

White paper

# The 2023 Cloud Modernization Research Report

Unleashing AI's Potential



Customer First.  
Cloud First.

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# Introduction and key findings

Cloud Modernization is paving the way for the effective use of artificial intelligence (AI) and machine learning, creating efficiencies that can boost organizational performance and accelerate time to market.

In 2023 Rackspace Technology® polled 1,420 IT professionals worldwide and across multiple industry verticals. Survey respondents worked in financial services, manufacturing, retail, hospitality, government and healthcare in the Americas, Europe, Asia and the Middle East.

- **90% of survey respondents stated that AI is a primary factor** driving their modernization of applications and data, while **80% agreed that failing to modernize would prevent them taking full advantage of AI.**
- Additionally, **exactly one-third of those surveyed expressed that they lacked the expertise** to implement modernization.

On average, respondents reported using 22 legacy systems or applications per organization, consuming 29% of the IT budget. The **need for increased security, improved efficiency and cost reduction** drove both IT departments (still the No. 1 driver of modernization internally) and the C-suite (second only to IT as decision-maker) to pursue application and data modernization. Doing so resulted in average cost savings of 4.46 percent.

Together, they recognize that the **risks of not modernizing (i.e. doing nothing) include increased costs and security threats.** As a result, IT and the C-Suite are collaborating to make sure that application and data modernization is a priority to take advantage of AI and machine learning and accelerate time to market.

By modernizing applications and data, **respondents expect to experience several benefits.** 30% anticipate better efficiency, 28% anticipate improved security, 29% hope to achieve cost savings and 27% look forward to incorporating advanced technology.

After modernization, **companies reap rewards from cost savings, enhanced security, and improved data benefits.** However, these efforts may be delayed, over budget and may present security risks. Additionally, key applications that are not migrated yet, create additional cost, security and data risks. Most companies think they can go it alone, believing they possess the required talent and resources to execute a modernization project independently.

Some companies lack the expertise and resources to develop and execute a modernization project and can benefit from working with a technology company with expertise in executing modernization projects that scale.

## What is cloud modernization?

*Cloud modernization is an umbrella term that includes modernizing infrastructure applications (apps) as well as data.*

In tough economic times, it is tempting to avoid spending more on IT. However, investing in modernizing infrastructure, applications and data can yield both short-term cost savings and ensure that a company's future is well positioned.

Every organization can benefit from cloud modernization, no matter which stage of the cloud journey they're in. Cloud modernization is more than just a migration to the cloud; it's the process of optimizing costs, modernizing applications and security, and, when necessary, cloud native application replatforming.

### **The benefits of cloud modernization**

Cloud modernization promotes efficiency, security and cost reduction. Under that umbrella, the modernization of your applications and data provides numerous benefits, such as improved accessibility, scalability and reliability. Cloud modernization can help you:

- Relieve cost pressures
- Free critical resources to innovate
- Seize the opportunity to jump ahead of competitors
- Build a modern tech stack that better positions the business for future innovation



