The workforce and technology are changing. They are more digital, more technological, and more global. At the same time, business expectations, needs, and demands are evolving faster than ever before. Deloitte is leading our clients into a contingent, crowd-sourced, automated, and cognitive-enabled future where the workforce will become increasingly augmented. The Future of Work program is developing and incubating solutions hand-in-hand with clients around the world, re-imagining the future of talent acquisition, workforce planning, professions, and more.
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What could work look like tomorrow?

Getting work done is a fundamental concern for any business. But today, paradigm-shifting forces seem to be driving significant changes in both work and the workforce. New digital and communications technologies are changing how work gets done. The growth of the “gig economy” and advances in artificial intelligence are changing who does the work. Even the question of what work looks like is coming under examination as a continually evolving marketplace drives organisations to explore new business models.

In the face of these technological and social forces, it could be imperative for businesses to rethink their approaches to the how, who, and what of work in fundamental, perhaps even transformative ways. And as usual, there seem to be no easy answers.

While we anticipate that the future of work will be better in some respects than many of our present day realities, we also anticipate much turbulence. The complexity of what lies ahead can make many business leaders feel as if they are navigating treacherous rapids rather than charting predictable courses of action.

The research this report describes aims to bring some degree of clarity to the pressures organisations can expect as they move forward in the future of work. Through an ongoing research collaboration with WikiStrat, we examine leading experts’ views on the new realities that are emerging and ways in which individuals, organisational leaders, and public policymakers can take advantage of the opportunities that the future of work presents.
The complexities and opportunities posed by the future of work may seem limitless, and they can present new realities to multiple stakeholders. And so, to better understand tomorrow’s most pressing issues, we tapped into the potential power of leveraging the wisdom of crowds. Considering a wide range of perspectives on the future of work allows us to view the issue from a variety of viewpoints, yielding a fuller picture of the transformations underway.

To create this fuller picture, we used the Wiki-Strat crowdsourcing platform to ask leading thinkers across the globe to identify what they thought were the most important driving forces shaping the work-related realities of tomorrow. Among these were futurists and experts in law, business, society, health and economics, representing 14 countries. We asked this crowd of experts to identify not only what they thought were the most relevant forces driving the future of work, but also how likely they thought these new realities were to take shape over the next five to ten years. (See the sidebar About the Research to learn more about the study methodology).

As we gathered and unpacked the data during the study’s first phase (conducted in April 2017), five “new realities” emerged that were considered both highly probable and likely to have a big impact on global public policymakers, organisational leaders, and employees seeking to navigate opportunities in the future of work. Each of these realities holds untapped potential for further developing the workforce, leveraging technology, and advancing economic and social growth in new ways.

The study’s second phase (conducted in November 2017) validated the five original realities and identified two additional “emerging” realities (figure 1).
ABOUT THE RESEARCH
Deloitte Consulting LLP combined forces with Wikistrat, a crowdsourced consultancy with a global network of over 2,200 subject matter experts, to research what possibilities the future of work could hold.

We chose to do this by creating future scenarios using the Delphi method. The Delphi method is a structured, systematic and interactive forecasting method that relies on a panel of experts. It offers the advantages of participant anonymity, structured information flow, and continuous feedback mechanisms that allow the experts to revise their own forecasts or opinions in real time.

We conducted three rounds of inquiry. In the first round (phase 1), our participants identified forces that would be likely to impact our understanding of work from an individual, organizational and societal perspective. During the course of a year, nearly 75 forces were identified (figure 2). We classified these forces into five categories — economic, geopolitical, social/demographic, technological, and legal (figure 2); the majority of the most influential forces were social/demographic and legal.

Zooming out to higher-level categories in this way allowed us to better examine each force’s likelihood and potential impact and more precisely pinpoint those forces that should be at the top of every executive’s mind in the coming year.

During the second round (phase 2), participants assessed and voted on the likelihood and impact of the identified forces. We also analysed the geopolitical landscape, economic implications, legal shifts, social and demographical trends and disruptive technologies in the context of these forces.
In the third round (phase 3), we constructed future scenarios around the forces which were identified as being the most likely and influential, which were then studied for the implications they would have for business.

