

20th CEO Survey

Competing in an age of divergence ^{p6} / Managing man and machine ^{p15} / Gaining from connectivity without losing trust ^{p21} /
Making globalisation work for all ^{p27}

20 years inside the mind of the CEO... What's next?



1,379

CEOs interviewed in
79 countries

44%

of CEOs say globalisation
has not helped to close the
gap between rich and poor

69%

of CEOs say it's harder for
businesses to sustain trust
in the digital age

Introduction from Bob Moritz

For the last two decades, PwC has asked business leaders everywhere about the trends reshaping business and society. As we mark the 20th year of our annual CEO survey, we've observed just how much the world has changed.

Demographic shifts, rapid urbanisation, a realignment of global economic and business activity, and a scarcity of resources, are among the megatrends affecting the world that we have been studying for the past 20 years. These are the shifts that have affected the CEO's mindset. Since we began our survey, globalisation and technology have jointly enabled a massive increase in trade and financial flows and global online traffic. This level of interconnectivity has raised engagement with stakeholders and forced society to think about how information is accessed and consumed. Increased transparency demands a new way of communicating, a higher level of accountability, an elevated approach to leadership, and indeed, a deeper focus on trust, purpose and the inherent human connection that has brought us closer together.

But great convergence has come with the potential for great divergence. In last year's survey, most CEOs foresaw a world divided by multiple beliefs and frameworks. 2016 brought into sharp focus the tangible ways in which these differences play out. Surprising voting results put pressure on established blocs, and today, the global systems which support trade are creaking at the seams. Recent events have also revealed the extent of public discontent over the gap in skills, jobs and income inequality, among a host of local issues that have stemmed from globalisation and technology. Despite greater interconnectivity, and often as a result of it, sections of the populace feel unheard and under-represented in the decision-making process. There is a growing disconnect from leadership, leading to mistrust and cynicism of traditional bodies, both in public and private sectors.

But there is still much to be optimistic about. The pattern of growth in the world is shifting. Indeed, optimism in CEOs remains high relative to the environment. They are focused on growth, leading to greater innovation. Demand remains strong in many emerging markets – and is likely to stay that way for some time to come. This is especially true in Asia, where populations are growing, disposable incomes are rising and urbanisation will likely continue.

Our 20th CEO survey explores what executives in 2017 think about three imperatives: managing man and machine to create a workforce that's fit for the digital age; preserving organisational trust in a world of increasingly virtual interactions; and making globalisation work for everyone by ensuring the benefits are distributed more fairly.

The challenge common to all three imperatives is leadership. In a time of heightened anxieties juxtaposed with the highest levels of transparency we have experienced, how leaders engage with employees and stakeholders (both public and private) has never been more important. Strategy can no longer be an approach of simply numbers and bottom lines; strategy must be built upon a long-term vision of growth, access, equality, innovation, and the human endeavour. The last of these is arguably the most important because linked to it is the critical concept of trust.

Since the inception of our survey, the definition of trust has changed – specifically, expanded. The days where the CEO of a company was rarely accessible to the end customer or was able to get sanitised feedback are gone, as are the days where the consumer had little sight into how a product was produced and a supply chain crafted. Today, executive teams need to fully grasp the ethical and moral implications of their decisions, and communicate their actions with integrity.

Trust must also be paramount between supervisors and employees. The contemporary worker is keenly aware of the importance of purpose – and is demanding clarity on not just the “how” of the company, but the “why.” Enduring winners will be leaders who develop a two-way relationship – whether with customers, employees, or society at large – based on reliability and ethical behaviour.

The ascendancy of corporations around the globe has boosted prosperity: it’s created jobs, raised living standards and delivered pioneering products and services that have improved people’s lives. Now, however, we are at an inflection point. A new reality is setting in and each of us must rethink how we act. Specifically for CEOs, it is time to raise the role of business in society and engage more broadly to help government and the public. It is time to step forward with their own solutions and collaborate with multiple players in society to boost trust and build the world we need for the future – because if executed properly, business is a force for good.

I’d like to thank the almost 1,400 CEOs from approximately 80 countries who have generously given us their insights. We’re particularly grateful to the 20 CEOs who engaged in deeper and more detailed conversations with us. You’ll see their comments throughout this report.

We hope you’ll find plenty of food for thought – and action – in the following pages, and in all our work on ceosurvey.pwc.



Bob E. Moritz
Global Chairman, PwC



20 years inside the mind of the CEO



Section one



Competing in an age of divergence

6

Globalisation disrupted?	8
Changing markets	9
Realists – or naïve optimists?	11
Standing at the crossroads	13



Section two



Managing man and machine

15

Wanted: More technology and more people	16
Creativity can't be coded	18



Section three



Gaining from connectivity without losing trust

21

The dark side of connectivity	22
Data security and ethics	23
IT outages and disruptions	24
Automation, robotics and AI	24
A trust strategy for a digital age	25



Section four



Making globalisation work for all

27

Time for business leaders to step up	28
New solutions to perennial problems	28
Leveraging technology for social benefit	29
Safeguarding the future	29



Further reading



Looking for more data?	32
Meet the CEOs	34
Meet the thought leaders	35
Research methodology and contacts	36
Acknowledgements and thanks	37
Endnotes	38

Competing in an age of divergence

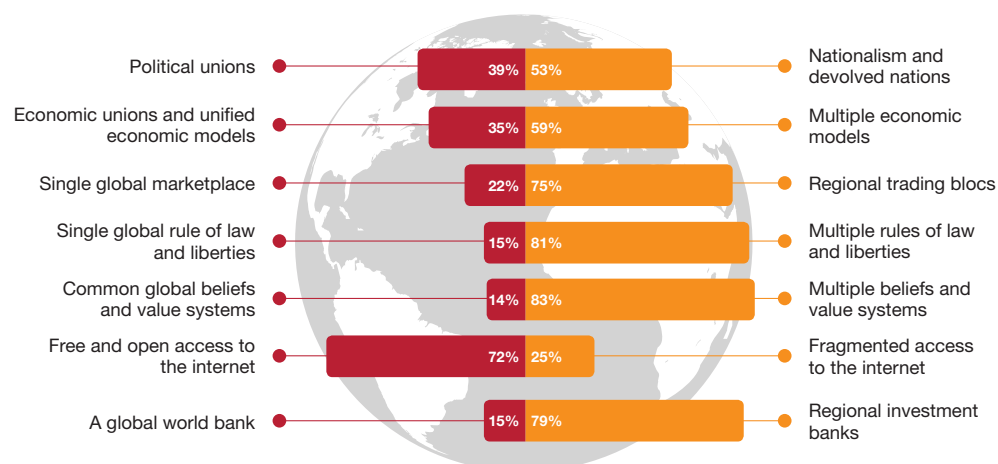


Over the past 20 years CEOs have witnessed tremendous upheavals as a result of globalisation and technological change. Both were core to our enquiries when we conducted our first Annual Global CEO Survey back in 1997. Since then, trade flows have quadrupled and global internet traffic has risen by a factor of 17.5 million.¹ The twin forces of globalisation and technological progress have helped to boost living standards and lessen inequality between countries.² And, in what's perhaps the most remarkable achievement of all, they've lifted a billion people out of extreme poverty.³

But greater convergence has come with greater divergence, as CEOs have long predicted. In 2009, when we first asked CEOs about the risks associated with various global trends, 46% thought governments would become more protectionist; 73% expected other countries to challenge the G8's dominance; and 76% anticipated a rise in political and religious tensions. And by the time we published our last survey in January 2016, most CEOs foresaw a world in which multiple beliefs, value systems, laws and liberties, banking systems and trading blocs would prevail (see Figure 1).

Figure 1: What's the world coming to?

Q: For each alternative, select the one you believe the world is moving more towards



Source: PwC, 19th Annual Global CEO Survey. Base: All respondents (1,409)



Little did we know just how much world events would prove them right. The UK referendum on EU membership in June 2016 and the US presidential election in November 2016 exposed deep divisions among voters. They also revealed the extent of public discontent over job losses in some industrial sectors and rising income inequality, to which globalisation and technology have contributed, as well as profound mistrust of ‘the establishment’, however defined.⁴ In fact, an analysis by economist Branko Milanovic, whom we interviewed as part of our research for this year’s study, shows how unevenly the benefits of globalisation have been distributed. Milanovic found that the biggest gains have gone to a small, increasingly rich elite in the industrialised nations and to Asia’s rising middle class, while the main losers have been lower-income people in developed countries.⁵

A number of emerging countries are also experiencing greater income inequality, while depressed commodities prices (relative to mid-2014 peaks) are raising questions about over-dependence on global trade.⁶ These factors, together with high unemployment, resource shortages and other challenges, have triggered conflict in some parts of the world.

But what we’re seeing isn’t a one-way street. Some forces are linking the world more closely, even as others are causing rifts. Digital connectivity is one example of the former (although it has also contributed to the rise in outsourcing and job losses). Certain countries will always reach out globally because they can’t produce everything they need. And many will continue to collaborate on borderless issues like security and the environment. Simply put, the world has become more complex.

Globalisation and technological advances demand a new style of leadership to manage heightened anxieties. The enduring winners will be those who can successfully navigate technology and preserve the human touch. Competitive advantage will go to those with the greatest capacity to build relationships built on trust, which comes from sharing deep, sustainable values and purpose.

So many things have changed in the last 20 years that it is not easy to identify only one that is much more important than the others. But if I had to choose, I would probably say the Internet. It has changed our lives in so many dimensions, namely in the way companies are run and in different factors that affect businesses and society.

Ângelo Paupério
CEO of Sonae SGPS, Portugal

I think that businesses over the last 10 or 20 years have ridden the wave of globalisation and certainly with recent events that trend is either being challenged or reversing.

Brian Conroy
President of Fidelity International,
UK

The world's changed a lot in 20 years, there's no doubt about that. If you look on the grander scale, we've seen probably the high-water mark of globalisation.

Alex Arena
Group Managing Director of HKT Ltd., Hong Kong, China

This connection with the emotional quotient can only come from having a clear understanding of how we think of trust today. Transparency has become a key consideration of how business leaders engage with stakeholders. In an increasingly transparent world, executive teams need to get better at fully grasping the ethical implications of their decisions and actions, and developing the moral muscle to make the right decisions and stand behind them. It's time for leaders to step forward and be counted, and to collaborate effectively with governments around the world.

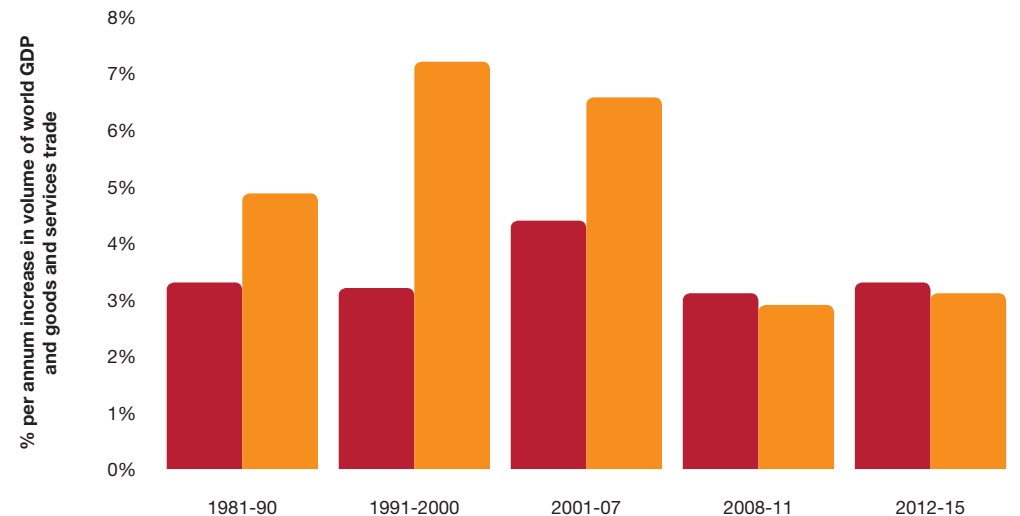
Globalisation disrupted?