## The rise of AI

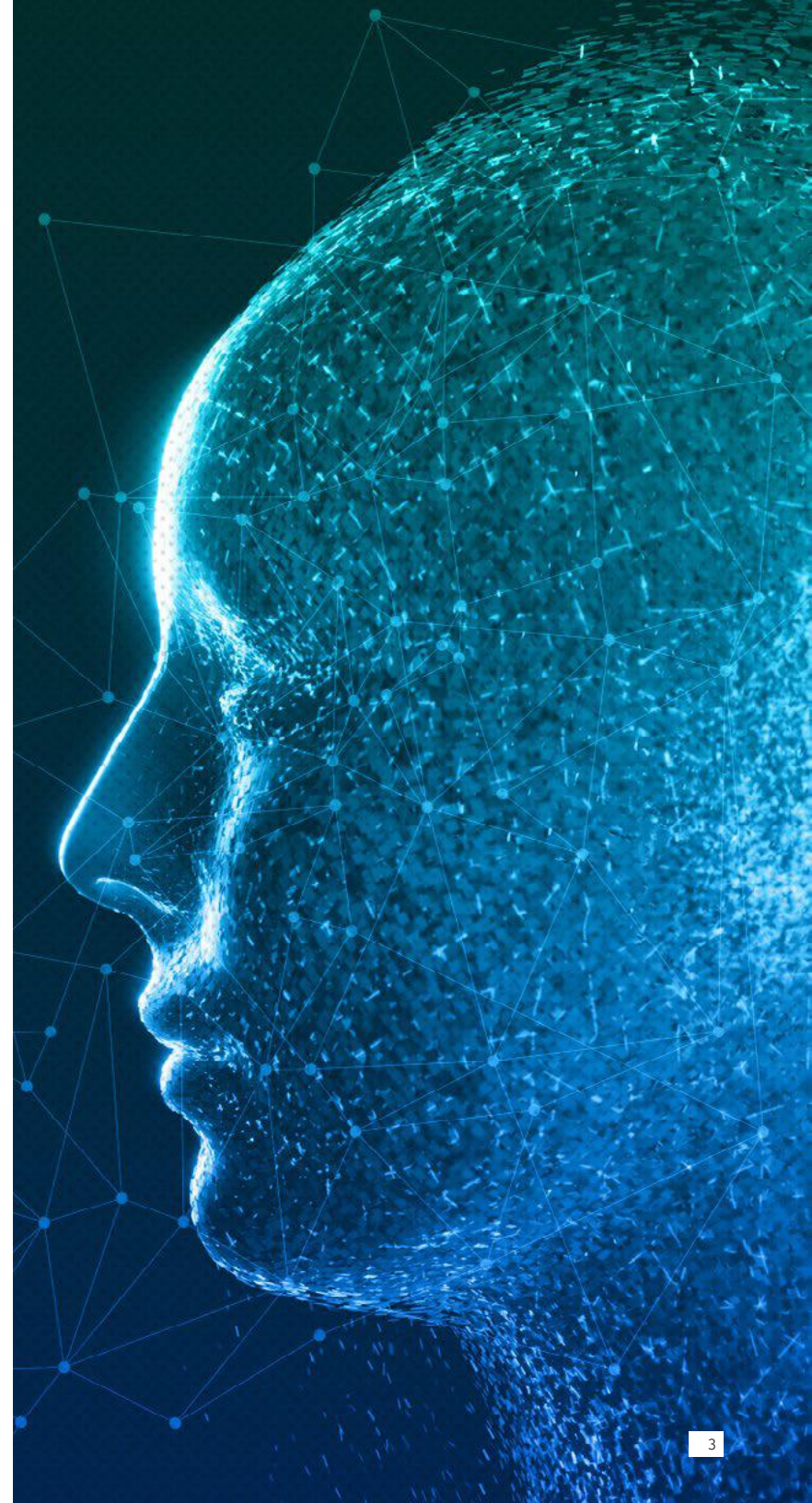
AI, especially generative AI, has garnered so much attention lately that it's become something of an instant priority for many companies. Some generative AI products such as ChatGPT have gone viral, while other large companies are quickly advancing their own tools. Amazon Web Services (AWS), for instance, recently announced the release of Amazon Bedrock and Amazon Titan which will allow users to easily build and scale generative AI applications.

It's important to realize that organizations have a lot of choice when it comes to AI solutions.

As Ruba Borno, AWS Vice President and Head of Worldwide Channels and Alliances, said in a recent CRN interview: "We're really excited about how AWS is now democratizing access to foundational models and generative AI for customers. The key outcomes we're helping customers with is giving them the flexibility to choose the way they want to build with generative AI."

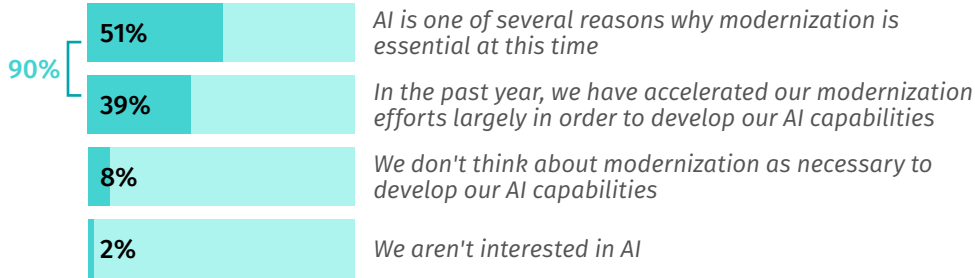
## Cloud modernization of applications and data as a prerequisite of AI implementation

AI is moving companies to complete their cloud transformation. To make effective use of AI, the modernization of applications and data provides the opportunity to leverage AI's advanced features such as automated analytics, data processing and intelligent automation. Cloud modernization enhances the speed of data analysis and decision-making, allowing organizations to gain a greater understanding of their data, make more informed decisions, and become more efficient.



### Views on the relationship between modernization and AI

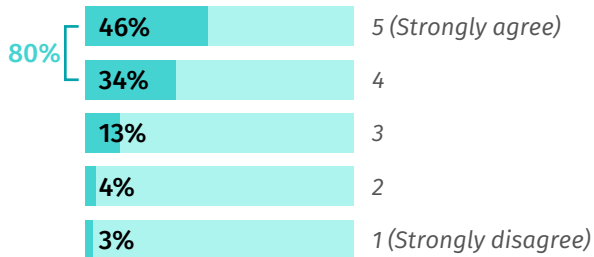
Thinking about the relationship between AI and modernization, which of the following best represents your view:



**90% of respondents agreed AI is driving modernization**, with over half (51%) stating that the technology is essential for modernizing. Nearly two in five (39%) noted their AI development efforts have increased significantly over the past year.

