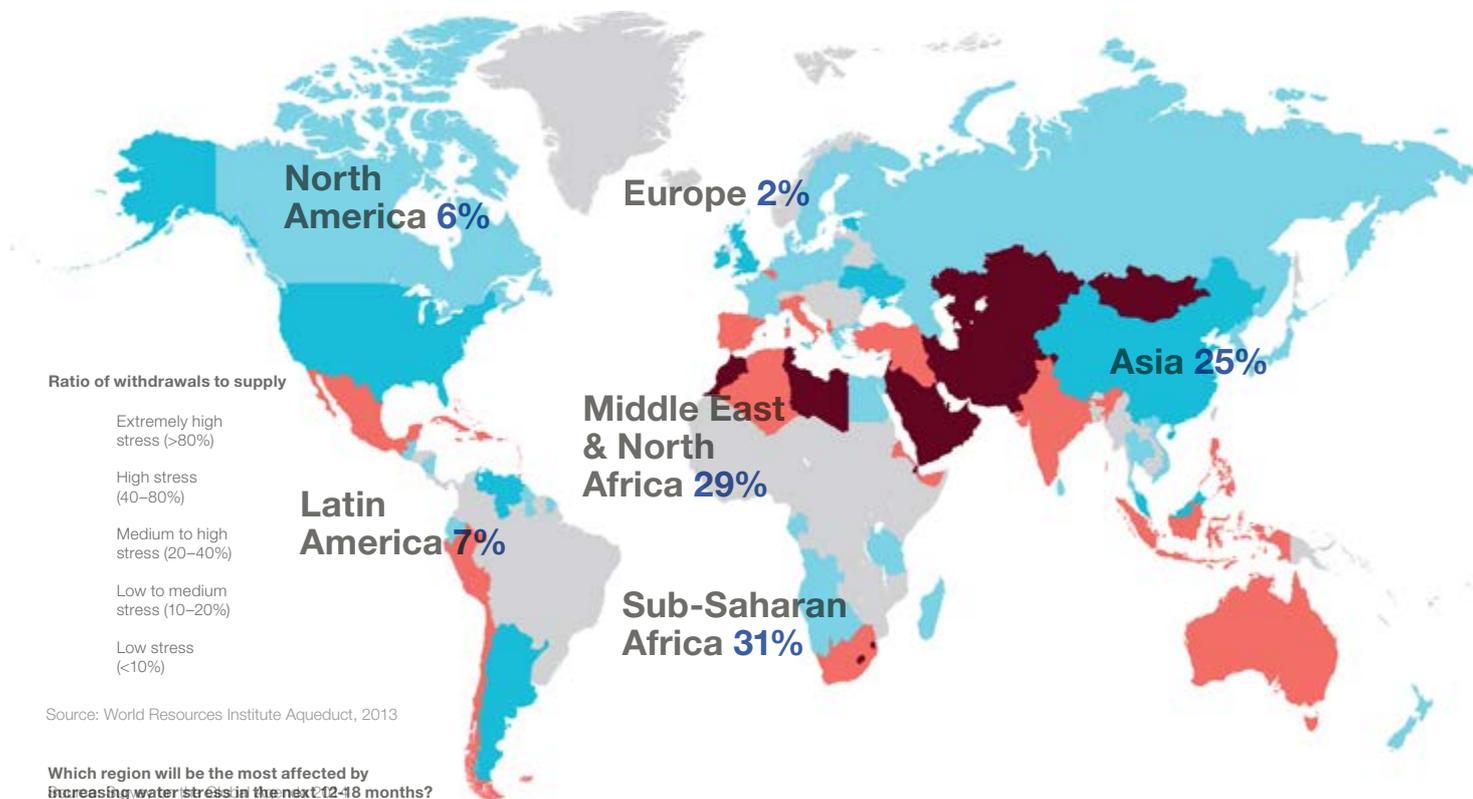
As water stress increases across the world, there will be political consequences. Will we see neighbouring governments, such as those of Pakistan and India, cooperating or manufacturing further tensions in order to seize resources?

Governments must play a central role. For a start, water treatment and distribution in urban areas is a natural monopoly, as it doesn't make sense to construct multiple sets of pipes from different companies. In many developed countries, there's more financial and political will to invest in long-term infrastructure, while in developing countries, it's not uncommon to see utilities lacking the means to invest in long-term infrastructure and often it is the poor who are left out when this infrastructure bypasses the slums.

Our work at Water.org shows that even people living at the base of the economic pyramid have the potential to be customers. While we believe that affordable access to water is a basic human right, the poor have the potential to meet us halfway if we can give them access to the right financial tools such as microfinance and the ability to connect to the water supply infrastructure ■

Increasing water stress: Inside the data

Which regions are most affected by increasing water stress?



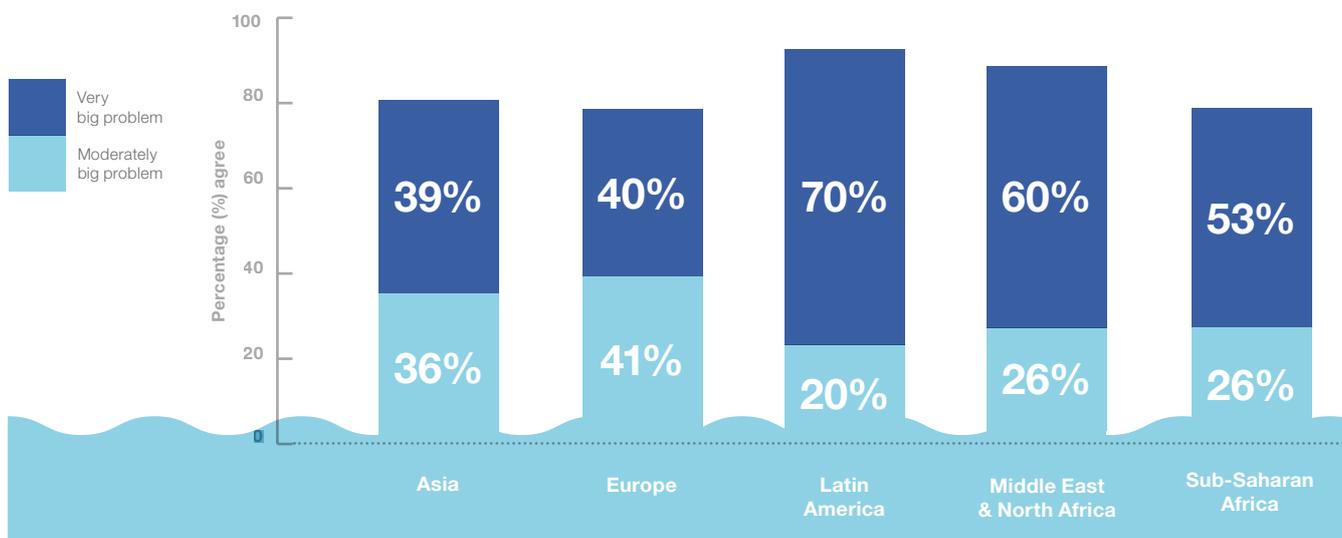
Source: World Resources Institute Aqueduct, 2013

Which region will be the most affected by increasing water stress in the next 12-18 months?

%

Source: Survey on the Global Agenda 2014

How great a problem does water pollution pose around the world?



Source: Pew Research Center Global Attitudes Project 2014

10



Growing importance of health in the economy

A health volunteer uses a protective suit at a newly constructed Ebola treatment centre in Monrovia, Liberia
© REUTERS/James Giahvue



Francis Collins

Director, National Institutes of Health, USA, and a Member of the Global Agenda Council on the Future of the Health Sector

There's a well-understood correlation that as the economy of a country improves, so the health of its citizens improves. What may be less obvious is that the opposite is also true – improving the health of a nation's citizens can directly result in economic growth, because there will be more people able to conduct effective activities in the workforce.

Health presents a challenge for all nations; in a study by the Pew Research Center, a median of 85% of respondents believe it was a problem in their country. Effective public health systems are essential for providing care for the sick, and for instituting measures that promote wellness and prevent disease. Tobacco, for instance, is one of the greatest scourges we face. In working to combat diseases such as lung cancer and heart disease, we have to fight the causes; there's a clear need for educational campaigns and other mechanisms to discourage people from smoking in the first place. If the plan to improve health in a nation is to simply build a few more hospitals, that won't solve the problem.

For developed economies, ageing populations place a heavy strain on healthcare networks. In developing

nations, a lack of resources or inadequate infrastructure present separate challenges. Currently, NIH is wrestling with the Ebola crisis in West Africa. When you see the devastation this disease has wrought upon the

“ If the plan to improve health in a nation is to simply build a few more hospitals, that won't solve the problem. ”

region, it's clear that healthcare systems in this part of the world were totally unprepared for the enormous challenge.

In many lower and middle-income countries, infectious diseases are our major focus. HIV/AIDS,

tuberculosis, and malaria take a huge toll, both in loss of life and reducing the workforce. The World Bank reports that 50% of the economic growth differentials between developing and developed nations are attributed to poor health and low life expectancy. The healthier the citizens of a country, the more effective the workforce; the better the health of their children, the fewer births, and hence the fewer dependents. Vaccinations and preventative strategies for childhood diseases are of key importance.

That said, non-communicable diseases in developing countries are growing. These are diseases we typically associate with wealthier countries – cancer, hypertension, diabetes and heart disease. We’re going to have to pay more attention to these diseases, and to their appearance in countries where we traditionally thought infection was the primary concern.

Fortunately, technology makes it easier to prevent, detect and treat these conditions. With the development of electronic health records, remote treatment, and the ability to share data online, we have an array of new healthcare solutions available, even in

low-income settings. The use of mobile technologies to collect and distribute information has helped significantly with the prevention and treatment of disease.

I recently had a chance to speak with Chen Zhu, the former Health Minister for China. His country has looked at the evidence on the health-productivity link and is voting with its pocketbook in a dramatic way. China is increasing spending on healthcare delivery and has been steadily upping biomedical research by between 20% and 25% per year. At this rate, China will soon be spending more in this area than the US – and that’s spending in absolute dollars, not just as a percentage of GDP. The Chinese believe that improving their research capacity is a wonderful way to build their economy, and I think they’re right.

China is undertaking a grand experiment, and not every country has the resources to do so. But for national leaders who have a vision, and who are thinking ahead – not just this year, but 10 or 20 years from now – paying attention to the Chinese example would be worthwhile. Investing in the health of a nation’s citizens is one of the smartest things a leader can do ■

Containing Ebola

The situation in the United States should not be cause for panic – there is zero chance of a major unchecked outbreak in the US, given the existence of a public health system that can do contact tracing and isolation of those exposed. But the situation in West Africa is increasingly dire, with thousands of deaths already. The world needs to focus all of its resources in getting this outbreak under control, or hundreds of thousands may die.

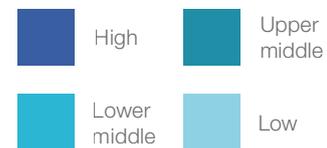
The immediate need to address Ebola in West Africa is to identify infected individuals, get them into treatment centres, and track down contacts to keep the disease from spreading.

It’s also crucial to make sure those who have died of the disease are not touched or washed by others without protective equipment, as the risks of infection are very high.

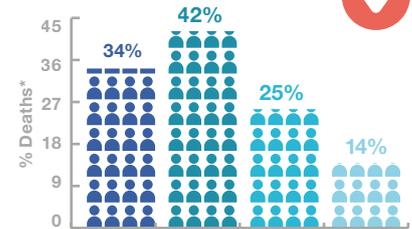
Worldwide resources are being assembled; the US is making the outbreak a major priority, including sending in the military to set up much-needed emergency treatment centres. At the National Institutes for Health in the US, we are working with the Food and Drug Administration to break records in getting a promising vaccine into clinical trials, and speeding up the effort to test new therapies. But speed is crucial. We need all hands on deck ■

What are the major causes of death among income groups around the world?

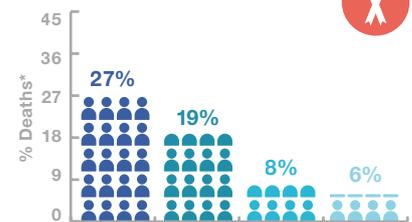
Key to income level



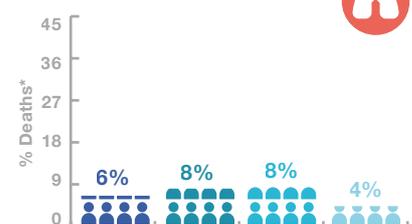
Cardiovascular



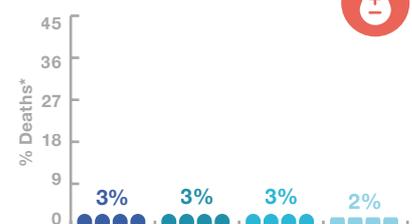
Cancer



Respiratory

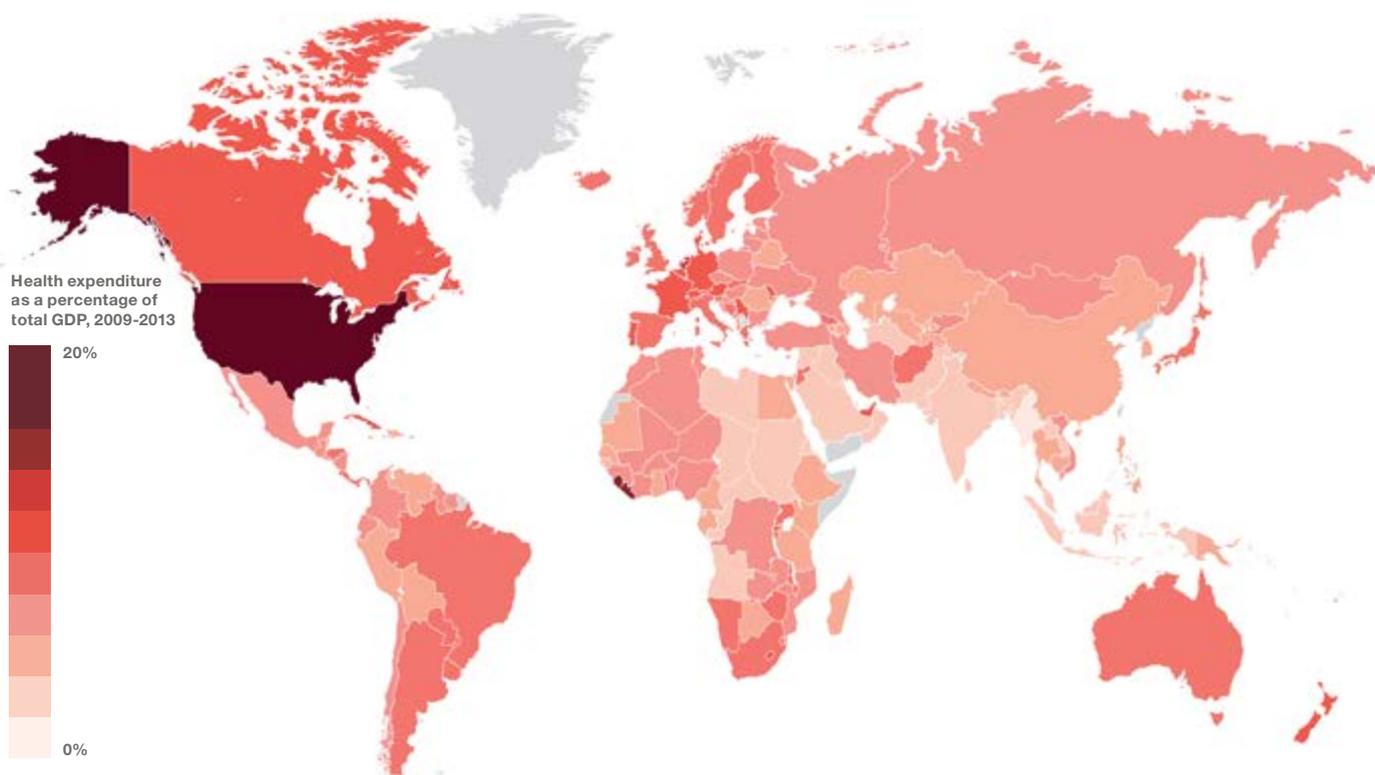


Diabetes



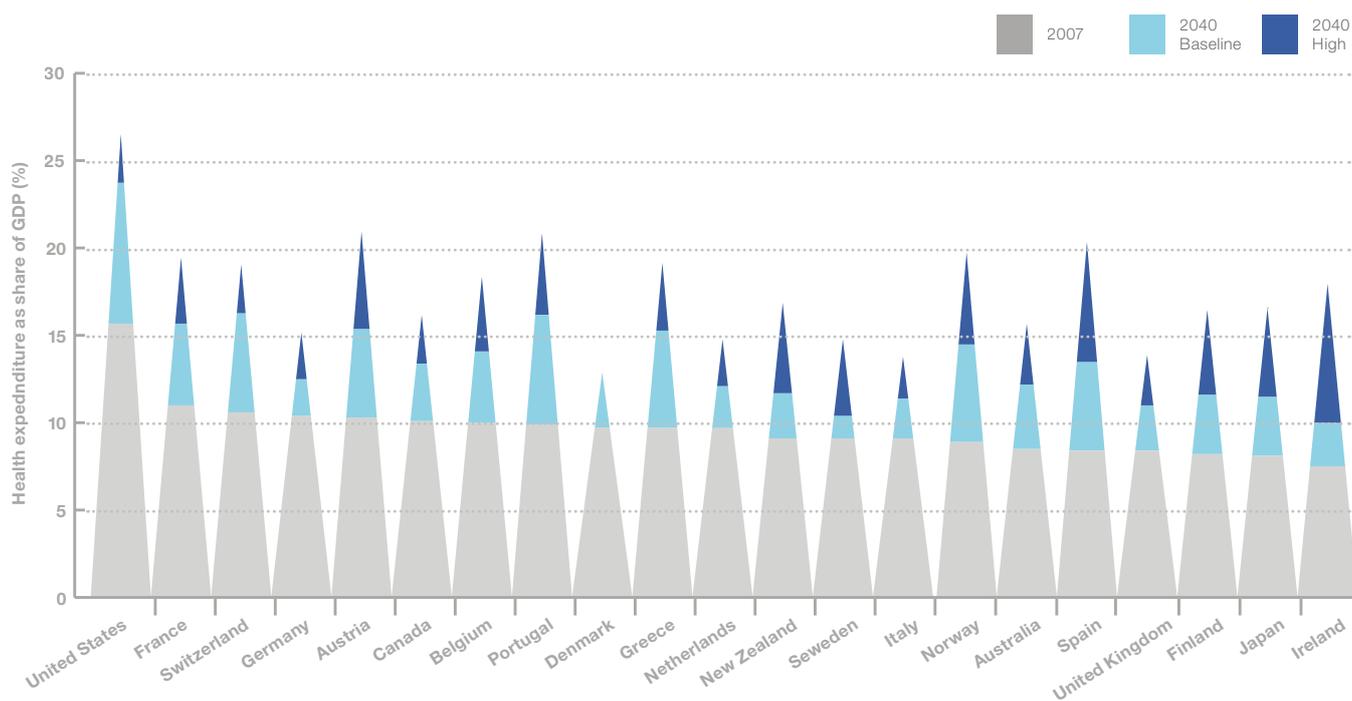
*Out of total deaths of the income level
Source: World Health Organisation Database, "Noncommunicable Diseases Country Profiles", 2011

How much is spent on **healthcare** around the world?

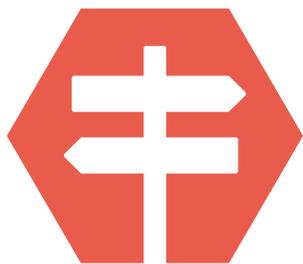


Total health expenditure is the sum of public and private health expenditure.
Source: The World Bank, Health Expenditure

How is global **healthcare spending** expected to grow by 2040?



Source: World Economic Forum, "Sustainable health systems: visions, strategies, critical uncertainties and scenarios", 2013



Immigration in focus

Anti-immigrant hostility is a major concern around the world, yet this topic failed to reach this year's Top 10 trends. José Manuel Barroso, President of the European Commission, explores the reasons why.



José Manuel Barroso
President, European Commission
2004-2014, and Chair of the Global
Agenda Council on the Future
of Regional Organizations

"Racism and xenophobia, intolerance and Islamophobia are on the rise," warns José Manuel Barroso, President of the European Commission. "They foster division and create suspicion and hatred between communities. In recent years, we have even seen a mounting wave of harassment and violence targeting asylum seekers, immigrants,

ethnic minorities and sexual minorities in many European countries."

One need not look far to see that President Barroso has a point. In February 2014, the Swiss population voted – albeit by a tiny majority – to reintroduce stringent quotas on immigration from EU countries. A few months later, in May 2014, anti-immigrant parties made significant gains in the European elections. In July, pro- and anti-immigration demonstrators clashed in Murrieta, a town in southern California, over the arrival of illegal immigrants – mainly children – at a border control station.

These examples highlight the fact that anti-immigrant sentiment is a growing, global concern. But while this trend was ranked highly by respondents to this year's Survey on the Global Agenda,

ultimately settling in 13th place, it failed to reach the Top 10 trends.

This result seems all the more surprising for the fact that this issue has clear points of intersection with other trends that did appear within our final 10. Indeed, it is possible that it is this proximity to other issues – and the reciprocal interaction with them – that led to 'Rising anti-immigrant sentiment' being overlooked.

For a start, let us consider the first two trends on this year's list. Persistent jobless growth and deepening income inequality have arguably contributed to fears that an influx of immigrants will exact further pressure on scarce and poorly paid jobs; the immigration discourse in Switzerland focused on the strain placed on jobs and salaries across the country.

Equally, the effects of immigration and increased population growth on social and health services and the environment have long been – and continue to be – cited as a reason for curbing the movement of people between countries. These perceived points of friction will likely persist as healthcare takes on an increasingly key



Gendarmes stand guard as immigrants are evacuated at an improvised camp in Calais, France
 © REUTERS/Pascal Rossignol

role within our economies, as observed by the last entry in our Top 10.

