



# Introduction

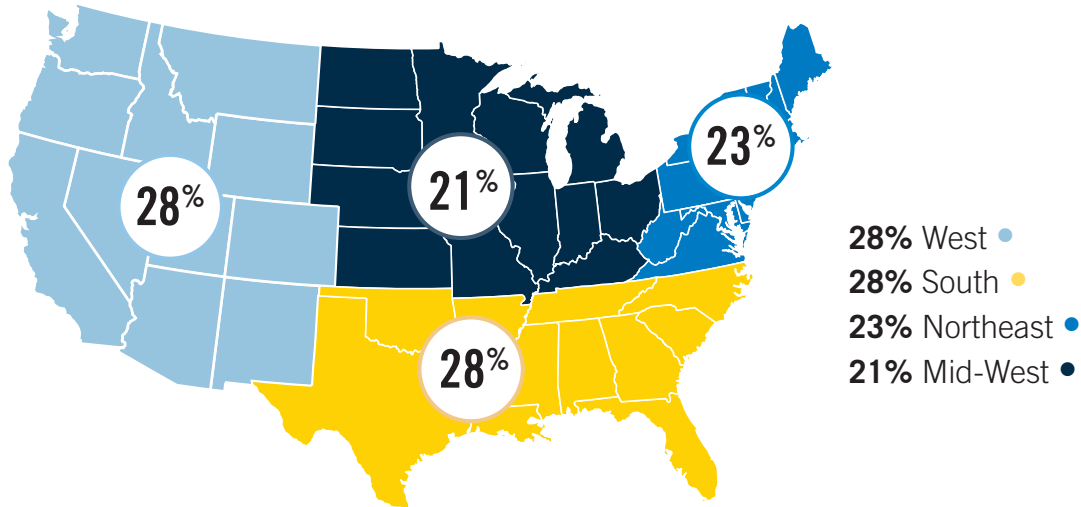
Manufacturers are navigating a period of intense change as digitalization and advanced technologies transform the sector in what is often called the Fourth Industrial Revolution or Industry 4.0. These changes add to the traditional business pressures of manufacturers, but also offer unprecedented opportunities to optimize production processes.

In July 2017 The Economist Intelligence Unit (EIU) conducted a survey, sponsored by Prudential, assessing manufacturers' preparedness and priorities in this era of industrial transformation. The survey polled 537 manufacturing executives across eight industry segments from companies varying in size and geography.

The survey surfaced findings organized around three key themes: strategies that manufacturers are adopting in response to industrial transformation; their approaches to managing their changing talent needs; and what the most innovative and tech-forward players in the sector do differently.

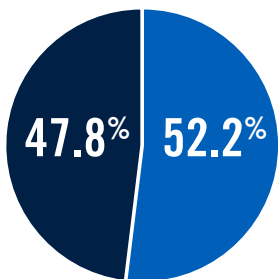
# We Surveyed:

