

Altair 2023

Frictionless AI Global Survey Report



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Introduction

To succeed in today's hypercompetitive, digitalized world, organizations recognize the imperative of using their data as a strategic asset. Companies around the globe are feeling the pressure to adopt organizational data analytics and artificial intelligence (AI) strategies.

When implemented correctly, advanced data and AI strategies allow organizations to make quick, data-driven decisions rather than needing to rely on costly, time-consuming testing or mere guesswork. These strategies allow organizations to do things like predict product or service demand, perform predictive maintenance, reduce time to market, increase product safety and security, reduce waste and energy usage, and much more.

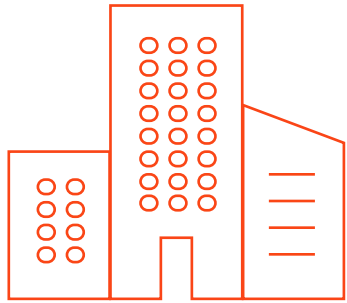


Too often, however, data and AI projects run into issues, including delays, mistakes, misalignment, and miscommunications that can lead to failure. These issues are commonly referred to as **friction**.

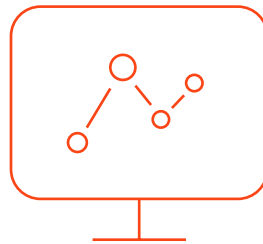
The problem is that many organizations struggle getting their data analytics and AI projects to work for them, especially as their data processes become more complex. Collecting, organizing, implementing, and streamlining vast amounts of data is a lot of work that involves many different teams with varying capabilities and needs.

Although this technology has become more powerful, more accurate, and easier to use in recent years, there's widespread acknowledgement that it has yet to reach its full potential. This survey report analyzes data and AI strategy adoption, and more specifically, what's stopping organizations from maximizing these critical technologies.

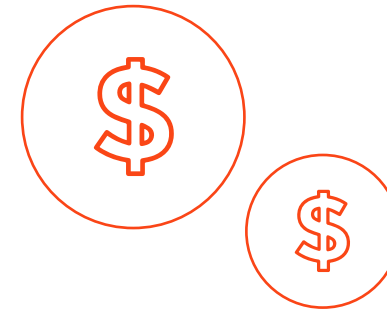
For this report, we surveyed thousands of professionals to see where they are encountering friction, why it's occurring, and how it's impacting their business. Throughout our research, three main areas of friction presented themselves: **organizational**, **technological**, and **financial friction**. Each one of these areas of friction wreaks havoc on business results in unique ways.



Organizational friction is friction that exists between departments, teams, and individuals. Organizational friction can affect organizations both “horizontally” (between different teams and domains) and “vertically” (between departments, teams, and individuals at different levels of seniority or job function).



Technological friction is friction that stems from technology infrastructure — this includes hardware and software resources, cloud and high-performance computing (HPC) resources, appliances and plugins, vendors, and more. Often, technological friction acts as a bottleneck by limiting projects’ speed, scale, and/or scope.



Financial friction is friction that presents itself when budgets are tight, resources are spread thin, and projects need to provide a return on investment. Financial friction can be most apparent when trying to invest in a new initiative or trying to scale efforts with expensive, legacy investments.

Friction is the main reason data and AI projects could fail. According to the survey, the top challenges preventing organizations from gaining insights from their data include:



Speed

The inability to process data quickly



Accuracy

Issues with data quality



Utility

The inability to use data to make informed decisions



Skills

Limitation in talent and employee skill sets

Because of friction, AI project failure is real and is seen across organizations no matter their industry or geographic location.

- **42% of respondents admit they have experienced AI failure within the past two years.** Among those who have experienced AI project failure at their organization within the last two years, 36% of projects failed on average.
- Those who report experiencing an AI failure within the last two years say — because of these failures — they have experienced wasted time and efforts among workers (63%) and compromised cybersecurity (50%) within the last year.
- However, **despite experiencing AI project failures, most respondents (78%) report their organization continues to use AI because there are still opportunities to level up capabilities or services.** Fifty-four percent say their organization still uses AI because the minor successes have shown potential for breakthroughs in efficiency. Finally, 50% indicate their organization continues to use AI due to the potential to save employees' time.





KEY TAKEAWAYS

Key Takeaways

Here, you can see some of the survey's most notable data points.



In general, there are three types of friction that plague data and AI strategies: **organizational friction, technological friction, and financial friction.**



Organizations are desperate for more data science talent. **75% of respondents struggle to find enough data science talent, and the shortage of talent/the time it takes to upskill current employees was the most prevalent problem in organizational AI strategy adoption at 54%.**



A vast majority of respondents encounter regular obstacles that slow down AI initiatives. **84% indicated their organization faces limitations that slow down AI initiatives sometimes or often;** 19% said “often,” while 13% said “very often.” Many respondents also indicated more than half of their data/AI projects within the past two years never made it to production due to friction. 63% of respondents agreed with the sentiment their organization makes working with AI tools more complicated than needed.



To combat a shortage of data science talent, most organizations have some sort of internal data science enablement programs in place. That said, **most organizations only have an enablement program in place in limited areas of the organization (47%)**. 43% of organizations have data science enablement programs in place throughout the organization, while 10% said “nothing of significance is in place.” Even with these programs, the consensus is still that there’s insufficient talent for the needs at hand.



Overall, 96% of executive-level respondents said there was some sort of structured data science enablement program in place at their organization, while just 83% of user-level employees said the same. Flipping the question, that means just 4% of executive-level employees said there was no data science program in place, compared to 17% of user-level employees. This is a significant disconnect between the two groups and may itself be a cause of organizational friction.



Executives may be more optimistic — or less realistic — about their organization’s ability to scale AI projects without the help of data science-savvy domain experts. **When asked if they believe their organization can scale AI projects without training domain experts in data science, 69% of executives said “yes,” while just 51% of users said “yes.”**



At the regional level, respondents from the Asia-Pacific (APAC) region were most likely to say their organization is looking to establish data strategies, scale organizational data and AI strategies, and pilot first use cases compared to respondents in the North and South American (AMER) and European-Middle East (EMEA) regions. Respondents from the APAC region were also the most likely to say they believe their organization will start to implement AI for large-scale projects within the next year or sooner. **China (88%), India (75%), and South Korea (62%) were the most likely nations to adopt AI for large-scale projects within the next year or sooner.**



Respondents from India experience a disproportionate amount of data and AI failures and are more likely to believe their organization makes the data and AI process more difficult than it needs to be. **They also reported the highest proportion of frequent AI strategy obstacles (72%), two-year AI project failure rate (66%), and were the most likely nation to say more than half of their data (52%) and AI projects (45%) from the last two years never made it to production.**



SECTION 1

THE LANDSCAPE OF DATA AND AI STRATEGY ADOPTION

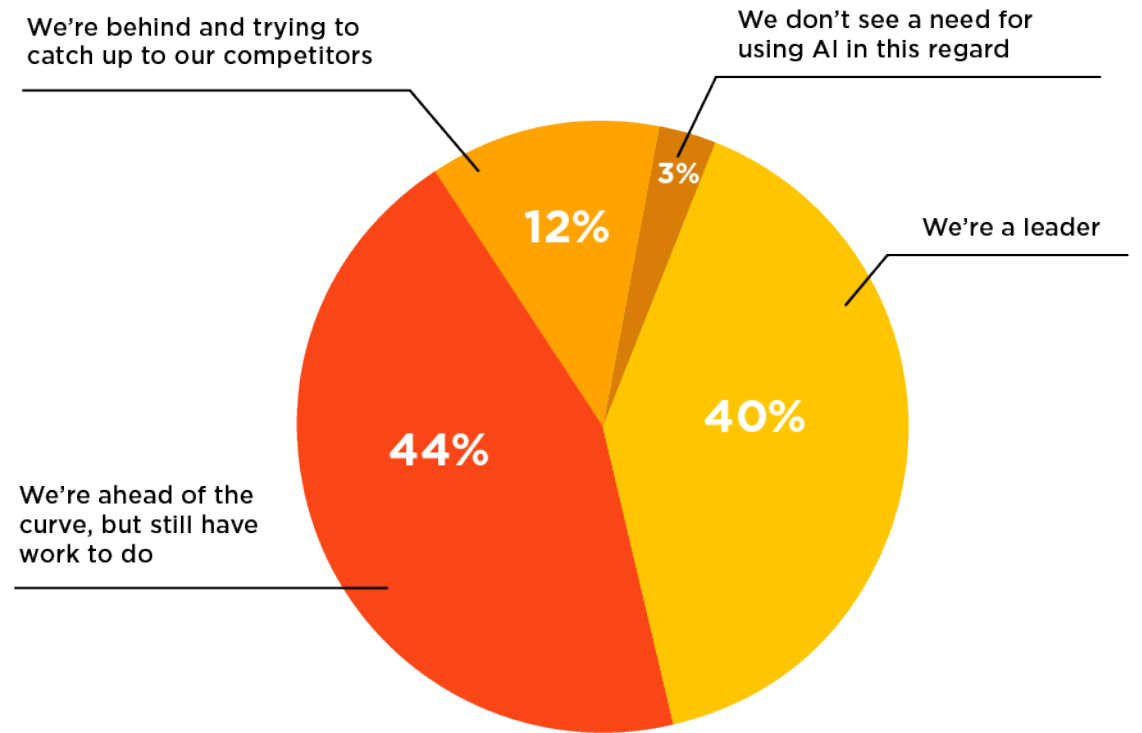
Section 1: The Landscape of Data and AI Strategy Adoption

Here, we seek to understand how broadly organizations have adopted company-wide data and AI strategies and workflows, where they're using these technologies, and more. Since we live in a world brimming with data — often more than organizations can handle — it makes sense to dive into how and why organizations are collecting, organizing, and using data via advanced tools that involve AI and machine learning.



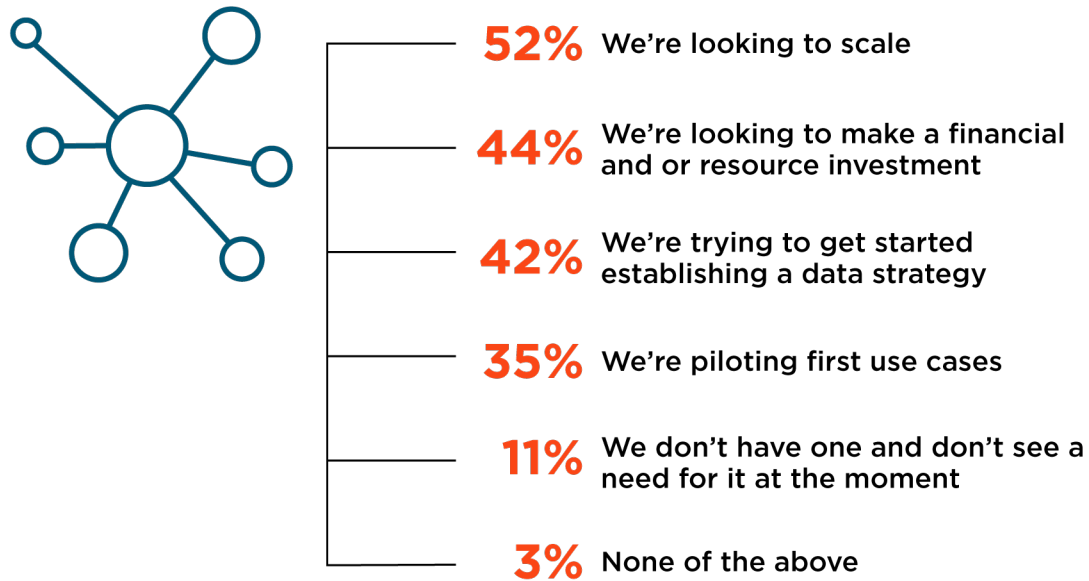
To begin, few respondents felt that their organization was behind the curve regarding their data and AI approach. In fact, **84% of respondents felt their organization was either “ahead of the curve” or a “leader” in data and AI strategy adoption.** Just 12% felt their organization was behind the curve.

- ▶ When it comes to your organization, how would you describe your approach to using AI and data to propel digital transformation?



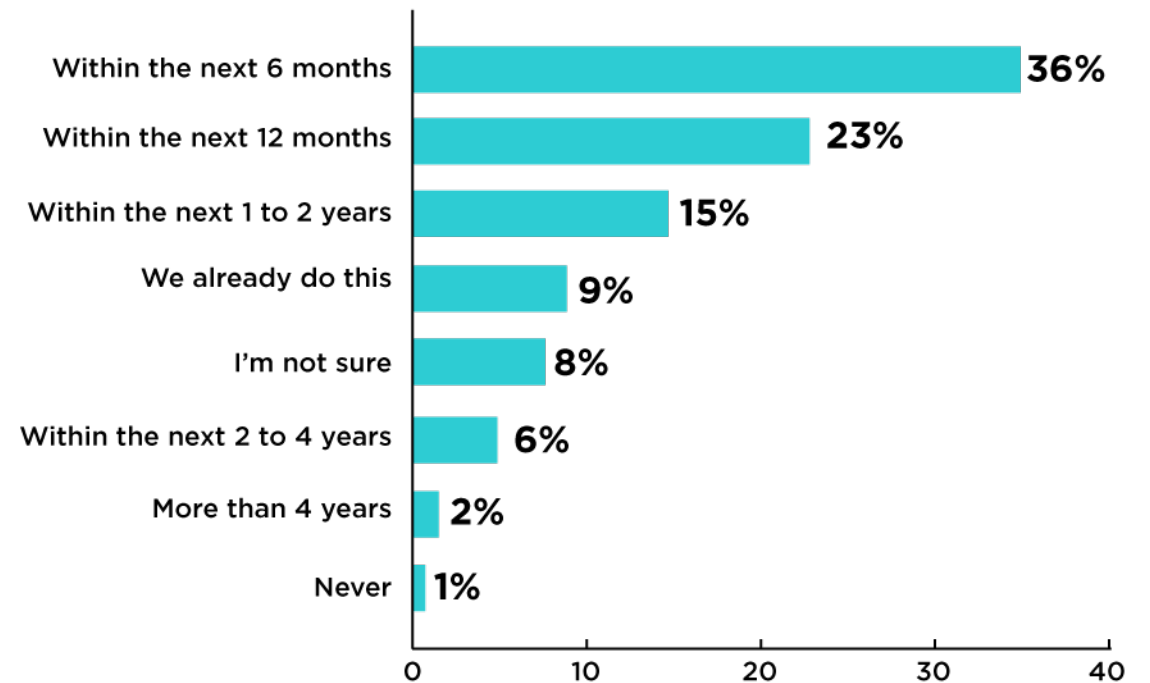
Moreover, **a majority of respondents (52%) indicated that their organization is looking to scale its existing data and AI strategy.** In addition, 44% said their organization is looking to make a financial/resource investment, and 42% said their organization is trying to establish a data and AI strategy. **Just 11% of respondents said their organization feels it doesn't need an organizational data and AI strategy at the moment.** For this question, respondents could select more than one answer.

► Where is your company on its data strategy?



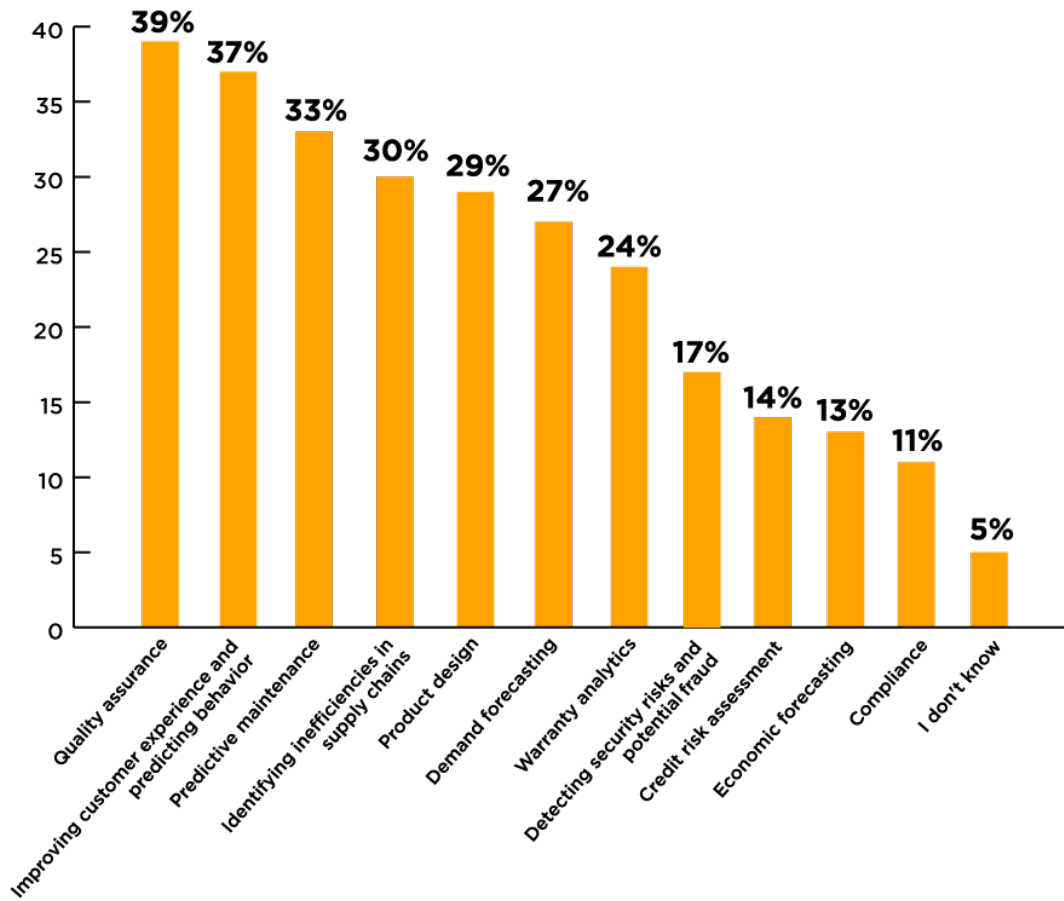
Regarding AI implementation, respondents felt that widespread organizational adoption was mostly a matter of months rather than years. The data shows that **59% of respondents believe their organizations will begin adopting AI within 12 months or sooner for large-scale projects; 36% believe adoption will occur within six months or sooner.** Additionally, 9% said their organization already uses AI for large-scale projects. Only 8% felt their organization will begin adopting AI for large-scale projects in two years or more.

► When will your organization start to implement artificial intelligence (AI) for large scale projects?



