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# Introduction

In a time of unprecedented change, how can we prepare for the year ahead?

We live in a fast-moving, highly interconnected and complex world. Breakthrough technologies, demographic shifts and societies in transformation are reshaping the world and have far-reaching social, political and economic consequences. More than ever, leaders need better information and understanding if they are to guide nations, organisations and societies successfully.

The Network of Global Agenda Councils was created to foster greater understanding and collaboration around the major issues of our time. Each of the 86 Councils is driven by top experts and thought leaders from around the world, who are not only recognised for their unique contributions to thought, but also for their commitment to cooperating in search of pioneering solutions.

The flagship publication of the Network, the **Outlook on the Global Agenda 2014** provides a top-of-mind perspective from the Global Agenda Councils on the challenges and opportunities of the coming 12–18 months. It offers a comprehensive overview of the world, drawing upon the foremost global intelligence network and its collective brainpower to explore the most important issues we all face in the coming year.

To better understand the complexity of these issues, the **Outlook** also provides deep insights into specific regional challenges, highlighting the perspectives of different stakeholders and those of the next generation. It illustrates the connections across issues and explores some of the outstanding questions our experts are grappling with, and finally, it looks ahead to the emerging issues and technologies that will shape our world.

The launch of the **Outlook** is timely as it provides input to our Summit on the Global Agenda, held from 18–20 November 2013 in Abu Dhabi. The Summit brings together members of the Network of Global Agenda Councils to discuss the findings and jointly develop recommendations for the World Economic Forum Annual Meeting in Davos-Klosters and other relevant Forum activities.

We are convinced that the **Outlook** will be an intriguing read for leaders who want to get ahead in understanding important global issues. I invite you to join the Global Agenda Councils in their efforts towards a greater understanding of the global, regional and industrial transformations shaping our future, and the collaborative actions that can be undertaken to improve the state of the world.

**Klaus Schwab**  
 Executive Chairman  
 World Economic Forum



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# Welcome to the Outlook on the Global Agenda 2014



**Martina Gmür**  
Head of the Network of Global Agenda Councils

As the year draws to a close, many organisations unveil their predictions for the year ahead. But the publication you're holding in your hands does something a little different.

We harnessed the insights of our Network of Global Agenda Councils to understand what the next 12 months will bring – but we haven't simply asked our contributors to gaze into their crystal balls.

Instead, we partnered with the Saïd Business School at Oxford University to redesign our Survey on the Global Agenda and with Pew Research Center to identify the most pressing issues of the year ahead. Using this tool, we collected insights from more than 1,500 global experts across business, government, academia and civil society. The majority of respondents came from within the Network, but we also wanted to include the perspective of the world's youth, so for the first time we also asked the Global Shapers and Young Global Leaders – young people who are transforming today's world – to participate.

Using this data, we selected the most interesting themes and contextualised them with commentary from some of our community's brightest minds. In this publication, we look at the 10 biggest trends for the year to come; we evaluate how they will play out globally and in different regions; we examine the new developments that are finding a place in the global agenda; and we take a look at how new technological advances will change our world.

We hope you will find the results of our research compelling and thought-provoking. The outlook for 2014 is complex. Our experts overwhelmingly agreed that rising societal tensions in the Middle East and North Africa (MENA) will be the defining trend of 2014, alongside increasing inequality and unemployment. Respondents also showed their dissatisfaction with the state of global co-operation on major challenges such as climate change, youth unemployment and poverty. But on a brighter note, they were optimistic about the future and about mankind's ability to address emerging issues in biotechnology, surveillance, energy security and a host of other issues.

The Outlook owes its success to the exceptional calibre and creativity of the Global Agenda Council Members, to whom we would like to extend our most sincere appreciation ■

# Preface

**Drew Gilpin Faust**  
President, Harvard University



President Drew Gilpin Faust © Stephanie Mitchell, Harvard University

Historians are more accustomed to looking into the past than forecasting the future. But as I read through the challenges facing the world highlighted in the pages that follow, I recognised a pattern that has been a focus of my work in recent years as president of a research university.

We live in an era when knowledge is of critical importance in addressing the world's most pressing problems, when technology promises both wondrous possibilities and profound dislocations, when global forces increasingly shape our lives and work. At Harvard and other research universities around the world, academic enterprise has become increasingly collaborative, because the best answers to complex questions often involve the combined perspectives of experts from different but complementary disciplines.

What struck me about the subjects highlighted in this journal was the degree to which many of these challenges are connected in complex ways that may not be apparent at first glance. For example, few would dispute the idea that climate change (**page 18**) will be a major concern in 2014, as will the rising socio-political tensions across the Middle East and North Africa (**page 10**). But relatively few may have noted that one of the factors exacerbating the situation in Syria is a drought that resulted from shifting weather patterns in the region. Similarly, the expansion of megacities (**page 26**) is influenced by rising sea levels and other climate challenges. And then there's the issue of energy independence and the impact that tapping natural gas in the US (**page 50**) could have on political policy in the Middle East.

The increasingly interconnected nature of the world's most pressing problems demands new approaches to the development of solutions. Traditional intellectual fields are shifting and converging in order to answer the complex questions facing our globalised society, just as organisations such as the World Economic Forum and its Global Agenda Councils are bringing together thought leaders from across a wide range of disciplines to provide new perspectives on our greatest opportunities.

As we look ahead, we have to be optimistic that this growing spirit of collaboration across disciplines and across borders will enable us to meet the challenges of 2014 ■

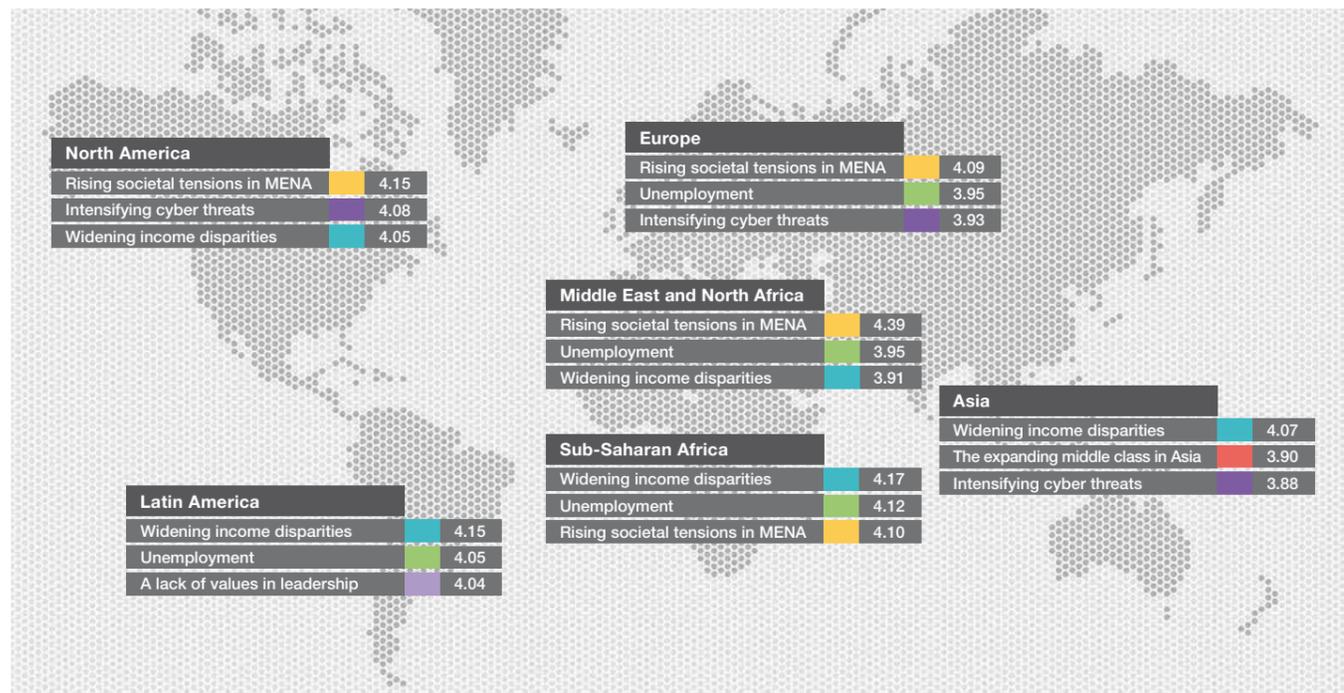
# Top 10 trends of 2014

What are the top trends facing the world in 2014? And what should we do about them?



To follow the latest developments on these issues, take a look at the WEF GAC blog at <http://forumblog.org/communities/global-agenda-councils>.

## Top trends for 2014 by region



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant  
Source: Survey on the Global Agenda 2013

Tensions in the Middle East. Rising living standards. Adaptation to climate change. Paralysed government. Innovative cities.

the challenges we face as a planet, decision-makers need to keep pace and anticipate what lies ahead.

The world is changing faster than ever. We're connected to each other in ways that would have been thought impossible just a generation ago, enabling enormous potential but also exposing our institutions to great strain. If we are to effectively address

To foresee the changes awaiting us in 2014, we asked the vast network of Global Agenda Council Members to identify and prioritise the issues that will exert the greatest force on the world in the coming 12 to 18 months. Using a selective survey tool, we determined the top 10 global trends (opposite).

Knowing which trends to watch is the first step. Where do we begin to prepare for their impact? Harnessing the interconnected structure of the Network of Global Agenda Councils, we turned back to the Councils and asked them to tell us what should be done to address the multifaceted impact the trends will have on our world.

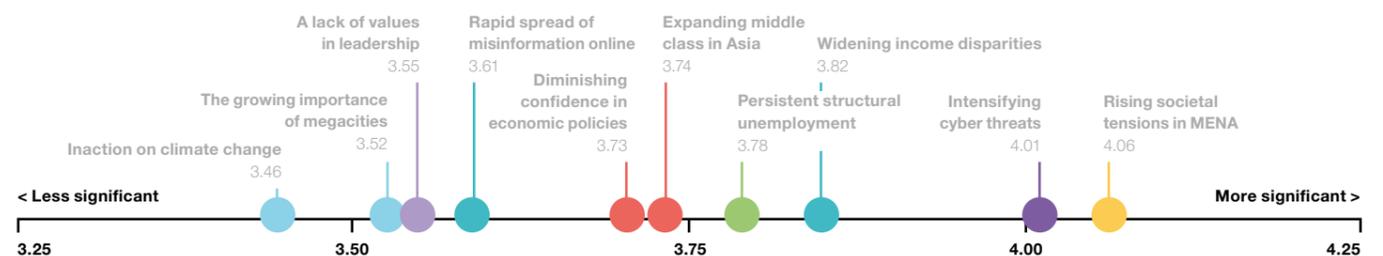
This chapter provides an overview of the forces that will shape 2014 and the ideas that can address their impact.

## Top trends for 2014, ranked by global significance

- Rising societal tensions in the Middle East and North Africa** 4.07
- Widening income disparities** 4.02
- Persistent structural unemployment** 3.97
- Intensifying cyber threats** 3.93
- Inaction on climate change** 3.81
- The diminishing confidence in economic policies** 3.79
- A lack of values in leadership** 3.76
- The expanding middle class in Asia** 3.75
- The growing importance of megacities** 3.48
- The rapid spread of misinformation online** 3.35

1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant  
Source: Survey on the Global Agenda 2013

## How significant will the global trends become in the next 18 months?



1.00 = Much less significant 2.00 = Marginally less significant 3.00 = Remain the same 4.00 = Marginally more significant 5.00 = Much more significant  
Source: Survey on the Global Agenda 2013

## 1

## Rising societal tensions in the Middle East and North Africa

**Tarik Yousef** is CEO of Silatech and Vice-Chair of the Global Agenda Council on the Arab World

There is a battle of ideas taking place within the Arab world, and it is polarising a region whose long-term outlook remains uncertain.

Two years ago, the trajectory for the Arab Spring countries seemed straightforward. The world assumed that the transitions in Egypt, Tunisia and Libya would eventually give birth to more pluralistic societies, that democracy would become institutionalised, and that economic prosperity would be enhanced. The road might have looked bumpy in the short term, but at least the destination was in view.

In light of the growing political instability since, many have started to question these assumptions, and both the regional outlook and individual national trajectories have become more uncertain. There is now

“There is a battle of ideas taking place within the Arab world, and it is polarising a region whose long-term outlook remains uncertain.”

a growing consensus that the region is facing a time of heightened uncertainty, at the root of which is societal polarisation.

The Survey on the Global Agenda supports this viewpoint, revealing that experts all over the world consider rising societal tensions in the Middle East and North Africa to be the biggest challenge facing the world in 2014.

But the data also allows us to focus specifically on the region, helping us to understand how people feel on the ground. And there are some significant changes to note. ►



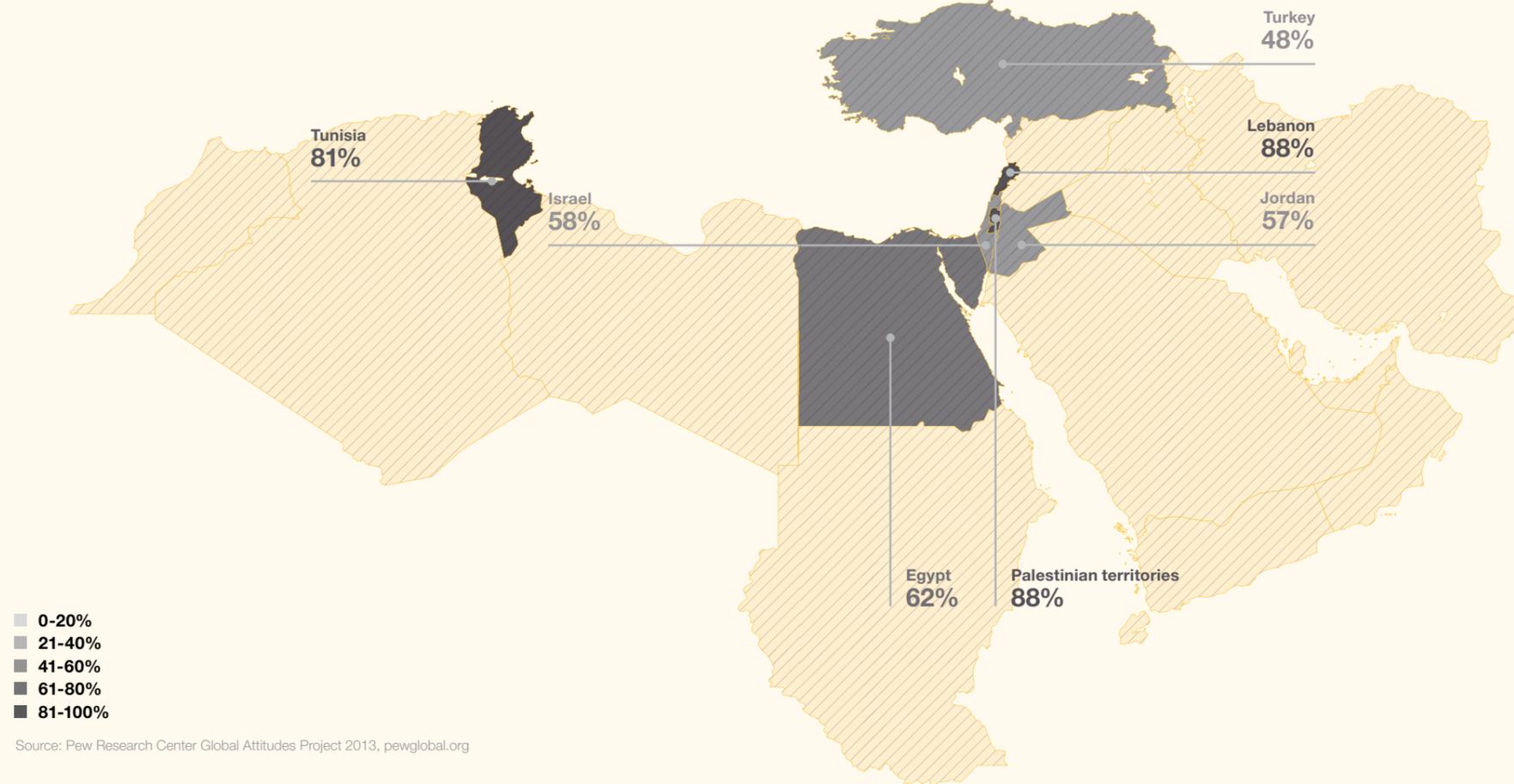
Supporters of deposed Egyptian President Mohamed Morsi protest against the military in Cairo  
© Reuters / Amr Dalsh

# 1



## Inside the data

### Percentage of people dissatisfied with the situation in their country



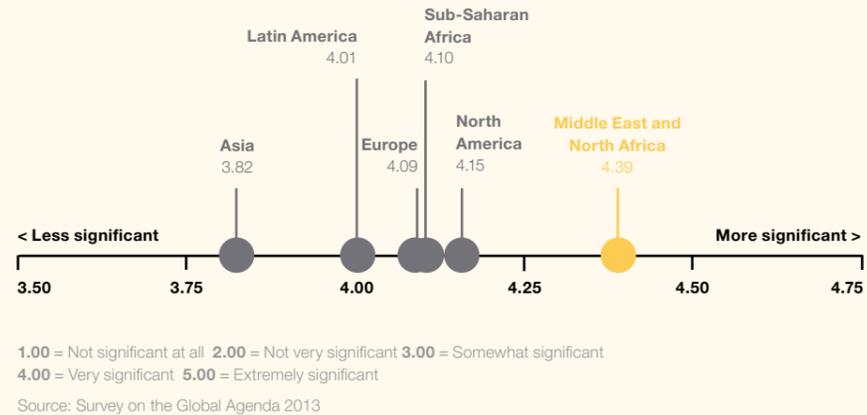
In the past, divergence in the Arab world ran mainly along economic lines, but in the post-Arab Spring era, additional drivers have emerged. Today, 45% of respondents say that the biggest challenge they face is political instability, while only 27% name unemployment as the region's most pressing challenge.

Within this context different ideological viewpoints have come to the fore, often presenting starkly divergent paths for the future. Most visible is the split between those who want political Islam to play a role in public life, and others who want to keep religion and government separate. We also see a trend of rising sectarian tensions within communities, and fractured regional cooperation on certain key issues.

### What is the greatest challenge facing your region?



### How significant do different regions consider rising societal tensions in the Middle East and North Africa?



The lack of trust among competing parties, an atmosphere of intolerance in the public arena and, more generally, the failure to put inherently fragile transitions on a stable path, are all to blame for the increased tensions. With the international community cautious to engage, regional players with divergent perspectives are playing a larger role in shaping domestic outcomes in transitioning countries.

The Arab world has entered a period of rising tensions, in which the future could be as much about the defeat of hope for change, as about the potential for a revival taking place. Our path at the moment remains unclear, but we should not allow that to deter us ■

# 2

## Widening income disparities



**Helene D. Gayle** is the President and CEO of CARE USA, and a Member of the Global Agenda Council on Poverty & Sustainable Development

Switch on the news and you see record-breaking protests, historic uprisings and riots on once-calm streets – there’s no doubt that growing income inequality is an issue of central importance. And the world wants to know more about it – this year’s Survey on the Global Agenda showed that of all the top 10 trends, respondents were least happy with the coverage the media gives to income disparity.

Widening wealth disparity affects every part of our lives. It’s impacting social stability within countries and threatening security on a global scale, and looking ahead to 2014, it’s essential that we devise innovative solutions to the causes and

“To counteract income inequality it’s essential we tackle poverty in an integrated way that has long-term impact. We need to give people the capacity to achieve a more prosperous future.”

consequences of a world becoming ever more unequal.

My organisation once focused primarily on the countries at the very bottom of the economic ladder – nations where most of the population were living in extreme poverty. But now we see more and more poor people in middle-income countries. Despite robust macroeconomic growth, large segments of these countries’ citizenry are being left behind. Income inequality is shifting the nature of our work as we now seek to also address poverty in countries on the rise, where a small percentage of the people enjoy unprecedented economic rewards, while many are squeezed out of the middle classes into the clutches of poverty.

The effects of growing income inequality are also being seen within major nations on the global stage, from large emerging markets like China and India to the developed nations of the West – according to the Survey, increasing inequality is the number one challenge facing North America. The incredible wealth created over the last decade in the US has gone to a smaller and smaller portion of the population, and this disparity stems from many of the same roots as in developing nations.

First among them is a lack of access to high quality basic primary and secondary education for all segments of our society. ▶

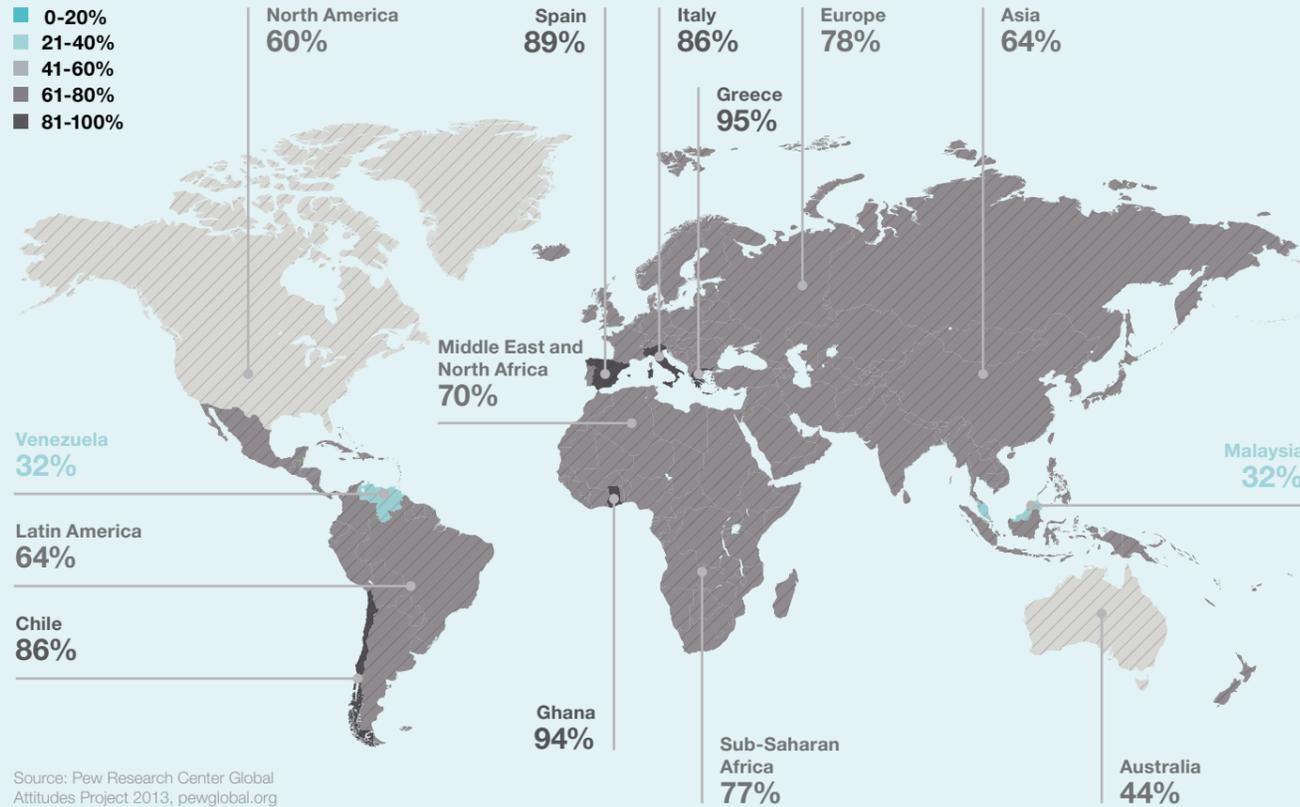


A man receives food at the Southeast Neighborhood House food bank in Washington © Reuters / Kevin Lamarque

# 2

## Inside the data

### Percentage of people who say the economic system in their country favours the wealthy

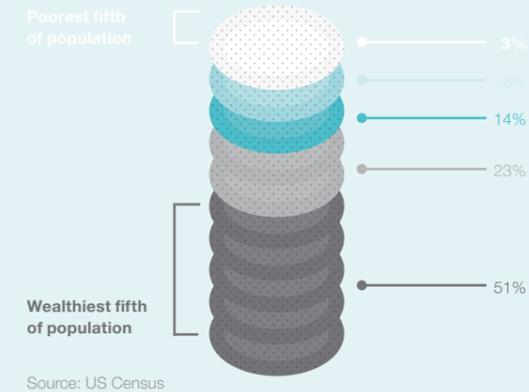


### Inequality in America

## Increasing inequality is seen by North Americans as the number one challenge facing their region

Source: Survey on the Global Agenda 2013

### Percentage of total US income earned by American households

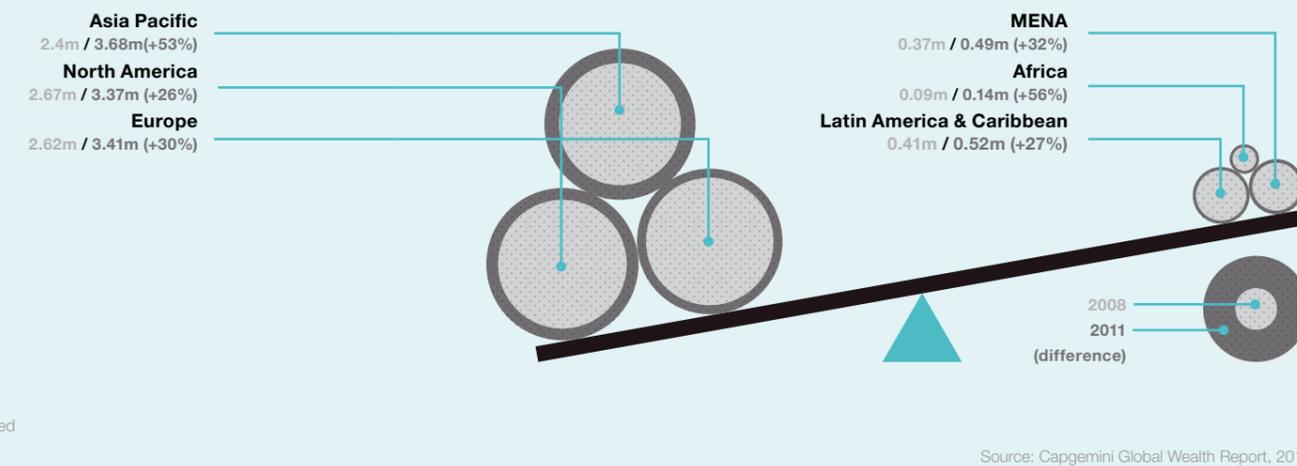


### Satisfaction with the attention given to top 10 trends by media and business

	Media	Business
Rising societal tensions in MENA	2.90	3.14
The expanding middle class in Asia	2.90	2.71
Intensifying cyber threats	2.81	2.60
The growing importance of megacities	2.63	2.47
The diminishing confidence in economic policies	2.60	2.45
Inaction on climate change	2.42	2.37
Persistent structural unemployment	2.41	2.26
The rapid spread of misinformation online	2.38	2.23
A lack of values in leadership	2.35	2.09
Widening income disparities	2.25	1.96

1.00 = Not at all satisfied 2.00 = Not very satisfied  
3.00 = Somewhat satisfied 4.00 = Very satisfied 5.00 = Extremely satisfied  
Source: Survey on the Global Agenda 2013

### The growing number of high net worth individuals



Additionally, it has become prohibitively expensive for the average middle-income family to send their child to college in the US; higher education, once seen as the great equaliser and engine for economic mobility, is becoming unaffordable for far too many.