### Views on modernization and the leveraging the benefits of AI

To what extent do you agree or disagree with the following statement (Not modernizing my organizations legacy applications and data systems would prevent us from fully leveraging the benefits of AI)



**Most respondents (80%) believe they won't benefit from AI if they don't modernize first.** Without modernization, companies risk falling behind and losing out on the benefits of AI. They must modernize their legacy applications and data to make full use of AI and take advantage of cutting-edge technologies to remain competitive.

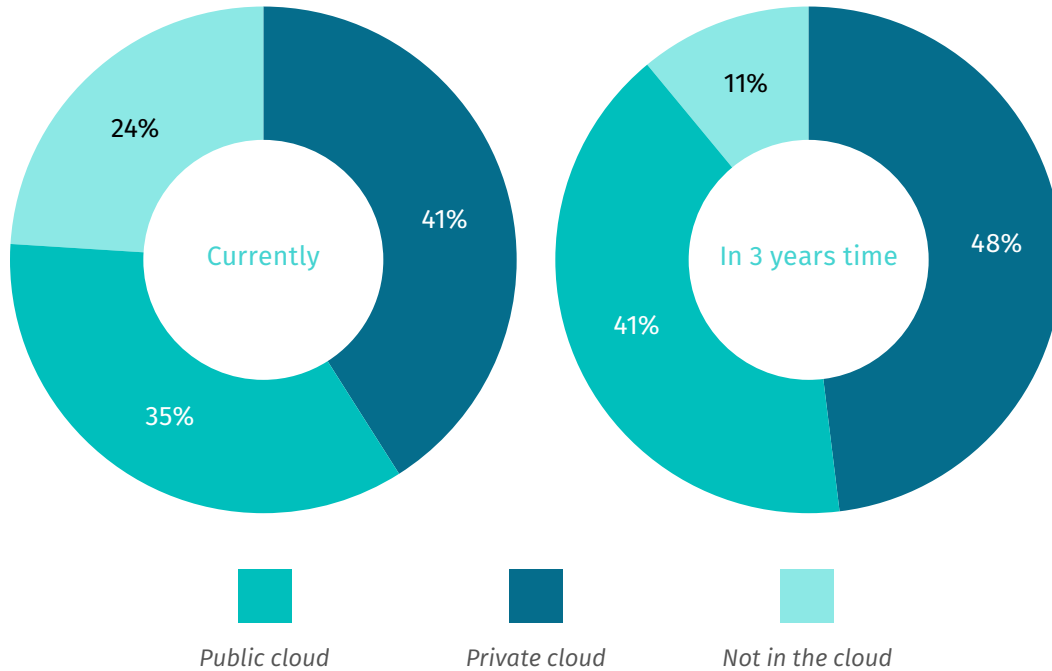


## The state of cloud adoption

As we delve more into the state of cloud modernization, it's important to examine that state of cloud adoption and where companies are investing the most.

### Proportion of workload in the cloud now and in 3 years time

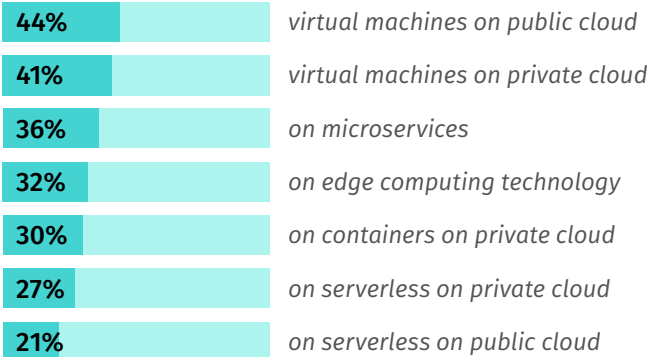
What proportion of your workload is currently in the cloud, and how is this split between public and private cloud? And what proportion do you expect to be in the cloud in 3 years' time?



**Public cloud is expected to grow.** Currently, 41% of workloads reside in private cloud, 35% reside in public cloud, and 24% are not in the cloud. Respondents expect that in the next three years, 48% of workloads will be in private cloud, 41% will be in public cloud, and 11% will remain outside of the cloud.