Between 1980 and 2007, global trade grew much faster than global GDP; since then it's been lagging for the first time in many years (see Figure 2). Globalisation is no longer driving growth to the degree it once did. Why not? The economic axis has shifted, making international co-operation more intricate; China's rebalancing has hit demand for commodities; and regulatory measures introduced in the wake of the financial crisis have dented cross-border capital flows. But it's arguably the views of the public – and their potential impact on national policies – which could slow the pace of globalisation most of all.

Trade agreements could be most seriously affected. The Trans-Pacific Partnership (TPP), signed in February 2016 but yet to be ratified, and the draft Transatlantic Trade and Investment Partnership (TTIP) have been widely opposed in many of the countries involved. Indeed, President-elect Donald Trump has vowed to withdraw the US from the TPP.⁷ Even limited opposition can derail talks, as was nearly the case with the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada.



Figure 2: World trade is now growing more slowly than world GDP



Sources: IMF World Economic Outlook, October 2016; PwC analysis

■ World GDP ■ World trade

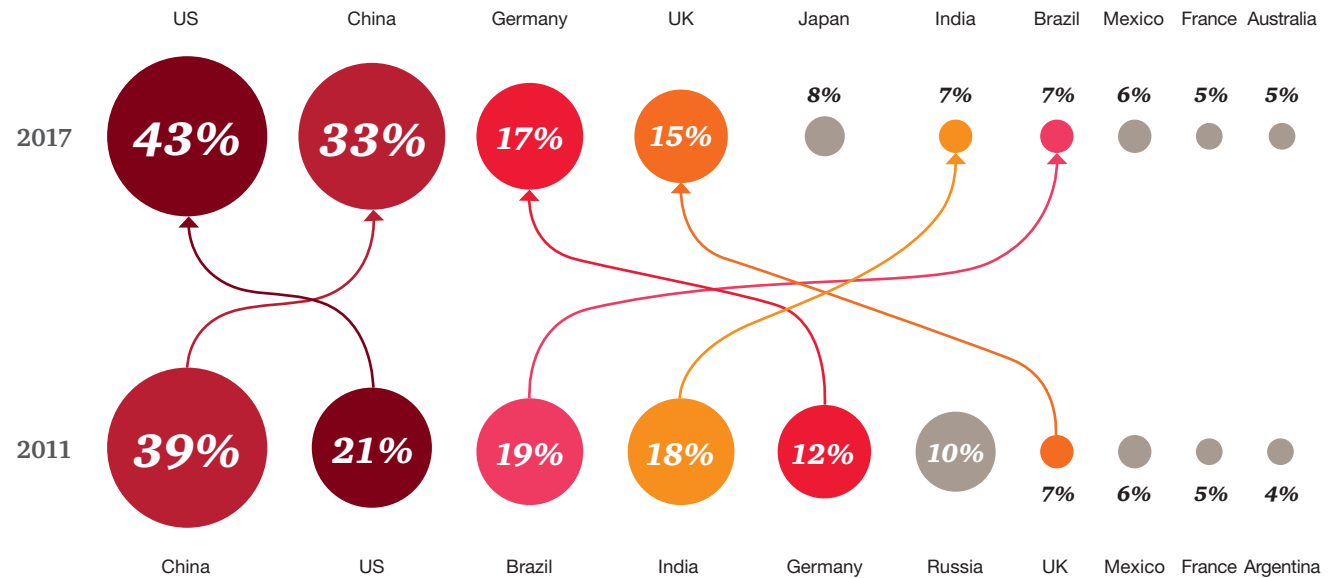
CEOs are well aware of what's shaping public sentiment. They've long acknowledged the growing gap between rich and poor: in our 2009 survey, 70% thought inequality would rise. Now, 44% say globalisation has made no difference at all in levelling the playing field. And many worry that increasing hostility to globalisation will cause governments to look inwards; indeed, 58% believe it's already becoming harder to compete on the world stage as a result of more closed national policies.

Changing markets

So, if global trade is slowing down, where are CEOs currently looking for opportunities to expand? Twenty years ago, it was relatively easy to determine where to look for global growth. CEOs saw emerging markets as a sure ticket to success; in fact, they were the only markets our earliest survey focused on. More recently, however, CEOs have turned to a broader mix of countries (see Figure 3).⁸

Figure 3: CEOs are looking at a mix of countries for growth

Q: Which three countries, excluding the one in which you are based, do you consider most important for your organisation's overall growth prospects over the next 12 months?



Despite these regressions caused by anti-globalisation, counter-market forces or planned economies, the impetus for strong market forces is irreversible, and it continues to march forward. As time goes by, whatever happens, China will continue moving towards a fully free market and this cannot be stopped.

Dr. Charles Zhang
Chairman of the Board & CEO
of Sohu.com Inc., China

...I believe that businesses in general are going through a time of greater volatility and uncertainty. All you have to do is look at recent events...

Jorge Mario Velásquez Jaramillo
CEO of Grupo Argos S.A.,
Colombia

Volatility – yes, unpredictability – yes, but, that is, in my opinion, what is now part and parcel of our daily practice. That is, there is a need to adapt businesses to continue operating even under conditions of the highest uncertainty. To make ten-year plans would currently be a utopian endeavour.

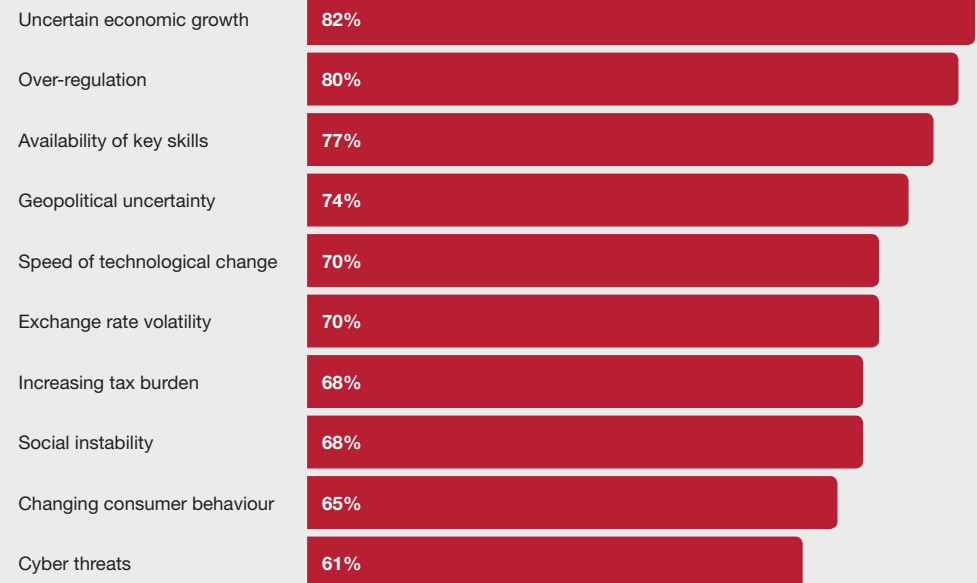
Alexey Marey
Member of the Board of Directors and CEO of Alfa-Bank, Russia

There's a solid rationale for this approach: the opportunity-risk profiles of different nations are becoming both more distinctive and more changeable, dictating the need for more considered growth strategies. The US surged ahead as CEOs' top choice three years ago and is doing well economically. Yet it faces challenges as it redefines its role on the world stage. China remains a priority but, for all its reforms and growing regional influence, is dealing with a worrying debt bubble. And the UK is even more popular than it was last year, although it will have to cope with considerable uncertainty as it negotiates its exit from the EU. Over time CEOs have become less enthusiastic about India, perhaps because structural reforms have been slow to come (and there have been recent short-term difficulties with its rupee conversion programme). Nevertheless, it still stands out for its robust growth and monetary and fiscal reforms. Brazil has also taken a tumble in the rankings and is grappling with a deep recession, but is starting to turn things around. Meanwhile, Russia has fallen out of the top ten entirely and is reeling from depressed oil prices, although it's slowly making headway.

Figure 4: Uncertain economic growth and over-regulation are top concerns for CEOs

Q: How concerned are you about the following economic, policy, social, environmental and business threats to your organisation's growth prospects?

Top ten threats



Top four risers since 2015



■—● Respondents who answered somewhat or extremely concerned

Base: All respondents (2017=1,379; 2016=1,409; 2015=1,322)

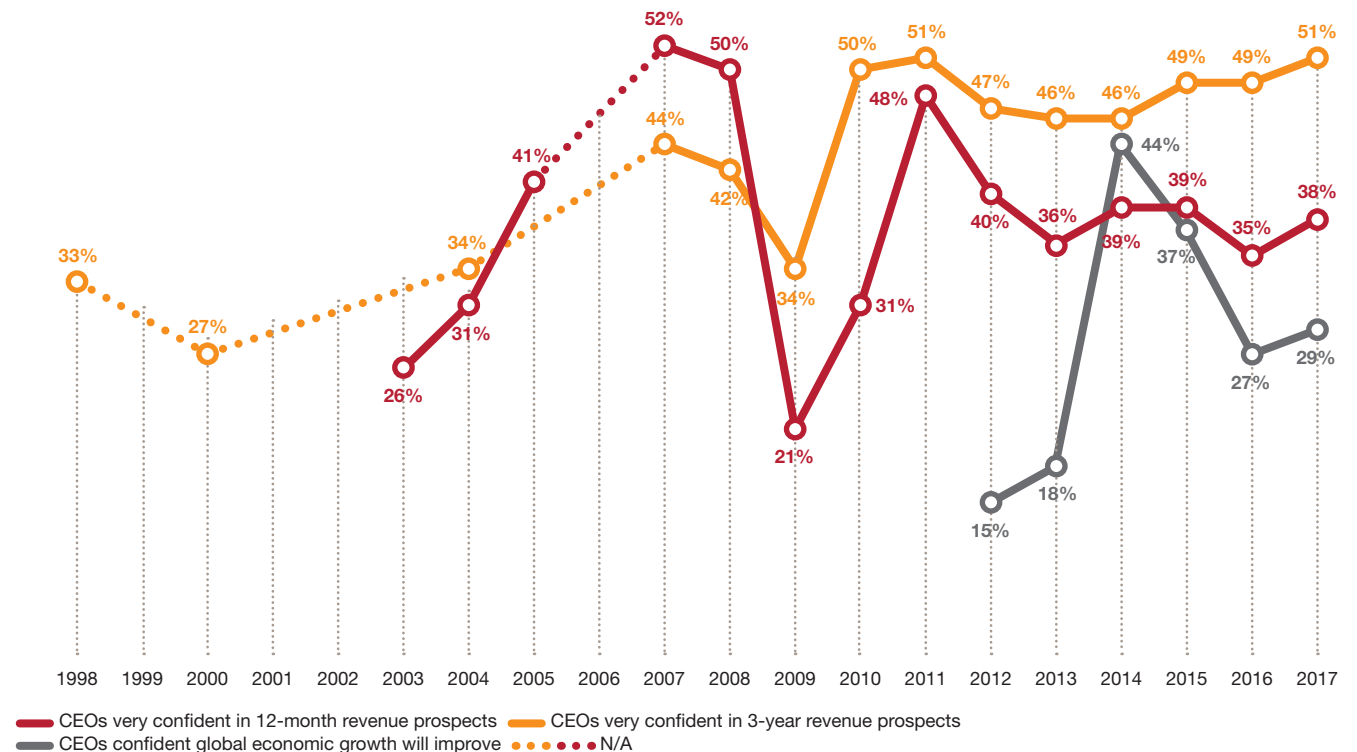
Realists – or naïve optimists?

No wonder CEOs are so concerned about economic and geopolitical uncertainties. Over-regulation and skills shortages are also high on their worry lists, and apprehensions about the speed of technological change have mounted most over the past few years (see Figure 4). Indeed, one key feature of the current environment is just how hard it is to read; a single event could trigger a need for wholesale strategic changes.

Yet despite these concerns, CEOs have become surprisingly optimistic. In late 1997, when we completed our first survey, only a third of the participants were very confident about their company's three-year revenue outlook, even though they were riding the wave of an extraordinary bull market. This year, by contrast, 51% of CEOs are extremely positive about the longer-term prospects for revenue growth, and 38% are very upbeat about the immediate outlook, up from 35% last year (see Figure 5).

Figure 5: CEOs' confidence has grown over time

Q: How confident are you about your company's prospects for revenue growth over the next 12 months?
Q: How confident are you about your company's prospects for revenue growth over the next 3 years?
Q: Do you believe global economic growth will improve, stay the same or decline over the next 12 months?

