Innovation Index:

How manufacturers are preparing for an era of constant disruption

Manufacturing executives have seen short- and long-term strategies converge in the face of constant disruption the past two years. While improving financial performance and increasing process efficiency remain top strategic goals, fear of disruption—from natural disasters, climate change, and health crises—still looms large.

Our research shows that those most likely to achieve success despite these challenges place a premium on developing customer and employee loyalty, investing in the right technologies to drive performance, and building confidence in decision-making through effective data usage.

In 2021, NTT DATA and Oxford Economics launched the "Innovation Index: Digital Strategies for an Era of Constant Disruption," a survey of 1,000 North American business and IT executives—200 of which came from the manufacturing sector—to find out how organizations are approaching digital transformation initiatives.

Long-term strategies meet short-term obstacles

For manufacturers, the future of business is a moving target. While over half of manufacturing respondents are focused on long-term strategic planning, outcomes are often beyond executive control. Financial performance (85%) and customer demand (58%) are core drivers of long-term strategic planning, but health crises and natural disasters are expected to have the biggest negative impact going forward (see Fig. 1). A majority of manufacturers also expect negative impacts from competitive threats (56%) and supply chain disruptions (51%).

At the same time, few manufacturers give themselves high marks in vital areas that could help them weather future disruptions: just 39% say they are above average at process improvement; 37% say the same about creating an innovation-focused culture; and 30% provide an above-average employee experience. Unpredictable challenges are difficult to prepare for—while middling performance and shortfalls in technology and skills exacerbate the problem.

Fig. 1: Long-term planning in focus, but preparation lags.

58%

of manufacturers say their organization's strategic planning is increasingly long-term...

...but

67%

expect a negative impact to operations and performance from climate change, natural disasters, or health crises...

...and

54%

feel equipped to deal with constant, rapid change

OXFORD ECONOMICS

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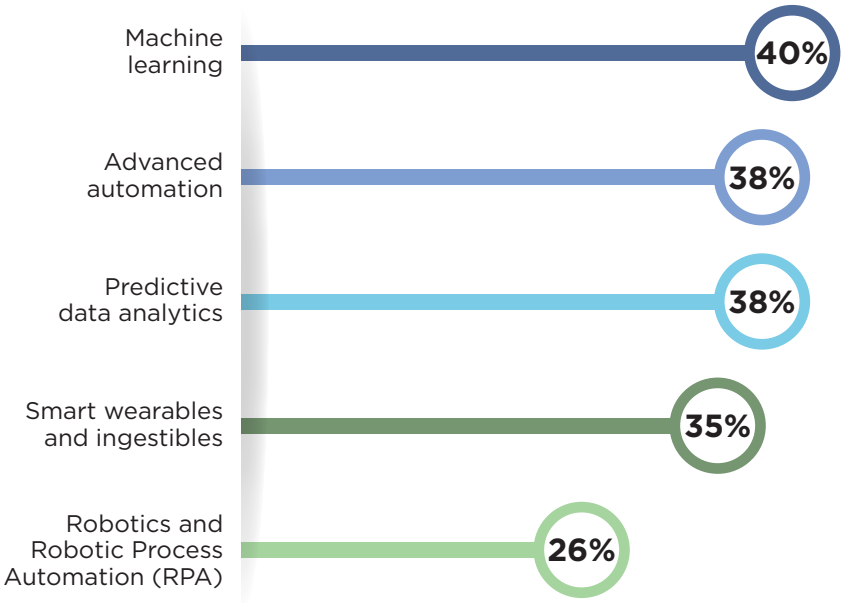
Technology is driving performance

Lacking the agility to take on market disruptions, manufacturers are turning to technology. For example, 83% are using ERP in some or all functions (vs. 72% of total results), and 74% are using public clouds (vs. 58%). In addition, some are pioneering the use of emerging technologies—including advanced automation (38%), smart wearables (35%), and RPA (26%), far more than most other industries.

Early adopters are reaping the rewards of their strategic wagers. Nearly three-quarters of those who invested in advanced automation say it helped them survive in the face of market changes, while smart wearables have improved financial performance for over half. More manufacturers may want to adopt these advanced technologies. While nearly half say innovation is critical to their survival, just a third say they are above average when it comes to product and service innovation.

Fig. 2: Investments in advanced automation a strength for manufacturers.

