



**Success personified in the
fourth industrial revolution**

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Introduction: Leaders emerge

As Industry 4.0 continues to reshape the world we live and work in, business leaders adapt to the changes it is causing. In Deloitte Global's second annual survey that assesses business and government readiness for the Fourth Industrial Revolution¹, leaders appear more knowledgeable about Industry 4.0 and its implications for their organisations. But with that knowledge comes a greater awareness of how quickly things are changing and how companies must act today to remain successful into the future.

Last year's inaugural report, which assessed executives and their organisations' readiness for Industry 4.0, observed a "tension between hope and ambiguity."² While executives understood the changes Industry 4.0

brought about and were confident they were ready, their actions (or lack thereof) demonstrated they were less prepared and less able than they thought to fully harness and benefit from those changes.

This year, we aimed to uncover where leaders made the most progress and what set them apart. Of the many insights uncovered in this year's report—which covers more than 2,000 C-suite executives across 19 countries—one seems to stand out: The number of respondents who insisted they are doing "all they could" to prepare their workforces for Industry 4.0 fell by nearly half.

Knowing that business leaders are unwilling to take their collective foot

off the pedal, this likely means that many executives have gained a much deeper understanding of Industry 4.0, are increasingly aware of the challenges before them, and view the actions needed to succeed in Industry 4.0 more realistically.

Though many in this year's survey acknowledge they are still in the early stages of navigating Industry 4.0, we found that some leaders progressed better than others to deal with today's challenges within the four major areas of impact: Society, strategy, technology, and talent. We have grouped the leaders who seem to be getting it right into personas: Social Supers, Data-Driven Decisives, Disruption Drivers, and Talent Champions.



1. This report has been derived from Success personified in the Fourth Industrial Revolution, which is a part of Deloitte Insights series on Industry 4.0. Available at https://www2.deloitte.com/content/dam/Deloitte/global/Documents/gx-davos-DI_Success-personified-fourth-industrial-revolution.pdf
2. Punit Renjen, "Industry 4.0: Are you ready?", Deloitte Review 22, 22 January 2018

Industry 4.0: Preparedness through societal, strategic, technological, and workforce dimensions

This year we asked executives how they enable their organisations to succeed in the age of Industry 4.0 in these four areas: Positively affecting society, shaping business strategy, utilising 4.0 technology, and managing talent and workforce needs. Among the findings are:

1. Societal impact

Executives expressed a genuine commitment to improve the world.

Executives in last year's survey were uncertain about how they could influence the direction of Industry 4.0 and its impact on society. This year's research finds executives and their companies strongly committed to improve the world through Industry 4.0. Many insisted that it simply makes good business sense.

Leaders rated societal impact as the most important factor when evaluating their organisations' annual performance, ahead of financial performance and customer or employee satisfaction. In the past year, nearly three-quarters of respondents said that their organisations took steps to make or change products or services with societal impact in mind. While many are motivated by the promise of new revenue and growth, leaders are split on whether such initiatives can and will generate profit.

2. Strategy

Executives struggle to develop effective strategies in today's rapidly changing markets.

Last year, many leaders saw their organisations focused more on

developing new products and services and improving productivity than on adopting new business models or technologies. This year, they told us about some of the organisational roadblocks that appear to be limiting effective Industry 4.0 strategies.

Faced with an ever-increasing array of new technologies, leaders said they feel as though they have too many options to choose from and, in some cases, they lack the strategic vision to help guide their efforts. Organisational influences also challenge leaders as they seek to navigate Industry 4.0. Many leaders reported that their companies don't follow clearly defined decision-making processes, and that organisational silos limit their ability to develop and share knowledge to implement effective strategies.

3. Technology

Leaders continue to focus more on using advanced technologies to protect their positions than on making bold investments to drive disruption.

Last year, executives exhibited a cautious mindset when it came to investing in technology. Again, this year, few expressed a commitment to disrupt their competitors or markets.