Chronic diseases, like heart disease and diabetes, which are linked to poor diet and lack of exercise, are major causes of death and disease in the US. Yet there are 'food deserts', areas where it's almost impossible to buy reasonably-priced fresh fruit and vegetables, so people have little choice but to eat high-calorie, low-nutritional food. Many of the same communities have streets that aren't lit, where it's not safe to go out alone to exercise, and we find that solving neighbourhood inequality can be just as important to creating positive health outcomes as providing medical access.

As people around the world see growing threats to their education, incomes and health, a movement is coalescing around the issue of widening income disparity. Unrest cloaked in a desire to change from one political leader to another is a manifestation of people's concerns



about their basic needs. And it's the young who are most willing to take to the streets because they feel like they have nothing to lose. Many young adults with college degrees are unable to find jobs and some countries have more than 50% youth unemployment. Over the next decade, particularly in developing countries where much of the population is under 30, the lack of access to jobs will increase the risks of political and social strife.

In order to counteract income inequality, it's essential to tackle poverty in an integrated way that has long-term impact. We need to give people the capacity to be resilient, to take on challenges and to learn the skills they need to work toward more prosperous futures. We should also look broadly at social inequalities like gender discrimination, as girls and women are disproportionately impacted by poverty; they are also the ones who bring greatest change to societies.

With political will and strategic initiatives, we can prevent more and more of our global neighbours from falling into the abyss of poverty and instead give future generations the opportunities they need to rise to their fullest potential ■

# 3

## Persistent structural unemployment

S.D. Shibulal, CEO of Infosys and Member of the Global Agenda Council on Emerging Multinationals

The world has finally woken up to the problem of persistent structural unemployment. There is a growing consensus on the fact that, unless we address chronic joblessness, we will see an escalation in social unrest. People, particularly the youth, need to be productively employed, or we will witness rising crime rates, stagnating economies and the deterioration of our social fabric.

The fact that governments and businesses are acknowledging these concerns gives me reason to be optimistic, particularly in the West. The latest Pew Research Center data shows that lack of employment opportunities consistently comes out top when people in North America and Europe are asked which issue the government should tackle first. But to make a change we need to follow that realisation with real innovation and investment, working across borders, all around the world. This isn't a national problem, so it's essential that governments and the private sector take a global view of unemployment and resist tendencies toward protectionism.

In this respect globalisation has already given us many gains. In India alone, millions of jobs have been created and the middle class has grown from 30 million people to 300 million in my lifetime. The IT sector,

### From the Survey

"A generation that starts its career in complete hopelessness will be more prone to populist politics and will lack the fundamental skills that one develops early on in their career. This can undermine the future of European integration, as the countries with the highest youth unemployment rate are on the periphery."

where I work, employs 2.2 million directly and 8 million indirectly. That's a good start, but in a country of 1.2 billion people with about 11 million unemployed, it's a drop in the ocean.

Governments must create regulatory structures that encourage employment and economic stability, first of all incentivising companies to create jobs and then to invest in their workers. This investment is essential because people can no longer expect the guarantee of lifetime employment; a person who is employable today may well not be ►

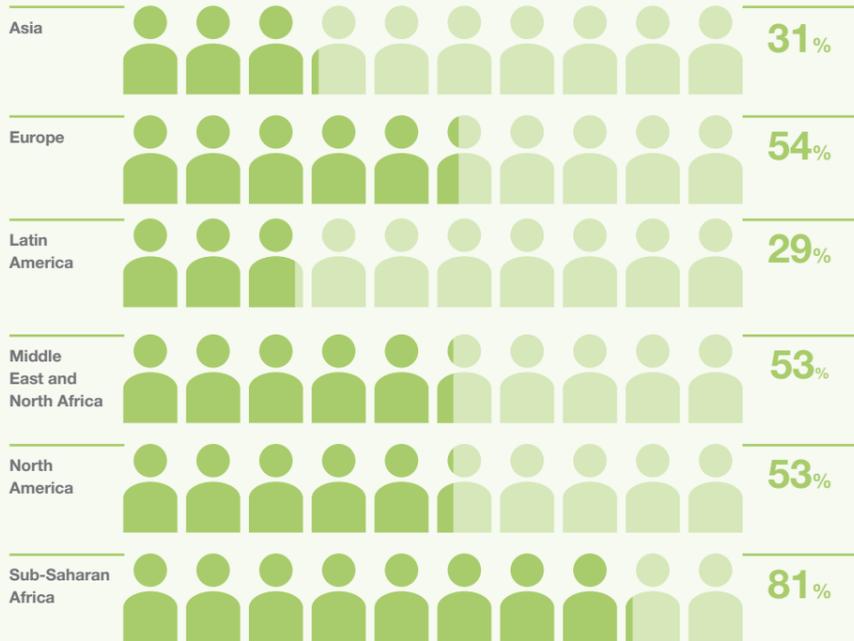


People queue to enter a government-run employment office in Madrid © Reuters / Sergio Perez

# 3

## Inside the data

### Percentage of people who say structural unemployment should be their government's top priority



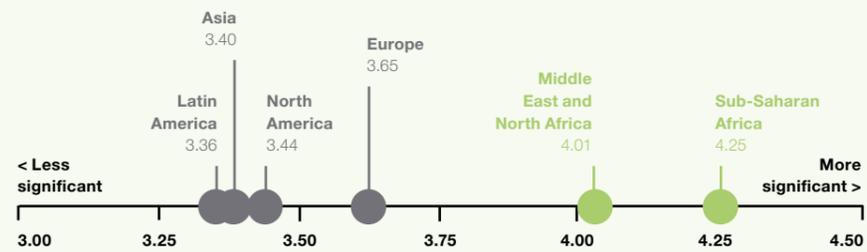
Source: Survey on the Global Agenda 2013 – Respondents chose between: Lack of employment opportunities; Public debt; Rising prices and The gap between rich and poor. This question was developed in collaboration with Pew Research Center

### Unemployment: a global issue

## Unemployment, and specifically youth unemployment, is the second-most commonly identified issue

Source: Survey on the Global Agenda 2013

### How significant do you consider structural unemployment to be in your region?



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013



“People, particularly the youth, need to be productively employed or we will witness the deterioration of our social fabric.”

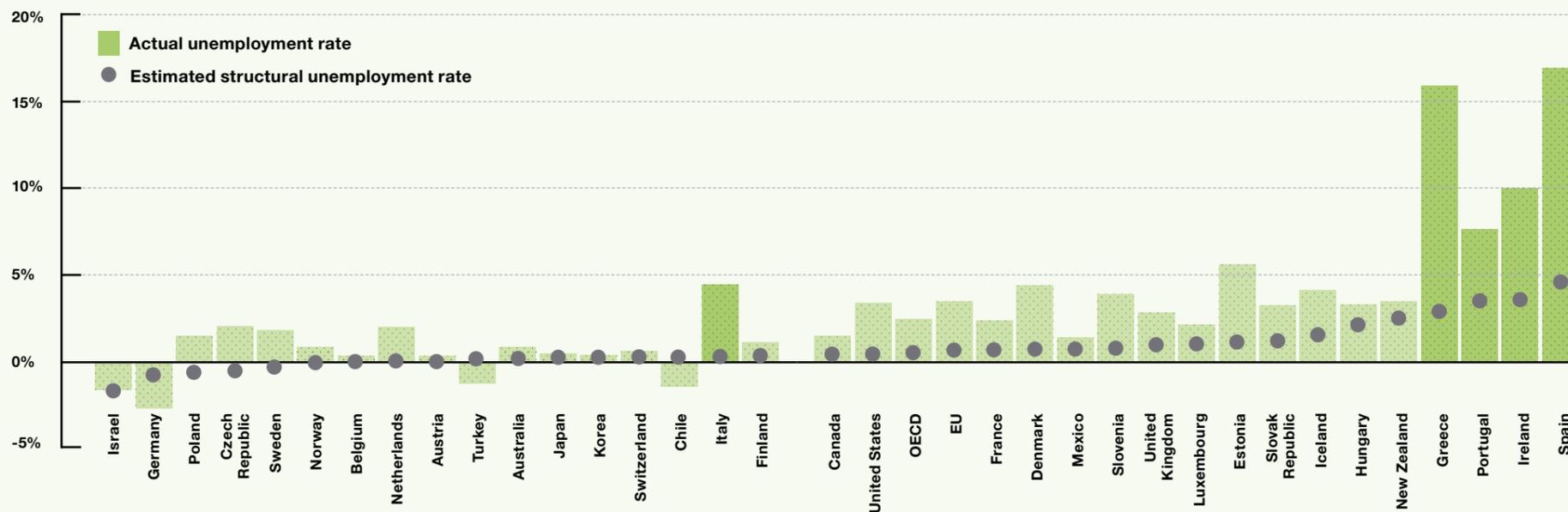
employable in four years, unless their employer invests in them or they invest in themselves. Workers today are competing in a global environment and that means they need quality education, schooling in soft skills and opportunities for retraining.

The solutions required vary in every region around the world. The US talks about having 8.5% unemployment, but unemployment is only 3.5% in the technology sector, so there's an opportunity there for more technology jobs to be created and more people to retrain. Europe, meanwhile, has a serious shortage of talent in healthcare, a sector that will always be needed.

India's unique challenge relates to the fact that given the size of the population, any solution needs to be implemented on an enormous scale. We may have three million graduates a year, including one million engineers, but only 25% are considered directly employable. The others need more training to make them industry-ready. Meanwhile, some 16 million Indian children are not in schools at all. India is working on it, but the results will take time.

This is where I see potential for innovation. Enterprises should take part in the fight

### Changes in global structural unemployment (Q4 2007 - Q2 2012)



Source: Economic Policy Reforms 2013: Going for Growth, OECD, 2013

against youth unemployment, by training and mentoring young people in roles that offer career opportunities and eventually by hiring some of them in a full-time role, or at least assisting with their placement in another company.

I think it's our responsibility to create opportunities like this. Technology and the efficiencies it brings are too often blamed for unemployment, but jobs are not disappearing. They're evolving. Losses in one sector often mean gains in another; for example at the airport I now check in at an automated kiosk. That may be a job loss for counter agents, but think of the thousands who worked to create that check-in software.

We are all custodians of social wealth. No institution or agency can do this alone. That's where organisations like the World Economic Forum can help, by providing a global platform for exchanging ideas and innovation. This is going to be a long journey, but if we work at it together I can only see progress ahead ■

# 4

## Intensifying cyber threats



**Jonathan Zittrain** is Professor of Law and Computer Science at Harvard University, a founder of the Berkman Centre for Internet and Society, and a Member of the Global Agenda Council on the Future of the Internet

Not too long ago, the phrase 'electronic army' would have conjured up visions of a 1980s cyber-dystopian film – the kind featuring Arnold Schwarzenegger and a lot of fog machines. But today the idea of an electronic army has been adopted outside the realm of entertainment, as a group called the Syrian Electronic Army, which supports Bashar al-Assad's regime, has successfully managed to temporarily cripple the online operations of companies like Twitter and The New York Times.

Perceived digital warfare is escalating as a sophisticated breed of attack against corporations, governments and individuals. The Survey on the Global Agenda tells us that people over 50 are more worried about it than the under-50s, but the shift to the cloud and the rise of the 'internet of things' mean that virtually all of us could be affected.

Until quite recently, most people and organisations with a web presence were operating their own servers. That meant that as the web developed it was naturally distributed – anybody would be able to set up a web server anywhere, yet it remained

### From the Survey

"Ignorance of emerging technologies at a political level means they cannot be policed, regulated or controlled."

only a click away for users. That worked beautifully for a while and it also meant that there was a certain kind of systemic resilience, because the eggs weren't all in one basket.

But the rise of denial-of-service attacks (typically by flooding a machine or network with spurious requests, rendering it temporarily unavailable) and other vulnerabilities have made it seem much more daunting to run one's own server. More and more are outsourced to one of a handful of vendors, but in the process, businesses are giving up more control than they appreciate. The eggs are increasingly in the same basket, so if Amazon Web Services goes down, then a bunch of otherwise unrelated websites – and their users – are in trouble.

But there's something else that's very pressing to bring up here and that's the 'internet of things'. This is a very catchy phrase in the tech world these ►



A view inside Facebook's new server hall in northern Sweden, its first data facility outside the US  
© Reuters / Susanne Lindholm

# 4

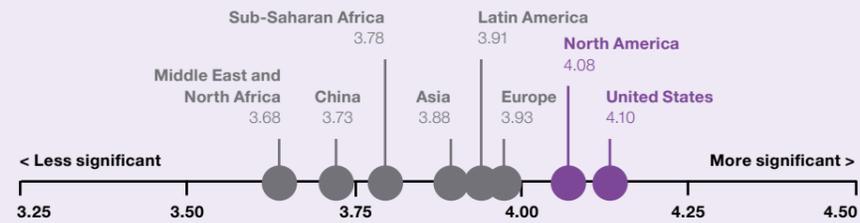
## Inside the data

### Industries most frequently attacked by malicious online activity



Source: Internet Security Threat Report 2013: Volume 18, Symantec

### Significance of intensifying cyber threats, by region



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

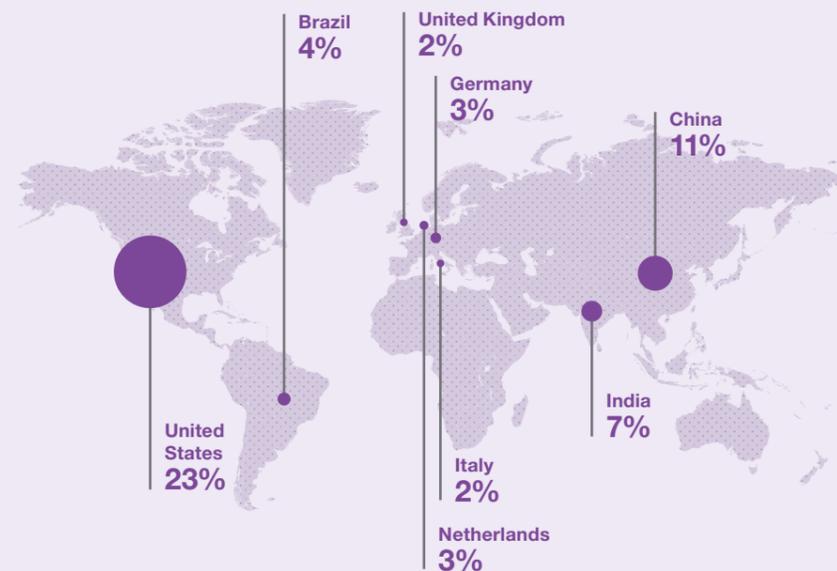
### Significance of intensifying cyber threats, by age group



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

### The world's biggest sources of malicious online activity



Source: Internet Security Threat Report 2013: Volume 18, Symantec



“Rather than attempting to prevent all possible forms of hacking, governments, private firms and NGOs should ensure that it’s not catastrophic to get hacked.”

days, referring to the fact that physical objects, often very mundane ones like thermostats and refrigerators, are now internet-enabled. Security hasn’t caught up here. It’s shocking sometimes: a German IT security company called n.runs discovered earlier this year that communications between aeroplanes and the ground are not encrypted, and that it wouldn’t take much for a hacker to give some rather unusual instructions to a plane, or to update its firmware while it’s in flight.

It ought to be easier to secure such things, conceptually, because they’re not meant to be accessible to the entire public. But because we’re in a transitional phase where we’re migrating so much previously isolated functionality into the ‘internet of things’, there are a lot of undiscovered vulnerabilities. If there’s any meaning to something like cyberterrorism, it’s more an attempt to use computer vulnerabilities to affect physical results, particularly as things that weren’t on the internet are given the power of connectivity for the first time.

So what can be done about this? Governments, private firms and NGOs can focus on resilience: ensuring that it’s

not catastrophic to get hacked, rather than attempting to prevent all possible forms of hacking. This is a distributed effort. Consider Wikipedia: if you want Wikipedia to be good, you have to figure out how to deal with vandalism, but a lot of the ways of dealing with it aren’t about preventing vandalism under any circumstance. Instead it’s about how to easily put it right as it happens, making sure that there are more editors fixing vandalism than there are vandals.

The same goes with cyberthreats. You’re always going to be dealing with an unpredictable current. But it’s manageable if there are more people and resources working – and working hard – toward course correction, than those who are disrupting the flow ■

# 5

## Inaction on climate change



**Christiana Figueres** is Executive Secretary of the United Nations Framework Convention on Climate Change, and a Member of the Global Agenda Council on Climate Change

Over the past three to four years, we've seen extreme weather events happening more frequently and more intensely in an increasing number of countries. That is one reason why people have woken up to the very real threat of climate change.

Inaction on climate change is fifth in this year's top 10 list. That's not due to climate scepticism, which is now less pervasive than it used to be. It is fifth because the consequences of insufficient action are still completely underestimated, otherwise it would be first. Because the fact is that if we don't take action in a timely fashion at the scale that we need, climate has the potential to wipe out the progress we have made over the past 20 years in economic development, in social development, in environmental protection. It is the major 'wipe out' factor.

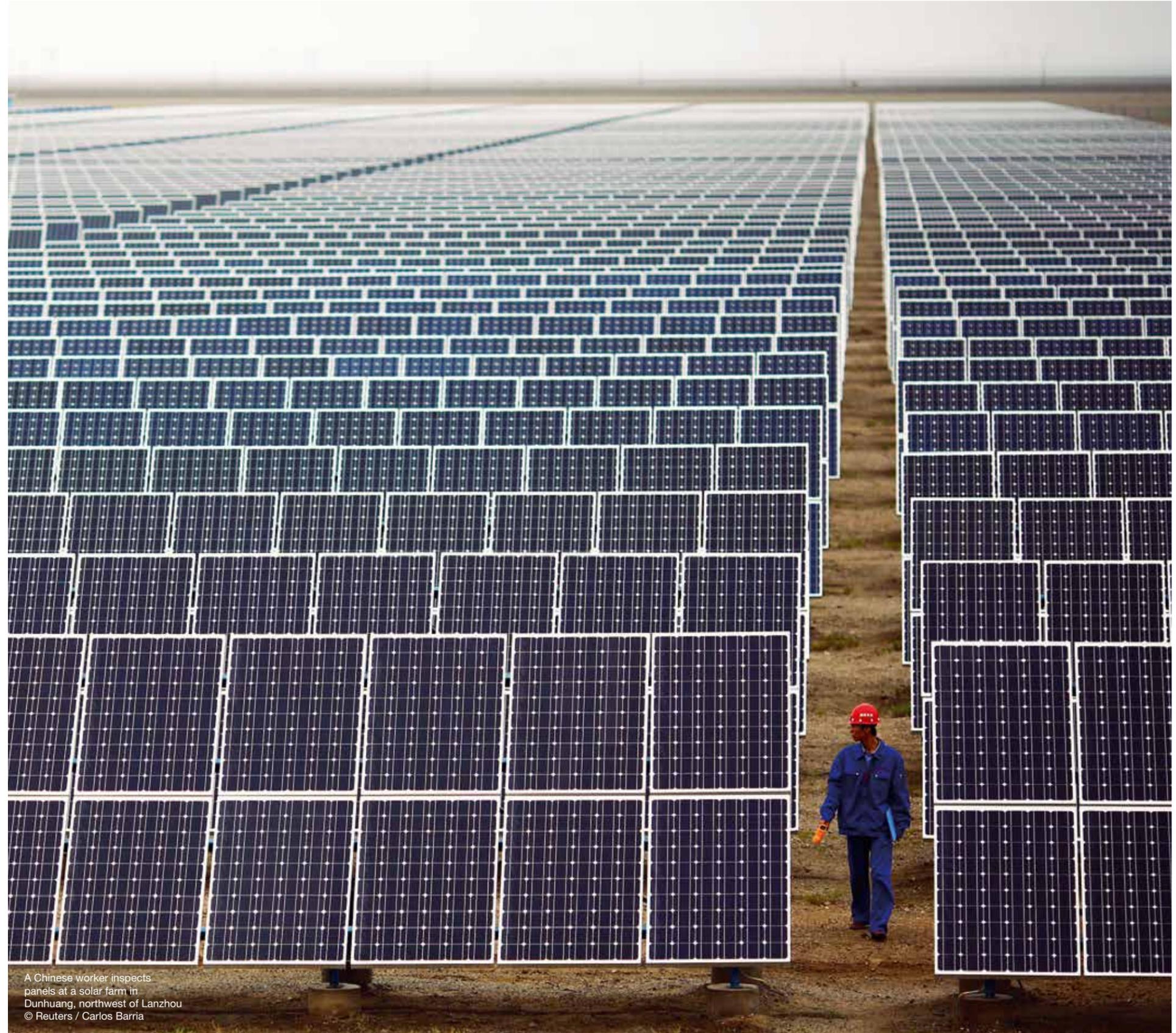
I think that's why people all around the world aren't happy with the amount of attention climate change receives. The Survey on the Global Agenda shows that of the top 10 trends, respondents are by far the least satisfied with the response to climate change. But we shouldn't mistake that for genuine inaction.

### From the Survey

"We are losing the battle on climate change – the sense of urgency we had two years ago has disappeared."

There is action, and it's moving in the right direction, but it's not moving fast enough. For example, we have \$1 trillion of cumulative investment in renewable energy. That's good news, but it's not enough. We need \$1 trillion per year. There's action nationally, internationally and on the ground, but it is absolutely not enough, and that's why there is the perception of inaction.

