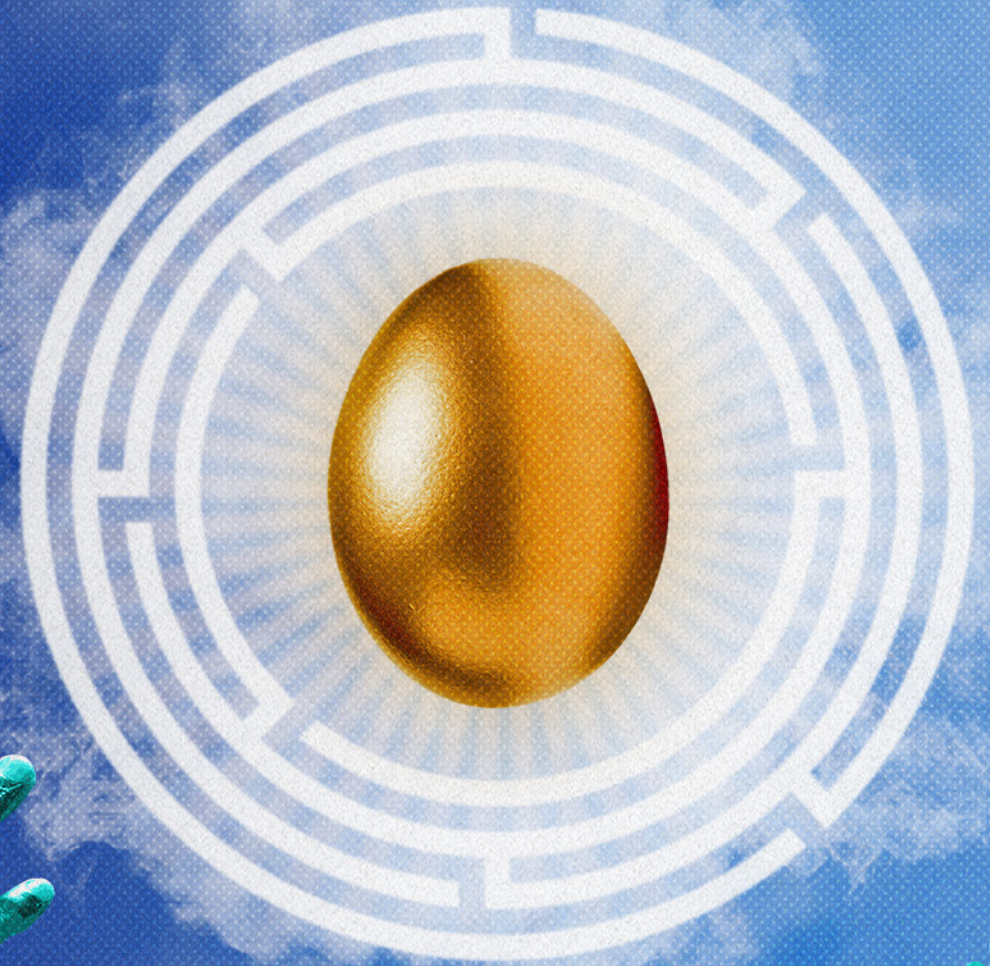White paper

AI/ML Annual Research Report 2022

AI/ML is top priority for businesses, but are they realizing its value?

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Artificial intelligence and machine learning (AI/ML) is on every organization's radar. Businesses and IT professionals are finding some amazing use cases for AI/ML and already experiencing its benefits, but there's still so much untapped and unrealized potential.

To better understand AI/ML uptake by IT leaders around the world and across multiple industries, we recently completed the second annual Rackspace Technology AI/ML survey. In this survey, we polled 1,870 IT leaders across a wide range of industries, including manufacturing, finance, retail, government and healthcare. Survey participants represent a global snapshot across the Americas, Europe, Asia and the Middle East.

Our research found that while 62% of respondents said AI/ML is a high priority for their organization, some 36% agreed that measuring and proving its business value remains the most common challenge.