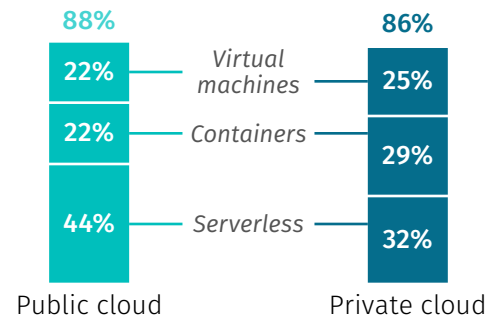
## Areas of investment

### Which technologies are you investing in the most?



### Public cloud sees slightly more investment than private cloud when comes to virtual machines, containers and serverless.

Companies are investing in public cloud services such as virtual machines (44%). In addition, 32% of respondents are investing in edge computing technologies while 15% are investing in cloud orchestration automation. These results suggest that public and private clouds are neck and neck in these areas and those surveyed continue to invest in more modern technologies.



In addition, 39% are investing in edge computing technologies and 15% are investing in cloud orchestration and automation.

## What to modernize, and why

### Most respondents have identified what to modernize

Have you identified the specific legacy applications and data that require modernization?

54% – Yes, in the process of doing this

42% – Yes, this process is complete

5%

No, not started

**Nearly all survey participants are addressing modernization.** Almost all (96%) of our respondents have indicated that they have already identified or are in the process of identifying which legacy applications and data still require modernization, with customer relationship management (CRM), human resources (HR) and enterprise resource planning (ERP) systems leading the way.

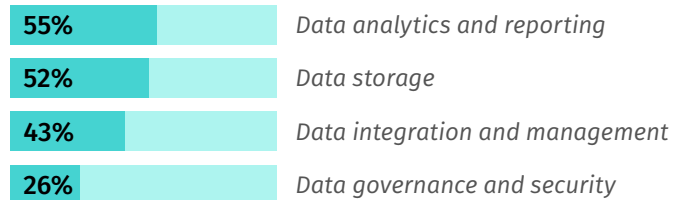
### *Legacy applications and data that require modernization*

*Which legacy applications and data have you identified?*

#### **Applications**



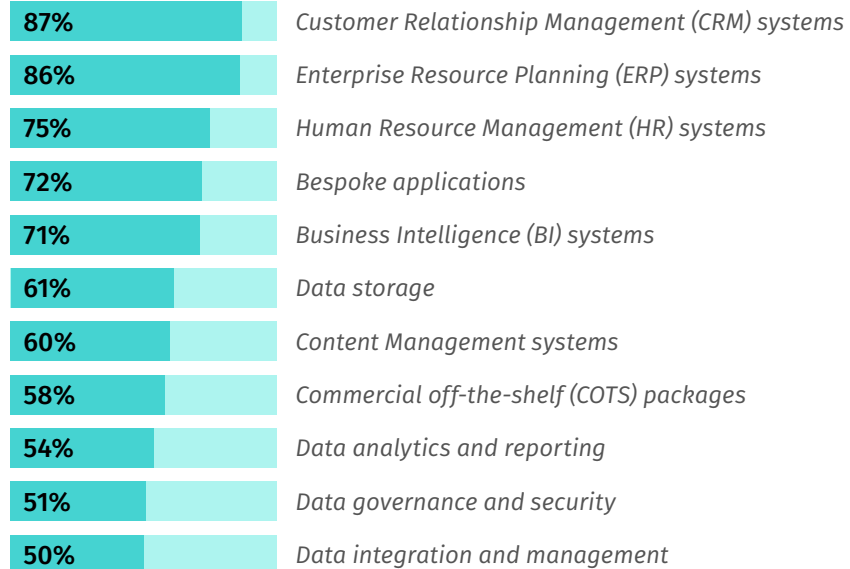
#### **Data**





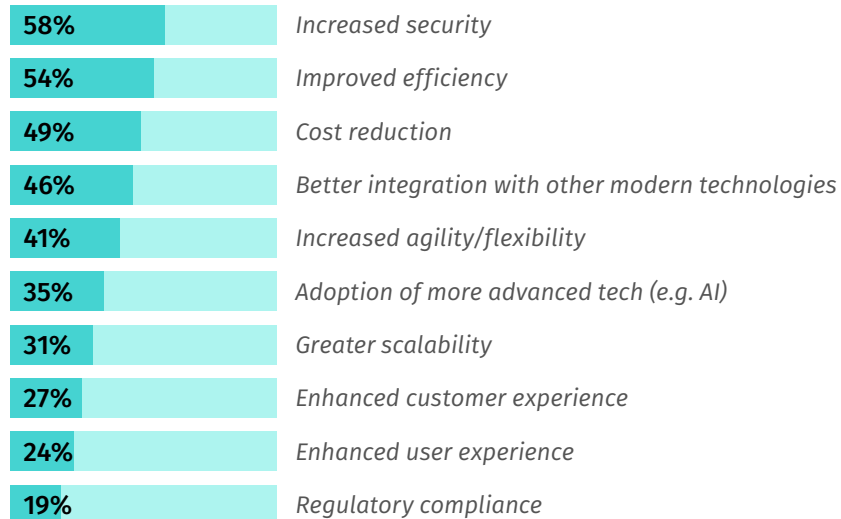
## Legacy applications and data in terms of criticality to modernize

Please now rank these legacy applications and data in terms of criticality to modernize:



## Main drivers of modernizing legacy applications and data

What are the main drivers of modernizing your legacy applications and data systems?