Our changing climate is the most pressing challenge we face, but it's also the most compelling opportunity we've ever had. Because there is no response to climate change that doesn't take us into a very exciting future. To reduce deforestation actually has many co-benefits environmentally, socially and economically; to accelerate the introduction of renewable energies into the energy matrix doesn't just have positive climate change implications, it transports us into the cutting-edge ►

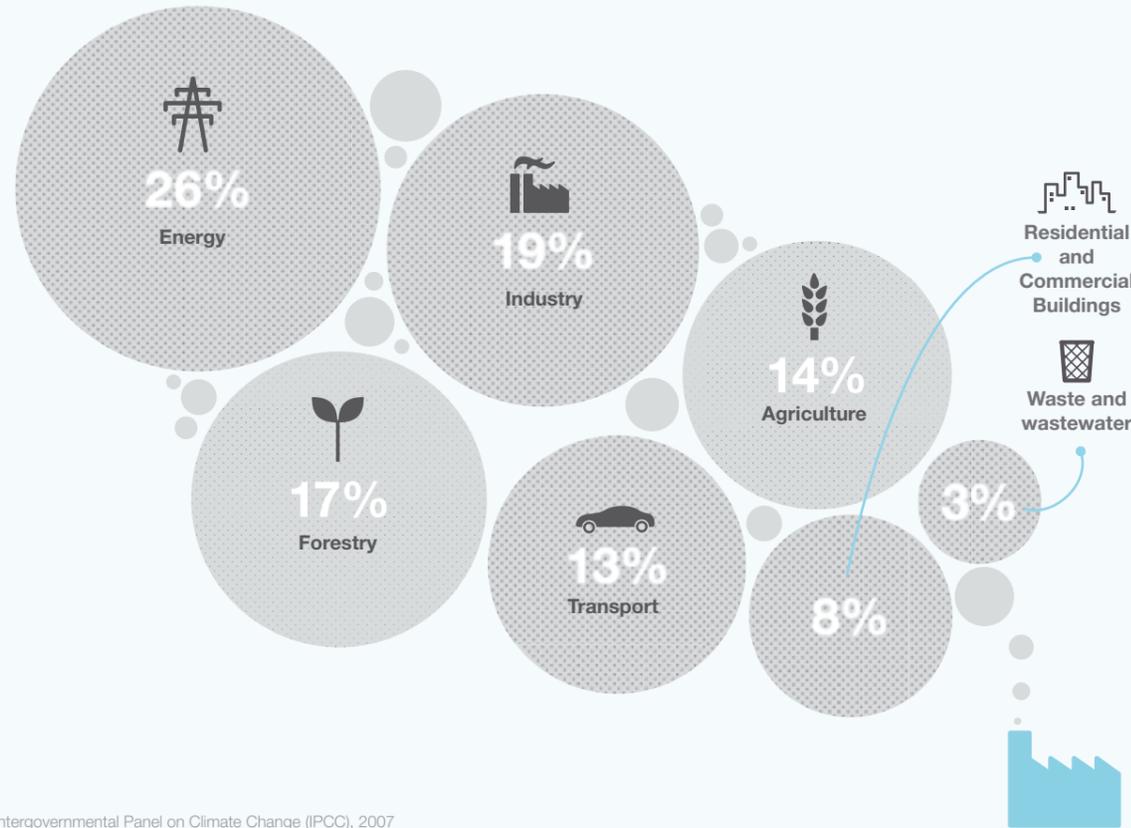


A Chinese worker inspects panels at a solar farm in Dunhuang, northwest of Lanzhou © Reuters / Carlos Barria

# 5

## Inside the data

### Sectors responsible for the greatest levels of greenhouse gas emissions



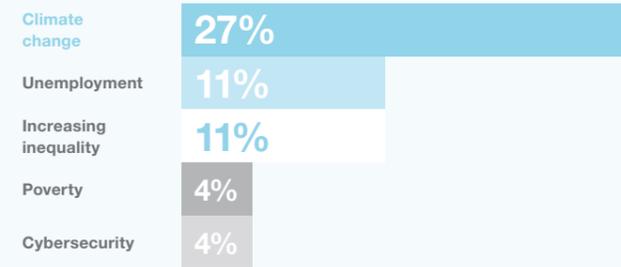
Intergovernmental Panel on Climate Change (IPCC), 2007

### A lack of attention for inaction on climate change

Of all the top 10 trends, respondents are **least satisfied** with the level of attention the world is currently giving to **inaction on climate change**

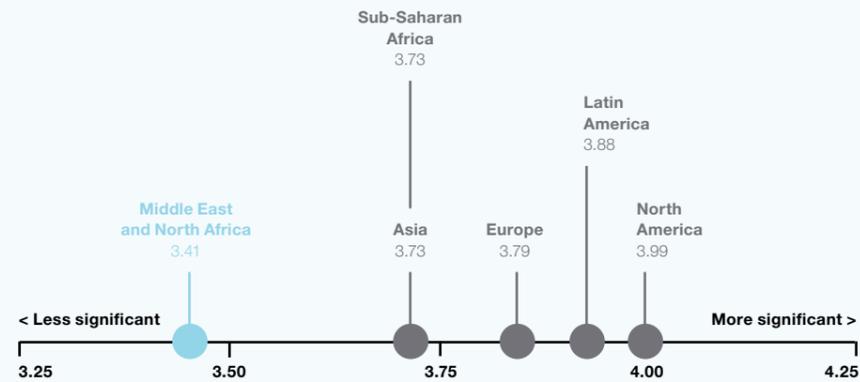
Source: Survey on the Global Agenda 2013

### Which global challenge is currently seen as the least effectively addressed?



Source: Survey on the Global Agenda 2013

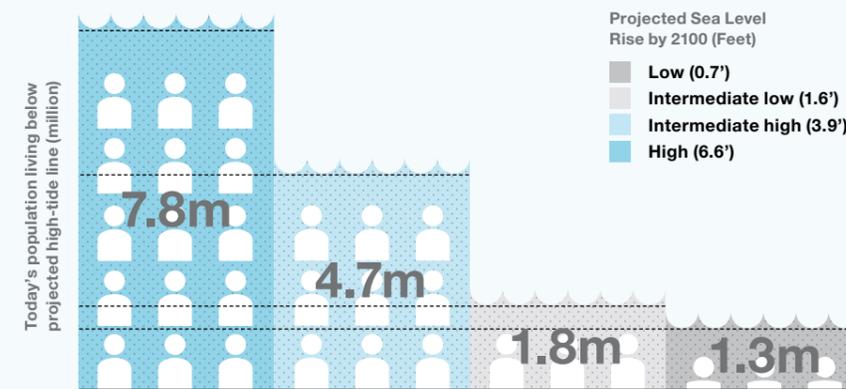
### How significant do different regions consider inaction on climate change?



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

### Number of people who could be affected by rising sea levels



Source: Global Sea Level Rise Scenarios for the United States National Climate Assessment, NOAA, 2013



“There is action, and it’s moving in the right direction, but it’s not moving fast enough. That’s why there is the perception of inaction.”

future of a low-carbon economy. That’s the wonderful thing about the climate – it’s the bridge to an exciting future that we should all feel very attracted towards.

Addressing climate change is daunting in its complexity. There’s no human endeavour that is not in some way linked to the climate change challenge. We are facing a complete transformation of our economy, but we have transformed our economies before – look at the industrial revolution or the revolution that the internet brought to the world. It is doable. We have the technology, we have the finance, we have the wherewithal, but we cannot allow ourselves to be paralysed, because the fact is that we do not have the option to ignore the problem as though that would make it go away.

It doesn’t help that you can’t point to any one economy that has already succeeded. You have economies like Germany, which has made a very serious commitment to the transformation of energy. And you have economies like tiny little Costa Rica, the country I come from, which has said it is going to become climate-neutral. But they’re isolated examples of this transformation and we need to move

from isolated examples to making this the norm.

Wherever you are in the world, policy cannot wait for transformative action and action cannot wait for policy perfection. It is completely unacceptable for those who have the power to effect change to stay in a ‘you first’ stance. Policy and action must progress hand in hand, learning from each other. We have to bring these two factors together.

It’s clear this is not just a government responsibility, a business opportunity or an academic exercise – this is something from which no single human being is exempt from responsibility. This is not just an environmental challenge and it’s not a future challenge; it is a transformational challenge that we must embrace today, not tomorrow ■

# 6

## Diminishing confidence in economic policies

**John Lipsky** is a Distinguished Visiting Scholar at the School of Advanced International Studies, and Chair of the Global Agenda Council on International Monetary Systems

It's pretty clear that people have lost confidence in current economic policies – you only have to look at the dearth of new investment and the weak re-employment rates in virtually all developed economies post-crisis to see that. So it's not surprising that 10% of respondents to the Survey on the Global Agenda mentioned economic troubles or financial issues as the most pressing emerging issue for 2014. In fact, if anything, it's surprising there weren't even more of them.

I think the reasons for this diminishing confidence are threefold: the reach and intensity of the crisis; the sluggish pace of recovery since then; and the unrealistic expectations that have been placed on economic policies.

To start with the first of those reasons, it's important to remember that few people saw this crisis coming. Folks in Asia saw their businesses dropping precipitously in the fourth quarter of 2008 and they had no idea who the Lehman Brothers were or what they did. And it's not just the man in the street who was caught by surprise; most experts had not foreseen the crisis

### From the Survey

**“There's a dissociation between governments and the governed, between trusted institutions like banks and the people who deposit.”**

because at the time the financial sector was seen as particularly innovative and prosperous.

It's hard to imagine now, but the rise to record levels of home ownership in the US and the growth of the sub-prime market were seen as signs of tremendous progress. That was flipped upside down virtually overnight, and suddenly these symbols of progress and opportunity became symbols of irresponsibility and threat.

That change was incredibly traumatic and it has been compounded by the sluggish pace of recovery since the crisis. People are uncertain about which policies are necessary to produce a return to stronger growth and that's been exacerbated by the tendency to ascribe wildly unrealistic powers of healing to public policy. I suspect that an excess of belief ▶

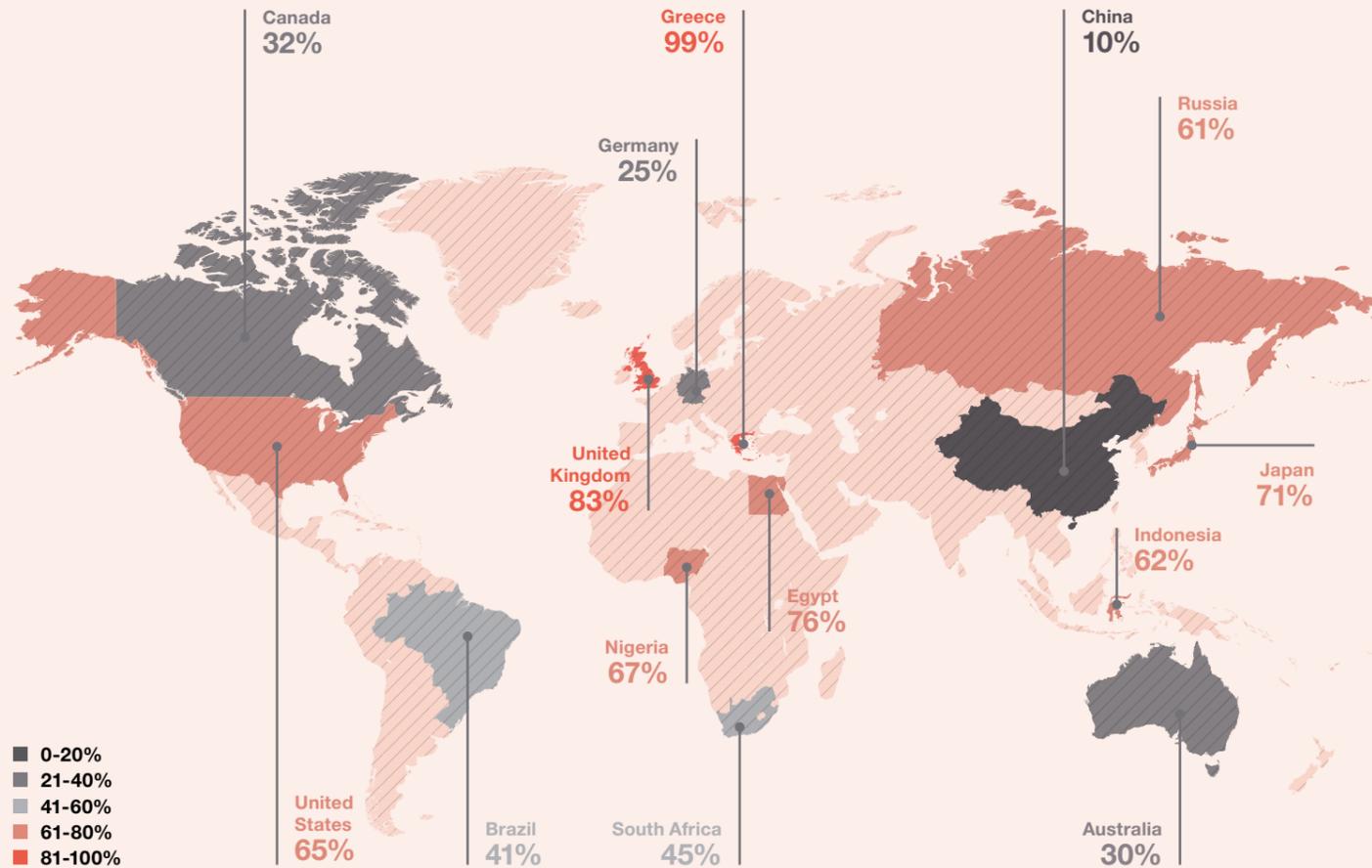


Greek workers in the state medical sector during an anti-austerity rally outside the Health Ministry in Athens  
© Reuters / Yorgos Karahalios

# 6

## Inside the data

Percentage of people who say the economic situation in their country is bad



Source: Pew Research Center Global Attitudes Project 2013, pewglobal.org

Financial issues: felt by many

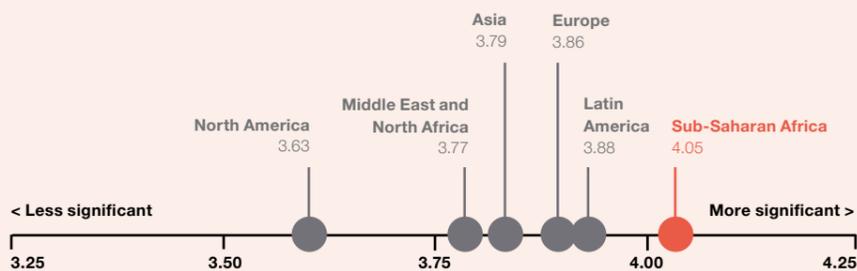
Around **10%** of respondents mentioned **economic troubles and financial issues** as their most pressing issue

Source: Survey on the Global Agenda 2013



“The most enlightened response to the crisis in our interconnected global economy was the formation of the G20 Leaders’ Summit, but it has been permitted to waste away.”

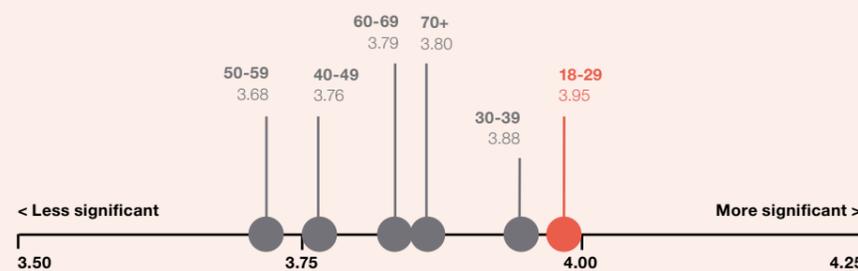
Significance of diminishing confidence in economic policies, by region



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

Significance of diminishing confidence in economic policies, by age group



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

If we’re going to turn this around and rebuild confidence, we need to heed the lessons highlighted by the current crisis, and the first of those is the degree to which the global economy is interconnected. The G20 leaders was the most enlightened response to the crisis and this mutual interdependence of the global economy, but its potential has been dramatically underestimated.

The G20 existed previously at the level of finance ministers, so somehow elevating it to heads of state didn’t seem like such a big deal. But a regular meeting of the heads of government that represent two thirds of the world’s population and 85% of its GDP has no historical precedent. The initial institutional response was extremely effective and yet it’s been permitted to waste away. Co-operative efforts are the best way of dealing with interconnected problems and if we can keep that in mind and build on the early successes of the G20 leaders, I think we can make a difference ■

grew up in the short-term efficacy of policy, because it was felt that there were prophylactic tools available that should be able to ameliorate any problem. As such, the failure of the financial system became seen as reflecting the failure of the regulatory environment and the weakness of the recovery yet again suggested that policy makers were either feckless or powerless.

Younger people tend to be especially critical of today’s economic policies – the Survey found that respondents under 50 think this issue is more significant than respondents over 50 and it’s the 18–29-year-olds who ascribe it the greatest significance. It makes sense that the boomers out there might not be quite so concerned personally – they stand to benefit from some very favourable government-supplied pensions and they’ve certainly done better than previous generations in terms of public healthcare and other welfare measures. My guess is they don’t really feel like those things are at risk, whereas many younger folks in places like the US will be wondering how long these systems will remain intact.

# 7

## A lack of values in leadership

**Archbishop John Onaiyekan** is the Cardinal and Roman Catholic Archbishop of Abuja, and a Member of the Global Agenda Council on the Role of Faith

The question of values in leadership boils down to why people seek leadership positions in the first place. Put very simply, if people want to win elections so they can improve the lot of the people and serve the nation, obviously they will take decisions along those lines. The Survey on the Global Agenda tells us that people in Latin America and Sub-Saharan Africa are particularly worried about this challenge, and speaking for Africa I can say we've seen too many people who seek power in order to make money, exert influence and spread money to their friends and cronies.

“The common good is the only way to prosper in the long term, because nobody can feel secure in a country in which the majority of people are struggling.”

In reality, it's more complex than that. Most people are neither one thing nor the other, so it becomes a question of degrees; to what extent do our leaders want to serve for the common good, and how much can that become tainted by the desire to do well for themselves and their families? The more short-sighted leaders fail to recognise that the common good is actually the only real way to prosper in the long term. Because no matter how well I do, I couldn't feel secure in a country in which the majority of people are struggling. In a country like that, nobody is secure.

Young people tend to have the strongest feelings on this issue; respondents under 40 told the Survey that they're not at all satisfied with the attention governments give to a lack of values in leadership. And they have every reason to be critical. They look around them, they see where the nation is heading and they don't want to go there. And yet they find they have no way of changing that direction because they're considered too young and inexperienced to be important.

Education is key to changing that, because while we can't always change things immediately, we should at least be able to understand what is happening and complain if we don't like it. And when enough people do that, a critical mass builds and a group of people will emerge with an agenda for genuine change. ►



Teachers strike outside the Municipal Assembly in Rio de Janeiro, demanding changes to the state and municipal education system © Reuters / Ricardo Moraes

# 7

“It’s not a lack of values that we should be worried about, rather the kind of values.”

**Sadako Ogata** is Chair of the World Economic Forum Japan office, and a Member of the Global Agenda Council on Japan

Most people’s understanding of a lack of values in leadership probably relates to the problem of leaders simply caring about their own interests, rather than being motivated by something more worthwhile. We expect leaders not to just stick to what they know, but to be driven by something that moves us forward and brings people together. And so, in reality, the concern is that there’s not enough sharing of views, values and vision.

Underlying the current conditions is the fact that we’ve never had access to such a wide variety of information. That gives rise to millions of different opinions and in this sense we – and our leaders – have to find the kind of directions we should be taking. So it’s not a lack of values that we should be worried about, rather it’s the kind of values. It has to be something that is not just about self-interest, but something that can be shared widely.

My hope is that we can create a global vision that takes into account not only those who benefit, but also those groups that are negatively affected, and makes the negative impacts as limited as possible.

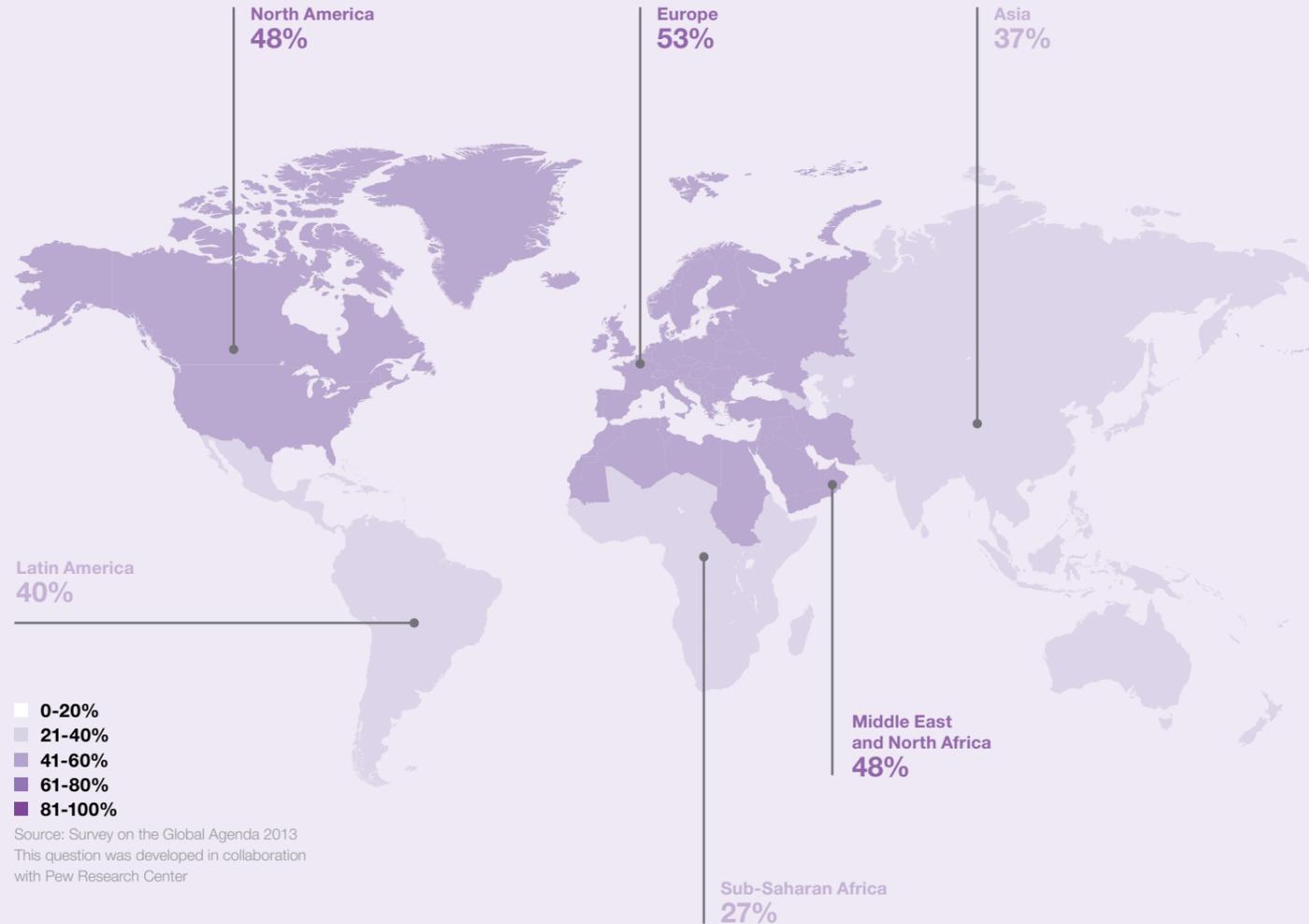
## Inside the data

### Governments must do better

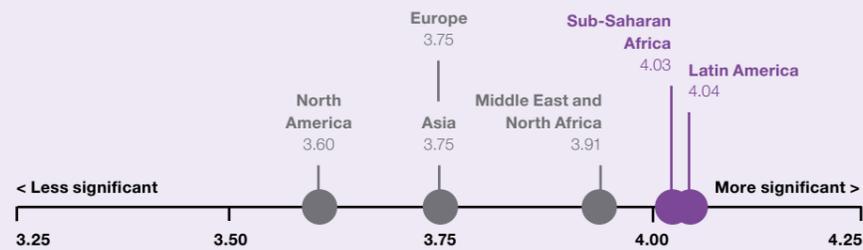
Of all the top 10 trends, respondents are **least satisfied with the attention that governments give to lack of values in leadership**

Source: Survey on the Global Agenda 2013

### Percentage of people who think religious leaders should have no influence in politics



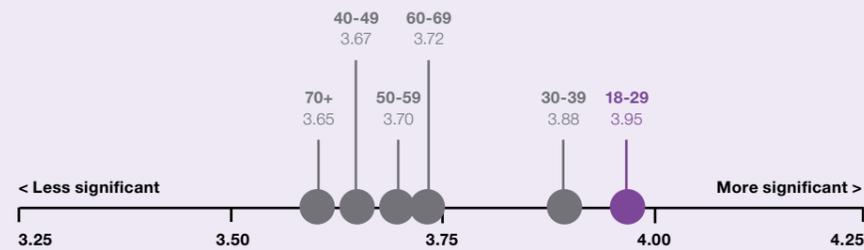
### Significance of lack of values in leadership, by region



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant  
 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

### Significance of lack of values in leadership, by age group



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant  
 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013



### From the Survey

“There’s a crisis of legitimacy in the institutions of industrial capitalism. Everywhere old institutional models are stalled or failing and the leadership for transformation is not coming forward.”

It may be impossible for leaders to know the interests of all, but I think the best leaders look to as wide an audience as possible. It is important that we don’t just look to maintain our own interests, or those of our immediate neighbours. Knowledge becomes relevant when responsible global decisions come from leaders who can draw upon a global knowledge base.

We cannot expect all leaders to be saints, or to have no interests of their own, or know everything about everybody – that is clearly impossible. But, in terms of developing a positive global vision, the sharing of information is key. We must work hard to present people with a different range of ideas, interests and visions, and introduce different types of people, information and values in an attempt to bring about understanding. There’s always room for learning. If leaders stop learning, then it’s the end ■

## 8

## The expanding middle class in Asia



### From the Survey

“The inexorable growth of the middle classes in Asia will put enormous stress on global resources.”

**Kishore Mahbubani** is the Dean of the Lee Kuan Yew School of Public Policy at the National University of Singapore, and a Member of the Global Agenda Council on China.

The explosion of Asia's middle class is stunning. The size of this group currently stands at 500 million and will mushroom to 1.75 billion by 2020 – more than a threefold increase in just seven years. The world has never seen anything like this before; it's probably one of the biggest seismic shifts in history. It's little wonder that people all across Asia expect a bright future for their children – according to Pew Research Center data a massive 82% of Chinese respondents expect today's children to grow up to be better off financially than their parents.

The reason these Asian societies are now succeeding in this way is because they have finally begun to understand, absorb and implement important reforms: free-market economics; mastery of science and technology; a culture of pragmatism; meritocracy; a culture of peace; the rule of law; and, of course, education.

All across Asia we are seeing a tremendous rise in living standards, with poverty disappearing everywhere you look. In China, for example, since initiating market reforms, more than 600 million people have been rescued from absolute poverty. We'll see a far greater improvement in living standards within the region than we have seen in centuries. And, through all this, there will be many benefits.