This report discusses the main insights and implications from our industry peers' responses regarding AI/ML adoption, usage, benefits, challenges and strategy. A high-level review of survey results reveals the following trends:
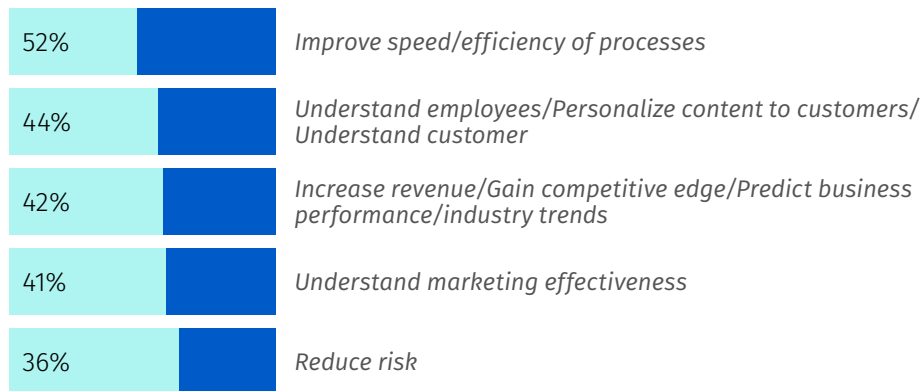
1. **AI/ML is critical for business strategy.** AI/ML ranked consistently in the top two most important strategic technologies, alongside cybersecurity. Up to 72% of respondents note AI/ML as part of their business strategy, IT strategy or both.

2. **AI/ML is having an overwhelmingly positive impact on businesses.** About 70% of all respondents reported positive impacts of AI/ML on brand awareness and reputation, revenue generation and expense reduction.

3. **AI/ML budgets are increasing.** More and more companies are increasing their overall AI/ML budgets. This slow but steady budget growth indicates the advancing importance and visibility of AI/ML.

4. **AI/ML is still only partially understood by those who consider it vital for business and IT strategy.** While 70% of respondents believed their IT departments have a strong understanding of AI/ML, less than half felt their leadership or any other department understands it well.

AI/ML has become a critical part of business and IT strategy, and analysts believe we're only scratching the surface in terms of what can be achieved. Gartner anticipates [75% growth in the operationalizing of AI](#) within the enterprise by the end of 2024. Our research showed 66% of respondents said AI/ML technology is past the experimentation stage in their organization, and now either in "optimizing/innovating" or "formalizing" states of implementation.

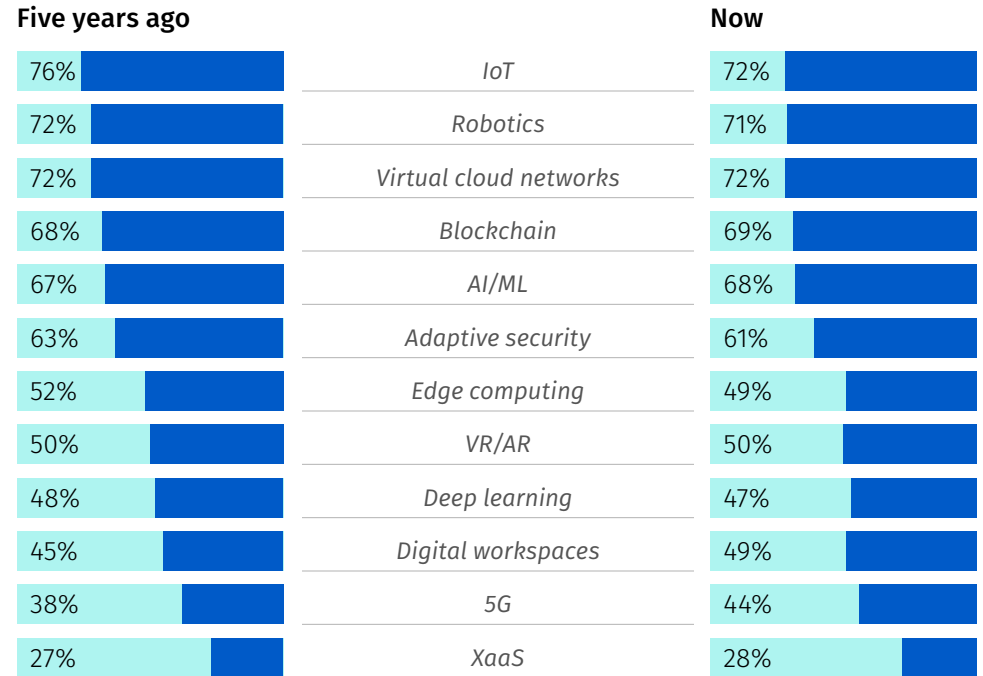## How are businesses using AI and machine learning?

As AI/ML permeates industry sectors and organizations worldwide, how is it being used right now?

Current uses of AI/ML cited by survey respondents include:

52% Improve speed/efficiency of processes

44% Understand employees/Personalize content to customers/ Understand customer

42% Increase revenue/Gain competitive edge/Predict business performance/industry trends

41% Understand marketing effectiveness

36% Reduce risk

Technologies important five years ago and now

Rank these based on their importance to your organization five years ago and now (rank 1, 2, 3).