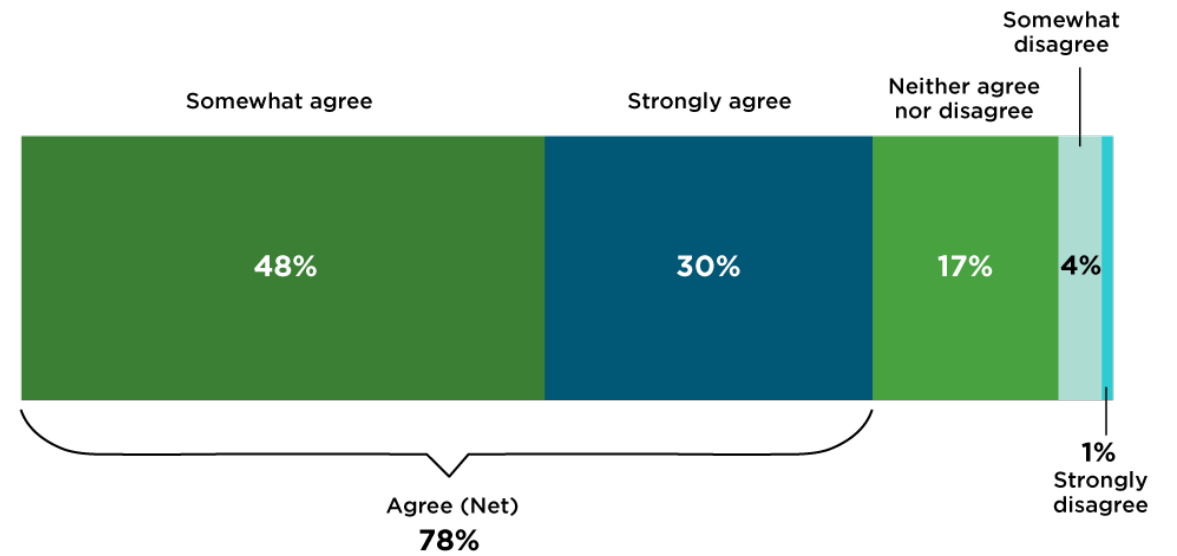
Here, you can see where and how organizations are using their data and AI strategies. For this question, respondents could select more than one answer.

- ▶ What are some of the more common projects and applications where your company is using AI?



Lastly, it's crucial to note that while friction is prevalent, organizations are generally confident in their ability to leverage data to drive valuable insights and results. For example, **78% of respondents indicated they feel their organization is able to use existing data to improve business performance.**

- ▶ To what extent do you agree or disagree with the following statement: I feel I am able to make use of the data we have to improve my organization's business performance.



Section 1 Key Takeaways

- Many organizations feel they're ahead of the game when it comes to implementing organizational data and AI strategies. **84% of respondents felt their organization was either "ahead of the curve" or a "leader" in data and AI strategy adoption.** Just 12% felt their organization was behind the curve.
- A sizable portion of respondents want to improve and expand existing strategies and infrastructure. **A majority of respondents (52%) indicated their organization was looking to scale its existing data and AI strategy.**
- The importance of organizational data and AI strategies in today's industries is widely recognized. **Just 11% of respondents said their organization felt it didn't need an organizational data and AI strategy right now.**
- **59% of respondents believe their organizations will begin adopting an organizational AI strategy within 12 months or sooner for large-scale projects, 36% believe adoption will occur within six months or sooner, and 9% have already adopted such a strategy.**



SECTION 2

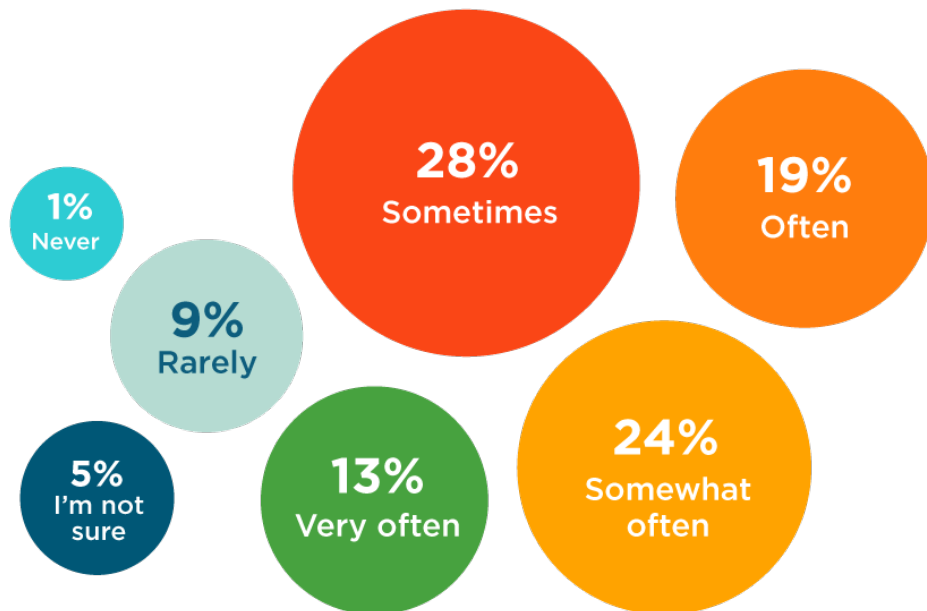
ORGANIZATIONAL FRICTION

Section 2: Organizational Friction

Now, let's explore the types and causes of friction in greater detail, beginning with organizational friction.

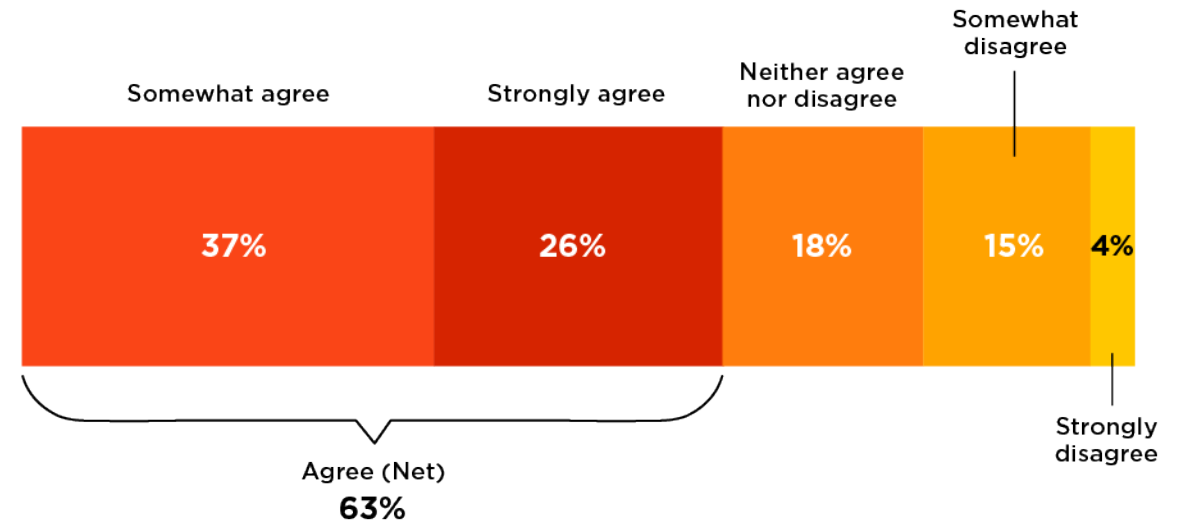
Overall, **84% of respondents indicated their organization faces limitations that slow down AI initiatives sometimes or often**; 19% said "often," while 13% said "very often." Only 10% of respondents indicated they experience limitations rarely or never.

- ▶ How often does your organization face limitations that are slowing down AI initiatives?



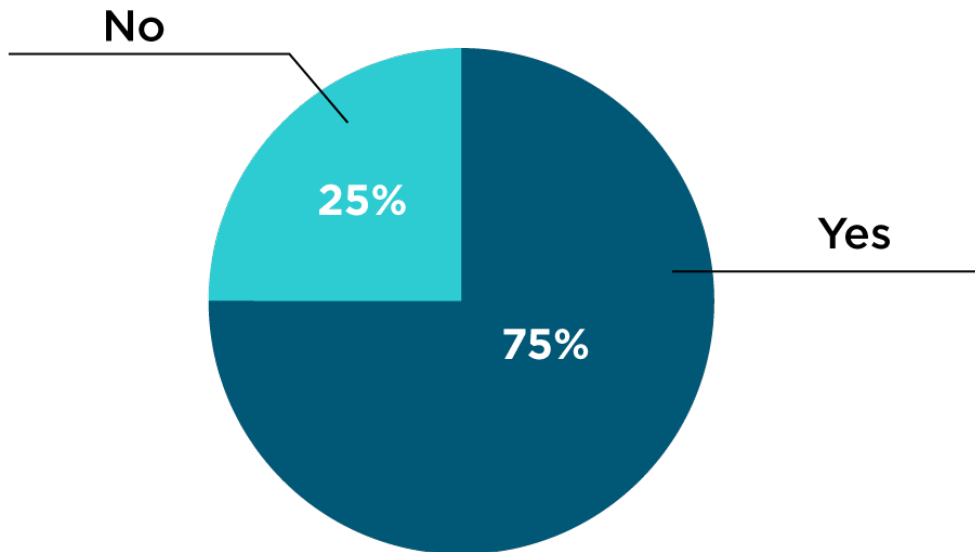
In addition, **63% of respondents agreed with the sentiment their organization makes working with AI tools more complicated than needed — more than a quarter of those respondents strongly agreed.**

- ▶ To what extent do you agree or disagree with the following statement: Our organization tends to make working with AI tools more complicated than needed.

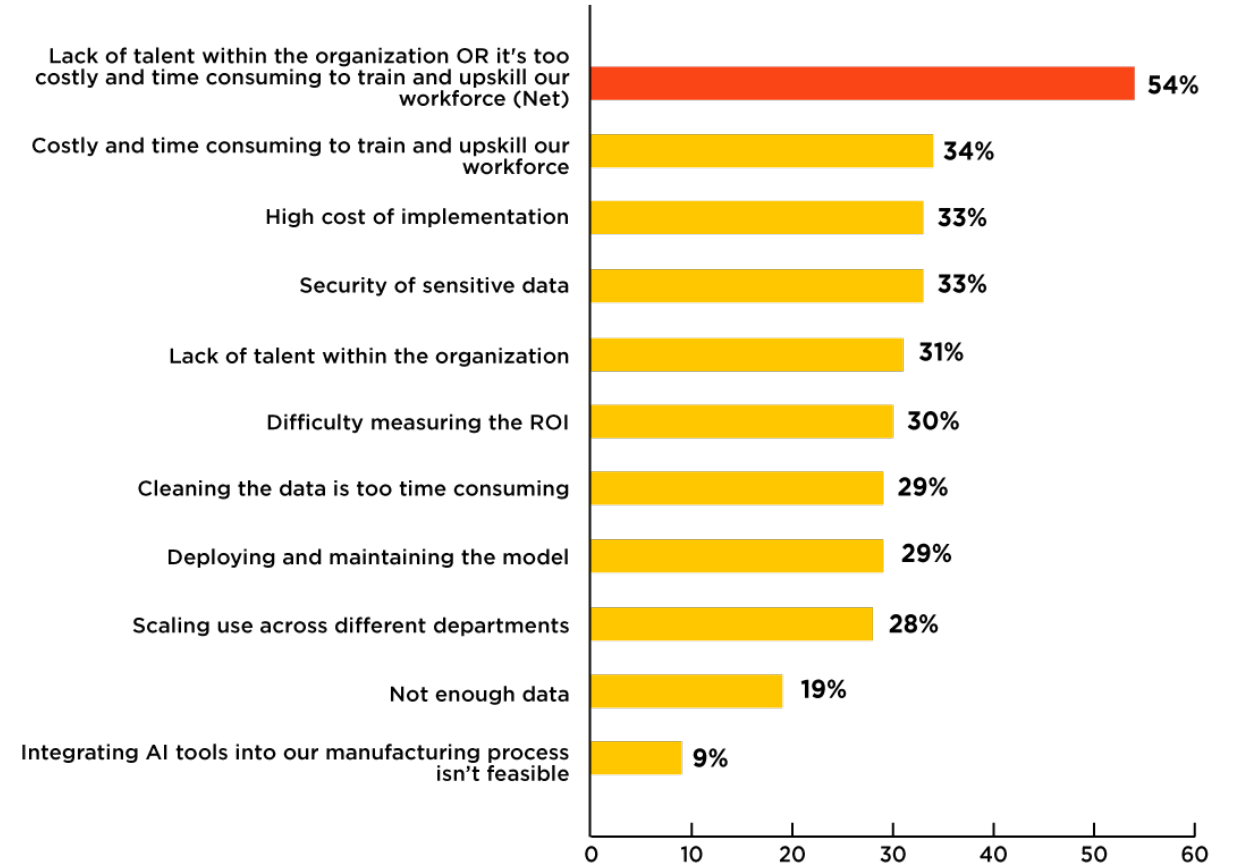


By far, the shortage of talent and the time it takes to upskill current employees was the most prevalent problem in organizational AI strategy adoption at 54%. This echoes a common sentiment within the modern data science industry — **there simply isn't enough data science-specific talent for each organization to have sufficient data science teams across departments.** This sentiment also appears clearly in another question regarding the availability of skilled data employees — **75% of respondents said they struggle to find enough data science talent.**

► Do you struggle to find enough data science talent?

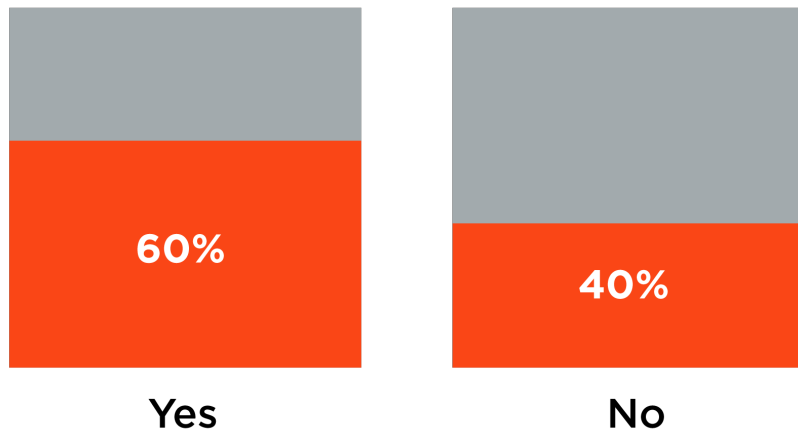


► What are some gaps or shortfalls your organization commonly runs into when relying on AI tools to complete projects? Select all that apply.



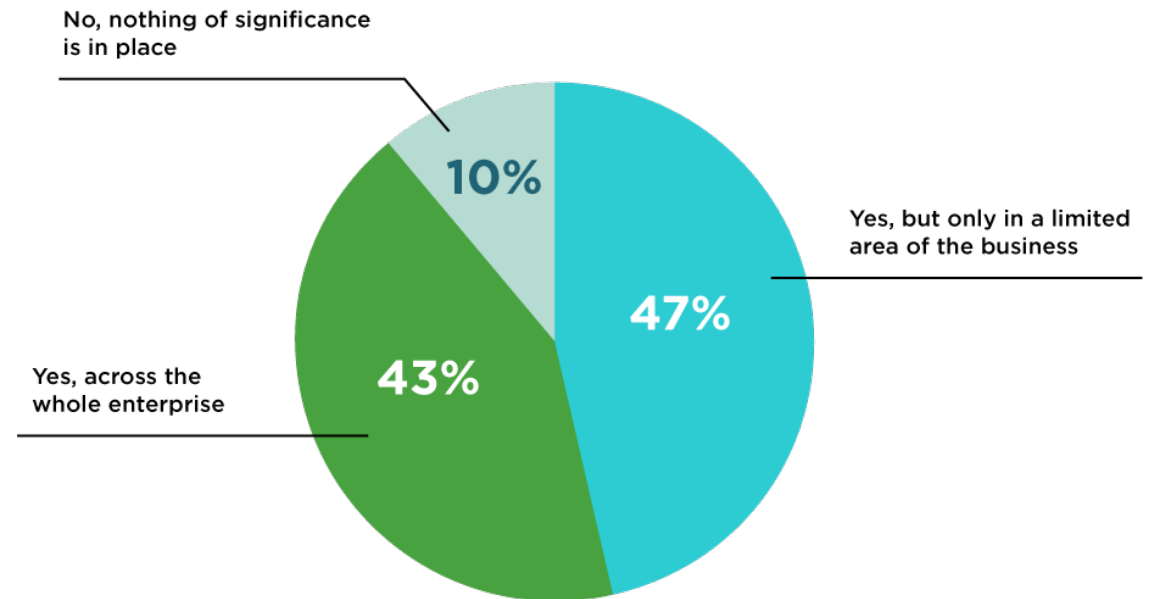
Not having enough data science-specific talent is a major source of friction, especially when other employees — likely without sufficient data science expertise — are made to oversee and manage organizational data and AI initiatives. As such, many modern organizations must implement in-house programs to upskill current employees and teams. To begin, 60% of respondents believe their organization can scale AI projects without training domain experts in data science. **Though this is a slight majority, that still leaves 40% who believe domain experts must be trained in data science to develop successful AI projects.**

► Do you believe you can scale AI projects without training your domain experts to embrace data science?



Regarding training programs to upskill employees, **most organizations only have a data science enablement program in place in limited areas of the organization (47%)**. 43% of organizations have data science enablement programs in place throughout the organization, while 10% said “nothing of significance is in place.” In any case, the data suggests that organizations are still looking for better ways to address a shortage of data science talent, which is one of the simplest, most effective ways to reduce organizational friction.

► Do you have a structured data science enablement program in place?



35% of respondents said that AI literacy is low among the majority of the workforce and/or they have a shortage of people with data science skill sets.

► What are some common challenges your business faces in leveraging the value of its financial investment in AI? Select all that apply.

35%

AI literacy is low among the majority of our workforce; lack of talent with data science skill sets

We are inundated with large volumes of messy, unstructured data every day in various forms, dispersed and siloed across the organization

Data science project management is iterative - you can't set it and forget it and we do not have dedicated and knowledgeable staff to keep them running smoothly



32%

Managing AI risk is more comprehensive than most assume



22%

The path to business value is unclear



13%

Not knowing how to get started



30%

The difficulty of nurturing a data-driven culture within the enterprise



20%

Lack of executive sponsorship



7%

This is not a challenge for us



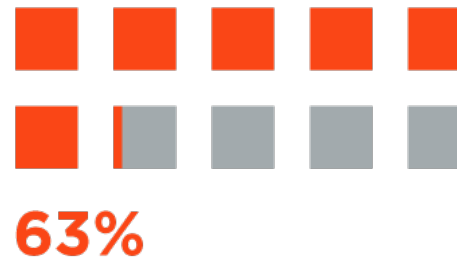
29%

Teams (data scientists and business leaders) are working in silos and not effectively communicating with each other

These friction-caused problems take a toll on both organizations' employees and bottom lines. Here, the data shows that **wasted time/effort and money accounts for organizations' main concerns at 63% and 40%, respectively.** Reputation and cybersecurity risk were also common responses.

► What negative impacts, if any, has your organization faced due to an AI related failure within the past 12 months? Select all that apply.