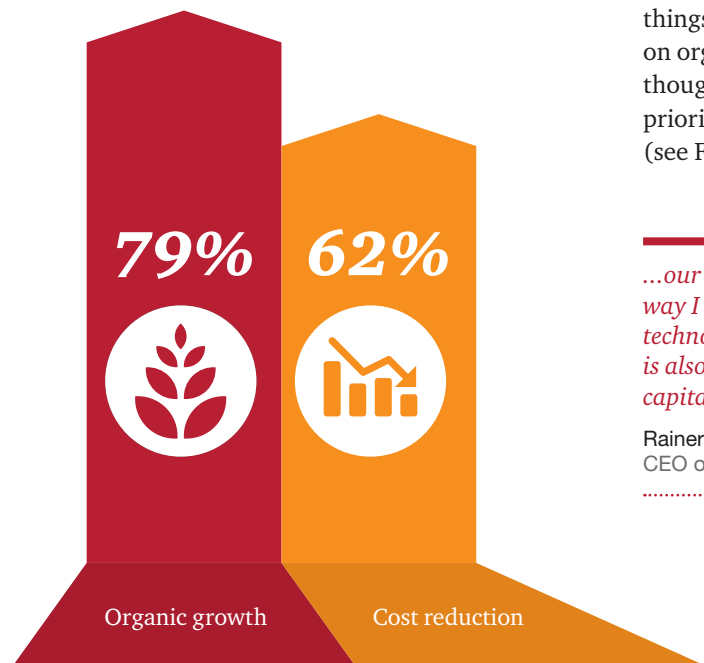


Base: All respondents (2016=1,409; 2015=1,322; 2014=1,344; 2013=1,330; 2012=1,258; 2011=1,201; 2010=1,198; 2009=1,124; 2008=1,150; 2007=1,084; 2006 (not asked); 2005=1,324; 2004=1,386; 2000=1,020; 1999=1,379 and 1998=377)

Please note: From 2012-2014 respondents were asked 'Do you believe the global economy will improve, stay the same or decline over the next 12 months?'

Figure 6: Organic growth and cost reduction are the top two activities CEOs are planning to drive corporate growth or profitability

Q: Which of the following activities, if any, are you planning in the coming 12 months in order to drive corporate growth or profitability?



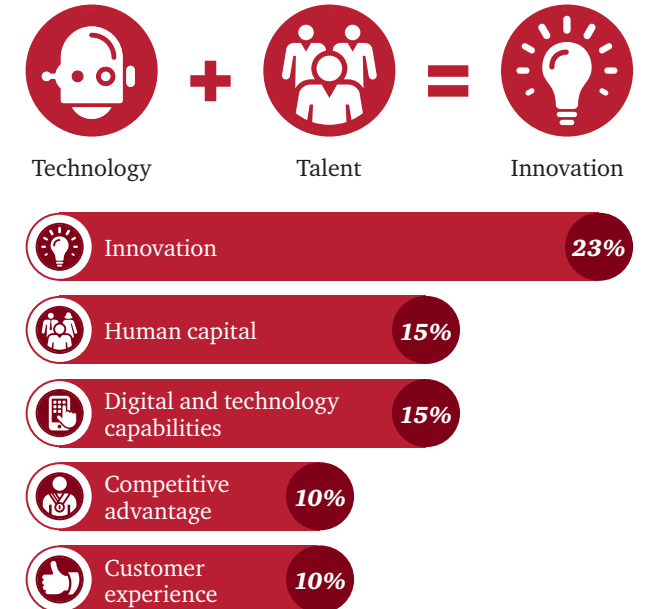
Why such optimism? CEOs have undoubtedly had to cope with very stormy conditions, so perhaps natural selection has played a part; anyone who reaches the top has already adapted to uncertainty. Alternatively, perhaps, CEOs have learned to look for the upside and seize on the opportunities uncertainty brings. One thing is clear; they're not waiting things out. CEOs recognise that it's not enough to focus on organic growth and cost reductions alone, important though these are (see Figure 6). So they are – rightly – prioritising investment in innovation and digital capabilities (see Figure 7).

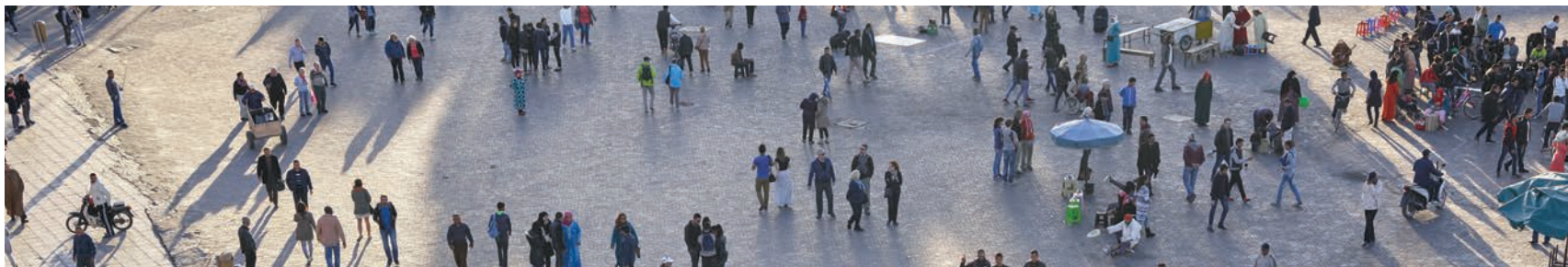
...our strategy is that we have to drive costs down. The only way I can see ...with a major impact, is that we build on new technologies and that we should go into digitisation, which is also a standardisation process, especially as we are a very capital-intensive industry.

Rainer Seele
CEO of OMV AG, Austria

Figure 7: CEOs are focusing on innovation

Q: Given the business environment you're in, which one of the following do you most want to strengthen in order to capitalise on new opportunities?





Standing at the crossroads

The forces of technology and globalisation will continue to transform the world. But in which direction? Are we entering an age of de-globalisation – or can we usher in a new era of inclusive global growth? There's much at stake. Global trade wars could disrupt supply chains and drive up prices, hurting both companies and consumers. Economic and political uncertainties could deter investment and dampen innovation, and perhaps even bring about another worldwide downturn. However, public discontent isn't just a danger to growth; social well-being and equality are vital in driving long-term economic performance.

CEOs are operating in a radically new environment. So how can they address the risks of globalisation and technology, and realise the benefits for everyone? We explore their views on three key areas:

1. Managing man and machine

Many individuals worry that globalisation and technology will eliminate their jobs. In reality, CEOs desperately need talent but can't find people with the right skills. How are they creating the more agile, well-rounded and diverse workforce that's needed for the digital age?

2. Gaining from connectivity without losing trust

As our interactions become ever more automated, data-driven and virtual, the human factor is receding. CEOs fear that technology will exacerbate public mistrust in organisations. How are they addressing the challenge?

3. Making globalisation work for all

In an era of people power, CEOs are prioritising purposeful growth. They know this entails working with others to help drive much wider changes and ensure a fairer distribution of the benefits to be gained from globalisation. How do CEOs think business can help?

Tough questions about competing in an age of divergence:

1. How will you find fresh organic growth in the new divergent and low-growth global economy?
2. As the pattern of world trade alters and protectionism threatens, how are you preparing to compete while continuing to optimise your cost base?
3. In a more uncertain world, where will you increase your investment and where will you 'hunker down'? How will you measure the relative success of your ventures?
4. If innovation is key to your success, how much more do you need to invest in R&D and new product development to ensure a proportion of future winning brand offerings?
5. In an increasingly risky business environment, how can you factor both agility and resilience into your growth strategy?

Managing man and machine



I believe one of the biggest challenges for society as a whole is the philosophical problem involving people's interaction with robots. I believe that during the lifetimes of our children we will certainly be faced with androids and the question of what laws we should enact to govern how robots are integrated into society.

Alexey Marey
Member of the Board of
Directors and CEO, Alfa-Bank,
Russia

Some worry that globalisation will take away their jobs and they're even more nervous about the impact of technology. Twenty years ago, there were fewer than 700,000 industrial robots worldwide; today, there are 1.8 million, and the number could soar to 2.6 million by 2019.⁹ Manufacturing output has simultaneously risen, but employment in the sector has fallen in various advanced economies.¹⁰ Technology has been one – although by no means the only – cause of these changes.

Robots are now entering the services arena; 3-D printing can be used to make cars and aircraft; biotechnology will change the way we grow crops, produce food and manufacture medicines; and nanotechnology and artificial intelligence (AI) will affect numerous industries. All this could happen much more quickly than we expect. Just look at the advent of self-driving trucks to make deliveries, or Amazon's new Go store, which uses technology to track what customers put in their shopping carts and bill them automatically when they walk out, eliminating the need for human cashiers.¹¹

Figure 8: The most confident CEOs plan the largest headcount increases

Q: Do you expect headcount at your company to increase, decrease or stay the same over the next 12 months?
Q: How confident are you about your company's prospects for revenue growth over the next 12 months?



Given these advances, it's hardly surprising that people are apprehensive. This year, we surveyed more than 5,000 members of the public in 22 countries to identify what they think about many of the same topics we raised with CEOs. Our findings show that 79% believe technology will cause job losses over the next five years.¹² And a number of experts believe that technology could replace humans in every sector, although when – or whether – that day will come is hotly contested.¹³ Forecasts of just how many jobs are at risk vary wildly, from 9% to 57% in OECD countries, for example.¹⁴ And the figure could be far higher in some emerging economies with large unskilled populations that have embraced automation to spur economic growth. Whatever the numbers may be, one thing is certain: technology *will* have a disruptive impact on the workforce, and it will do so right across the skills spectrum.

Wanted: More technology and more people

Yet CEOs still need people. Only 16% plan to cut their company's headcount over the next 12 months – and only a quarter of them say it's primarily because of technology. Conversely, 52% plan to hire more employees, although there are significant differences depending on how confident CEOs feel about their company's growth prospects (see Figure 8). Clearly, CEOs see the value of marrying technology with uniquely human capabilities. The skills they consider most important are those that can't be replicated by machines (see Figure 9). In fact, they're precisely the qualities required to stimulate innovation – the area CEOs most want to strengthen to capitalise on new opportunities.

As technology in the workplace increases, it will have a big impact on both people and culture. It'll change the type of people you employ. It'll change the culture of delivery within the organisation. It'll drive us away from applying human thoughts to things which can be automated in a very logical way.

Peter Harrison
Group Chief Executive of
Schroders plc., UK

Figure 9: The hardest skills to find are those that can't be performed by machines

Q: How difficult, if at all, is it for your organisation to recruit people with these skills or characteristics?

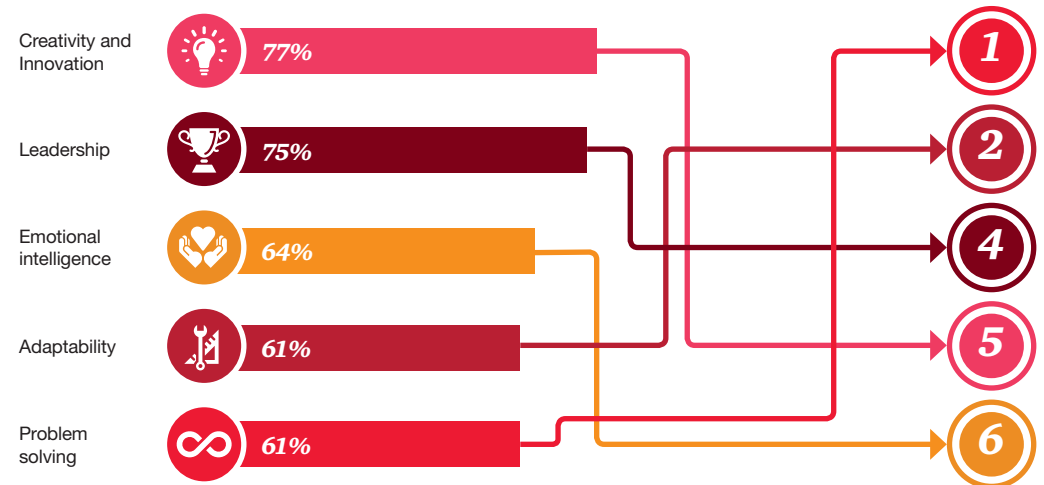
Q: In addition to technical business expertise, how important are the following skills to your organisation?