One key positive outcome of these changes, for example, is the reduction of conflict within the region. Asia has yet to achieve the Western European gold standard of there being zero prospect of war between neighbouring states, but, because of the expansion of the middle class – a population that traditionally reduces the prospect of war – that's something I think we are moving towards.

It's not all good news, though. The biggest challenge we face is what this all means for the environment; if Asia's expanding middle class citizens all aspire to Western living standards through the Western model, the strain placed on our ►

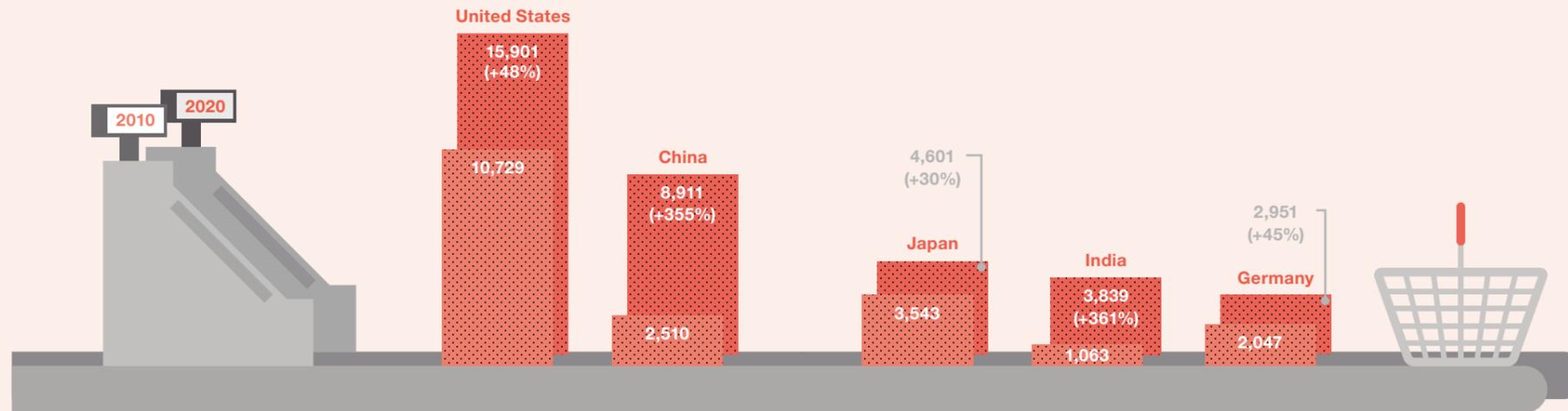


New-built houses at Dadun village in Hainan province, China. Around 3,500 villagers now live in the houses © Reuters

# 8

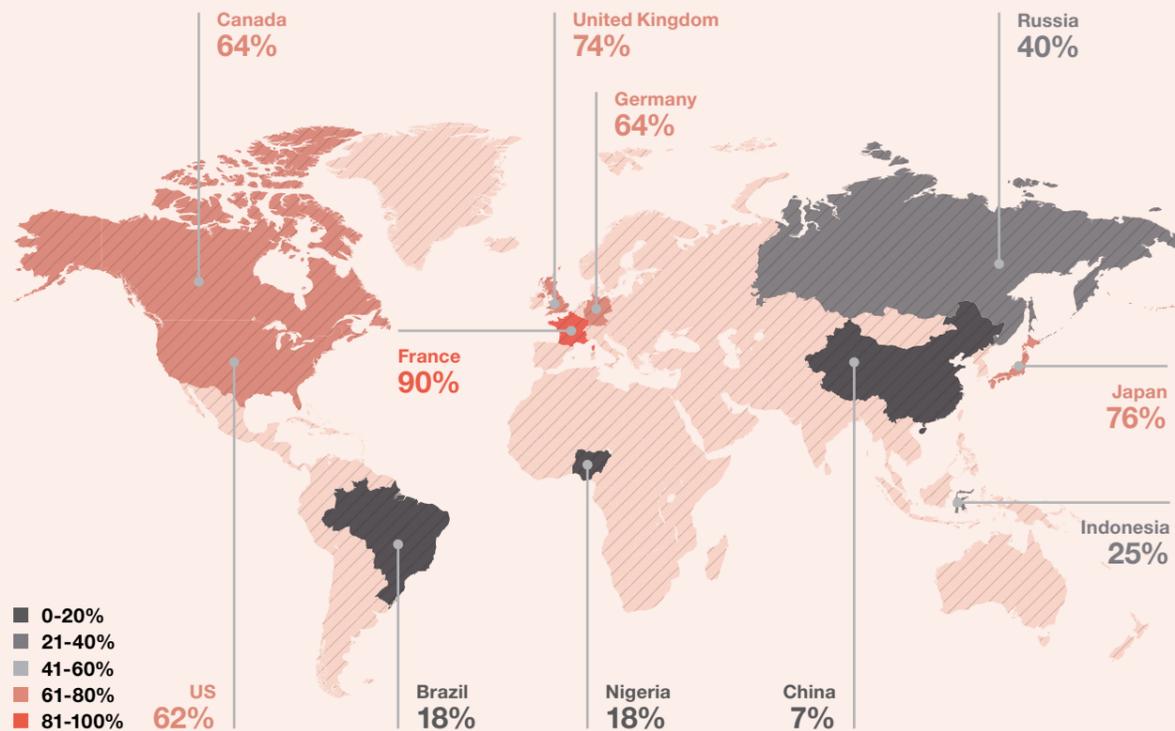
## Inside the data

### Who are the world's biggest consumers?



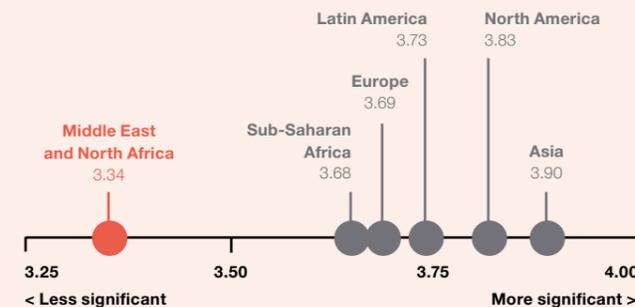
Source: IHS World Economic Outlook 2012

### Percentage of people in their country who think the next generation will be financially worse off than their parents



Source: Pew Research Center Global Attitudes Project 2013, pewglobal.org

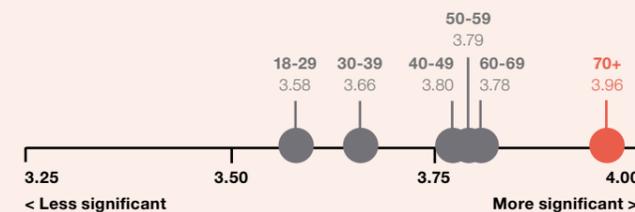
### Significance of the expanding middle class in Asia, by region



1.00 = Not significant at all 2.00 = Not very significant  
3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

### Significance of the expanding middle class in Asia, by age group



1.00 = Not significant at all 2.00 = Not very significant  
3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013



“Asian societies are succeeding because they have begun to implement important reforms including free-market economics, mastery of science and technology and education.”

global environment could prove disastrous. Electric power consumption in the US was a staggering 13,395kWh per capita in 2010, but by contrast, in China and India it was just 2,944kWh and 626kWh per capita respectively. That means China and India currently each have three times the population of the US but a fraction of the per capita electricity consumption. Clearly, we cannot stop the explosion of the Asian middle class, so the hope has to be that these societies will be more responsible in their impact on the environment.

Asian leaders recognise they have to do something in this arena. But in terms of solutions it's also important for the developed countries to lead by example. This is a big challenge for long-term policy thinkers – if you want the likes of China to emerge as a responsible stakeholder and one that pays attention to the global environment, you have to show the way through deeds, not words.

One way the Asian middle class could contribute to this dynamic is through the incredible amount of brainpower it will add to the realm of science and

technology. Japan's level of energy efficiency is 10 times better than China's. So if lessons can be learned by China and the growing middle class there can contribute to areas such as the study of green tech, it may be possible to create greater economic growth while reducing resource use.

And so my advice is simple. The global trend of an expanding middle class, especially in Asia, is one to be embraced. People across the continent can see their lives improving by the decade and these Asian societies are experiencing a level of peace and prosperity that they haven't enjoyed for centuries. If challenges like the environmental question can be tackled, there's no reason why that shouldn't continue for years to come ■

# 9



## The growing importance of megacities

**Geoffrey West** is a Distinguished Professor at the Santa Fe Institute, and Chair of the Global Agenda Council on Complex Systems

From global warming to homelessness, from debt crises to energy shortages, from insufficient water to outbreaks of disease, name any problem that concerns humanity and the city is the crucible where you will find it bubbling away.

But cities also represent our best hope for finding solutions to these enormous challenges since they are the cauldrons of innovation, ideas and wealth creation. Thus, an urgent challenge of the 21st century is to understand cities, and by extension megacities – those urban areas with populations exceeding 15 million.

Looking back over 150 years to megacities of the past, such as London or New York, we recognise that they suffered from much the same negative

“All cities share the same effective ‘DNA’ because they’re made up of people; cities are fundamentally social networks, complex adaptive systems that behave similarly regardless of geography, political system or economic model.”

image often associated with megacities of today. Think of the Dickensian image of London: a city pervaded by crime, pollution, disease and destitution. Nevertheless, these cities were highly mobile, evolving and diverse societies, offering huge opportunities ultimately resulting in their modern manifestation as drivers of the world’s economy. Much the same could be speculated about megacities emerging today in Africa, Asia and other parts of the world.

Recently, my colleagues and I have been developing a ‘Science of Cities’ to understand quantitatively how their socio-economic and infrastructural dynamics and organisation work. We found some surprising results. By analysing data representing a broad spectrum of urban metrics of cities across the world, we found that they all scale in a remarkably similar fashion. This means that if you know the population of a city within some urban system anywhere in the world, you can predict with 80–90% accuracy its average income, number of AIDS cases, patents, crime rate, petrol stations, length of roads, etc. So, despite history, geography and culture, there are extraordinary systematic regularities and constraints that transcend the individuality of cities.

Why is this? We believe these ‘laws’ reflect the commonality and similarity of people and social networks the world over: the connection is us. All cities share the same effective ‘DNA’ because they’re made up of people; cities are fundamentally social networks, complex adaptive systems that behave similarly ▶



The observation deck of Tokyo Skytree, the world’s tallest stand-alone communications tower  
© Reuters / Issei Kato

# 9

## Inside the data

### Population growth of the top 15 megacities (millions, 2001-2025)



Source: UN Population Division, World Urbanisation Prospects 2011 Revisions; figures for 2025 are projections

### Rapid growth of megacities

If Tokyo were considered a country, by 2025 it would be the 31st largest in the world

### More megacities than ever before

By 2025, there will be 35 megacities in comparison to 22 in 2011

Source: UN Population Division, World Urbanisation Prospects 2011 Revisions; figures for 2025 are projections

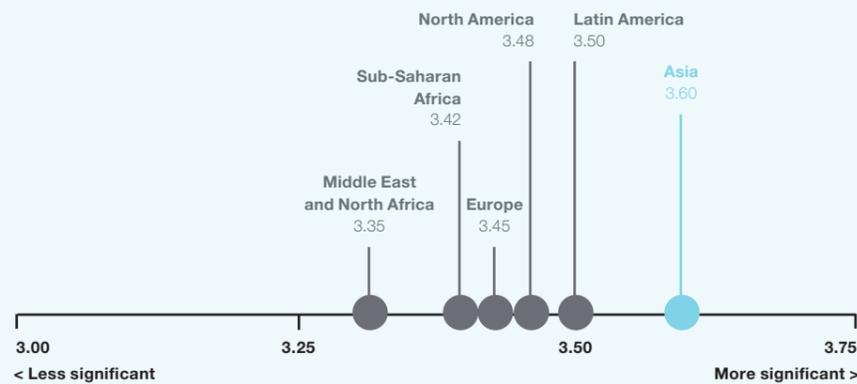


regardless of geography, political system or economic model.

How does this extend to megacities? The Survey on the Global Agenda showed that across the globe people recognise their importance, but the jury is out on their future. Will they continue to grow indefinitely without significant improvement of social conditions, or will they follow the trajectories of London and New York and develop into major economic engines and modern metropolises? Cities take decades to change, but as we look around the world there are lessons that underscore the importance of really understanding what makes them tick.

China, for example, has embarked on the daunting task of constructing new cities to urbanise 250 million rural residents. Perhaps out of expediency, these cities are being built without deep understanding of the complexity of cities and its connection to socio-economic success. Indeed, we are told that many of these new cities, like classic suburbs, are soulless ghost towns with little sense of community. Cities have an organic quality; they evolve and physically grow out of interactions between people.

### Significance of the growing importance of megacities, by region



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

### Significance of the growing importance of megacities, by country



1.00 = Not significant at all 2.00 = Not very significant 3.00 = Somewhat significant 4.00 = Very significant 5.00 = Extremely significant

Source: Survey on the Global Agenda 2013

The great metropolises of the world facilitate human interaction, creating that indefinable buzz and soul of the city; the wellspring of its innovation and excitement that is a major contributor to its resilience and success, economically and socially.

In the US, Detroit shows us how neglecting diversity can lead to losing that buzz. Detroit was narrowly focused on the automobile industry, which indeed spun off other associated but highly dependent industries, which led to a temporary boom. But because of its lack of business diversity, the city was unable to adapt when the ageing automobile industry hit tough times. Cities are quintessential complex adaptive systems constrained by underlying social and infrastructural networks. Diversity is crucial for their resilience, because all of their benefits, successes and problems are thereby highly coupled, interacting and continually changing ■

# 10



## The rapid spread of misinformation online

**Farida Vis** is a Research Fellow at the University of Sheffield, and Member of the Global Agenda Council on Social Media

Every new communications technology experiences a phase when people make assumptions about its powers and problems, so it's important to remember that the spread of misinformation is not a uniquely digital issue. You only have to look at Orson Welles' 'War of the Worlds' – when it was first broadcast on the radio in 1938, people fled their homes believing the Earth was being invaded by aliens.

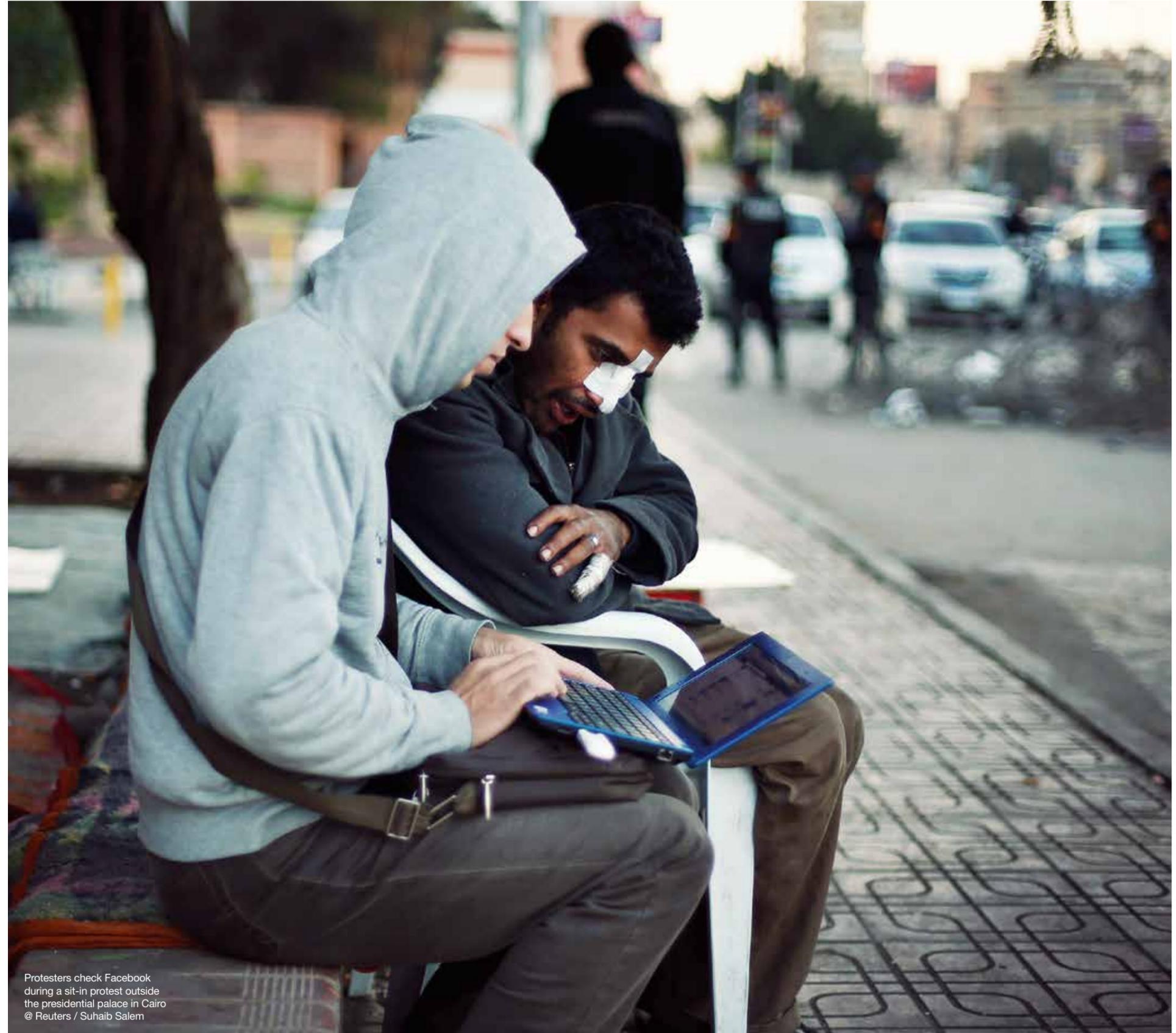
Any online information is part of a larger and more complex ecology, with many interconnected factors. It's therefore very difficult to fully map the processes involved in the rapid spread of misinformation or to identify where this information originates. Moreover, we should endeavour to look beyond the specific medium and consider the political-cultural setting in which misinformation spreads and is interpreted.

During the UK riots in the summer of 2011, for example, a rumour spread on Twitter that a children's hospital had been attacked by looters. The story fits with people's preconceptions of who the rioters were and what they might be capable of,

and it caught the public imagination. But interestingly, it was the Twitter community that swiftly debunked the rumour, killing it off well ahead of official confirmation from the hospital and media.

Misinformation of a different kind occurred in the US during the December 2012 Newtown shootings and the April 2013 Boston bombings. In the Newtown case, online and mainstream media misidentified a Facebook page as that of the shooter. After the Boston bombings, social media users engaged in online detective work, examining images taken at the scene and wrongfully claiming that a missing student was one of the bombers. But in this case, mainstream media outlets also played a part in perpetuating and validating the misinformation by publishing images of the wrong suspects.

In another recent example, again at the intersection between social and mainstream media, hoaxes emerged during the Turkish protests that began with the response to redeveloping Taksim Square. Twitter 'provocateurs' were condemned as responsible for spreading misinformation, including a photograph of crowds at the Eurasia Marathon, which was presented as 'a march from ▶

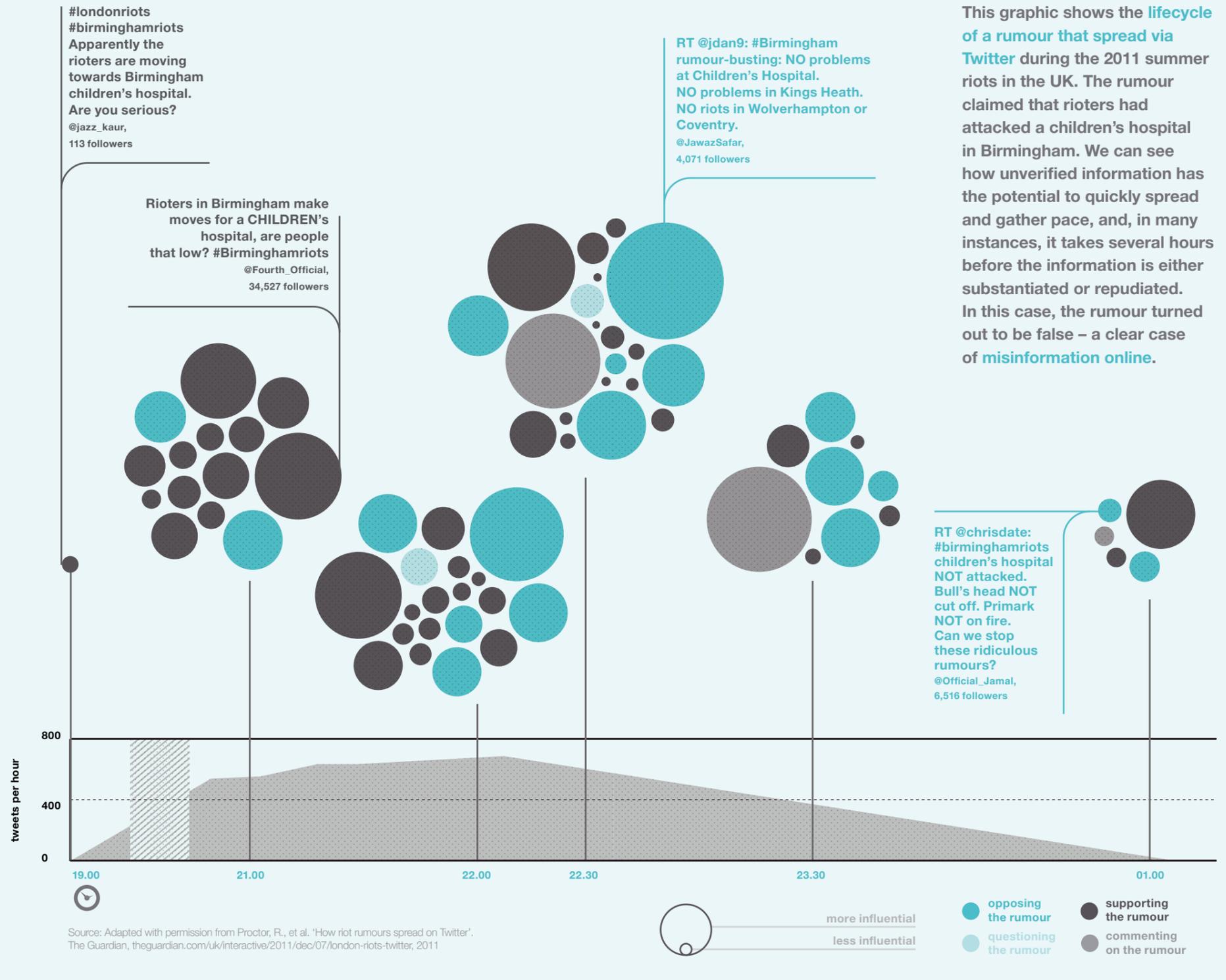


Protesters check Facebook during a sit-in protest outside the presidential palace in Cairo  
© Reuters / Suhaib Salem

# 10

## Inside the data

### Lifecycle of a Twitter rumour



“Any online information is part of a larger and more complex ecology, with many interconnected factors. We should endeavour to look beyond the specific medium and consider the political-cultural setting in which misinformation spreads.”

This graphic shows the lifecycle of a rumour that spread via Twitter during the 2011 summer riots in the UK. The rumour claimed that rioters had attacked a children’s hospital in Birmingham. We can see how unverified information has the potential to quickly spread and gather pace, and, in many instances, it takes several hours before the information is either substantiated or repudiated. In this case, the rumour turned out to be false – a clear case of misinformation online.

the Bosphorus Bridge to Taksim.’ But blaming Twitter ignores the context; the country’s mainstream news media had been slow to respond to the protests, creating a vacuum in which misinformation easily spread, especially when referenced by foreign media outlets.

It can also be difficult to establish what ‘fake’ actually means. One popular image shared during Hurricane Sandy in 2012 showed soldiers standing guard at the Tomb of the Unknown Soldier in Arlington Cemetery, braving the approaching storm. Unlike the pictures of the marathon on Bosphorus Bridge, the framing of the image did not place radically different meaning on its subject, but it also didn’t show what people thought they were looking at. The image had been taken during an earlier storm and was undoubtedly ‘real’, but had no relevance to Hurricane Sandy.

It’s now common practice for news organisations to source images online, so we must get better at understanding how these images can be verified. Storyful, which describes itself as “the first news agency of the social media age”, is developing invaluable guidelines and techniques that can help with this essential

verification process. An appreciation of the ways in which media influence each other, as well as broader cultural and social issues, may help us understand the content of such images.

It’s also imperative to highlight the volume and rapid dissemination of online misinformation. When you are dealing with social media, you are dealing with big data. It’s simply not possible to read the 1 billion tweets produced every two-and-a-half days. In order to properly understand this data, we need to make use of computer-assisted processing and combine this with human evaluation to put information into context.

Finally, we should remember that every case of misinformation is unique and should be considered independently, paying attention to the complexities of the ecosystem it circulates within. In terms of interpreting misinformation, human evaluation will remain essential to put information into context, and context is ultimately what this is all about ■



# In focus

Our experts' analysis of the top 10 trends shows just how complex they are, but there are some that require special attention. To identify the gaps in our collective knowledge, we asked our Survey respondents to name the challenges they feel they know the least about.