Many of the businesses that have made investments in technology see payoffs; others find it difficult to move forward. Challenges include being too focused on short-term results, not fully understanding Industry 4.0 technologies, and a lack of leadership

vision. Leaders acknowledged the ethical implications inherent in new technology, but few companies even discuss how to manage those challenges, let alone actively put policies in place to do so. Further, business leaders continue to wrestle with how Industry 4.0 technologies should be regulated.

4. Talent

The skills challenge becomes clearer, but so do differences between executives and their millennial workforces.

The breadth of the skills gap is more evident to leaders compared with last year, as is a sobering awareness that the current education system will be inadequate to meet the challenge.

Last year, most leaders (86 percent) thought their organisations were doing everything they could to create a workforce for Industry 4.0. This year, as more recognise the growing skills gap, only 47 percent are as confident in their efforts.

On the bright side, nearly twice as many leaders indicated that their organisations will strive to train existing employees rather than look to hire new ones. And there is more optimism than last year that autonomous tech will augment, rather than replace, humans. But research from Deloitte's annual Millennial Survey suggests that leaders and employees (particularly younger ones) differ on which skills are most needed and who is responsible to develop them.³

3. Michele Parmelee, Insights from the 2018 Deloitte Millennial Survey, Deloitte Insights, 15 May 2018

Societal impact: Purpose begins to pay off

Executives expressed a genuine commitment to improve the world

For many companies born at the dawn of Industry 4.0, societal impact has been woven throughout the fabric of their organisations from day one. But even more established organisations are starting to take their impact on wider society more seriously because they believe a sincere commitment to society plays a large role in a company's success.

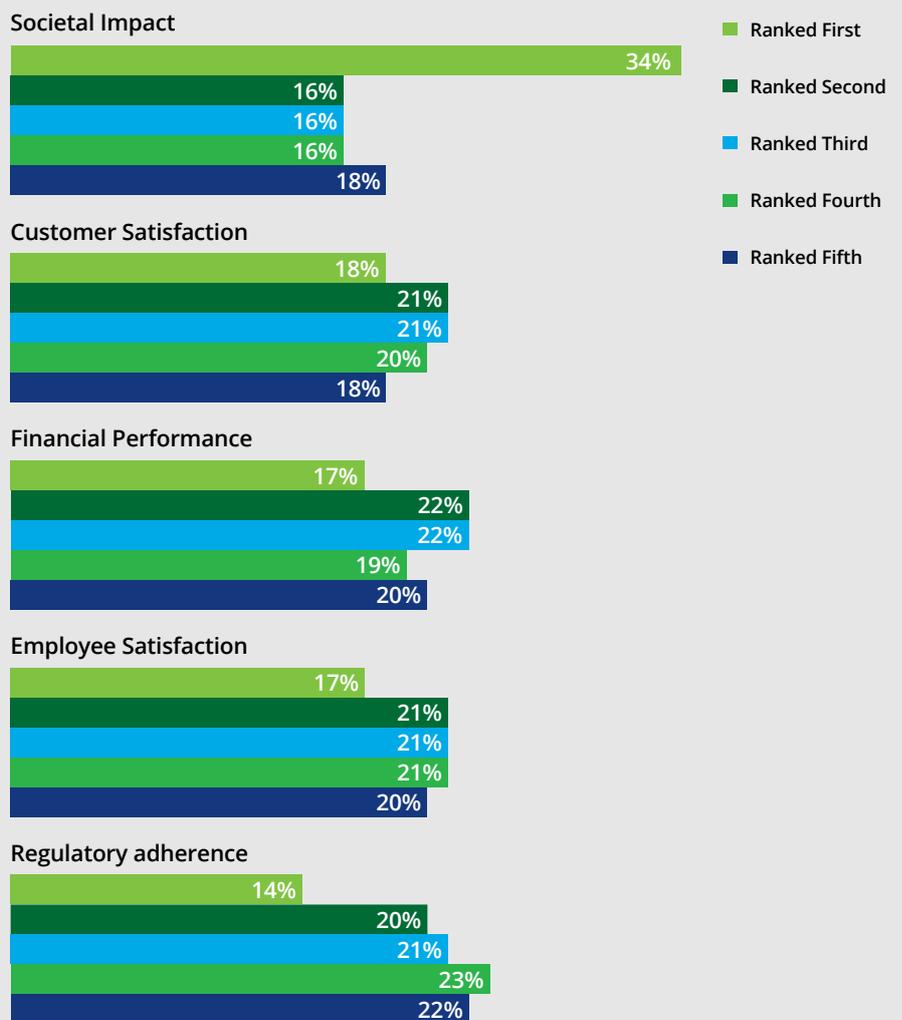
In fact, when asked to rank the most important factors their organisations use to evaluate their annual performance, more than one-third of executives ranked "societal impact" first, totalling "financial Performance," and "employee satisfaction" combined (see figure 1).