Difficulty in recruiting people with skill

Respondents who answered somewhat difficult or very difficult

Importance of skill

Respondents who answered somewhat important or very important

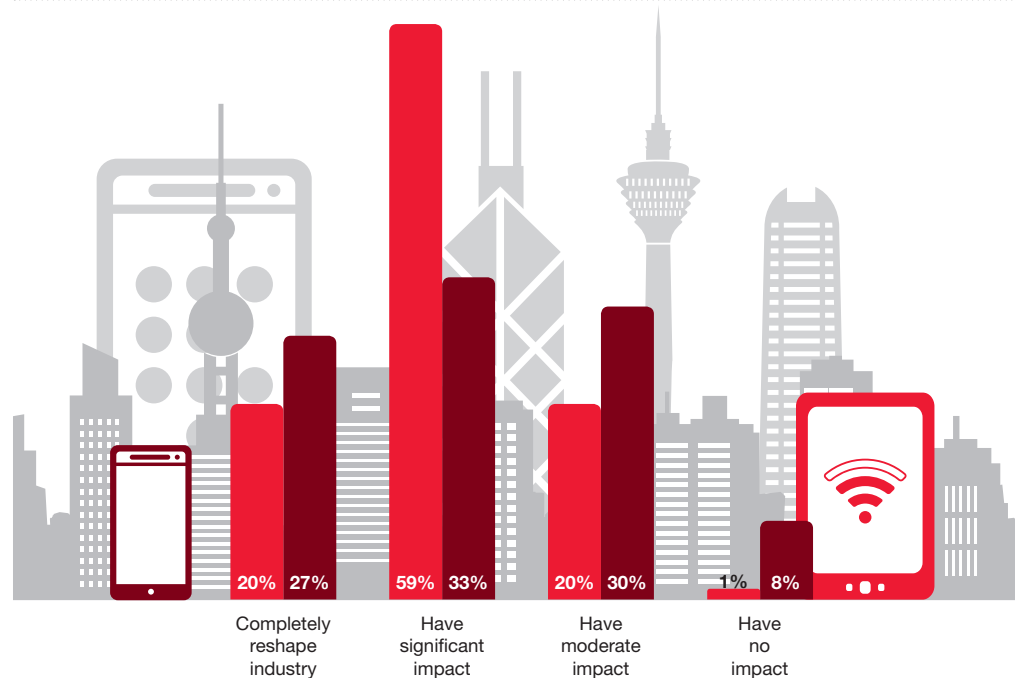


I think that the biggest change that I see happening in the next 20 years is that there is going to be big overlapping among the different industries. So, there is going to be fierce competition among the mature industries – for example, telecoms will fight with energy companies, energy companies will fight with the automotive companies, and so on.

Francesco Venturini
CEO of Enel Green Power, Italy

Figure 10: Technology has had less of an impact than CEOs predicted

Q (1998): To what extent do you think e-commerce will reshape competition in your industry?
Q (2017): To what extent has technology changed competition in your industry over the past 20 years?



Source: PwC, 1st Annual Global CEO Survey and 20th CEO Survey
Base: All respondents (1998=377; 2017=1,379)

■ 1998 ■ 2017

There are several reasons why organisations continue to need people. One is simply how long it takes to adopt new technologies, whether that's because older technologies are still profitable, because there are other priorities or because the effort and resources required are too great. In our first CEO survey, for example, 20% of CEOs thought e-commerce would completely reshape competition in their industries. This may sound like a surprisingly small percentage, but they weren't far off: 27% of the CEOs in our latest survey say technology has transformed the competitive environment in the last 20 years (see Figure 10).

The regulatory environment can be a big factor, too. Some of the world's largest manufacturing exporters, like Brazil and France, have been slow to adopt robotics, partly because of stringent labour regulations.¹⁵ Moreover, technology is currently nowhere near able to replicate every job or every aspect of a particular role. It's routine, repetitive, standardised jobs and tasks that will be at risk – as well as non-routine activities, where there's enough data for a machine to learn to spot anomalies. But, by and large, more variable activities will be much harder to replace. And even where jobs *can* be fully automated, some will remain in human hands simply because companies need people to understand what consumers want, including how they prefer to interact with technology and the products and services they desire.



Technology also creates new jobs: jobs for people who can design, monitor, maintain and fix technology; jobs for people in sectors that benefit indirectly from technology (such as the leisure sector, where new opportunities are emerging, as people's time is freed up); and even new versions of 'old-world' jobs. Technology has, for instance, facilitated the rise of on-demand companies that match customers with independent contractors selling everything from taxi services to accommodation.

Ultimately, however, it's the ability to acquire new skills that's kept people employed through past disruptions like the industrial revolution. Some jobs will vanish. Others will remain, but their nature will change. Computers far outstrip humans when it comes to analysing vast quantities of raw data, for example. But they lack the intuition, empathy and creativity required to make sense of that data. The intersection between man and machine can generate more value for business than either alone. It can also make many jobs more interesting and more purposeful.

Creativity can't be coded

The challenge is getting to that point: 77% of CEOs are concerned that key skills shortages could impair their company's growth. And they say it's the soft skills they value most that are hardest to find (see Figure 9). Creative, innovative leaders with emotional intelligence are in very short supply. If anything, indeed, they're even thinner on the ground than they were in 2008, when we asked a similar question, whereas people with technological skills are more plentiful than before.

I'm a firm believer that our people and our culture are our only sustainable competitive advantages.

Edward H. Bastian
CEO of Delta Air Lines Inc., US

...while Artificial Intelligence will help with some things like sorting data and insights, the quality of thinking in decision making, in team-based interaction that creates value for people and corporations, is still going to be a key part of how we do business.

Anthony Healy
CEO of Bank of New Zealand,
New Zealand

I used to say that up to the 19th century the most important people were those who had liquid resources, money. In the 20th century world, it was essentially the engineers, but in the 21st century, it is the ones who are able to manage talent. So talent is going to be the driver for the 21st century.

Ignacio S. Galán
Chairman of Iberdrola, Spain

So how are CEOs addressing the skills crunch? They're mainly trawling in wider waters. A significant number promote diversity and inclusiveness; seek the best people, no matter who or where they are; and move employees where they're needed. Just over three quarters of CEOs have also changed their talent strategies to reflect the skills and employment structures their companies will require in the future (see Figure 11).

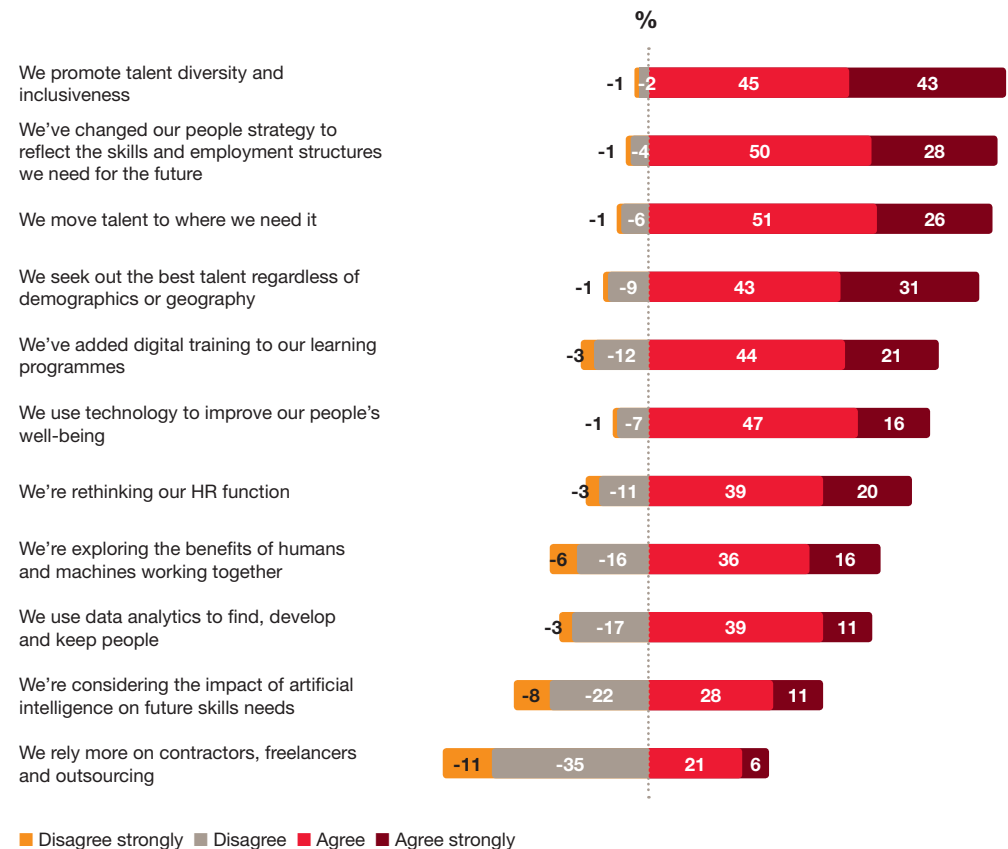
The percentage of CEOs who agree that their company uses technology to hire, train and retain people, or who are exploring the future impact of technology on their people or on the HR function itself, is considerably smaller.

But new strategies to find people and develop them will no longer be enough. The whole system within which people work will have to be considered. This includes reinforcing mechanisms like pay and reward and performance-enhancing mechanisms like coaching and feedback. But it will also be essential to help people manage the impact of turbulent environments, appoint executive teams that reflect the diversity of the employee pool and create a purpose and culture that inspire people.

Organisations will also have to collaborate with government, educational and vocational institutes and employees to redesign the workforce. Retaining the human element in a more virtual world will be a prerequisite for future success.

Figure 11: CEOs are looking more widely to find the skills they need

Q: To what extent do you agree or disagree with the following statements about your organisation's talent activities?



Tough questions about managing man and machine:

1. What parts of your business model will benefit from further automation?
2. Is your HR function ready to adapt to managing man and machine? What's missing from its capabilities and how will you fix it fast?
3. How are you going to find the rarer skills like leadership, creativity and adaptability required for your company to innovate and build brand differentiation?
4. Have you considered how artificial intelligence and automation will help you create competitive advantage in your key markets?
5. Have you redesigned your business processes so that your employees are best placed to work seamlessly with automation to create new value?

Gaining from connectivity without losing trust



I always love one of the sayings from our founder, Henry Ford. He said, “A business that makes nothing but money is a poor business,” and so giving back is a very important part, and that’s how you build trust.

Mark Fields
CEO of Ford Motor Company, US

...organisations will change dramatically. The arrival of artificial intelligence, the arrival of robotics, the arrival of big data, the arrival of the interrogation techniques that are now capable of being deployed on data, all give sort of a new challenge but also a new tool to businesses across the world. We have to embrace them. We have to recognise that they’re here to stay and it will only get worse.

John Patrick Hourican
CEO of Bank of Cyprus, Cyprus

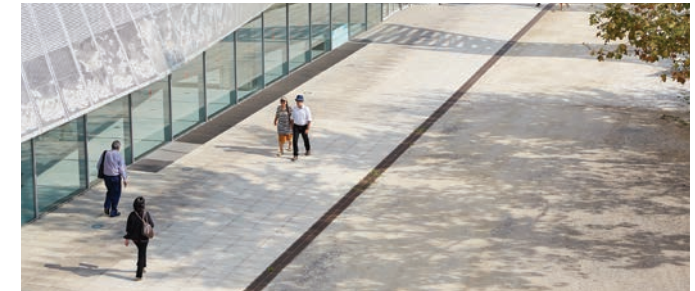
Twenty years ago, trust wasn’t as high on the business radar as it is today. In fact, we didn’t survey CEOs about it until 2002, when the business community was reeling from accounting fraud scandals, the bursting of the dotcom bubble and the collapse of the equity markets. With hindsight, it seems hard to believe that only 12% of CEOs thought public trust in companies in their country had greatly declined, and only 29% thought the fallout from corporate misdeeds was a serious threat.