**What are the motivators for application modernization?** Security (58%), efficiency (54%) and cost reduction (49%) were the top motivators for application modernization in our research. The ability to adopt advanced technology is essential for businesses to remain competitive. Our research showed that 80% of respondents feared they would not benefit from AI if they did not modernize their legacy applications and data systems. However, updating these systems can be challenging and expensive while opening the door to security threats. Consequently, the factors that discourage updates are the same pain points that prevent progress.

### *Top expected outcomes of modernizing legacy applications/data*

*What are the top 3 expected outcomes of modernizing your legacy applications and data systems?*

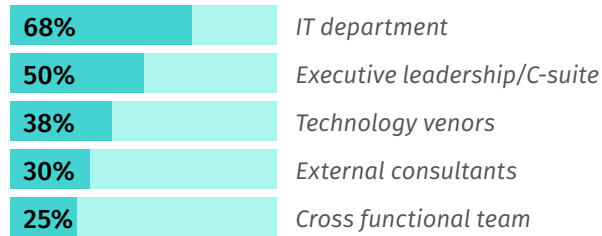


**No surprise — Among the top expected outcomes are: efficiency, cost and security.** Respondents expect modernization to improve efficiency (30%), save costs (29%), secure systems (28%) and enable the adoption of advanced technology (27%).



## Main drivers of modernization

Who are the main drivers of modernization within your organization?



**The C-suite increasingly participates in modernization decisions.** C-suite executives and IT departments increasingly take charge of modernization decisions. IT departments and C-suite executives drive modernization together (i.e., those at the top are involved with IT matters these days). Despite this, 25% of respondents reported a cross-functional team as the main driver, suggesting that silos remain a challenge in the industry.

## Main business costs if do not modernize legacy applications/data

What are the top 3 expected business costs for your organization if you do not modernize your legacy applications and data systems?

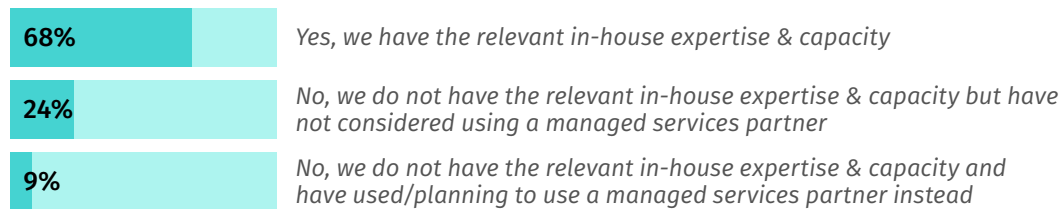


**The penalties for not modernizing.** Respondents said that if they don't modernize legacy applications and data solutions, they believe they will face increased costs (32%), poor security (27%), integration challenges (26%), a lack of innovation (26%), and the inability to adopt advanced technologies (25%).

## One-third of respondents say they lack the expertise needed for cloud modernization

### Use of in-house expertise vs. partners for cloud modernization

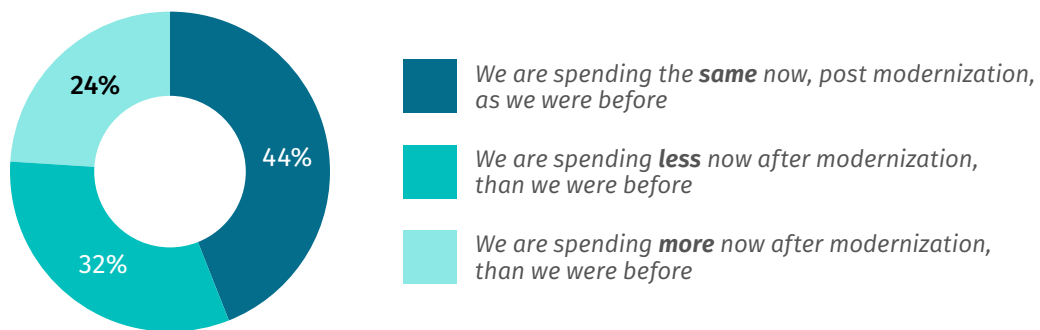
Do you have the necessary in-house expertise and capacity to execute the cloud modernization process, or are you considering/have you partnered with a managed services provider?