Why has societal impact blossomed as a business imperative? Part of it surely has to do with company cultures and employee expectations. External pressures also motivate executives, both customer expectations and keeping up with competitors ranked highly. But more than anything, leaders seem to believe that doing good can be good for business. Almost half of the surveyed executives (46 percent) reported that their efforts have been motivated by the quest to create new revenue streams, and said initiatives that have a positive social impact are necessary to sustain or grow their businesses (see figure 2).



Figure - 1

Respondents cited Societal Impact most often as the top factor used to measure success when evaluating annual performance



Numbers may not add up to 100% due to rounding

Purpose in action

Organisations are beginning to act now. Seventy-three percent of surveyed CXOs reported having changed or developed products or services in the past year to generate positive societal impact. What's more, 53 percent said they had successfully generated new revenue streams from these socially conscious offerings.

While some leaders have started to see profits from positive societal goods and services, there is disagreement over the question of whether initiatives meant to benefit society also benefit bottom lines. Fifty-two percent see societal initiatives as generally reducing profitability; 48 percent said that such initiatives boost the bottom line. Despite this split, leaders reported a commitment to initiatives that benefit society. Some companies have made decisions with potentially negative short-term financial impact because of their core values.

Strategically integrated

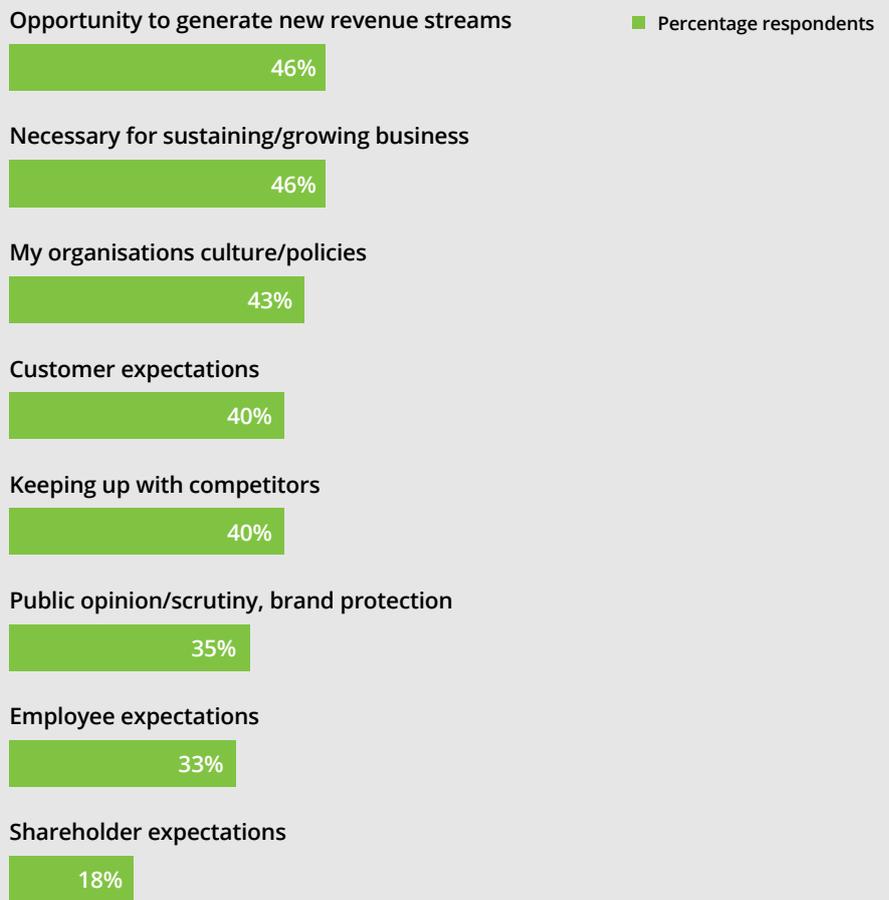
Beyond products, services, and new revenue streams, leaders integrate societal impact into their core strategies. Executives said they have been effectively preparing for the impact that Industry 4.0 solutions will have on society. They're also building external partnerships and joint ventures, and strengthening ecosystem relationships. Companies are taking other progressive actions, such as restructuring pricing to better match the needs of consumers in different areas of the world.