Five years ago		Now
76%	IoT	72%
72%	Robotics	71%
72%	Virtual cloud networks	72%
68%	Blockchain	69%
67%	AI/ML	68%
63%	Adaptive security	61%
52%	Edge computing	49%
50%	VR/AR	50%
48%	Deep learning	47%
45%	Digital workspaces	49%
38%	5G	44%
27%	XaaS	28%

According to survey respondents, AI/ML is now seen as slightly more important to organizations than it was five years ago. Other technologies like blockchain and digital workspaces have also grown in perceived importance over the last five years.

Levels of AI/ML adoption maturity

When it comes to assessing overall maturity levels regarding AI/ML adoption, participants are split into three groups. What's noteworthy here is that 32% are in "formalizing" mode, a significant increase from the 17% number reported in this survey a year ago.

34% Exploring/experimenting. In proof of concept/pilot mode

34% Optimizing/innovating. AI/ML models are increasing

32% Formalizing. Moving from a POC/pilot to an AI/ML solution in production

Method of adoption: Regardless of industry, the respondents' preferred method is to build an AI/ML solution from scratch on their own platform (53%), rather than a platform like Google Cloud (35%) or an off-the-shelf service or application (11%).

Which of the following best describes your organization's approach to AI/ML?

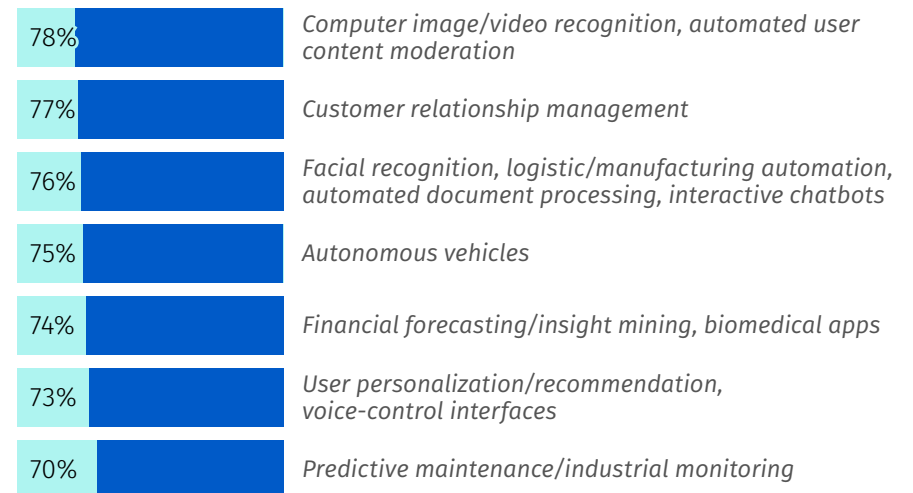|	
53%	*We intend to build an AI/ML solution from the ground up on our own platform*
35%	*We intend to use a platform like Google Cloud to build our AI/ML on*
11%	*We intend to use an "off the shelf" AI/ML service or application*

How is AI/ML helping businesses?

Below are a few of the more commonly cited ways AI/ML already helps businesses:

- Making logical predictions that improve profits
- Creating a more personalized customer experience
- Identifying fraud in real time

Survey participants cited usage-specific applications such as computer video recognition, facial recognition and automation, as well as CRM applications as the most useful ways AI/ML is helping their businesses:

78%	*Computer image/video recognition, automated user content moderation*
77%	*Customer relationship management*
76%	*Facial recognition, logistic/manufacturing automation, automated document processing, interactive chatbots*
75%	*Autonomous vehicles*
74%	*Financial forecasting/insight mining, biomedical apps*
73%	*User personalization/recommendation, voice-control interfaces*
70%	*Predictive maintenance/industrial monitoring*

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More AI/ML wins are out there for the taking
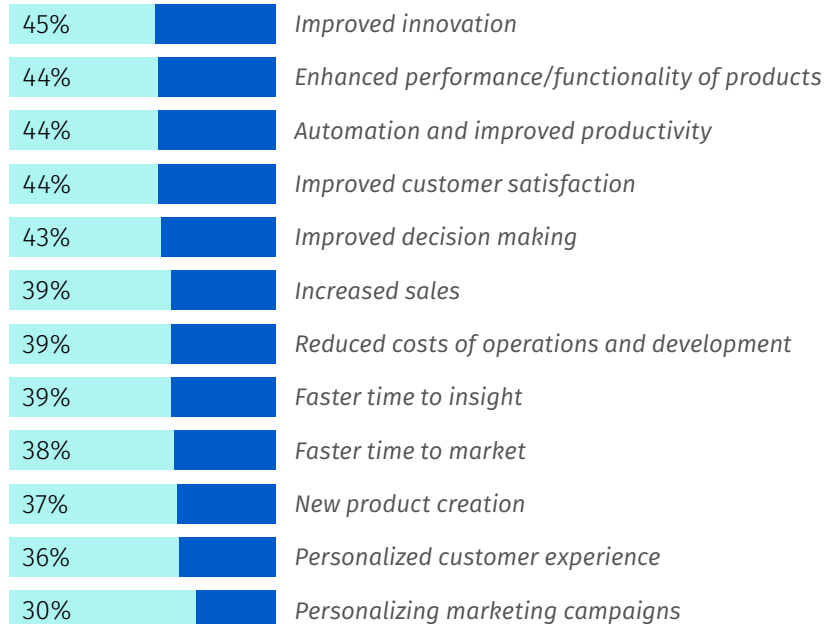
Nearly three-quarters (72%) of respondents said they have realized substantial benefits of AI/ML.