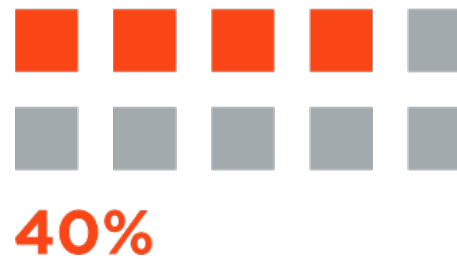
Wasted time and efforts among workers



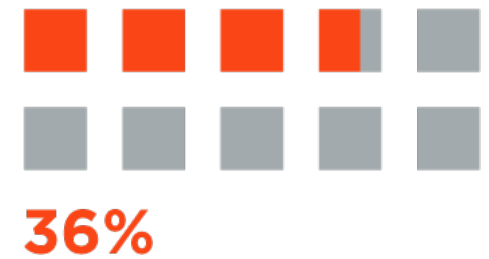
Compromised cybersecurity



Wasted money

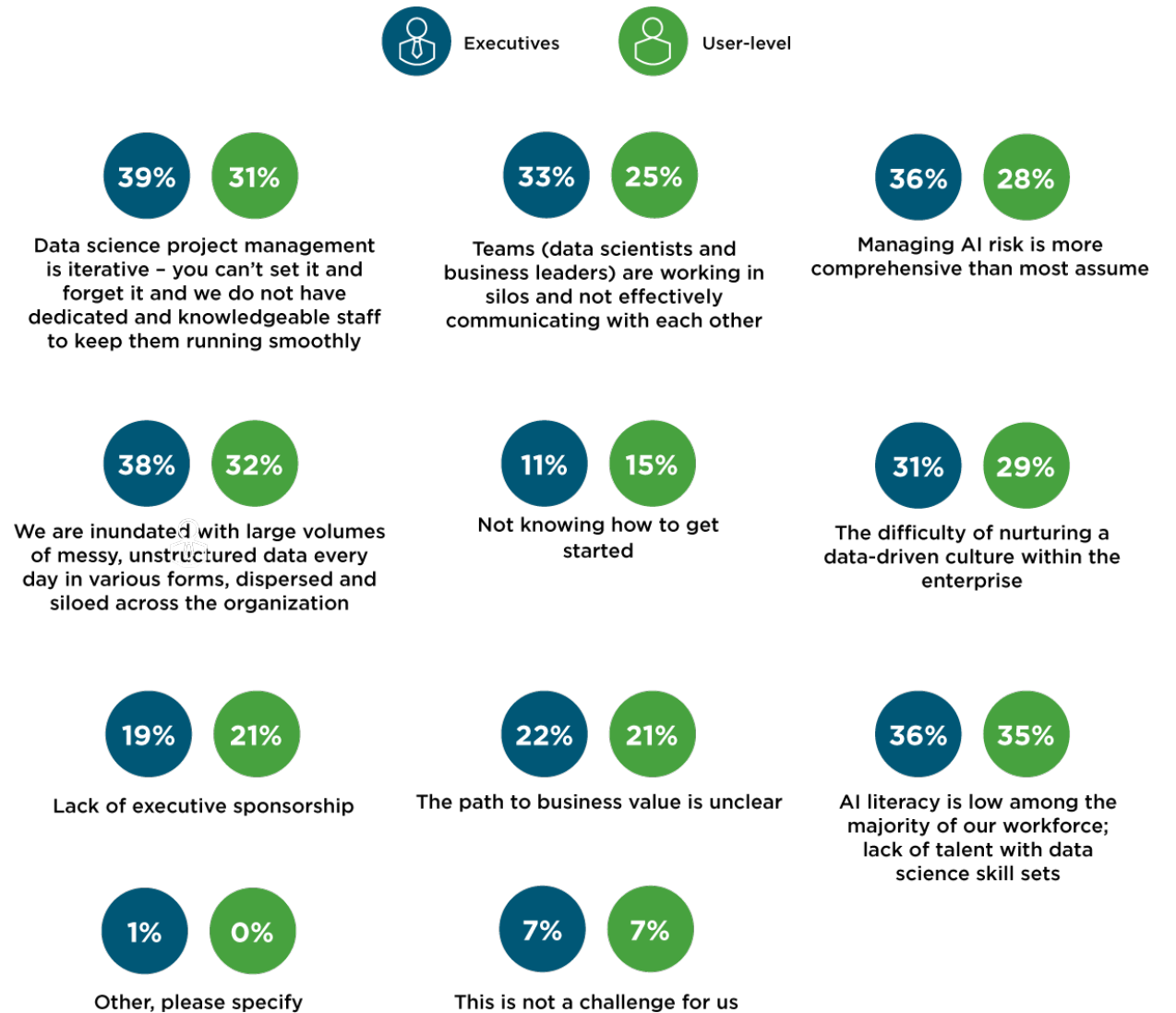


Damaged reputation



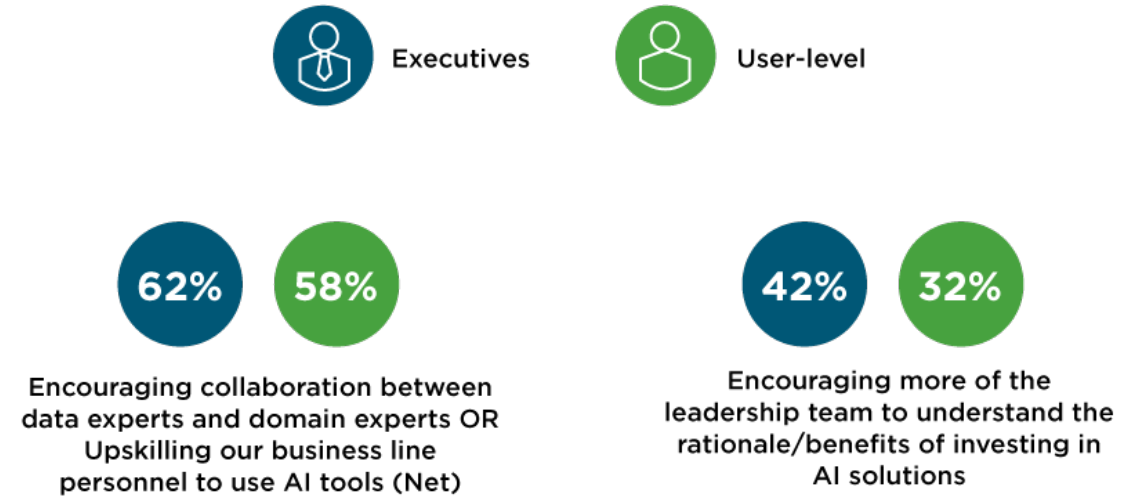
Crucially, it's important to note that organizational friction affects organizations both horizontally and vertically. The data revealed some insightful trends on how friction is hurting organizations vertically. **33% of executive-level respondents said teams such as data scientists and business leaders are working in silos** and therefore communicating ineffectively. **User-level respondents said the same at just a 25% rate, an 8% difference from their executive counterparts.**

► **What are some common challenges your business faces in leveraging the value of its financial investment in AI? Select all that apply**



Moreover, the data suggests there's a disconnect between how executives and users feel people are encouraging collaboration between data and domain experts, and upskilling business line personnel in AI tools. Undoubtedly, **both executives and users are encouraging others to collaborate and upskill their skill sets at 62% and 58%, respectively.** However, **while 42% of executives said they're encouraging others within their leadership team to understand the rationale or benefits of investing in AI solutions, just 32% of users said the same.**

► **What percent of your organization's AI projects failed within the past 24 months?**



Section 2 Key Takeaways

- By far, the shortage of talent and the time it takes to upskill current employees is the most prevalent problem in organizational AI strategy adoption. **75% of respondents said they struggle to find enough data science talent.**
- **84% of respondents indicated their organization faces limitations that slow down AI initiatives sometimes or often;** 19% said “often,” while 13% said “very often.” Only 10% of respondents indicated they experience limitations rarely or never.
- **Most organizations only have a data science enablement program in place in limited areas of the organization (47%).** 43% of respondents indicate organizations have data science enablement programs in place throughout the organization, while 10% said: “nothing of significance is in place.”
- **While 42% of executive-level respondents said they’re encouraging others within their leadership team to understand the rationale or benefits of investing in AI solutions, just 32% of user-level respondents said the same.**



SECTION 3

TECHNOLOGICAL FRICTION

Section 3: Technical Friction

Now, we'll examine technological friction and how respondents experience it. As the previous section established, most respondents said they experience frequent obstacles in their data and AI strategies.

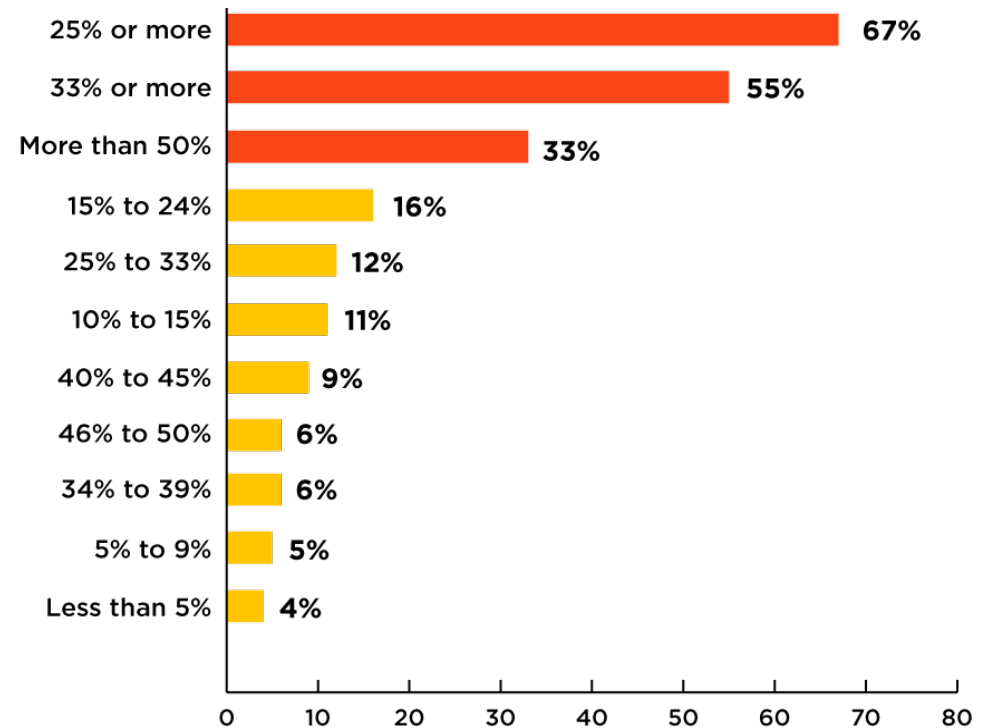
Below you can see what respondents felt were the most challenging issues related to gathering insights from their data. **Overall, respondents felt they struggled most with data processing speed, making informed decisions quickly, and data quality issues.**

► When it comes to getting insights from your data, what top 3 challenges does your organization struggle with most?



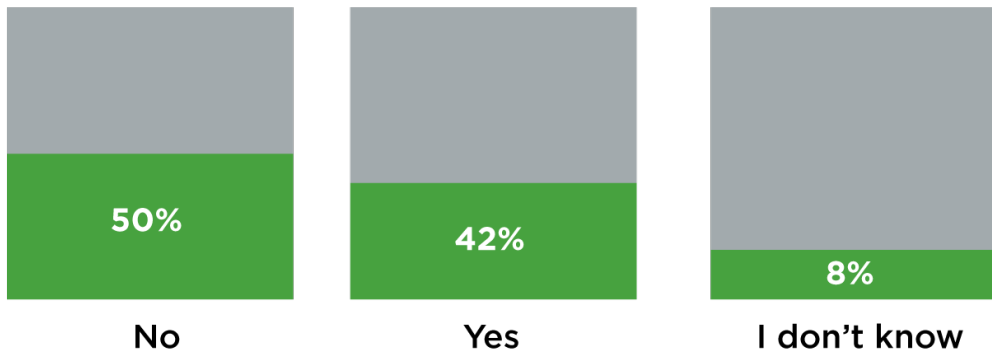
In addition, the data revealed a troublingly high prevalence of friction when we examine what percentage of data science projects haven't made it to production within the past two years. When asked what percent of organizational data science projects haven't made it to production within the past two years, **33% of respondents said more than half of their data science projects never made it to production.** Moreover, **55% of respondents said more than a third of their data science projects never made it to production within the past two years,** while a staggering **67% said more than a quarter of projects never made it to production.**

► What percent of your organization's data science projects have NEVER made it to production within the past 24 months?

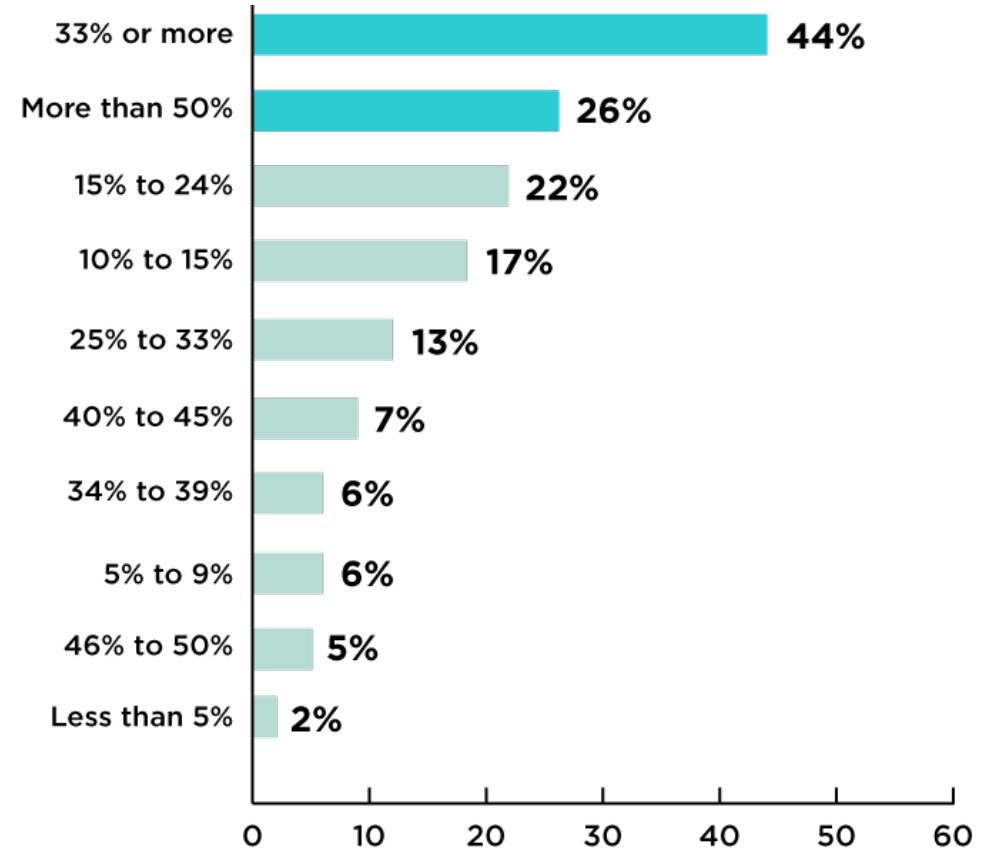


The numbers aren't promising for AI projects either. **42% of respondents said their organization has experienced an AI project failure within the past two years.** Additionally, **26% said more than half of their AI projects have failed within the past two years.** **44% said more than a third of their AI projects have failed within that same time frame,** and **57% said more than a quarter of their AI projects have failed within that time frame.**

▶ Have you experienced an AI failure within the past 24 months?

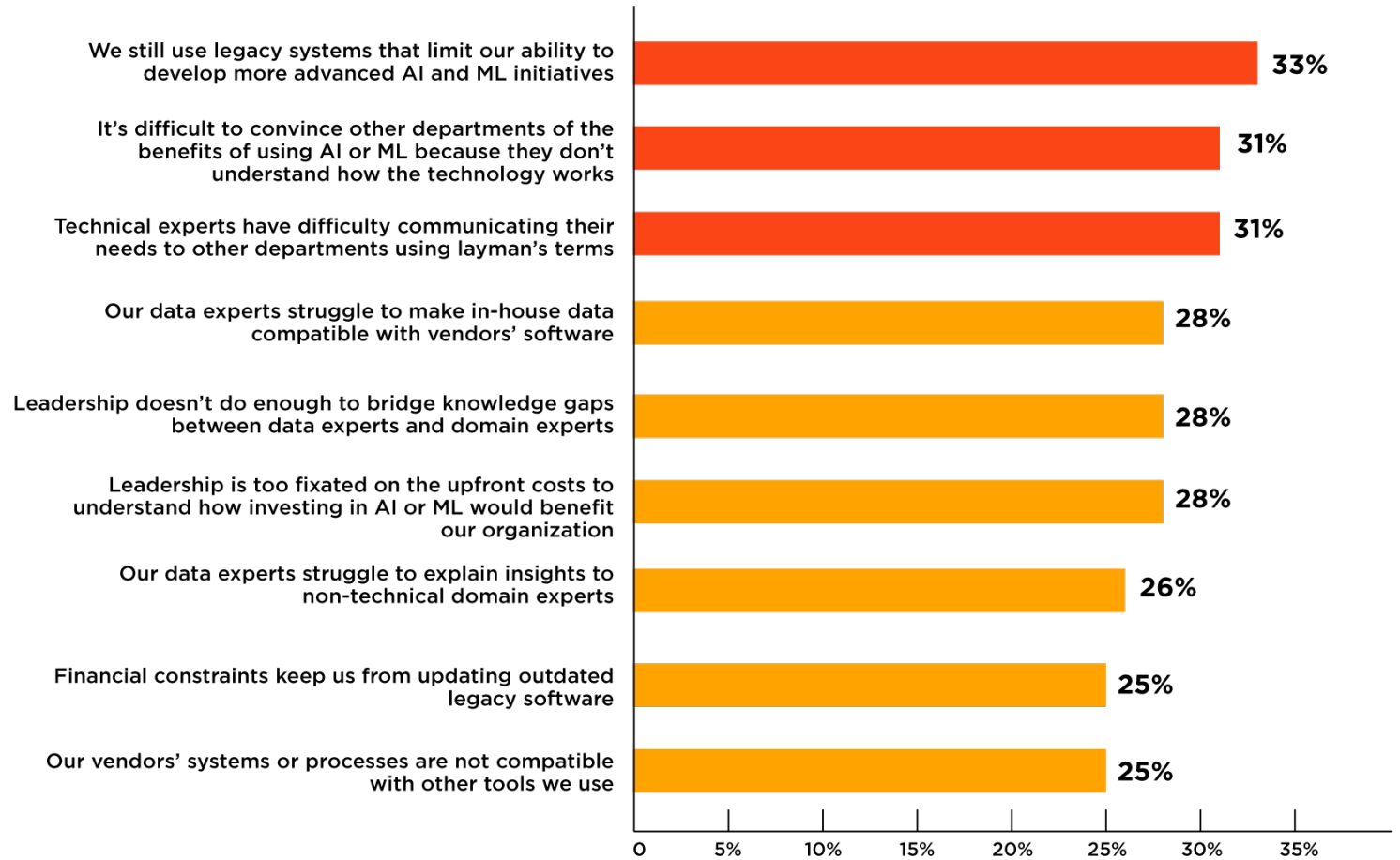


▶ What percent of your organization's AI projects failed within the past 24 months?



Below, we can see that respondents point to multiple technology-related issues — primarily, **legacy systems’ inability to develop advanced AI and machine learning initiatives (33%)** and **technical teams’ difficulty communicating their needs to other teams in layman’s terms (31%)**. Additionally, respondents cited vendor system and software incompatibility as a recurring issue. For this question, respondents could choose more than one answer.

► Which of the following are challenges that are negatively affecting AI initiatives at your organization?



The top three issues that prevent respondents from gathering insights from their data are a lack of processing capacity (either in personnel or technology), trouble making informed decisions quickly, and data quality issues.