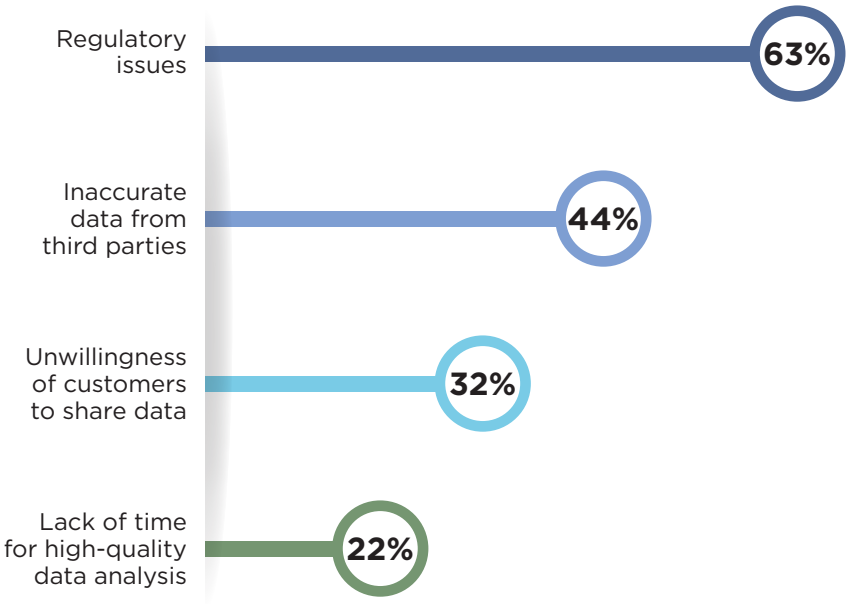
"Has your organization implemented any of the following AI-enabled technologies?" "In use in some functions" and "In use in most or all functions" responses combined, manufacturing respondents



A data weak spot?

Fig. 3: Regulations and inaccurate third-party data top list of data challenges.

"Which of the following are challenges to your use of data?" Manufacturing respondents



As more manufacturers use advanced technologies like automation and RPA, good data practices become more essential. In most areas, however, manufacturers are still challenged to realize value.

Less than half (45%) are confident they can effectively prevent security breaches, and just 30% say they effectively keep up with changing data regulations. Manufacturers are slightly better than the survey average at sharing data with partners (37% vs. 24%)—but face difficulties with the data they receive from third parties (Fig. 3). However, smart distribution of data seems to be paying off—56% say their data collection highly influences supply chain sourcing, while 47% say the same for process design.

The underappreciated workforce

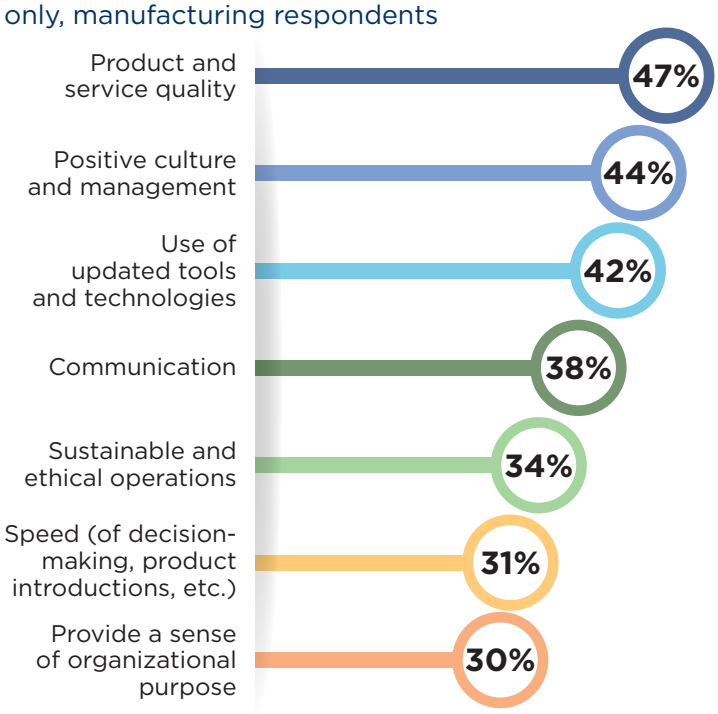
Although 53% say employee skills support innovation, only 15% of manufacturing executives expect to focus on employee retention engagement over the next two years.