Anti-immigrant discourse is hardly confined to economic and societal concerns, however. Several of our trends, 'Intensifying nationalism', 'Lack of leadership' and 'The weakening of representative democracy' suggest a fluctuating sense of national identity, and perhaps even a dissatisfaction with traditional styles of governance. At the very least, these trends can be seen as reflecting a political environment in which anti-immigrant sentiment can flourish, as voters turn from traditional parties towards more extreme political options. The results of last May's European elections underscore this shift all too well.

For President Barroso, anti-immigrant sentiment can only be diffused with strong leadership, and with an approach that acknowledges the challenge of the situation, as well as its opportunities.

"International migration is a reality," he says. "In an open world, where developed, underdeveloped and emerging economies are integrated on an unprecedented level, they act almost like communicating vessels, where goods, services,

“

The benefits of diversity are clear, but often underestimated. Our open societies cannot do without it. The fact that Europe needs migration to address its demographic challenge is equally clear.

”

Tackling anti-immigrant sentiment will, he believes, necessitate a firm approach to migration itself. The European Commission has proposed establishing a common set

knowledge, information and indeed, people, naturally flow from one part to the other."

He continues: "The benefits of diversity are clear, but often underestimated. Our open societies cannot do without it. The fact that Europe needs migration to address its demographic challenge is equally clear. But there is a worrying lack of political courage and leadership on these issues."

of standards for external border control and strengthening Frontex, the agency for border security. Barroso believes that these measures will help European governments to handle the challenges of irregular migration, promoting solidarity between member states.

"Such solidarity is only possible if public support for legal migration continues," says Barroso, "if we tackle any abuses yet never compromise our values of openness, toleration, respect for the rule of law, and human dignity for all.

"In times of globalization, social crisis and cultural uncertainty, these values, which literally form the heart of what the European Union is all about, can never be taken for granted. Europe is far more than a market – it is a community of values, founded on human dignity, freedom, equality and solidarity."

Of course, these principles should not just apply to the European Union, but to the entire world. These are values which should be universal, and by safeguarding and promoting them, we can simultaneously eliminate the harm caused by discrimination. The problem of intolerance – and finding a solution to it – is of global concern ■

Regional challenges



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Middle East & North Africa



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Europe



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Tension points:
Assessing the state
of global geopolitics

Regional challenges

North America

Key challenges

- 1 Increasing inequality
- 2 Geopolitical shifts
- 3 Adapting to climate change

Europe

Key challenges

- 1 Fostering economic growth and innovation
- 2 Youth unemployment
- 3 EU-Russia relations

Middle East & North Africa

Key challenges

- 1 Persistent youth unemployment
- 2 Managing political transitions
- 3 Societal tensions

Asia

Key challenges

- 1 Geopolitical tensions
- 2 Structural economic reform
- 3 Managing urbanization

Latin America

Key challenges

- 1 Corruption
- 2 Education and skills development
- 3 Increasing inequality

Sub-Saharan Africa

Key challenges

- 1 Education and skills development
- 2 Building sustainable governance systems
- 3 Delivering hard infrastructure

Source: Survey on the Global Agenda 2014

From systematic corruption to the development of skills and education, from geopolitical shifts to youth unemployment, every region of the world faces a unique set of challenges. Even when two areas share similar problems, these issues demand specific solutions to meet unique, localized needs. We surveyed regional thought leaders from our Global Agenda Councils to gather their biggest concerns about where they live. Here, they discuss the challenges and the directions in which progress may lie ►

Middle East & North Africa



Rola Dashti
Chairman of FARO International, and Vice-Chair of the Global Agenda Council on the Middle East and North Africa

Key challenges



1
Persistent youth unemployment



2
Managing political transitions



3
Societal tensions

Governments and businesses ranked **Persistent youth unemployment** lower than other stakeholders:

Stakeholder	Rank out of 5 challenges
Civil Society	#1
Universities	#1
International organizations	#1
Business	#2
Government	#2

The number one challenge for the business sector is **managing political transitions**

The number one challenge for the government sector is **societal tensions**

Source: Survey on the Global Agenda 2014

The Middle East and North Africa (MENA) is the region of superlatives: though its workforce has grown at the fastest annual rate in the world (2.7% in the past 10 years), youth unemployment is also the highest, at around 25% of the population. The latter is a persistent problem, and has been identified by our respondents as the biggest challenge MENA faces, alongside the management of political transitions and societal tension.

Dr Rola Dashti, former Kuwaiti Minister of State Planning and Development Affairs, attributes youth unemployment to a dysfunctional education system, inherent skill mismatches, labour market rigidities, and a growing labour force.

“Unfortunately, this demographic asset has become a demographic burden,” Dashti explains. “We need to start working on lowering that growth rate because it’s not going to be affordable – not only in terms of job creation, but also in terms of the quality of life.”

Reforms have so far failed to target a more dynamic private sector to jump-start the economy; state institutions currently employ most of the region’s youth. In Jordan and Egypt, the public sector accounts for about 35% of the workforce. In Dashti’s assessment, adequate reforms should ensure sustained job-intensive growth, refocus education and training, and enhance labour market flexibility.

“
Our societies are becoming more fragmented, and this needs to be targeted in the form of social and political reforms.
”

“You need to create opportunities for entrepreneurship and be more supportive of small and medium enterprises,” she says. “We need to have policies that support the growth of private sector investment and ensure this growth is distributed to the masses.”

MENA’s authorities must find a way to foster entrepreneurial spirit – but to do this, the public must be convinced that they will directly benefit from a healthier private sector. As things stand, many citizens believe that private sector growth will come at their expense.

“In general, the people of the region are not seeing a bright future. They’re seeing a lack of opportunity to succeed, lower strands of quality of life, and then this is causing society to become more broken.”

Dashti further believes that there is a direct correlation between this social despair and the rise of sectarianism across the region.

“Our societies are becoming more fragmented, and this needs to be targeted in the form of social and political reforms that need to be worked in conjunction with policies of economic reform.”

While countries across MENA have their own specific issues to confront, Dashti also notes the tendency for problems in individual nations to spill over and affect their immediate neighbours, as seen recently in Syria and Iraq. She is therefore in favour of complementary region-wide initiatives encouraging socio-political stability and regional trade.

“While internal reforms remain an important issue, regional investment trade and projects will help support the stability of nations. Projects that are shared among regional countries are important because these are huge investments which can prolong and create jobs at the same time as creating mobility of wealth and resources.”

These initiatives could ultimately create the stability that MENA needs.

“We’ve already seen revolutions in some countries, and others are at stake,” says Dashti. “If we do not take serious actions of reform, social unrest will follow.” ■

Europe



Carl Bildt
Member of Parliament,
Sweden, and Chair of
the Global Agenda
Council on Europe

Key challenges



1 Fostering economic growth and innovation



2 Youth unemployment



3 EU-Russia relations



85%

of European respondents believe that **business** and **government** should address the challenge of fostering economic growth and innovation as a priority

Source: Survey on the Global Agenda 2014

27%

of European respondents think that their economic situation will improve over the next 12 months

Source: Pew Research Center Global Attitudes Project, 2014

Despite tentative signs of progress in Britain, economic output in the euro bloc is still struggling. In October 2014 the International Monetary Fund warned that the threat of a triple-dip recession poses a major risk for global recovery. Annual growth in the Eurozone is forecast at just 0.8%.

Sure enough, Survey respondents cite fostering economic growth and innovation, and youth unemployment, as the persistent issues facing Europe, but respondents also indicate the fall-out between Russia and the EU is darkening the mood. It is an assessment Carl Bildt, Foreign Minister of Sweden, would agree with.

“We have strife and conflicts in the entire south, which is affecting Europe substantially with refugee streams, humanitarian challenges, and new terror threats,” he says. “The situation is worrying.” Yet, although food exports to Russia represented €12 billion (\$16 billion) in 2013, Bildt is confident Russia’s tit-for-tat sanctions on agricultural products will only have marginal effects on EU members.

Bildt explains that the solution to economic pressure hinges on increasing research and development (R&D) spending, upgrading higher and tertiary education and accelerating partnerships within EU borders.

“**We have strife and conflicts in the entire South, affecting Europe with refugee streams, humanitarian challenges, and new terror threats.**”



“Governments must take these issues more seriously because the majority of countries that haven’t recovered their pre-crisis production levels are in Europe.”

According to the United Nations, the EU industrial production index remains more than 10% below its

2008 peak, plateauing at 101.5 in the first quarter.

“It is important that we are investing in R&D in the future, [with] investments coming from both government budgets and corporations,” Bildt says, pointing to star pupils Sweden and Finland, which currently invest roughly 4% of their GDP.

While the bloc is targeting 3% of GDP in combined public and private investment levels by 2020, Bildt says this is in stark contrast with the EU’s current 2% allocation. “That is way too low,” he insists, highlighting Brussels’ estimates that the bloc would need to train and employ at least 1 million new researchers compared with 2008 levels, if it is to reach its 3% target.

Bildt believes that Europe must create a climate that encourages innovation. New immigration rules, such as the ones rolled out in the UK in 2013, could encourage the brightest global talent to come to study, invest and set up business. But there is also a need to create low-skilled, entry-level jobs.

“These jobs are particularly important when it comes to the integration of immigrants,” says Bildt. “When you have young people coming in from other parts of the world, this is often where they enter the labour market.”

Vocational training schemes, tied to enterprise, have helped Germany to lower its youth unemployment figures. Partnerships between universities and businesses, mainly start-ups and high-tech firms, have propelled areas around Cambridge in the UK, and parts of southern Germany and southern Sweden, to Silicon Valley levels.

In this expanding context, Bildt says, policy-makers must avoid complacency and press ahead with the structural reforms in their labour market – notably increasing the share of low-skilled entry-level positions in the economy and widening the use of temporary contracts and vocational training ■

Asia



Kevin Rudd
26th prime minister of Australia, Senior Fellow, Belfer Center on International Relations, Harvard Kennedy School, and Chair of the Global Agenda Council on China

Key challenges



1 Geopolitical tensions



2 Structural economic reform



3 Managing urbanization



40%

of Asian respondents feel that **governments** should address geopolitical tensions as a priority

Source: Survey on the Global Agenda 2014



55%

of Asian respondents think that **the US** is the world's foremost economic power



25%

of Asian respondents think that **China** is the world's foremost economic power

Source: Pew Research Center Global Attitudes Project, 2014

Despite positive growth prospects, Survey respondents across the Asia Pacific believe the region faces inherent challenges, including structural economic reforms, effective management of urbanization, and geopolitical conflicts.

In recent years much of Asia's geopolitical tension has been centred upon the South China Sea and on maritime disputes between China and Vietnam, Japan and the Philippines. But for Kevin Rudd, former prime minister of Australia, the roots of Asia's fundamental geopolitical disputes reside in the low degree of cultural and linguistic identification as a community, and in long-standing historical animosities fuelled by unresolved territorial boundaries.

Rudd highlights how opposing forces of nationalism and globalization are fuelling deep regional acrimonies in countries that are otherwise interconnected through supply chains. "We need to involve a common concept of community through the wider East Asia-Pacific," he says.

In Rudd's view, the formation of this community will involve economic, political, security and socio-cultural concepts. Trade propositions such as the Regional Comprehensive Economic Partnership (RCEP) are an important step, as are stronger "effective political mechanisms" within the Asia-Pacific Economic Cooperation (APEC) forum and the ASEAN Regional Forum.

"The truth is, regional institutions in the Asia-Pacific are not as robust as those that have evolved in Europe," says Rudd. "Because the Asia-Pacific region looms as being the strategic cockpit of the 21st century, we need more robust institutions than those we have at present."

Regional institutions in the Asia-Pacific are not as robust as those that have evolved in Europe.



Another challenge for Asia will be presented in the rapid growth of cities across the region. There are already 170 cities in China that

have populations in excess of 1 million citizens, and the country is forecast to gain 292 million city-dwellers by 2050. Meanwhile, a further 404 million Indians are expected to have migrated to cities.

These increases will place a heavy strain on national infrastructure, requiring increased investment in housing, transportation, healthcare and education, among other services. In the long run, Asian economies will also be reshaped by significant demographic shifts.

"Population ageing has profound implications, not least in terms of how sufficient revenue can be generated to sustain the enormous infrastructure investment by the government," says Rudd. "Parallel reforms will also be required for long-term social security insurance, as the traditional patterns of looking after older people will change as family sizes decrease."

In light of these incoming challenges, Asian countries are reforming their economic structures in a bid to adapt. In 2012, President Shinzo Abe initiated bold reforms in Japan for economic revitalization. Dubbed 'Abenomics', the stimulus package focused on monetary, fiscal and growth strategies, but critics argue Japan needs structural reforms for the ambitious economic experiment to succeed.

Meanwhile, China's reform agenda, unveiled at the Communist Party's Central Committee 2013 meeting, placed clear priority on market forces. President Xi Jinping's administration is also aiming to boost the role of the national private sector, to encourage the efficient allocation of financial resources to SMEs, and to reduce China's role in strengthening market prices.

"If China succeeds in this direction, then we are going to have a buoyant half century ahead," Rudd explains. "If not, it won't only be China that faces a massive problem. The rest of Asia will too, and given the global importance of the Chinese economy, so will the rest of the world." ■

North America



Frederick Kempe
President and Chief Executive Officer of The Atlantic Council, and a Member of the Global Agenda Council on the United States

Key challenges



1
Increasing inequality



2
Geopolitical shifts



3
Adapting to climate change

88%

of North American respondents believe it is **unlikely that there will be a political will to implement meaningful strategies** for increasing inequality in the next 12-18 months

The response "unlikely" groups the Survey phrases of "not likely at all" and "not very likely"
Source: Survey on the Global Agenda 2014



41%

of US respondents think that **China** is the world's foremost economic power



40%

of US respondents think that the **US** is the world's foremost economic power

Source: Pew Research Center Global Attitudes Project, 2014

In 2013, President Barack Obama branded income inequality as "the defining challenge of our time". Income inequality in the US has reached levels not seen since 1928, according to the University of California, Berkeley. In 2013, the top 1% of families received nearly 22.5% of income, while the bottom 90%'s share was below 50% for the first time.

It is striking that an administration openly conceding the problem has done little to address it. Our North American Survey respondents named increasing inequality as the issue they are most concerned about, followed by geopolitical shifts and the challenge of adapting to climate change.

Frederick Kempe, President and CEO of the Atlantic Council, agrees that inequality undermines the US as an example for others to emulate. Paradoxically, it is the innovation and entrepreneurship the world admires that has produced much of the wealth.

Globalization and the digital economy, Kempe says, provide greater earning power, so the best way to address the gap is through training and education to increase access to these opportunities.

Regarding tax policy, Kempe says increasing inequality is a reversible trend only if addressed through education and training: "If we use tax income to take on under-education and inadequate training, we can succeed. However if the goal is

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The best way to address the (inequality) gap is through training and education to increase access to these opportunities.
”

simply to punish the fabulously wealthy, greater taxation could kill the goose that's laid the golden egg," he adds. "Let's give people the skills to bring them into the middle and upper middle-classes. Government intervention should advance skills pertinent to modern economies, including maths and science."

According to this year's Survey, 88% of respondents believe that meaningful strategies to combat inequality are unlikely to be developed within 18 months. Kempe believes that American "political dysfunction" – the polarization between Republicans and Democrats in Congress – is making it difficult for the US establishment to build consensus on crucial but contentious issues, from immigration reform to climate change.

While there is 98% agreement among scientists about climate change, only 50% of Republicans say there is solid evidence of rising temperatures. Agreement is smaller among Tea Party Republicans, where only 40% say global warming is happening.

Yet Kempe believes there is sufficient agreement on climate to progress – but less through the United Nations, and more at the G20 level. "The UN can only do so much. They can set targets, but without policy, technology and finance, they become fig-leaves concealing a lack of action. Technology and finance will be crucial to meeting targets, so negotiations may be more effective among the G20, who account for more than three-quarters of emissions, not the 192 at the UN.

Meanwhile, the cautious response of the Obama administration to a series of global events, including the spread of extremism across the Middle East and the Russian annexation of Crimea, raises questions about America's role in the world. Kempe worries that the temptation of US disengagement is dangerous. Although it would satisfy much of American public opinion, it would leave a vacuum that would be filled either by less benevolent actors or chaos.

The fact that Obama acknowledged that the Ukraine crisis and spread of Islamic State require a concerted global response is positive, according to Kempe. "It's a good sign the US sees the need to remain engaged, but do we have the political will required to address the generational challenges that won't be solved in a year or two?" ■

Sub-Saharan Africa



Maria Ramos
Chief Executive Officer
of Barclays Africa Group,
and Chair of the Global
Agenda Council on Africa

Key challenges



1 Education and skills development



2 Building sustainable governance systems



3 Delivering hard infrastructure



Universities were the only stakeholder group in Africa not to rate **education and skills development** as their number one challenge



41%

of African respondents believe that the business sector is the most likely to be impacted by **education and skills development challenges**



36%

of African respondents believe that the government sector is the most likely to be impacted by **education and skills development challenges**

Source: Survey on the Global Agenda 2014

Tellingly, this year's Survey on the Global Agenda revealed education and skills development as the biggest challenge facing Africa in 2015, followed by building sustainable governance systems and the delivery of hard infrastructure. Almost every stakeholder group ranked education as the most important issue; respondents also suggested that business is the stakeholder that will be most affected by Africa's educational challenges.

While UNESCO predicts that Africa will soon be home to 50% of the world's illiterate population, Maria Ramos, Chief Executive of Barclays Africa Group, points to the focus of governments and businesses on creating real improvements through training programmes and scholarships.

"We must make sure that governments remain focused on funding and investing in education and skills improvement, and that they encourage partnerships with donors, business and local communities," she says.

But given Africa's rapid increase in mobile phone users – 40-fold since 2000 – it is clear that technology will play a fundamental role. Ramos points to Ghana's Open Learning Exchange which looks at innovative teaching and learning models, as well as South African experiments with digitizing the curricula and making it available on tablets.

"Apart from the fact that you take away a lot of logistics costs associated with it, mobile technology makes education accessible to young learners in remote parts of the country. It also addresses concerns about the quality of educators because you can upskill teachers quickly and provide them with ongoing support through a range of online platforms."

Education isn't the only area where African leaders must engage with their people.

Ramos highlights the significant improvements in "governance, fiscal management, macroeconomic management and greater accountability" made in countries like Rwanda. She says accountability remains the biggest obstacle to developing appropriate governance. "When you limit democracy and you have a lack of accountability to citizens, you undermine the basic principles that facilitate economic development and ensure broad political stability."

While investment in human capital is critical, the need to address the infrastructure deficit is equally important.

Africa is facing infrastructural challenges – not least with regards to the provision of energy – that have an impact on economic development. Countries including Kenya, Tanzania, Nigeria, Ghana, South Africa and Ethiopia have made significant progress in both the renewable and non-renewable energy sectors, but growth and development can only be sustainable with additional targeted investments. And yet the results of this year's Survey show pessimism around this issue. Almost 40% of respondents doubted that Africa's infrastructural problems would be dealt with in a meaningful way in the near to mid-term future.

More optimistic observers point to the fact that the build-up of infrastructure is supported through foreign direct investments and trade with other emerging economies – such as the record \$200 billion China-Africa trade flows – and agencies such as the African Development Bank and the World Bank. But for Ramos, a significant development is that regional and local investors are starting to chip in. This also helps to shift from traditional investments based on the extraction of natural resources to more "strategic investments focused on a broader set of development opportunities and long term sustainability" ■

Latin America



Alicia Bárcena Ibarra
Executive Secretary of the Economic Commission for Latin America and the Caribbean, and Chair of the Global Agenda Council on Latin America

Key challenges



1 Corruption



2 Education and skills development

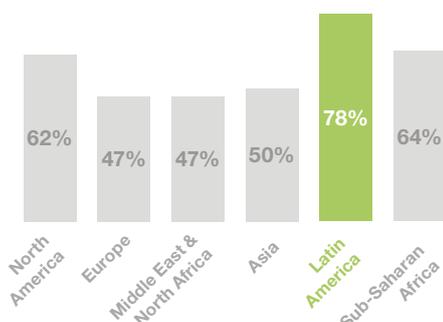


3 Increasing inequality

77%

of Latin American respondents believe that **corrupt political leaders** are a very big problem

Latin American respondents, above all other regions, believe that **education is a very important factor*** to get ahead in life



*Percentage of people who ranked education as "very important" (10 on a scale of 0-10)

Source: Pew Research Center Global Attitudes Project, 2014

Corruption has long been regarded as a significant problem for Latin America – perhaps the most significant of all. As such, it's little surprise our respondents have identified this as the biggest concern currently facing the region, followed by education and increasing inequality.

But for Alicia Bárcena Ibarra, the United Nations Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC), "institutions at the national and sub-national levels in the region have already undergone deep changes to further build their capacities for greater transparency and accountability". In 2012, the government of Ecuador implemented systematic anti-corruption measures, including a rise in police salaries; this subsequently resulted in the country gaining four points, year on year, in Transparency International's annual Corruption Index. The most recent index also showed that Uruguay has become Latin America's least corrupt country, and is now on a par with the United States.

While governmental respondents ranked corruption as their third-biggest challenge, business figures placed it at their top priority. In any case, it is clear that strengthening institutions and the rule of law must remain a high priority on the governance agenda in the region.



We need an enhanced equilibrium between the state, the legislative and judicial branches, the civil society and private sector.



"We need an enhanced equilibrium between the state, the legislative and judicial branches, the civil society and private sector, which are instrumental for change."

Honest, balanced institutions will be essential if Latin America is to tackle its financial concerns. Bárcena

Ibarra underscores the need for policies to transform informal economies into formal ones. While micro, small and medium-sized companies encompass more than 70% of employment, which is often informal, they contribute very little to the region's GDP.

At the same time, the recurring income distribution gap should be reduced by improving education equality, in terms of achievement, access to information and communication technologies and social integration. This year's Survey shows that Latin Americans regard education as the most important factor for getting ahead in life.

While recognizing the importance of education has pushed governments to extend public resources poured into the sector from 3.4% of GDP in the 1990s to 5.3% in 2011, Bárcena Ibarra insists there is an urgent need to improve quality, raise the profile of technical training and increase coverage of pre-schooling, secondary and tertiary schooling.