► When it comes to getting insights from your data, what top 3 challenges does your organization struggle with most?



Lastly, here you can see the most common challenges organizations face when trying to leverage their investments in organizational data and AI strategies. The data shows that large volumes of messy data derail organizations' ability to implement successful data and AI strategies.

► What are some common challenges your business faces in leveraging the value of its financial investment in AI? Select all that apply.



Section 3 Key Takeaways

- Technologically, **respondents struggle most with data processing speed, making informed decisions quickly, and data quality issues.**
- When asked what percent of organizational data science projects haven't made it to production within the past two years, **33% of respondents said more than half of their data science projects never made it to production.** Moreover, 55% of respondents said more than a third of their data science projects never made it to production within the past two years, while a staggering 67% said more than a quarter of projects never made it to production.
- Organizational AI projects are also plagued with similar failure rates. **42% of respondents said their organization has experienced an AI project failure within the past two years.** Additionally, 26% said more than half of their AI projects have failed within the past two years. 44% said more than a third of their AI projects have failed within that same time frame, and 57% said more than a quarter of their AI projects have failed within that time frame.
- Respondents point to multiple technology-related issues that cause friction — primarily, **legacy systems' inability to develop advanced AI and machine learning initiatives (33%) and technical teams' difficulty communicating their needs to other teams in layman's terms (31%).**
- **Respondents also cited vendor system and software incompatibility** as a recurring issue.
- Respondents indicated that the top three technological issues that prevent them from gathering insights from their data are a lack of processing capacity (either in personnel or technology), trouble making informed decisions quickly, and data quality issues.



SECTION 4

FINANCIAL FRICTION

Section 4: Financial Friction

For the last main area of friction, we'll turn the microscope to financial friction. Though organizations may be eager to establish or evolve their organizational data and AI strategies, nothing can get done if teams and individuals keep hitting financial obstacles.

To start, **25% of respondents cited financial constraints — specifically those that prevent them from accessing new technology infrastructure — as a point of friction that negatively affects AI initiatives within their organization.** Additionally, 28% said their leadership is too focused on the strategies' upfront costs to understand how investing in AI and machine learning would benefit their organization.

- ▶ Which of the following are challenges that are negatively affecting AI initiatives at your organization?



On this same note, 33% of respondents said that the “high cost of implementation” — whether real or perceived — is one of their organization’s shortfalls when relying on AI tools to complete projects. In the same question, respondents also pointed out the financial costs associated with upskilling current employees’ data science skill sets.

- ▶ What are some gaps or shortfalls your organization commonly runs into when relying on AI tools to complete projects?



Moving ahead, **a sizable portion of respondents said their organization struggles to scale their financial investments in data and AI strategies.**

Moreover, **44% of respondents said they have difficulty finding use cases for large-scale AI projects** — this includes projects related to billing, invoicing, payment processing, cost analysis, and more.

▶ **When it comes to getting insights from your data, what top 3 challenges does your organization struggle with most?**



1.82

We struggle to scale financial investments

▶ **What areas are you having the most difficulty in finding a use case for AI?**



44%

Streamlining financial operations
(i.e., billing, invoicing, payment processing, cost analysis, etc.)

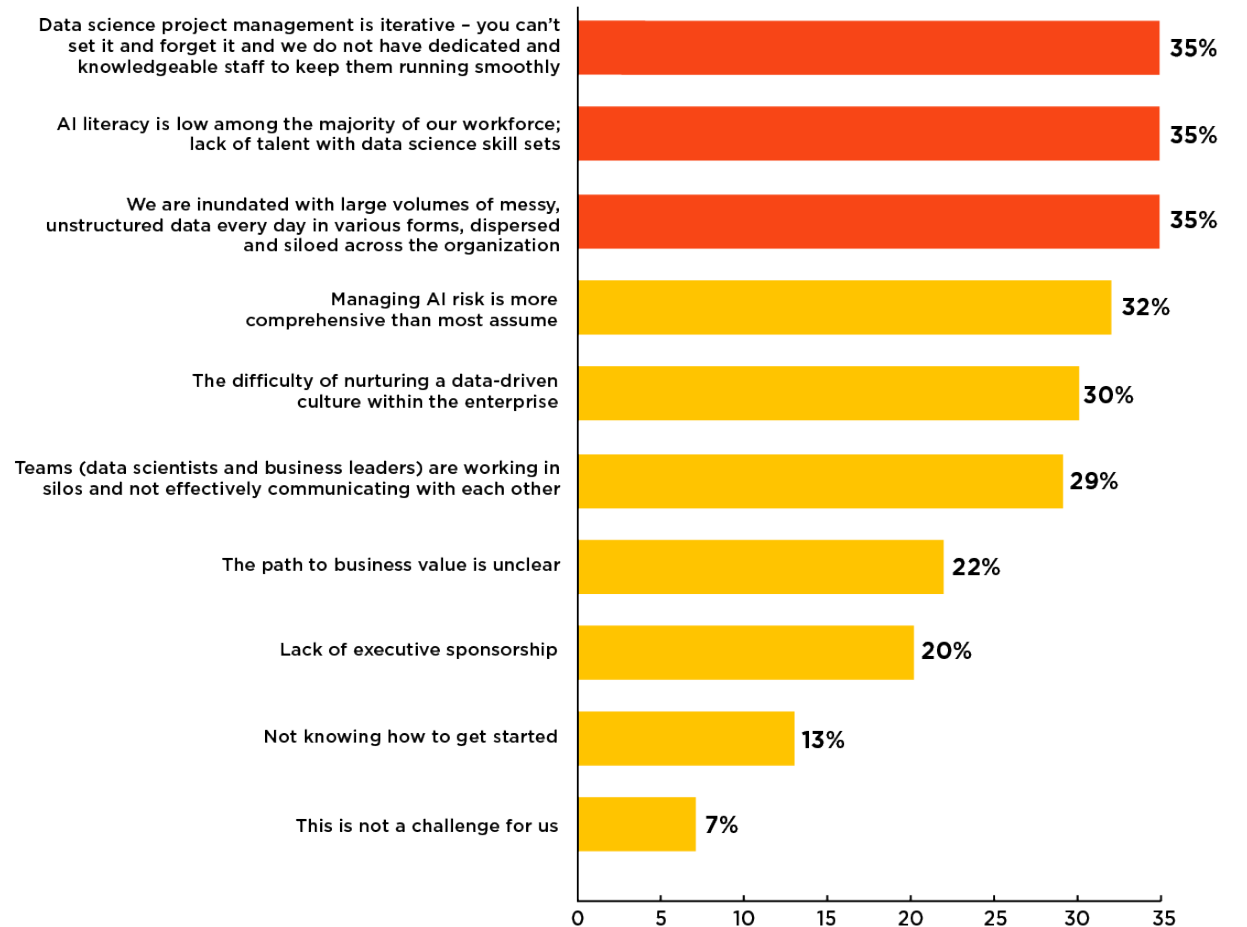
Below, you can see what factors respondents identify as top challenges that prevent them from leveraging their financial investment in AI strategies.

Lastly, because of these financial sources of friction, **40% of respondents said they've wasted money as a result of an AI project-related failure within the past year.**

► **What negative impacts, if any, has your organization faced due to an AI related failure within the past 12 months?**



► **What are some common challenges your business faces in leveraging the value of its financial investment in AI? Select all that apply.**



Section 4 Key Takeaways

- **44% of respondents have difficulty finding use cases for large-scale AI projects** — this includes projects related to billing, invoicing, payment processing, cost analysis, and more.
- **25% of respondents cited financial constraints as a point of friction that negatively affects AI initiatives within their organization.** In addition, 28% said their leadership is too focused on the strategies' upfront costs to understand how investing in AI and machine learning would benefit their organization.
- **40% of respondents said that they've wasted money as a result of an AI project-related failure within the past year.**



SECTION 5

ORGANIZATIONAL ROLE BREAKDOWN

Section 5: Organizational Role Breakdown

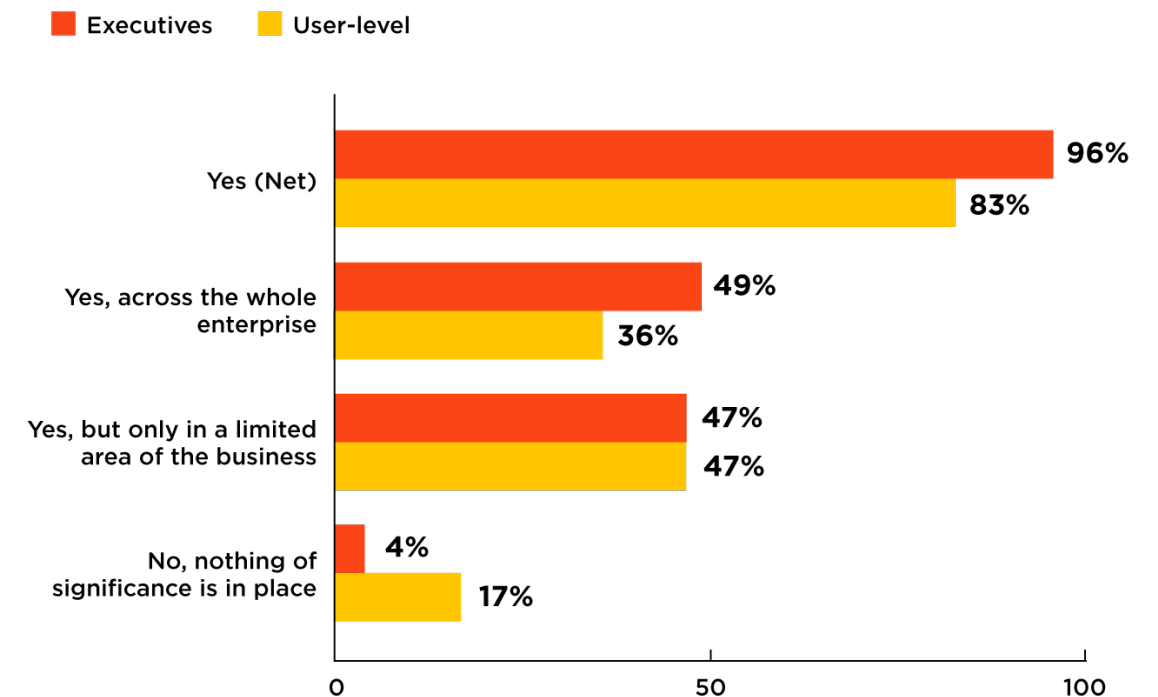
As in any organization, executive-level and user-level employees see things differently. That means these two different populations can have varying opinions on how data and AI strategies should be implemented, where friction is coming from, how friction could be eliminated, and more. It’s important for teams to be in alignment so work can get done smoothly, quickly, and ahead of schedule, so everyone gets the most out of the organization’s investments. When departments, teams, and individuals aren’t in alignment, this is a significant and persistent cause of one of the main types of friction — organizational friction.

In this section, we’ll analyze the data as segmented by organizational role to see what, if any, differences lie between executive-level and user-level employees when it comes to friction within organizational data and AI strategies.

It’s important to begin by noting that both executive-level and user-level employees agree on the difficulties of finding data science talent — the groups said their organizations struggle to find enough data science talent at nearly identical rates (74% and 75%, respectively).

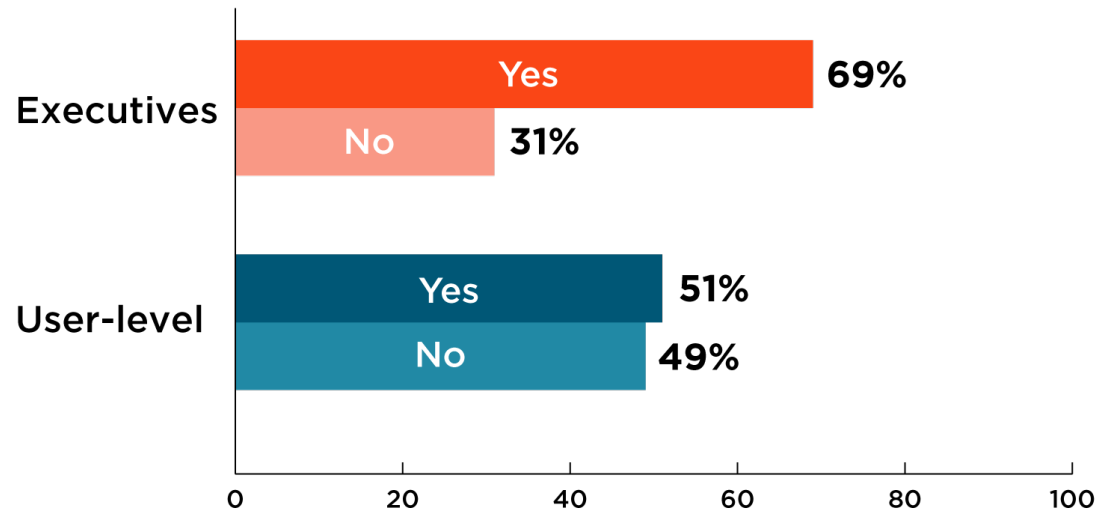
And as discussed in Section 2, this is why most organizations create dedicated data science enablement programs to upskill current employees. However, the data suggests that executive-level and user-level employees don’t see eye to eye on these programs’ efficacy. **Overall, 96% of executive-level respondents said there was some sort of structured data science enablement program in place at their organization, while just 83% of user-level employees said the same.** Flipping the question, that means just 4% of executive-level employees said there was no data science program in place, compared to 17% of user-level employees. This is a significant disconnect between the two groups and may itself be a cause of organizational friction.

► **Do you have a structured data science enablement program in place?**



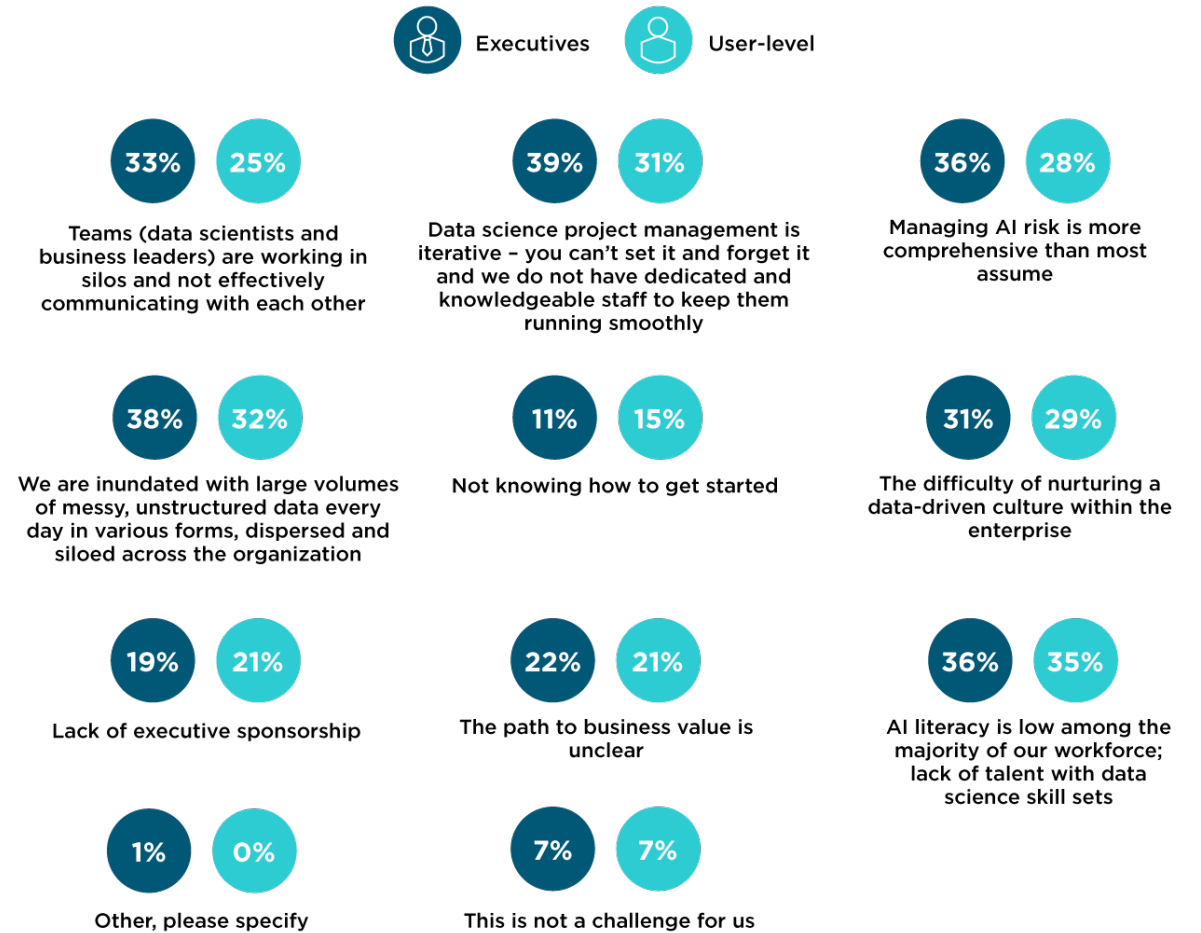
However, that wasn't the only response that revealed a disconnect between executives and users. **When asked if they believe their organization can scale AI projects without training domain experts in data science, 69% of executives said "yes," while just 51% of users said the same.**

- ▶ Do you believe you can scale AI projects without training your domain experts to embrace data science?



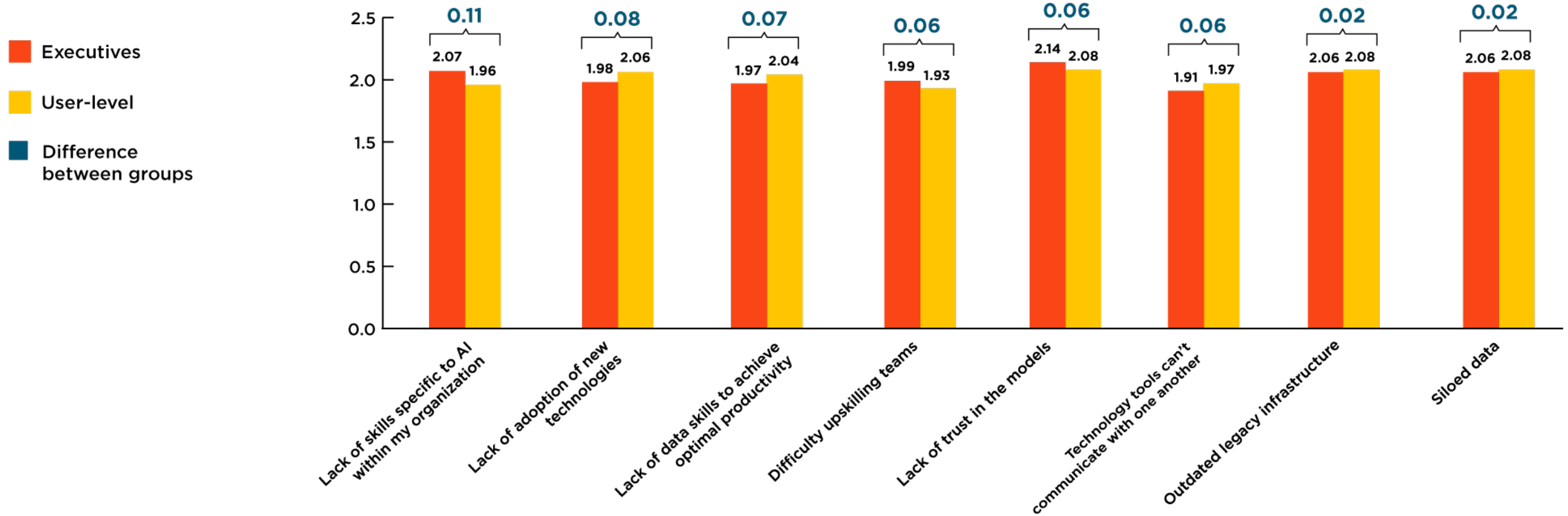
Additionally, though varying by a smaller margin, more **executives (33%) believe teams are working in silos and not communicating effectively across teams compared to user-level employees (25%).**

- ▶ What are some common challenges your business faces in leveraging the value of its financial investment in AI?