We engage in these three rounds of exploration with the expert panel every six months, allowing us to regularly update our predictions for future scenarios and their projected likelihood. This agile approach and focus on continuous improvement within our methodology is how we strive to stay on the cutting edge of the future of work.

Figure 2. Experts plot the likelihood and potential impact of nearly 75 forces on the future of work
The evolution of work

Reality No. 1: Exponential organisations

The driving forces of big data, the Internet of Things and the growing number of Generation X individuals in leadership positions have led to the rise of exponential technologies and data-driven organisations. Organisations that can capture the potential value unlocked by technology and data's unprecedented availability are anticipated to outpace their peers. We often refer to these organisations as “exponential organisations” (ExOs). We define an ExO as one that has a disproportionately large impact (or output) compared to its peers, and that enjoys an exponential return on assets (such as talent, capital, or intellectual property). An ExO's exponential return on assets may be largely due to the use of new organisational techniques that employ the right mix of exponential technologies, business models, and, most importantly, human talent.

To successfully operate as an ExO, an organisation should find the right mix between people and technology to scale impact and accelerate growth. ExOs seem to have mastered artful augmentation—leveraging the power of technology while further developing the enduring human skill sets needed to capture value in the market. They generally see technology not simply as a way to create efficiencies and cut costs, but as a way to unleash exponential growth in abundant markets. They can redefine their markets and use data to create new industries (for example, the sharing economy and crowdfunding).

A concrete example of the kind of action an ExO may take to achieve these ends is the steps that a large hedge fund organisation is taking to use artificial intelligence to augment the firm’s management decision-making. This allows its investment managers to spend more time engaged in higher-value tasks. Another example is that of a leading medical practice that is using cloud technology and data science to provide more precise health care and value to patients.

One challenge to operating as an ExO is the practical difficulty of getting one's arms around the vast volume of data and information being generated. This volume is only growing; some estimate that 90% of the world’s data has been created in the past few years. We also often hear about the increased flow of information: 2.5 exabytes of data are produced every day, while 140 million emails are sent every minute. How then can organisational leaders prepare to harness data and information in the quest for exponential performance?

A good starting point is to create a data-driven business model that focuses on customer value creation by relying on new data
The evolution of work

streams, technologies and human talent to inform decision-making and redefine the competitive market. Harnessing a mix of data, technology and people allows ExOs to create opportunities in untapped markets. It is also necessary to develop core business competencies like statistical reasoning, data manipulation, and data visualisation. And, while ExOs focus heavily on science and data, they also place a premium on technical workers who can also leverage soft skills such as social interaction, creative thinking, and complex problem solving.

Key insights: Public policymakers should keep a close eye on data privacy and intellectual property protection as organisations continue to compete based on intangible assets. Organisational leaders should develop a technology-fluent work-force to harness the most value possible from their technology investments. From the individual’s point of view, people who can apply both “hard” technical and “soft” interpersonal skill sets can thrive and potentially find plenty of opportunity in an ExO.

Read more: Every year, Deloitte works with the Massachusetts Institute of Technology (MIT) to understand how organisations are adapting to exponential technologies. Our latest report examined how the most mature digital organisations are thriving in this new reality.5
Reality No. 2: The unleashed workforce

FACTORS such as the growth of freelancing, 24-hour access to everything, mobility, crowdsourcing and gamification have unleashed the workforce, freeing it from many traditional constraints. Indeed, one of the fastest-growing workforce segments is the “alternative” worker—one who works off-campus and outside of an organisation’s official talent balance sheet. In addition, the rise of platform technologies has made it easier for organisations to use crowdsourcing to tackle tough challenges. And technologies such as artificial intelligence, augmented reality and robotic process automation allow work to be outsourced to robots.

This broadening of the talent range gives employers an opportunity to engage in a multi-channel workforce strategy that leverages a mix of traditional full-time employees, joint ventures, contractors, freelancers, crowds, and robots (figure 3).