"Technical and vocational training are fields of education that have been left behind, both in terms of public and private investments. Knowledge, innovation and technology are not sufficiently stimulated by our society. Without major agreements between public and private institutions, the needs of the labour market and modern technology are not connected to technical education."

Investing in the formation of capital and infrastructure are a "high priority for the region", which has excessively relied on consumption and exports. "In this slowdown of the economy, Latin America is extremely vulnerable to the external context. The only way our region can counteract is through investments, both public and private."

Current investments represent 21.7% of continental GDP – levels Bárcena Ibarra says fail to cover the needs in infrastructure, education and health. By comparison, investments in Asia reach 40% of GDP, while the OECD boasts levels ranging between 32% and 36% ■

Tension points: Assessing the state of global geopolitics



Carl Bildt



Rola Dashti



Frederick Kempe



Kevin Rudd

From the rise of Islamic State to conflict in Ukraine, 2014 has been marked by geopolitical friction that led to several dramatic flash points. What can we learn from these conflicts – and how can we avoid similar crises in the future?

Geopolitics

War, separatism and insurgency battered the global political order throughout 2014, with hotspots from Europe to the Middle East, and with few answers forthcoming. Where past years have seen decisive action to preserve the security and standing of Western powers in particular, uncertainty and indecision appeared to have infiltrated capital cities; in September, this culminated in the Obama Administration's admission that it had yet to form a strategy to deal with the rise of terrorist group Islamic State, after more than a decade of state-building in Iraq.

Throughout 2014, the economic and political turmoil of major crises brought three key trends into sharp focus. First, increasingly vehement nationalist ideologies, opposed to globalization,

created new geopolitical flash points and uncertainty in long-dormant ones. In particular, European Union elections showed a distinct trend benefitting nationalist parties, with implications for the survival of the Union. Second, confusion and disengagement by Western powers encouraged political entrepreneurs to test the limits of norms that have long governed inter-state relations, not least in Europe's own backyard. This was perhaps most apparent in Ukraine, where two divergent visions of the country's future clashed in an increasingly bitter conflict that threatened to become an international crisis. Third, crises of unusually grave magnitude led to the formation of new alliances, particularly in the Middle East, with a rapprochement between Iran and the West in order to fight Islamic State that may or may not prove to be transitory in nature.

The threat of Islamic State

Nowhere were these three trends exemplified more plainly than in the Middle East, where the rise of Islamic State has brought violent, far-reaching disorder. Indeed, with the withdrawal of Western forces from Iraq barely complete, the insurgency spread from Syria to threaten the capital, Baghdad, and force significant political change by the country's Shi'ite elite.

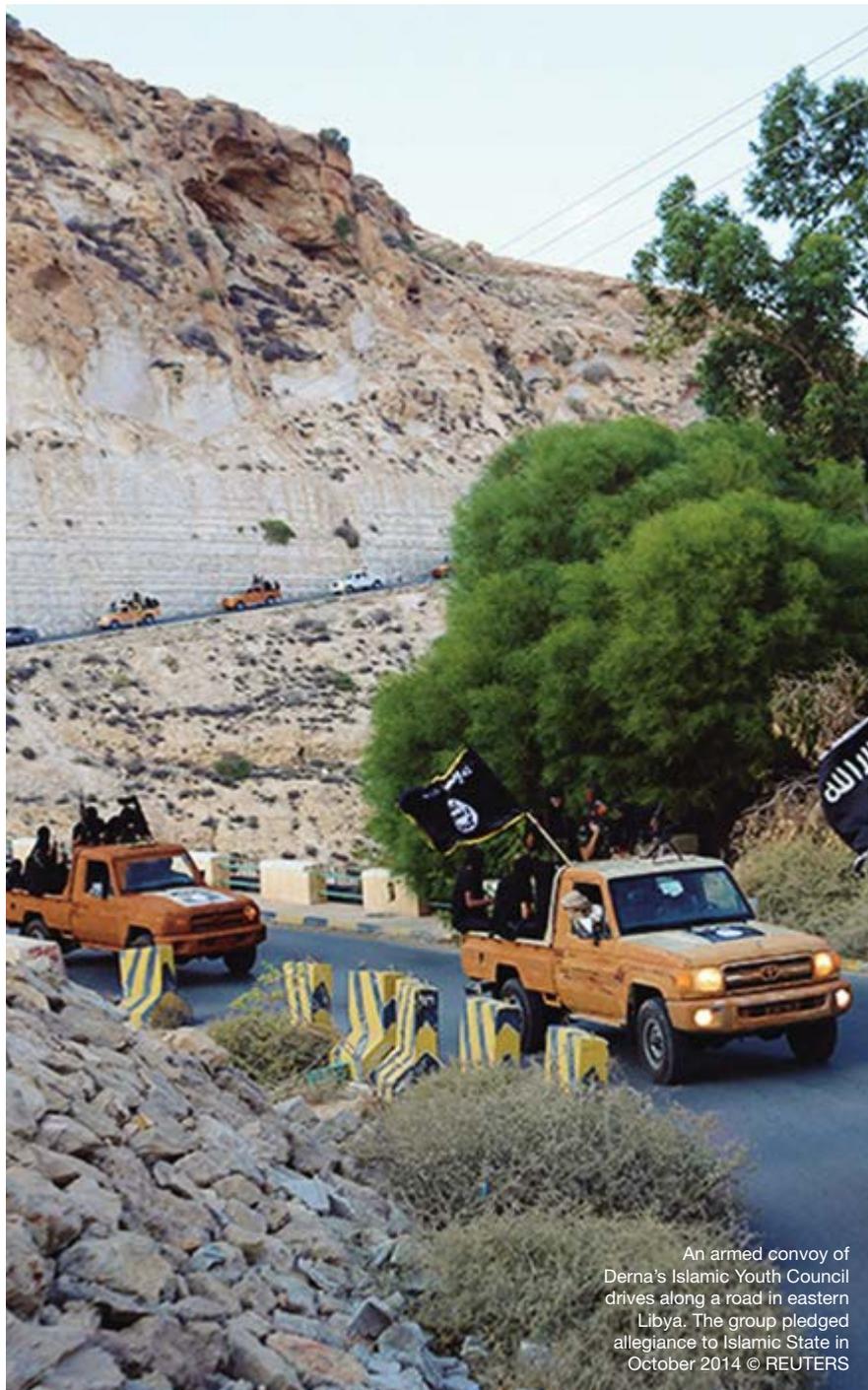
Ultimately, and despite America's reluctance to put 'boots on the ground', the Iraqi army and Kurdish forces have proven themselves able to regroup and prevent further advances. However, Islamic State's determination to establish a caliphate propagating hardline Islamist authoritarianism has its neighbours worried.

Dr Rola Dashti, former Minister for State Planning and Development in the Kuwaiti government (and one of the first women to enter the country's parliament just five years ago), says the group threatens to prevent the emergence of a new Middle East.

"Now, we can't speak about prosperity or progress when you have a terrorist regime that believes in an outdated mode of life, that adopts exclusionary policies, that executes the people who differ from them," she says. "This doesn't match with the request of the masses of the region, and where we want the region to go."

Because of the severity of the threat, Arab countries that have typically avoided intervening in the affairs of a sovereign neighbour have joined forces to drive out, or at least halt, Islamic State. Dr Dashti speaks of "a coalition of the world community against a terrorist regime", with fighting led primarily by Iraqi and Syrian forces with air strikes and logistical support from other countries.

Frederick Kempe, President and CEO of the global policy think-tank, The Atlantic Council, thinks the United States' decision to re-engage in Iraq, working alongside a coalition of regional allies, is a model for the future that grows out of the Libyan experience. The US has come to recognize that it can achieve little of lasting value in the region on a unilateral basis, so regional actors must play a role that is substantial and not



An armed convoy of Derna's Islamic Youth Council drives along a road in eastern Libya. The group pledged allegiance to Islamic State in October 2014 © REUTERS

just symbolic to provide the opportunity for a longer-lasting solution.

The involvement of Iran in the coalition against Islamic State, leading to the first direct contact between US and United Kingdom officials and their Iranian counterparts in years, could yet prove to be a breakthrough. Dr Dashti characterizes the current approach as "wait and see", but says the region cannot afford to allow Iran to develop a nuclear capability. Even a peaceful,

energy-focused nuclear programme brings risks to the country's neighbours, including Kuwait, she argues.

Against this backdrop, there was little time for the international community to address longstanding problems, including Egypt's descent into authoritarianism or the Israel-Palestine question. Indeed, the latter erupted into war between Hamas and Israel in Gaza, with an Egyptian-sponsored ceasefire finally ending a 50-day conflict after

numerous short-lived halts in fighting were breached. Although war-weariness and shock at the level of devastation caused in Gaza were evident by the end of the conflict, Israel's sense of security has been compromised and Palestinian grievances heightened, making a lasting peace seem further away than ever.

The Ukraine question

While the European Union remains preoccupied with internal crises and a largely stagnant economy, it has been forced to face a foreign policy crisis that has so far cost more than 2,000 lives and challenges the basic assumptions of its neighbourhood policy.

Russia's support for the separatist groups in eastern Ukraine has brought relations with the West to a new low point, while the latter's response has created its own uncertainties. Kempe says the North Atlantic Treaty Organization (NATO) at its Wales Summit drew a 'red-line' around alliance countries, but that left others in a 'grey zone', where they were neither part of the West nor belonging to Russia: Georgia, Moldova and Ukraine. Indeed, Russia's annexation of Crimea may prove a watershed in the country's international position, potentially intensifying external political and economic strains on the Putin regime. Yet with Putin's foreign policy dependent on re-establishing a sphere of influence for both trading and political purposes, there is a dilemma waiting to be resolved.



A return to the modernization and integration course at least partially attempted before 2012 would bring new opportunities.

– Carl Bildt



Carl Bildt, Sweden's former foreign minister, has been a vocal critic of Russia's actions in the region. The EU's relationship with its neighbour can improve, he thinks, but not on Russia's terms.

“A continued internal authoritarian and external revisionist course would obviously continue to place severe strain on the



Ukrainian servicemen ride on an armoured vehicle near Kramatorsk © REUTERS/David Mdzinarishvili



US President Barack Obama meets China's President Xi Jinping, during a nuclear security summit, in The Hague, Netherlands
© REUTERS/Kevin Lamarque

relationship," he says, "while a return to the modernization and integration course at least partially attempted before 2012 would bring new opportunities."

On the basis of current evidence, there is little appetite for a prolonged confrontation – not least due to the close ties between several European economies and Russia's own.

"What we've seen so far is what I think is the first time in history that the West has relied on economic sanctions in the hope of ending a military conflict," says Frederick Kempe. "To me, that is new, but you just don't know how it is going to play on Putin. We can't be sure how hurting the Russian economy will influence the way he does things."

China's future

While US power may be declining relative to China's rise, the Obama Administration remains positive about increasing its involvement in the region. According to Kempe, officials regret that the president's signature focus on the region was described as a pivot, rather than as an act of rebalancing. America's allies accept the idea that the US needs to pay more attention to a region which is fast becoming the world's economic powerhouse, he says, but were concerned by the notion that the US might be pivoting away from other commitments.

Kevin Rudd, twice prime minister of Australia, cites two threats to the region's status quo: unresolved territorial disputes

and long-standing historical animosities between China and Japan on the one hand, and questions about the roles of China and the United States in the region on the other. Kempe agrees, saying China is not a spoiler in the global political order, but neither is it a full stakeholder. As the country develops a foreign policy beyond mere economic self-interest, it will want to employ many of the levers the US currently enjoys, including military force.

Rising tensions demand the rejuvenation of multilateral bodies, Rudd argues, plus the creation of new regional ones. Indeed, with regional institutions in the Asia-Pacific lacking the robustness of the European Union, Rudd argues for a more ambitious political security dialogue, defined by a common concept of community and a mandate for dealing with and managing security and political tensions when they arise.

Trade: an unlikely answer

With some form of military conflict dominating concerns around the world, now may seem an unlikely time to focus on improving the terms of global trade. Yet many experts think that is exactly what world leaders should focus on. Two deals in particular are worthy of attention: the Transatlantic Trade and Investment Programme (TTIP) between the US and EU, and the Trans-Pacific Partnership (TPP) encompassing 12 countries in North and South America, East Asia and Australasia.



The US must pay more attention to a region fast becoming the world's economic powerhouse.

– Frederick Kempe



According to Rudd, economics tends to draw cultures together, through the vehicles of trade and finance, while identity politics pulls regions and countries apart. He believes that resolving the TPP or a lesser agreement, plus a bilateral trade pact between China and the US, could transform politics in the region.

Dashti, an advocate of more trade between Middle Eastern countries, also emphasizes the benefits of deeper economic relationships on peace and security, while Kempe says a global trade deal may yet be the Obama Administration's greatest achievement in office. The sense of common purpose that defined the West following the Second World War has been flagging recently, he argues, and could be revived by more open and interdependent economies.

But even the most determined action on the international stage may need a firm domestic base. As Kempe says of America: "Our diminishing ability to anchor a liberal economic order is partly because of our decline in the share of global wealth and the rise of emerging powers, but it's also because of our income inequality, a stubborn economic downturn, and domestic political polarization and dysfunction that make our democracy less of a model for others."

In two years the country will have a new president. Whether he or she will be able to reverse the trends that have made 2014 so extraordinarily volatile depends to a great extent on how Americans interpret the causes of that instability ■

Global leadership & governance



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A call to lead



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LGBT: Moving towards equality

A call to lead



David Gergen

Professor of Public Service and Co-Director, Center for Public Leadership, Harvard Kennedy School of Government, and a Member of the Advisory Board to the Centre for Global Strategies

Our world looks in vain for strong leadership. Politicians and religious leaders no longer seem to offer it. David Gergen, Co-Director of the Center for Public Leadership, says that leaders today need to have a global perspective and to serve the greater good.

For decades, the United States military has prepared its future officers for the chaos of the battlefield by teaching them the acronym VUCA – volatility, uncertainty, complexity, and ambiguity. Our geopolitical realities have never been calm and ordered, but in an increasingly interconnected globe, every minor crisis and conflict has the potential to cause huge systematic shifts. As a world we are now facing a future of VUCA and more than ever, we need strong, effective leadership.

This past fall, we lost one of the foremost American scholars on leadership, Warren Bennis, who taught us that “leadership is the capacity to translate vision into reality.” He also showed us that “good leaders make people feel that they’re at the very heart of things, not at the periphery.” But instead of clear vision, skilful

implementation and a collective sense of purpose, citizens around the world have become fearful, distrustful, and impatient.

The Outlook on the Global Agenda illustrates this reality. When you look at the results from this year’s Survey on the Global Agenda, 86% of the respondents strongly agree the world is facing a ‘leadership crisis’ today. In the top five global trends, respondents cite ‘lack of leadership’ and ‘the weakening of representative democracy’. Political leadership is unsurprisingly taking the most heat – in nearly every country surveyed, the public’s confidence in business leaders far surpassed their confidence in government leaders. Further, a hefty 55% of respondents to the Survey said they do not trust government to be transparent and accountable.

Here in the United States, we've had a front row seat to dysfunctional political leadership. North American respondents to the Survey rated "collaboration" and "consensus-building" as two of the most important qualities that make a good leader. And yet, our current Congress is one of the most partisan and rambunctious of the past century, failing to address festering problems. In the White House, his critics believe that President Obama has suffered from a convoluted vision and a lack of foresight, and his multiple stumbles have helped to tank the public's confidence in his leadership prowess.

If you ask the respondents to the Survey on the Global Agenda, there's no ambiguity about the qualities that make for strong leadership. From the US to Europe and Asia, there's an agreement that having a "global perspective" is the number one skill for any strong leader in 2015. "Collaboration" emerges as another key trait, appearing in the top three choices for every region in our Survey, while "communication" was selected by four of the six geographical groups.

So to solve our leadership crisis, something big needs to change. We need moral, effective leadership, collaborating and communicating across boundaries – business, non-profit and political leaders all have a role to play. And in a world where disruption is the name of the game – whether it's due to a new technology or the increased frequency of political uprisings – it's more crucial than ever that leadership engage and involve the public. On one hand,

social entrepreneurs and innovators are thinking up new ways to tackle our biggest problems and need to be brought into the fold. On the other, frightening trends such as sky-high youth unemployment in countries of the Middle East, Mediterranean and beyond demand much more targeted efforts.

On the international stage, we need our leaders to overhaul the system of global governance which aspires to provide leadership on a collective, worldwide scale. A majority of respondents believe global governance is a good idea, yet 87% believe it is poorly executed. This should come as a surprise to no-one but must remain a grave concern to us all.

But finally, we must remember the old adage that we get the leadership we deserve. We the people bear responsibility. In one country after another, political polarization has come in part because the middle has fallen away and engagement has been dominated by extremists. Globally, we the people have been hesitant to speak up when it matters most, when we are facing the toughest of crises – from climate change to poverty to fiscal stability, and so on.

Famously, Abigail Adams – that extraordinary woman – wrote to her young son John Quincy in the bleak days of the American Revolution: "These are times in which a genius would wish to live... Great necessities call out great virtues."

This year's Survey on the Global Agenda makes clear the necessity for strengthened leadership and to call out great virtues ■



We need moral, effective leadership, collaborating and communicating across boundaries – business, non-profit, and political leaders all have a role to play.



55%

of respondents do not have confidence in their government to be transparent and accountable.

Source: Survey on the Global Agenda 2014

Global Leadership Index

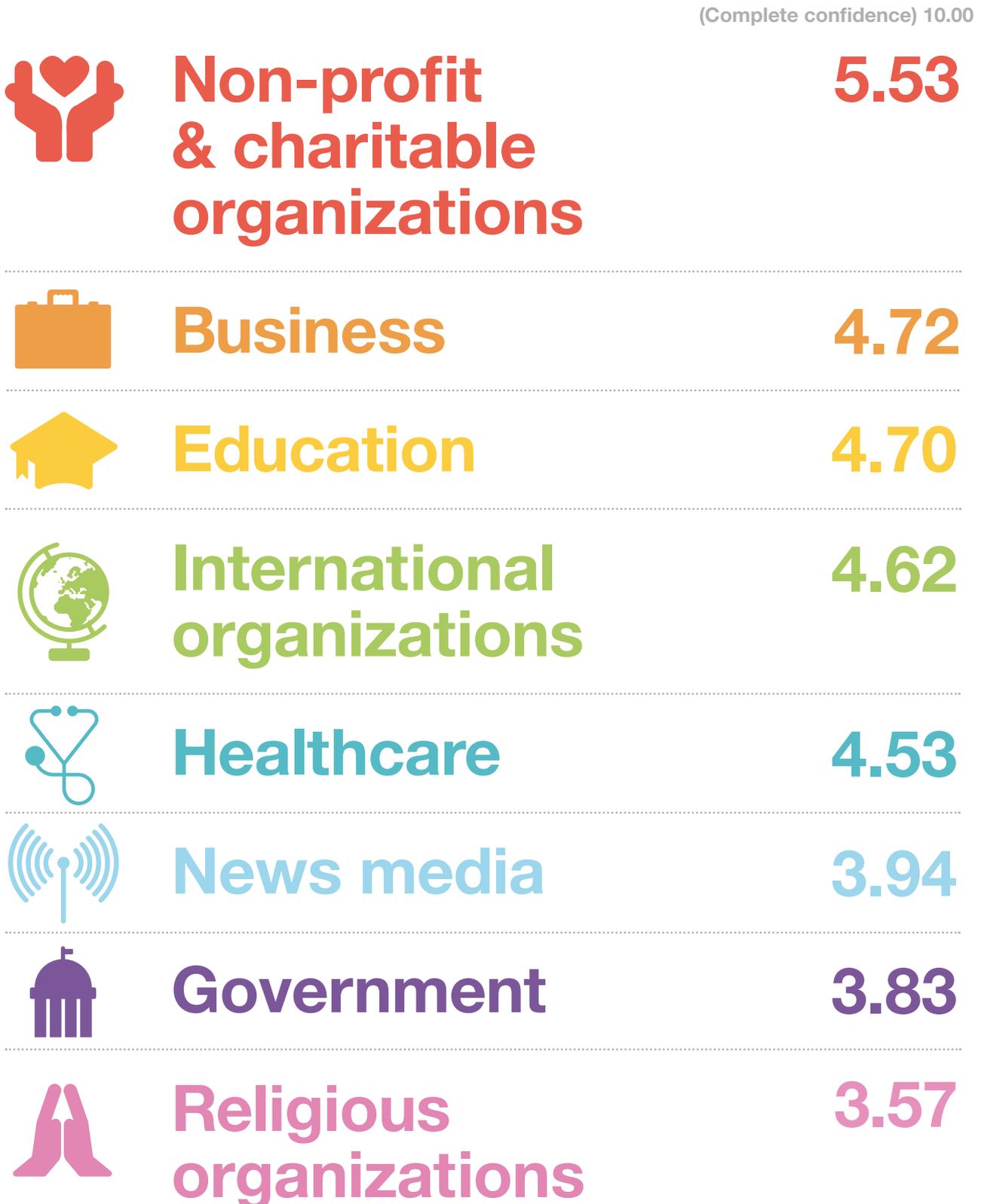
One of the major threads running through this year's report is the crisis of confidence in leaders which has grown on a national and global scale. As citizens lose faith in democratic institutions and geopolitical conflicts proliferate, it is clear that a lack of leadership in the world today is contributing overall to a leadership crisis. The aim of this chapter is to provide a global overview on the perception of leadership across various sectors.

Using a methodology based on the National Leadership Index created by the Center for Public Leadership at the Harvard Kennedy School, the respondents of the Survey on the Global Agenda have rated their confidence in the leaders of their countries. The Index uses 37 indicators to better capture the perceptions of and challenges facing global leadership, with the final results ranking leadership across national and regional levels, as well as by sector.

In order to highlight the diverse and multistakeholder nature of leadership in the 21st century, we have emphasized the rankings per sector, which are displayed overleaf. Strikingly, people's confidence in religious leaders is lower than any other sector, while civil society and business lead the way. Country and regional rankings can be found inside the gatefold, along with the qualitative findings from our questions about what can be done to address this crisis. For our respondents, the skills needed for global leaders today are a mix of traditional competencies and a more global perspective.