When we were designing the Survey on the Global Agenda, we didn't just want to focus on what respondents knew. We also wanted to seek out those areas where they weren't so comfortable, enabling us to map not just their collective expertise, but also the issues and challenges they feel they could know more about.

Top of that list was the issue of intensifying cyber threats (page 16), followed by the expanding middle class in Asia (page 24) and the growing importance of megacities (page 26). **Jonathan Zittrain**, Professor of Law

and Computer Science at Harvard University, a founder of the Berkman Centre for Internet and Society, and a Member of the Global Agenda Council on the Future of the Internet, was not surprised that cyber threats had ranked so highly.

"I don't think the security of our online world lacks visibility," he says. Virtually everyone with an internet connection has some understanding of the cyber threats we face, but Zittrain speculates that the lack of understanding reported by Survey respondents could be a reflection on our

current inability to deal with cyber threats on a national and institutional level.

"This is a globally visible problem, but it's something that authorities currently don't know a thing about," he explains. "The only way to change that is by installing technically savvy people in the upper ranks of government. You can pass laws at the normal speed of passing laws, but cyber threats change so fast that the normal pace of legislation can't keep up."

**Kishore Mahbubani**, Dean of the Lee Kuan Yew School of Public Policy at the National University of Singapore, and a Member of the Global Agenda Council on China, agrees enthusiastically that there are "shocking levels of ignorance" about the expansion of Asia's middle class. Reflecting on this gulf of understanding, he singles out the one-way flow of education that has prevailed over the last 20 years.

"I think there are about 180,000 Chinese students studying in America today and something like 120,000 Indian students. But how many Western students travel to Asia to study? I don't know the numbers, but they are incredibly low." In Mahbubani's opinion, it's time to reverse that flow.

And he says the process has already started. "For many years Australia has welcomed hundreds of thousands of

Asian students to study in its universities, but now Australia wants to send some of its young people to study abroad with us. They have realized that the time has come for Australians to learn from Asia. It's time for a two-way street of learning."

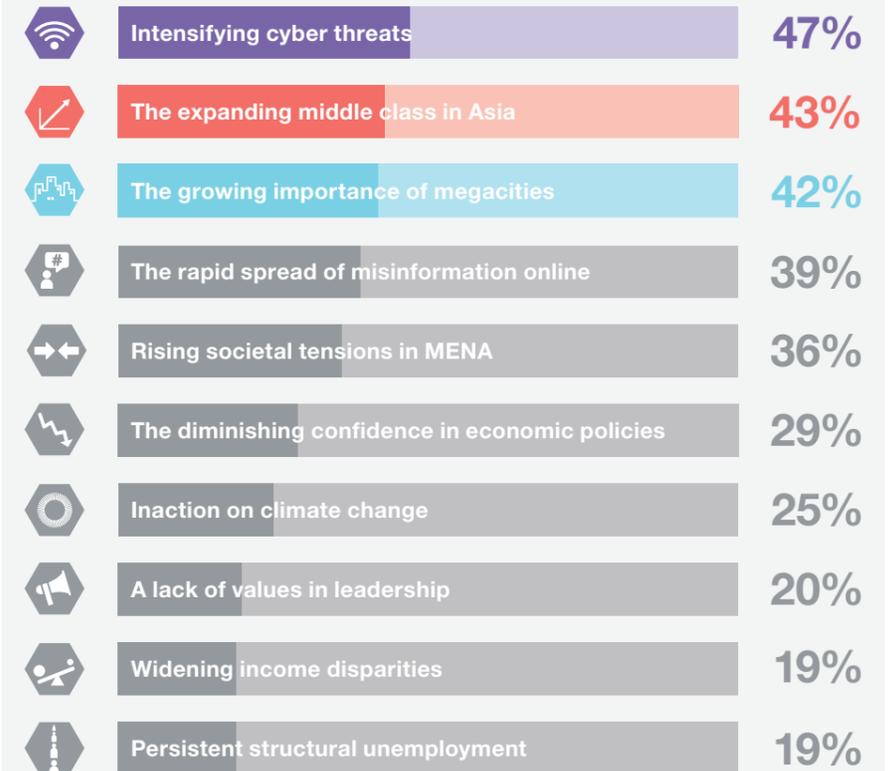
Finally, **Geoffrey West**, Distinguished Professor at the Santa Fe Institute and Chair of the Global Agenda Council on Complex Systems, says that there's still much work to be done when it comes to understanding the rise of megacities.

"To say we don't understand megacities presupposes that we do understand ordinary cities, and I would say that's far from true," he notes. While he and his colleagues have been working on ways to scientifically understand the make-up of cities, West says that megacities introduce a whole new level of complexity because of the resources they consume, both in their construction and their day-to-day life.

"It's a global sustainability question," he explains. "Is there enough out there that we can lay our hands on quick enough to keep up with the flux of people being drawn into these cities and relocated within them, trying to eke out jobs and move up the hierarchy? It has awkwardly become the ambition of everybody to be middle class and to have all the benefits associated with that. Is there enough out there to sustain that? It's a huge issue." ■

## Inside the data

### Percentage of respondents who reported limited knowledge of the trends



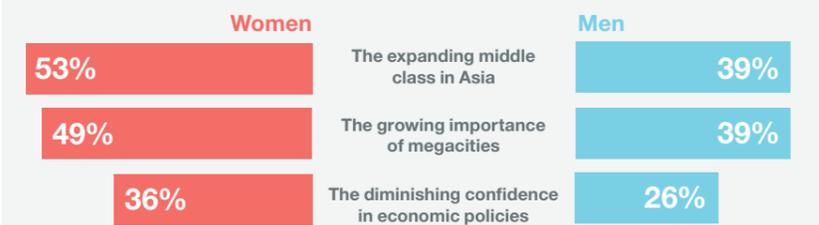
Source: Survey on the Global Agenda 2013

### Top three trends for which younger people report more limited knowledge



Source: Survey on the Global Agenda 2013

### Top three trends for which more women than men report limited knowledge



Source: Survey on the Global Agenda 2013

# Regional challenges

34

**Building for the better**

40

**The cautious optimist**

The Survey on the Global Agenda produced a wealth of region-specific data, allowing us to compare and contrast the many different challenges as they are experienced around the world, and providing insights into how to tackle these difficulties as they occur in their region.



# Building for the better

All around the world, regions are struggling to reconcile growth with sustainable development. Inequality, unemployment and corruption are felt in every corner of society and need to be addressed in their specific regional context. In this chapter, we deep dive into specific regional issues and ask four experts from the Global Agenda Councils for innovative proposals.

Top challenges faced by regions across the world



Source: Survey on the Global Agenda 2013

What are the key challenges facing **Asia** in 2014?

↓  
Increasing inequality



The role of China



Inclusive and sustainable growth



Geopolitical conflict



Global co-operation



Source: Survey on the Global Agenda 2013

## Asia – the rise of China

To feel the irresistible force of the world's fastest-growing economy first-hand, take a trip to People's Square station in Shanghai during the morning rush hour. More than 400,000 people pass through this station every day, making it the busiest in China, as it serves a city that has grown by around 40% in the last decade. And Shanghai lags well behind Guangzhou, Beijing and Shenzhen in the growth stakes, the latter expanding almost 60% during the same period.

Asian respondents to the Survey on the Global Agenda named inequality (14%) and the role of China (11%) as the issues they are most concerned about. Take a 20-minute drive from Xintiandi, Shanghai's glitziest retail hub, to the sprawling shantytown made from shipping containers near its docks and you can't help but be struck by these twin challenges.

For **Fu Jun**, Professor of Political Economy at Peking University, and Vice-Chair of the Global Agenda Council on New Growth Models, the solution to sustainable Chinese growth hinges upon more domestic consumption, a more equal society and more efficient use of energy and resources.

"For the Chinese economy to move forward, you need a balance between supply and demand," he explains. "In the past, the balance manifested itself in exports, investment and consumption. The recent economic slowdown in the US ▶

and Europe, however, put downward pressures on Chinese exports. To shore up growth, a huge amount of money was injected into the economy. But this kind of investment was mostly government-led and resulted in overcapacities, thus making it unsustainable. That leaves consumption.”

So, while a chastened US and Europe are having to tweak their economies in terms of overspending and over-reliance on the financial sector, China must work to redirect economic growth towards domestic consumption. Fu Jun says that this process will have to be finessed to involve the creation of better institutions to deal with monopolies of various kinds and to improve education, health and social issues, as well as the distribution of wealth.

The danger, he warns, “is complacency with China’s status quo (i.e. halfway between plan and market economy) expressed in various administrative monopolies. “For growth to be sustainable,” he argues, “China must continue to press ahead with market-oriented reforms, not just about goods and services, but also about factors of production, such that you build a truly level playing field.”

Given the resources, says Fu Jun, economic growth is a function of population multiplied by technology. Thanks to globalisation, China has managed to narrow the technology gap with advanced economies. “There is a catching-up process,” he explains, “And when you multiply this technology variable with a huge population, you get dramatic growth. The implications on resources are obvious and the answer to the challenge lies in energy-saving technologies. By technology, I mean not only hardware, but also institutional technology. Examples would include corporate governance, anti-trust, the rule of law, carbon trade and better integration into the world system. I would also add universities. Built on the principle of academic freedom, universities facilitate growth – albeit indirectly – by shaping norms, generating new ideas and pushing the frontier of human knowledge.”

Thus, to make growth more sustainable and inclusive in the future, China must also catch up and innovate in terms of institutional technology. “What is involved in sustainable growth is not only a good balance between man and nature, but also a good balance between state and market,” he says. “In addition to anti-corruption measures, recalibrating the role of the state vis-à-vis that of the market will be high on the reform agenda of the new Chinese leadership.”



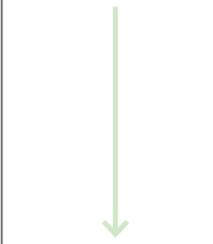
## Latin America – the search for equitable growth

One region where economic reforms have pulled millions more people into the middle class – in part because of its freshly implemented \$260 billion annual trade with China – is Latin America, an area bursting with commodities and energy. Brazil is now the world’s second-largest emerging market behind China and Latin American respondents to the Survey identified it as the country to focus on in their region. But they also picked out the many challenges facing Latin America, including inequality (30%), economic growth (14%) and education (13%).

It’s an assessment that **Enrique García**, President of CAF Development Bank of Latin America and Chair of the Global Agenda Council on Latin America, would agree with. “Yes, exports have grown, macroeconomic policies have improved after the hyper-inflation and the ‘lost decade’, but now we need to look at the micro-economy. It’s time for a bigger investment in education, technology and infrastructure,” he says.

“Overall, inequality throughout Latin America has not improved, which has not helped to incentivise people and has harmed our reputation worldwide. If our children now do not have the opportunity to study, it will be hard for us to accumulate the human capital required for the productive transformation and the structural changes we need,” he continues. “We have to work on better education, particularly in the tech field, but in order to do that we need a consensus among governments and society as a whole for their vision to develop a long-term agenda.”

What are the key challenges facing Latin America in 2014?



Increasing inequality



Economic growth



Education



Poverty



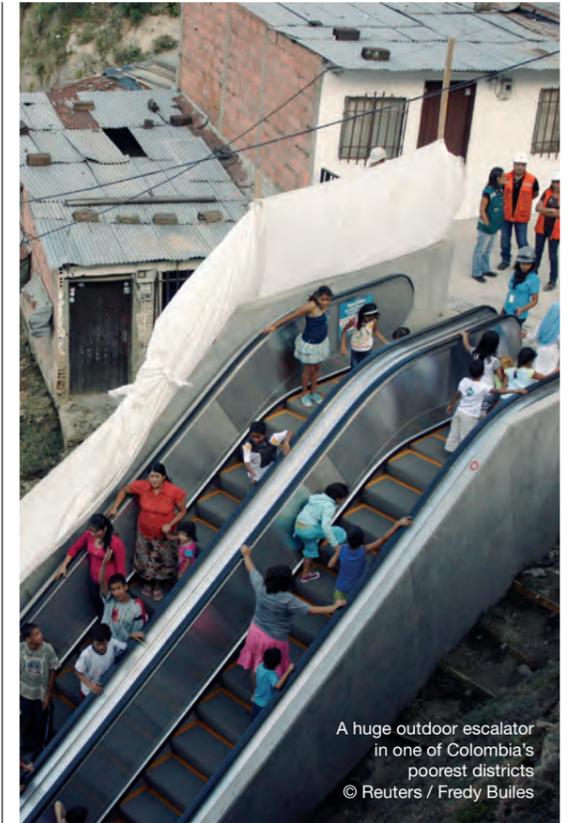
Unemployment



Corruption



Source: Survey on the Global Agenda 2013



García says that Latin America needs to undertake new structural reforms in order to improve further growth. “We cannot rely on primary goods exports. We have to move from a traditional advantage model to a competitive value model. We need a more diverse, more inclusive, economy,” he says. In García’s assessment, technology should make this possible throughout the region, but governments will still need to encourage innovation, creativity and entrepreneurialism.

“Education is not solved in a five-year election cycle, infrastructures are not built in a congressional cycle of three years, but we can plan for long-term and lasting change. This is something we can copy from Korea – how they became such a dynamic country with no natural resources. Instead, Korea had a long-term vision and invested heavily in education. You have to do this as a democracy. In Latin America, I see too many people who don’t think beyond the next five years.”

Tellingly, last year Brazil unveiled a BRL133 billion (\$65.6 billion) stimulus package to spur investment in its creating infrastructure, which was creating obstacles to faster growth. Few Brazilians believe this would have happened if the country were not hosting the World Cup next summer and the Olympic Games two years later. But García is taking the long view and says that supporting innovation and entrepreneurs and investing in education – encouraging financial institutions to ramp up small business activities – will help Latin America meet its other big challenge of turning its informal economy into a formal one. ▶

## Middle East – planning for peace

Another part of the world struggling with a large informal economy and chronic joblessness is the Middle East, a region also dealing with political volatility ranging from regime change to civil war. This, compared to Latin America, makes long-term economic planning seem daunting. From Cairo, the economist and writer **Mohamed El Dahshan** points out that “in business you want to be able to plan five years ahead. In the Middle East, you can barely plan five months ahead – we are navigating through very thick smoke.”

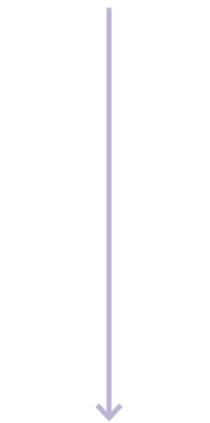
Nevertheless, he insists, there are fundamentals that have to be changed. “We still need to make sure children enter school, that syllabuses are relevant and teachers are respected. So regardless of who comes into power, there are some deep-rooted challenges and some long-term reforms that need to be implemented. But it is possible – putting it into context, and comparing it with, say, the South Africa of 1994, we have seen countries come back from worse situations than this.”

Survey respondents across the Middle East and North Africa cite unemployment (45%) and political instability (27%) as the biggest challenges facing the region, but El Dahshan says that despite sectarian issues, it is the economy that will ultimately lift the Middle East and North African countries. “People’s primary concern is when their next pay cheque will arrive,” he says. As in pockets of South America, the ‘informal’ sector of Middle East economies – where employees operate outside the provision and the protection of the state – is particularly significant. Across the Middle East, from street vendors to factories missing the correct licence, millions of people work in the shadows.

“To make people become taxpayers, you can either punish them or incentivise them with access to social security or healthcare,” says El Dahshan. “In most Middle Eastern countries, the government has not succeeded at making this happen.”

Compounding the poverty cycle is the fact that many of these people live in unregistered dwellings and without proof of ownership – which presents further social and political challenges – and are not eligible for secured business or personal loans. El Dahshan refers to the research of economist Hernando de Soto, who estimated that Egypt alone has \$248 billion worth of ‘informal’ property that it cannot use. “Interestingly, this issue has been successfully addressed in countries like Brazil

What are the key challenges facing the Middle East in 2014?



**Political instability**



**Unemployment**



**Education**



**Economic instability**



**Poverty**



Source: Survey on the Global Agenda 2013

by sending teams house by house to check for asset ownership, but this takes a lot of time,” he says.

Finding the right tools to tackle unemployment and underemployment is not an easy feat. For half a century, governments have been the region’s biggest employers, effectively paying several people badly to do one person’s job. “Instead of giving out government contracts, you need to create an entrepreneur-friendly climate, whether people are running a kiosk or building the next Facebook,” says El Dahshan. The resources needed are financial, legal and human, with banks that know how to handle small companies and institutions that operate free of corruption. “Creating a company shouldn’t be a 10-month endeavour that costs two years of salary and involves kickbacks. In this particular regard, the Middle East needs to learn from the West.”

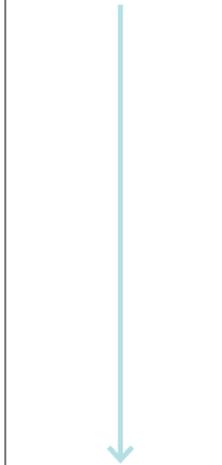


Pupils at a new school south of Cairo © Reuters / Mohamed Abd El Ghany



Workers at a Congolese copper mine check bundles of copper cathode sheets ready to be sent out to buyers © Reuters / Jonny Hogg

What are the key challenges facing Africa in 2014?



**Poverty**



**Unemployment**



**Youth unemployment**



**Increasing inequality**



**National governance**



Source: Survey on the Global Agenda 2013

## Africa – fighting against corruption

Inequality and corruption do not only affect emerging countries. “Inequality is a fundamental issue facing every country. There are inequalities within countries and between countries,” says **Huguette Labelle**, Chair of Transparency International and a Member of the Global Agenda Council on Responsible Mineral Resources Management.

“Power and greed are part of the reason and corruption is a common denominator, but it is manifested in different ways. In Western industrialised countries we see tax evasion, illicit trade and collusion on contracts. In poor countries the theft of public assets by some leaders remains a problem, but petty bribery has a crippling effect. Unless you successfully tackle corruption, you won’t reach equality of access and greater peace.”

Labelle says that corruption prevents developing countries from reaping the benefits when they exploit their natural resources. “In 2006, for example, the Treasury Department of the Democratic Republic of Congo received only \$86,000 despite around \$1 billion worth of minerals being exported from the country. Around \$2.5 billion of gold has been taken out of Tanzania but the government there has received only \$28 million a year over an eight-and-a-half-year period.” She points out that there is 30–45% more chance of civil wars in countries with perceived corruption.

Labelle says that the G20, its anti-corruption task forces and the World Economic Forum are pushing the envelope of the global discourse on transparency. As are the World Bank, regional banks and the UN Global Compact.

“After seven years, I have seen, through the language and the content of the Global Agenda Councils, very important leadership being displayed in bringing the world community together to find practical solutions. I also notice that we have an increasing number of business leaders who are taking a much more direct and important role in pressing not just for clean business, but for governments to operate in a different way.”

El Dahshan agrees that research by the Global Agenda Councils becomes particularly useful as more developing countries adjust their economic tools to an urban setting. “Problems are increasingly complex, particularly where local communities don’t have all the answers. It is good that multiple councils are addressing such defined issues, rather than discussing one-size-fits-all solutions.” ■

# The cautious optimist

According to our Survey, Sub-Saharan Africa is the region most optimistic about tackling the global challenges we all face. But can this optimism be turned into opportunity? We meet Donald Kaberuka, President of the African Development Bank, who gives us his first-hand regional perspective.



Donald Kaberuka in the AfDB headquarters, Tunis © Mark Leary

Donald Kaberuka, President of the African Development Bank (AfDB) and Chair of the Global Agenda Council on Africa, has heard the same cliché as everyone else. Africa is the continent with the troubled past and the vast potential for development, if only its leaders could find a way of responsibly tapping its phenomenal resources. It's become a familiar narrative for the region that is now being courted by international partners as a place of growth and prosperity, but Kaberuka insists that beyond the cliché there is evidence of real change.

He points to the results from the latest Survey on the Global Agenda, which found that Sub-Saharan Africa is comparatively the world's most optimistic region when it comes to tackling the challenges the world faces in 2014. And while he's not about to be swept away by a groundswell of good feeling, he shares the optimism: "It's not my job to debate whether the glass is half-empty or half-full – figuring out how to fill the glass, that's my task."

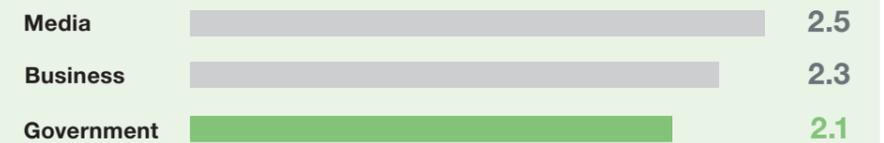
"It's where we came from," he says of the region's positivity. "We went to the bottom and now we have the chance to come back up. The Survey found that poverty, unemployment and youth unemployment

are the most pressing challenges for our region to tackle and that's precisely what we intend to do."

Under Kaberuka's leadership, the Global Agenda Council on Africa has identified six key focus points, ranging from building human capacity through education, entrepreneurship and talent mobility, to managing the emerging China-Africa dialogue. Focused, measurable and (it's hoped) achievable, they provide a carefully considered structure that takes Africa's development away from vague sentiment and anchors it firmly in reality.

But this is a job bigger than any one institution and Kaberuka says the key to success is in building lasting alliances between organisations. The Council on Africa has aligned itself with Kaberuka's own AfDB, as well as the African Union Commission (AUC) and the United Nations Economic Commission for Africa (UNECA), which together represent the continent's three major regional organisations. Drawing these organisations together and promoting his agenda of pragmatic progress wherever he goes, Kaberuka works tirelessly to overcome the cliché. And under no circumstances will he fall foul to complacency. ▶

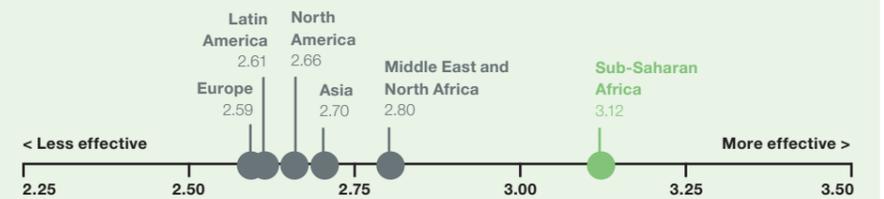
## How effectively are key sectors addressing global challenges?



1.00 = Not at all effectively 2.00 = Not very effectively 3.00 = Somewhat effectively  
4.00 = Very effectively 5.00 = Extremely effectively

Source: Survey on the Global Agenda 2013

## According to different regions, how effectively are world institutions identifying global challenges?



1.00 = Not at all effectively 2.00 = Not very effectively 3.00 = Somewhat effectively  
4.00 = Very effectively 5.00 = Extremely effectively

Source: Survey on the Global Agenda 2013



Donald Kaberuka in the AfDB headquarters, Tunis © Mark Leary

“Much remains to be done,” he concedes. “Whether it’s issues around institutions, around better management of natural resources, around better democratic institutions, around expanding our economies and moving up the value chain... In other words, I focus on what makes this momentum sustainable.”

### Focus on the future

Born in Rwanda in 1951 and educated in Tanzania and Britain, Kaberuka served as his homeland’s Minister of Finance and Planning from 1997–2005. He leads the team credited with laying the foundations for Africa’s economic transformation and he says his own optimism is rooted in looking to the future, as embodied in the mobile-phone-wielding young people like those who fuelled the Arab Spring.

“The young people, who are now the majority of Africans, they know what is needed, they are better connected,” he says, adding that this connectivity will place pressure on leaders to build “institutions that can deliver for the people, institutions that are clean, institutions that are accountable.”

There’s clearly an appetite for these changes among young people. The Survey found that 18–29-year-olds are more concerned than older age groups about a lack of values in leadership, and Kaberuka says that in Africa, as elsewhere, young people must come first. Half of Africa’s 1 billion people are 17 or younger and the AfDB predicts the active population between the ages of 15 and 64 will triple between 2005 and 2060. That could mean higher productivity and faster growth, but only if young people get the training and support they need. He also notes that half of these young people are women and girls, and many of them are key agricultural producers and agribusiness entrepreneurs. He singles out countries like South Africa, Rwanda and Kenya for “the way they have been reaching out to women.”

“In terms of mobile finance, using mobile technology to bank the unbanked, to ensure that rural women can access market prices, Kenya’s been fantastic,” he says.

And Kaberuka himself has been taking advantage of new technologies – he started tweeting last year as @donaldkaberuka, a move that was greeted with interest by critics who have called on the bank to be more transparent and responsive.

“I see an incredible conversation between me and African young people,” he says. “Through Twitter, they can talk to me directly.”

### Making a difference

Open and avuncular, his Twitter persona reflects the motivations of a man eager to look beyond Africa’s own shores to both import and export expertise. “We can learn from each other, all of us,” he says, noting that he admires the example set by Asian countries that invested in education. Meanwhile Africa is presented as a model for Western nations faced with swallowing the bitter pill of structural reform, a process Kaberuka knows only too well from the measures the IMF once required of failing African states.

“They were very, very difficult,” he says. “But, looking back at the 1980s and 1990s, especially the 80s, which is called ‘the lost decade’... without those structural reforms in the 90s, I think the continent would not have fared as well.”

It looks like those decades of pain set Africa’s leaders in good stead. The Survey revealed that respondents all around

the world feel governments are not working together effectively to address the top 10 global trends we face in 2014. But once again Sub-Saharan Africa emerged as the most optimistic region, with respondents putting the greatest faith in their leaders to work together productively.