**Going it alone could be costly.** Fully one-third (33%) of respondents indicate that they do not possess relevant, in-house expertise and capacity to execute cloud modernization. This suggests that many could be devising and executing modernization initiatives on their own and meeting with cost overruns, security issues and internal resistance.

## Cost savings from modernization

Which of the following best describes the experience you have had regarding cost savings as a result of modernization?



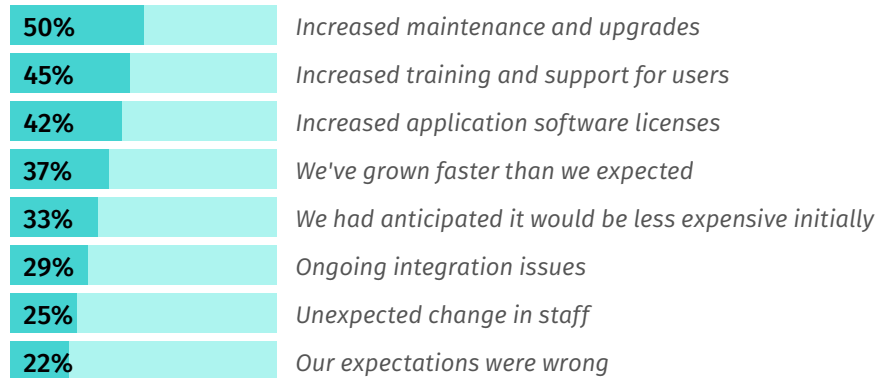
**Modernization offers real potential for cost savings.** According to our research, 44% of organizations that modernized spent less post-modernization and 24% stayed the same, while 32% spent more.

Altogether, 78% of organizations reported cost savings, either through spending the same amount or spending less with improved experience and security.

Another angle: Even if post-cloud modernization efficiencies are not as high as anticipated, 56% of those surveyed reported the same spend (24%), or lower (32%) costs, post-modernization.

### Spending increase since modernization

Why are you spending more now after modernization, than you were before?



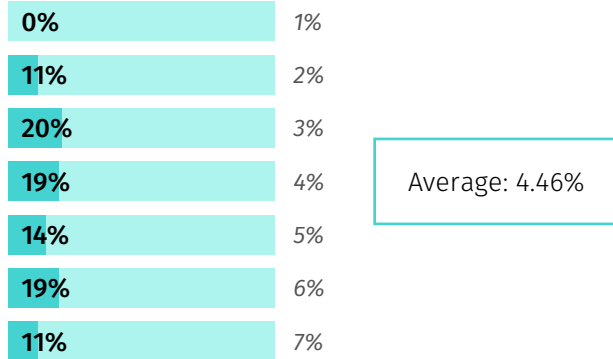
**Why are some spending more?** Companies that reported spending more after modernization cited higher maintenance and upgrade costs (50%), increased training and support required for users (45%), and increased application software licenses (42%).

*Of respondents that reported spending more after modernization, 37% cited post-modernization growth as the reason.*



### Cost savings of modernization

Approximately what level of cost savings (per annum) have you realized (or expect to realize) as a result of modernization?



**Annual cost savings.** The vast majority of those surveyed reported some cost savings as a result of modernization. The cost savings ranged from 2% - 7%, as shown above – and averaged 4.46%.

### Most unforeseen challenge to successful modernization

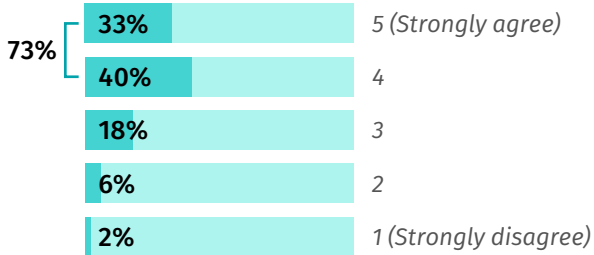
What was the single most unforeseen challenge to a successful modernization program?



## Views on statements

To what extent do you agree or disagree with the following statement?

The outcomes we have seen from cloud modernization have met our expectations



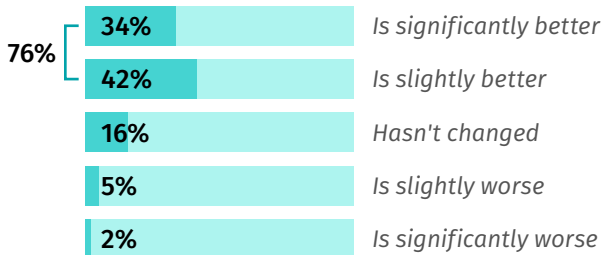
**Unexpected challenges persist.** While 73% agreed that outcomes from cloud modernization have met their expectations, they also attributed unforeseen challenges to limited resources (28%), a culture that's resistant to change (21%), integration challenges (16%), and a lack of buy-in from leadership (12%).