To reap benefits from this new reality, successful organisations can leverage team-based models and decision-making protocols rather than building traditional, hierarchical business models. Agile companies can draw upon all points of the talent range to rapidly shape new business models, improve output quality, generate ideas, and manage costs. At the same time, effective organisations also recognise the different needs and specific attributes of different worker types across the range. They do not take a one-size-fits-all approach to the employee experience.

These new alternative talent models lend themselves to new management styles that can allow organisational leaders to take better advantage of team-based decision-making. One large global banking organisation, for instance, began experimenting with an agile new human resources model that formed nine-person groups loosely organised into 13 teams. These teams were free to operate and make decisions at the team level rather than going through the traditional hierarchical decision-making process. This approach was so successful in improving time to market, boosting employee engagement and increasing productivity that the bank is now rolling it out throughout the organisation.

In our most recent refresh of the WikiStrat research, we saw a powerful trend emerge within the larger growth of the range of talent: namely, that today’s workforce encompasses more diversity—in terms of gender, age, background, experience, viewpoint and over-
all workforce composition—than in the past. As society’s perceptions evolve to become more inclusive of women and minorities in leadership positions, companies will experience increasing pressure to continue to diversify their workforce and diligently avoid the many scandals that have recently been brought to light regarding discriminatory practices and harassment in the workplace. Especially with HR selection and management processes changing to accommodate the use of data and technology in recruitment, organisations have the ability to make more fact-based choices to reduce some of the many inherent biases against women and minorities in the workplace (as is evident from numerous behavioural science studies).9

**Key insights:** Public policymakers should consider new labour categories to account for the rise of alternative work arrangements, paying particular attention to social safety nets and tax incentives that could offset the impact of income uncertainty among an increasingly transitory workforce. Organisational leaders may consider moving away from traditional hierarchical structures towards project-based teams composed of a variety of workers, which can allow them to respond faster to market-place needs and opportunities. Individual workers should plan for and adapt to possibly greater uncertainty about where and when their next job will be, as well as embrace lifelong learning with an increasing emphasis on essentially human, enduring skillsets.

**Read more:** Deloitte’s 2017 Global Human Capital Trends report discusses the augmented workforce in greater depth.10 We also consider the opportunities organisational leaders have to extend their culture beyond office walls and balance sheets.11
The global trend of the lengthening of employees’ productive years (figure 4 shows the US as an example) and the need for lifelong learning have led to the new reality of lifelong reinvention.

Longer lifespans seem to be challenging traditional ideas about careers, retirement and work-life balance, and these changes in mind-set are starting to affect the way people work. Lengthening worker careers could...
complicate operational and resource management. The effectiveness with which organisations can manage workforces across four generations may affect business efficiency and productivity, investment decisions and resource retention. Extended careers might redefine worker and management attitudes toward ageing, alter the pace at which organisations are renewed by younger talent and new ideas and increase intergenerational competition for jobs.

Lifelong reinvention can be enhanced by leveraging the strengths of each generation. St. John’s University professor Nicos Scordis has remarked, “There is an implied assumption that all future young workers would bring superb skills to the workplace. The reality might be different. It might be that the value of older workers might actually improve, not for their productivity, but rather as role models for their work ethics.” The use of mentoring models is likely to rise in this new reality, with older workers teaching early career workers interpersonal and leadership skills, which often develop with experience.

The need for lifelong reinvention is presenting itself in a few different ways in the workplace. For example, one finance organisation unveiled plans to increase its over-50 employee population by 12% by 2022. Another financial services company is giving its bankers more flexible hours throughout the workweek to engage in personal learning. Meanwhile, a telecommunications company is encouraging all its employees to learn a new digital skill, giving them both the time and resources to do so.

**Key insights:** Individual workers should make education part of their careers, including engaging in both traditional and on-the-job training opportunities. Organisational leaders will likely want to consider implementing flexibility policies that are suitable for and inclusive of workers of all ages. Public policymakers should try to adopt and adhere to anti-discrimination and anti-ageism laws across industries and sectors.