With these solid foundations in place, it’s Kaberuka’s aim that Africa’s natural resources should be used to build her own future. New energy reserves are being discovered in countries like Mozambique, Tanzania and Uganda, opening up great opportunity but also calling for careful, responsible management.

“In the past, countries had oil and gas, but the result was white elephants, the resources curse and excess debt,” Kaberuka says. “The transformation of natural wealth and inherited wealth into created wealth is the issue of the moment. And we have to do much better – we have to use the oil and gas to develop education, to develop training, to develop the human capital.”

“I come back to young people, because that’s what the continent is about.” ■

# Expert opinion

Sub-Saharan Africa emerged as the region most optimistic about tackling the challenges we all face, but how did other regions and stakeholders shape up?



## Government

Around the world, respondents are unanimous that businesses are not working well together to tackle global challenges. **Elizabeth Littlefield**, President of the Overseas Private Investment Corporation, and Member of the Global Agenda Council on Social Innovation, says the only way to improve the situation is by taking a long-term view.

“If incentives for business and government continue to be skewed toward short-term outcomes, we’re never going to get the right decisions to solve the world’s problems. Corporations must be driven to become forces for good in the world, and this can only happen by taking a long-term view. For example, transforming the global economy over the next 20 years to a lower carbon economy that creates jobs and opportunities in a more equal and inclusive way would be an incredibly powerful thing for the world, but it requires patience and a clear realignment of incentives.”



## Europe

Europe is the region most pessimistic about the challenges the world faces, rating international organisations and national governments not very effective.

**Robin Niblett**, Director of Chatham House, and Member of the Global Agenda Council on Europe, explains that the continent still has a long way to go.

“The rise in Spanish and Italian exports is good news, as is the gradual re-balancing of wage levels and emerging country investor interest in Europe. But extensive structural reforms still need to be delivered in areas like banking, education and labour markets, and these will take time to work through. Populist parties that want to derail the reform process could gain influence if EU countries cannot start to show sustainable rates of growth, at 1.5% and above, by the beginning of next year.”



## Media

Respondents in the developed world say the media is not very effective in monitoring global challenges, but respondents in the developing world feel the media is doing a better job. **Trevor Ncube**, Deputy Executive Chairman of Mail & Guardian, and Chair of the Global Agenda Council on Informed Societies, says that in some parts of the world the importance of media has been lost.

“Journalists must make sense of the clutter in a world of too much information. That happens all over the world, but I feel the West has lost a sense of media’s importance in a democracy – we live in a connected world, but we’re connected on social media with people who agree with us.”

# Networked thinking



**The Survey on the Global Agenda provides insights on the interconnections between global trends and issues global trends and issues are deeply interconnected. In this special fold-out infographic, we take a Council perspective to examine the webs of cause and effect that connect the world's greatest challenges, and highlight the fact that today's decision-makers need to adopt a systems-wide view to gain a deeper understanding of the connections between issues.**

The greatest strength of the Global Agenda Councils is their interconnectivity; bringing together experts from very different fields and very different parts of the world, they're a platform upon which otherwise unconnected individuals can come together to share their ideas and opportunities. Turn the page to see the ways in which some of the Councils coalesce around values and employment, two issues that require greater connectivity in policy design and action.

To see a complete picture of the Councils and their interconnectivity, try our interactive infographic at <http://wef.ch/GACinterconnect>

# Values

Values are at the core of all our societies and organisations, shaping notions of mission, objectives and operating procedures. In today’s fast-paced world, values can sometimes seem like slow remnants of a forgotten time, but standing for something is more important than ever in an age when individuals, movements, companies and entire nations face seemingly impenetrable challenges.



## Global Agenda Council on Values

“The values conversation is the future of the business conversation.”

The old social contract between citizens and public institutions is broken. Growing inequality, corruption and a global financial crisis have eroded public trust in governments and business, while shared notions about fairness, mutual benefits and communal values have disappeared.

The Global Agenda Council on Values believes a new social covenant between citizens, businesses and governments needs to be designed. At its core would be certain universal principles: human dignity, the primacy of the common good and stewardship of the planet. Such a covenant would aim at the promotion of human flourishing, happiness and wellbeing as social goals. We want to affirm the movement from a shareholder model to a stakeholder model of business.

We have political leaders, NGO leaders, human rights campaigners and CEOs in the conversation already. We’re aiming for nothing short of a global movement to renew values in crucial decisions and policymaking.

**Jim Wallis**, President and CEO of Sojourners, and Chair of the Global Agenda Council on Values



## Global Agenda Council on Anti-Corruption & Transparency

“At its heart, corruption is a misuse of power and a form of theft.”

There’s really no value system I know of where theft is acceptable, and corruption is in fact a very expensive, dangerous, corrosive form of theft. From a values perspective, anti-corruption is the notion that it is unacceptable to steal from your fellow citizens through the misuse of your office, the misuse of your authority or the misuse of your position. From a corporate standpoint, we will not be able to invest and create growth in those places in the world where corruption endangers our investments.

The mission of the Global Agenda Council on Anti-Corruption & Transparency is to unify the various anti-corruption activities around the world to create a common agenda and turn words into action. The main focus has been to promote and implement the B20 recommendations on anti-corruption. We’ve been very encouraged to see the recent adoption of a recommendation for operationalising a Collective Action Hub, where business, government and civil society will work together on anti-corruption initiatives in the public and private spheres.

**Peter Solmssen**, Member of the Managing Board and General Counsel, Siemens, and Chair of the Global Agenda Council on Anti-Corruption & Transparency



## Global Agenda Council on Institutional Governance Systems

“Nowadays we have the universal conviction that organisations should be guided by values. But sometimes there’s a mismatch between real practices and values.”

Many of our global institutions were designed for the world of the mid-20th century and are not as effective today in delivering global public goods. We need new institutional arrangements that match the real division of power, the interconnectedness and complexity of the new economics of the world.

The Global Agenda Council on Institutional Governance Systems is analysing values in international institutions – in particular transparency, accountability and how organisations select leaders. We are diagnosing the state of elements such as legitimacy and meaning, and asking whether institutions are truly reflective of their membership. Do they have clearly specified missions, reflected in a set of values and by-laws? How are the institutions held accountable and are they transparent about their rules and the results of their operations?

These elements are key to governance, and quite simply, governance will have an impact on performance.

**Ernesto Zedillo Ponce de Leon**, Director of the Yale Center for the Study of Globalization, and Vice Chair of the Global Agenda Council on Institutional Governance Systems

# Employment

Creating sustainable, quality employment is at the top of policy-making agendas worldwide; job growth strategies of the past no longer have the same impact on today’s labour markets. While millions of students are investing in developing skills, millions more find themselves unemployed. New startups have vast potential to create jobs, yet established businesses continue to report talent shortages. A rethink is underway with companies, governments and researchers pioneering interconnected models for employment.



## Global Agenda Council on Fostering Entrepreneurship

“People like to do something of value. Not only does entrepreneurship solve unemployment, it knits up the social fabric.”

Everyone believes in the dynamism of the new economy and everyone loves startups. Now that we are faced with high unemployment rates in many countries, startups can be one of the solutions. Entrepreneurship has the ability to take unemployed people and turn them into productive workers, who in turn contribute to a prosperous and dynamic economy.

Corporations want some of that magic and the Global Agenda Council on Fostering Entrepreneurship has a simple message for them: it’s easy. Work with entrepreneurs. We collaborate to advance successful entrepreneurship ecosystems that allow enterprises to scale. There’s an optimal company size in the middle of startups and large corporations, where the productivity of each individual is enhanced. The goal is to create more companies that are on this plateau.

One of the big problems facing startups is that they don’t know how big companies work. If they are going to grow, they need to learn that. We’re encouraging larger companies to share their resources, not as a charitable act, but as something that will help them. I’d say our major work is in encouraging corporates to look at these startups as potential suppliers.

**Esther Dyson**, Chairman of EDventure Holdings, and Vice-Chair of the Global Agenda Council on Fostering Entrepreneurship



## Global Agenda Council on Youth Unemployment

“The consequences of youth unemployment are generational – and the costs are huge.”

In 2010, almost 358 million young people were not in education, employment or training (NEET) and the number is rising. Young people who aren’t employed for a few years after entering the job market are so scarred by the experience that they may never work.

At the same time, emerging-market multinationals face challenges finding the right talent to support growth. We need to do something about this mismatch between demand for labour and the supply of young people desperately looking for employment. Enterprises can play a major role in engaging young talent, and we are exploring a framework that helps them to do so successfully and economically.

TEN Youth is a joint initiative between the Global Agenda Councils on Youth Unemployment and Emerging Multinationals. It has three components: a skills framework that identifies the behavioural skills important for a young person to develop, such as reliability, flexibility and problem-solving; an apprenticeship model that’s more intense and less costly than the traditional model; and a mentoring programme to support and further develop these skills on an ongoing basis. We are now building platforms and protocols so we can start a pilot.

**Branka Minic**, Founder, Future Work Consulting, and Member of the Global Agenda Council on Youth Unemployment



## Global Agenda Council on Education & Skills

“The demand for educated workers is greater in a world economy in which knowledge increasingly rules.”

It is vital to improve education worldwide because, as we’ve seen, many students are either inadequately educated or possess skills that are not highly valued by the job market. Education encourages productivity, job creation, technological progress, and ultimately economic growth. It is a powerful promoter of innovation, and in a world economy in which knowledge increasingly rules, education responds to the demand for educated, skilled workers.

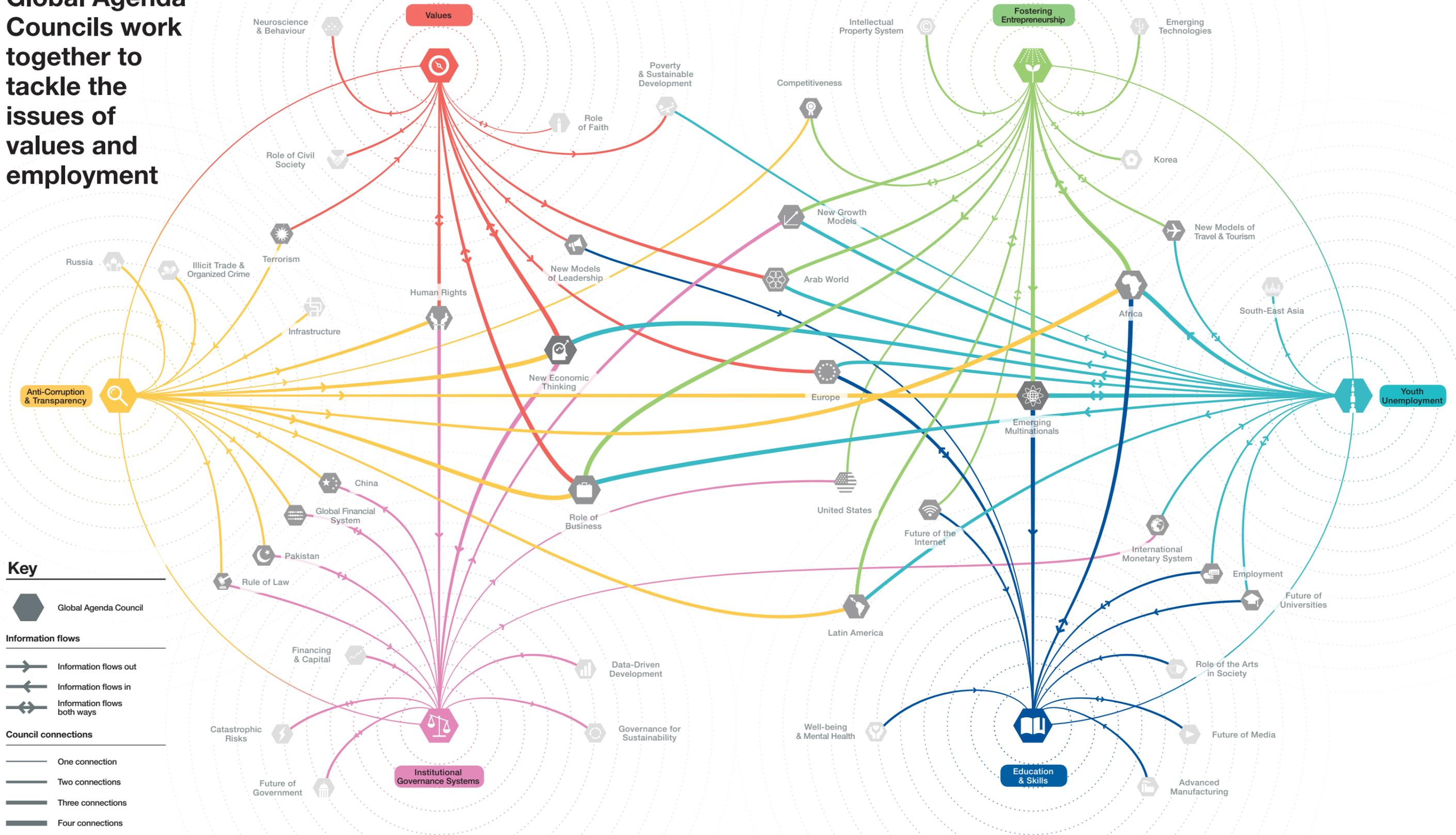
The central focus of the Global Agenda Council on Education and Skills is building human capital through formal and informal systems of education and training, and learning on the job.

The Global Agenda Council on Education and Skills is preparing a book for publication, tentatively entitled ‘Education and Skills 2.0: New Targets and Innovative Approaches’. It looks at the diverse challenges facing education and skill-building throughout the world and the most innovative, scalable and financially sound means for addressing them.

The policy environment is key: policies that support the accumulation of human capital and competitive rewards can provide strong support for economic growth.

**David Bloom**, Professor of Economics and Demography at Harvard University, and Chair of the Global Agenda Council on Education & Skills

# Discover how Global Agenda Councils work together to tackle the issues of values and employment



# Future agenda



48

**Big questions**

Now that we've examined the global challenges and the various ways they currently manifest themselves around the world, it's time to look ahead.

60

**The new space race**

As part of the Survey on the Global Agenda we asked the experts to identify "emerging issues" – those developments that are seen as important, but which have yet to reach their full potential or impact. The data pinpointed six issues as worthy of explanation, so in Big questions, our Global Agenda Council Members explore biotechnology, shale gas, the future of democracy, digital surveillance and emerging multinationals.

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**Mapping the future**

Outliers in the data also led us to extend our horizons, so The new space race examines how the great beyond is bringing new opportunities to mankind. And in Mapping the future, we track how emerging technologies are changing the way we live our lives back here on Earth.



A researcher demonstrates the process of cloning in a laboratory in National Chung Hsing University in Taiwan © Reuters

# Big questions

**We speak with Global Agenda Council Members about the big questions that will define the year ahead**



## The future of biotechnology: what needs to happen for biotechnology to reach its full potential?

### From the Survey

“Creating a new technology is less dependent on the huge resources of large organisations. Biohacking and garbage biotech are increasingly popular using off-the-shelf ingredients.”

**Tim Harper**  
Chief Executive Officer and President, Cientifica

### From the Survey

“Advances in biology and the biomedical sciences increase the need to prevent their exploitation for malicious or hostile uses and to reinforce their beneficent ends. In the short term, new fatal infectious diseases cause concern; in the long term, it will be our ability to manipulate the human genome.”

**Jeanne Guillemin**  
Researcher, Harvard Sussex Program on Chemical and Biological Weapons, University of Sussex

**Sir Leszek Borysiewicz**  
Vice-Chancellor of the University of Cambridge, and Member of the Global Agenda Council on the Future of Universities

I am an optimist – I believe that advances in biotechnology will help eradicate diseases, while advances in plant sciences will make it possible to feed the future global population of 9 billion, as well as solve critical issues of water security. However, to get there we will have to tackle the ethical and legal constraints on these advances; this will be crucial for progress.

The power of genetics, the ability to genetically modify organisms, from bacteria to plants to mammals, is of course a huge issue. Because at the same time that it allows us to create stronger, better and more efficient organisms, it also raises the ethical question of whether man has the right to manipulate life. Moreover, the biggest area of development is currently in the mass databases available to scientists. On the one hand they allow us to profile and link patient data in order to increase our understanding and make new discoveries, but on the other hand, the databases touch on the issue of privacy.

There are already ethical constraints in place, both among the scientific community and among the public. In many cases, research must first be approved by an ethics committee, while scientists are always held to account by their peers. The final decision on ethics should be decided by public debate, but the form that debate takes can vary widely, and in the UK, for example, we've seen very different reactions. The issue of genetically modified food was largely met by public hysteria, while the 2008 Embryology Bill (which included regulations on hybrid human-animal embryos for research purposes and sex selection) was a two-year debate that was incredibly well-informed and open.

Individual scientists have to ask themselves what they are doing and what they are hoping to achieve. You cannot control every scientist or every country, but scientists must be open to public scrutiny and they must engage in public debate early on, explaining the potential benefits of their research and anticipating the potential harm ■



## The future of shale gas: what are the economic and environmental implications of shale gas extraction?



A shale gas facility run by Poland's PKN Orlen company  
© Reuters / Peter Andrews

### From the Survey

“The availability of shale gas could spell energy independence for the US. That would mean a shift of regional influence away from the Middle East. It could mean natural gas abundance and use as transportation fuel.”

**Stephen Dobbs**  
Senior Group President, Fluor Corporation and Vice-Chair of the Global Agenda Council on Infrastructure

**Nobuo Tanaka**  
Global Associate of the Institute of Energy Economics, and Member of the Global Agenda Council on Energy Security

Shale gas has the potential to trigger a revolution in the global energy landscape. It could change the rules of the game.

Today there is a small group of countries that are energy suppliers. With shale gas, a whole new group of suppliers could join the market and the impact would be felt worldwide. The availability of shale gas on the market would alter prices, turn some producer countries into consumers and shift the balance of trade in favour of those with shale.

OPEC countries are worried about the development of shale gas. They need high oil prices to pay for social stability, but that will be threatened if gas is substituted for oil in areas such as transportation. This is already happening in places such as California and Texas, and if gas prices

stay low, a continued substitution is very possible. American industry will be a huge winner, thanks to cheap gas and electricity creating cheaper inputs for the chemical and manufacturing sectors. And by reducing oil imports and starting exports of liquefied natural gas (LNG), the US trade balance will be significantly improved.

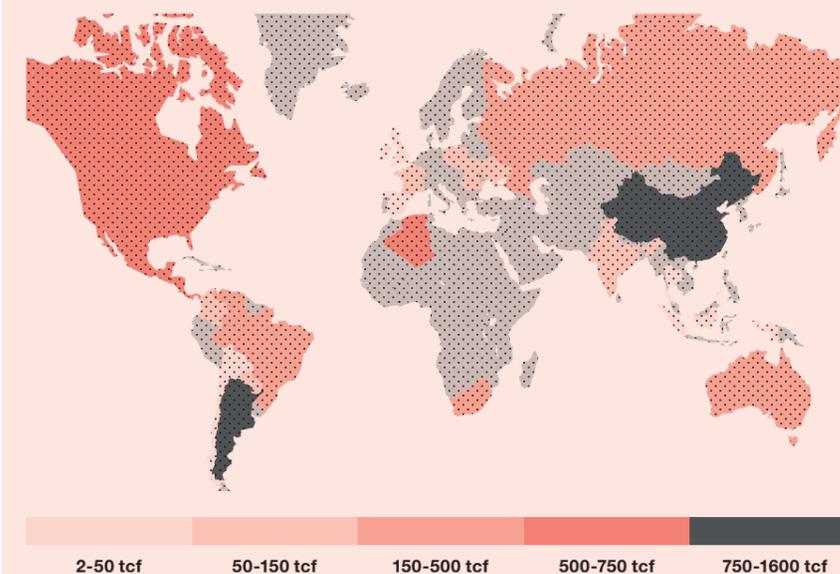
The rise in the accessibility of shale gas has been driven by technologies such as horizontal drilling and hydro-fracturing through the existing pipeline system, which makes it economically feasible to access these deposits. The new supply is having huge knock-on effects globally – Russia is planning to develop gas fields in the Arctic Ocean and had planned to sell primarily to North America, but with the new gas supply in the US, Russia's plans may no longer be feasible. LNG exports from the US will provide diversity and create pressure for other gas suppliers to reduce prices.

There are many impacts environmentally. On the one hand, gas is less polluting than oil,

so substituting shale gas for petroleum and coal could result in lower CO<sub>2</sub> emissions. On the other hand, there has been contamination of drinking water from the leaked gas, or from the recycling of water used in shale gas extraction. Much of the environmental impact could be prevented if we choose sites more carefully or if we improve the breakdown of chemical substances used to extract shale gas, making the water recycling eco-friendly. It can be solved through improved technology, but this costs more and the investments in improving technology need to increase.

There is a constant balancing act – the shale gas price needs to be high enough for producers, but low enough so as not to undermine the economies of the emerging markets that consume it. Shale could become commercially viable, but it depends on increased levels of investment in the technologies, such as fracking and horizontal drilling. It also depends on designing the necessary smart regulations in the US and other countries with potential to enter the market ■

### Countries with technically recoverable shale gas resources (trillion cubic feet)



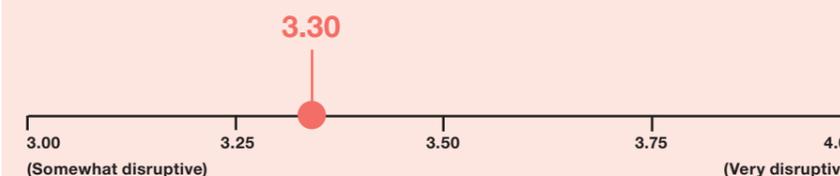
Source: US Energy Information Administration

### Technically recoverable shale gas resources (trillion cubic feet)

Country	Resources (tcf)	Ratio of imports to consumption of dry gas (2011)
China	1,115	24%
Argentina	802	16%
Algeria	707	N/A
United States	665	14%
Canada	573	33%
Mexico	545	27%
Australia	437	19%
South Africa	390	72%
Russia	285	8%

Source: International Energy Agency / KPMG, 2013

### How disruptive do you believe shale gas extraction will be in the next 18 months?



1.00 = Not disruptive at all 2.00 = Not very disruptive 3.00 = Somewhat disruptive 4.00 = Very disruptive 5.00 = Extremely disruptive

Source: Survey on the Global Agenda 2013



## The future of democracy: are we witnessing the beginning of the end for democracy?

**Professor Joseph Nye**  
Distinguished Service Professor at Harvard Kennedy School of Government, and Chair of the Global Agenda Council on the Future of Government

No, I think that's too pessimistic. But new challenges in the information age, the long-term decline of trust in elected governments and the increase in citizen involvement all mean that democracy must adjust.

Democracy has its problems, but then it always has, even in ancient Greece. And of course, there was a period in the 1930s when there was a widespread belief that democracy was finished as a form of government and that fascism and communism would prevail, so I think it's premature to see the end of democracy at this moment in time.

Respondents to the Survey on the Global Agenda signalled a change in the expectations they have of governments. The data links the failures of democracy to a broader failure of the institutions that govern political, economic and social life. And interestingly, the Survey also points to an increase in citizen involvement as a risk factor for democracy.

We're seeing a long-term decline in trust in many institutions, including corporations, governments and religious institutions, but one of the greatest trends of the 21st century is the diffusion

of power from state to non-state actors. The internet has given a significant proportion of the population access to more information at lower costs than ever before. This means that governments and traditional hierarchies will have increasing difficulty in getting things done, unless they adapt to more networked procedures and more horizontal structures.

But we have to remember that we're not talking about machines here – political and social institutions can't keep pace with Moore's Law and the increase in computing power, so there's a dialectic between those new empowered actors and traditional institutions. That's why we can see protesters gather in Tahrir Square using social media to demand change, and just months later a military coup overthrows a democratically elected leader.

But then we have to take a long-term view on all this and even the term 'Arab Spring' suggests seasonality. We should really be talking about an 'Arab Revolution' and revolutions take decades to work themselves out – just look at the French Revolution, which started in 1789 and didn't come to an end until the Congress in Vienna in 1815. Even then the result was a reassertion of traditional authority, so while the French Revolution unleashed an enormous tower of ideas that spread throughout Europe, you have to take the century-long perspective to say that it prevailed ■

Furloughed AmeriCorps employee Jeffrey Wismer sits alone on the Washington Mall, as he calls for an end to the government shutdown  
© Reuters / Jason Reed



### From the Survey

“Governments need to address the frustrations and growing discontent of large segments of their populations, especially young people who are particularly affected by a significant rise in unemployment, in some developed regions – such as the EU – as well as in many emerging economies.”

**Anne Miroux**  
Director, Division on Technology and Logistics, United Nations Conference on Trade and Development and a Member of the Global Agenda Council on Logistics & Supply Chain Systems

“The world has yet to develop a model of democracy that limits the short-termism of leaders at the expense of doing what is right for society in the long term. In area after area, we are avoiding the fundamental issues although there are solutions, e.g. the EU crisis, global warming, the war in Syria.”