To what degree has your organization realized the potential benefits of AI/ML?

72%	*We have realized substantial benefits of AI/ML*
28%	*It's too early to say*
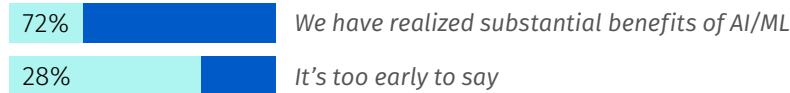
It's expected that more benefits of AI/ML are still to come. Respondents are optimistic that AI/ML has the power to drive further improvements, including improved innovation and enhanced performance/functionality of products.

Which of the following do you see as potential benefits of AI/ML initiatives?

45%	*Improved innovation*
44%	*Enhanced performance/functionality of products*
44%	*Automation and improved productivity*
44%	*Improved customer satisfaction*
43%	*Improved decision making*
39%	*Increased sales*
39%	*Reduced costs of operations and development*
39%	*Faster time to insight*
38%	*Faster time to market*
37%	*New product creation*
36%	*Personalized customer experience*
30%	*Personalizing marketing campaigns*

Investment is inching upward

Our survey indicated that AI/ML is now perceived as the most (64%) important technology for business strategy. This explains why we're seeing more organizations increase their overall budgets for AI/ML in 2022.

What proportion of your annual IT budget will be invested in AI/ML initiatives in 2021 and 2022?

2021		2022
40%	*1 - 5%*	12%
30%	*6 - 10%*	69%
26%	*11 - 15%*	18%
4%	*16 - 20%*	2%
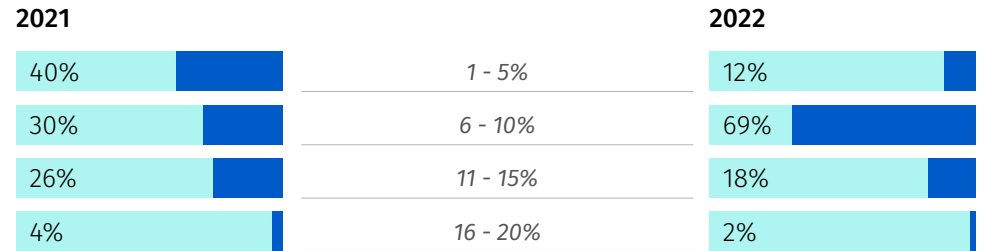
Seven in ten participants in our 2021 research reported an AI/ML budget (as a percentage of overall budget) of between 1% and 10%. This year, that budget allocation is between 6% and 10% for about seven in ten respondents (69%).

Measurement and ROI

More than three-quarters of those surveyed (78%) measure ROI for AI/ML initiatives at their companies. But 36% of organizations said that measuring and proving the business value of the AI/ML solution is the most common challenge on the AI/ML journey.
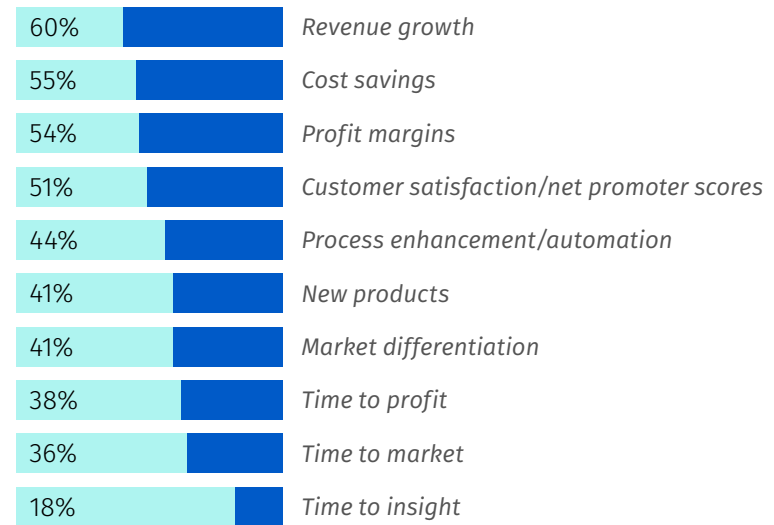
Use of AI/ML spend

We found that AI and machine learning spend is spread across the organization on current and planned projects to grow revenue, drive innovation, increase productivity and enhance user experience.