The problems mount from there. While manufacturing respondents are more likely than the survey total to say they deliver product and service quality and updated tools and technology to their employees, few effectively deliver positive culture (44%), communication (38%) or a sense of organizational purpose (30%).

Manufacturers will need a skilled, engaged workforce to keep up with the rapid pace of technological change in the industry—not to mention their increasing use of advanced technologies. These executives need to assess their company culture to ensure employees are engaged and have an opportunity to improve their skills to ensure they stick around during a period of increasing employee resignations. However, no manufacturing executives in the survey say employee demands are a driver behind big strategic or operational changes—a potentially catastrophic misstep.

Fig. 4: Delivering what matters to the workforce.

"How effectively does your organization/agency deliver on the following?" Highly effective responses only, manufacturing respondents

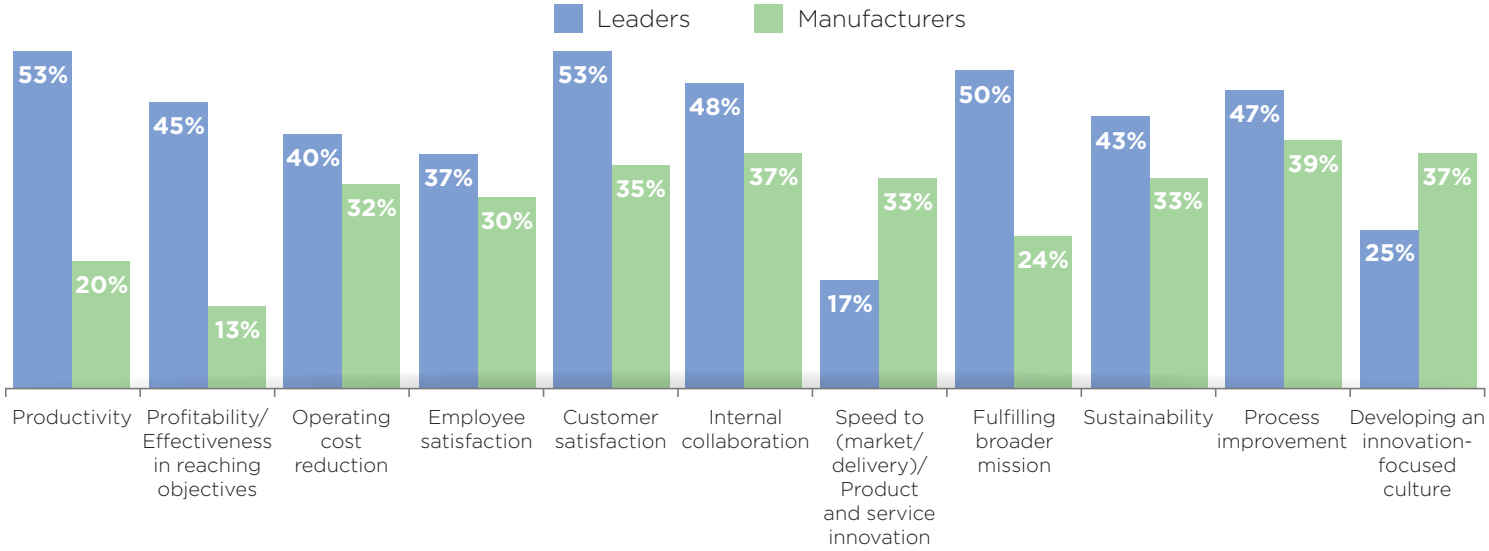


Digital efforts deliver customer value

Manufacturing executives would do well to increase their focus on technology investments, workforce needs, and strategy—because these things pay off. A select group of our total respondent pool (about 6% of the sample) have invested in artificial intelligence, developed culture and organizational purpose for their workers, and ensured all strategic and operational changes put customer needs first. These leading companies are better able to keep up with rapid changes in data regulations (63%, vs. 34% others), are 35% more likely to have experienced revenue growth, and are 33% more likely to provide higher-quality products and services to their customers. Despite being a fifth of the total sample, less than 5% of the manufacturing respondents qualify as leaders, the lowest of any industry in the survey.

Fig. 5: Manufacturers have a lot to learn from leaders.