Explore the section for yourself by diving into the results over the coming pages. The comprehensive breadth of the rankings and statistics ensure that this is one of the most complete pictures of leadership the Forum has ever produced ■

Which sector is the most trusted for its leadership?



Source: Survey on the Global Agenda 2014

Non-profit & charitable organizations

Global Leadership Index sector ranking

#1

55%

have confidence in non-profit leaders to **advocate for the marginalized or under-represented**

Region with the **greatest confidence** in non-profit & charitable organizations:

Region with the **least confidence** in non-profit & charitable organizations:



Education

Global Leadership Index sector ranking

#3

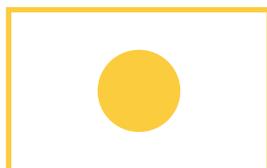
The younger generation (20-29 years old) has the lowest level of confidence in education leaders (4.44)

Country with the **greatest confidence** in education leaders:

Country with the **least confidence** in education leaders:



Switzerland (5.77)



Japan (4.26)

Business

Global Leadership Index sector ranking

#2

Almost 3 times as many respondents have confidence in business leaders than in religious leaders

Region with the **least confidence** in business leaders:

Region with the **greatest confidence** in business leaders:



International organizations

Global Leadership Index sector ranking

#4

Region with the **greatest confidence** in leaders of international organizations:

Region with the **least confidence** in leaders of international organizations:



23%

have confidence in leaders of international organizations to **effectively implement the mandate of their organization**



42% do not have confidence in leaders of international organizations to be **independent and not influenced** by some political, partisan or national interests

Healthcare

Global Leadership Index sector ranking

#5

Region with the **greatest confidence** in healthcare leaders:



Region with the **least confidence** in healthcare leaders:



Sector with the most confidence in healthcare leaders
Government (4.88)



43% do not have confidence in healthcare leaders to **provide economically viable healthcare**

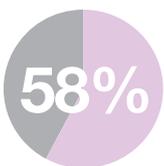
Government

Global Leadership Index sector ranking

#7

 Sector with the least confidence in government leaders

Business (3.67)



58% do not have confidence in government leaders **not to abuse their position of authority and power**



Men (**3.90**) have greater confidence than women (**3.69**) in government leaders

News media

Global Leadership Index sector ranking

#6

Region with the **greatest confidence** in news media leaders:



Region with the **least confidence** in news media leaders:



52% do not have confidence in news media leaders **not to abuse their position of authority and power**

The younger generation (20-29 years old) has the lowest level of confidence in news media leaders (3.78)

Religious organizations

Global Leadership Index sector ranking

#8

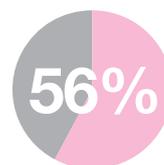
Region with the **greatest confidence** in religious leaders:



Region with the **least confidence** in religious leaders:

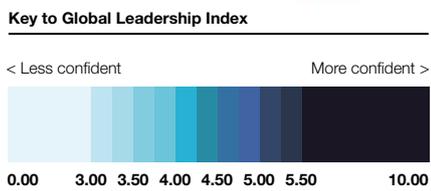
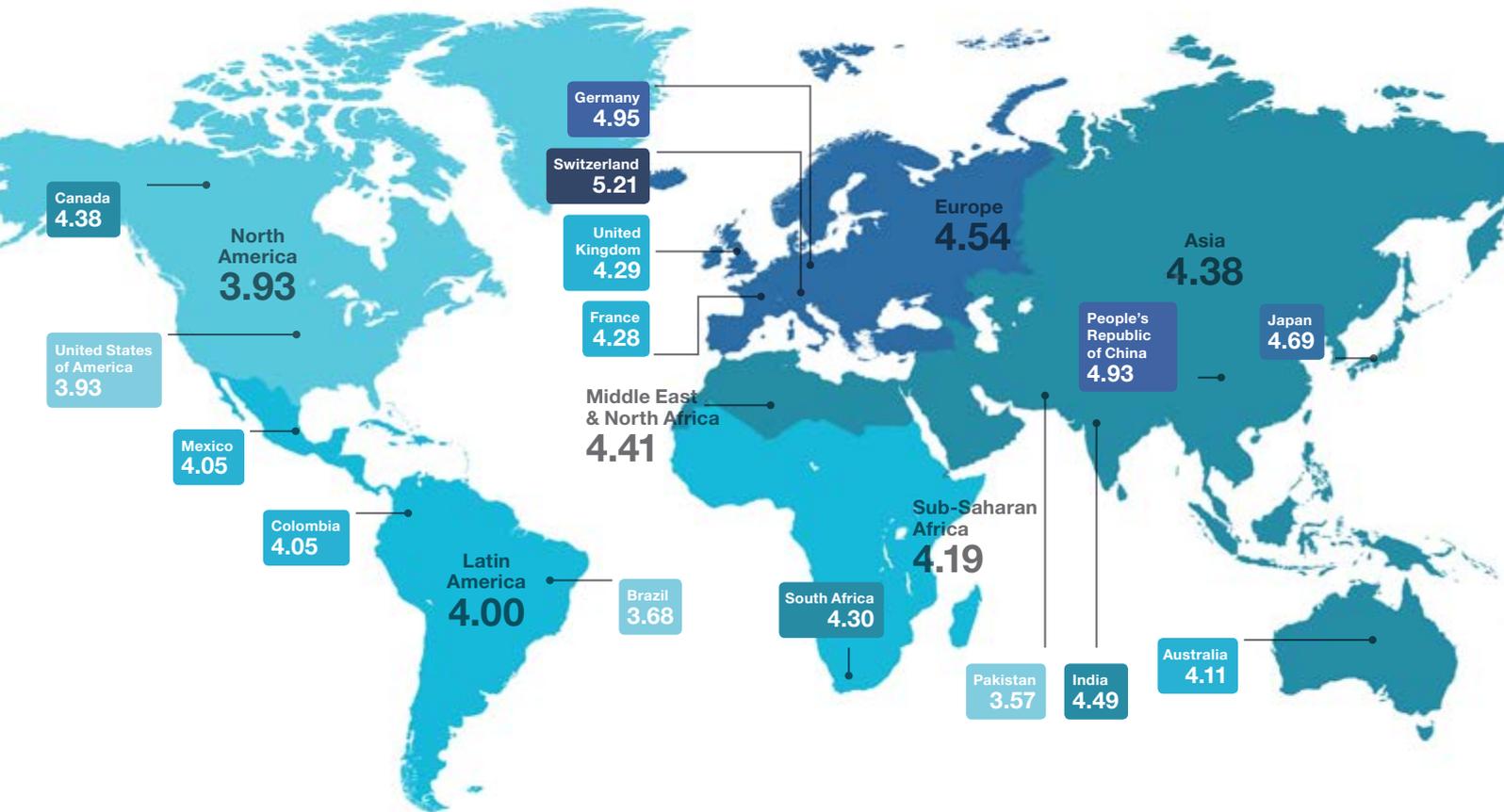


Sector with the least confidence in religious leaders
Business (3.46)



56% do not have confidence in religious leaders to be **active in addressing global problems**

Global Leadership Index



Question scale for individual questions:
 No confidence at all
 Not much confidence
 Moderate confidence
 Significant confidence
 Complete confidence

The phrase **"Have confidence"** groups together the responses of "Complete confidence" and "Significant confidence". The phrase **"Do not have confidence"** groups the responses of "No confidence at all" and "Not much confidence".

Source: Survey on the Global Agenda 2014
 Data based on 1291 survey responses

Top leadership skills

North America

- #1 Global perspective
- #2 Collaboration
- #3 Builds consensus

Top leadership skills

Asia

- #1 Global perspective
- #2 Collaboration
- #3 Communication

Top leadership skills

Sub-Saharan Africa

- #1 Relates to everyday people
- #2 Collaboration
- #3 Communication

Top leadership skills

Europe

- #1 Global perspective
- #2 Communication
- #3 Collaboration

Top leadership skills

Latin America

- #1 Collaboration
- #2 Highly moral
- #3 Global perspective

Top leadership skills

Middle East & North Africa

- #1 Collaboration
- #2 Inspirational
- #3 Communication

New governance architecture



Ngaire Woods
Dean, Blavatnik School of
Government, University of Oxford,
and Vice-Chair of the Meta-Council
on the New Architecture of Governance



The shift in international power relationships that we are currently witnessing may be dramatic, but it certainly isn't new.



Our systems of governance are struggling and the global balance of power is shifting – so how should we respond to this challenge? Ngaire Woods, Dean of the Blavatnik School of Government at the University of Oxford, reveals the new strategies that could change the way we lead.

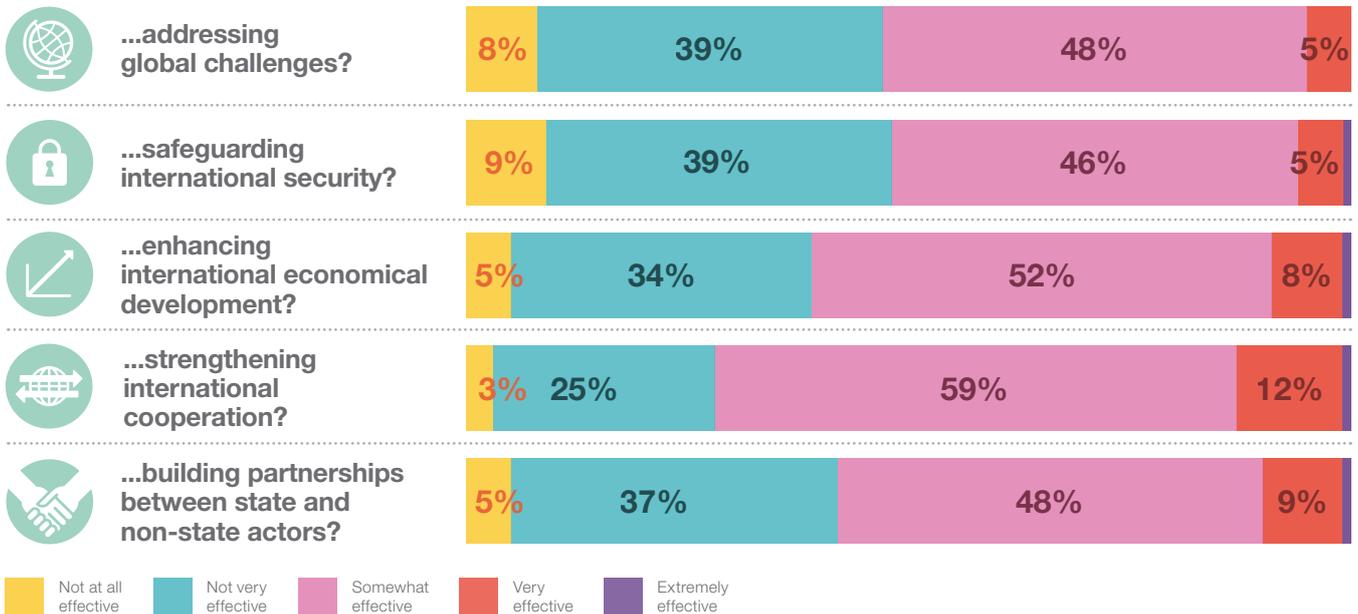
We all need a better understanding of, and a greater empathy with, how other countries look at the same situation. With each crisis that arises, there is often a temptation to make everything into a Hollywood script: these are the bad guys, these are the good guys and it's a simple war of good against evil. But we know that humanity isn't that simple. For power politics to work, countries must make decisions even when they don't agree – and that takes a degree of understanding of the other side.

Over the last decade, the perceived failures of global governance have left us grappling for new solutions, and wondering whether we need to go back to basics. In the Survey on the Global Agenda 2014, more than 8 in 10 said they believed new structures for global governance needed to be developed.

Even the international crises that have emerged in just the last 12 months, from the rise of Islamic State to Russia's intervention in Ukraine, would suggest we are at a critical moment in global politics. The hegemon that in the past could be relied upon to maintain order is now thought to be receding, leaving emerging countries to make a play for strategic assets.

We've seen this happening before in the dying days of the Ottoman Empire, the Habsburg Empire, and after the First and Second World Wars, as old, great powers waned and new ones grew in influence. The shift in international power relationships that we are currently witnessing may be dramatic, but it certainly isn't new. But how should the world respond now? Should a concert of great powers be intervening to declare to parties what they must and must not do? It's difficult to see, in each of these current crises, how great powers can simply order the actors involved to

How effective are the **current global governance structures** (i.e. UN, WTO, IMF, G20) at...



Source: Survey on the Global Agenda 2014

act in particular ways. A different kind of local agreement is needed, whether it's an agreement between Saudi Arabia and Iran on the shape of borders and government in the Middle East, or an agreement among Russia and its neighbours on where its borders should sit.

Aside from geostrategic conflicts, there are other problems that global governance must address. Health issues present a perennial challenge, as exemplified by the recent outbreak of Ebola – a global, infectious disease that requires neighbouring countries and others to cooperate to halt its spread, find a solution and prevent a panic. Finally, if we suffer another emerging market economic crisis, it will be extraordinarily damaging across their respective regions if an internationally coordinated response is not forthcoming.

Each of these crises reminds us why we need international cooperation. There are specific kinds of problems in our world that our leaders can only deal with if they can rely upon other nations to take certain actions.

The view from academia

Academics broadly view global governance in one of three ways. Some believe it's all about power –

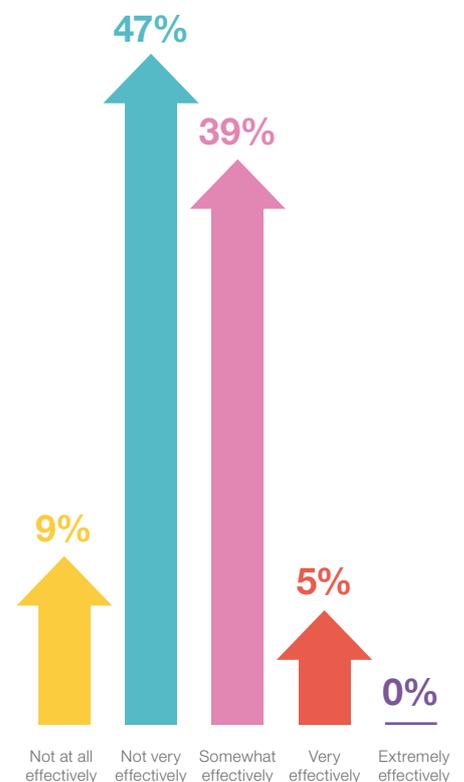
having a hegemon or having a group of great powers. This is a very hierarchical view that says that international order work can only be maintained or restored if a great power, like the United States, is both willing and able to issue and carry out effective threats.

A second view argues that cooperation is about enlightened self-interest. It's a contractual view that believes no single nation can achieve its national interests without cooperating with other countries. Therefore international cooperation is born of mutual interest, and if we can find those mutual interests, we can encourage countries to cooperate on solving problems.

And a third view states that what countries think of as their interests is constructed by their history, society, religion and values so that cooperation is generated by how a community perceives itself, its duties and responsibilities.

Those three perspectives have been around for centuries, but I think what we're starting to see is people reverting very much to the first, power-based view – what people might call realpolitik. For example, although a very strong stance was taken a year ago against Bashar al-Assad, now the argument is that perhaps the United States should

How effectively do **current global governance structures** represent the increasing political and economic power of emerging economies?



Source: Survey on the Global Agenda 2014

How did respondents feel about the statement: **“We need to develop new structures for global governance”?**



32%

Strongly agree



55%

Agree



11%

Disagree



2%

Strongly disagree

Source: Survey on the Global Agenda 2014

arm Syria so as to defeat the greater enemy of Islamic State. This is a clear example of *realpolitik* in practice.

If one lacks an understanding of the first perspective – the nature and working of power politics – the next two strategies will likely make little sense. The relationship formed by power creates a solid platform, allowing the establishment of mutual interests that can enable cooperation; these can then be correlated with these factors such as identity and cultural values. All three perspectives are important, therefore – but I believe that they must run in this order.

Challenges of leadership

For too long it has been assumed that the discussions that take place among the G7 nations, or those between Europe and the United States, are the only important ones, the ones to which we should all listen. Clearly this is not the case.

China has progressed its own bilateral diplomacy. When it holds a summit for African leaders, it brings together all the African authorities in a way that the Europeans and Americans can't achieve; we're getting a new kind of great power politics involving the BRICS which looks very different, and does not always include the United States or Europe.

International cooperation and global governance is often viewed as the domain of the United Nations and the set of global institutions that were created almost 70 years ago. The Survey suggests four out of five respondents believe global governance structures are poorly implemented. Within the framework of the Global Agenda Council on Institutional Governance Systems, I have been leading a project assessing effective leadership in international organizations, which are often accused of being ineffectual. I believe there are two measures which could make these international organizations work more effectively.

Firstly, my belief is that these global institutions should narrow their focus while deepening their engagement. They should tackle only the serious, collective-action problems, and they need to tackle these with their full concentration. We need to put a stop to what I call *mandateitis*. Every time there's a problem in the world, the United Nations gets told to start reviewing it, reporting on it, and taking out a new mandate on it. Alternatively, you start with an organization that's designed to do one thing, which subsequently ends being loaded up with all sorts of other mandates. It's impossible to be effective in either situation, so instead, let's focus on what we really need each international organization to do – and then let them do it.

The second measure is improving leadership. For the last 70 years, countries around the world have fought tooth and nail to have their candidates accepted as the leader of each international organization.

We're watching this play out in the European Union at the moment. Is it Britain's turn to have a European Commissioner? Is it Germany's turn to have an IMF managing director? It's the nationality politics of choosing leaders – and then once the leader is chosen, there's a rather unfortunate habit of just ignoring everything that happens afterwards.

A really good, effective manager leader is not enough, on their own, to make an international organization work. You need a lot of other things



These global institutions should narrow their focus while deepening their engagement.



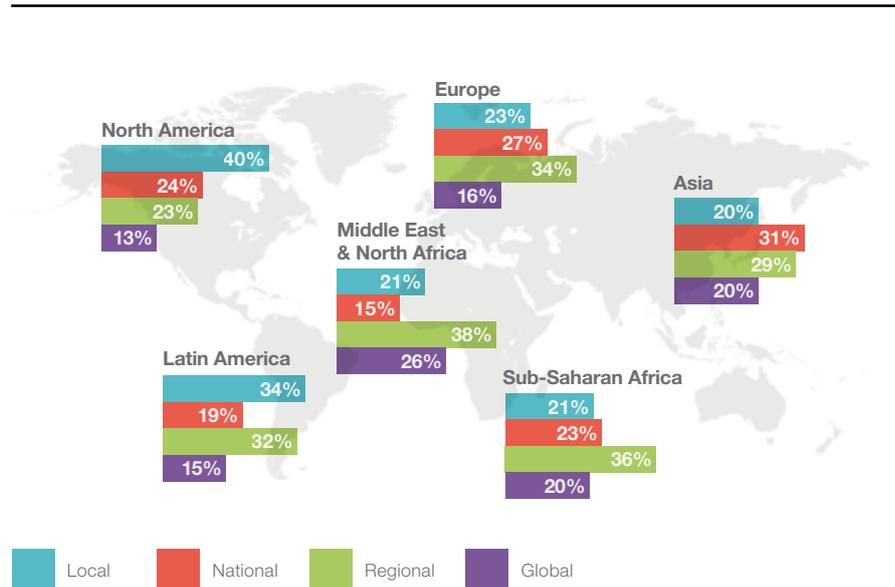
as well – and yet if you do not have an effective manager leader at the top of an institution it’s never going to operate as well as it can. The problem we frequently face is that if the person proves to be incompetent or careless – or simply does not have the aptitude, experience or capacity to do the job – there’s very little that happens, unless there is a scandal, to change the leadership.

We need appointments to be determined by transparent, competitive processes but we also need our leaders to know that they will be held accountable by the whole community that elected them. If you know not only who appointed you, but who has the power to decide whether you are re-appointed for another term, even the most conscientious leaders going to have that in mind as they make key decisions.

Promoting change

The post-Second World War victors, who took up commanding positions in our international organizations, face a dilemma. None of them – the United States or Europe – wants to give up power today in order to ensure their interests tomorrow. The United States and the European Union have solidly refused to push forward further reforms in the International Monetary Fund (IMF) and World Bank for that very reason. No government wants to be the one that gave away a particular power, even though they all agree that it’s in their long-term interest to ensure that these institutions are effective.

Which **form of governance** is expected to be most successful at addressing challenges around the world in the next 12-18 months?



Source: Survey on the Global Agenda 2014

They realize that the only way they can be effective is if there is greater buy-in and greater representation from emerging powers.

We are seeing incremental change, but it is happening at a very slow pace. In the event of a major crisis, the former colonial powers and the United States have a reflex which is, “What should we do about this?” And I think the citizens of the affected countries quite often have a similar reaction, whether they’re arguing for or against intervention. There’s

a presumption that there is a specific set of countries that can and should take action, but increasingly they need to ask is, “Who is it that can most effectively govern this situation in the long term? And how do we make that happen?”