## Modernizing data

### Benefits

#### Changes to managing data since cloud adoption

To what extent has the way your organization accesses and manages data changed as a result of cloud adoption?



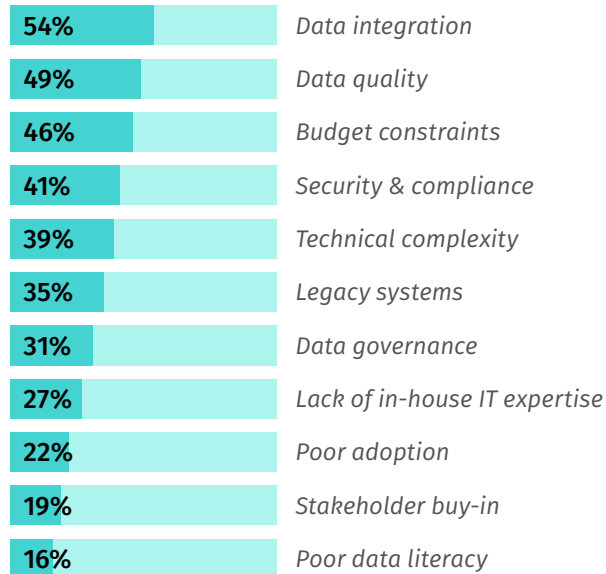
**Data Management has improved.** Our survey found that 76% of respondents agree managing data is better as the result of cloud adoption.



## Challenges

### Most significant challenges to data modernization

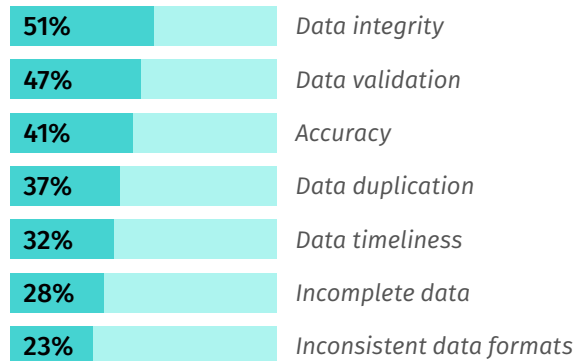
What do you perceive as the most significant challenges to data modernization within your organization?



Integrating (54%) and improving quality (49%) are the main data challenges.

### Concerns regarding data quality during data modernization

What concerns, if any, do you have regarding data quality and consistency during the data modernization process?

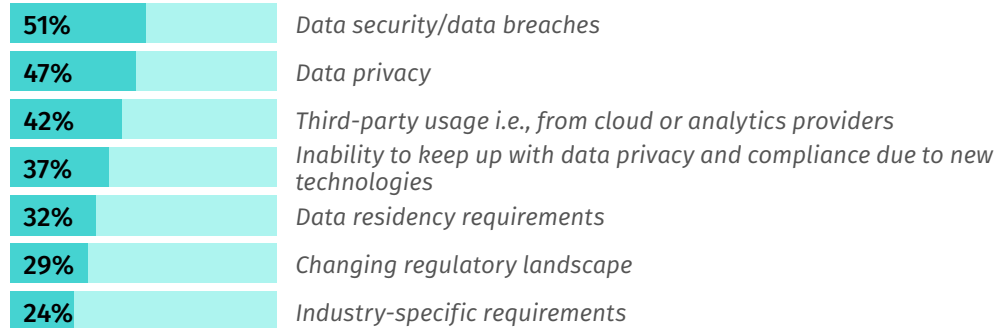




**Navigating quality challenges during modernization.** Concerns regarding data quality during data modernization: Data integrity (51%), validation (47%) and accuracy (41%) are at the top of the list.