Since then, the financial crisis has catapulted trust into the limelight, and the after-effects of stagnant economic growth and spiralling debt levels continue to fuel a climate of mistrust. The impact on CEOs has been significant: in 2013, 37% worried that lack of trust in business would harm their company’s growth. This year, the number has jumped to 58%. The breakdown in public trust now poses a potent risk to political, economic and social systems the world over.

Every decision and action that business leaders take – whether it involves customers, employees, suppliers, partners, shareholders or the wider community – has a bearing on trust. In an increasingly transparent world companies need a clear moral compass. Stakeholders are keenly interested, not just in what businesses do but also in how and why they do it. To add to our research on the trust

In my view, technology brings transparency, and transparency is a good thing for our society because it allows us to shine a bright light onto the dark spots of our society. However, we will need to have a discussion about the Internet, because the Internet in my view is a reflection of the good, the bad and the evil of our society. Whilst most of the digital business models have been designed with the best intentions in mind, they're now facing an ugly reality.

Helene von Roeder
CEO Germany, Austria and CEE of Credit Suisse, Germany



agenda over the last decade, this year's CEO survey homes in on how technology has exacerbated the challenge.

The dark side of connectivity

A sizeable number of CEOs are firmly convinced that, in an increasingly digitalised world, it's harder for businesses to gain – and retain – people's trust. They also think it's become more important both to run their companies in a way that addresses wider shareholder expectations and to establish a strong corporate purpose that's reflected in their organisation's values, culture and behaviour (see Figure 12).

So which risks arising from connectivity concern CEOs most? When 'technology' and 'trust' pop up in the same sentence, most of us automatically think of how reputations are made and lost overnight through mass communications. And, indeed, 87% of CEOs believe social media could have a negative impact on the level of stakeholder trust in their industry over the next five years. But as new technologies and new uses of existing technologies proliferate, they say new dangers are emerging – and old ones are getting worse (see Figure 13).

Figure 12: In an increasingly digitised world, there is widespread recognition that a strong corporate purpose is vital – as well as an awareness that it's harder to win trust

Q: In the context of an increasingly digitised world, to what extent do you agree with the following statements?



84%

of people say breaches of data privacy and ethics causes them to lose trust in companies

Source: PwC survey of 5,351 members of the public in 22 countries, 2016.



How people can ensure that they own their data, that it's theirs and that how it's used is appropriate, will become the key battleground over the next 20 years.

Craig Donaldson
CEO of Metro Bank PLC., UK

Data security and ethics

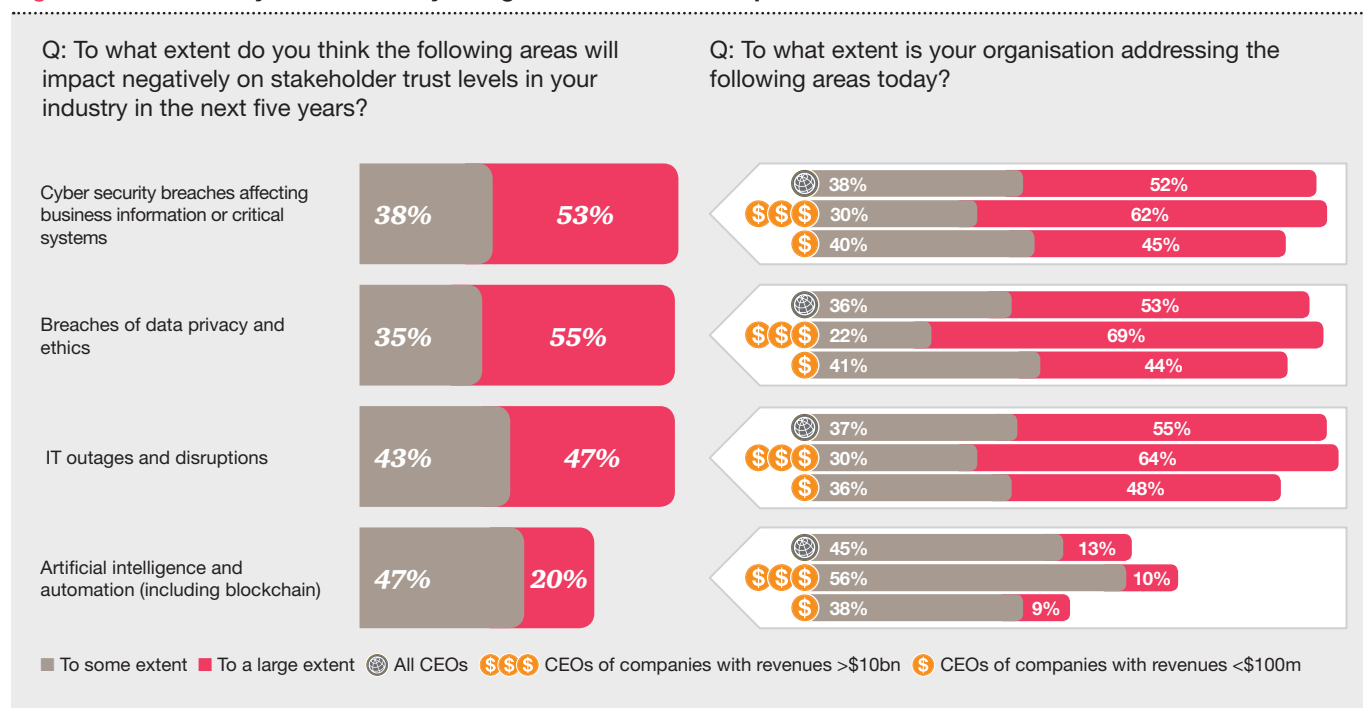
Many companies already collect a vast amount of customer data, which they use to target specific customers and influence their behaviour, often in very subtle ways. As the Internet of Things (IoT) spreads to everything from wearables to consumables, cars, and every conceivable part of the home, what companies know about people will increase exponentially.

This data is an incredible asset for companies and their customers. It enables businesses to deliver a better service, develop closer relationships with their customers and earn their trust. It enables customers to get more targeted offerings and engage with companies in more meaningful ways. But what happens if a company crosses the line between anticipating customers' needs and intruding on their privacy, or if a government tries to access the data in an effort to control security risks? And what happens if the data gets lost or stolen and ends up in the hands of criminals? One study found that privacy and security concerns had stopped 45% of online US households from conducting transactions or expressing their views via the Internet.¹⁶ Even worse, people's physical security could be compromised, as cars and homes become increasingly connected. Several US government agencies have already issued a warning about the security risks associated with smart cars.¹⁷

The growing use of data in the workplace also poses new trust issues. As HR departments slowly but surely increase their use of data analytics, talent management is turning from an inexact art into a science. But monitoring employees' activities in – and out of – work can quickly turn sour. What are the limits of the information companies can gather? How transparent is the use of that data in making decisions about employee rewards or penalties?

CEOs recognise the complexity of the situation. A full 91% say breaches of data privacy and ethics will have a negative impact on stakeholder trust in the next five years, and 89% are already on the case. However, CEOs in the largest companies are doing much more to address these areas than those in the smallest firms (see Figure 13).

Figure 13: CEOs worry about a variety of digital risks and their impact on trust



Security breaches aren't confined to customer data; cyber spying is now a major threat in some industries, for example. As Ian Bremmer, President of political risk consultancy Eurasia Group, whom we spoke to as part of our research, says, "Twenty years ago...the web was one of the least political areas of the market you could possibly imagine. Today, it is perhaps the most politicised sector after defence, and it increasingly is defence and national security." Businesses in key areas like infrastructure, energy and banking are particularly prone to attacks. This explains why so many CEOs worry that breaches affecting business-critical information and systems could also impair public trust in their industry. The vast majority are already taking steps to try and forestall such problems – although, again, it's the largest firms that are most active in this regard (see Figure 13).

The companies that are most effective in addressing these issues will be those that are not only strengthening their IT security, risk and governance strategies, but also collaborating with government (for example, to create the right regulatory environment for public clouds, which can offer better end-to-end security and privacy management) and engaging with stakeholders. They will need to decide what levels of transparency stakeholders should be entitled to and how to balance competing interests, as well as educating people on how to manage their technology footprint. Employers will also have to consider how much information it is necessary or acceptable to gather on their people, and how open they should be about what they're collecting, and why and how it will be used.

Digital technology is central to both our customer solutions and our operating practices. For example, we are implementing platforms that make it easier for our customers to access their information and monitor their consumption, and to optimise their buildings' energy use. We also make significant use of digital technology to improve industrial performance, by implementing predictive maintenance at our plants, for example.

Isabelle Kocher
Directeur Général du
Groupe (CEO)
ENGIE of France

IT outages and disruptions

IT outages and disruptions are another source of concern. If the lights go out in a world that's heavily reliant on technology, the consequences can be extremely disruptive. What happens if customers can't access their money when they need it, or if their connected homes lock them out? Deeply inconvenient though such incidents are, they pale into insignificance next to the physical risks that will arise as we become more connected. Picture, for instance, the sort of accident that might occur as a result of a computer glitch in one or more smart cars.

It's no wonder so many CEOs fear that IT outages and disruptions could impact stakeholders' trust and why so many are taking action. Again, it's CEOs at the largest firms that are dealing most actively with the issue (see Figure 13). But addressing such risks is very difficult. The complexities and interdependencies of enterprise systems are a big problem.

Automation, robotics and AI

Behind automation, robots and smart machines lie algorithms. These may be nothing more than instructions for computers to achieve particular outcomes, but they shape lives to a much bigger extent than many people imagine. The way we navigate websites, how we interact with connected devices, how the growing gig economy works: all are influenced by code. This raises questions about what safeguards are needed to ensure that machines carry out human orders effectively, in the way they were intended. It also raises various ethical questions. To what extent, for instance, is it acceptable to influence human choices? And can the humans who write these codes – or the companies they work for – be trusted?

78%

of people say IT outages and disruptions causes them to lose trust in companies



Source: PwC survey of 5,351 members of the public in 22 countries, 2016.



Such issues explain why high-profile figures in Silicon Valley are increasingly focusing on how technology can benefit society.¹⁸ They also explain why 67% of CEOs say AI and automation will affect trust levels in future, and why 58% are already addressing the situation, with the CEOs of the largest companies being the most active (see Figure 13). It will be crucial to have robust risk and governance frameworks. It will also be important to better integrate human and machine collaborations to oversee algorithmic processes. But the companies that are successful in addressing these challenges will be those that also prioritise transparency. Without a clear idea of how rules are defined and implemented, for example, stakeholders may question a company's fairness and honesty.

A trust strategy for a digital age

In some respects, digital connectivity has made us more trusting; in the sharing economy, for example, consider how many people let strangers stay in their homes or buy from businesses they've never heard of before. In other respects, digital connectivity has eroded trust by creating new threats and exposing organisations to far more scrutiny. The growing complexity of technology and the increasingly distributed way in which we work, with greater individual autonomy, have also made it much harder for companies to build trust – or rebuild it, once it's been lost. And no firm gets it right every time, which is why effective crisis management is as crucial as robust risk management.

Trust has been a core attribute of our company over its lifetime. Consumers do relate well to our brand from a trust perspective. So therefore we are called in to help people harden their cyber security, for instance, and to test it, to help them in disaster recovery situations and make their businesses more robust. So, again, that's more a source of opportunity to us than it is a threat.

Alex Arena
Group Managing Director of HKT Ltd., Hong Kong, China

But if forfeiting people's trust is a sure-fire route to failure, earning their trust is the single biggest enabler of success. As an example, the take progression from assisted to augmented to autonomous intelligence heavily which depends on how much consumers and regulators trust machines to operate on their own. That, in turn, depends on whether those who create the machines have the right risk and governance structures in place, the means to verify and validate their claims independently and the mechanisms to engage effectively with stakeholders.

In short, trust is an opportunity, not just a risk. Many CEOs recognise as much: 64% – rising to 75% of those who head companies with revenues of more than US\$10bn – believe that how their firm manages data will be a differentiating factor in future. These CEOs understand that prioritising the human experience in an increasingly virtual world entails treating customers with integrity.

Tough questions about gaining from connectivity without losing trust:

1. Does your CIO know the extent to which the technology you're investing in today will affect how your stakeholders trust you tomorrow?
2. What are you doing to protect customer and employee data from theft, loss or misuse – and how robust are those strategies?
3. How can you build the right infrastructure for collecting, managing, governing and securing data?
4. As cybersecurity risks increase, have you got clear protocols in place for when systems go down and inconvenience your customers?
5. What can you do to measure and leverage trust in your brand as a competitive advantage?

