

## R&D READINESS

Leaders are struggling to stay ahead of the major trends reshaping the R&D landscape, according to a recent survey.

*by Elia Berteletti, Thomas Morel, and Marc Teulieres*

The changes confronting R&D leaders are significant: data flooding in from customers, devices, and sensors, combined with powerful analytical tools, are creating new sources of insight to fuel the development of products and services. New materials and breakthrough manufacturing techniques may vastly change the economics of many offerings. And unexpected pockets of knowledge and expertise are sprouting around the world.

Against this backdrop, we surveyed 200 executives, managers, and experts from top R&D organizations across regions in six industries. Less than a fifth of our respondents reported that their companies were ahead of the curve in implementing technology and building capabilities for six emerging R&D trends in areas ranging from data analytics to advanced software development (Exhibit).<sup>1</sup> The middle managers responsible for frontline execution registered the lowest levels of confidence about the readiness of their

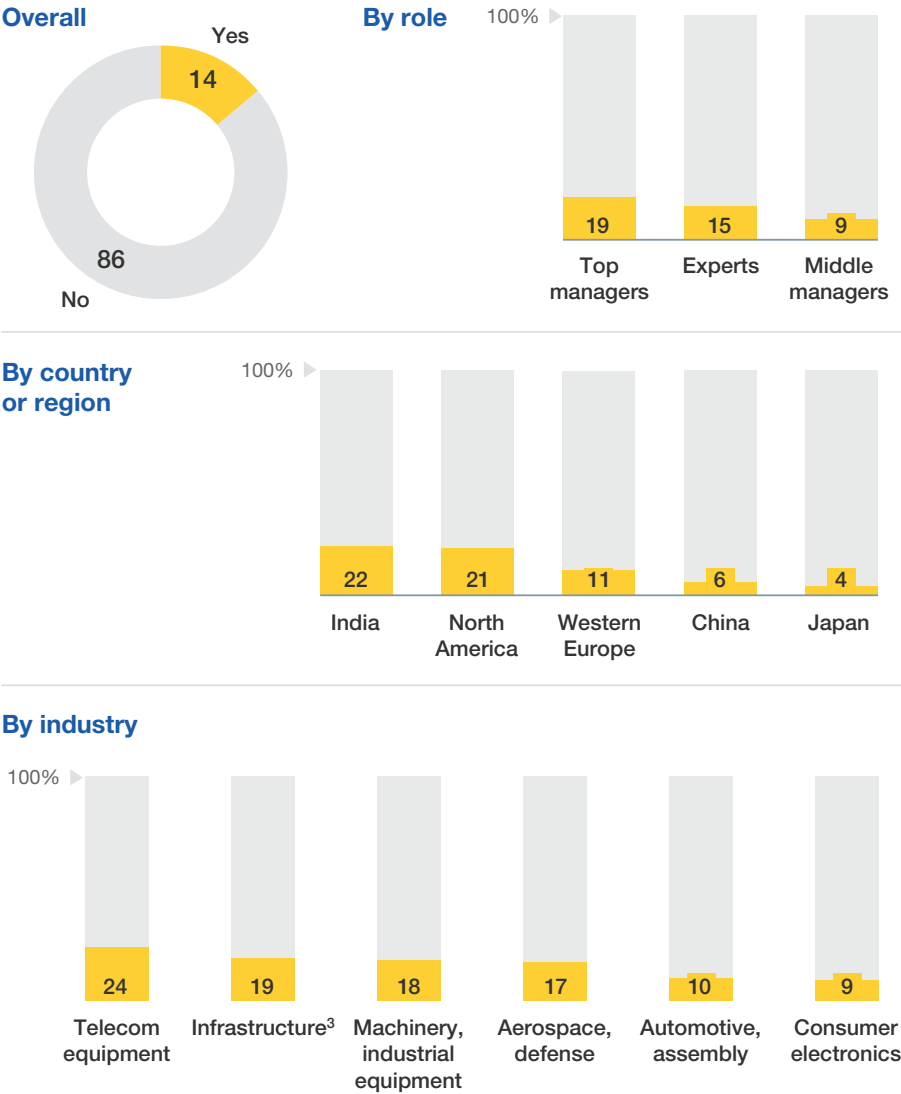
organizations—9 percent, versus 19 percent for top managers. Regions varied, too: respondents in India and North America reported the highest levels of preparedness, and those in China and Japan the lowest. Industries differed, as well: respondents from companies that make telecom equipment reported higher readiness scores than the others did.

Finally, differences in perceptions seemed correlated with management practices, particularly for data analytics. Data from customer interactions, social-media feedback, and, increasingly, the Internet of Things (IoT) are the grist for analytics tools that guide the development and design of products, reduce complexity, and, ultimately, boost value. Overall, we found that these technologies are still at low levels of maturity—respondents from only 16 percent of the R&D organizations said they had adopted them widely. The companies of respondents who reported the highest levels of preparedness in this area were much more likely than the rest to have designated a chief digital

Exhibit

Less than a fifth of respondents reported their companies were ahead of the curve in six emerging R&D trends.

*Is your company ahead of the curve in meeting the challenges of six emerging R&D trends?*<sup>1</sup> % of respondents<sup>2</sup>




<sup>1</sup>According to the respondents, the percentages of their companies that were ready for the six trends varied: (1) the ability to leverage the Internet of Things, big data, and advanced analytics, 11%; (2) digitization of the product-development process and feature-based development, 13%; (3) adapting product development to advanced materials and new manufacturing technologies, 17%; (4) excellence in software development, 13%; (5) globalizing R&D footprints, 20%; and (6) transparency and accountability in R&D performance, 13%.

<sup>2</sup>Pool of 200 respondents from top R&D organizations across regions and six industries.

<sup>3</sup>Includes civil engineering, construction, and megaprojects.

Source: 2016 McKinsey global R&D of the future survey

officer and forged external partnerships to gain new capabilities. They were also more likely to have focused attention and money on data and IoT strategies and hunted for new talent. It's too early to tell, of course, whether these investments, partnerships, and leadership roles will fully deliver on their potential. 

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<sup>1</sup> The survey spanned 150 questions. We also asked respondents about the R&D-related business practices their organizations had adopted for each of the trends. See the footnote in the accompanying exhibit for a list of the six trends and the respondents' perception of corporate readiness for each of them.

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The authors would like to acknowledge the contributions of Guillaume Deraisme, Sander Smits, Igor Tchoudovski, and Florian Weig to this article.

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