Below, you can see how executives' and users' views differ slightly on what they believe hinders their organization's ability to deploy effective organizational AI strategies.

► Which of the following obstacles limit your organization's ability to deploy AI?

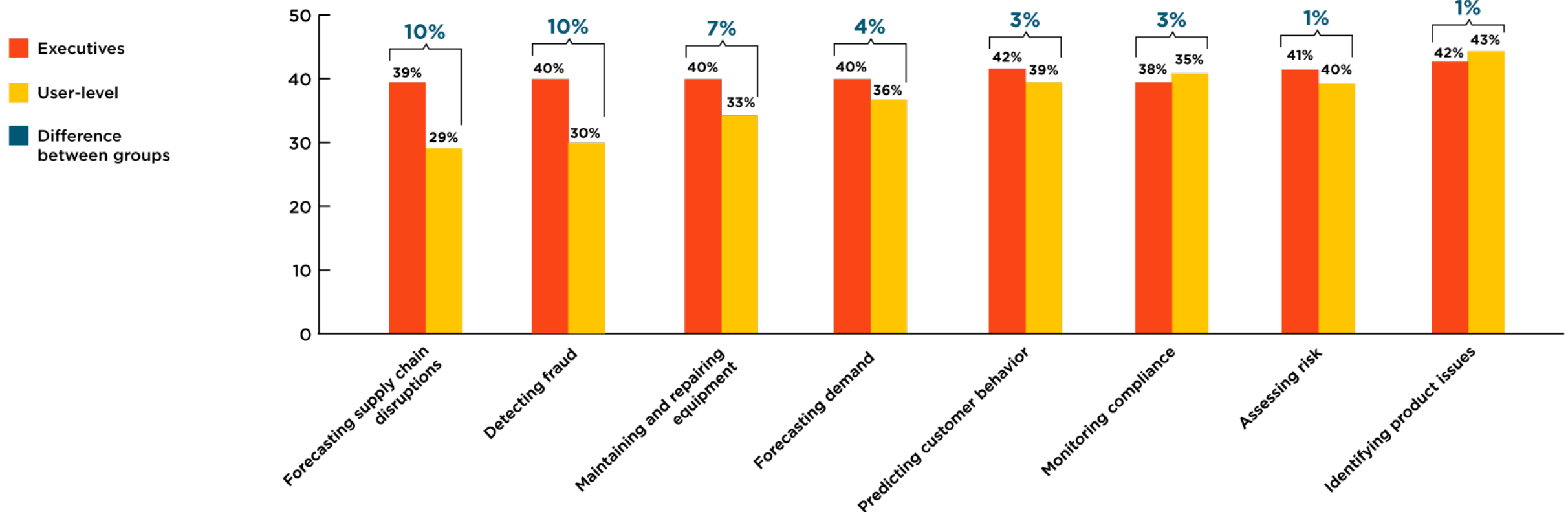


Here, you can see how executives' and users' views differ on what challenges they believe can be solved with AI within their organization.

► **What inefficiencies is your organization experiencing that could be improved with AI?**

There are also, however, many areas of alignment between these two groups.

In general, executives and users are aligned on the challenges that teams and organizations face and understand a lack of talent leads to a great deal of organizational friction. For example, they showed nearly identical responses when asked what percent of data science projects hadn't made it to production within the past two years — both groups said that more than half of such projects failed (33% and 32%, respectively). They also believed their organization makes working with AI tools more complicated than it needs to be (65% and 60%, respectively).



Section 5 Key Takeaways

- Both executive-level and user-level employees agree on the difficulties of finding data science talent — **the groups said their organizations struggle to find enough data science talent at nearly identical rates (74% and 75%, respectively).**
- **Overall, 96% of executive-level respondents said there was some sort of structured data science enablement program in place at their organization, while just 83% of user-level employees said the same.** Flipping the question, **that means just 4% of executive-level employees said there was no data science program in place, compared to 17% of user-level employees.** This is a significant disconnect between the two groups and may itself be a cause of organizational friction.
- Executives may be more optimistic — or less realistic — about their organization’s ability to scale AI projects without the help of data science-savvy domain experts. **When asked if they believe their organization can scale AI projects without training domain experts in data science, 69% of executives said “yes,” while just 51% of users said the same.**



SECTION 6

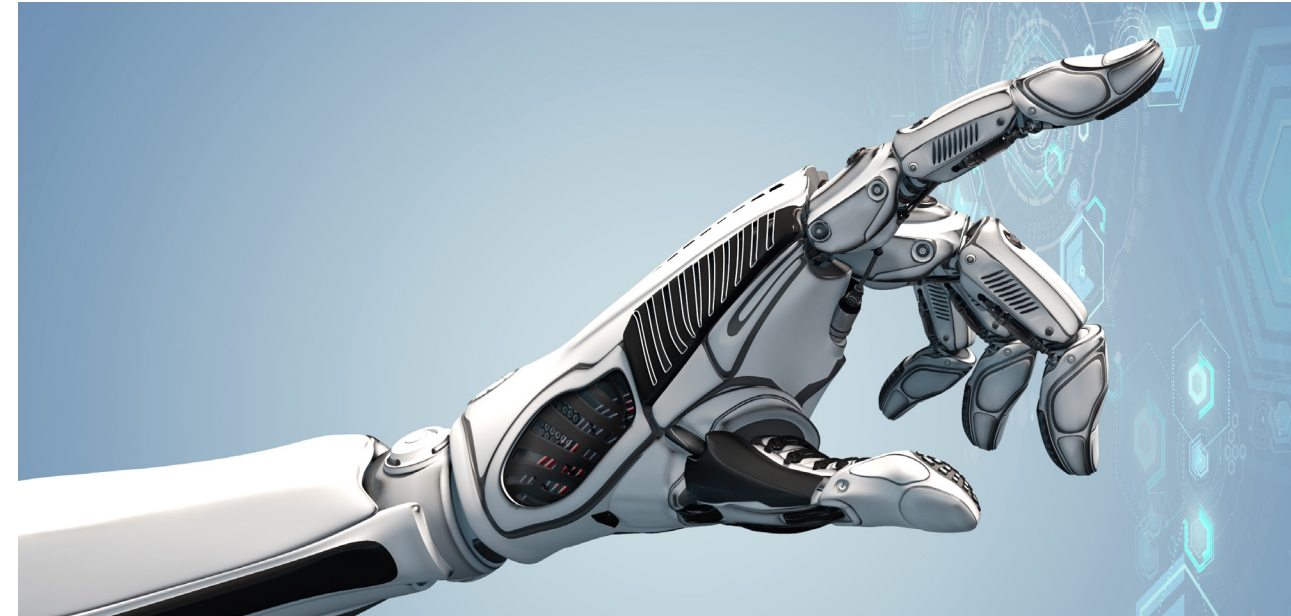
GEOGRAPHICAL LOCATION BREAKDOWN

Section 6: Geographical Location Breakdown

In this section, we'll examine what differences exist among various geographical regions as it pertains to organizational data and AI strategies. The data from this section revealed that international regions and countries vary on their use of organizational data and AI strategies, perceive and experience friction differently, and are looking to scale their existing strategies in different ways. Overall, the data suggests that respondents from the APAC region — China in particular — are looking to learn more about organizational data and AI strategies, implement them, reduce friction, and more within the near future.

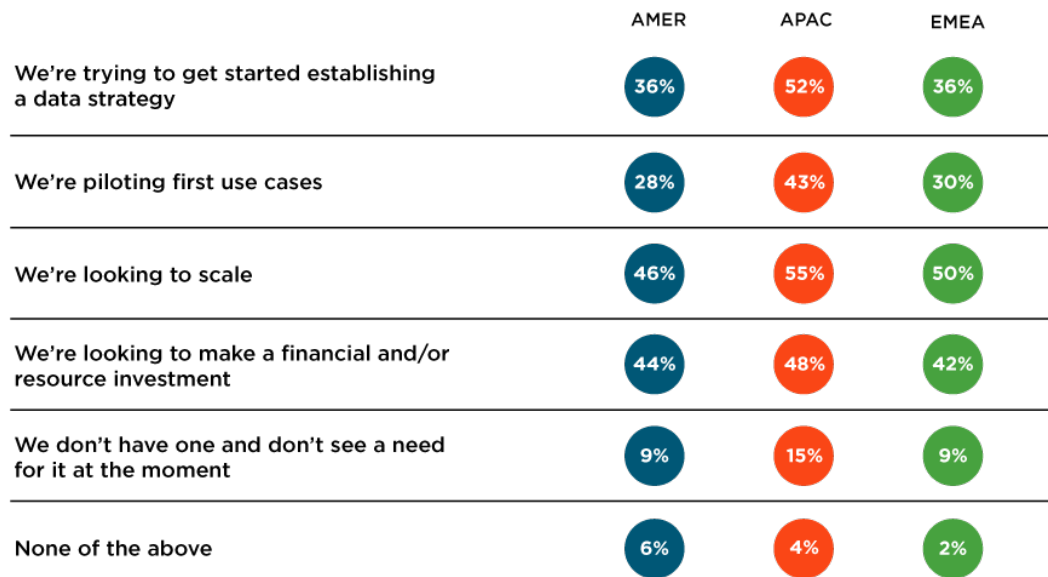
Regional Insight

First off, **respondents from the APAC region were most likely to say their organization is looking to establish data strategies, scale organizational data and AI strategies, and pilot first use cases compared to respondents in the AMER and EMEA regions.**

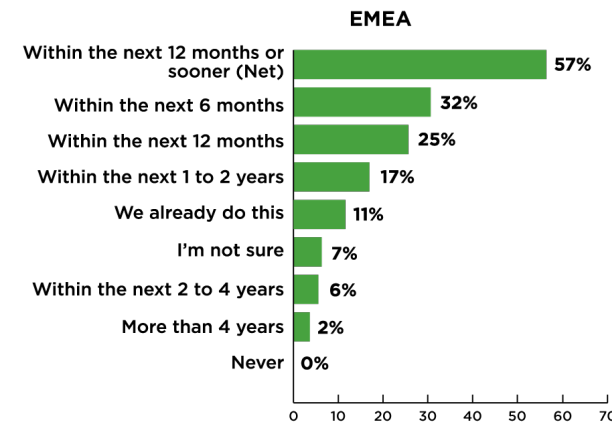
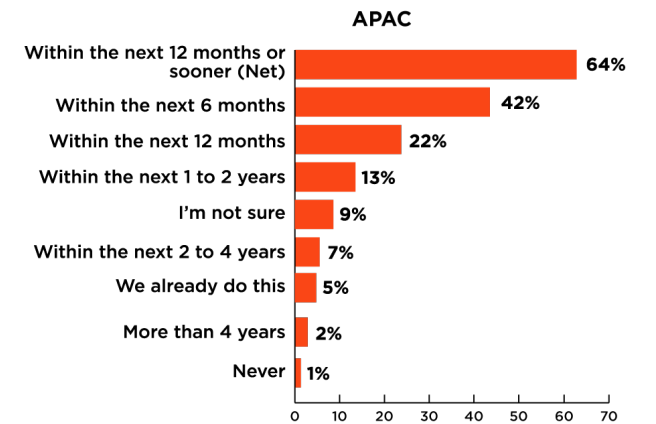
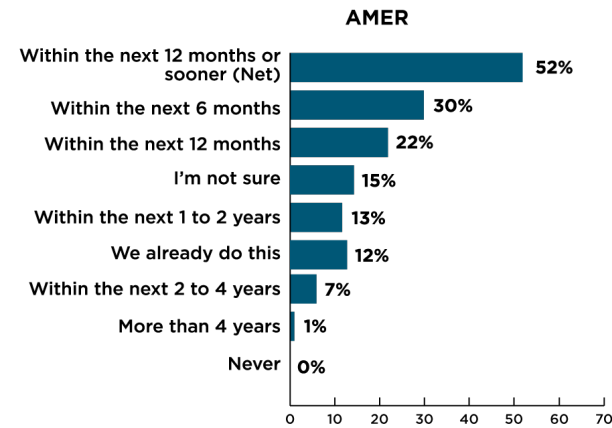


In addition, **respondents from the APAC region were also the most likely to say they believe their organization will start to implement AI for large-scale projects within the next year or sooner.** The data also showed that APAC respondents were the least likely to already be using AI for large-scale projects. This suggests the region and its organizations are looking to scale quickly to make up a gap in adoption and implementation.

► **Where is your company on its data strategy?**

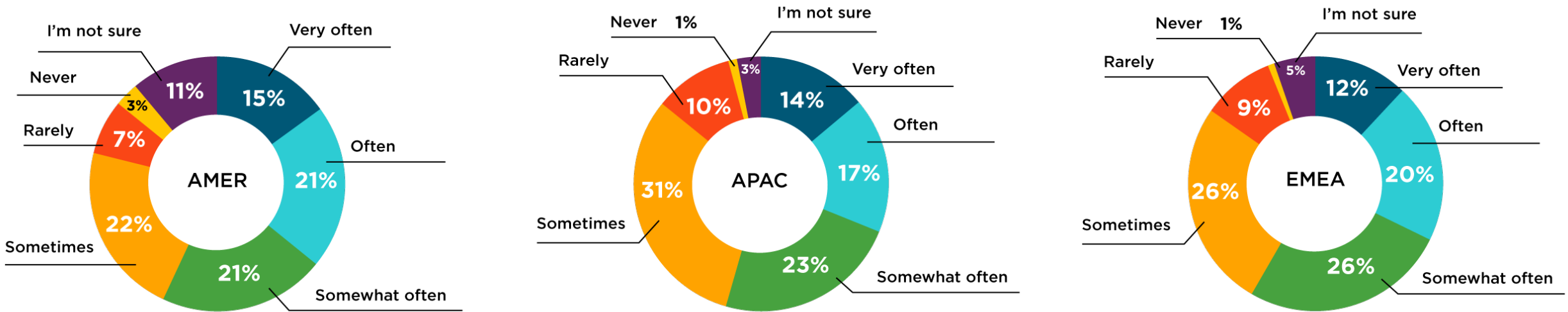


► **When will your organization start to implement AI for large scale projects?**



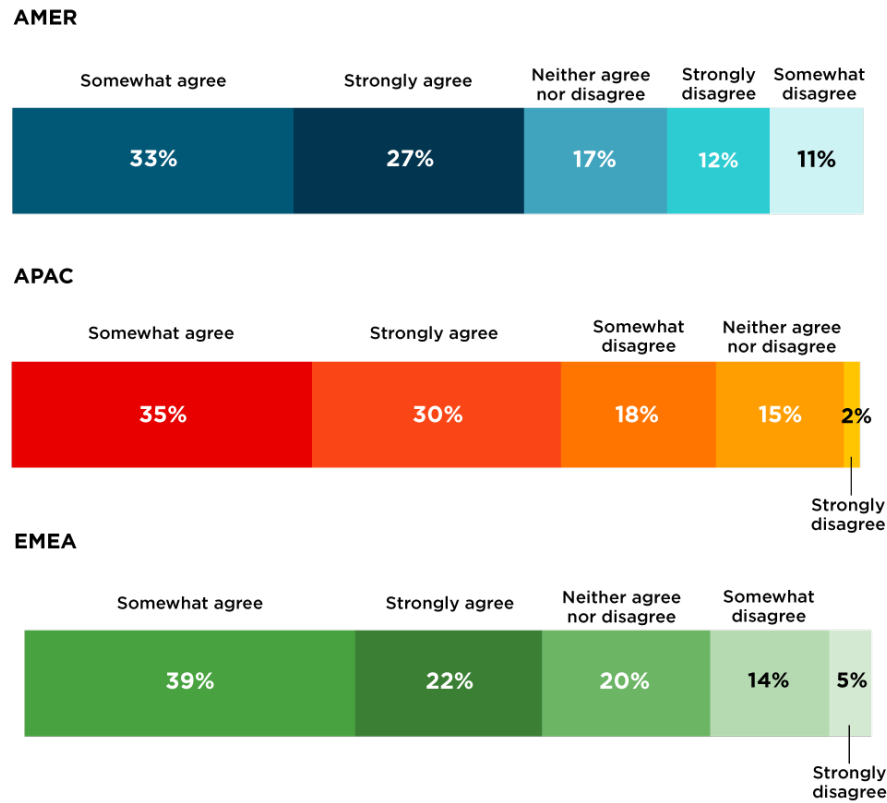
Overall, respondents from the three major international regions all indicated that they encountered limitations that slow their AI initiatives at roughly the same rate. This result suggests that friction is a worldwide problem that affects organizations no matter where they're located.

► How often does your organization face limitations that are slowing down AI initiatives?



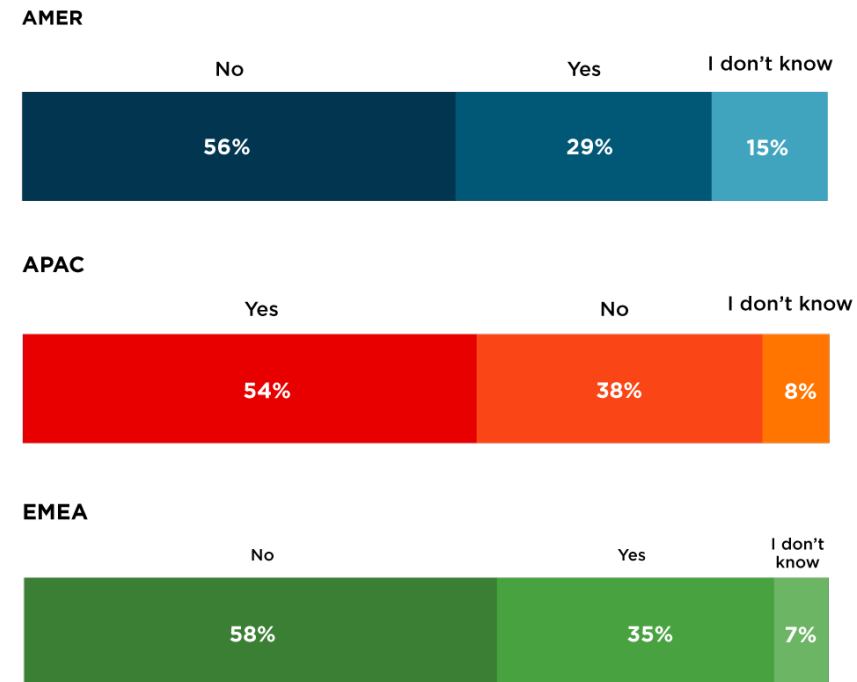
The same sentiment revealed itself when respondents were asked if they feel their organization makes working with AI tools more complicated than it needs to be.