**Read more:** Josh Bersin’s latest article discusses the evolution of the 21st-century career and how organisations can encourage continuous learning.
Reality No. 4: Technology, talent, and transformation

The falling cost of automation, an increase in the use of artificial intelligence and the rise of human-machine collaboration have created a new reality of talent compromises and transitions. This reality presents the opportunity to reimagine the economic value of work through the increased productivity that human-machine collaboration can bring to the workplace. While the impact of automation currently remains largely concentrated in a few industries and countries, it is nevertheless spreading across industries, including services industries and the public sector. (Figure 5 highlights how different countries are using robotics in response to rising labour rates.) Automation is also gaining ground in developing countries, although one challenge to its widespread adoption is that many emerging economies have an excess of labour and a shortfall of technology. In addition, the establishment of automated factories in developed areas of an emerging nation may create social and political tensions within the country as well as with other countries.

Agile organisations assess and reassess the mix of human and machine talent at all levels as an essential element of their business and strategic planning. Getting it right could significantly affect an organisation's productivity, competitiveness and positioning. Organisations should prepare for a complex, multi-year transition period as jobs and careers are assessed and reassessed, technologies become more capable and legal and social safety nets evolve.

Contrary to what some may fear, robots are not taking over human jobs. In the context of technological enablement and automation, there is an ongoing need for essentially human and enduring skillsets that robots currently do not possess. One global manufacturer plans to replace nearly 30% of its current workforce capacity with robots—but to reallocate its human workers to more complex tasks rather than eliminating them. A global car company with a production facility in Germany announced it will reduce the number of robots on its production line and replace them with human labour, as customisation, which is in high demand, is not cost-efficient using robots. In a different industry, one social media company is planning to hire more human workers to provide oversight over what is published on their platforms.

As these examples illustrate, organisations will have to continue to make decisions about talent compromises as automation becomes ever more prevalent and available.
Most—thanks to the broader range of talent that the future of work is making available—will have a variety of talent models to choose from. Automation technologies become more likely to be leveraged when the cost of labour for routine tasks rises. In parallel, the marketplace value of human labour to perform highly complex, customised, and unpredictable tasks is also likely to rise.

**Key insights:** Public policymakers should consider increasing incentives for lifelong learning and skills development while developing safety nets for workers marginalised by new technologies. Organisational leaders should brace themselves for potential rapid disruption caused by technological advances that could require substantial talent restructuring. Individual workers should seek to identify and target employment opportunities in areas where the demand for human workers is likely to increase, while also understanding and learning technology skills for sustainable employability.

**Read more:** Earlier this year, Deloitte US CEO, Cathy Engelbert and John Hagel talked with Tom Friedman to explore the talent compromise decisions that organisations in the future will have to make.20

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**Figure 5. Labour cost savings**

![Labour cost savings from adoption of advanced industrial robots (%, 2025)](image)

Reality No. 5: The ethics of work and society

The driving forces behind our fifth new reality seem to be the economy of good deeds and a rise in discussions around the need for universal basic income.

The evolving clash between traditional conceptions of work, societal values and public policy may define the limits and conditions placed on the future organisation. Developments such as artificial intelligence and job market fragmentation could produce large-scale shifts, changing how we think about work, what is valued at the workplace, and what is valued by society. In particular, worker demands appear to be pushing organisations to focus on worker interests—such as the effect of some technology applications on workers' well-being—along with broader social benefits. New policies and programmes might eventually be needed to balance organisational interests with the need to protect workers from the new working environment's uncertainties.

The reality that organisations seem to be held to an increasingly high ethical standard is manifesting itself in a variety of ways, as they strive to balance shareholder needs with those of their broader constituents such as employees and their local communities. For example, one banking organisation recently raised its workers' minimum wage; while another smaller regional bank rolled out companywide benefits to better accommodate autistic individuals. 21

Key insights: Both individual workers and organisational leaders may need to develop a deep understanding of changing laws and employment regulations, especially as they relate to the alternative workforce. Organisational leaders should also reinforce ethical behaviour and responsible conduct as a core management principle. Public policymakers will be likely to continue to develop regulations to protect workers. They may, for instance, establish watchdogs for artificial intelligence algorithms that could have a greater influence on hiring and firing decisions.