Figure - 2

CXOs initiatives are driven by business growth, as well as desire for positive social-impact outcomes

What in your view motivates your organisation to undertake initiatives it hopes will have a positive social impact ? (Select top three)



Strategy: Roadblocks to effectiveness

Executives struggle to develop effective strategies in today's rapidly changing markets

To take advantage of the potential growth inherent in Industry 4.0, leaders need to be willing and able to innovate and explore new business prospects. The CXOs we surveyed seemed to embrace this approach. More than two-thirds (69 percent) believe they have permission to fail and learn from their mistakes in the context of innovation.

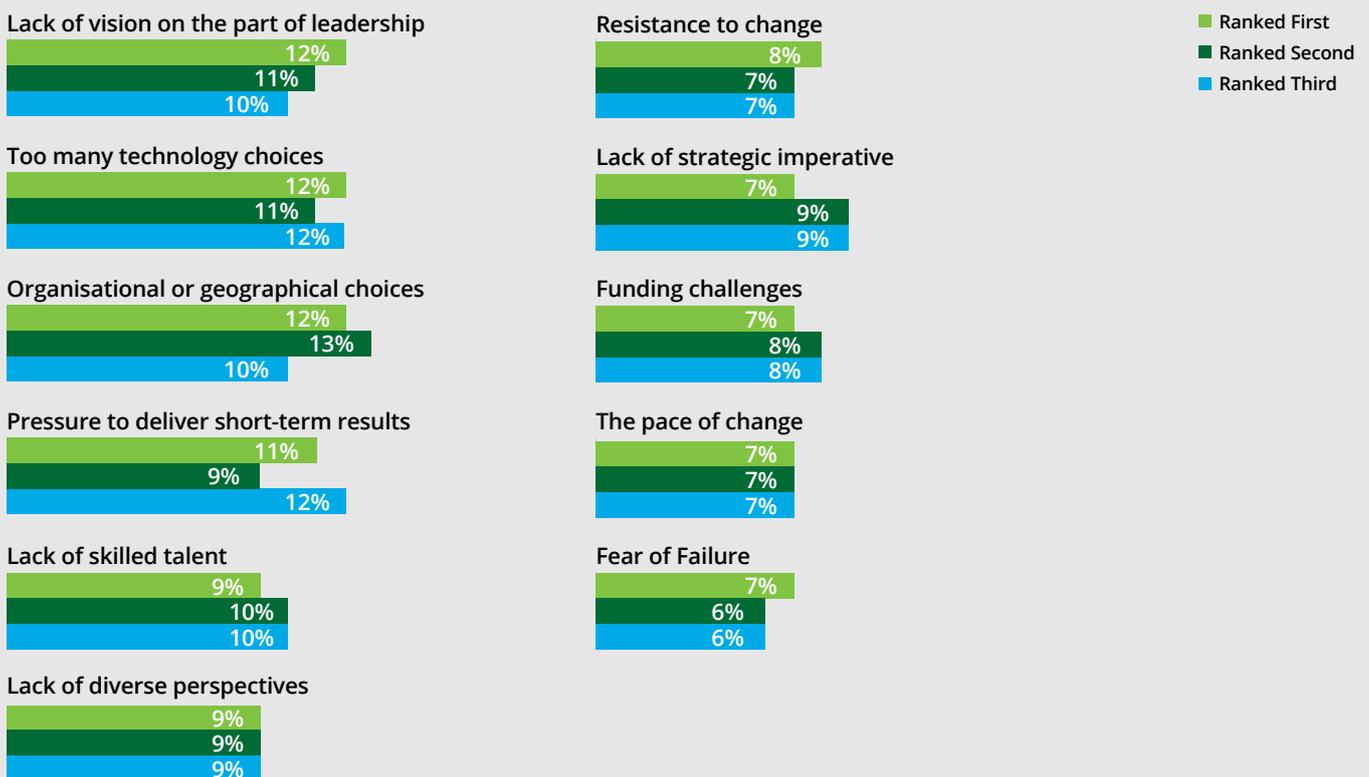
Although leaders appear to feel empowered to explore the possibilities of Industry 4.0, they remain challenged to translate the possible into tangible business strategies. When asked to state the top challenges their organisations face in adapting their strategies in response to Industry 4.0, a third of leaders cited lack of leadership vision (see figure 3). Leaders also reported having too many technology choices and suggested having difficulty keeping pace with the rapid rate of change and understanding all the new technology-driven opportunities.