- ▶ To what extent do you agree or disagree with the following statement: Our organization tends to make working with AI tools more complicated than needed.



However, the data suggests that **respondents from the AMER region were far less likely to have experienced an AI failure within the past two years (29%) compared to the APAC (54%) and EMEA (35%) regions.**

- ▶ Have you experienced an AI failure within the past 24 months?



The data also suggests **respondents from the AMER region (80%) were less likely to have a structured data science enablement program in place compared to respondents from the APAC (91%) and EMEA (90%) regions.** Overall, the AMER region proportion for this question was nine points lower than the overall survey average.

► Do you have a structured data science enablement program in place?

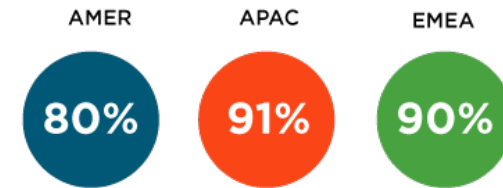
Yes, but only in a limited area of the business



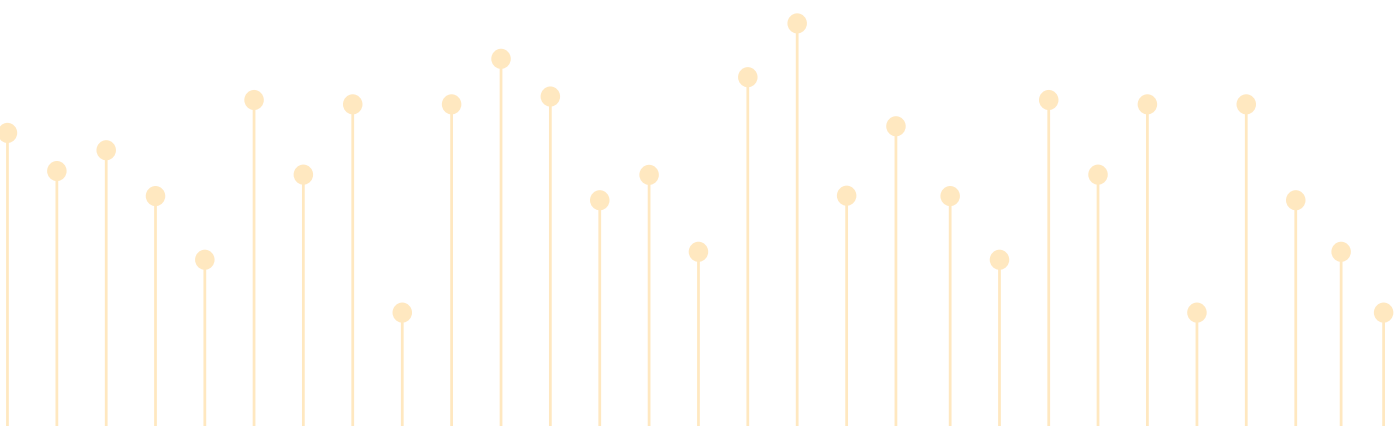
Yes, across the whole enterprise



Yes (Net)

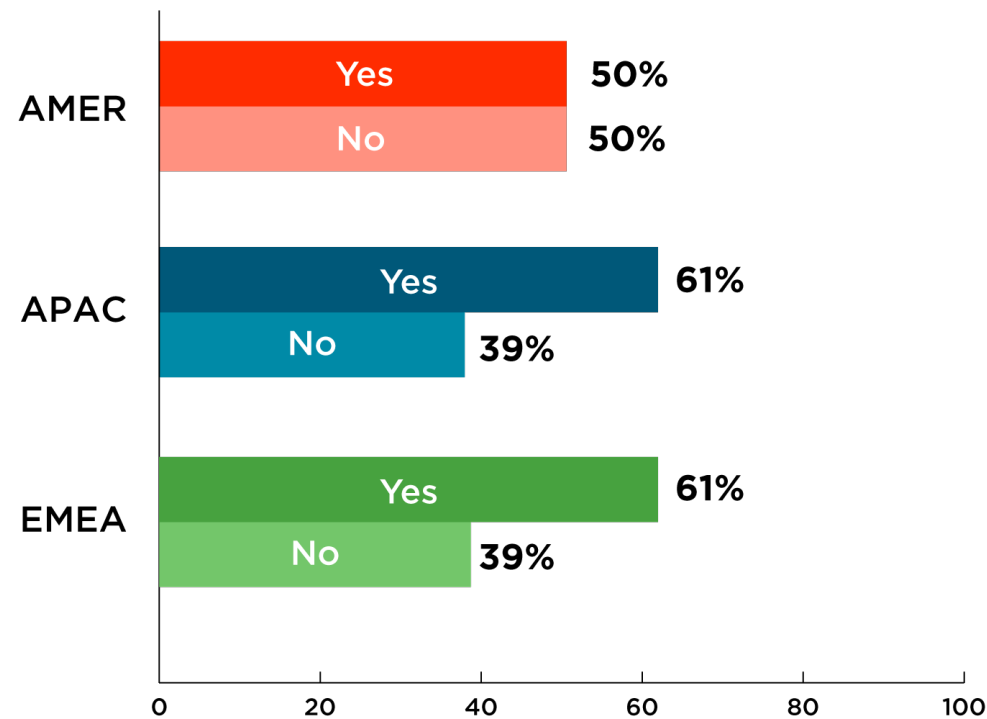


No, nothing of significance is in place



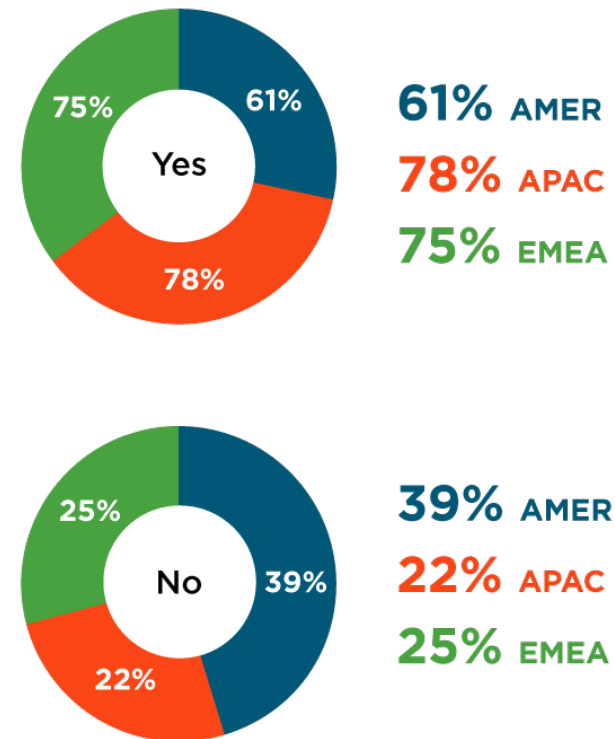
In addition, it appears that respondents from the APAC and EMEA regions (both 61%) were more optimistic they can scale AI projects without training domain experts in data science than respondents from the AMER region (50%).

► Do you believe you can scale AI projects without training your domain experts to embrace data science?



As covered in previous sections, it's no secret that finding data science talent is a struggle for all organizations. The data suggests that this problem is more pronounced in the APAC and EMEA regions than it is in the AMER region — **overall, 78% of APAC respondents and 75% of EMEA respondents said they struggle to find enough data science talent compared to just 61% of AMER respondents.** Regardless of discrepancies however, it's clear there's widespread consensus on the overall shortage of talent in this regard.

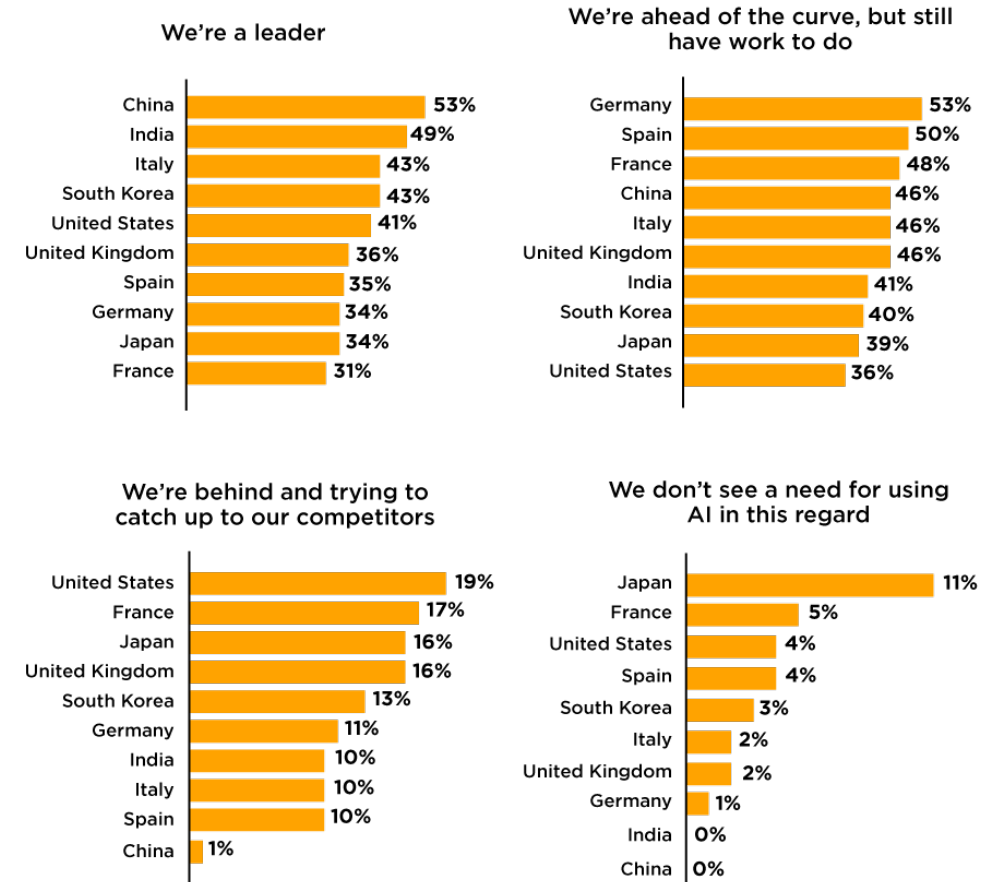
► Do you struggle to find enough data science talent?



Countries Insight

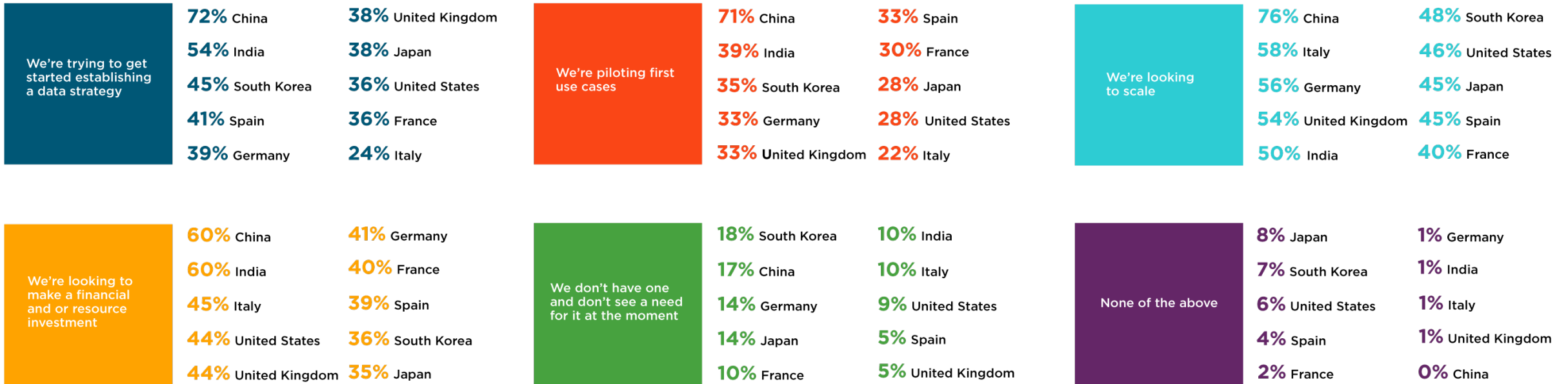
Let's examine individual countries in greater detail. According to the data, respondents from China and India — two APAC nations — were the most likely to feel their organizations were AI and digital transformation leaders. On the other hand, respondents from the U.S. were most likely to feel their organization was lagging behind the competition along with France and the U.K. Below you can see the detailed results from this question.

► When it comes to your organization, how would you describe your approach to using AI and data to propel digital transformation?



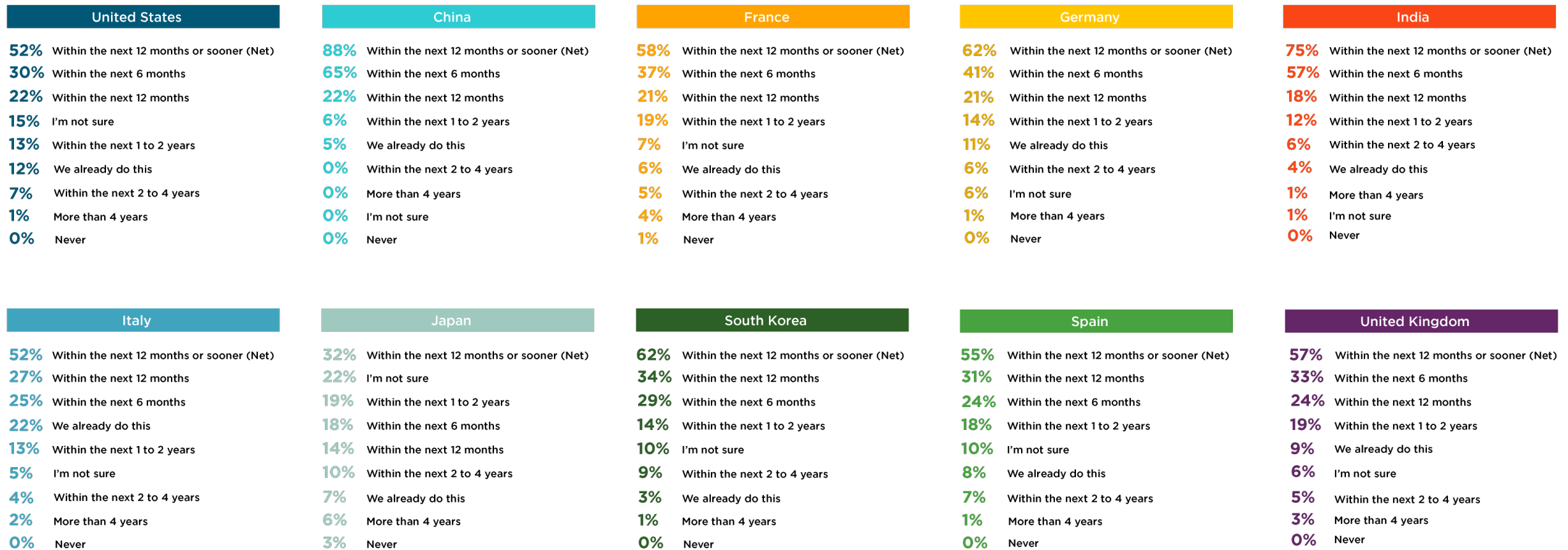
Building off the previous question, respondents from China and India were also the most likely to say their organizations are currently looking to establish and implement an organizational data and AI strategy. China’s role in this question is of particular interest — **respondents from China were by far the most likely to indicate that their organizations are trying to establish a data strategy, pilot first use cases, looking to scale, and make investments in data and AI strategies.** At the same time, they were also the second-most likely country behind South Korea to say their organization doesn’t have a data and AI strategy and doesn’t see a current need for one.

► Where is your company on its data strategy?



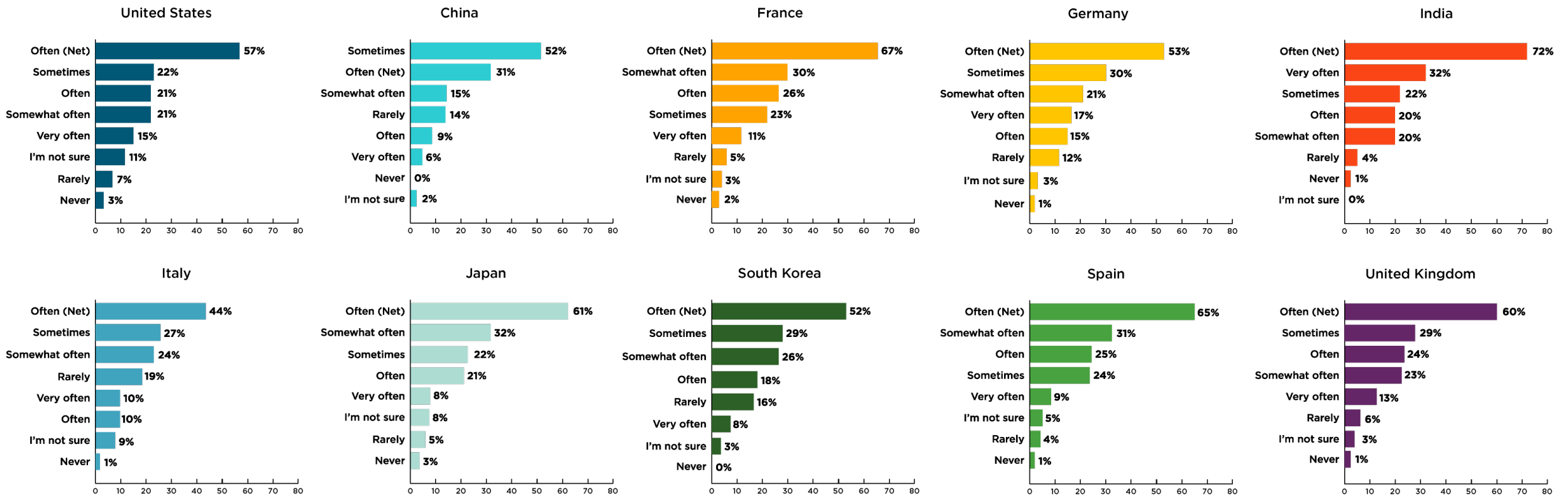
Regarding when their organization plans to adopt AI for large-scale projects, three APAC countries lead the way. **China (88%), India (75%), and South Korea (62%) were the most likely nations to have adopted AI for large-scale projects within the next year or sooner.** Respondents from Italy (22%), the U.S. (12%), and Germany (11%) were the most likely to say their organization already uses AI for large-scale projects.

► **When will your organization start to implement artificial intelligence (AI) for large scale projects?**



As mentioned earlier, experiencing limitations that slow down data and AI initiatives is very common around the world. Below, you can see how respondents from each country indicated how often they face these types of obstacles. In addition, you can see what each country indicated these obstacles are.

► How often does your organization face limitations that are slowing down AI initiatives?