Choosing battles

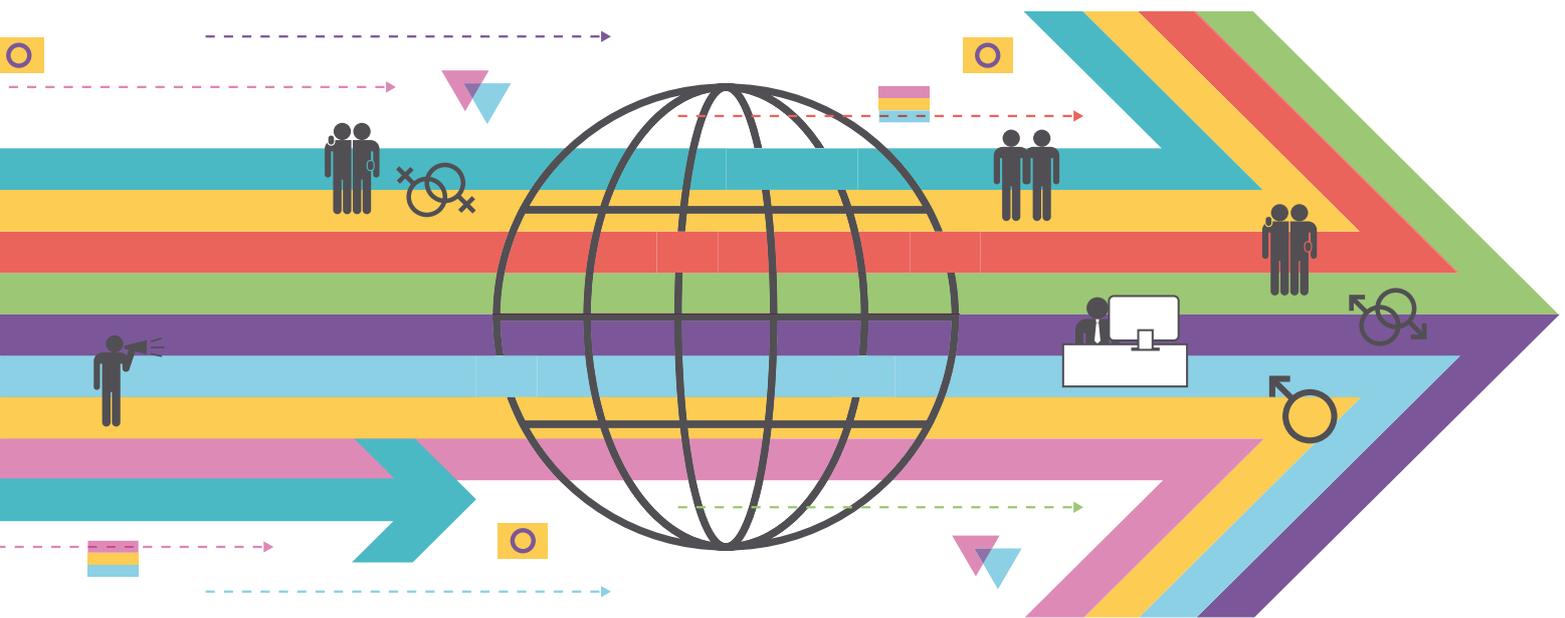
Asking “What can I do?” is a good reaction to a crisis. But rather than always assuming that we must personally intervene and take credit and responsibility for the solution, the better response may instead be figuring out which other country or region is going to solve that problem, and then how could we support them.

Not every battle is ours to fight; sometimes its not even our role to coerce or cajole those who might need to take action. Sometimes we need to say, “Hold on, who is already taking action on this, and what are they doing? Are we getting in the way, or is that the wrong direction?” These are slightly differently framed questions to “What can I do?”, but ones we must ask if we are to learn how to be partners, in this new, more decentralized world ■

85%
of respondents worldwide believe global governance is an **important** concept, but is **poorly implemented**.

Source: Survey on the Global Agenda 2014

LGBT: Moving towards equality



Human Rights Watch monitors governments around the world. Its Executive Director Kenneth Roth oversaw the creation of a lesbian, gay, bisexual and transgender (LGBT) rights programme 10 years ago. Here he looks at how LGBT rights have changed since then.



Kenneth Roth
Executive Director,
Human Rights
Watch, and a
Member of the
Advisory Board
for the Centre for
Global Strategies

Almost 2.8 billion people are living in countries where identifying as gay could lead to imprisonment, corporal punishment or even death. In stark contrast, only 780 million people are living in countries where same-sex marriage or civil unions are a legal right.

These figures, reported by the International Lesbian and Gay Association in May 2014, show there is still much to be done in the effort to attain universal rights for LGBT communities worldwide. Yet there has also been significant progress over the

past 10 years, and this too should be acknowledged. Here, the Outlook on the Global Agenda looks at what has been achieved so far and profiles the challenges that still lie ahead.

What progress has there been on LGBT rights since you established Human Rights Watch's LGBT rights programme?

There's been enormous progress globally and locally. It's important to note that the fight for LGBT rights is not a Western phenomenon; many of

2.8 billion
people live
in countries
where being
gay is a
crime

Source: Human Rights Campaign

the governments at the forefront of the defence of LGBT rights are from the developing world. The historic LGBT resolution at the United Nations Human Rights Council, adopted in September 2014, was led by governments from the global south, primarily Latin America, and backed by others from all over the world, including South Africa. Even governments usually opposed to human rights enforcement, such as Cuba, Venezuela and Vietnam, supported it.

Yet, because of this global support, we're recently witnessing an intensifying backlash. To a large degree, this is due to the greater visibility of the LGBT community in societies that have begun to recognize their rights. But LGBT people are also convenient scapegoats for embattled leaders, who are trying to rally support from more conservative sectors of their society. Whether it's Uganda, Nigeria or Russia, the decision to scapegoat the LGBT community is an outcome of serious challenges to the regime, for widespread corruption or abusive authoritarianism.

The status of the LGBT community is a good litmus test for the status of human rights in society more broadly, precisely because it is such a vulnerable minority – similar to the proverbial canary in the coal mine. Where the rights of LGBT people are undermined, you can be sure that the rights of other minorities and critical members of civil society will soon also be in jeopardy.

When you look back over the last decade, what do you think was the main driver for change, in regulation and people's mindset?

Broader changes in society have driven some of the greater recognition of LGBT rights, such as more equitable relations between genders, the rights revolution generally and the greater respect for individual autonomy. Within that context, you saw the LGBT population gradually coming out, so people suddenly discovered that they had a gay brother or son or neighbour or close colleague, which started shaping public perception and reinforced the social changes.

It's easy for bigotry to exist in a context of ignorance, but when you're being bigoted toward a close friend or neighbour, you start thinking: "Maybe LGBT people are really just people; maybe I should recognize their rights.

Why can't they love whom they choose, just like I can?" Yet the lingering fear of 'the other' is also applicable to some of the other trends we see in this year's Outlook on the Global Agenda – like increasing nationalism and anti-immigrant sentiment.

Conversely, that ties back to what you said about scapegoating; by making the LGBT community less visible – and thus less relatable – unscrupulous leaders can take political advantage...

Yes. In Uganda for example, the LGBT community is scapegoated in an artificial context – the narrative is that homosexuality in general is a foreign import, not part of the traditional culture. There's a great irony here because much of that homophobia is the product of interventions by a well financed US evangelical movement, and the prohibitions in place are a continuation of the British colonial-era bans on same-sex relations. Moreover, it's not like the West has been secretly airdropping gays into other cultures – an LGBT population has existed in all societies for all time; gays have simply been more or less open, depending on the politics and the mentality of the moment.

Given the backlash, who should we be targeting to combat it?

Begin with the leaders doing the scapegoating and their policies. In response to the homophobic environment created around the Sochi Olympics, the International Olympic Committee recently announced new rules for the selection of host cities, including a requirement of full non-discrimination. That implicitly says that if Russia had been fostering the homophobic environment at the time of selection, Sochi would not have been selected. That's a very important signal to send.

At the same time, there must be a broader coordinated educational effort. Anything that helps to increase the visibility of LGBT people, to move beyond past stereotypes and ignorance, to show that gays occupy the same range of positions in life and society as everyone else, that will help to make societal change happen more quickly.

The young are the core of societal change; what

Of Fortune 500 companies:



91%

prohibit discrimination
on the basis of
sexual orientation



61%

prohibit discrimination
based on gender identity
(3% in 2000)

62%

provide **domestic partner**
health insurance benefits
to their employees

Source: Human Rights Campaign

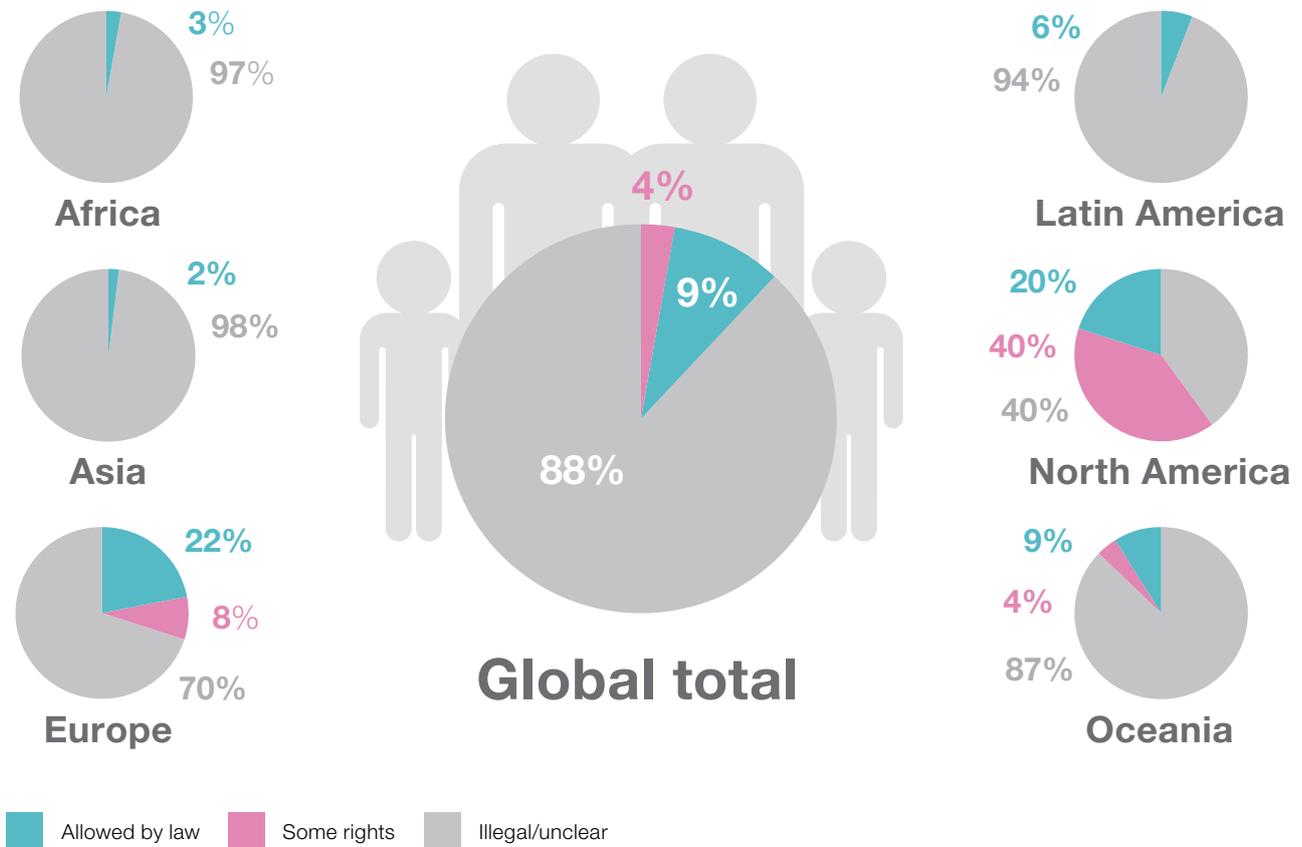
pressures do they face?

In many ways the younger generation is much more accepting than their elders. I see a positive trajectory as young people grow up with variations in sexual orientation around them being the norm. But the younger generation is also a battleground. A lot of the leaders that promote homophobia do so by insisting that they're not anti-gay, but just trying to shelter the impressionable young from 'gay propaganda'. In many ways, they see that the trends are going in favour of LGBT rights and they're trying to fight back with the younger generation.

What role can non-governmental stakeholders play, such as businesses?

Business is a very important stakeholder in this debate. A significant section

In what percentage of the world are same-sex couples entitled to apply for adoption?



Source: Lesbian, gay, bisexual and transgender rights around the world. Feilding Cage, Tara Herman and Nathan Good, 2014

of consumers insist on respect for LGBT rights, so the global corporate giants can't get away with permitting discrimination in the workplace or embracing homophobia in any sense. That becomes important, because these companies operate globally and so can become oases of respect for LGBT rights, even in societies where the government hasn't caught up with the agenda.

Where business currently falls short, though, is in embracing role models. Lord Browne regretted not being more open about being gay when he was CEO of BP, and it's sad that many corporate leaders still feel that they have to live in the closet. The more that corporations can highlight the LGBT people among their leadership, the quicker these societal transformations will be encouraged. That said, if you look at the number of business or political leaders coming out now compared to a decade ago, we're seeing good progress.

Do you think the international community is a good driver for LGBT rights?

Positive action is taken at several different levels – local, national and global. What happened at the UN is important as part of the effort to legitimise LGBT rights; to have such an overwhelmingly positive vote is an important rebuke to those governments that want to pretend homophobia and bigotry are consistent with international human rights standards. They're not.

Other things the international institutions can do is to collect information on the treatment of the LGBT community worldwide to probe governments that fall short of recognition of its rights. Perhaps most critical, though, is to defend the political space in which local human rights and LGBT activists operate.

International multistakeholder organizations, such as the World Economic Forum, could clearly play a leadership role in this debate, by holding

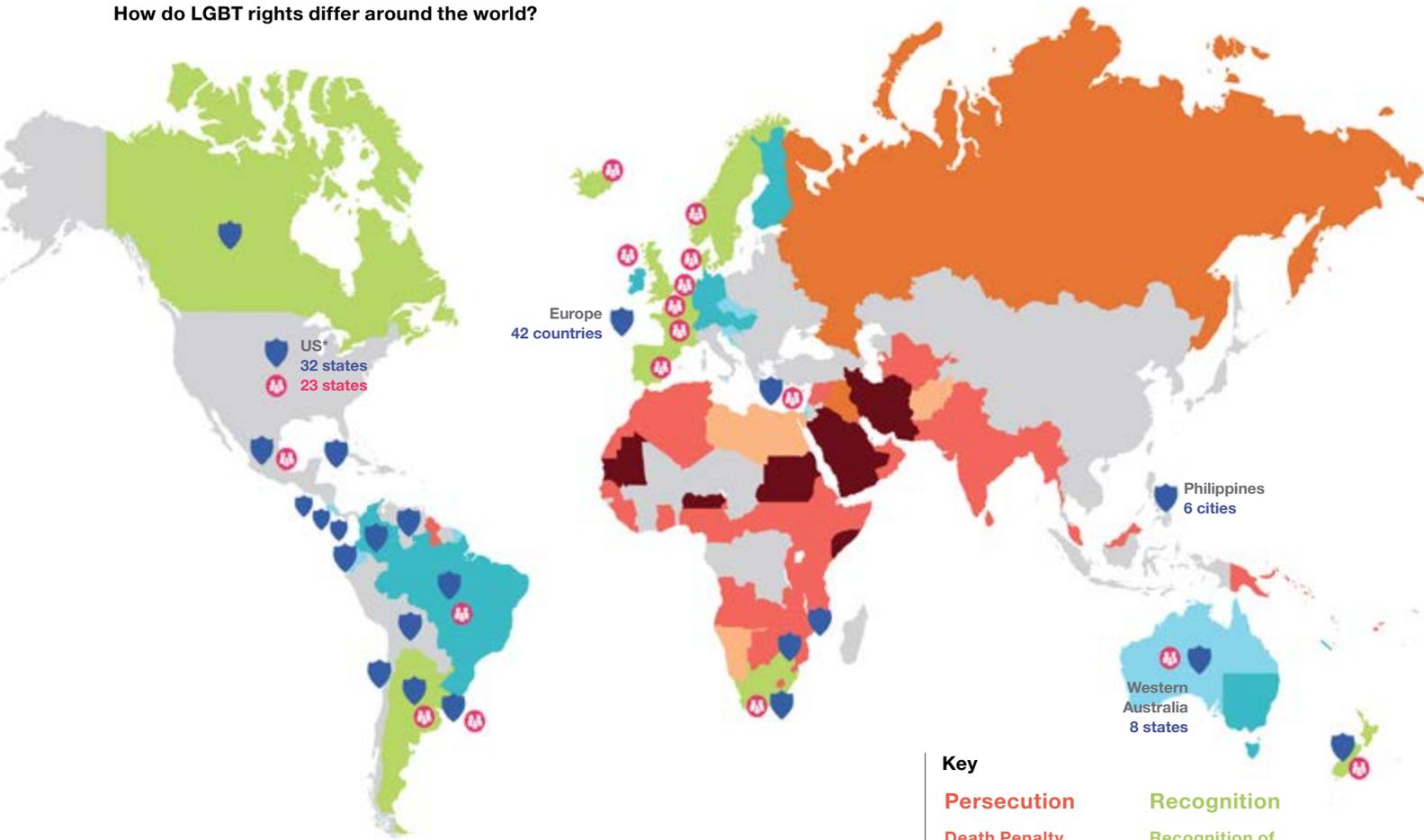
sessions devoted to trends in the rights of LGBT people. For example, a session on best business practices with respect to LGBT rights would give an opportunity to talk about, not just the formal non-discrimination steps, but also the more personal leadership role that corporations might play.

What kind of challenges have civil rights groups faced over the past decade?

Ten years ago we created a formal LGBT programme within Human Rights Watch, because we wanted to make the point that LGBT rights are an essential part of the human rights agenda. One of our first real interventions took place in Egypt, where there had been a crackdown and a raid on what was called the Queen Boat; this was literally a boat in the Nile that had been a gay bar, and the occupants were arrested and brutally beaten by the police.

Human Rights Watch put out a protest, but a few of our Egyptian

How do LGBT rights differ around the world?



Key

Persecution

Death Penalty

5 countries and parts of Nigeria and Somalia

Imprisonment

78 countries

● Death penalty

● Imprisonment

● Unclear: legislation not specifically homophobic but which can be used as such

● Iraq: persecution by organized non-state agents / Russia: "Anti-Propaganda law" restricting freedom of expression and association

Recognition

Recognition of same-sex unions

32 countries and 47 entities

Joint adoption

15 countries and 32 entities

● Marriage

● Equal (almost equal) substitute to marriage

● Clearly inferior substitute to marriage

● Joint adoption

Protection

Anti-discrimination laws

70 countries and 84 entities

● Countries which have introduced laws prohibiting discrimination on the grounds of sexual orientation

● No specific legislation

colleagues objected, claiming that homosexuality was immoral conduct, and the repression of gays was not a human rights issue. They feared that their broader human rights work would be discredited if they took on LGBT rights. Now times have changed and you don't hear that argument anymore; there is a vigorous Egyptian movement that embraces LGBT rights as part of its broader human rights programme. But this shows the pressures that civil society groups can face as they take on an area that has been circumscribed by homophobia and regressive views.

Historically we've seen a lot of tension between religious movements and the LGBT community. Do you think this will continue, or is there a positive role religions could take on?

I don't view religion as necessarily a negative force, although it obviously sometimes has been. I think enlightened leadership can emerge in all religious traditions. No tradition is static, every tradition is subject to ongoing, endless interpretation, so there is ample room

within them all to respect something as essential as a person's sexual orientation.

Look within Christianity. On the negative side, you have the right-wing evangelical movement, which is very well-funded and a nefarious homophobic force. On the other hand, you've got the Catholic church which, even before the current leadership, has taken positions against violence and discrimination toward the LGBT community. Pope Francis took it a step further by explicitly adopting an accepting attitude, both at a doctrinal level and in his personal posture and statements. He shows what an enlightened leader can do, even within a very conservative institution.

What is your biggest hope and biggest concern for the future of LGBT rights?

Obviously, this backlash is my biggest concern at the moment. In terms of hope, homophobia is still one of the last acceptable forms of bigotry in some regions, and my hope is that that changes ■

*The US has no federal legislation on gay marriage. 30 states and Washington DC allow marriage for same-sex couples according to state-level rulings (CNN).

Source: The International Lesbian, Gay, Bisexual, Trans and Intersex Association

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Emerging issues

Members of the Network of Global Agenda Councils discuss the issues that will shape our future.



Synthetic biology: Designing our existence?



Nayef Al-Rodhan
Honorary Fellow,
St Antony's College,
University of Oxford,
and a Member
of the Global
Agenda Council
on Nanotechnology

The latest scientific advances will soon enable us to take charge of evolution itself. Synthetic biology is a new form of engineering that involves the creation of complex, new biological systems. It is the result of the confluence of knowledge in life sciences, engineering, and bio-informatics, and the most promising innovations in this new field – genetic design, protein manufacture and natural product synthesis – could have a revolutionary impact on our lives, particularly with regards to the production of energy and medicine. It brings with it gigantic opportunities and risks.

Early innovations may include personalized, genome-specific medications for the treatment of cancer and degenerative diseases such as Parkinson's and Alzheimer's, and pro-environmental bacteria designed to counter the effects of pollution; picture a microbe that 'eats' the toxicants in a contaminated body of water. As an alternative to existing, limited energy sources, we could also engineer the mass production of cellulosic ethanol – a renewable

plant-based biofuel that produces very low carbon emissions.

On the other hand, synthetic biology could also prove to be extremely hazardous. Even among enlightened citizens and scientists, there's a great deal of concern surrounding the field – and rightly so. These innovations have tremendous possibilities for good, but they could be devastating without proper regulation. Certain DNA products have huge capacity for virulence or pathogenicity: Mad Cow Disease is no more than a prion – a tiny little protein, smaller than a virus – but its effects are potentially devastating.

These new DNA products are quite consequential in terms of health and global security, but it wouldn't require much for a rogue state or scientist to duplicate the technologies involved. The core knowledge isn't difficult to acquire, and if an entity with an understanding beyond amateurish were intent on using or misusing it, they wouldn't find it hard to do so. Even among engineers with positive intentions, working with nanomaterials is extremely risky: if you create tiny



**Chromosomes
range in size**

from

**50
million**

to

**250
million**

bases* each

*Bases are the building blocks of DNA

Source: Ensembl genome browser release 68, July 2012



Synthetic biology could also prove to be extremely hazardous. Even among enlightened citizens and scientists there's a great deal of concern surrounding the field.





A scientist prepares protein samples for analysis at the Institute of Cancer Research in Sutton, UK © REUTERS/Stefan Wermuth

Forecast future value of DNA sequencing market



\$3.5 billion
value of DNA sequencing market in 2012

\$11.7 billion
estimated value of DNA sequencing market by 2018

Source: BCC Research, DNA Sequencing: Emerging Technologies and Applications, February 2014

both within and across societies? Do parents have the ethical and legal right to design their babies the way they want to, or should there be bio-ethical oversight approval mechanisms? These are serious concerns, and they operate at the state level in addition to affecting individuals.