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Measuring the success of AI/ML initiatives

When evaluating the success or failure of AI/ML projects, 60% of respondents consider revenue growth a leading KPI.

Monetary measures likely rise to the top because metrics like process improvement and time to insight are more difficult to calculate.

Which of the following KPIs does your organization use to measure the success of AI/ML initiatives?

|	
60%	*Revenue growth*
55%	*Cost savings*
54%	*Profit margins*
51%	*Customer satisfaction/net promoter scores*
44%	*Process enhancement/automation*
41%	*New products*
41%	*Market differentiation*
38%	*Time to profit*
36%	*Time to market*
18%	*Time to insight*

Three barriers on the AI/ML journey

Respondents identified three main barriers for organizations on their AI/ML journey.
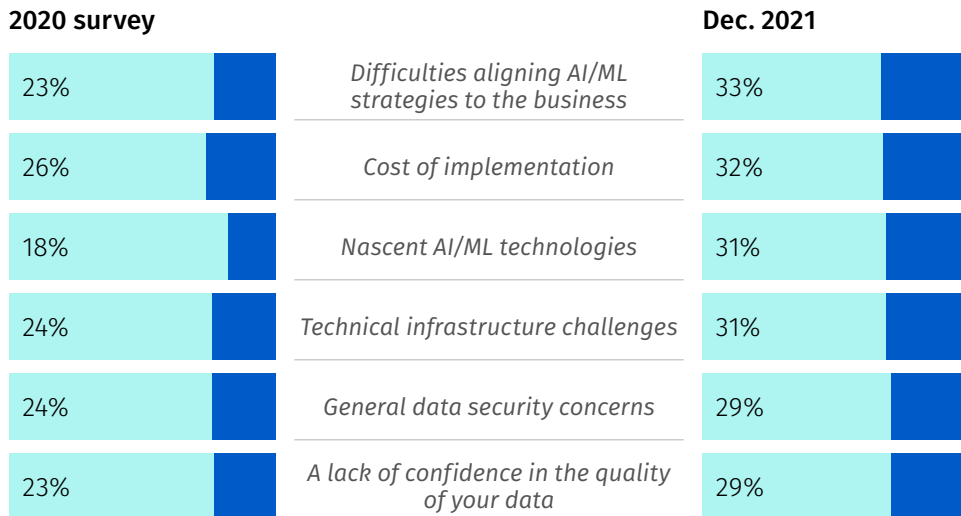
1. Leveraging AI

The biggest pitfalls in leveraging AI/ML were:

44%	*Legacy technology barriers*
41%	*Difficulty in identifying ROI*
15%	*Lack of skills/staff*
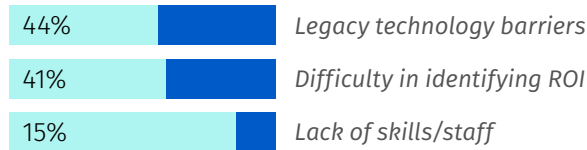
Note: there's a bit of a conflict here. Although nearly three-quarters (72%) of respondents said they have realized substantial benefits of AI/ML (as mentioned on page 4), some 41% also reported difficulty identifying ROI as the biggest pitfall.

2. Adoption barriers

There was a 9% rise in difficulties aligning AI/ML strategies to the business, showing a lot of journeys were disrupted over the last year due to poor strategy. Gaining organizational support and achieving consensus on deliverables, milestones and timeline is essential to keep projects on track and committed to the business.