## REGIONS



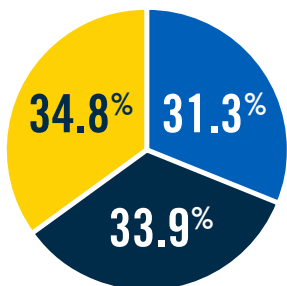
## SENIORITY

52.2% C-Suite ●  
47.8% Non-C-Suite ●

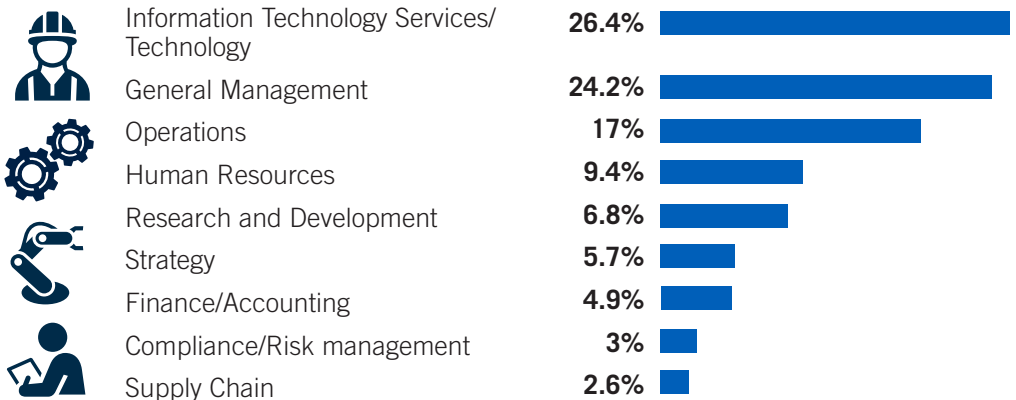


## SIZE (WORKFORCE)

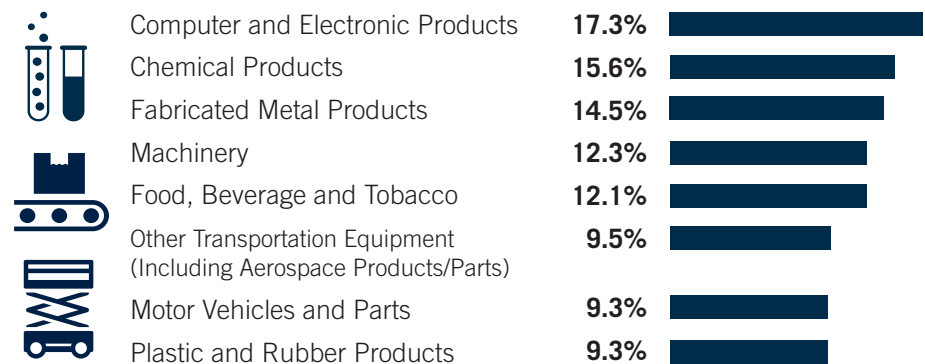
31.3% Small (<150) ●  
33.9% Medium (151-999) ●  
34.8% Large (1,000+) ●



## KEY FUNCTIONS



## INDUSTRY



FINDING

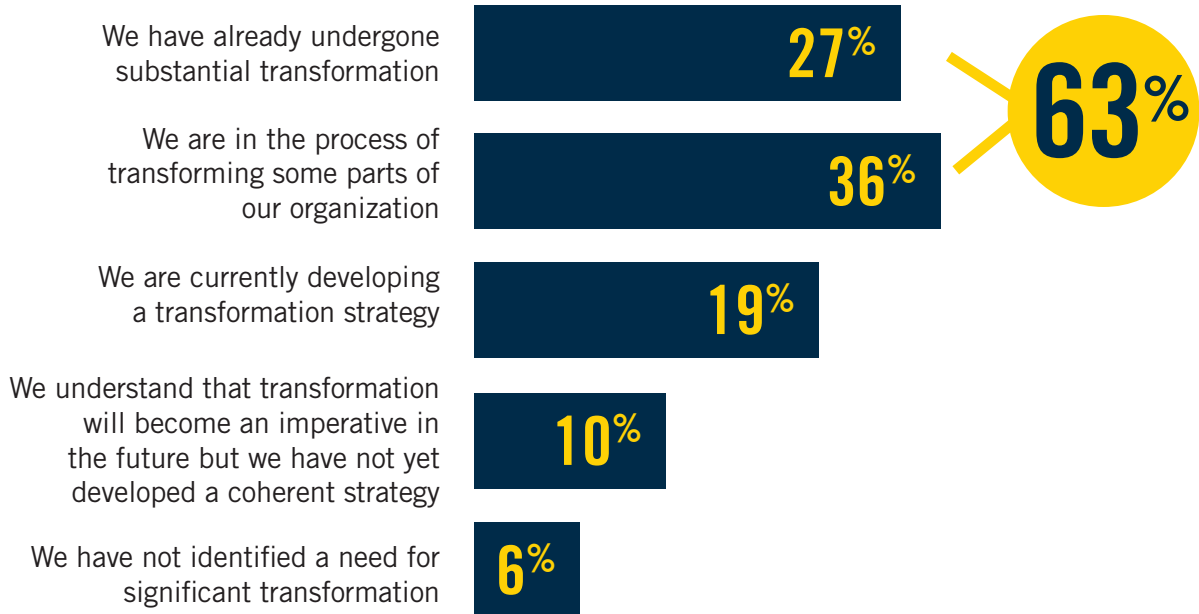
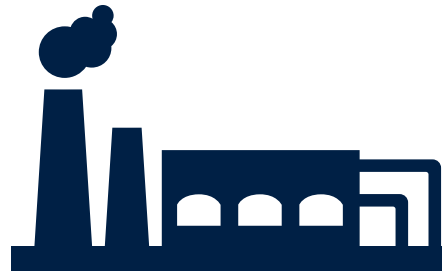
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# Manufacturers are adopting industrial transformation strategies, with many already reaping benefits from change