The protective response required is not easy, but necessary. We must aim at creating oversight mechanisms that mitigate risks without stifling innovation. Because of the diverse national and commercial interests involved, oversight can only be provided by a powerful multistakeholder organization – one that can hold states to account, as well as non-state actors, from biotechnology companies to individual scientists.

Above all, we should remember that human nature is an uncertain variable. The idea that we have innate morality competes with the brutality, inequality, and everything else that fills the history of our species. We must never be complacent about the virtues of human nature – thus the need for very stringent governance paradigms for these extremely powerful new tools ■

particles without the necessary oversight, sometimes the results are small enough to integrate into normal DNA sequences when they come into contact with them, producing unforeseen mutations.

In addition to these security threats, the rise of synthetic biology poses a series of ethical considerations. On a philosophical level, I believe that man is an emotional, amoral egoist. Our moral compass is steered by the frameworks in which we find ourselves, and we are governed primarily by self-interest and emotional motivations. These motivations, combined with biological innovations are now leading us towards personal enhancements, both physical and cognitive.

The cognitive enhancements are far more problematic, not least because the mind

defines who we are. Within a decade or so we will have the ability to enhance our mental dexterity, not only in terms of mental ability, but also our emotionality (or lack thereof). While we might like to pretend otherwise, emotions are physical, cellular and subcellular neurochemical events; once we understand this better – we know quite a bit already – we should be able to influence mood.

The very concept of biological and cognitive enhancements poses significant questions. Who will be enhanced, and will this create a dangerous societal divide between the enhanced and the non-enhanced? With the chronic gap between rich and poor citizens now the top trend in this year's Outlook, could synthetic biology result in even more dangerous inequalities



Brain-computer interaction: Transforming our networked future?



Corinna Lathan
Founder and Chief Executive Officer, AnthroTronix, and Chair of the Global Agenda Council on Artificial Intelligence and Robotics

The interaction between human beings and machines has enabled us to achieve incredible things. Now, as we enter a new era of brain-computer interfaces, we should prepare ourselves for innovations that will transform the way we learn, communicate and control devices – and perhaps even each other.

Traditional human-computer interactions can already be described

as brain-computer interfaces (BCI): Our intentions are sent from our brain to the computer through our fingers, via a keyboard, or through a camera that tracks eye movement. However, a more specific definition of BCI describes the ability of computers to read, interpret and act on our thoughts using electroencephalography (EEG).

In a recent experiment at the University of Washington, a researcher mentally



A woman using a brain-computer interface (BCI) at the Hannover Messe industrial trade fair in Germany
© REUTERS/Morris Mac Matzen

controlled the hand movements of his colleague by sending EEG signals over the internet. At Princeton University, scientists have used EEG to show that when someone understands what you are saying, their brain waves begin to synchronise with yours – they are literally on the same wavelength. If this connection can be captured, measured and transmitted, we will soon be able to modify it.

Over the next decade, the ability to control individual machines through EEG will gradually develop, with a broad range of applications ranging from computer games to robotics and prosthetics. We are still a long way from sci-fi clichés such as interface sockets embedded in human spines, or the ability to learn kung fu by downloading a program directly into our brains; it's hard to even imagine the biological basis for 'downloading' a skill. But BCI could certainly help with skill acquisition. My team is currently working with the United States Navy on a project that uses both BCI and physiological sensing to optimize individual and team training. You could soon have a computer that acts as an intelligent tutor, using BCI to sense when your attention wanders, and re-structuring the lesson to set an efficient pace of study.

In time, we will be able to use BCI for simple tasks such as controlling the cursor on a computer screen, or interacting, hands-free, with mobile phones. But in the more distant future, advances in BCI will have huge ramifications for the interaction between human beings. Some colleagues and I have used the term 'cognitive coupling' to describe the synchronization of neural signals between people. In simple terms, you could say that we are looking at the idea of 'connecting the crowd to the cloud'.

As we move from networking devices through the Internet of Things to networked humans, we'll witness a revolution for brain-computer interaction. By capturing human cognition, capabilities and actions,

and putting them in a connected environment, we could become – to borrow a term from Star Trek – a global Borg community, albeit an empathic one.

In the popular TV series, the Borg is a collective of cybernetic humanoids interconnected to function as the drones of 'the Hive'. The image of a Borg society suggests two potential – if extreme – outcomes. In the dystopian depiction, people no longer have a choice over their actions – an external mind, more powerful than yours, would control your every move. The other imagining would see us build an empathic society with a collective consciousness. In such a scenario, we would share each other's perceptions of the world, along with our problems. We would develop a common empathy. If you think of this group consciousness as an individual, it would be in our own self-interest to solve society's problems and to maximize the potential of every human being.

These hypothetical scenarios represent the far-flung future of BCI advances, but even in the short term, this new technology raises many ethical questions - and one of the biggest issues is going to be control. People need to maintain actual control over their lives, not just the illusion of it. At the same time, regulation is unlikely to keep up with the pace of technological development. We're seeing that now with autonomous weapons and the worldwide debate about the legitimacy of drone strikes. If you leave safeguarding to industry and don't consider the ethics at a regulatory level, it'll be too late.

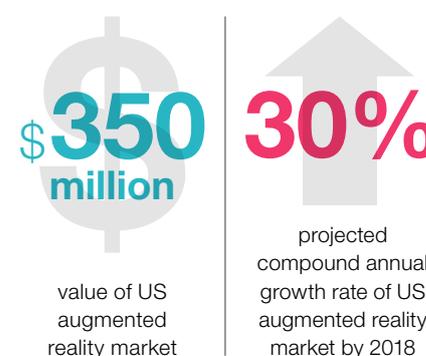
Rather than predicting the future and figuring out the ramifications of our predictions, we should say what we want the future to look like and drive towards that. I think that's where the Forum can play an important role as a convening organization, especially with regards to the Global Agenda Councils. However we pursue this new technology, it's obvious that we're going to need some serious group thinking ■



If you leave safeguarding to industry and don't consider the ethics at a regulatory level, it'll be too late.



The value of the augmented reality market



Source: ABI Research, Cloud Strategies for Augmented Research, 2013



Deep sea mining: The new resource frontier?



Michael Lodge
Deputy Secretary-General, International Seabed Authority, and a Member of the Global Agenda Council on Oceans

The global demand for natural resources continues to grow. As land-based sources decline, corporate and governmental attention is increasingly turning to an area of the planet that has been beyond reach until now – the ocean floor. Hailed as a ‘new resource frontier’, the deep seabed is home to a variety of valuable minerals and metals, which lie hidden in underwater ridges, seamounts and sediment, up to depths of 5,000 metres.

At present, under the United Nations Convention on the Law of the Sea (UNCLOS), any country or deep sea mining company that wishes to exploit the seabed needs an exploration contract from the International Seabed Authority (ISA). There has been a dramatic increase in the number of applications for such contracts. Five years ago there were just six projects in international waters; we now expect there to be 26 by the end of 2014.

Most of the interest over the past three years has come from the private sector. So, what is the prize? The world’s undersea reserves are estimated to include 10 billion tonnes of polymetallic nodules. On average, the most promising of these deposits will break down to about 30% manganese, 1.5% nickel, 1.5% copper, and 0.3% cobalt. In short, the ocean floor is

home to a staggering quantity of useful minerals – and these deposits also contain smaller traces of rare earth elements. Many of these are used in electronics and in the manufacture of ‘clean technologies’, such as wind turbines and hybrid cars. These elements are technically by-products of the mining process, but they are driving a lot of new commercial interest. Japanese geologists estimate that a single 2.3 km² patch of seafloor might contain enough rare earth materials to sustain global demand for a year.

Technological progress in accessing remote areas has also spurred much of the recent interest. Remotely operated vehicles (ROVs), for instance, can gather samples from the ocean floor, which are returned to the surface for analysis. Ore can be extracted by specially designed collectors and transferred to a waiting ship or platform via hydraulic suction, pumping the seabed material up long, hose-like tubes. Once the targeted resources have been filtered out, excess seawater and sediment are subsequently returned to the ocean floor.

The rise in commercial interest in deep sea mining has been accompanied by an upsurge in fears about environmental damage, the potential destruction of marine life and real concerns about the impact

 **98%**
of the oceans’ species live in, on or just above the floor of the sea

Source: The Deep Sea Conservation Coalition

 **\$150 trillion+**
worth of gold resources are estimated to be in the seabed

Source: The Pros and Cons of Deep Sea Mining, 2013 miningaustralia.com.au

Estimated annual seabed metal yield value:



Manganese
\$950m



Nickel
\$759m



Copper
\$259m



Cobalt
\$118m

Source: The Pros and Cons of Deep Sea Mining, 2013 miningaustralia.com.au



A deep-sea mining machine being built for mining company Nautilus Minerals at Wallsend, England
© REUTERS/ Nigel Roddis

on biodiversity. Greenpeace has pointed out that mining exposes sea life to metallic and acidic substances, which introduce toxic particles to underwater food chains. Deep sea trawling has already shown that the destruction of oceanic topography takes a big toll on fish, particularly slow-breeding species such as redfish and orange roughy. Aside from the impact on aquatic ecosystems, these issues could also have serious consequences for the livelihoods and well-being of coastal communities.

Although the ISA has regulations in place to govern exploration of the oceans within its remit, the aim is to develop legislation to cover all aspects of the industrial extraction of undersea resources in international waters. ISA stakeholders have been consulted and the current goal is to have a financial, fiscal framework for exploitation in place by 2016.

Creating a cohesive governance framework for national waters is more challenging. Nations have sovereign rights over resources on their continental shelves and, given the potential economic benefits, some emerging economies see the new industry as a huge opportunity. For example, Papua New Guinea's government has reached an agreement to allow seabed mining in its territorial waters and is optimistic that the project will deliver a significant amount of revenue.

One major region of focus for the industry is the Pacific Islands. In order to address the issue of governance, the Pacific Community, a strong regional organization, is helping countries to put regulatory frameworks in place. In other regions, however, there is a lack of governance – and there are no global standards for deep sea mining in national waters.

If we are to make the most of these precious resources and protect the delicate and diverse ecosystems of the ocean floor, good governance and best practice for the deep sea mining industry must be set in place now ■



Emerging nuclear powers: A safe path to energy security?

Protesters gather near
a nuclear power in
Kudankulam, southern
India © REUTERS



Dr Fatih Birol

Chief Economist and
Head, Economic
Analysis Division,
International Energy
Agency (IEA), and
Chair of the Global
Agenda Council
on the Future of
Electricity

Demand for electricity in the emerging economies is growing very strongly – between 5% and 6% each year, on average, compared to 1% or less in developed economies – and will continue to rise in the decades ahead. Moreover, many of these same countries have goals to improve energy security and avoid emissions of greenhouse gases and other air pollutants.

It's impossible to rely solely on natural gas or sources of renewable energy to meet this demand. Nor is it possible to rely exclusively on coal, the most carbon-intensive fossil fuel.

From our past work it is clear that almost all of the increase in nuclear power capacity over the coming decades is set to come from emerging countries. There are three that are particularly crucial: China, India and Russia. Within the OECD, South Korea is the only country expected to see any notable expansion. There are also many other countries that are considering the introduction of nuclear power for the first time. Although significant caution should be exercised in assessing which might actually succeed and over what timeframe as doing so will

require a lot of time, expertise and determination.

Countries pursuing an expansion of nuclear power face big challenges. Nuclear power plants have high upfront investment costs and long construction times, which creates particular issues in competitive markets where utilities face significant market and regulatory risk. Nuclear power also faces intense public concern about a wide range of issues. Safety is the dominant concern – safety in plant operation, safe radioactive waste disposal and safeguards against the proliferation of nuclear weapons. And perhaps most importantly, there is the need to improve confidence in the competence and independence of regulatory oversight. If these challenges are not adequately addressed, the nuclear component of future generation may be lower than many expect.

Our world is facing twin challenges of climate change and energy security. Nuclear power can be part of the solution and I believe it will remain an important part of the electricity generation mix in the decades to come in many countries ■



Safety is the dominant concern – safety in plant operation, safe radioactive waste disposal and safeguards against the proliferation of nuclear weapons.





Dr Armen Sarkissian

President and Founder, Eurasia House International, and a Member of the Global Agenda Council on Risk and Resilience

Safeguarding nuclear material

You cannot stop the transmission of knowledge. There is no way that you can prevent people learning how to build a nuclear power plant, how to enrich uranium, or even how to make a bomb. If every nation is to have the right to use nuclear energy, there must be disciplined behaviour in its use, both in terms of safeguarding the environment and resisting the temptation to use it as a weapon. Beyond that, the greater challenge is to apply this discipline in a world that is increasingly unstable.

The key to ensuring this is to control and manage the materials that serve as nuclear fuel, such as uranium-235 and plutonium-239. We must reach a global consensus on how to manage these

substances: it could be that a multinational company is empowered to control most of the nuclear fuel worldwide, which it then leases to each country, and when the fuel is spent, it is safely returned. This last stage is crucial, as some spent materials can be used for the production of nuclear arms.

In theory, such an arrangement is workable, but it's up to the politicians to decide if we can reach that kind of agreement. To get to the negotiation table, we must first stabilize Eastern Europe, the Middle East and North Africa; only then can we begin the necessary process of diplomacy and understanding. Because it goes without saying that this cannot be achieved without cooperation and consensus between the world's superpowers ■



There is no way to prevent people learning how to build a nuclear power plant, how to enrich uranium, or even how to make a bomb.

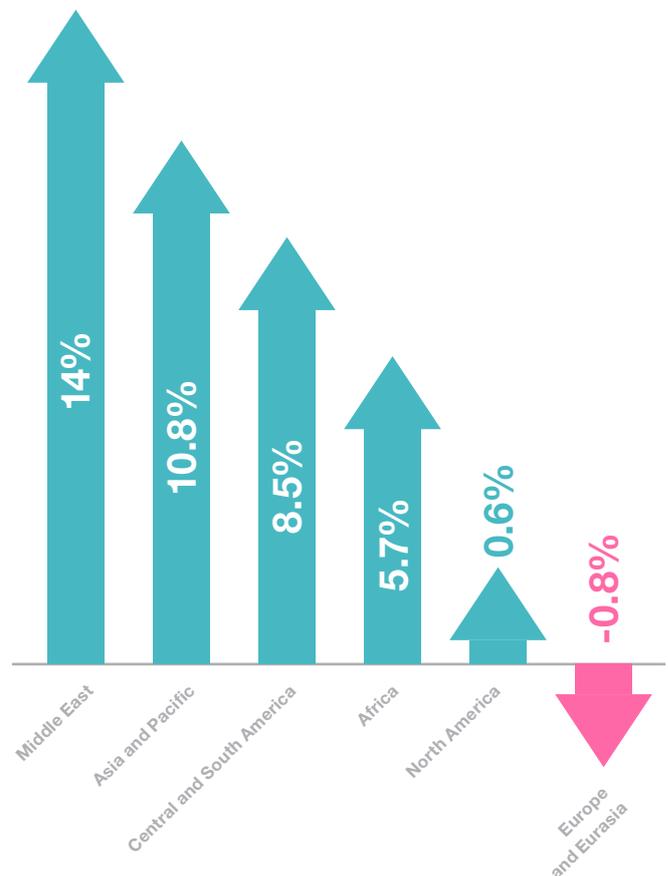


The top 5 countries for primary energy consumption in 2013 (in million metric tonnes of oil equivalent)

	#1 China 2,852
	#2 USA 2,266
	#3 Russian Federation 699
	#4 India 595
	#5 Japan 474

Source: BP Statistical Review of World Energy, June 2014

How energy consumption changed around the world between 2010 and 2013



Source: BP Statistical Review of World Energy, June 2014



The evolution of monetary policy: A new era for central banks?



Dr Adam Posen
President,
Peterson Institute
for International
Economics, and
Chair of the Global
Agenda Council on
Global Economic
Imbalances

Central banks around the world are trying to see how to encourage growth in the wake of crisis, and monetary policy is entering a new phase. We're entering a period where each economy has different issues to tackle, and the biggest story is the increase in volatility and decrease in cross-border correlations of interest rates.

The current challenges facing the major economies require very different approaches to monetary policy, which will create increasing disparity between central bank

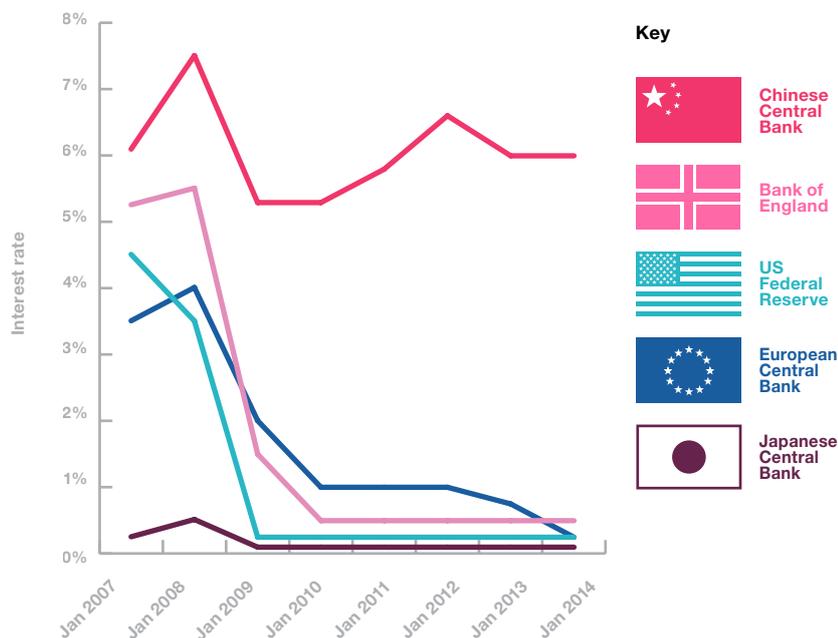
interest rates. The United States Federal Reserve has to work out the limit of the non-accelerating inflation rate of unemployment (NAIRU). The Bank of England has productivity concerns and a potentially worrying housing boom to deal with. Many emerging markets face the traditional challenges of avoiding overheating, while in China the question becomes how to reform the financial sector while not tightening policy too much.

But by far the most pressing monetary policy challenge faces the euro area. The European Central



Traders at work in the crude oil and natural gas options pit at New York's Mercantile Exchange
© REUTERS/Lucas Jackson

Evolution of interest rates of major central banks



Source: www.global-rates.com

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Regardless of whether secular stagnation proves true, we are entering an important period in monetary history.
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Bank’s recent announcement that it would purchase asset backed securities and bonds, and cut the interest rate was a step in the right direction, but it now needs to do enough to prevent a downward spiral. In the future, I hope that the euro area will think of different means of weighing countries’ inflation goals, rather than setting monetary policy for the core economies in a way that has bad spill-over effects.

As a result of these global monetary policy issues we should expect further volatility. For the EU, poor choices could lead to continued low growth and high unemployment, threatening social cohesion and the future of the economy. In developing countries, reactions to slowing growth need to be checked to avoid potentially disastrous bubbles arising. The US economy itself will be relatively stable, but the value of the dollar is likely to fluctuate.

The most pressing intellectual challenge for monetary policy authorities is figuring out how countries from Norway to Australia and from Singapore to Chile can deal with massive capital inflows, and the potential for volatility those create.

The bubbles caused by these inflows tend to manifest themselves in the housing market, which means that central banks’ use of macro-prudential instruments will become more important. Possible solutions include looking at loan-to-value ratios, trying to reduce demand, or impacting mortgage supply by adjusting banks’ capital targets, which forces them to hold more funds in reserve.

There’s also been considerable discussion about the broader prospect of secular stagnation, which raises the possibility of negligible or no economic growth in the most developed market-based economies. This is a serious concern, but there are several reasons why we should be cautious about assuming this is to occur, given the speculative nature of the discussion.

It is true that we can expect lower growth rates in the medium-term due to changing demographics and a decrease in the development of breakthrough technologies. However, the discussion about secular stagnation has largely been around country – rather than per capita – growth rates, so it overlooks the rise of incomes in emerging markets, which might accelerate despite stagnation in the frontier. Both matter, but I would argue the rise in average per capita income has a greater impact on world affairs and stability.

Another reason is that there’s always room for structural reform. We talk about it in Europe and Japan, but we certainly should be doing it in terms of healthcare and primary education in the US. Over two to five-year periods, structural reform initiatives can make huge differences to growth rates.

Regardless of whether secular stagnation proves true, we are entering an important period in monetary history. Central banks are going to have to take a more active role in dealing with the challenges facing the major economies if they are to be successful in reducing financial volatility. What was called unconventional will become increasingly common ■

Mapping the future

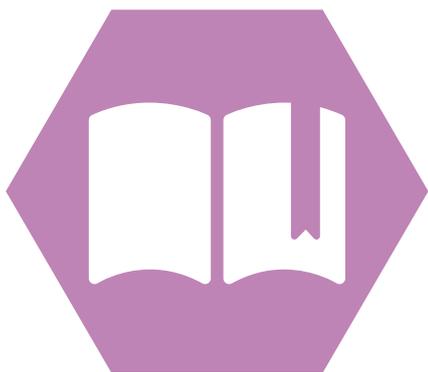




The world is changing at an unprecedented rate, driven by technical innovation and new ways of thinking that will fundamentally transform the way we live. As we move away from the old structures and processes that shaped our past, our experts reveal the opportunities that await us.

Our societies are defined by the way we interact with one another, and by the tools and institutions that support these interactions. Over the past 10 years, the rise of the internet and networked communication has led to dramatic shifts in the way we collaborate and share information; these changes will continue to gain momentum as they mature, proliferate and escape the bounds of traditional devices.

At the same time, the disruptive nature of technology can be seen in the evolution of our social infrastructure, and in groundbreaking new approaches to the way we work, teach and learn. In the pages that follow, we cast a light on the developments that lie in store for the future of employment, education and the internet itself ►



The future of education

How do we best educate the students of tomorrow? What we teach our children – and how we teach them – will impact almost every aspect of society, from the quality of healthcare to industrial output; from technological advances to financial services. Our Global Agenda Council experts join the debate to offer various visions of how education may evolve, and how governments, educators, employers and students will need to adapt to keep pace with the bewildering array of possibilities that will shape all of our futures.