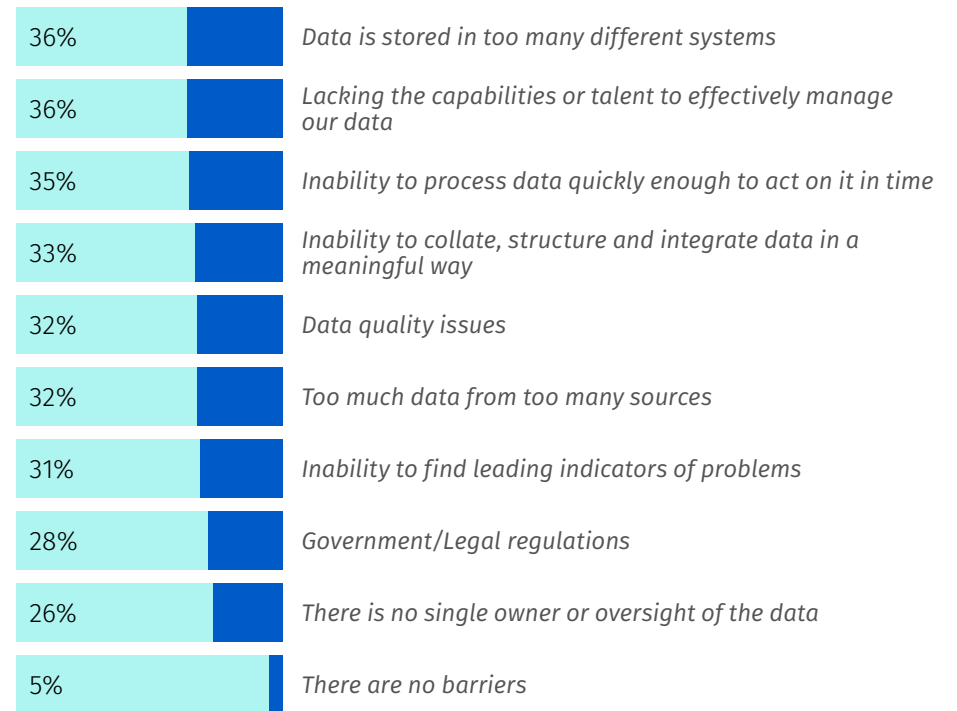| 2020 survey		Dec. 2021
23%	*Difficulties aligning AI/ML strategies to the business*	33%
26%	*Cost of implementation*	32%
18%	*Nascent AI/ML technologies*	31%
24%	*Technical infrastructure challenges*	31%
24%	*General data security concerns*	29%
23%	*A lack of confidence in the quality of your data*	29%

3. Drawing actionable insights

Almost every AI/ML project seeks to leverage insights gained from data. Converting the numbers into actions is a goal of every organization that operates AI/ML. However, data and management obstacles associated with AI/ML can often impede or delay adoption.

Respondents cited disparate data silos (36%), technical capabilities and talent (36%) and timing challenges (35%) as the top issues preventing access to actionable insights.

What are the biggest barriers to your company's ability to draw actionable insights from data and act on these?

|	
36%	*Data is stored in too many different systems*
36%	*Lacking the capabilities or talent to effectively manage our data*
35%	*Inability to process data quickly enough to act on it in time*
33%	*Inability to collate, structure and integrate data in a meaningful way*
32%	*Data quality issues*
32%	*Too much data from too many sources*
31%	*Inability to find leading indicators of problems*
28%	*Government/Legal regulations*
26%	*There is no single owner or oversight of the data*
5%	*There are no barriers*

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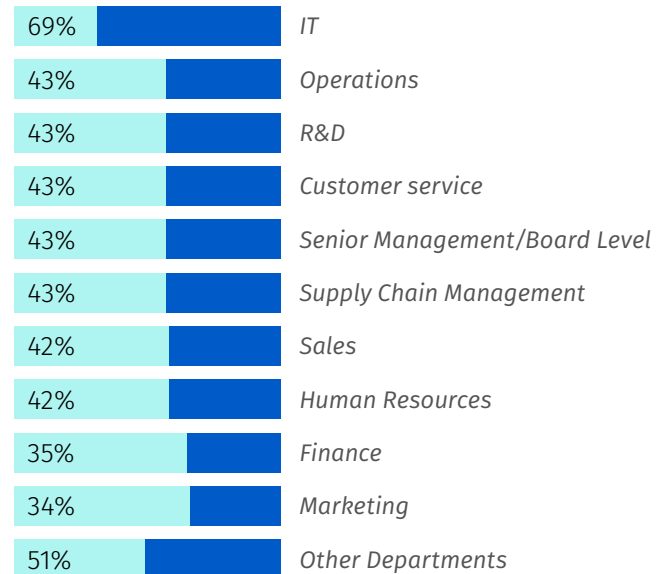# How much do employees understand AI/ML?

With its ability to evaluate data and compare it to other datasets, AI/ML helps analyze what the digital world produces and presents enormous value to businesses. But organizations often struggle with communication and clarity surrounding the nascent technology and its benefits.

80% of survey respondents report doing well communicating AI/ML to their clients and customers. However, less than half believe that any of their internal departments outside of IT understands the benefits of AI/ML.

How well do you think the use of AI/ML by your organization is being communicated to clients/customers?

40%	*5 = Very well communicated*
40%	*4*
15%	*3*
3%	*2*
2%	*1 = Very poorly communicated*
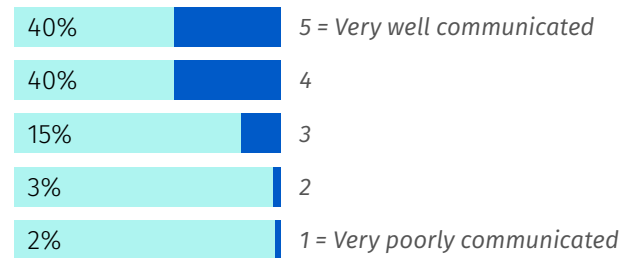
In your opinion, how would you rate the level of understanding of the benefits of AI/ML within the following departments in your organization?