The vast majority of manufacturers surveyed have recognized the need for industrial transformation, with most already taking action. Indeed, 63% have either undergone substantial transformation or are in the process of transforming some parts of their organization. An additional 19% are currently developing a transformation strategy but have yet to reach the implementation phase.



Which of the following statements best describes the extent to which your organization has addressed the need for industrial transformation?



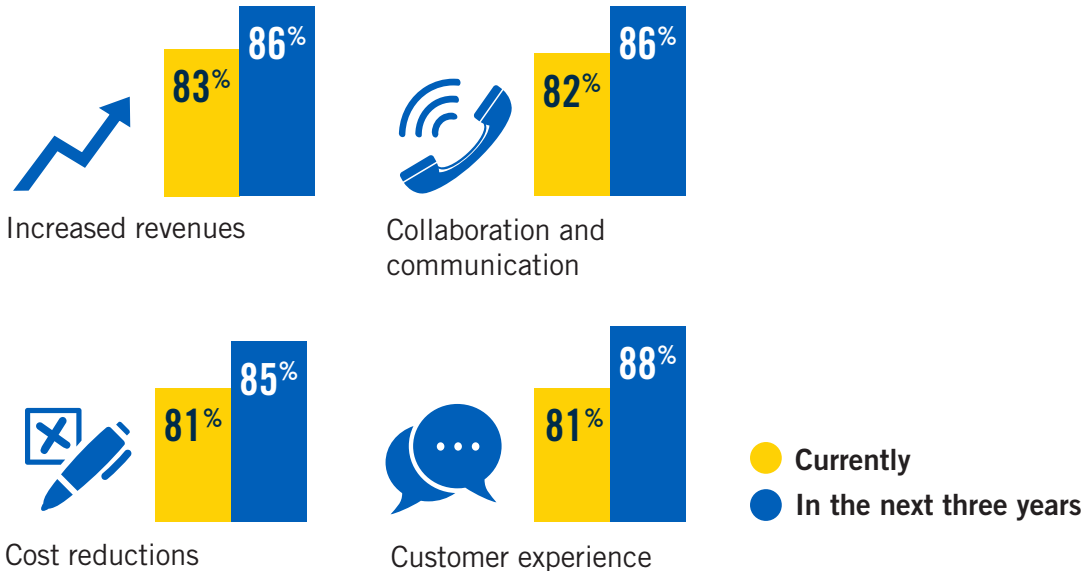
While no single approach is dominant among respondents, 58% of those implementing transformation strategies report increasing operational efficiency as the most common initiative, followed closely by creating new products and services. Over two in five (44%) have implemented at least one initiative identified in the survey, such as improving marketing and brand differentiation or extracting greater value from data.

Manufacturers that have undertaken transformation initiatives are already seeing benefits as a result. Three in four report having seen improvements in at least one part of their organization, and nearly half note moderate improvement across their operations. This includes, among others, approximately four in five reporting increased revenue, improved collaboration and communication, cost reductions and better customer experience; while three in four note improved risk management. Over the next three years, respondents expect to see further progress in these areas, with the most improvement predicted in customer experience.