Anant Agarwal
Chief Executive Officer, EdX, and a Global Agenda Council alumnus



Tan Chorh Chuan
President, National University of Singapore and a Member of the Global Agenda Council on the Future of Jobs



Shirley Ann Jackson
President, Rensselaer Polytechnic Institute, and a Global Agenda Council alumnus



Mona Mourshed
Senior Partner, McKinsey, and a Member of the Global Agenda Council on Education

The impact of technology

Rapid and dramatic developments in technology, the internet and online learning have outpaced projections from just a few years ago. And while the concept of internet-enabled study is hardly a new phenomenon, Massive Open Online Courses (MOOCs) could be the spark that ignites significant changes in the way the world teaches and learns. That's the view held by Professor Anant Agarwal, CEO of edX, the online learning destination founded by Harvard and MIT.

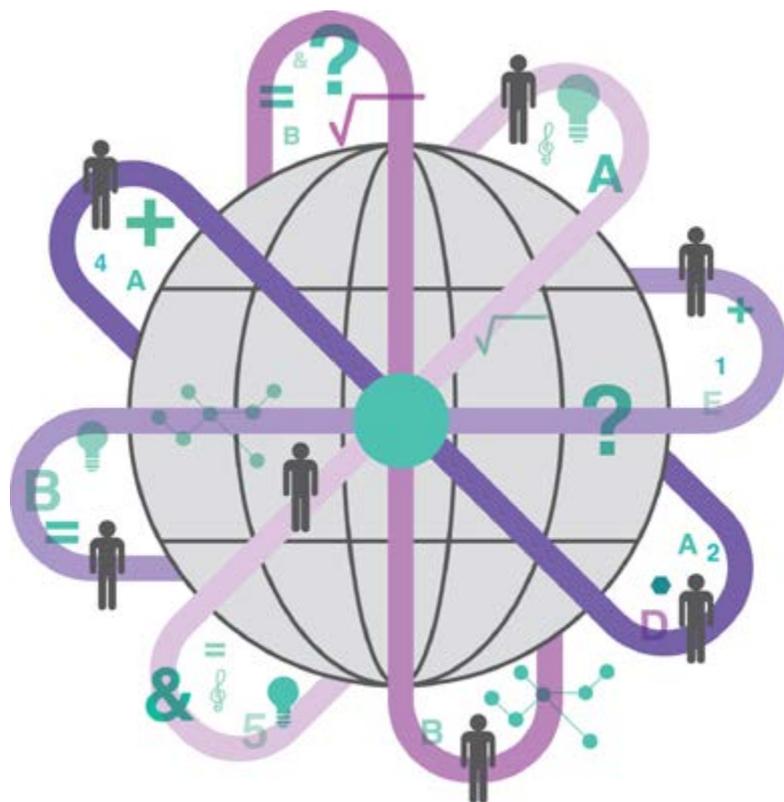
"We're seeing a revolution in education as we speak," says Professor Agarwal, "Technology is casting a spotlight on the innovation of massively open courses, of dynamic new study options that are available to everyone, regardless of background or location."

Flexible, mass stream and open-source learning, he argues, will revolutionize the landscape of education. "In the future, you could go to university having done the first year of content online. You could then come and have the campus experience for two years, before going on to get a job in industry where you become a continuous learner for the rest of your life."

Professor Agarwal believes that this flexibility, combined with instant online feedback, will vastly improve learning outcomes. But this dynamism also extends beyond a mere expansion of study options.

The evolution of MOOCs will not only have a profound effect on how we teach in the future, but who we teach, says Professor Agarwal. MOOCs and their technology could be used to 'virtualize' education on a mass scale, delivering low-cost learning opportunities to developing countries that have skipped what he calls the "landline generation" – countries such as India and Kazakhstan, and Africa's emerging economies where mobile phones are the primary form of communication. It is, he says, much easier to connect thousands of people to the internet and provide them with subsidized tablets, than to build hundreds of bricks-and-mortar campuses.

Professor Agarwal believes that open source MOOCs will adapt organically and democratically to the specific needs of the developing world. The use of the open source model will promote universal access to study materials, setting each MOOC in competition with itself as well as anyone else who wishes to challenge and modify its platforms.



“When something is this powerful and this game-changing, we need to be steering it as a non-profit venture, and even move beyond the concept of non-profit. It should be a platform that everybody can take, and evolve in the way they see fit. Why should any one organization be in charge of it?” he says.

Increasing globalization

Not everyone is convinced that access to MOOCs will prove to be a universal solution to the world’s education challenges. Technology and online learning have exponentially extended the reach of the humble classroom – but this a trend that Professor Tan Chorh Chuan, President of the National University of Singapore, approaches with some caution.

In Professor Tan’s view MOOCs distributed by well-established universities, while undoubtedly having a positive impact, fail to take into account the heterogeneous nature of education. And this is particularly true in the context of developing countries.

“There is unlikely to be a panacea in terms of a form of education which would meet different needs worldwide,” says Professor Tan. “Another disadvantage is that you could end up disempowering local education institutions.”

He envisions a more symbiotic approach: “For example, a MOOC provider could work with a number of universities in Africa or in India in order to customize or contextualize the learning materials. They could also work directly with the educators so that face-to-face components could be developed.”

As technology continues to replace routine jobs, education must adapt, says Professor Tan. Modular and online learning will play a significant role in this, but are no substitute for a holistic learning experience.

Outside of developed countries, he feels that branch campuses and partnerships with more established institutions can offer several benefits. “This kind of internationalization in situ provides a new and quite interesting way in which higher education capacity and quality can be built up in the developing world.”

The unification of standards – a question of governance

If education is set to become increasingly globalized, who should govern the models that are used in the future? And should we be looking to build a universal set of standards, one that can be co-opted by universities, industry, MOOCs and other online learning platforms?

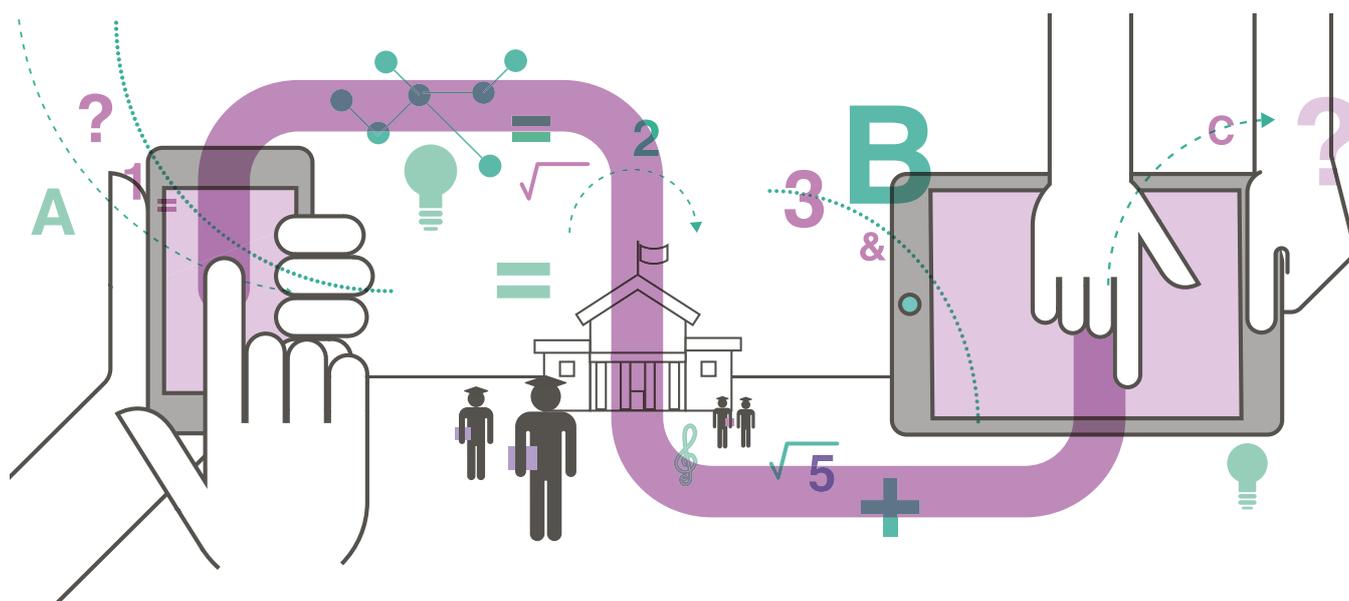
Professor Tan warns against establishing such a hegemony. He argues that diversity of educational models, even within a given country, is something that should be encouraged: differentiation helps to equip educators with more resilient ways to adapt to the unpredictability of education in the future.

“I think adaptation is very important,” he says. “I would also say that experimentation actually allows us to learn more and more about what works and what doesn’t. We still don’t know enough about learning psychology and how people best acquire knowledge in a very rapidly-changing environment. I think trying to standardize that might actually have a negative impact on education.”

Dr Shirley Ann Jackson, President of the Rensselaer Polytechnic Institute, envisions a new model – what she calls the “New Polytechnic” – of working and learning that is required in this “data-driven, computationally powered, globally networked era.”

Dr Jackson believes that the future of education will be a collaborative effort, with universities, businesses and governments working more efficiently together to “use and link the capabilities of advanced information technologies, communications and networking”.

“The way we connect and are connected by communication devices, medical devices, security devices and more has resulted in an explosion of data,” explains Dr Jackson. “Data is the new natural resource of the 21st century. The great challenge and opportunity is how to mine, manage, preserve and protect the data to ensure it is being harnessed to its full potential.”



“

If 60% of the world is still not online then there is a question about addressing the great challenges of our time.

– Shirley Ann Jackson

”

“The aim of the ‘New Polytechnic’ is for educational institutions to work across disciplines, sectors and regions to harness the advanced technologies, the communications networks, and global interconnectivity to address our global challenges with energy security, water, health, environmental and national security, and the linked challenges of climate change and sustainability – animating and supporting strong economic systems and financial markets,” she says.

At Rensselaer, changes are already underway to realise Dr Jackson’s vision, which, she says, will equip the next generation with more intellectual agility. So while the internet itself will benefit from more structuring, students, she argues, must be taught to be adaptable. They must develop what she calls “multicultural sophistication” and they must have a global view.

Dr Jackson believes it is vital to harness this approach to build a strong innovation ecosystem.

The internet, Dr Jackson notes, is the new library. As with online platforms such as MOOCs, connectivity is required for students to reach their full potential.

“If 60% of the world is still not online then there is a question

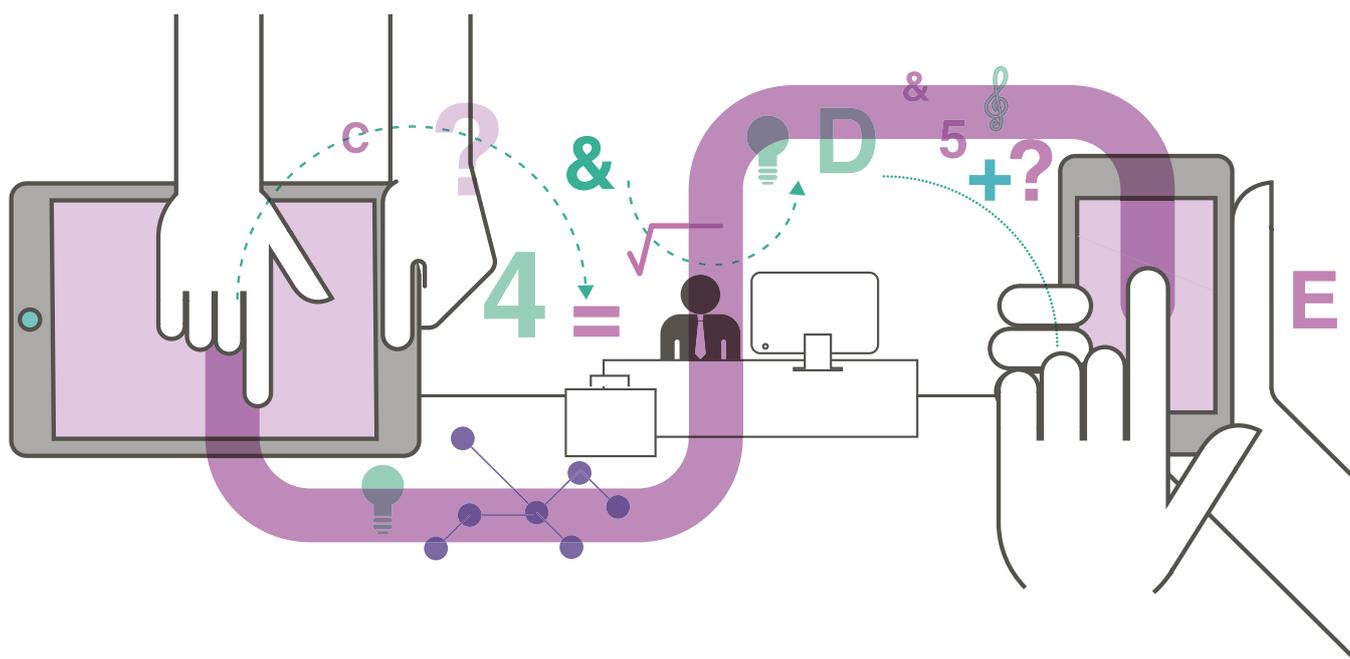
about addressing the great challenges of our time,” she says. “In emerging economies, which is where a lot of these challenges play out, if one wants to try to think about a data-driven approach, then one has to think about what barriers exist. Is there broadband access? Is there even electricity?”

In this manner, even the most advanced of educational ideas may be anchored to more prosaic facilities and needs.

A different approach: Will commoditization benefit education?

Of course, education should be seen as a need in itself. Technology has undoubtedly made the world a smaller place and, in the 21st century education is rightly considered a basic human right. Unfortunately, this classification doesn’t negate the need for financial backing; somewhere along the chain, educators, researchers and platforms must be funded.

Dr Jackson is somewhat cautious, however, about initiatives that bow to the needs of industry for specific skills training, without providing a broader education. She believes that education cannot purely be demand-driven,



as these demands are subject to constant change; locking people into a specific skills framework will leave them poorly prepared to adapt to these changes.

Dr Mona Mourshed, Senior Partner with McKinsey & Company, believes a more radical approach to education must be adopted if the world is to keep pace with future demand for skilled workers. We are, she posits, migrating towards the curation of education – an environment of accelerated learning, based upon a modularized approach. She echoes Professor Agarwal's theory that the students of the future will spend less time on traditional campuses.

"I think universities will no longer be four-year experiences," she says. "Furthermore, I believe that vocational options will no longer necessarily be a two-year experience. We will be talking about eight to twelve weeks of experiences to attain particular skills. Then in the workplace, as you get ready to take your next step, you get the next module. This process can be regarded as a partnership between the employer and the education provider."

Dr Mourshed believes that competency-based assessments to acquire what she terms "just-in-time skills", acquired via informal learning,

will allow people to access education wherever and whenever they like. This modularization will disrupt traditional attitudes towards current educational models.

Furthermore, Dr Mourshed's vision of a modular, skills-based education suggests that industry – rather than traditional institutions – will play a greater role in driving standards, and thus funding education in the future. This will not stem from a desire, on the part of employers, to shape education policy; rather, it's about responding to the need for individuals to have more diverse skills.

"Employers are changing the reality of education on the ground," says Dr Mourshed. "They are giving jobs on the back of that, so I think it's more the case that policy will follow these experiments."

So, will universities disappear? "No, of course they won't. But we will increasingly see a share of the student population opting for a very different education experience."

Education, she says, must not stagnate if we are to get young people to a higher level of productivity at a faster rate than has traditionally been the case.

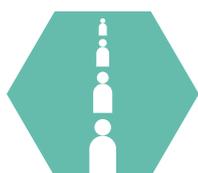
The changing, but recognizable, face of future education

Education is constantly adapting to societal needs, and this transformation will undoubtedly gather momentum in the years to come. Technology, MOOCs and industry will all play a unique role in this evolution, and while traditional institutions may face challenges in the future, it's likely they will still form the bedrock of learning and influence how the world teaches and learns.

The answer, in Dr Jackson's eyes, lies in finding a sense of balance. While the future she envisions for education will certainly be more technologically driven, it must still be so organic, interactive, and experiential as to allow students to mature and be creative, too.

"Technology is not going to replace students in a lab or classroom doing actual physics or biological science experiments, and studying living things," she says. "It is not going to replace the socialization and the maturation that they go through as part of their studies.

"We do not want to take an existing narrow, restricted education model and simply replace it with another one. That's something we should always remember." ■



The future of work

Technology is enabling us to achieve remarkable things, yet it's rendering many jobs obsolete. How will the world of work change over the coming years? Andrew McAfee, Co-Director of the Initiative on the Digital Economy at the MIT Sloan School of Management, explores the possibilities ahead.



Andrew McAfee
Co-Director of the Initiative on the Digital Economy at the MIT Sloan School of Management and a Member of the Global Agenda Council on the Future of Jobs

Voltaire once claimed that “work saves us from three great evils: boredom, vice and need.” A few years ago, Gallup conducted a study of ‘global desires’ and the results were unambiguous: ahead of family, democracy or even religious freedom, people wanted a job – ideally with steady hours, a regular pay cheque and all-round stability. But in the years to come, this is going to be challenged. Already, the average amount of time that people spend in jobs is going down, the number of career transitions is going up, unemployment is on the rise globally and the waves of disruption hitting every industry are accelerating.

We can't predict exactly what work will look like in the future or the specific types of jobs that will exist for the next generation. Technology is moving at

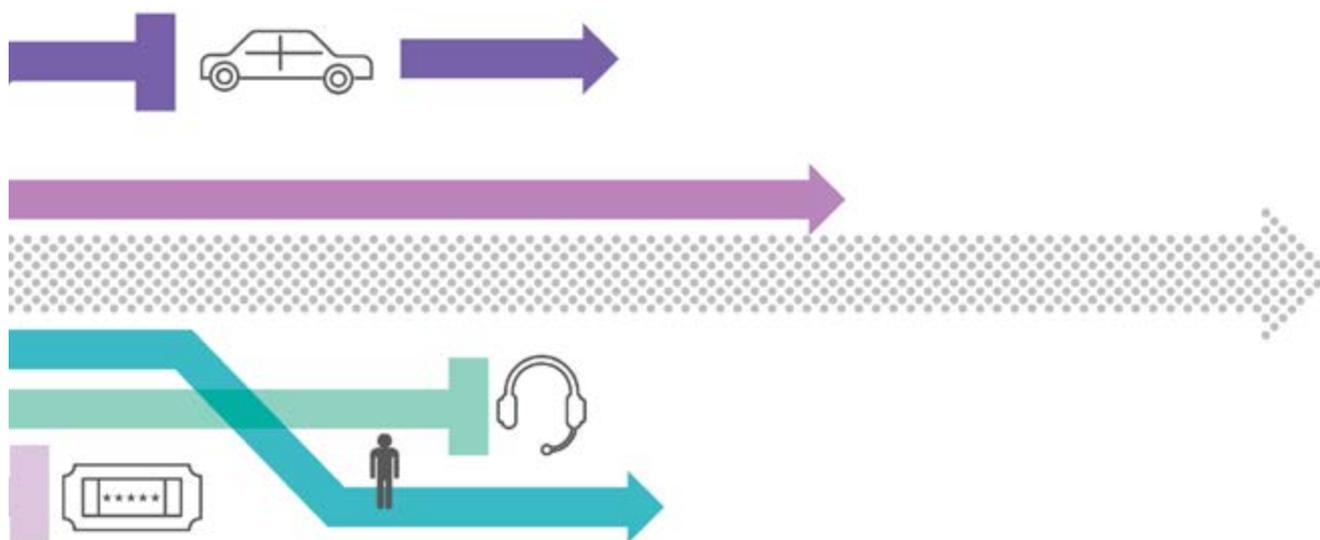
such a rapid pace that it would be impossible to try to – recently a robot was placed in a company's board of directors, something that would be considered science fiction even five years ago. What is clear, however, is that we are witnessing a Second Machine Age, in which income and employment opportunities might be squeezed for the short-term, but will raise earnings in the long-term.

Since the Industrial Revolution, automation has had a heavy impact on employment that involves routine physical work; this is now intensifying and on top of that we're seeing technology's effects on many other areas, including information processing. Looking ahead, it's estimated that almost 50% of the current jobs in existence will become automated, even in the ‘white-collar’



We need to rethink the social contract that our societies offer to workers.





occupations, which have traditionally been resistant to automation.

These changes are not merely a phenomenon of the post-recession years, nor are they showing up in just one or two economies where they might be expected. Essentially, capital has been invested in technology – leading to greater automation – as opposed to labour. Over the coming 10 years, we will face huge, tectonic forces of globalization and astonishing technological progress – forces that must be confronted and embraced if we are to ensure economic opportunity and inclusiveness for all.

We can already see the signs of various disruptions that will take place. On one hand, jobs including physical labour are going to become increasingly automated on a global scale. If you look around Chinese factories today, most of the workers have repetitive manual tasks. This arrangement is currently economically viable because the wages are so low. As those wages are increasing and technology is getting cheaper, we see China becoming one of the world's biggest purchasers of robotic equipment. Coming from the world's second-largest economy, this will be a huge disruption. On the other hand, computers are becoming so advanced in terms of human interaction that the services sector will be increasingly handled by intelligent systems.

Humans won't be rendered obsolete, but services companies will probably be staffed by a small number of capable employees to handle the strangest requests, with the rest handled automatically.

With technology racing ahead and leaving some people behind, we have two choices: either to try and stop progress, or to figure out what we need to do to help those who are being displaced. Both employers and educators have already realized this, and focus is increasingly being placed on innovation, and this is very encouraging. Change of this magnitude is always a painful process for workers, but technology also acts as a facilitator for new ideas and employment options.

