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Next-Gen  
Industrial AI

Regional Spotlight: North America

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# Next-Gen Industrial AI: The New Frontier for Global Competitiveness

The industrial sectors in the United States and Canada have battled through decades of outsourcing, market shocks, regulatory changes, and economic policy shifts.

As we enter the 2020s, both countries are looking for ways to drive both reshoring and new industrial growth. Ways to support this include boosting skilled labor, cheap energy, and low-carbon production methods. However, it seems certain that innovation and proficiency with new technologies will be crucial to competitiveness, and one area with real transformative potential is the next generation of industrial AI.

To investigate the shift toward the next generation of industrial AI, we conducted a survey of 515 senior leaders. Each respondent needed to be responsible for, involved in, or knowledgeable about their organization’s existing or planned use of AI. Here, we discuss some of the findings from the 122 respondents in the United States and Canada (hereafter North America); the overall findings have been published in our Next-Gen Industrial AI report.

## Three times the benefits by 2022?

A minority of North America respondents are currently benefiting from industrial AI applications, but about three times as many expect to benefit in just three years’ time. The top expected benefits by 2022 include using AI to automate quality control; identify risks; and optimize systems automatically.



This is a rapid rise in benefits, but it is also expected in other regions – and North America is starting from a lower base: it is behind Europe and Asia-Pacific in terms of the current benefits.

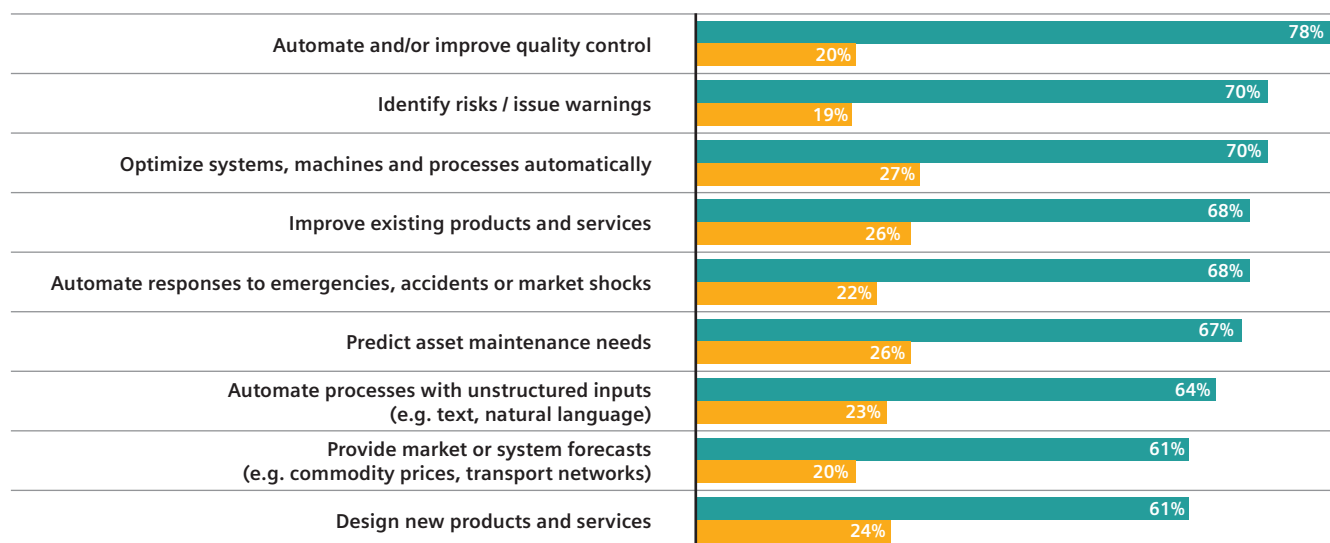
The reason for this could be the prominence of certain key barriers to progress with AI, and especially the top barrier for North America respondents: reluctance to change/ conservatism. At present, 83% of North America respondents say that this barrier has a moderate or major negative impact on their progress with AI, which is significantly more than Europe (71%) and Asia-Pacific (72%).