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## Industries see enterprise-wide benefits

### Percent of respondents who have experience implementing transformation initiatives and indicate at least “moderate” improvement as a result of transformation



## Investing in current employees is the most effective way to address skills shortages, but there are significant obstacles to overcome

Given the technological revolution under way and the arrival of sophisticated new forms of automation, it is inevitable that manufacturers will face new pressures to secure talent with the necessary skills and competencies to succeed. More than a third of survey respondents acknowledge that they are struggling with recruiting and retaining talent, making it their most frequently cited pressure behind competition in product markets.

Similarly, a closer look at manufacturers who cite implementing new automation technologies as a top challenge reveals concerns over the next three years in training employees to use new technologies (39%) and recruiting specialized talent (32%).

Perhaps inevitably, this has led nearly half of manufacturers in the survey to cite reskilling current employees as the most effective strategy to develop talent for a successful transformation. Other methods include collaborating with industry partners, supporting job rotation and collaborating with educational institutions.



**What are the most effective methods of developing skills and competencies for successful transformation?**



**Invest in re-skilling of current employees**



**36%**

Collaborate with industry partners



**27%**

Support job rotation



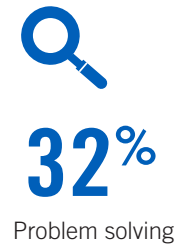
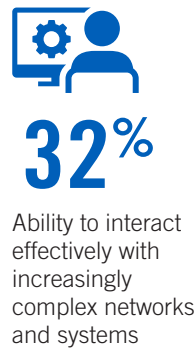
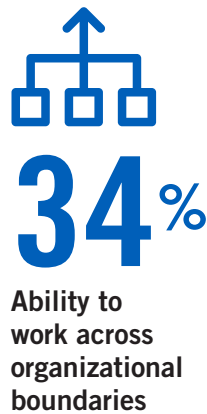
**27%**

Collaborate with educational institutions

Still, among the executives who are struggling to find the right people, 42% worry that over the next three years they will not be able to recruit new workers with the necessary prerequisites for on-the-job training. A similar proportion (38%) are also concerned there will be a lack of candidates interested in manufacturing work.



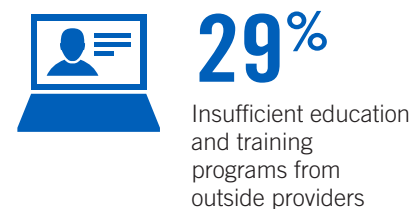
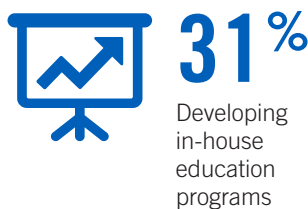
**Q What are the skills and competencies that your organization needs most in order to transform successfully?**



While much of the conversation on manufacturing’s future revolves around technology, skills will remain critical in driving the sector’s prosperity. For example, 66% of respondents expect difficulties competing with foreign firms in advanced countries that have stronger training and educational systems. Moreover, 71% of respondents believe that workers will lack the basic skills needed for retraining.

Beyond building skills, willingness to learn is also important. However, 65% of respondents anticipate a substantial proportion of manufacturing and assembly workers will not be willing to undergo retraining in the next three years.

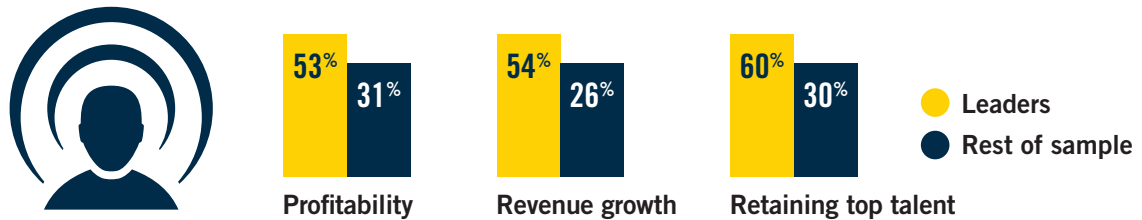
Organizational and institutional constraints also stand in the way of manufacturers’ efforts to reskill their existing workforce. Survey respondents cite three main obstacles:



FINDING  
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## The most innovative and tech-forward companies are seeing significant improvements throughout their organizations

A look at top-performing companies provides a lens by which to assess and highlight best practices to achieve industrial transformation. These self-defined leaders—20% of the survey sample—rate their organizations “well above average” in innovation and adoption of advanced technologies. **They stand out in other areas as well, and are more likely to rate themselves “well above average” compared with the rest of the sample in terms of:**

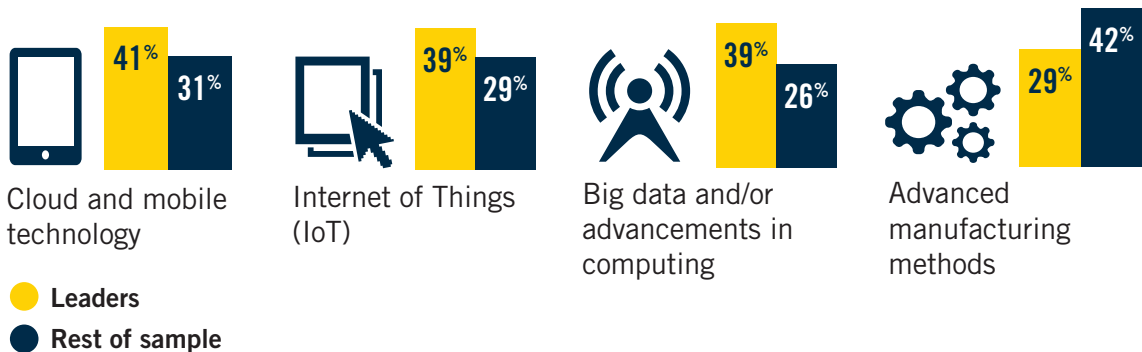


Already better equipped, it is not surprising that leaders have implemented substantial transformation initiatives to a greater degree than others (41% vs 24%). As a result, they have seen significant improvements throughout their organizations, particularly in collaboration and communication (59% vs 28%) and supply chain management and logistics (57% vs 33%).

When looking forward to the next three years and the role of technology in adding value to their business, leaders are less likely than other respondents to cite advanced manufacturing methods. They expect to continue to leverage a wide-ranging portfolio of technologies that can add value, and are more convinced about the role of cloud and mobile technology, the Internet of Things and big data.