Making globalisation work for all



For the past 20 years CEOs have been largely positive about the impacts of globalisation on their businesses and markets. But, by 2007, they were beginning to express reservations about the short-term effects on society. CEOs are still ambivalent. Today the vast majority believe that globalisation has helped to free up flows of money, people,

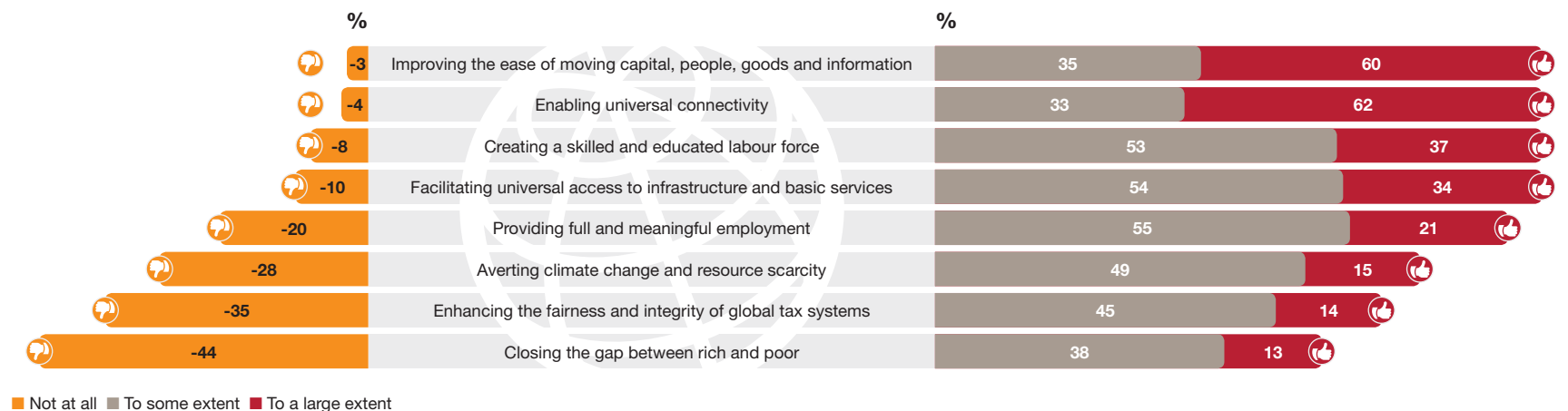
goods and information, facilitate universal connectivity and create a skilled workforce. Yet a significant number say it's done nothing to mitigate climate change, promote the development of fairer tax systems or close the gap between rich and poor (see Figure 14).

...globalisation may be maximally efficient, but maximum efficiency doesn't really care about distribution, and so you've left a lot of people behind.

Ian Bremmer
President and Founder of Eurasia Group, US

Figure 14: CEOs recognise both the benefits and downsides of globalisation

Q: To what extent has globalisation helped with the following areas?



Nearly all CEOs believe it's vital to address social challenges by focusing on purposeful growth. The question is – how. The political, economic, regulatory and social systems within which companies operate are coming under increasing strain; indeed, many people see them as part of the problem. In what ways and to what extent, then, should CEOs be expanding the scope of their leadership to help drive systemic change?

Time for business leaders to step up

We asked CEOs to tell us how they think the corporate community can work with others to stimulate change in areas where globalisation hasn't produced desirable results. The majority of CEOs say the best way for business to help spread the benefits of globalisation more widely is to have more and better collaboration with government. But while they concede that companies need to work more closely with governments, some add that governments don't listen very well. "Business and government need to find a non-adversarial way to interact," one CEO observes, which means that executives will have to be flexible enough to find common ground without compromising their values.

However, a small but noticeable minority of CEOs believe that their business is too small to engage effectively, or that there's little they can do to effect change – despite evidence to the contrary. There are many instances of successful corporate collaboration with multilateral institutions to deliver social improvements. As an example, 9,000 companies work with the UN Global Compact to advance broader social objectives like the Sustainable Development Goals.¹⁹ Newer, smaller platforms for multi-stakeholder engagement have also sprung up, including some spearheaded by the private sector. And a number of CEOs point to a less immediately obvious source of change: trade associations and industry bodies.

I think we face a very dislocated next 20 years. I think we'll see a reversal of some of the globalisation that has occurred. I think we'll see the emergence of nationalism, economic nationalism, in a much more fundamental way than we've seen over the last 20 years. But at the same time, we'll see the creation of business models that are much more ubiquitous in the use of their data and their information, much more technologically core-driven. But actually, that's going to change the nature of the type of jobs that are available in society, which I think will in the beginning increase the tension between business and society, policymakers and business people. So I think we have some dangerous waters ahead – which is why we need to be honest about them, and to engage in the dialogue so that we can all navigate them.

John Patrick Hourican
CEO of Bank of Cyprus, Cyprus

We must realize that markets cannot, by themselves, solve the big social problems created by a technological revolution; government has to play a proactive role.

Prof. Carlota Perez
Researcher, lecturer and international consultant, UK

35%

of people agree that businesses have increased their focus on operating in a way that takes them and community into account



Source: PwC survey of 5,351 members of the public in 22 countries, 2016.

New solutions to perennial problems

In fact, companies can play a valuable part in the wider debate about the systems that govern business and society, including the effect of technology on these systems. The future of globalisation is clearly one topic for discussion. Some CEOs think business has a role to play in promoting the benefits of globalisation. Others favour localisation, seeing the retreat from globalisation as a chance to embed a 'glocal' approach that benefits their markets.

Researcher, lecturer and international consultant Carlota Perez, whom we interviewed for this year's survey, sees tax mechanisms as a way to balance global versus local sourcing, as well as minimising resource consumption: "One of the things that I have proposed is flipping VAT; instead of being a tax on value added, which is profits and labour, flip it – income neutrally – to materials, energy and transport, so that every product would be taxed on its material and energy content and on how far it has travelled. It would change the relative costs of producing away or producing near: some things would continue to be more competitive produced abroad; others can be produced locally. And there would be a proliferation of innovations in new materials and energy sources and in how to use less of them."

A second issue is whether the current focus on shareholder value should be qualified. Helene von Roeder, CEO Germany, Austria and Central Eastern Europe of financial services firm Credit Suisse, says: "If you ask me how business can address these challenges [of globalisation], I do believe that the German system of a stakeholder, rather than a shareholder, economy is a pretty good answer." One organisation that's already exploring this concept is the RSA Inclusive Growth Commission, an independent multi-stakeholder body in the UK set up to investigate practical ways of making local economies more inclusive and prosperous.²⁰

54%

of people don't think growth matters much, if at all, for their well-being



Source: PwC survey of 5,351 members of the public in 22 countries, 2016.

Among many other obligations, today's CEO has to know how to address or manage polarity. The customer wants a quality product at an affordable cost, with transparency and a story that is consistent with the best values in society. Shareholders want the best, fastest return on a product, with better optimisation of capital. And these are the conflicts that create value and generate progress, and that are not necessarily mutually exclusive. Herein lies the value of management and the reason management is paid to provide this service.

Sergio Rial
CEO of Santander Bank, Brazil

Income distribution is yet another theme to be explored, particularly given the impact of technology on human labour. "How do we distribute wealth so it is balanced and fair?" a CEO in Hong Kong asks. "Who are the future consumers and what do they consume and how do they earn a living to pay for it?" One solution put forward by economist Branko Milanovic is to spread the ownership of capital assets more widely: "Reducing concentration of income from capital would imply measures to redistribute ownership...through taxation relief to make the middle class more willing to hold financial assets..."

Wherever the solutions may lie, if we don't resolve inequality issues, one CEO in the UK cautions, "The whole [capitalist] system will be put under pressure from the working population [which] will no longer accept the wealth differential created today."

Leveraging technology for social benefit

Discussion and collaboration will provide some of the answers to these challenges, but technology can also resolve certain issues, as some CEOs point out. And the business world is in an ideal position to help. Take healthcare. "[The] availability of basic and advanced care for all people is a key issue," says a CEO in France. "Private public partnership on all levels should be developed to work on more effective,

75%

of people believe that globalisation has helped to create a skilled and educated workforce (of which 29% believed to a large extent)



Source: PwC survey of 5,351 members of the public in 22 countries, 2016.

I think there's two trends, one that will impede in the shorter term is the rise of populism, which I worry about, the rise of people closing their borders to some degree. And then the second is the rise of disruptive technologies, which generally are a good thing for the world, but they can have an impact on employment in particular, as the technologies work through industries.

Mark Machin
President & CEO of Canada
Pension Plan Investment Board
(CPPIB), Canada

efficient and sustainable solutions, [for example] working on telemedicine and IT solutions to better connect patients and care givers or to make better use of expert systems."

Technology could help address another problem: access to continuing education. "Government and business can work well together to provide opportunities for workers displaced by globalisation," one CEO in the US comments. "[Its] impacts need to be moderated with retraining and other initiatives in a much larger and better-designed way." Some companies already collaborate with educational institutions to co-develop courses and sponsor degrees. But technology could ultimately transform the delivery and cost of education, as well as its effectiveness. Online training, AI and other tools could be used not only to raise basic standards but also to foster skills like creativity and adaptability, which are hard to teach in more traditional ways.

Safeguarding the future

Addressing the dangers of globalisation and technology while capitalising on the opportunities they present is a delicate balancing act. Many CEOs freely admit that they struggle with this, both because they're uncertain about the extent of their company's social obligations and because greater emphasis on shareholder value has made it far more difficult to prioritise long- over short-term performance.²¹



64%

of people believe globalisation
has helped create full and
meaningful employment



Source: PwC survey of 5,351 members of the
public in 22 countries, 2016.

But the events of the past year have shown us just how interconnected the interests of shareholders and other stakeholders really are. Businesses that ignore the power of the people will jeopardise the growth they seek. Conversely, businesses that respond effectively – by articulating their purpose, anticipating risks and adhering to the values they profess – will thrive.

And what about the CEO's personal role in all of this? CEOs will certainly require different skills. When we spoke to 216 young business leaders last year, 44% thought one of the core attributes that would be needed by future CEOs was the ability to give and receive feedback.²² Tomorrow's business leaders will also have to be able to collaborate widely and embrace more decentralised decision-making. The expanding C-suite is evidence of this trend. Over the past 20 years, it's doubled in size and changed beyond recognition. The next 20 years may bring further expansion, with additional roles such as that of Chief Privacy Officer or Chief Relationship Officer, and more diversity in the boardroom.²³

In 1998, we concluded that these were 'great times in which to be a global CEO'. The corporation was 'ascendant around the globe' – and this, we thought, was the 'mortar of a better and more harmonious and less divided planet than in the past'. Our statement clearly needs updating. While we believe these can still be great times in which to be a global CEO, we also think a paradigm shift in the role of business is required to produce that better, more harmonious, less divided planet. The ascendancy of corporations around the globe has contributed to prosperity; it's created jobs, raised living standards and delivered innovative products and services that have bettered lives. But that's no longer enough.

In the headlong rush to reap the benefits of technology and globalisation, the human factor has been lost. It's time for CEOs to step forward and help safeguard the future by ensuring the benefits of business go to everyone.

I think looking forward over the next 20 years is always hard. Nobody has a crystal ball. But with what we've seen around globalisation and technology globalisation, I think it will continue – whether or not there is a backlash against it.

Craig Donaldson
CEO of Metro Bank PLC., UK

With the changes happening right now, I think I'm privileged to live under these circumstances because so much will happen in the coming 10 years. It's a privilege to live in this time period, and the opportunities it creates are massive. But there are going to be a lot of winners and a lot of losers, of that I'm certain. Hopefully we're amongst the winners.

Thomas von Koch
Managing Partner of EQT,
Sweden

Tough questions about making globalisation open for all:

1. Have you assessed the impact current sentiment about globalisation will have on your organisation's ability to compete globally?
2. Are you making the most of your reporting to ensure all your stakeholders are aware of your initiatives to support workforce, communities and social initiatives?
3. Have you evaluated your global tax strategies recently to consider the impacts of public and government views on tax obligations to support public services?
4. How do your investments in innovation align to the important problems at the core of your purpose?
5. How can businesses and governments work together to help those who've been disenfranchised by globalisation?