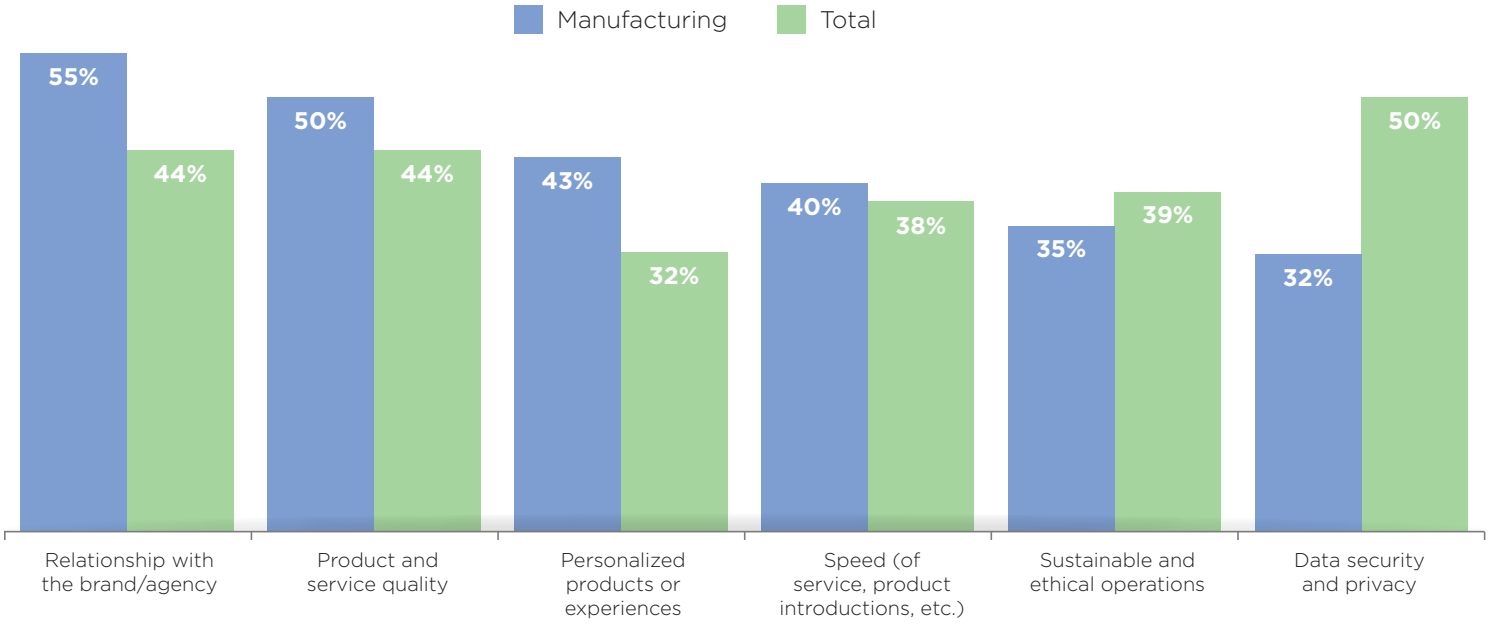
Please rate your organization's performance in the following areas; above average responses only.



Manufacturing respondents are doing well in some of these areas. They are significantly more likely than the total sample to say they deliver a highly effective relationship with the brand (55% vs. 44%), product and service quality (50% vs. 44%), and personalized products and services (43% vs. 32%). But a highly disrupted marketplace for manufacturers and the woes of employee engagement present challenges. More than half of manufacturing respondents say changing customer needs is a top challenge to delivering high-quality experiences, meaning manufacturers must be able to move quickly to stay ahead.

Fig. 6: The changing needs of customers require flexible—yet secure—services.

"How effectively does your organization/agency deliver the following to customers?"



To close strategic gaps—and better prepare for an uncertain future—manufacturing executives must revisit company goals and how to reach them. Manufacturers have made commendable progress in their commitment to building a technological infrastructure that supports Industry 4.0 initiatives, but they must pay closer attention to workforce needs while investing in skills to make the most of available resources. Adjusting the strategies of yesterday to match the factories of tomorrow will help—as will doubling down on data management improvements to optimize supply chain efficiencies.

Following the footsteps of leading executives can guide manufacturers through this process—and in turn, deliver value to their customers.

To review how other North American organizations are prioritizing and valuing their digital investments in the wake of constant disruption, read the full Innovation Index at *https://us.nttdata.com/en/engage/innovation-index*.