**Per-Ola Karlsson**  
Senior Vice-President, Booz & Company and Chair of the Global Agenda Council on the Arctic

### Which stakeholders need to be most aware of increased citizen expectations of government?

Stakeholder	Increased citizen expectations of government
Governments	93%
Business	67%
IOs	60%
NGOs	60%
Academia	53%

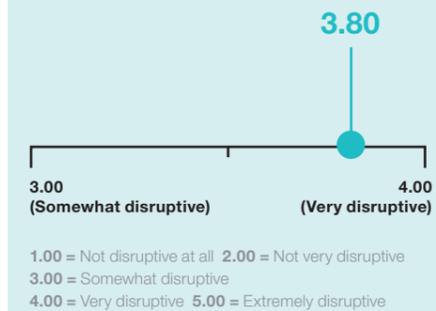
Source: Survey on the Global Agenda 2013

### Which regions will be most affected by increased citizen expectations of government?

Affected region	Increased citizen expectations of government
Asia	93%
Latin America	93%
MENA	93%
Sub-Saharan Africa	87%
North America	67%
Europe	67%

Source: Survey on the Global Agenda 2013

### How disruptive do you feel increased citizen expectations of government will be during the next 18 months?



Source: Survey on the Global Agenda 2013

### Increased expectations of government become more visible

**60% of respondents predict that increased expectations of government will become more widely perceived in the next year**

Source: Survey on the Global Agenda 2013



## The future of surveillance: how does digital surveillance fit within a world of increasing transparency?

### From the Survey

“Are democracy and capitalism at risk from the proliferation of surveillance and data aggregation? Is privacy a thing of the past? Will big data’s big winners become monopolists?”

#### James Stewart

Chairman of KPMG’s Global Infrastructure Practice, a Member of the Global Agenda Council on Infrastructure

### From the Survey

“The most significant issue is how to foster new, exciting and mutually beneficial opportunities that take advantage of Big Data while simultaneously allowing people to control some portion of their data flow.”

#### Michael Fertik

Founder and Chief Executive Officer, Reputation.com, and a Member of the Global Agenda Council on the Future of the Internet



Satellite dishes at GCHQ’s outpost in Cornwall, South West England, close to where transatlantic fibre-optic cables come ashore © Reuters / Kieran Doherty

#### Nigel Inkster

Director of The Transnational Threats and Political Risk International Institute for Strategic Studies, and Chair of the Global Agenda Council on Terrorism

Big Data has fundamentally changed our relationship with information and called into question established expectations of privacy. Our personal information and online behaviour has become a commodity to be analysed and marketed to a degree that few users of electronic media appreciate, and with virtually no controls.

As a former intelligence officer I am no stranger to electronic surveillance, but I fully understand that ordinary citizens are uncomfortable with this phenomenon. We now live in a world of Big Data and unlike in the past, the technologies that enable this are almost exclusively in the hands of the private sector.

It should come as no surprise that governments have sought to keep pace with these developments to ensure national security or to pursue national advantage: there are many malevolent actors who use the internet and other electronic media for nefarious purposes including criminality, sabotage and terrorism, and governments need to be able to counter such activities. But they need to do so in ways that command public confidence: there needs to be clarity about the reasons for governments to access Big Data – though not the ways in which they do it – and transparent and verifiable processes for ensuring that such access is not abused. I doubt whether any of my former colleagues in the intelligence community would have a problem with these propositions.

That said, I don’t think you can ever perfectly reconcile aspirations for transparency and the need for security.

This has to be a pragmatic calculation driven by perceptions of threat and risk; history suggests that most populations will accept some constraints on their freedom in return for feeling safe.

As for the use of electronic media for state-on-state espionage, this is simply a function of the human condition and is unlikely to ever change. States that feel disadvantaged will just have to adopt better communications security – and perhaps invest more in their own intelligence capabilities.

Concerns about security and privacy should not obscure the very real benefits the internet has brought about. And for all the current talk of threat and risk, we should bear in mind that so far nothing too bad has happened in the cyber domain. But the pace of development has taken us all by surprise and we need to start thinking through the implications of where we now find ourselves in a more systematic – and democratic – way ■

### Which stakeholders need to be most aware of digital surveillance?

Stakeholder awareness	Digital surveillance
Governments	100%
Business	96%
IOs	74%
NGOs	67%
Academia	63%

Source: Survey on the Global Agenda 2013

### How disruptive do you believe digital surveillance will be during the next 18 months?



Source: Survey on the Global Agenda 2013

### More people become aware of digital surveillance

**78% of respondents expect digital surveillance to become more widely perceived within the next year**

Source: Survey on the Global Agenda 2013



## The future of the Arctic: what are the consequences of a thawing North?



The Coast Guard Cutter Healy breaks ice during an Arctic expedition in 2009  
© Reuters / US Coast Guard / Patrick Kelley / Handout

### From the Survey

“Driven by climate change, the rapid decrease of Arctic sea ice cover should be a major international concern. For example, between 2007 and September 2012, the minimum sea ice cover retreated 18%.”

**Kenneth MacLeod**  
Chairman, Stena Line UK and a Member of the Global Agenda Council on Oceans

### Laurence C. Smith

Professor and Chair, Department of Geography UCLA, a Member of the Global Agenda Council on the Arctic

The effects of global climate change are hugely amplified in the Arctic. Over the long term we can expect this iconic, frigid place to experience temperature increases much larger than the world average. This poses numerous environmental threats, including loss of polar species, increased release of greenhouse gases, and shrinking ice, wetlands and lakes.

From an economic perspective, the temperature amplification may benefit some Arctic countries, especially the five littoral states of Russia, Norway, Iceland, Canada, Greenland and the US, all of which enjoy direct access to

seaways of the Arctic Ocean. Although thawing landscapes make ground activity increasingly difficult, marine operations are becoming easier during summer, owing to shrinking extent and thickness of sea ice. In our own research at UCLA, we show that even the North Pole will likely become traversable by ice-strengthened ships in the coming decades.

As the world's richer, growing population demands ever more natural resources, rising commodity prices will motivate development in remote areas, including the Arctic. Globalisation and immigration are driving surprisingly high rates of population growth in most northern countries.

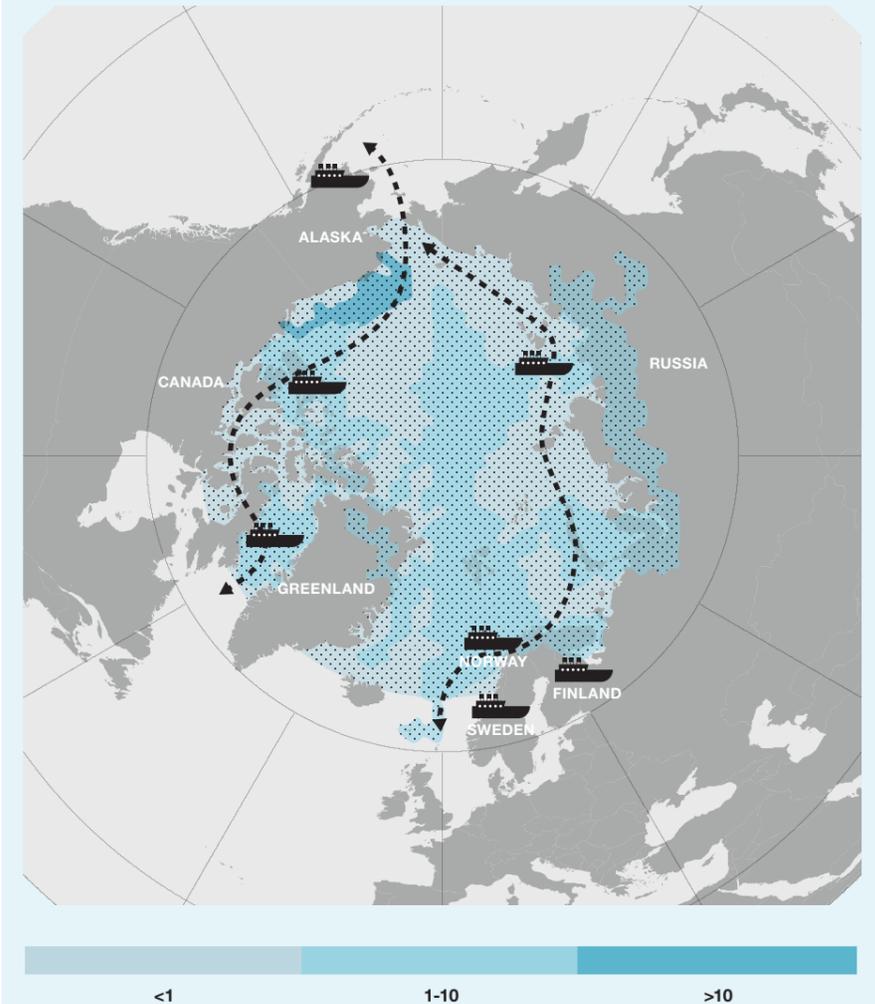
The economic prospects will also have impacts on diplomacy. Will we see

non-Arctic states aligning themselves with Arctic ones? Iceland, for example, is developing remarkably strong ties with China, including a new free-trade agreement that is quite extraordinary for a country of just 320,000 people.

These trends have created passionate debates about the future of this important region, ranging from calls for rapid oil and gas development to the creation of an Arctic park. If the region's resources are developed, sustainability will be key.

The world needs clear-eyed discussion about these controversial issues, including mitigation of climate change and resource extraction impacts, the role of native peoples, and the region's growing importance to the rest of the world ■

### New trade routes (and oil/gas reserves) facilitated by the melting of the Arctic



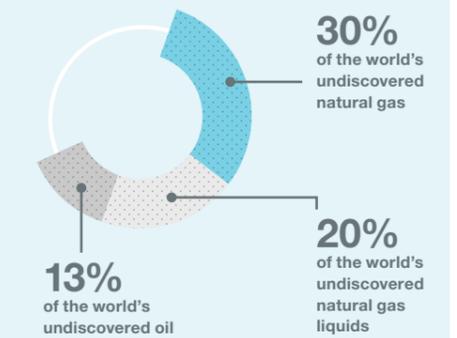
Source: Economist: June 16th, 2012; FT Research; Sea Level Rise Explorer, Studies from the Postdam Institute and IPCC Reports

### Trade routes shortened by the Northeast Passage (in miles)

Route	Suez Canal (miles)	Northeast Passage (miles)
Yokohama, Japan to Rotterdam, Netherlands	12,894	8,452
Shanghai, China to Rotterdam, Netherlands	12,107	9,297
Vancouver, Canada to Rotterdam, Netherlands	10,262	8,038

Source: Ministry of Transport, Russia

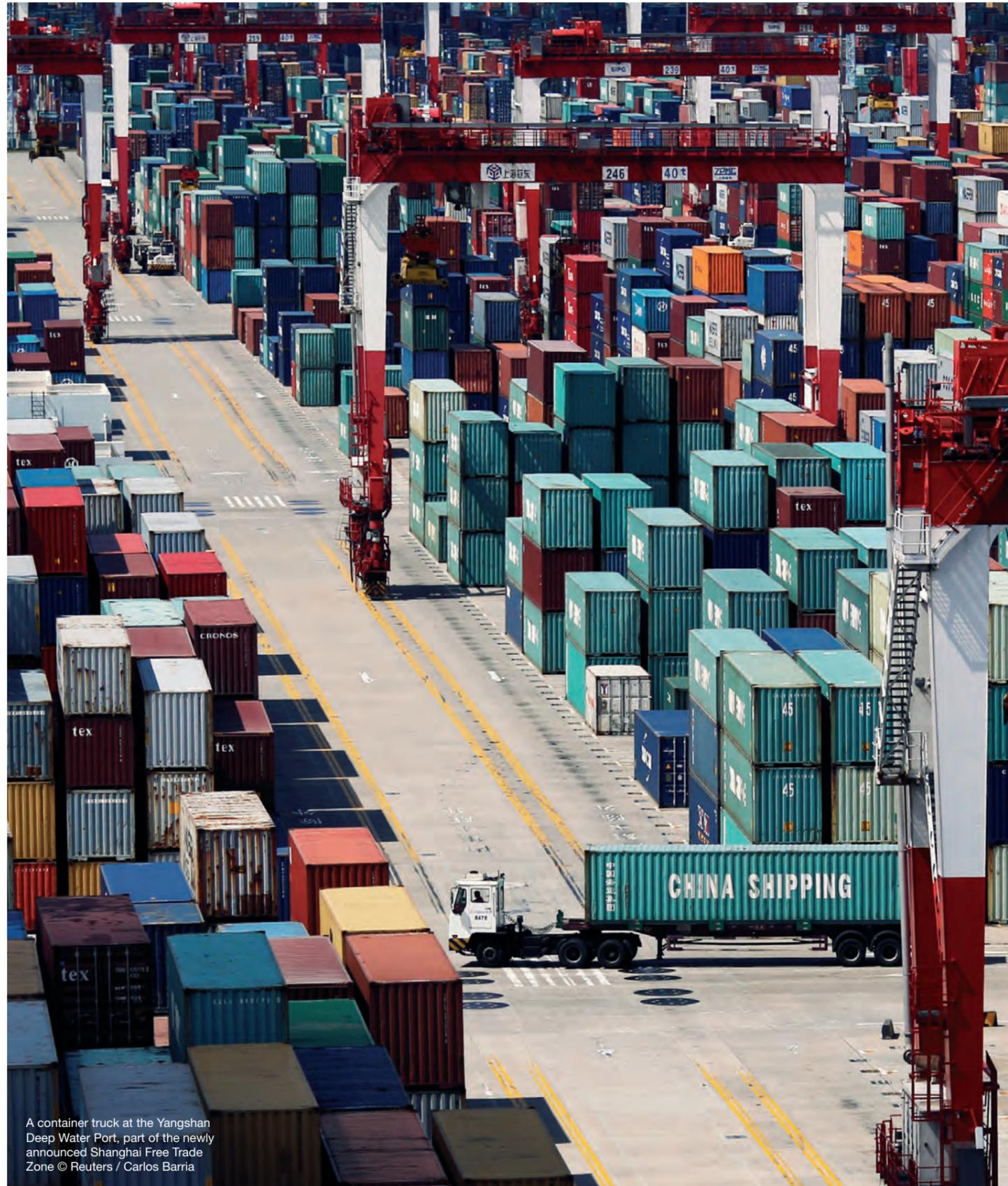
### Estimated undiscovered resources in the Arctic basins



Source: US Geological Survey, 2008



**The future of multinationals:** how will the global economy be affected by the rise of multinationals from emerging markets?



A container truck at the Yangshan Deep Water Port, part of the newly announced Shanghai Free Trade Zone © Reuters / Carlos Barria

**From the Survey**

“By 2020, the BRICS are expected to account for nearly 50% of global GDP growth. Securing a strong base in these countries will be critical for investors seeking growth.”

**Neeraj Bharadwaj**  
Managing Director, Carlyle India Advisors and a Member of the Global Agenda Council on India

**Liu Jiren**

Chairman and CEO of Neusoft Corporation, and a Member of the Global Agenda Council on Emerging Multinationals

As emerging-market multinationals become key global players, their business activities will significantly enhance the integration and co-operation between emerging and developed markets, and contribute significantly to the dynamism and growth of the global economy.

With the advantages in cost-efficiency and innovation dynamism, these future global multinationals will accelerate the worldwide trend of ‘reverse innovation’, bringing more affordable and effective solutions to the world. The joint co-operation between emerging and developed markets in R&D, manufacturing and many other sectors will also be greatly increased, further boosting economic growth and helping to solve many systemic global problems.

Meanwhile, these multinationals will increase their competitiveness and will have the opportunity to acquire best practices from developed markets. Their own home markets will become more mature, and the innovation ability and business operations of the multinationals will be improved, greatly

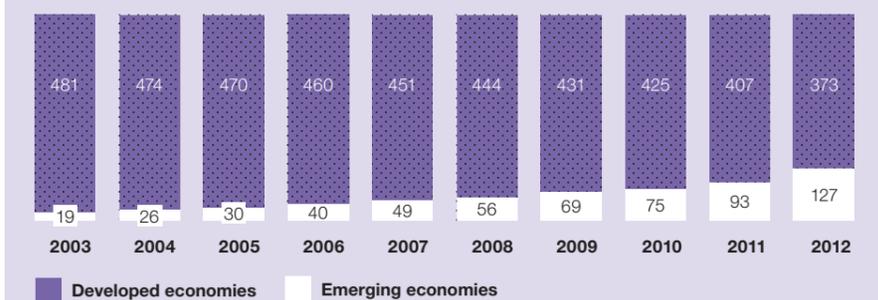
benefiting the long-term sustainable development of these markets.

This is a key time for companies from emerging markets that want to compete globally; we’ve seen companies from India, China and Russia all attempting to make the shift. The cost of doing business is always a factor; when global companies enter emerging markets their costs are cheaper than at home, but if these companies want to operate and hire in a more developed market, the costs are much higher.

Chinese companies specifically have clear strengths. We can move fast, be flexible and make quick decisions. The trouble is that most of our business leaders are not experienced in understanding the world outside China – they’re not ready to go global because they don’t understand the culture, the legal systems, or the mentality.

That’s the biggest challenge for these companies. They need to build their soft competitive advantage, working on areas like social responsibility and learning how to employ people outside their home countries. When we look at Japan and Korea, we see companies successful in selling cars, mobile phones or TVs, so we know we can sell the product globally. But we now need to think ‘people to people’, not just ‘product to people’, and that’s a very different mindset ■

**Top 500 emerging multinational corporations by origin (2003-2012)**



Source: Fortune Global 500, 2013

# The new space race

The sheer number of pressing challenges facing our planet can make it easy to forget the rest of the universe. But as a packed schedule of launches blasts ever more craft into the great beyond, we take a moment to explore the role space could play in humanity's future.

Space is just 80 miles away from every person on Earth. As political scientist Daniel Deudney once observed, that's closer than most people are to their own national capitals. And yet, in the four decades since our first giant leap, the great beyond has slowly drifted out of the world's consciousness.

But a different kind of space race could be about to change that. As Voyager-1 explores new frontiers beyond our solar system, growth in space is becoming a far more accessible ambition for countries and organisations the world over.

"The number of countries with a presence in space is growing," says **Theresa Hitchens**, Director of the UN Institute for Disarmament Research, and a Member of the Global Agenda Council on Space Security. "There's a growing interest around the world in the use of space in a deeper way than in the past."

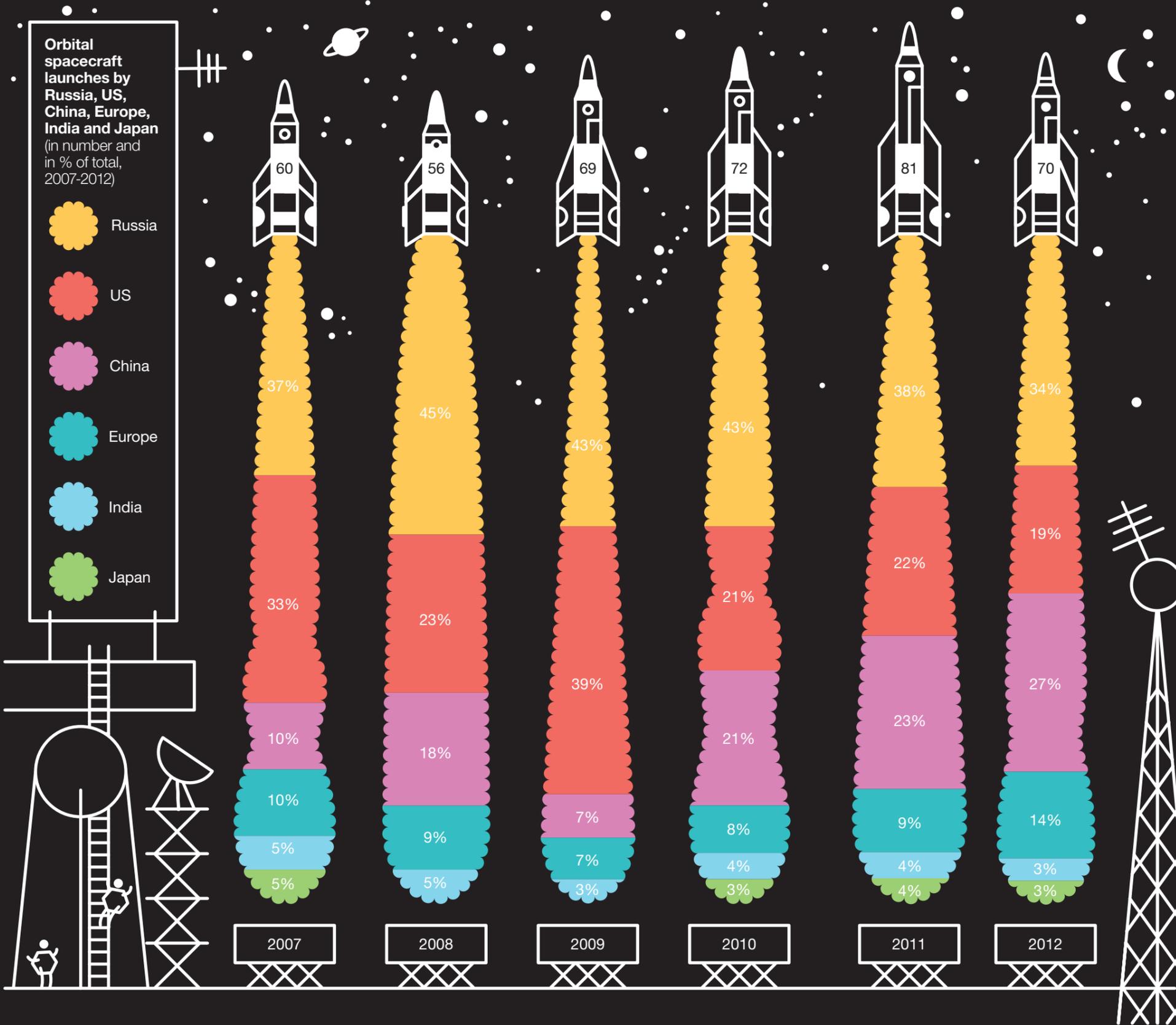
There are around 250 satellite launches scheduled for this year, almost 40% more than in 2010. Such a steep growth rate reflects the benefits that a presence in space can bring to our daily lives on Earth; from public health and communications to agriculture and education, nations of all sizes are looking to the skies to improve life on the ground.

"There is a larger recognition today, particularly among developing countries, of space as a fundamental building block to development," says Hitchens. "In India, they are heavily reliant on satellites for things like tele-education. Nigeria is using Small Remote Sensing (SRS) satellites to monitor crops and drought, while Vietnam has become the newest country to own its own satellite. And for countries that have really big land masses, satellites offer a cheaper alternative to fibre optic cable for providing internet access." ▶

Conservative estimates of space budgets of G20 countries



Source: The Space Company at a Glance 2011, OECD



Source: Federal Aviation Administration, Commercial Space Review Report, 2007-2012

All of which means that space is becoming an increasingly crowded place, both physically and politically. Traditional space players like Russia, the US, the European Union and China are becoming concerned that as the useful orbits become more congested and debris population increases, so do the chances of accidents.

“Space is a very under-regulated environment,” says Hitchens. “We don’t have a very good system, neither a legal system nor even an international regulatory system, of how to control activities in space.”

And that’s not the only geopolitical stress point: satellites also provide huge military advantages to countries that are trying to project power outside their own borders, a fact not lost on the world when China successfully tested its first anti-satellite missile in 2007. “When China became the third country to test an anti-satellite weapon, it caused real concerns about whether we’d be facing some kind of race around their use,” says Hitchens.

China’s ambitious long-term space plans – lunar landing, space exploration and construction of a manned station by 2020 – make it the exception to the norm. Most national space programmes have short-term aims, meaning that no human has left low Earth orbit since 1972. But if ambition in space runs on funding and curiosity, the private sector has plenty of both. “I don’t think the new space race is really government versus government,” says **Gwynne Shotwell**, President of SpaceX, and also a Member of the Global Agenda Council on Space Security. “This is a race being run by entrepreneurs.”

PayPal entrepreneur Elon Musk’s SpaceX made history when his Dragon spacecraft carried out a successful mission to dock with the International Space Station for the first time in May 2012.

Richard Branson’s Virgin Galactic has done much to reignite interest in space tourism, while Blue Origin, the company set up by Amazon founder Jeff Bezos, is also working to democratise space travel. And meanwhile other companies, such as Shackleton Energy Company, are looking to mine the moon and asteroids.

“VCs are investing in new space companies in far greater numbers than they ever have,” says Shotwell. “I think the impact will be felt maybe five or so years from now – it’ll be very interesting to see whether private companies overtake government spending

“I’m sure the CEOs driving this believe they’ll make money one day, but their primary rationale is to make the world a better place.”