Figure - 3

Leaders reported lack of vision, choice overload, and organisational silos as top challenges to set an Industry 4.0 strategy

Top challenges in changing strategy for Industry 4.0 (Respondents were asked to rank top three challenges)





Challenges to implement Industry 4.0 strategy

The challenges leaders face to develop effective Industry 4.0 strategies are not limited to vision and technology. Many organisations simply do not implement effective strategy-development processes. For example, only 29 percent of executives see their organisations have clearly defined decision-making processes. This may be because only one in five CXOs strongly agreed that strategic decisions are made after input from diverse and inclusive sets of stakeholders.

Even fewer leaders fully agreed that their organisations use data-driven insights when making decisions. One way that companies adapt their approaches to develop and implement effective Industry 4.0 strategies is by eliminating organisational silos.

Collaboration or cross-functional teaming, both internally and externally, is necessary to generate knowledge and innovate for organisations. Organisational silos restrict collaboration, limit communication, knowledge sharing, and innovation. One-third of leaders in this year's study ranked organisational or geographical silos among their top three challenges in setting Industry 4.0 strategy.

Leaders from organisations struggling with silos acknowledged the negative impact on their companies' knowledge bases. Sixty percent reported that their organisations' Industry 4.0 knowledge was concentrated in a few individuals or groups within the leadership team rather than being widely distributed, which creates challenges across multiple fronts, including strategy.

Those in siloed organisations were also more likely to say they don't know what skill sets their workforces will need for the future (41 percent vs. 35 percent).

In terms of results, executives whose organisations struggle with silos were less likely to say their technology investments have achieved or exceeded their intended business outcomes. Unfortunately, these companies may not even realise the problem that silos are creating. Leaders from siloed organisations were less likely to identify innovation and creativity as attributes their organisations are currently working hardest to develop (36 percent vs. 42 percent).

Overcoming organisational silos can help companies develop clear visions and effective strategies to capitalise on Industry 4.0.