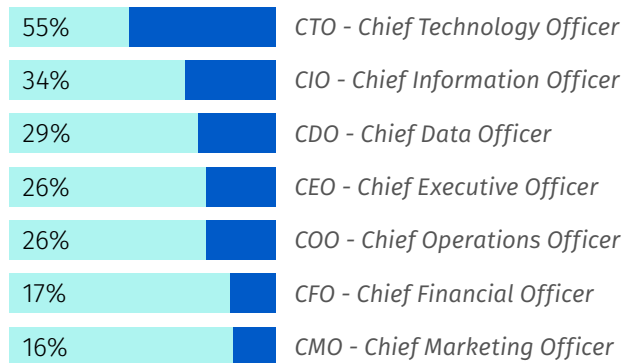|	
69%	*IT*
43%	*Operations*
43%	*R&D*
43%	*Customer service*
43%	*Senior Management/Board Level*
43%	*Supply Chain Management*
42%	*Sales*
42%	*Human Resources*
35%	*Finance*
34%	*Marketing*
51%	*Other Departments*

The CTO Knows Best

CTOs and IT staff are most knowledgeable when it comes to grasping the potential of AI/ML. Our survey found that CEOs and COOs currently are perceived to have half the understanding of these emerging technologies as CTOs.

55%	*CTO*
26%	*CEO & COO*

Who within your organization best understands AI/ML?

55%	*CTO - Chief Technology Officer*
34%	*CIO - Chief Information Officer*
29%	*CDO - Chief Data Officer*
26%	*CEO - Chief Executive Officer*
26%	*COO - Chief Operations Officer*
17%	*CFO - Chief Financial Officer*
16%	*CMO - Chief Marketing Officer*

Comparing AI/ML understanding across departments

Departmentally, IT leads in understanding what AI/ML can do. Comparing one department to another, 69% of IT grasp AI/ML benefits while operations, R&D, customer service, senior management and boards had a 43% understanding of the technologies. Sales and HR weighed in with 42% and marketing understood them least at 34%.

Unlocking further benefits of AI/ML

From a talent perspective, IT decision-makers are confident they have the skills within their organization and can hire additional talent when needed to work on AI/ML initiatives. Over half said they have the skills within their organization and that recruiting employees with AI/ML skills was easy (84% tried to recruit those employees over the past 12 months). However, they admitted the following improvement areas:

- Actionable insights could be improved with higher quality/more accurate data (71%), improved efficiency (66%) and more accessible data (59%).
- Actionable insights from the data could be improved through better internal skills/hired talent (57%) and a better understanding of the talent in place (52%).
- An understanding of AI/ML can be gained through internal training (54%), exterior training (52%), attendance of conferences and events (51%) and recommended online reading (51%).
- Specifically, there is a need to train current staff on AI/ML solutions programming/software design (51%), machine learning (45%) and data quality analysis (43%).

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Implications for your AI/ML journey

For businesses starting or struggling to implement AI/ML learning initiatives, this data gives an inside look at potential benefits and pitfalls. Looking at the results, three action steps stand out:

1. **Strategy first:** Without a solid destination and organizational buy-in, your AI and machine learning efforts could waste a lot of money and resources and never become production-ready. Start by gathering the major stakeholders, presenting a strong business case and gaining consensus on deliverables, milestones and timelines to keep your project on track.

2. **Address data quality and accuracy:** An AI and machine learning program requires clean, integrated data. The first step in a successful AI and machine learning program is cleaning up your data and data processes, which includes setting definitions, eliminating data silos, establishing governance and aligning business processes.

3. **Focus on training talent:** Respondents consistently listed lack of understanding and refining talent as concerns. Specific focus on upskilling and internal training will improve understanding of AI/ML. Assess your company's current training efforts and talent-in-place to determine whether you can fill roles or need to unveil exterior training, raise attendance of conferences/events and recommend online coursework/reading.

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How Rackspace Technology helps

Rackspace Technology offers a portfolio of services to support your AI and machine learning journey — from data hygiene and business process transformation to operationalizing your data models. Our team of data scientists and cloud experts can help you deploy AI and machine learning for leading use cases such as:

- **Forecasting & prediction:** Use historical data to build models that predict future outcomes.
- **Machine vision:** Rely on images or video to collect data including tracking objects, detecting changes over time and facial recognition.
- **Language processing:** Involve speech or text including interpretation, translation and sentiment and keyword analysis.
- **Extended reality (XR):** Deploy advanced human-machine interfaces, such as chatbots or AR/VR/XR with real-time human interaction as a key element.
- **Anomaly & pattern detection:** Identify clusters of commonality or normal/anomalous distinctions such as segmentation and categorization.