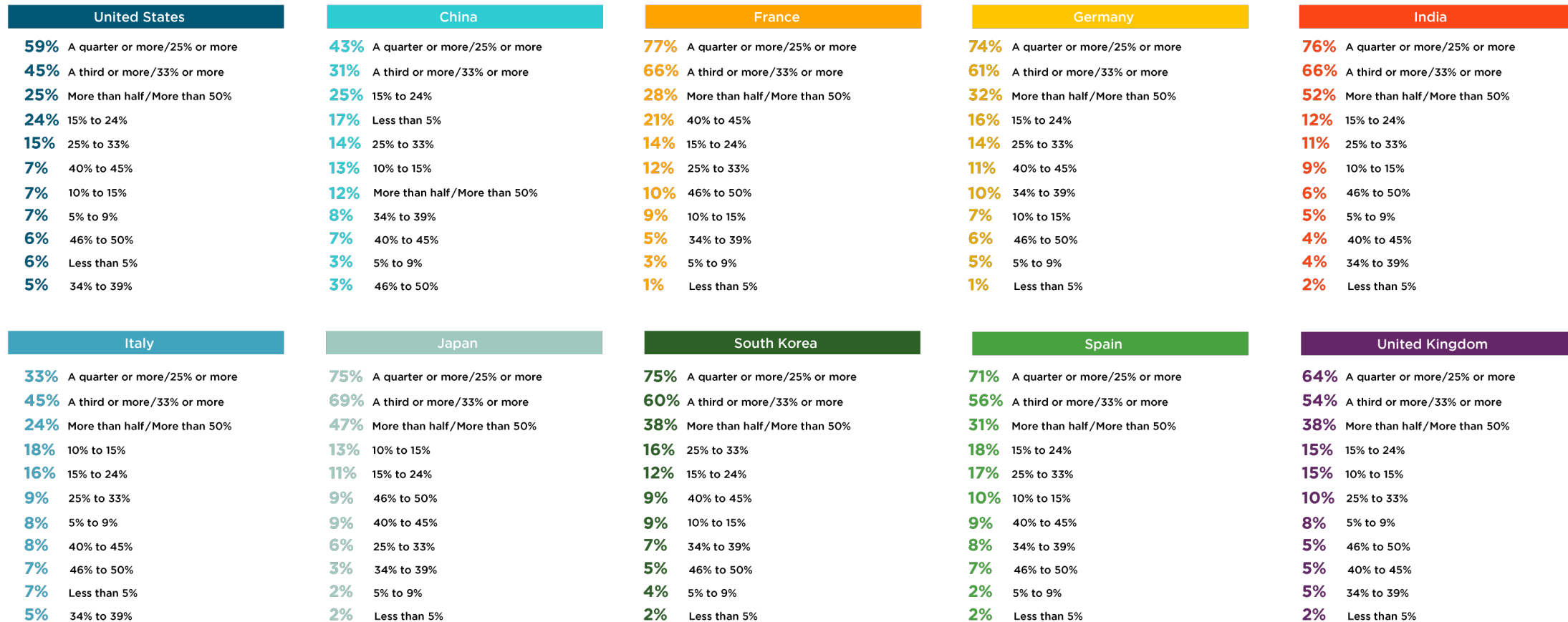


► Which of the following obstacles limit your organization’s ability to deploy AI?

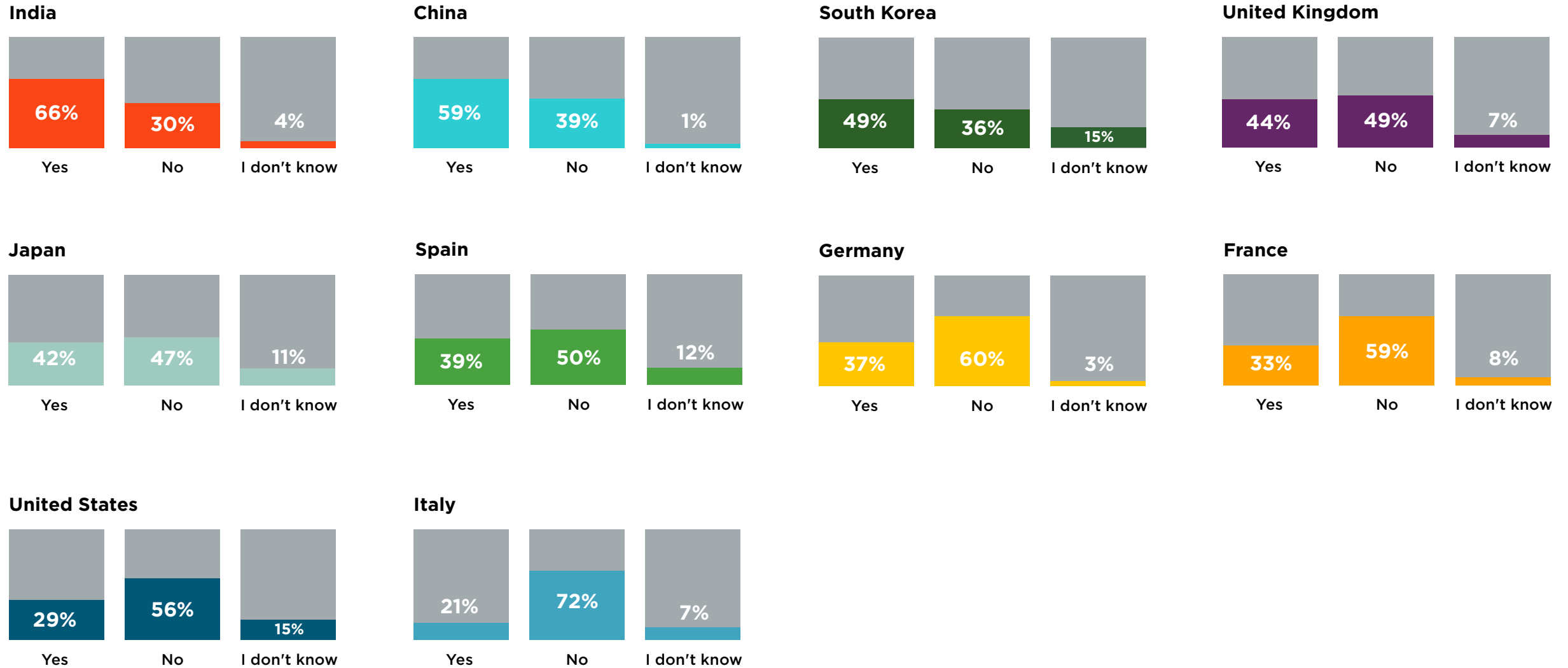
United States	China	France	Germany	India
1.97 Lack of adoption of new technologies	2.06 Lack of adoption of new technologies	2.15 Lack of adoption of new technologies	1.98 Lack of adoption of new technologies	1.94 Lack of adoption of new technologies
2.00 Difficulty upskilling teams	1.88 Difficulty upskilling teams	1.97 Difficulty upskilling teams	1.91 Difficulty upskilling teams	2.01 Difficulty upskilling teams
2.13 Siloed data	2.06 Siloed data	2.18 Siloed data	2.01 Siloed data	2.00 Siloed data
1.91 Technology tools can't communicate with one another	1.96 Technology tools can't communicate with one another	1.91 Technology tools can't communicate with one another	1.87 Technology tools can't communicate with one another	1.94 Technology tools can't communicate with one another
2.06 Outdated legacy infrastructure	2.03 Outdated legacy infrastructure	1.98 Outdated legacy infrastructure	2.12 Outdated legacy infrastructure	2.14 Outdated legacy infrastructure
2.08 Lack of trust in the models	2.06 Lack of trust in the models	2.18 Lack of trust in the models	2.15 Lack of trust in the models	2.11 Lack of trust in the models
1.83 Lack of data skills to achieve optimal productivity	2.10 Lack of data skills to achieve optimal productivity	1.92 Lack of data skills to achieve optimal productivity	2.03 Lack of data skills to achieve optimal productivity	2.00 Lack of data skills to achieve optimal productivity
2.19 Lack of skills specific to AI within my organization	1.93 Lack of skills specific to AI within my organization	1.97 Lack of skills specific to AI within my organization	2.04 Lack of skills specific to AI within my organization	1.96 Lack of skills specific to AI within my organization
Italy	Japan	South Korea	Spain	United Kingdom
1.89 Lack of adoption of new technologies	2.18 Lack of adoption of new technologies	1.99 Lack of adoption of new technologies	2.00 Lack of adoption of new technologies	2.0938 Lack of adoption of new technologies
1.96 Difficulty upskilling teams	2.01 Difficulty upskilling teams	1.92 Difficulty upskilling teams	1.97 Difficulty upskilling teams	1.97 Difficulty upskilling teams
2.20 Siloed data	1.94 Siloed data	2.02 Siloed data	2.16 Siloed data	2.04 Siloed data
2.20 Technology tools can't communicate with one another	2.00 Technology tools can't communicate with one another	1.93 Technology tools can't communicate with one another	1.67 Technology tools can't communicate with one another	2.02 Technology tools can't communicate with one another
1.96 Outdated legacy infrastructure	2.07 Outdated legacy infrastructure	2.27 Outdated legacy infrastructure	2.12 Outdated legacy infrastructure	1.96 Outdated legacy infrastructure
2.22 Lack of trust in the models	2.00 Lack of trust in the models	2.16 Lack of trust in the models	2.09 Lack of trust in the models	1.98 Lack of trust in the models
2.00 Lack of data skills to achieve optimal productivity	2.03 Lack of data skills to achieve optimal productivity	1.94 Lack of data skills to achieve optimal productivity	2.13 Lack of data skills to achieve optimal productivity	2.0909 Lack of data skills to achieve optimal productivity
1.94 Lack of skills specific to AI within my organization	2.03 Lack of skills specific to AI within my organization	1.98 Lack of skills specific to AI within my organization	2.04 Lack of skills specific to AI within my organization	2.01 Lack of skills specific to AI within my organization

Examining the country-specific data, **the numbers suggest that respondents from India experience a disproportionate amount of data and AI failures, and that they're more likely to believe their organization makes the data and AI process more difficult than it needs to be.**

► **What percent of your organization's data science projects have NEVER made it to production within the past 24 months?**



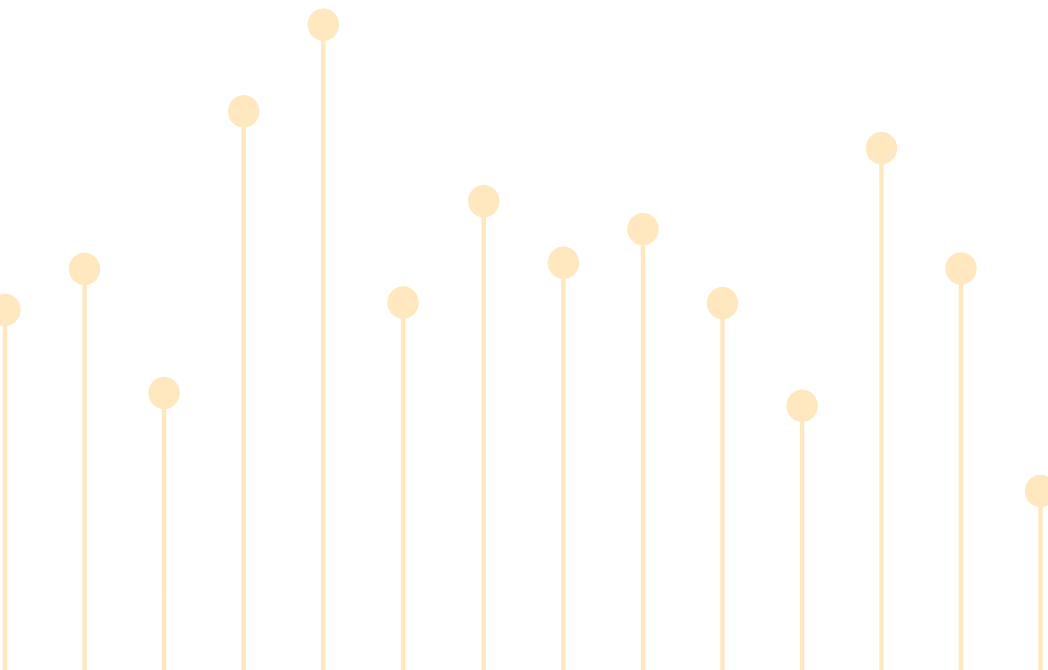
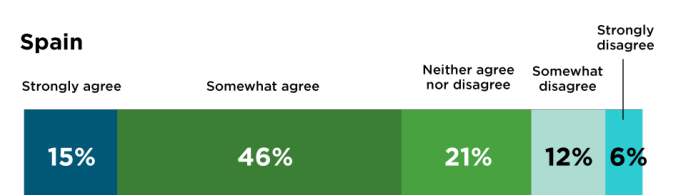
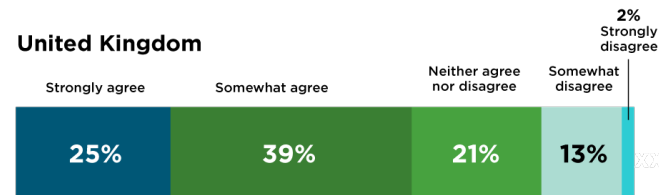
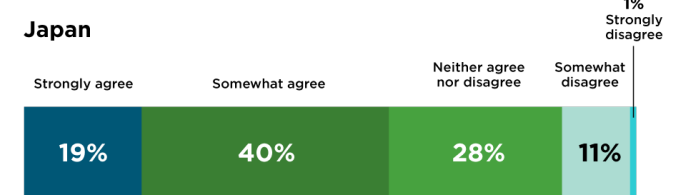
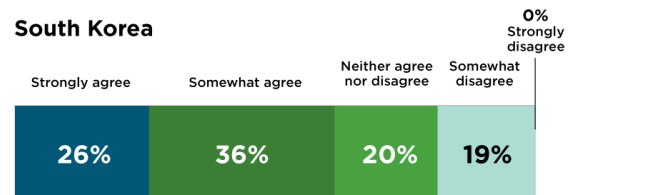
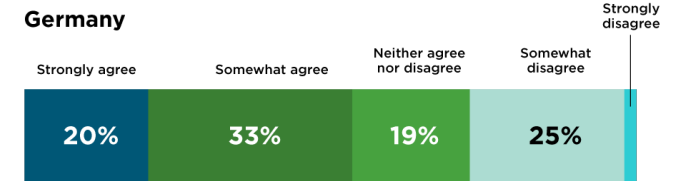
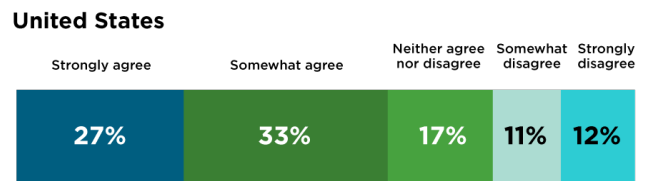
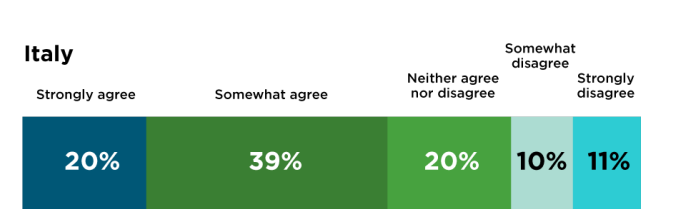
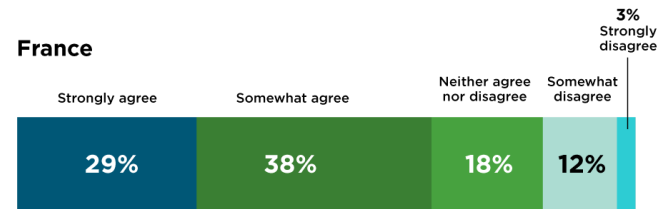
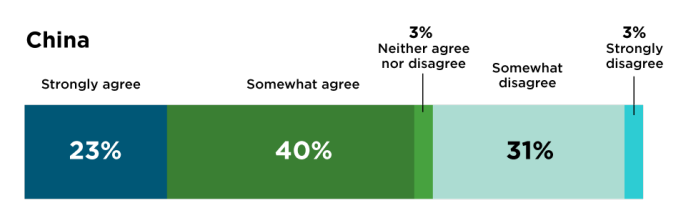
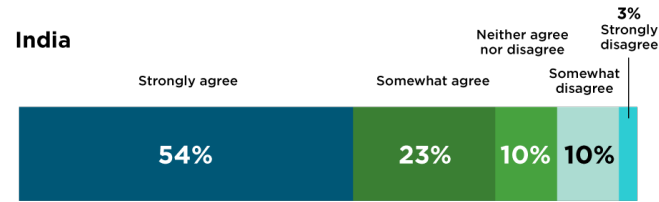
► Have you experienced an AI failure within the past 24 months?



► What percent of your organization’s AI projects failed within the past 24 months?

	India	Spain	Japan	United States	South Korea	United Kingdom	Germany	France	China	Italy
25% or more	73%	69%	57%	58%	59%	68%	64%	43%	20%	63%
33% or more	63%	54%	49%	47%	38%	50%	47%	32%	15%	51%
More than 50%	45%	36%	35%	33%	28%	26%	15%	14%	4%	10%
46% to 50%	5%	3%	7%	3%	1%	6%	8%	5%	2%	22%
40% to 45%	8%	12%	1%	5%	2%	9%	15%	9%	4%	17%
34% to 39%	5%	3%	5%	5%	7%	9%	7%	5%	4%	2%
25% to 33%	9%	15%	9%	12%	21%	18%	19%	11%	7%	12%
15% to 24%	15%	12%	25%	18%	29%	22%	16%	28%	31%	17%
10% to 15%	9%	15%	17%	17%	14%	8%	18%	26%	28%	17%
5% to 9%	5%	4%	9%	7%	3%	1%	7%	5%	14%	2%
Less than 5%	0%	0%	0%	3%	0%	2%	0%	3%	8%	2%

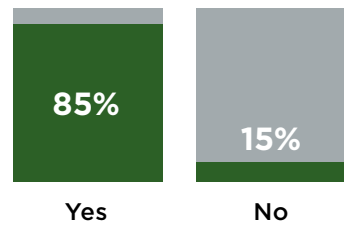
► To what extent do you agree or disagree with the following statement: **Our organization tends to make working with AI tools more complicated than needed.**



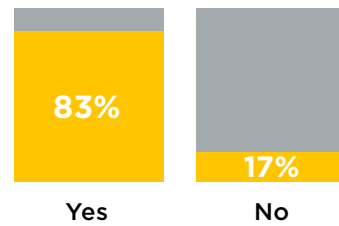
Returning to the question of finding data science talent, you can see how each country felt about acquiring talent, creating data science programs for existing employees, and how confident organizations are that they can scale AI initiatives without training domain experts in data science.

► Do you struggle to find enough data science talent?