## AI in a post-covid world

When this research was commissioned, there was a lot of hype around the potential of consumer AI, and fewer insights available on industrial AI. While we at Siemens, with over 30 years’ experience in industrial AI, are no strangers to this field, we wanted to learn more about the experience of other organizations. This research sought to uncover the benefits and barriers of industrial AI applications, and to highlight its potential, especially when combined with other technologies like IoT and digital twin. Suddenly the world is a different place. However, as organizations seek to recover, rebuild and adapt in a post-covid environment, the potential of industrial AI is more relevant than ever.

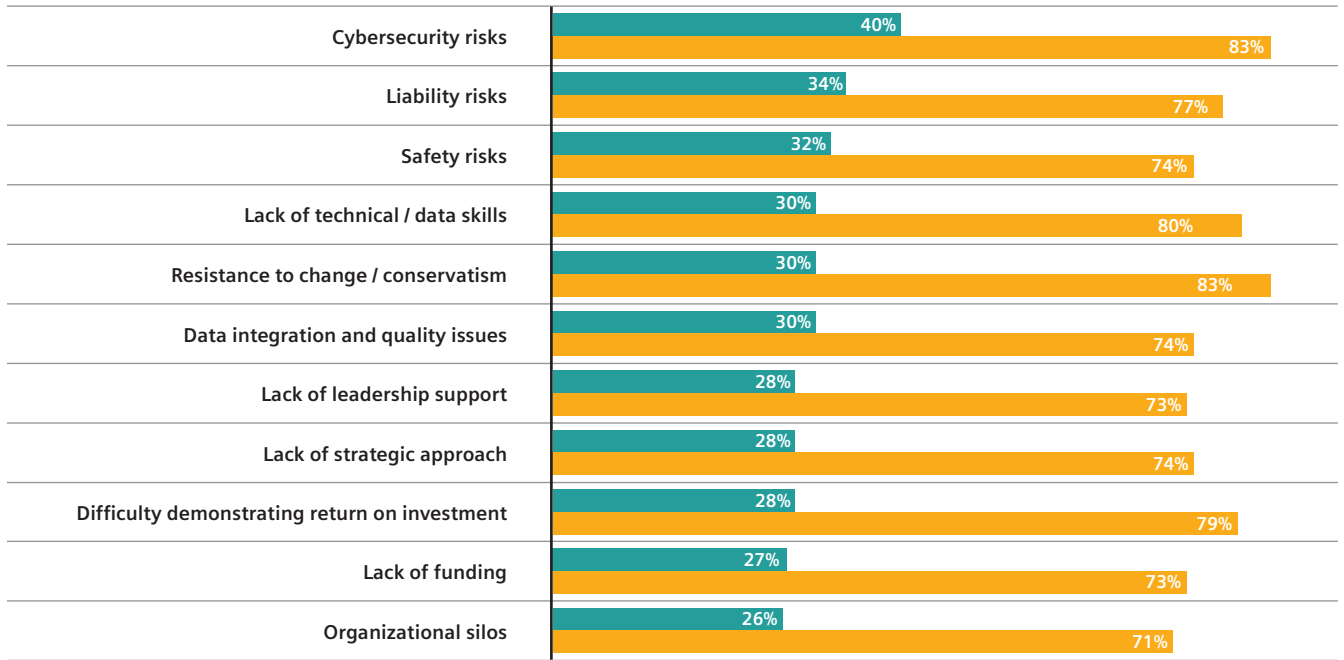
## Current and future benefits of AI, according to respondents in North America

2022   
Current 



## Current and future barriers to AI adoption, according to North America respondents

2022   
Current 



### The race for a new advantage

So, what kind of impacts could this reluctance to change, and other high barriers, have on US industrial organizations? Without some effort to catch-up, it could dent long-term global competitiveness. Asia-Pacific is home to some of North America's biggest industrial sector rivals. It is also the leading region across a range of measures in our survey, which makes it a useful benchmark to contrast with the North America results.

And those contrasts can be stark. For instance, just 27% of North America respondents say that their organization is an industry leader in the use of AI, compared with 47% of Asia-Pacific respondents. This reflects an advantage that appears to have produced real results, with 61% of Asia-Pacific respondents saying that AI has already had a significant positive impact on their organization, compared with just 43% of North America respondents.

Some 69% of Asia-Pacific respondents, meanwhile, say their organization is keen to use as much AI as possible, compared with 53% of North America respondents. This means that without some significant move by industrial organizations in North America to gain ground, their counterparts across the Pacific look likely to maintain or increase their edge.