Read more: Reimagining measurement: Enhancing social impact through better monitoring, evaluation, and learning which explores ways organisations can more productively measure social impact. 22 Also, Cathy Engelbert and John Hagel's latest Harvard Business Review article discusses ways that artificial intelligence is causing people to rethink the nature of work.
EMERGING REALITIES

During our most recent refresh of the data, we found two additional emerging trends that cast the future of work in an optimistic light. One of these deals with the growing use of advancing technologies to create nimble enterprises. The second is that, after a decade of irregular activity, governments and local authorities are starting to take back control over the sharing economy, gig platforms, and cryptocurrencies to help protect both individual workers and organisations seeking to leverage the new technological and workforce options available to them today.

Reality No. 6: The nimble enterprise. Just as big data and the Internet of Things have given rise to exponential organisations, technology has also spawned the development of what we might call “nimble” enterprises. It is no longer David versus Goliath in this new reality, but David with Goliath, as innovation seems to be democratising business ownership. Smaller, more nimble enterprises are leveraging larger organisations’ solutions, such as cloud computing and online payment services. Compared to traditional small firms, nimble enterprises tend to have better brand identity, vision, expertise, international networks and intangible assets. Their cost structure is lean and flexible, allowing them to survive through economic cycles while continuing to generate cash to support their business.

Reality No. 7: Regulated innovation. In the broadening talent range, some of the newer labour market segments are largely untaxed and unregulated. Partly as a result, labour is losing its protection, revenue is being lost and politically-influential industries (for example, hotels and taxis) that are losing revenue are unhappy. In response, regulators are starting to get more active. In 2018, we anticipate much more government involvement in the implementation and use of gig workers and robotics. We envision organisations responding to this increased activity with both dialogue and research — perhaps, for instance, conducting artificial intelligence research on artificial neural networks to help explain automated choices or recommendations. Regulation will continue to evolve as governments, organisations, and individual workers grapple with the complex compromises the future of work demands.

We will continue to closely watch the new realities and the impact they might have on the future of work during our next refresh of the study later in 2018.
Adapting to the new realities

The new realities we’ve discussed here can present a host of opportunities. But to capitalise on them, we will need to find new ways to align institutions, organisations and individuals with each other amid rapid market shifts. Public policymakers, organisational leaders and individual workers will need to invest time and effort to figure out how to work together, or at least avoid working at cross-purposes, in the current and future world of work. Yet doing so could ensure that the future of work is both productive and rewarding for all parties.

Capturing the inherent value within each of these new realities could require many changes. It could involve reengineering work to take advantage of technological advances. It may require transforming workplaces to welcome and accommodate a range of talent needs. Almost inevitably, today’s organisational leaders will need much courage to upend their existing models of work to usher in a more nimble and diverse enterprise.

Our recommendations for leaders seeking to capture value for tomorrow’s realities include:

- Start to explore ways to tap into different parts of today’s talent range to accomplish work that is currently more expensive and less productive than you would like it to be. Emphasize human-machine collaboration, not competition—utilising the strengths that each brings to the workplace. Try, test, and learn.
- Place strategic longer-term bets. Identify the most important value chains in your business, and invest in transforming work in these specific areas. Start small, experiment and scale quickly.
- Consider ways in which your business can engage in a broader societal narrative. Younger generations in particular, generally expect businesses to play a positive role in shaping society and helping to address some of its most pressing issues.

Join the conversation: To dive deeper into the issues surrounding the future of work, visit our extensive collection of Future of Work articles on Deloitte Insights (www.deloitte.com/insights).
ENDNOTES


2. Brian Wang, "$160 billion hedge fund wants artificial intelligence software to make 75% of all management decisions by 2022," *NextBigFuture*, December 16, 2016.


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