Moreover, labour productivity driven by innovation is going to accelerate substantially in the years to come. There are innovations that we could not have predicted 10 years ago; we are already bearing witness to incredible advances, from vehicles that drive themselves to robots that can understand and converse with us, and many of these developments are so recent that they have yet to diffuse throughout our economies – it takes time for society to adapt and integrate them into its business models. Imagine what the next 10 years could offer, as we readjust even faster. We definitely need to rethink the social contract that our societies' offer to workers, but trying

to protect existing jobs at this pace of innovation is a deeply flawed idea.

It seems we're heading into a world that is going to be relatively light on work – we will simply employ fewer people. The temptation is there to see this as a losing battle. And yet conceptually speaking, this is exactly what we should be trying to do: to create a world where the idea of 'enough jobs to go around' is no longer required, a world free from drudgery and toil. We will soon be able to eliminate those dull and repetitive tasks we don't like doing, and achieve the goal of more wealth and abundance with less work. Creating a phenomenally plentiful, technologically sophisticated economy that can supply all the goods and services that we need, making them widely available to everyone, is what we should be aiming for. And, as far-fetched as that may sound, this is the world that we could quite feasibly build – not in the science fiction of the 24th century future, but in the next 50 years.

While it's true that the consequences for labour seem – and are – pretty serious at the moment, it is vital that we don't attempt to put the brakes on technological progress. We are standing on the edge of a singular point in human history, and we should be profoundly heartened and optimistic about that. Technological progress has always generated new, exciting opportunities for humanity. There isn't any reason for us to expect otherwise for the future ■



The future of the internet

The internet has infiltrated almost every corner of society, transforming our lives in the process. Over the coming decades, networked innovations will extend this change to the physical world. But as we become ever-more reliant on online tools and services, who should protect and regulate the internet itself? Our Global Agenda Council experts explore the debates and opportunities ahead.



Xiaodong Lee
Chief Executive Officer, China Internet Information Network Center, and a Member of the Global Agenda Council on Cyber Security



Helen Margetts
Director and Professor, Oxford Internet Institute, University of Oxford, and a Member of the Global Agenda Council on the Future of Government



Anil Menon
President, Smart+Connected Communities, Cisco Systems and Vice-Chair of the Global Agenda Council on the Future of Cities

Over the past two decades, the exponential growth of the internet has led it to touch upon every aspect of modern life. From mobile entertainment to healthcare to the heart of enterprise, the internet has become, in the words of Bill Gates, “the town square for the global village of tomorrow”.

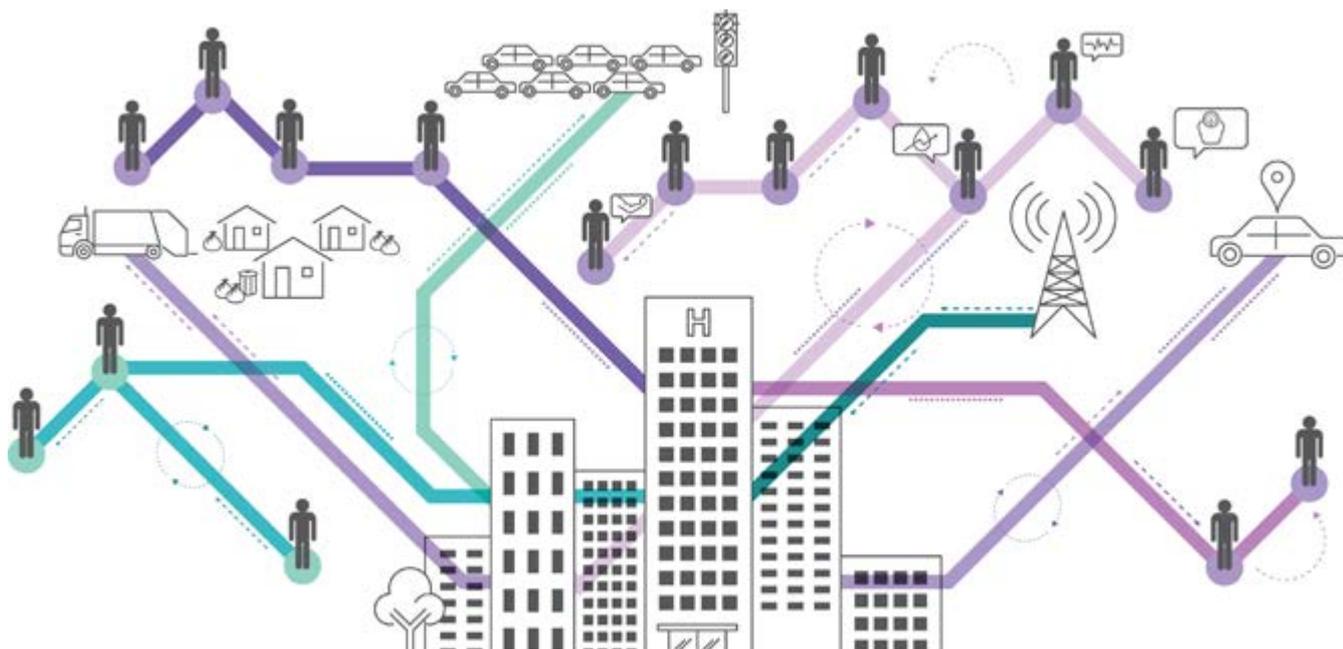
Now, with the advent of the Internet of Things, we stand on the threshold of a new era – one in which online functionality will spread to the physical world, to the objects and environments that surround us. As this happens, however, the complexities associated with online structures are transferred to the offline world, including the question of governance. As web-enabled devices take an ever-more prominent role in our societies, who should govern and protect the infrastructure upon which they rely? Will this issue of governance hinder the development and adoption of internet technologies? And what opportunities and problems will be presented by this new chapter

of our technological history, both for governments and individuals?

The power of networks

Networked technology is spreading rapidly from traditional devices to everyday items, and even to the spaces in which we live. Before long, online functionality will be ubiquitous in the most commonplace objects, allowing them to identify, communicate and cooperate with one another. This coming phenomenon is known as the ‘Internet of Things’.

Research firm Gartner predicts there will be 26 billion devices on the Internet of Things by the year 2020. Anil Menon, President of Smart+Connected Communities at CISCO, believes that the rise of omnipresent connectivity will present opportunities and challenges in equal measure, fuelled by an explosion in data feedback from our networked environment.



“Connecting one object to every other object will not necessarily transform the way we live or do things,” he says. “It is by connecting things to processes, and then using the resulting data to change the way we behave – that is where you will see a dramatic shift. The Internet of Things will be the foundation, but it will be the business models on top of it that will change our lives.”

Menon believes that cities are the entities best placed to benefit from this data-centred evolution. Yet the current lack of standards in network interoperability presents a potential hurdle to those who would harness this power. Global standards in medicine, for example, allow for communication between doctors who cannot speak each other’s language. Now we need to establish a similar harmony for data.

“In 1913, the city of London had 65 utility companies with 49 standards,” says Menon. “One hundred years later, in 2014, the situation echoes that of digital infrastructure, where you have multiple networks, each with different standards. What we need is a single layer with very strong privacy and security protocols, allowing us to use data feeds at the appropriate levels to manage things like traffic, water flow, and parking.”

The management of these services won’t be limited to local authorities, either. Menon cites the example of TaKaDu, an Israel-based company that is offering cloud-based water management to cities in Australia and Singapore, monitored remotely from the other side of the world. In the near future, authorities will be able to outsource a plethora of operations, from traffic control to waste-disposal, to the cheapest, most efficient operator – wherever they may be. At the same time, immersive technologies will reduce the need for individuals to relocate to cities in order to access top-tier healthcare services.

“Our research shows that for 80% of a typical doctor’s consultation, the doctor doesn’t need to touch you themselves,” says Menon. “Somebody needs to be physically present, but that person doesn’t necessarily need to be the doctor. So once we have wearable health monitors and interactive video, why should you drive all the way into town for a consultation?”

The evolution of medical services will be particularly effective in developing countries. “In a country like Tanzania, which has one of the highest rates of infant mortality from heart conditions, most hospitals will not have a dedicated

pediatric radiologist or surgeon. But with the help of immersive digital technologies, we’ll be able to offer those institutions interactive access to experts. And those same experts will also be able to help a child in India, or rural Mexico.”

Thanks to the increasing omnipresence of networked technology, we are set to experience significant changes to the long-established, time and space-bound structures of society. But as we grow ever-more reliant upon online functions to support and enhance our lives, a key question arises: who should oversee our online world?

The governance of the internet

Many people regard the internet as a global entity, something that exists outside of the boundaries of national ownership. Yet the fact remains that much of the system’s core infrastructure remains in the hands that pioneered it, and specifically in Western institutions. The protocol for the assignment of IP addresses and online namespaces is handled by ICANN, based in California; authority over the internet’s Domain Name System ultimately lies with the



In a country like Tanzania, most hospitals will not have a dedicated pediatric radiologist or surgeon. But with the help of immersive digital technologies, we'll be able to offer those institutions interactive access to experts.

– Anil Menon



US National Telecommunications and Information Administration. The Internet Society, a non-profit organization that aims to shape the development of the net for the benefit of users worldwide, now has chapters in 90 different countries – but its headquarters are located in Reston, Virginia, in the US.

In the wake of Edward Snowden's electronic surveillance revelations, the movement to oppose this US dominance is gaining momentum. Professor Xiaodong Lee, Chief Executive Officer of the China Internet Information Network Center (CNNIC) thinks the current governance model has to change, yet he suggests it is unhelpful to blame Western nations for their established levels of influence.

"It's not the fault of Western countries," he says. "The West is home to a lot of developed nations with strong technology and good knowledge about the internet – that's why they play a very important role in its governance. The reality is that there's a gap between western and eastern countries. If you look at Africa, there are still many countries with a limited number of internet users – but I believe in the next 10 years, the entire population of the continent will move online."

Crucial bodies like ICANN currently lack members from developing nations, depriving these countries of a voice in regulatory debates. Professor Lee regards this as a key flaw in the current governance arrangement. As their access to computer resources improves, developing countries will find it easier to send representatives to organizations such as ICANN – yet true progress may rely upon the creation of new institutions altogether.

"In the future, no lone institution or country can rule the internet, not even the United States," says Professor Lee. "I would choose a new organization to govern the internet, a new platform to discuss the culture issues involved. The internet is everything! It's not only a commercial or educational or technological concern. It has morphed into the physical world, so it cannot stand only one organization to govern it."

Professor Helen Margetts, Director of the Oxford Internet Institute, agrees that the transition to a more global

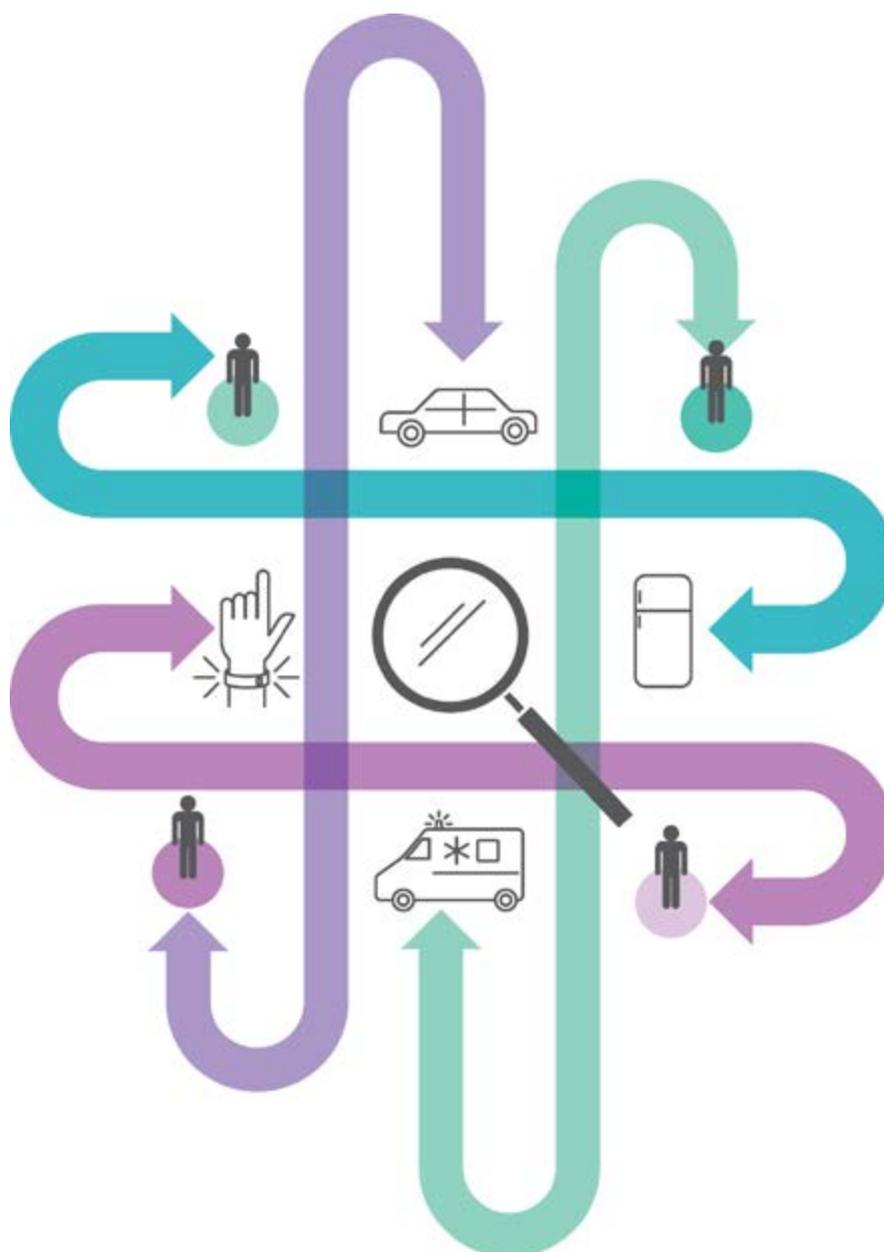
governance structure is desirable. However, she feels that the question of governance is less important than the fact that the landscape of the internet is evolving at a speed that authorities struggle to match.

"I don't think talking about a new model of governance for the whole internet is really the way to go. The internet is often depicted as some kind of lawless Wild West, when in fact its architecture and operation is governed by clear standards and protocols set by international bodies, while our use of the internet is largely covered by existing laws and regulations on issues such as fraud, copyright and libel. There are aspects of these laws and regulations that are basically unsuited to deal with changing technologies and the fact that people spend increasing amounts of their time in digital contexts – and that is what we need to address. But that is not really a question of internet governance.

I am in favour of a multistakeholder approach, where there is no single point of failure, or domination by a single group or set of interests. Existing governance structures need to adapt and change – but I am not supportive of a government-focused type governance model. There are reasons to be worried about those – I'm not aware of an Eastern governance model that doesn't involve censorship. Rather, we need a clearer understanding of the limits of government and corporate intervention online."

The recent debates over the surveillance activities of the US National Security Agency (NSA) and the UK Government Communications Headquarters (GCHQ) have cast a spotlight upon governmental use of the internet, particularly with regards to data-tracking. But for Professor Margetts, the real dangers lie with the rapid centralization of the internet, which has led to the emergence of monolithic platforms such as those owned by the world's most popular search engines and social networks. While she feels that these companies have had a broadly positive impact on the experience of using the internet, their data-gathering capabilities and increasing omnipresence makes them hard to control.

"As unhappy as I am that the NSA and GCHQ have gathered large quantities



of my personal data, I am equally concerned about the amount of information the major digital services companies have about me," she says. "How long are they storing this data for, and for what purpose? Once you are using the same platform for your search engine, email and cloud services – and then add a driverless car into that mix – you establish a toxic situation that is very difficult to regulate."

Legislation arguably represents the key battleground for determining the future of the internet. Professor Margetts believes that the real question is whether existing laws and regulations on issues such as fraud, copyright, libel, data protection and freedom of expression can be effectively enforced online. In some areas

new bilateral agreements are emerging which may amount to international agreement, such as consensus around measures tackling child abuse images online. In other areas, we see a few reactive prosecutions rather than widespread adherence.

For all the drastic change that the growth of the internet has already brought to our lives, the years ahead will require further adaptation on the part of governments and individuals alike – particularly as the Internet of Things becomes a widespread reality. But for Professor Lee, this change is not something for us to fear.

"If you go back 100 years, there were very few cars – most people would feel

very nervous if they even saw one," he says. "Today there are five or six million cars in most cities. People aren't worried because they know how to drive, how to avoid being hurt by them."

He continues: "Now we're living in the internet age. There are so many sensors, so many video cameras everywhere and facilities to monitor everything – so of course there are a lot of security issues, and people want to protect themselves. We already know how to do that in the physical world, but we need to build new models and cultures for the internet era, rules that will let us find a balance between a convenient life and a secure life. And that may take a couple of years." ■

Making the Outlook on the Global Agenda 2015

The Outlook on the Global Agenda sets out to illuminate the biggest trends that the world will face over the coming 12 to 18 months. Every year the World Economic Forum taps into its global knowledge network, using its Survey on the Global Agenda to cast a spotlight on the opportunities and problems that lie just over the horizon.

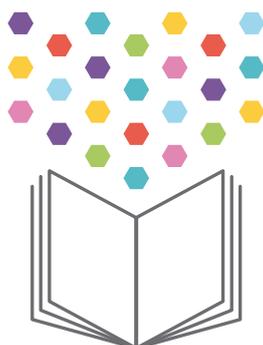
Thank you for reading this year's Outlook. As ever, it is our hope that the ideas and challenges here will inspire you to take some form of positive action. By gaining an understanding of global issues and then confronting them together, we can move towards a better world.

If you would like to know more about the data contained in this report, please visit our methodology website at wef.ch/o15m or contact the Global Agenda Council Team via gac@weforum.org.

Methodology

A key objective was to make this year's Outlook more comprehensive than ever before. While we retained our chapters on global trends, regional challenges and emerging issues, efforts were also taken to overhaul each section, providing increased levels of insight into specific concerns on different parts of the globe. A new set of questions, around leadership, were one of most notable additions to our Survey; the responses to these ultimately formed the basis of our Global Leadership Index.

Our global trends are again compiled using a Delphi Method, whereby a team of experts undergo several rounds of structured, anonymous questioning. This expert panel is made up of professionals and thought leaders who serve on the Global Agenda Councils, in addition to Young Global Leaders (aged 40 or under) and Global Shapers (aged 30 or below). By the end of the process, this group had collectively produced the initial shortlist of trends to appear within this year's Survey. These were then ranked by our respondents, producing the list of top 10 global trends you find in the report.



Administration

The Survey on the Global Agenda was distributed in June and July to members and alumni of the Global Agenda Councils, as well as Young Global Leaders and Global Shapers.

A total of 1,767 responses were received this year. Our Survey was answered by at least 120 people in each of the world's major regions – Asia; Europe; North America; Latin America; Middle East and North Africa; and Sub-Saharan Africa. The welcome granularity of our results afforded us a wide perspective on how views and concerns differ according to geographical region, among other variables such as age and gender.



Analysis

The results of our Survey are comprised of quantitative and qualitative data. The latter are obtained via responses to five open-field questions in our questionnaire, which offer respondents the chance to delve deeper into the topic by offering their opinion on effective solutions. All of our text-based answers are scrutinized and processed by an expert in qualitative analysis, facilitating their use within this report.

The quantitative data can be ranked by various criteria – including the country, region, and age of respondent – to highlight specific trends and findings. When our two data sets are finally combined, they present a detailed picture of the world issues that are of greatest concern to our Survey community.



Collaboration

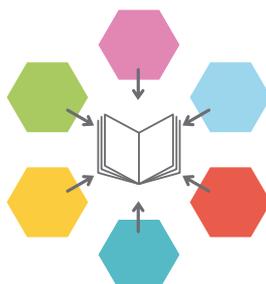
The Outlook would not be possible without with the help and invaluable input of a great many people, particularly the members of our Global Agenda Councils.

Thanks are due to Seth Rosenthal, who helped to design this year's Survey and assisted with our data questions, and to Diane Purvin, who provided essential analysis of our qualitative data.

The Pew Research Center once again played a key role in the production the Outlook, granting us advanced access to the findings of its Global Attitudes Project. Pew's experts also helped to shape our Survey questions, and advised us on the sourcing of additional information to compliment our core data. The regional figures of the Pew data presented were calculated using medians of country responses. The number of countries per region varies across each data point.

Further thanks go to Mona Hammami, who provided open-source data for our stories, and to the Oxford University's Saïd Business School and Blavatnik School of Government, whose team of students also supported this project.

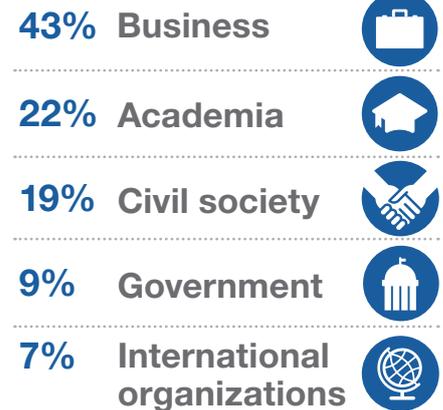
Finally, we worked with creative agency Human After All on the design and publication of this report. They helped us conduct all of the interviews on which the pieces in the Outlook are based ■



Inside the data



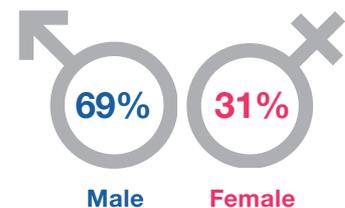
Stakeholder



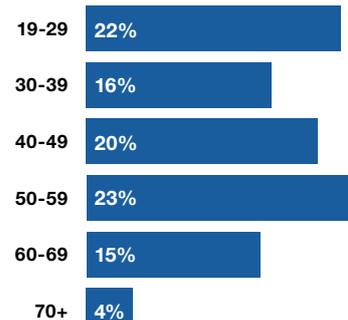
Region



Gender



Age category



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Pew Research Center is a nonpartisan fact tank that informs the public about the issues, attitudes and trends shaping America and the world. It does not take policy positions. Its Global Attitudes Project conducts public opinion surveys around the world on a broad array of subjects ranging from people's assessments of their own lives to their views about the current state of the world and important issues of the day. All of the project's reports are available at pewresearch.org/global.

Open-source data (various sources, cited individually)

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