Looking for more data?

Figure A: Short-term confidence has risen most in North America & Latin America

Q: How confident are you about your company's prospects for revenue growth over the next 12 months?

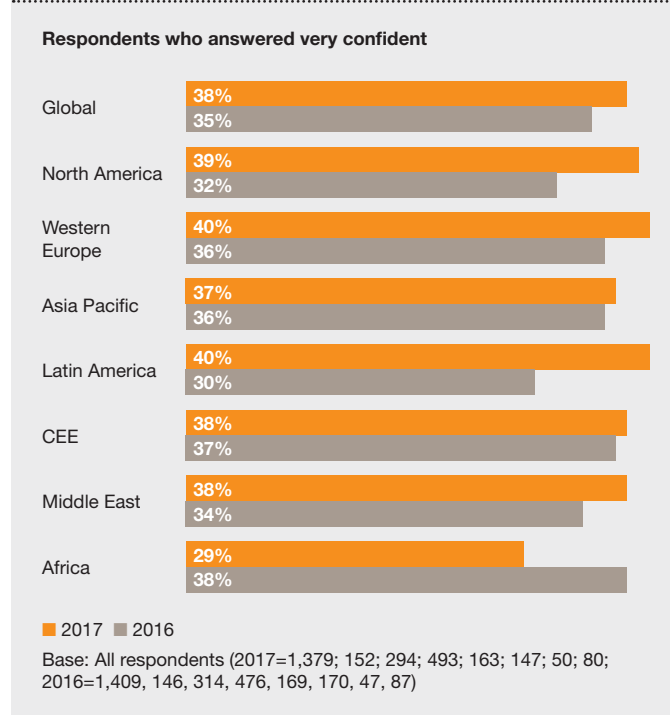


Figure B: Organic growth and cost reduction are the top two activities CEOs are planning in order to drive corporate growth or profitability

Q: Which of the following activities, if any, are you planning in the coming 12 months in order to drive corporate growth or profitability?

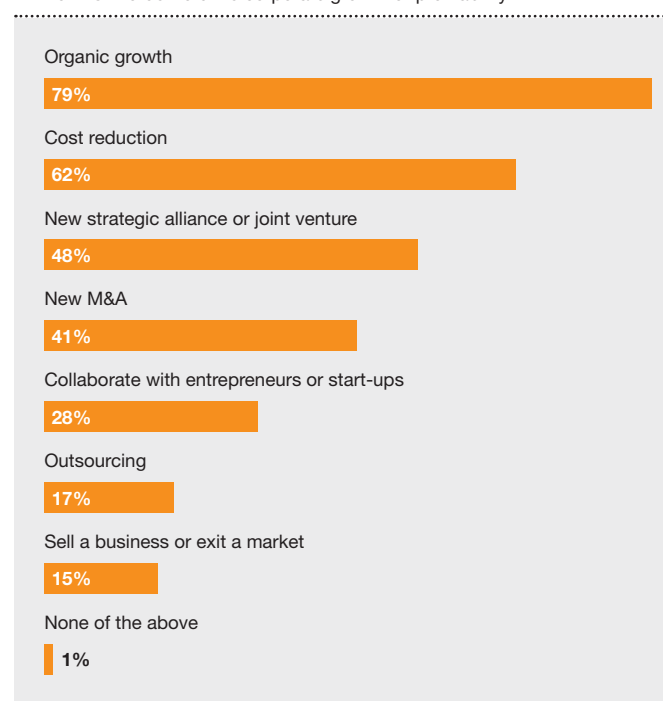


Figure C: Of the CEOs who plan to decrease headcount over 80% indicated it could be a result of automation and other technologies

Q: Which of the following activities, if any, are you planning in the coming 12 months in order to drive corporate growth or profitability?

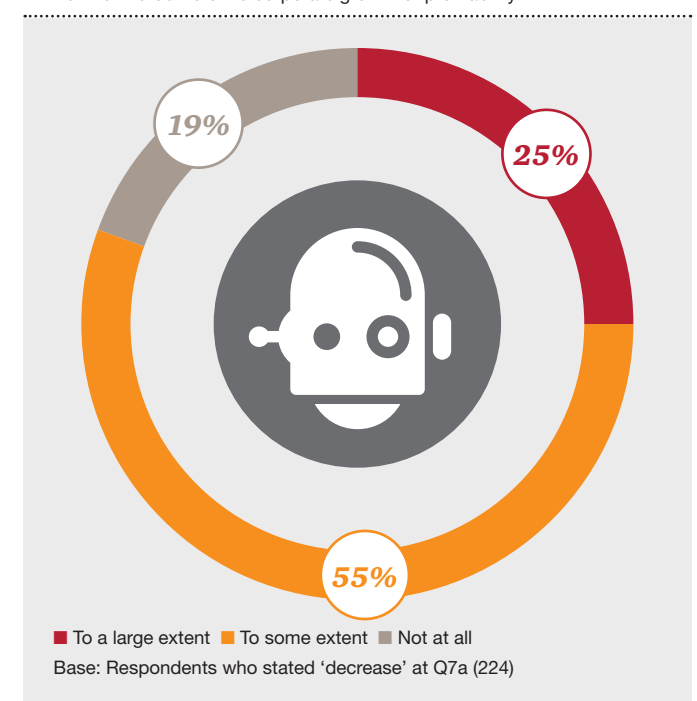
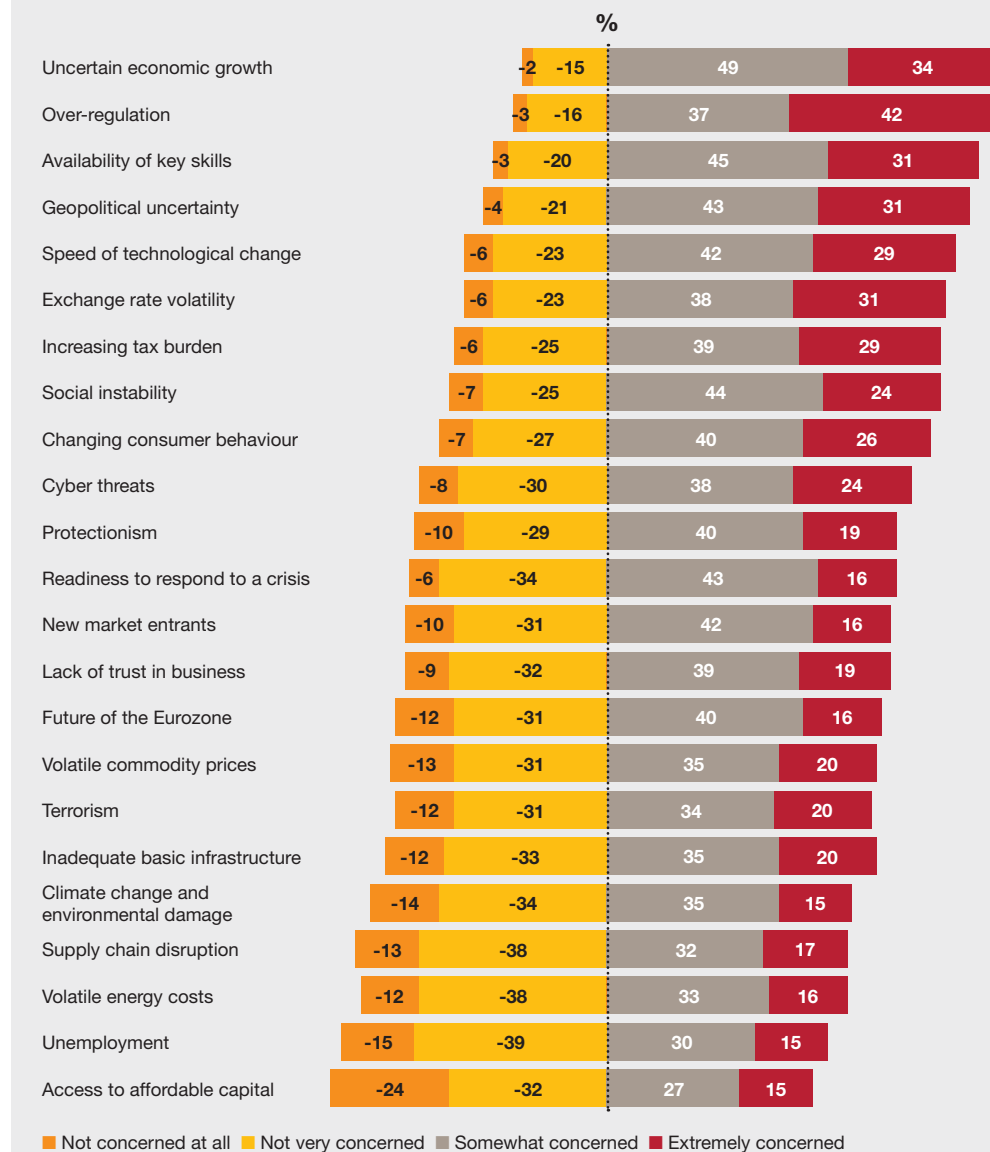
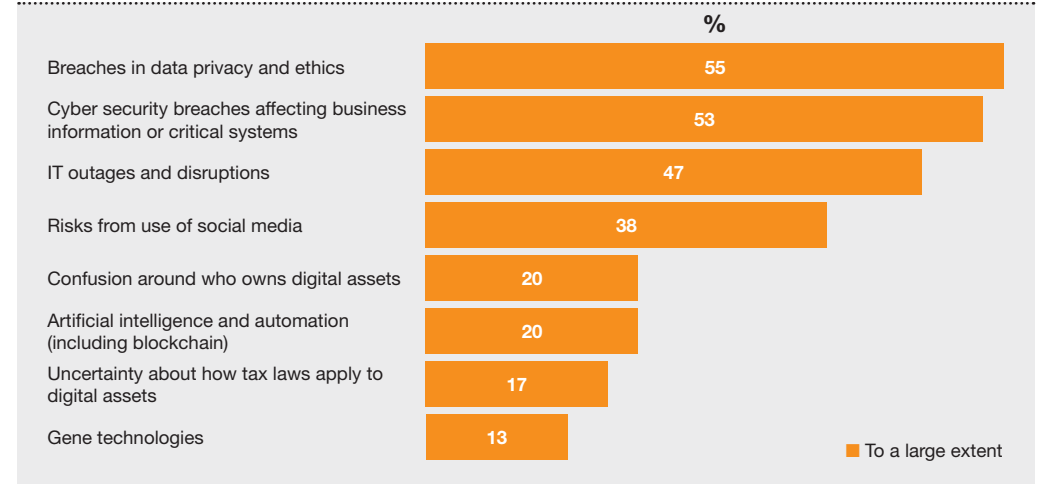


Figure D: Uncertain economic growth has displaced over-regulation as the top threat

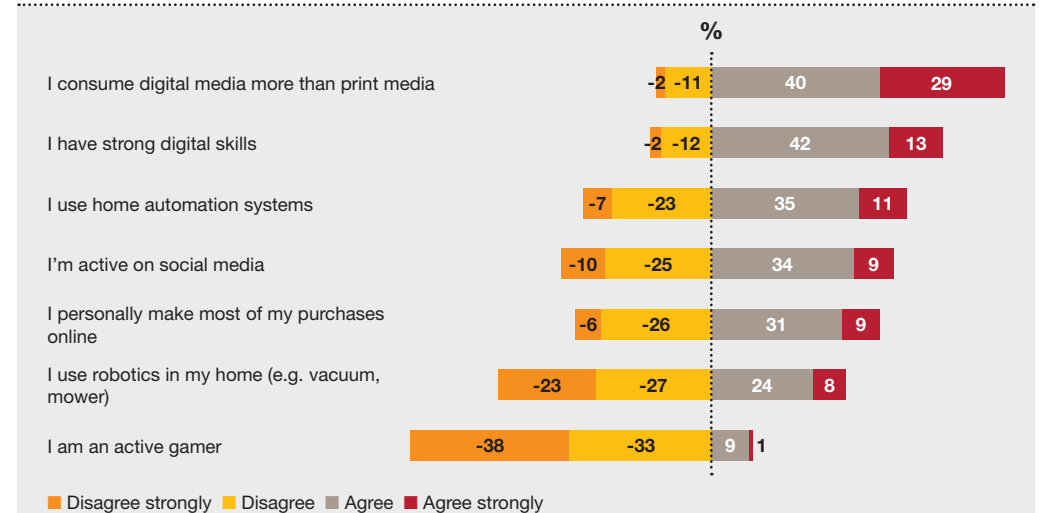
Q: How concerned are you about the following economic, policy, social, environmental and business threats to your organisation's growth prospects?