### What is AI?

In this report, and the research that supports it, 'artificial intelligence' and 'AI' refer to a broad spectrum of methods or technologies that perform tasks which would normally require functions of human intelligence such as learning, judging, and problem-solving. This is more in keeping with the contemporary business understanding of AI than any technical or academic conventions.



## Confidence in theory more than practice

The survey contained a number of questions that asked respondents to consider hypothetical scenarios related to AI in their organizations. It is interesting to note that in their responses to these questions North American respondents did not have the same reticence as Europe respondents toward trusting AI-driven predictions or automation. In fact, they were similar to Asia-Pacific respondents, both in the performance they would require from an AI model, and in favoring the decision of an impressive AI model over an experienced human colleague.

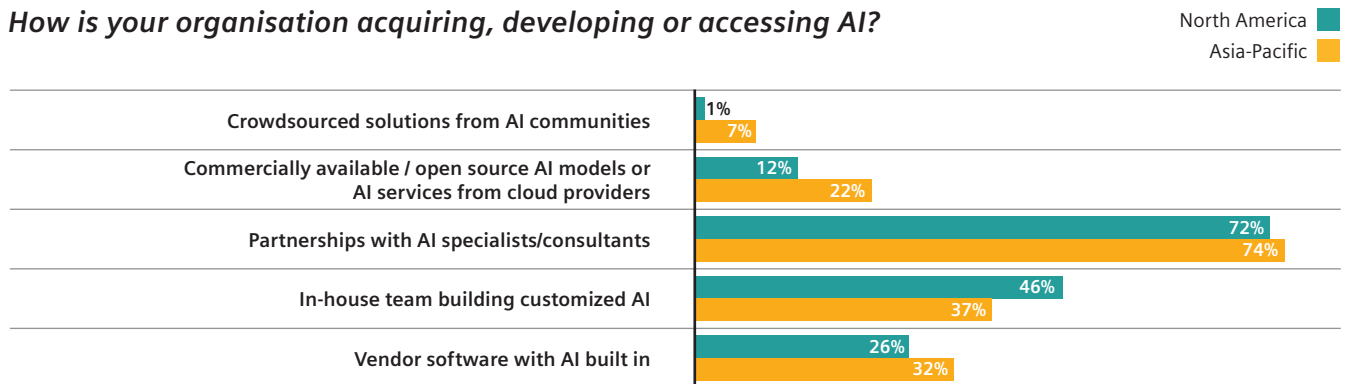
At the same time, just 39% of North America respondents think that within five years some of their organization’s high-value assets will be under autonomous AI-control, compared with 60% for Asia-Pacific (and 55% for Europe). So, while they share similar levels of confidence in AI models,

North America respondents expect much less automation of important assets than their Asia-Pacific counterparts.

We have seen how several key barriers to progress are prevalent in North America – to a greater extent than in Asia-Pacific – and this may explain that difference. But it is also important to consider the different strategies used by organizations to access the benefits of Industrial AI.

North America respondents are mostly using partnerships with AI specialists and in-house teams to acquire, develop, or access AI. By contrast, fewer Asia-Pacific respondents report using an in-house team, but more are using off-the-shelf options, vendor software with built-in AI, and crowdsourced AI solutions. Greater use of those approaches could be one way North American organizations could speed up AI-driven improvements and keep pace with rivals around the world.

## How is your organisation acquiring, developing or accessing AI?



**ABOUT THE RESEARCH:** Siemens and our research partner Longitude conducted primary research<sup>1</sup> into the uses of, attitudes to, and outlooks for AI in industrial organizations. We surveyed 515 senior business leaders in the energy, industrial/manufacturing, urban infrastructure, and transportation sectors. The research included respondents from North America, Latin America, Europe, the Middle East and Africa, and Asia-Pacific. All respondents were from organizations with an annual revenue of at least \$100 million. In order to qualify for the survey, respondents needed to be responsible for, involved in, or knowledgeable about their organization’s existing or planned use of AI and related technologies, strategies, budgets, and applications. The research included respondents from North America, Latin America, Europe, the Middle East and Africa, and Asia-Pacific and was concluded in September 2019.

**Published by  
Siemens AG in cooperation  
with Longitude Research Ltd**

Werner-von-Siemens-Str. 1  
80333 Munich,  
Germany

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