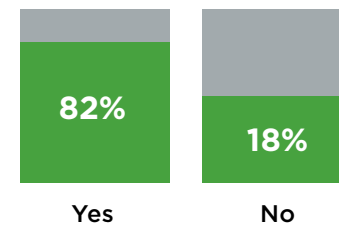
South Korea



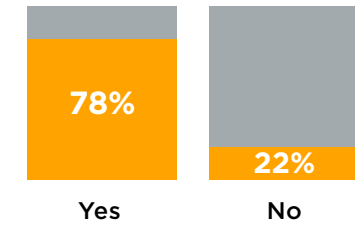
Germany



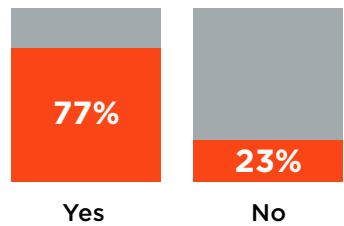
Spain



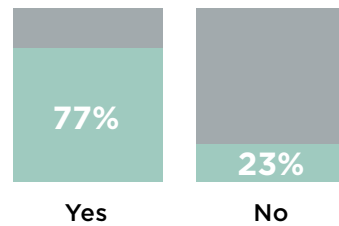
France



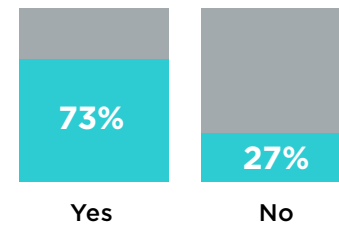
India



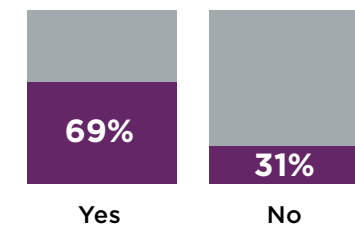
Japan



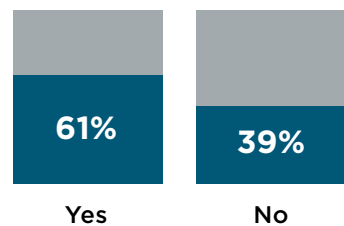
China



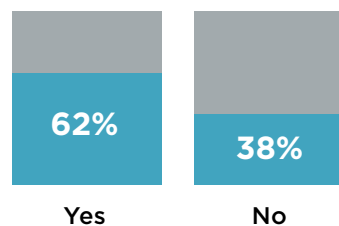
United Kingdom



United States



Italy



► Do you have a structured data science enablement program in place?

Yes, but only in a limited area of the business

59% South Korea	49% Spain
56% United Kingdom	44% Japan
54% India	42% United States
53% France	34% Italy
52% Germany	26% China

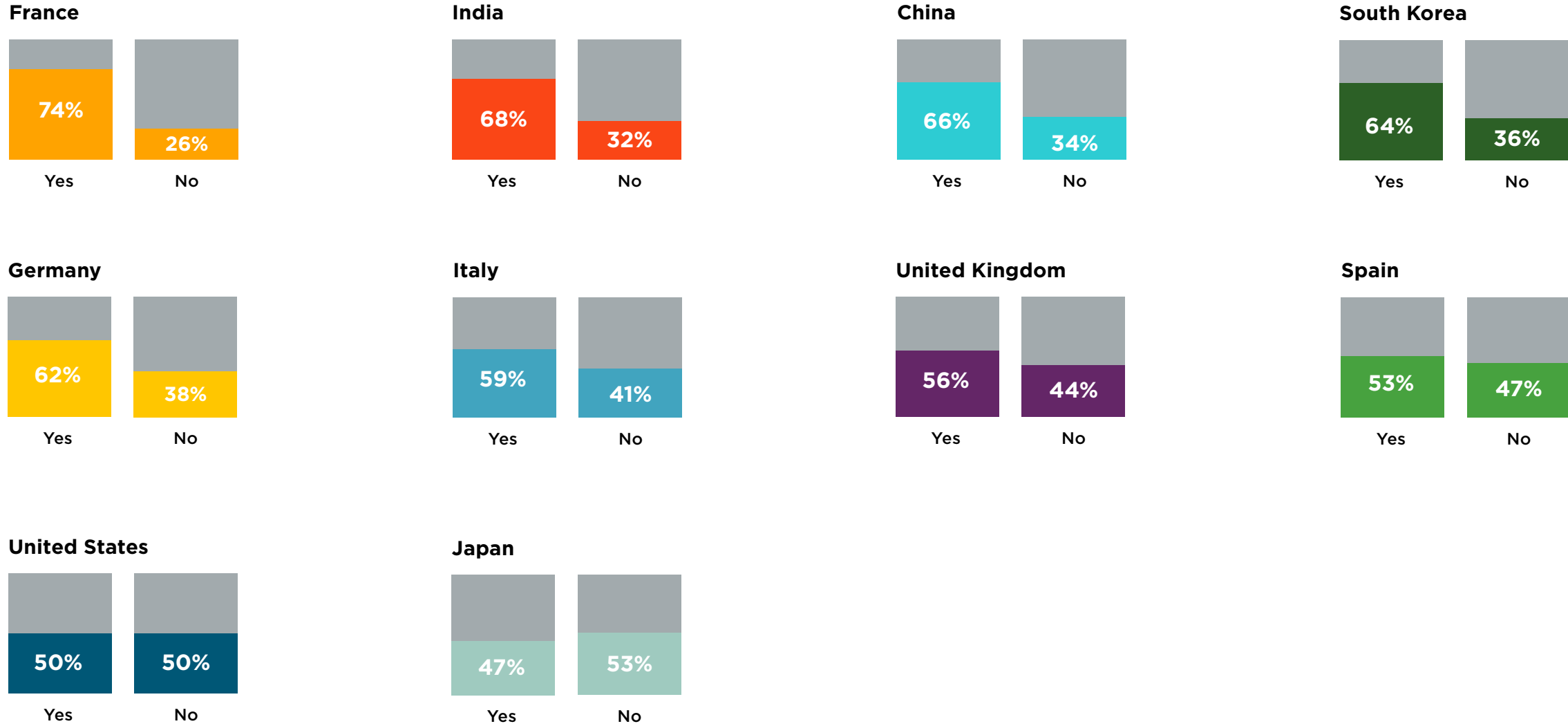
Yes, across the whole enterprise

73% China	39% Spain
56% Italy	38% United States
47% Germany	34% South Korea
44% India	30% Japan
39% France	27% United Kingdom

No, nothing of significance is in place

26% Japan	8% France
20% United States	7% South Korea
17% United Kingdom	2% India
12% Spain	1% China
9% Italy	1% Germany

► Do you believe you can scale AI projects without training your domain experts to embrace data science?



Below, you can see how organizations from each country use AI in their organizational operations. Note China’s elevated numbers for most categories.

► **What are some of the more common projects and applications where your company is using AI?**

	United States	China	France	Germany	India	Italy	Japan	South Korea	Spain	United Kingdom
Demand forecasting	21%	53%	13%	18%	33%	19%	28%	34%	31%	22%
Identifying inefficiencies in supply chains	29%	48%	14%	22%	43%	34%	26%	29%	32%	28%
Predictive maintenance	30%	55%	21%	26%	40%	31%	30%	37%	36%	24%
Product design	32%	54%	24%	18%	39%	15%	17%	28%	28%	35%
Quality assurance	32%	59%	18%	36%	54%	44%	36%	37%	45%	29%
Warranty analytics	19%	50%	16%	11%	28%	19%	18%	33%	23%	19%
Improving customer experience and predicting behavior	42%	20%	46%	39%	58%	32%	35%	27%	35%	40%
Credit risk assessment	15%	16%	19%	25%	16%	11%	10%	5%	7%	15%
Detecting security risks and potential fraud	19%	14%	26%	27%	20%	13%	9%	11%	8%	19%
Economic forecasting	13%	13%	18%	25%	15%	9%	8%	8%	5%	15%
Compliance	14%	11%	15%	21%	13%	5%	8%	6%	3%	14%
Other, please specify	1%	0%	0%	0%	0%	1%	1%	0%	0%	2%
I don't know	12%	0%	4%	1%	0%	5%	15%	3%	5%	3%

Section 6 Key Takeaways

- At the regional level, **APAC is going all-in on data and AI, despite failure rates.** Respondents from the APAC region were most likely to say their organization is looking to establish data strategies, scale organizational data and AI strategies, and pilot first use cases compared to respondents in the AMER and EMEA regions. Respondents from the APAC region were also the most likely to say they believe their organization will start to implement AI for large-scale projects within the next year or sooner.
- At the country level, **respondents from China were by far the most likely to indicate that their organizations are trying to establish a data strategy, pilot first use cases, looking to scale, and make investments in data and AI strategies.** China (88%), India (75%), and South Korea (62%) were the most likely nations to adopt AI for large-scale projects within the next year or sooner.
- **Respondents from China and India were the most likely to feel their organizations are AI and digital transformation leaders;** on the other hand, respondents from the U.S. were most likely to feel their organization is trailing the competition along with France and the U.K. That said, respondents from Italy (22%), the U.S. (12%), and Germany (11%) were the most likely to say their organization already uses AI for large-scale projects — not China or India.
- Respondents from India experience a disproportionate amount of data and AI failures, and they're more likely to believe their organization makes the data and AI process more difficult than it needs to be. **Respondents from India reported the highest proportion of frequent AI strategy obstacles (72%), two-year AI project failure rate (66%), and were the most likely nation to say that more than half of their data (52%) and AI projects (45%) from the last two years never made it to production.**

Conclusion

So, what insights did the survey findings deliver? **Above all, friction in and around organizational data and AI strategies is incredibly common within organizations worldwide, regardless of industry. This friction stems from three key areas: organizational, technological, and financial.** The good news is that organizations are taking steps to remedy these problems, but they're still facing roadblocks that frustrate them and make them feel the process is more complex than it needs to be. Let's dive in further.

First, the survey suggests that, even though many organizations face persistent data and AI strategy friction and project failure, many consider themselves to be "ahead of the curve" — if not outright leaders. Respondents from countries in the APAC region were the most likely to consider themselves leaders in digital transformation strategies. That said, the three top countries that said they're already using AI for large-scale projects were Italy, the U.S., and Germany.

Staying on the topic of organizational data and AI strategies, the results are clear that many organizations are either looking to establish new strategies and/or scale existing ones. Additionally, many respondents feel that data and AI strategy adoption is a matter of months — **59% of respondents believe their organization will begin adopting AI for large-scale projects within the next year or sooner.** 36% of those respondents believe adoption will occur in six months or sooner.

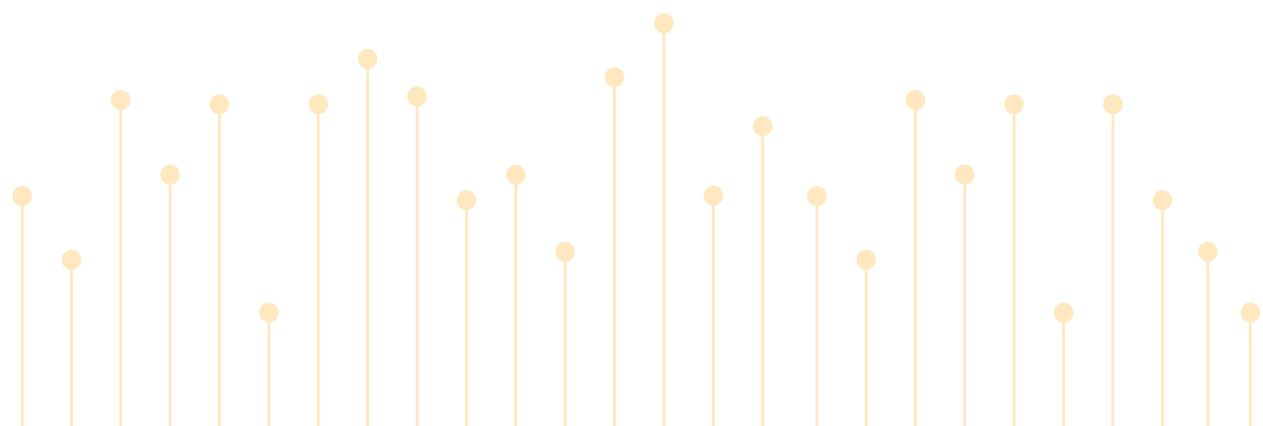
The survey also confirmed the prevalence of friction and revealed that organizations — despite taking steps to upskill employees and find new data science talent — are frustrated at frequent project slowdowns and failures. **More than any single factor, organizations from all regions agreed on a shortage of data science talent, a problem more pronounced in the APAC and EMEA regions.**

Respondents also pointed to technological factors such as outdated legacy infrastructure and siloed data as obstacles that prevent successful data and AI strategy projects. Overall, **the results revealed startlingly high numbers of data and AI projects within the past two years that never even made it to production** — a statistic that must change if organizations' digital transformations are to succeed in both the short and long term.



The survey also revealed organizational and geographical factors played a part in how organizations perceived and dealt with data and AI strategies and the friction found therein. Additionally, executive-level respondents were more optimistic about their organization's ability to scale AI projects without needing to train domain experts in data science. Whereas 69% of executives were confident this could happen, just 51% of users said the same — an 18-point gap.

In total, friction from organizational, technological, and financial sources is present and widespread, but doesn't seem to be deterring companies from implementing or scaling data and AI strategies. In fact, these initiatives seem to be growing rapidly and will soon play a greater part in organizations around the world, which begs the question: How can organizations confidently move forward and maximize their investments with so much friction hampering success?





METHODOLOGY

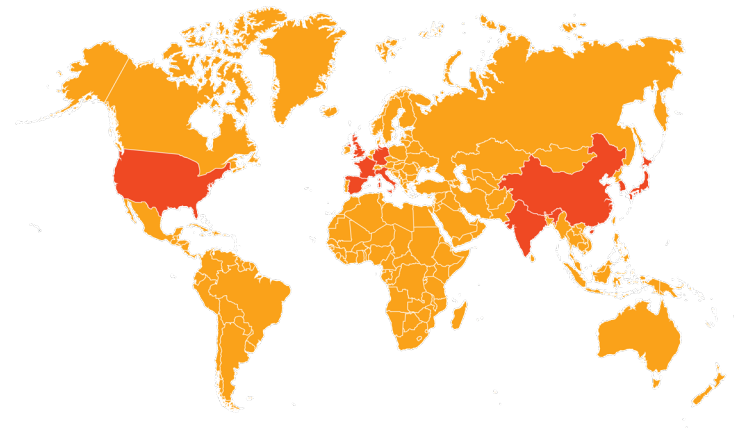
Methodology

In March 2023, Altair commissioned Atomik Research to conduct an international, online survey of 2,037 professionals employed throughout several target industries who work with data in some capacity to drive valuable insights for their organization. Target industries included:

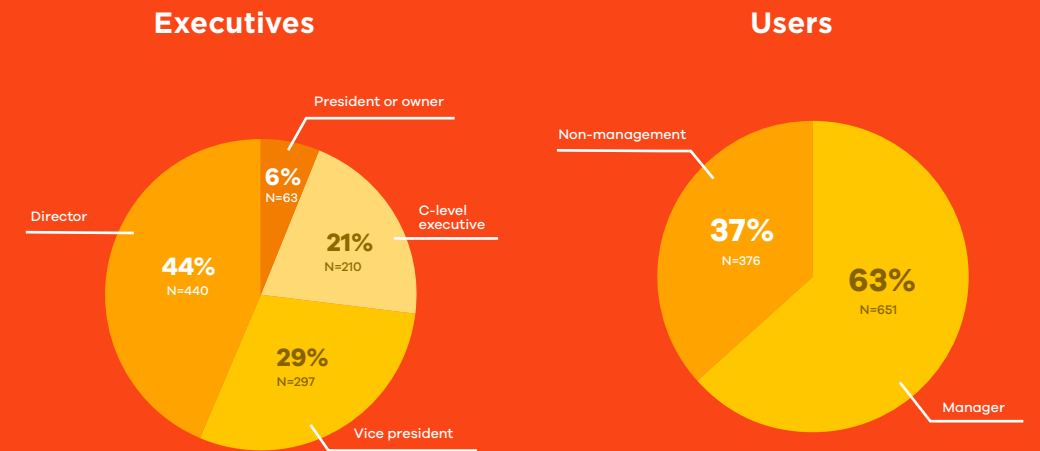
- Aerospace
- Automotive
- Banking, financial services, and insurance (BFSI)
- Consumer electronics
- Heavy/industrial equipment
- Technology

The sample group consists of respondents from ten countries. These countries include the following, where N denotes the number of respondents from each location:

- United States (N=213)
- France (N=206)
- Germany (N=203)
- United Kingdom (N=203)
- China (N=202)
- India (N=202)
- Italy (N=202)
- Japan (N=202)
- South Korea (N=202)
- Spain (N=202)



Of the 2,037 respondents, half categorized themselves as “executives” and the other half categorized themselves as “users.” User-level respondents performed technical job functions in data science, data analytics, data architecture, machine learning, financial analysis, and/or product development. All respondents work at organizations that employ 500 or more employees. Below is a positional breakdown from the respective groups:



The margin of error for the sample of executive respondents is +/- 3% with a 95% confidence interval. The margin of error for the sample of user-level respondents is +/- 3% with a 95% confidence interval. Participants had the option to take the survey in English, French, German, Hindi, Italian, Japanese, Korean, Chinese (simplified), or Spanish. Fieldwork took place between March 14-31, 2023. Atomik Research is an independent market research agency.

A hand is shown typing on a laptop keyboard. The image is overlaid with a complex digital graphic consisting of glowing yellow and orange circuit-like lines, squares, and diamonds. There are also various colored dots (blue, green, red) scattered throughout. A large, semi-transparent orange shape is on the left side, and a yellow triangle points towards the text. The background is a blurred laptop screen and keyboard.

**RESOURCES TO
REMOVE FRICTION**

Resources to Remove Friction

[Altair® RapidMiner®](#) — Altair’s data analytics and AI platform — helps organizations overcome the most challenging obstacles they face along their data journey. We offer a path to modernization for established data analytics teams as well as a path to automation for teams just getting started. We do this without requiring your organization to radically change your people, processes, computing environment, or existing data landscape. This helps your organization achieve your data goals without changing who you are or what you have.

Altair RapidMiner eliminates friction:

- ▶ **Between users and data** — Our platform works with any data and helps build trust in the insights that data provides. We empower users to extract and prep data easily from any source, working with reports and PDFs that are core to the business. We build trust with a wide array of features that explain complex data models and serve up the insights to the right stakeholders in real time.
- ▶ **Between data and domain experts** — Altair RapidMiner scales AI initiatives without requiring a big team of data scientists or expensive services engagements. We help organizations upskill their workforce so novices and experts alike can leverage the tools needed to provide data-driven insights. Teams can collaborate on projects easily while still working the way they want to between our Auto ML, visual workflows, and coding options.
- ▶ **From idea to production** — Our platform and methodology are designed to get models deployed so they can deliver business value right away. We work with organizations on an AI roadmap, identifying the highest priority use cases based on feasibility and value, and then help tackle those first. Altair RapidMiner is truly end-to-end, from data ingestion and modeling to operationalization and visualization. No matter where data is coming from or where insights need to go, everything is easily distributable and consumable at scale.
- ▶ **When infrastructure, tools, or vendors change** — Altair RapidMiner supports diverse infrastructure landscapes — from mainframes to cloud — and alleviates the pressure of modernizing expensive legacy environments. With [Altair SLC™](#), teams can create, maintain, and run SAS language programs, models, and workflows directly in a multi-language environment without needing to license third-party software. We offer flexible licensing and usage of all Altair’s data analytics and AI products via [Altair Units](#), Altair’s gold standard software licensing system. Altair Units gives users the flexibility to run software anywhere, the freedom to choose what software tools they need when they need them, and unparalleled value that maximizes use and minimizes cost.



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