**Figure E: The top three threats to trust are likely to be cyber security & data privacy breaches and IT disruptions**

Q: To what extent do you think the following areas will impact negatively on stakeholder trust levels in your industry in the next five years?

**Figure F: CEOs display varying degrees of digital literacy and adoption**

Q: To what extent do you agree or disagree with the following statements about your personal use of technology?



Meet the CEOs

We met with 20 CEOs and 3 thought leaders from around the world face to face to discuss their views on the issues explored in this report.



Alex Arena
Group Managing Director
HKT Ltd., Hong Kong,
China



Alexey Marey
Member of the Board of
Directors and CEO
Alfa-Bank, Russia



Ângelo Paupério
CEO
Sonae SGPS, Portugal



Anthony Healy
CEO
Bank of New Zealand,
New Zealand



Brian Conroy
President
Fidelity International, UK



Dr. Charles Zhang
Chairman of the Board
& CEO
Sohu.com Inc., China



Craig Donaldson
CEO
Metro Bank PLC., UK



Edward H. Bastian
CEO
Delta Air Lines Inc., US



Francesco Venturini
CEO
Enel Green Power, Italy



Helene von Roeder
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Credit Suisse, Germany



Ignacio S. Galán
Chairman
Iberdrola, Spain



Isabelle Kocher
Directeur Général du
Groupe (CEO)
ENGIE, France



John Patrick Hourican
CEO
Bank of Cyprus, Cyprus



Jorge Mario Velásquez Jaramillo
CEO
Grupo Argos S.A., Colombia



Mark Fields
CEO
Ford Motor Company, US



Mark Machin
President & CEO
Canada Pension Plan
Investment Board (CPPIB), Canada



Peter Harrison
Group Chief Executive
Schroders plc., UK



Rainer Seele
CEO
OMV AG, Austria



Sergio Rial
CEO
Santander Bank, Brazil



Thomas von Koch
Managing Partner
EQT, Sweden

Meet the thought leaders



Branko Milanovic
Visiting Presidential
Professor and LIS Senior
Scholar, The Graduate
Center, City University of
New York, US



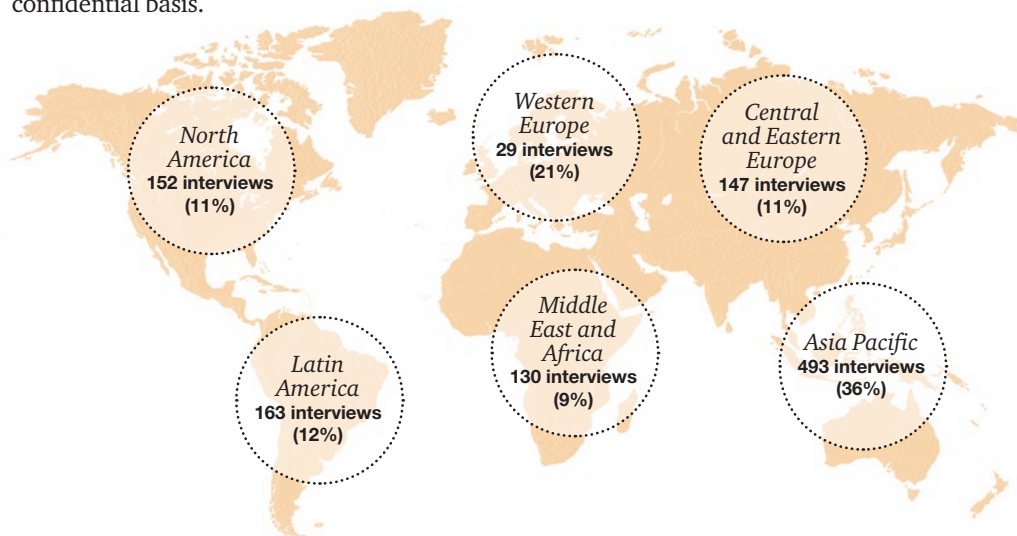
Prof. Carlota Perez
Researcher, lecturer and
international consultant,
UK



Ian Bremmer
President and Founder
Eurasia Group, US

Research methodology and contacts

We've conducted 1,379 interviews with CEOs in 79 countries. Our sample is weighted by national GDP, to ensure CEOs' views are fairly represented across all major countries. The interviews were also spread across a range of industries. Further details, by region and industry, are available on request. Twenty-eight percent of the interviews were conducted by telephone, 63% online and 9% by post or face-to-face. All quantitative interviews were conducted on a confidential basis.



The lower threshold for all companies included in the top ten countries (by GDP) was 500 employees or revenues of more than US \$50 million. The threshold for companies included in the next 20 countries was companies with more than 100 employees or revenues of more than \$10 million.

- 36% of companies had revenues of \$1 billion or more
- 38% of companies had revenues of over \$100 million up to \$1 billion
- 21% of companies had revenues of up to \$100 million
- 57% of companies were privately owned

Notes:

- Not all figures add up to 100%, due to rounding of percentages and exclusion of 'neither/nor' and 'don't know' responses.
- The base for figures is 1,379 (all respondents) unless otherwise stated.

We also conducted face-to-face in-depth interviews with 20 CEOs from five continents over the fourth quarter of 2016. Their interviews are quoted in this report, and more extensive extracts can be found on our website at ceosurvey.pwc where you can explore responses by sector and location.

In addition, we surveyed 5,351 members of the public from 22 countries. The interviews were conducted in December 2016 using an online survey community of global consumers.

1,379

interviews completed in 2016 across

79

countries between 26 Sept and 5 Dec 2016

2,900

members of the PwC's Global CEO Panel were invited to participate via the online survey, contributing to the total online responses

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Endnotes

- 1 Growth in world merchandise exports between 1995 and 2014 in World Trade Organisation, *International Trade Statistics 2015* (2015): 14; Growth in internet traffic data (including both internet and non-internet IP traffic) between 1992 and 2015 in Cisco Visual Networking Index [or VNI], *The Zettabyte Era: Trends and Analysis* (July 2016): 7.
- 2 Esteban Ortiz-Ospina and Max Roser, “World Poverty,” *OurWorldInData.org* (2016), accessed December 15, 2016, <https://ourworldindata.org/world-poverty/>; Jos Verbeek, “Increasingly, inequality within, not across, countries is rising,” The World Bank (October 2, 2015), accessed December 15, 2016, <http://blogs.worldbank.org/developmenttalk/increasingly-inequality-within-not-across-countries-rising>.
- 3 *The Economist*, “Towards the end of poverty” (June 1, 2013), accessed December 9, 2016, <http://www.economist.com/news/leaders/21578665-nearly-1-billion-people-have-been-taken-out-extreme-poverty-20-years-world-should-aim>.
- 4 Manufacturing jobs data from European Commission’s Directorate General for Economic and Financial Affairs, Annual macro-economic database (2016), accessed December 20, 2016, http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm; income inequality data from Global Consumption and Income Project, accessed December 20, 2016, <http://gcip.info/>.
- 5 Branko Milanovic, *Global Inequality: A New Approach for the Age of Globalization* (Cambridge, Massachusetts, & London: Harvard University Press, 2016): 11, 19, 21 & 22.
- 6 Verbeek, op. cit.
- 7 *BBC News*, “Trump says US to quit TPP on first day in office” (November 22, 2016), accessed December 9, 2016, <http://www.bbc.co.uk/news/world-us-canada-38059623>.
- 8 PwC’s latest “World in 2050” report, to be published in February 2017, will give an update on our views on long-term global growth in the major advanced and emerging economies. For our earlier views, see the 2015 edition here: <http://www.pwc.com/world2050>.
- 9 International Federation of Robotics press release, “World Robotics Report 2016” (September 29, 2016), accessed December 10, 2016, <http://www.ifr.org/news/ifr-press-release/world-robotics-report-2016-832/>.
- 10 UN Industrial Development Organisation, *Industrial Development Report 2016* (2015): 13 & 190.
- 11 Eric Newcomer and Alex Webb, “Uber Self-Driving Truck Packed With Budweiser Makes First Delivery in Colorado,” *Bloomberg Technology* (October 25, 2016), accessed December 15, 2016, <https://www.bloomberg.com/news/articles/2016-10-25/uber-self-driving-truck-packed-with-budweiser-makes-first-delivery-in-colorado>; Rupert Neate, “Amazon Go store lets shoppers pick up goods and walk out,” *The Guardian* (December 5, 2016), accessed December 15, 2016, <https://www.theguardian.com/business/2016/dec/05/amazon-go-store-seattle-checkouts-account>.
- 12 PwC, “CEO20 Public Survey” (2016).
- 13 Clive Cookson, “AI and robots threaten to unleash mass unemployment, scientists warn,” *Financial Times Ltd.* (February 14, 2016), accessed December 10, 2016, <https://www.ft.com/content/063c1176-d29a-11e5-969e-9d801cf5e15b>; Phoenix Kwong, “Artificial intelligence won’t replace humans anytime soon, say China’s tech leaders,” *South China Morning Post* (November 18, 2016), accessed December 10, 2016, <http://www.scmp.com/business/companies/article/2047281/artificial-intelligence-wont-replace-humans-anytime-soon-say>.

- 14 Melanie Arntz, Terry Gregory and Ulrich Zierahn, "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis," OECD Social, Employment and Migration Working Papers, No. 189 (Paris: OECD Publishing, 2016); Citi GPS and Oxford Martin School, *Technology at Work v2.0: The Future Is Not What It Used To Be* (January 2016): 7.
- 15 Hal Sirkin, "It May Surprise You Which Countries Are Replacing Workers With Robots the Fastest," *The Huffington Post* (May 21, 2016), accessed December 10, 2016, http://www.huffingtonpost.com/hal-sirkin/robots-workers-countries_b_9992960.html?1463577708.
- 16 Dan Munro, "New Survey Highlights Startling Erosion Of Online Trust," *Forbes* (May 15 2016), accessed December 15, 2016, <http://www.forbes.com/sites/danmunro/2016/05/15/new-survey-highlights-startling-erosion-of-online-trust/#5fa2dda75e67>.
- 17 Andy Greenberg, "The FBI Warns That Car Hacking Is a Real Risk," *Wired* (March 17, 2016), accessed December 15, 2016, <https://www.wired.com/2016/03/fbi-warns-car-hacking-real-risk/>.
- 18 Juliette Powell, "An Advocate of Deep Learning," *strategy+business* (June 28, 2016), accessed December 29, 2016, <http://www.strategy-business.com/article/An-Advocate-of-Deep-Learning?gko=2d725>; Peter Dockrill, "Elon Musk launches US\$1 billion AI company to 'benefit humanity' and avoid robot wars," *Science Alert* (December 14, 2015), accessed December 29, 2016, <http://www.sciencealert.com/elon-musk-launches-us-1-billion-ai-company-to-benefit-humanity-and-avoid-robot-wars>.
- 19 United Nations Global Compact, "Our Mission," accessed December 15, 2016, <https://www.unglobalcompact.org/what-is-gc/mission>.
- 20 Royal Society for the encouragement of Arts, Manufactures and Commerce, "Inclusive Growth Commission," accessed December 15, 2016, <https://www.thersa.org/action-and-research/rsa-projects/public-services-and-communities-folder/inclusive-growth-commission>.
- 21 In our 19th Annual Global CEO Survey, for example, 67% of CEOs said that their purpose centred on creating value for wider stakeholders, but 45% thought that costs were a barrier in responding to stakeholders' expectations.
- 22 PwC, "Tomorrow's leaders today" (2016), accessed December 15, 2016, <http://www.pwc.com/gx/en/ceo-agenda/ceosurvey/2016/aiesec.html>.
- 23 PwC, "Who's at the table? The C-suite and 20 years of change" (2016), accessed December 15, 2016, <http://www.pwc.com/gx/en/ceo-agenda/ceosurvey/20th-anniversary/the-evolution-of-the-c-suite.html>.

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