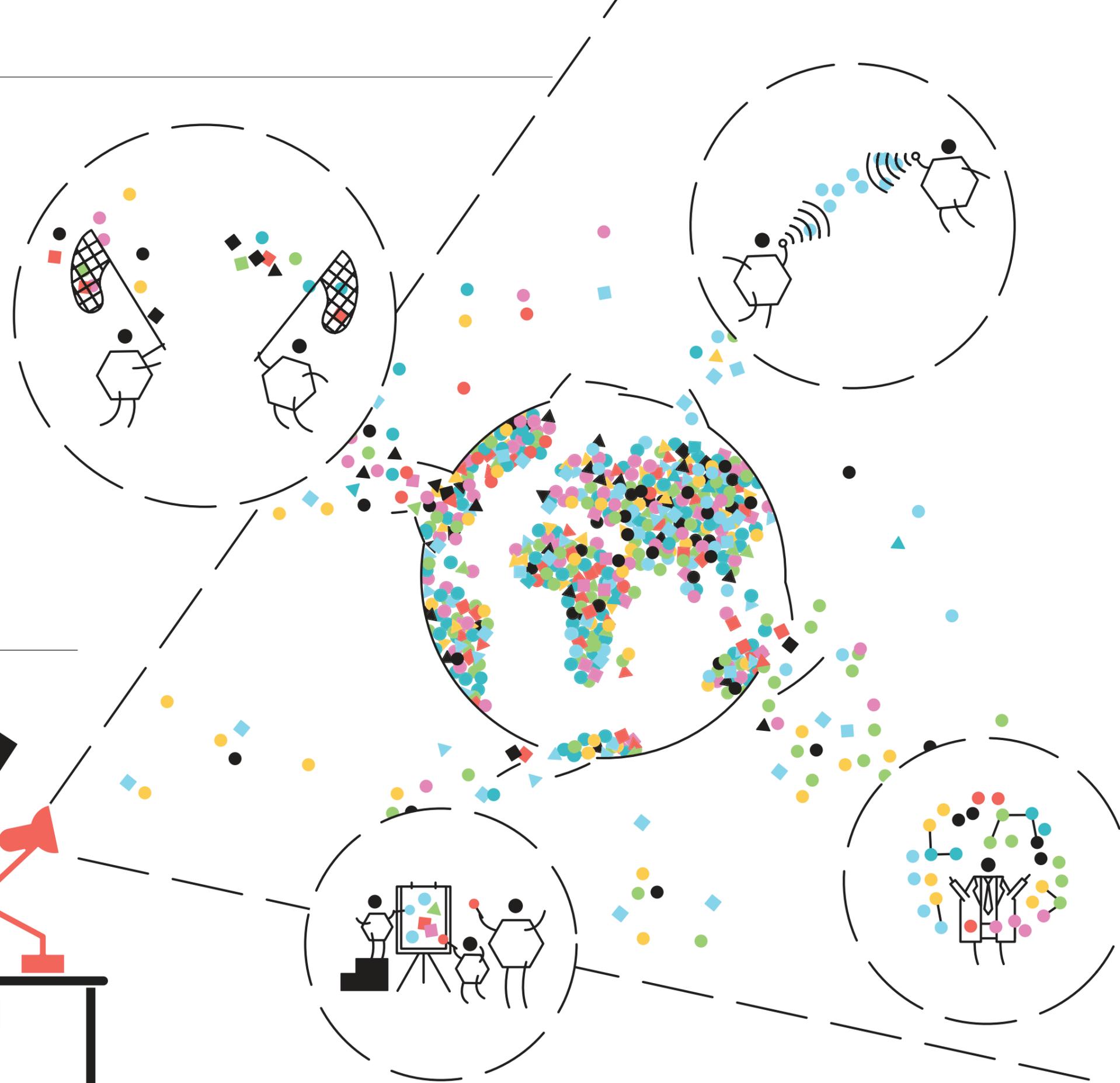
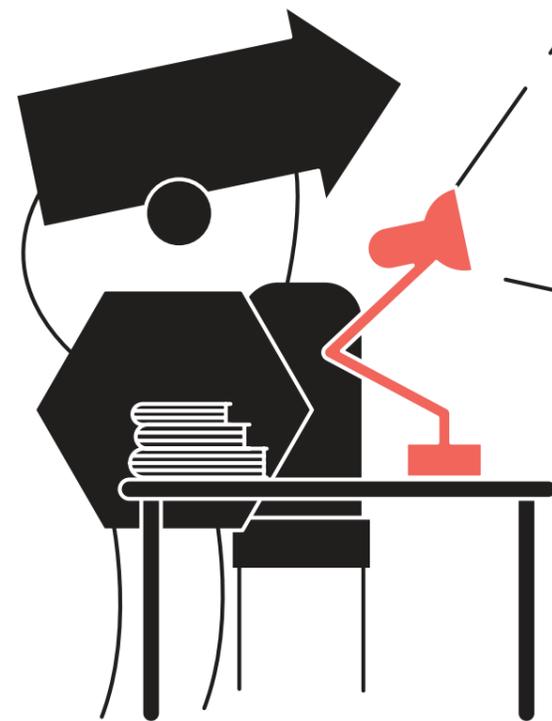
on space. The increase in space-based revenues from 2011 to 2012 grew almost 7% to \$304 billion. Space-based GPS and other similar systems facilitate enterprise in the order of \$3 trillion. It’s an enormously helpful system to the world’s economy; it far exceeds the expenditures on space and space-related capabilities.”

But while there are obvious commercial opportunities in space exploration, Shotwell believes that private companies are also driven by ideals. “If you look at the list of CEOs who are doing this, they’ve got space backgrounds. And space-folk tend to be very humanitarian-focused,” she says. “I’m sure they believe that decades from now they’ll be making money, but I’d say that the primary rationale for doing this is to make the Earth a better place, and to make what exists beyond the Earth a better place too.” ■

# Mapping the future

**Information and communication technologies are bringing us closer together, breaking down old barriers and making predictability a thing of the past. But what does that mean for our day-to-day lives? Our Global Agenda Council experts point the way towards a brighter future.**

It doesn't matter whether you're talking about climate or economics, urbanisation or employment; digital applications are reshaping every facet of our existence and presenting us with a bewildering array of opportunities and threats. Every conceivable gain brings its own associated challenges, from increased online vulnerability to the simple frustration of an emerging technology not functioning properly. So how can we distinguish the path of progress from the inevitable dead ends and pitfalls? We asked a few select Global Agenda Council Members to show the way towards a technologically enhanced future. ►



## Data immune system

Digital and communication technologies allow devices, objects and individuals to communicate with each other virtually anywhere and any time. That generates an exponential increase in the amount of data that can be captured, stored and analysed, and as such the conflict between digital security and privacy is of paramount importance, says **Joichi Ito**, Director of MIT Media Lab, and a Member of the Global Agenda Council on Informed Societies.

“Yes, we can protect privacy and make things more secure – it just requires more cost,” he says. “But it is also important to point out that the people who fight for our freedoms and our privacy are typically not governments, but NGOs. So the key to resolving these conflicts will involve bringing in NGOs to help balance the multistakeholder discussions, and the design of protocols and procedures. While governments will play an important role, they can’t be the primary convenor. People assumed the US government would be such a convenor until they learned through Edward Snowden about National Security Agency surveillance. That threw into stark relief the downside of counting on the same people to provide your security as protect your privacy.”

The process for figuring out how to balance privacy and transparency is similar, reckons Ito, to the human body and its immune system. “You don’t

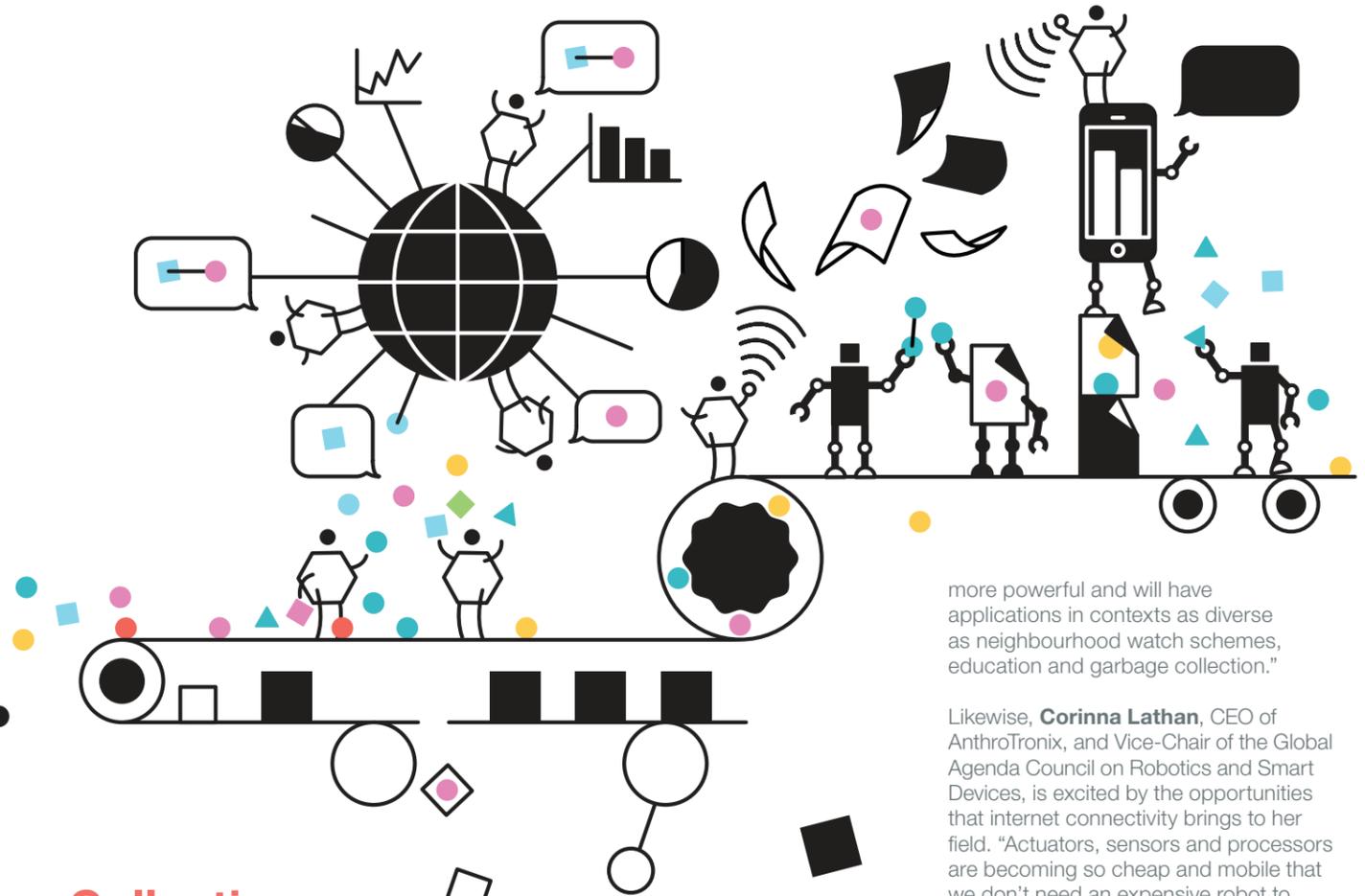
get stronger by trying to eliminate everything, by turning off the internet or making everyone have ID cards,” he explains. “Instead, the system gets more robust the more it gets attacked. Each time a WikiLeaks or Snowden shows weaknesses in the system, the system gets stronger. There are short-term costs, but in the longer term it’s like a child catching a cold – it’s how they develop an immune system.”

Ito sees an important role for dialogue in this process. “Privacy and security issues affect everyone. There should be a constant public debate, and it’s important to identify the neutral players. The Forum is a great convenor for these conversations; it has the stature and power to bring intellectuals together and the Global Agenda Councils have access to most of the biggest brains. I’m fundamentally an optimist about the hyperconnected world and I believe that those brains will find the solutions we need. We’re a resilient people and what doesn’t kill us will make us stronger.”

**Robert Madelin**, Director-General for Communications Networks, Content and Technology at the European Commission, and a Member of the Global Agenda Council on the Future of Media, says people must be reminded that they don’t have to surrender control. “The whole data privacy thing is being

run as a fundamentalist issue where, like a religion, it’s about rights,” he says. “Fundamentalism and reaction are always the twin obstacles to innovation. How do you overcome them? By showing that all of us can own a share of the future. That there is a future where hyperconnectivity will not make us objects, but individuals who can still have autonomy and control.”

“Each time a WikiLeaks or a Snowden shows weaknesses in the system, the system gets stronger. It’s like a child catching a cold – it’s how they develop an immune system.”



more powerful and will have applications in contexts as diverse as neighbourhood watch schemes, education and garbage collection.”

Likewise, **Corinna Lathan**, CEO of AnthroTronix, and Vice-Chair of the Global Agenda Council on Robotics and Smart Devices, is excited by the opportunities that internet connectivity brings to her field. “Actuators, sensors and processors are becoming so cheap and mobile that we don’t need an expensive robot to package them. So we’re approaching the next stage of the internet of things, a world of little robots,” she predicts. “All of these interactions and connections will be generating data and knowledge in the broadest sense, which will help us understand ourselves and each other better: from small data about our personal health to big data that helps us understand why, after 30 years of trying, we’re still no closer to encouraging more girls into the STEM (Science, Technology, Engineering and Maths) field.”

But realising the potential will mean breaking down some of the silos that still exist, maintains Lathan. “For example, the FDA (Food and Drug Administration) regulates medical-related apps, but it’s not clear what exactly it covers. We might reach a situation where individuals can use them, but not hospitals,” she says. “Likewise, we’re relying on companies like Apple and Samsung to bring these important apps into the arena. So these technical and regulatory silos need to be broken down to create an ecosystem where innovation can flourish.”

## Collective awareness

Communication technologies will also increase the power of individuals and organisations to work together across time zones and continents. “Digital technologies hugely expand the notion of collaboration,” says **Tim Brown**, CEO of IDEO and Chair of the Global Agenda Council on Design and Innovation. “It used to be, ‘Can we get half a dozen people into the room?’ Now it’s collaborating with people all over the globe, but also collaboration with the technology itself.”

“And the idea that every object and space will collect data and collaborate with other objects is a very different way of thinking about our physical world. It requires designers and engineers to think about physical objects as pieces of software that are constantly evolvable, and which can be constantly designed. At that point the world starts to look more like a complex biological network than a machine.”

Designing in complexity was the topic of a recent Global Agenda Council on Design workshop at MIT – other workshops this year have focused on education, the urban environment and the role of governments. “What we seek with these roundtables are meta-level patterns and principles,” explains Brown, “and we’re creating a report we can share with other Councils so they can apply a design lens to what they are working on.”

For Madelin, the greatest empowerment could come through collective awareness. “Today we have more powerful, affordable, mobile computational capacity with which to make more sense of the data,” he says. “The really interesting transformation is collective awareness. A pair of Nike shoes can already tell you how fast you ran and how that compares with yesterday’s run. It makes data about you measurable and sets that in a context of past performance. But the next level – collective awareness of what your peers are doing too – is even



## Innovation at the edge

Today the old silos, boundaries and other limits that used to separate us from one another no longer protect us from the actions of others. And that means we can no longer keep the gains of technological progress to ourselves, says Ito. "We have been arrogant in thinking that any technology that made more money was a good thing," he argues. "We have been irresponsible in creating technologies that diminish global progress in order to make local progress. The cost of creating science and technology is diminishing and you find that some of the highest impact developments are happening in unfunded startups, not in big research labs. Innovation is being pushed to the edges where there is less control."

"So we need to be thinking at a systems or global level, and making people responsible for the technologies they build and fund." Encouraging more design-thinking is a critical part of making that happen, he says. "Scientists and artists can detach themselves from morality. They are just pursuing truth. But designers and engineers have to think about how well the science or innovation will work with other parts of the system. They make the choices about how it will impact on society."

The democratisation of the tools of design and manufacture is helping to proliferate design-thinking, says Brown. "The opportunity for people to participate

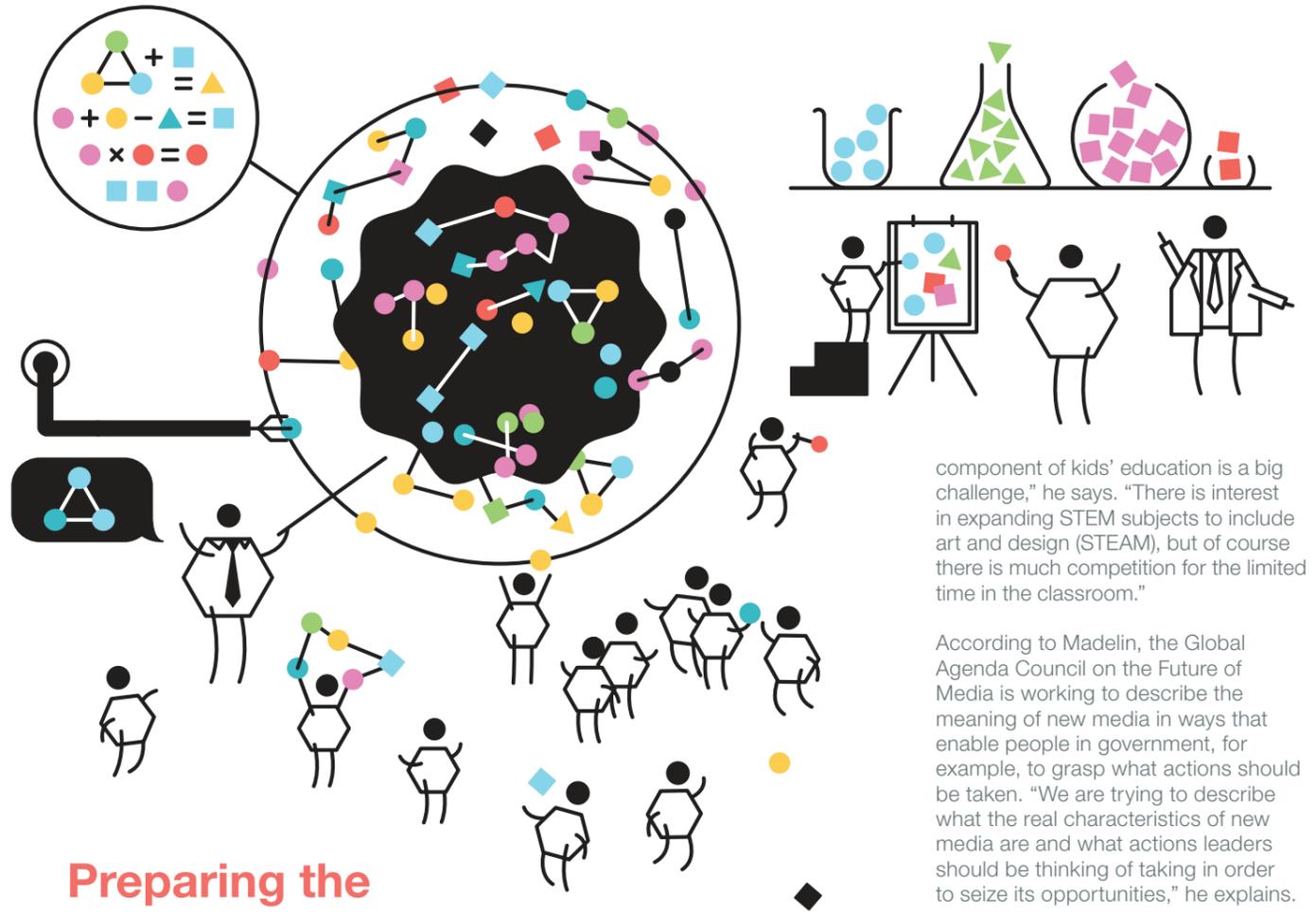
and collaborate in design is increasing very quickly, while on the manufacturing side the emergence of 3D printing and libraries of ready-made design is enabling us to create low runs of cost-effective products – it's going to transform the way we think about design for the developing world if we create solutions that are tailored for specific locations."

The question, says Brown, is how long will it take for these technologies to become affordable and accessible in places where they can do most good? Lathan agrees; "How can it be that mobile devices have outnumbered toilets in a country like India?" she asks. "We've been challenged on our Global Agenda Council on Robotics and Smart Devices to move outside the American and European mindset and to think more globally. A multidimensional model that we are proposing highlights the opportunities and risks in the field of robotics and smart devices, and we're committed to ensuring the model functions globally and in all cultural contexts."

The Council is working on a flagship documentary video, featuring curated thought pieces that explore the subject of integrating robotics and smart devices to improve the quality of life. "The exciting thing about the World Economic Forum is that the diverse group of people it convenes means things are always going

to happen," says Lathan, who argues that the challenge is to stay human-focused.

"How to retain our humanity as we become more tech-focused and centred will be a critical one for the digital native generation," she says. "The model that our Council is creating helps us gain a psychological and sociological understanding of people's needs, desires, capabilities and traits, and a cognitive understanding of the physical and behavioural dimensions of humanness."



## Preparing the digital natives

As technology advances and we grow more interconnected, the outcomes of our actions become increasingly uncertain, with many unintended consequences. So how can we prepare ourselves to live in a world that is so much more complex and unpredictable than the one we live in now?

"There is a completely different set of things that we need to be teaching our kids," says Ito. "We need to give them cognitive models of how to live in a networked world where they are learning constantly, incorporating systems thinking and design thinking. At present we're using pre-internet cognitive models to design a world for our kids, who have a very different brain."

Brown is concerned that the schooling system in the Western world has driven creativity out of the curriculum. "Reintroducing creativity as a core

**"We need to give our kids cognitive models of how to live in a networked world where they are learning constantly, incorporating systems thinking and design thinking. At present we're using pre-internet models to design a world for them, but they have a very different brain."**

component of kids' education is a big challenge," he says. "There is interest in expanding STEM subjects to include art and design (STEAM), but of course there is much competition for the limited time in the classroom."

According to Madelin, the Global Agenda Council on the Future of Media is working to describe the meaning of new media in ways that enable people in government, for example, to grasp what actions should be taken. "We are trying to describe what the real characteristics of new media are and what actions leaders should be thinking of taking in order to seize its opportunities," he explains.

"We're concerned about new media literacy and what are the roles and responsibilities of social actors. We probably have to start with teachers – the number of people trying to bring ICT into education is huge, but the number of teachers who don't get it is also huge. Likewise, parents need to feel comfortable with these new technologies, otherwise children aren't going to get the help they need with their homework."

But Lathan says she is confident our children will embrace the challenges of their hyperconnected world, adapting to it almost effortlessly. "Kids move in and out of the digital world so fluidly, to the point where many now take ubiquitous connectivity for granted," she says. "It's becoming the same with robotics. My fourth-grader's after-school activity this year is creating 3D objects in the Minecraft videogame, printing them out on a 3D printer and then controlling them with MaKey MaKey invention kits (which allow users to turn everyday objects into game controllers). Now, that's how you teach digital natives." ■

# Making the Outlook on the Global Agenda 2014

From start to finish, our step-by-step guide to making the Outlook on the Global Agenda

At the end of 2012, we launched a consulting project with the Saïd Business School (SBS) at Oxford University to re-evaluate both the Survey on the Global Agenda (our annual research product) and the Outlook on the Global Agenda (the annual flagship publication of the Network of Global Agenda Councils).

## Methodology

An important conclusion from the SBS consultancy was that the Survey should be both more comprehensive and more specific than it had been in previous years. In the past, the survey had been used to identify important global trends. The next step was to ask respondents why they matter, who they affect, and – perhaps most importantly – what do to about them. Pushing further, we decided to examine emerging issues and regional challenges.

A team of experts and thought-leaders was assembled from amongst the Global Agenda Councils, as well as the Young Global Leaders (all aged 40 or under) and the Global Shapers (all aged 30 or under). We employed the Delphi method – a structured communication technique used to arrive at forecasts or decisions – with our team of experts to define which trends would be considered in the survey.

## Administration

The survey was launched in July for Global Agenda Council Members, Young Global Leaders, Global Shapers and business constituents.

In total, we received 1,592 responses from 112 countries around the world, increasing our regional responses to a statistically relevant number and allowing us to conduct regional analyses, as well as compare and contrast results from different parts of the world for the first time.

## Analysis

Each of the responses included 10 open-field answers. This qualitative data is important to our methodology on many levels, from identifying emerging issues to capturing ideas on what to do about them. We fed the open-field answers into an online platform to be bucketed, correlated, coded and further sub-coded. With the quantitative data, we produced snapshots of responses by country, region, stakeholder and age, to discover its nuances. In a third phase, we combined the qualitative and quantitative results for an overall picture of what the data was telling us in its entirety.

## Collaboration

The Outlook benefited from the support of many people both inside and outside the Network of Global Agenda Councils. Our core team was supported by resources from the Risk Response Network and the Centre for Business Engagement within the World Economic Forum, as well as specialised consultants. And of course none of it would have been possible without the insight and expertise of our Global Agenda Council Members.

We also collaborated with Pew Research Center, which allowed us access to the data from its Global Attitudes Project, and advised on survey questions. We collaborated with experts in open-source data, ensuring that the Outlook integrated key information from a wide variety of sources. And we worked with creative agency Human After All to design and publish the Outlook.

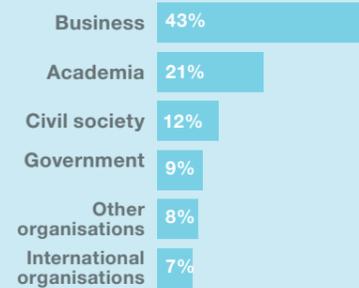
The ideas presented here aren't just for the world leaders who assemble at Davos-Klosters. We hope they reach everyone who cares about global issues and wants to use knowledge and understanding to make the world a better place ■

If you'd like to know more about the data, contact the Global Agenda Council Team of the World Economic Forum at [gac@weforum.org](mailto:gac@weforum.org)

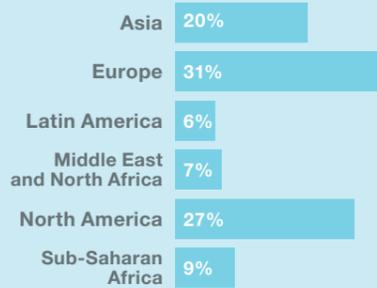
## Inside the data



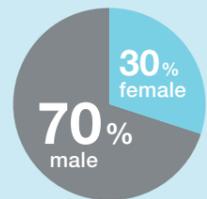
### Stakeholder



### Region



### Gender



### Age category