Technology: Cautious approach to disruption

Leaders continue to focus more on using advanced technologies to protect their positions rather than make bold investments to drive disruption

Technology is more advanced than ever before, offers opportunities for businesses to create solutions, and develops products that were hard to imagine five or ten years ago. However, some organisations still view technology less in terms of

advancement and more in terms of protection. Among a list of 11 topics business leaders said they discuss frequently, “disrupting competitors” ranked ninth, suggesting that upsetting the status quo is a low priority. Further, twice as many leaders said they’re more likely to invest in Industry 4.0 technologies to protect from disruption versus those looking to disrupt (67 percent vs. 33 percent). And just 23 percent

said their organisations have been most effective at disrupting competitors in the last year.

This apparent lack of aggressiveness can’t be blamed on lack of money; just one-quarter cited funding as a primary challenge with respect to investment in Industry 4.0 technologies. So what is holding leaders back from embracing disruptive technologies? Quite a few things, as it turns out.

Trading the future for today



As they consider the challenges that stymie their abilities to invest in Industry 4.0 technologies, nearly half of the respondents called their organisations overly focused on short-term results. It can be difficult to justify significant upfront investments or implementation costs for a return on investment that may not appear immediately.

Investment challenges



Executives also noted a variety of challenges related to Industry 4.0 technology investments: Lack of understanding of Industry 4.0 technologies, lack of a business case, and lack of leadership vision. These issues are fundamental not only to make a convincing argument to invest in technologies but also to ensure that they are implemented and used successfully.

Too much choice



When asked about the top challenges they faced with respect to Industry 4.0 strategy, leaders pointed to “too many technology choices” as a top hurdle. Certainly, sifting through the multitude of options can prove humbling, and leaders run the risk of freezing in place.

Despite these challenges, nearly half of those investing in technologies to disrupt the market said those investments met or exceeded their goals. This doesn’t mean that the other half’s disruptive investments are failing: Big bets can take longer to pay off.

Using technology to enable and grow

Overall, two-thirds of all surveyed executives said their tech investments have met or exceeded expectations. While not necessarily disruptive, new technology allows them to address problems that exist for large groups of customers.

Ethics and Industry 4.0

The ethical implications of new technologies are serious. Fears about “the machines taking over” may be overblown (or maybe not).⁴ Privacy violations, cyber intrusions, and the use of civil technologies for military purposes are prominent policy issues.

But in the short term, new technologies force leaders to ask whether some things should be done just because they can be done. Thirty-eight percent of executives see ethical considerations as a barrier to invest in technology, so it’s clearly an issue to which many executives already pay attention.

While leaders are beginning to acknowledge ethical concerns, few companies are actively discussing the subject, let alone acting on it (see figure 4). Fewer than half of leaders said their organisations completely understand the potential ethical ramifications of Industry 4.0 technologies; just 29 percent reported even discussing ethical concerns.

From there, the drop-off continues: Only 12 percent explore or already have policies in place related to the ethical use of Industry 4.0 technologies.

At the same time, executives do not appear to welcome government regulation of the ethical use—or any use—of technology; 68 percent of leaders said technology regulation should be guided by market forces, not government. Sixty-nine percent see a lack of understanding in government’s approach to new technologies, and wish to be better represented when government makes decisions on technology regulation.



Figure - 4

When it comes to the ethical use of technology, the drop-off from understanding to action is steep

Percentage who “completely agree”

Our leadership understands potential ethical ramifications of Industry 4.0 technologies ■ Percentage respondents



My organisation is highly concerned with ethical use of Industry 4.0 technologies



Our leadership has frequent discussions on use of Industry 4.0 technologies



Our leadership is concerned about our organisation being harmed by others unethical use of Industry 4.0 technologies



My organisation is exploring policies to put in place or already has policies in place, related to the ethical use of Industry 4.0 technologies



4. Joe McKendrick, “Artificial intelligence will replace tasks, not jobs,” Forbes, 14 August 2018

Talent: Reality sinks in

The skills challenge becomes clearer, but so does differences between executives and their workforces

Last year, 86 percent of respondents said their organisations were doing everything they could to create a workforce for Industry 4.0. This year, as more respondents recognised the growing skills gap, only 47 percent saw their organisations as doing everything they could. This implies that executives are more deeply cognizant of the talent challenge ahead and may feel increasingly concerned about their organisations' readiness.