**Which of the following technologies will contribute the most value to your business over the next three years?**

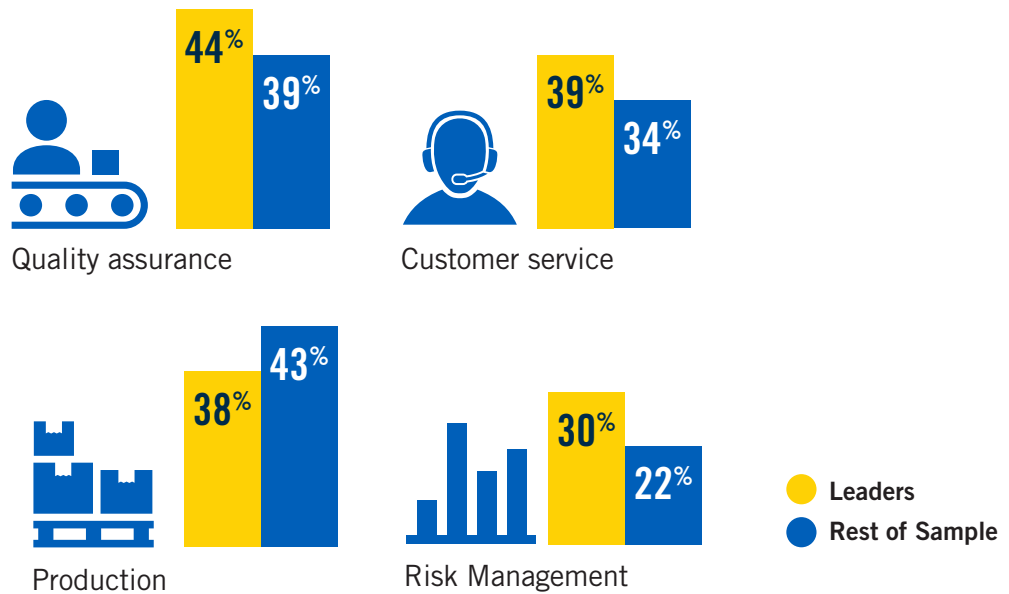




Leaders tend to adopt more holistic strategies in their priorities for improving employee competencies in different parts of their business. They are less likely to identify production or sales as one of the three top priorities, but more likely to point to quality assurance, customer service, risk management, supply chain logistics and marketing.



**Which of the following are top priorities for your organization in terms of improving employee competencies for successful transformation?**

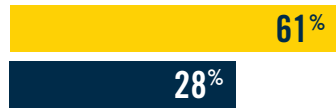


In some aspects, this high-performing group possesses a particularly positive outlook on the U.S. manufacturing sector over the next three years. By a better than two-to-one margin, they strongly believe industrial transformation will be a positive benefit for the U.S. economy. They are also much more optimistic in the belief that training opportunities will attract new talent to their sector, and that improved manufacturing techniques and smart supply chains will lead to better products and services.

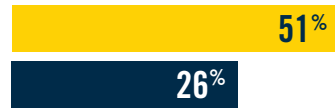
However, leaders voice stronger concerns over the sector’s ability to compete with foreign counterparts with better education and training systems, and in the same vein, that manufacturing workers will lack the basic skills for retraining.



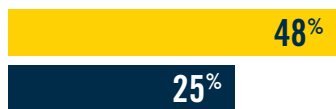
**To what extent do you agree or disagree with the following statements about the outlook of the U.S. manufacturing sector over the next three years?**



The overall impact of industrial transformation on the U.S. economy will be positive



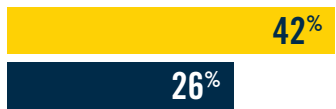
The sectors training opportunities will attract new talent



The sector will have difficulty competing with counterparts in other advanced countries that have stronger education and training systems



The development of more flexible manufacturing techniques and smart supply chains will enable manufacturers to provide better products and services



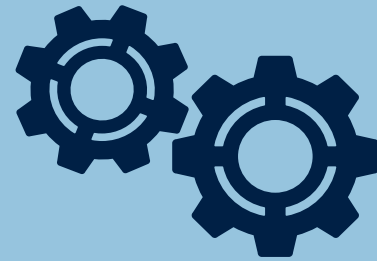
A substantial proportion of manufacturing and assembly workers will lack basic technical skills for retraining

- Leaders who "strongly agree"
- Rest of sample who "strongly agree"

In terms of addressing skills shortages, leaders' views are largely similar to those of other executives surveyed. They believe reskilling employees is the most effective strategy to develop talent, but are also more likely than others to point to job rotation (32% vs 26%) and collaboration with educational institutions (33% vs 25%).

# Conclusion

Manufacturing executives overall have squarely identified and, in most cases, begun addressing the need for industrial transformation. Those that have implemented transformation strategies have already seen improvements and expect more progress in the coming years.



The most innovative and tech-forward firms are the most positive about this change and its impact on the overall sector. These firms are more likely to have adopted transformation strategies, and their optimism may reflect improvements they have observed.

That said, throughout the sector there is a widely held awareness that skills shortages may put U.S. manufacturers at a serious disadvantage, hindering their ability to maximize their potential. This underscores the fact that industrial transformation is not solely centered on adopting the right technologies or automating functions, but also about developing the talent to bring individual enterprises and the overall sector forward.

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