Learn more at:
www.rackspace.com/data/ai-machine-learning

About Rackspace Technology

Rackspace Technology is the multicloud solutions expert. We combine our expertise with the world's leading technologies — across applications, data and security — to deliver end-to-end solutions. We have a proven record of advising customers based on their business challenges, designing solutions that scale, building and managing those solutions, and optimizing returns into the future.

As a global, multicloud technology services pioneer, we deliver innovative capabilities of the cloud to help customers build new revenue streams, increase efficiency and create incredible experiences. Named a best place to work, year after year according to Fortune, Forbes, and Glassdoor, we attract and develop world-class talent to deliver the best expertise to our customers. Everything we do is wrapped in our obsession with our customers' success — our Fanatical Experience® — so they can work faster, smarter and stay ahead of what's next.

Learn more at www.rackspace.com or call 1-800-961-2888.

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Appendix: Methodology and audience profile

Our partner Coleman Parkes Research conducted the global survey of **1,870 IT decision-makers** at companies and organizations in eight sectors during December 2021.

Country

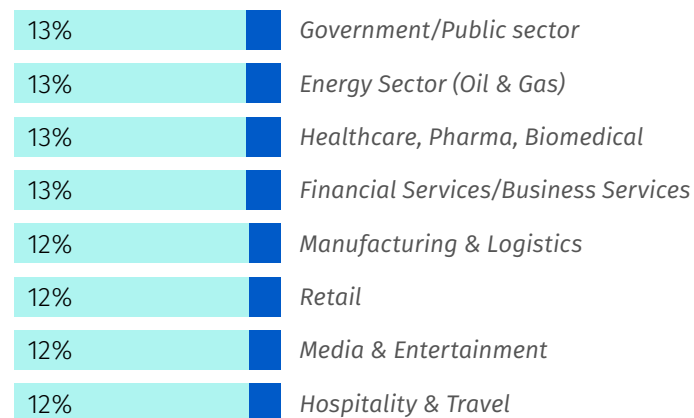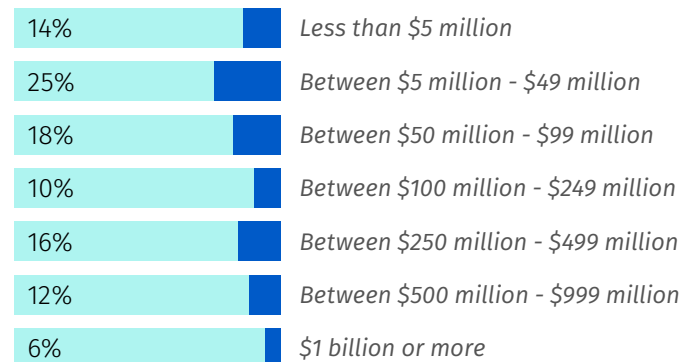|	
16%	USA
11%	Germany
11%	India
11%	UK
11%	Australia
10%	Netherlands
10%	Singapore
7%	Colombia
7%	Mexico
5%	Middle East (UAE)

Sector

13%	Government/Public sector
13%	Energy Sector (Oil & Gas)
13%	Healthcare, Pharma, Biomedical
13%	Financial Services/Business Services
12%	Manufacturing & Logistics
12%	Retail
12%	Media & Entertainment
12%	Hospitality & Travel

Annual revenue

14%	Less than $5 million
25%	Between $5 million - $49 million
18%	Between $50 million - $99 million
10%	Between $100 million - $249 million
16%	Between $250 million - $499 million
12%	Between $500 million - $999 million
6%	$1 billion or more

IT budget as % of annual revenue

58%	1 - 5%
20%	6 - 10%
22%	11 - 15%

Number of employees

39%	Less than 1,000
43%	1,000 - 4,999
12%	5,000 - 9,999
6%	10,000+

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Job title

16%	VP/Director/Head of IT
14%	CTO - Chief Technology Officer
11%	Chief Engineer
10%	COO - Chief Operating Officer
9%	CFO - Chief Financial Officer
9%	Head of Infrastructure VP/Director/Head of Product
9%	CIO - Chief Information Officer
7%	VP/Director/Head of Business Intelligence
5%	VP/Director/Head of Engineering
4%	Chief Data Scientist
4%	CDO - Chief Data Officer
3%	LOB (Line of Business)

Responsibility

61%	Key decision maker
19%	Key influencer
12%	Influence part of the process
8%	Part of a decision-making team

Awareness of advanced and emerging technology

73%	A fair amount
27%	A great deal

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