Confronting the skills gap with the right talent

What's driving this general unease in talent readiness? According to this year's study, the answer lies in a growing talent gap, and in turn, in understanding how to properly address it. Specifically, respondents said their top talent challenge (55 percent) derives from a significant mismatch between current skill sets and those needed in the future (see figure 5). The challenges cited in connection with this mismatch illustrate the difficulty to identify the right talent and, correspondingly, attract and retain these individuals.

Another explanation might be that the skills needed in the near term and further down the line will change. Although executives likely have a sense of what skills will be most valuable a year or two into the future, our survey found that 46 percent of executives cited lack of knowledge of what skills will be needed as one of their top challenges to prepare their workforces for Industry 4.0.

The skills needed for the future will likely depend on who is doing the work. CXOs were more confident this year than last (63 percent vs. 53 percent) that technology will augment rather than replace humans.



Figure - 5

Executives report a mismatch between the skills their workers have now and the ones they will need in the future

Top challenges to prepare the workforce (Respondents were asked to rate the top 3 challenges)



Summary: Faces of progress

The preceding sections highlight four personas of leaders who are finding ways to turn societal initiatives into profitable ventures, act decisively in an increasingly complex environment, deploy new technologies in a disruptive manner, and equip their workforces with the right skill sets to navigate the Fourth Industrial Revolution. Encouragingly, this research also shows that these personas share a number of characteristics that might offer lessons for those still trying to define their approaches. Some common threads we see across all leader types include:

- A commitment to doing good. All are highly attuned to using Industry 4.0 technologies in an ethical manner. For many, this has resulted in society-driven products that have created new revenue streams.
- Clearer vision of the path forward. They are purposeful and methodical

in setting Industry 4.0 strategies. Their companies follow clearly defined processes and use data to make decisions, more so than other companies.

- Long-term lens on technology investments. In addition to achieve incremental gains for short-term initiatives, these leaders are more likely than others to invest in Industry 4.0 technologies to disrupt their markets.
- Taking the lead on workforce development. They embrace the opportunity to extensively train their existing employees. Further, they are more confident that their organisations already possess the correct workforce composition for the future.

Two more things they have in common: They are growing faster (that is, more than 5 percent annually) than their counterparts (32 percent vs. 20 percent),

and they're more confident in their own abilities to lead their companies in the Industry 4.0 world—which is telling, given the uncertainties that many surveyed CXOs indicated.

While leaders with these characteristics stand apart, over the past year, leaders' general ambiguity seems to have subsided into clearer, and more tempered perspectives. They better recognise the many dimensions—and ensuing challenges—associated with the Fourth Industrial Revolution. These include societal and ethical implications, the importance of clear vision and collaborative organisations, the trade-offs to invest in technology for the short vs. long term, and addressing the talent gap. Executives' mindsets have evolved from a "tension between hope and ambiguity" to "clarity gives rise to progress." That, in itself, represents progress.



Methodology

This research is based on a survey of 2,042 global executives and public sector leaders conducted by Forbes Insights in June-August 2018. Survey respondents represented 19 countries from the Americas, Asia, and Europe and came from all major industry sectors. All survey respondents were C-level executives and senior public sector leaders, including CEOs/presidents, COOs, CFOs, CMOs, CIOs, and CTOs. All executives represented organisations with revenue of \$1 billion or more, with half (50.1 percent) coming from organisations with more than \$5 billion in revenue. Sixty-five percent of public sector leaders represented organisations and agencies with budgets of \$500 million or more. Additionally, Forbes Insights and Deloitte conducted one-on-one interviews with global industry leaders and academics.



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