### Challenges related to ensuring compliance with data protection

*In the context of data modernization, what challenges do you anticipate related to ensuring compliance with data protection regulations and industry-specific requirements?*

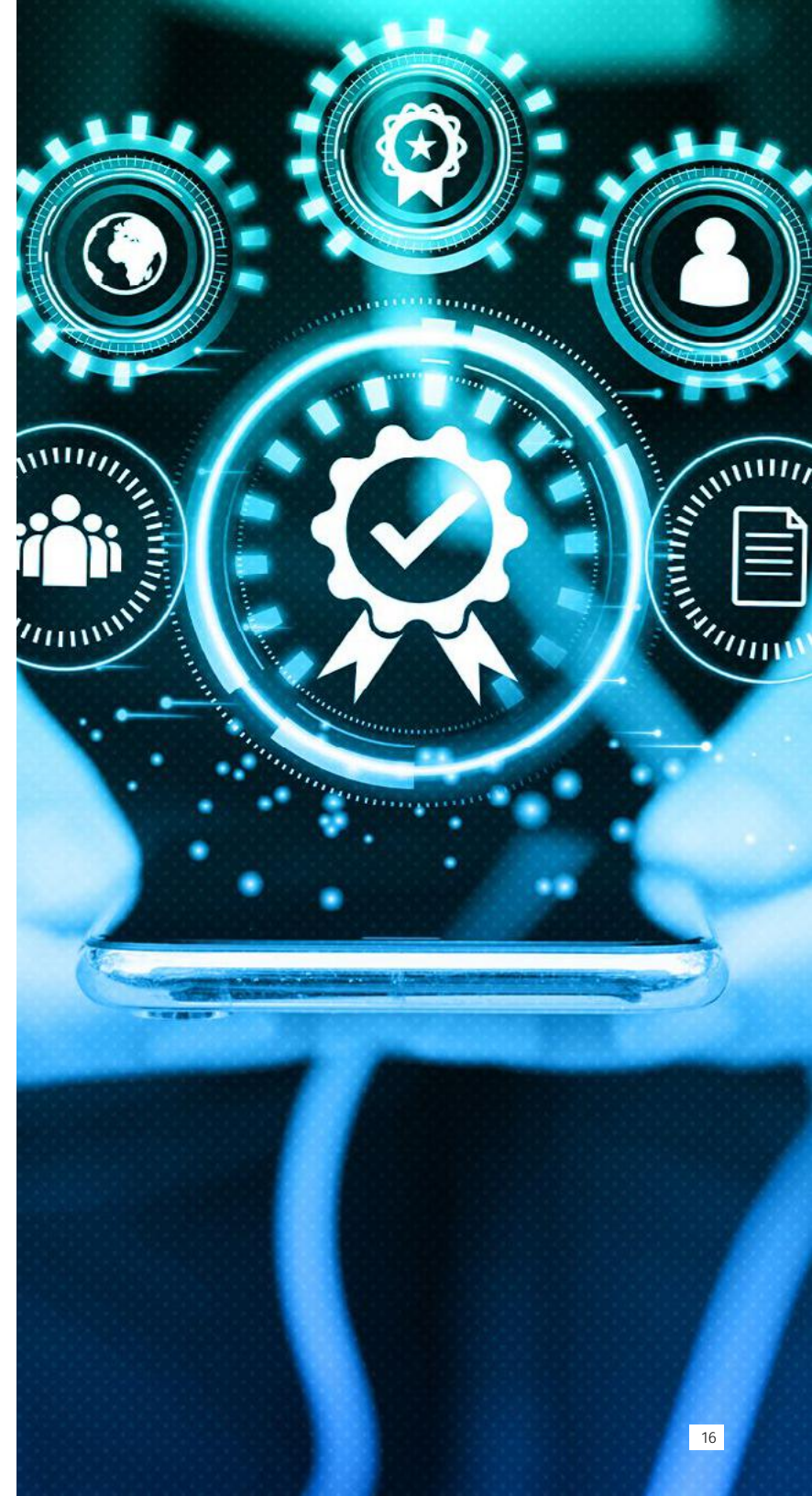
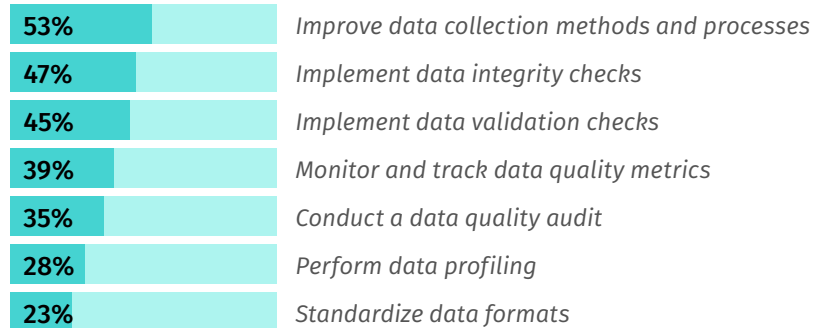


**Anticipated compliance challenges include data security/breaches, privacy and third-party usage.** Respondents anticipated the following challenges in adhering to compliance and data protection regulations and industry specific requirements: data breaches/security (51%), data privacy (47%), third-party usage (42%) and an inability to keep up with data privacy/compliance due to new technologies (37%).

## Advice

### Plans to mitigate concerns over data quality

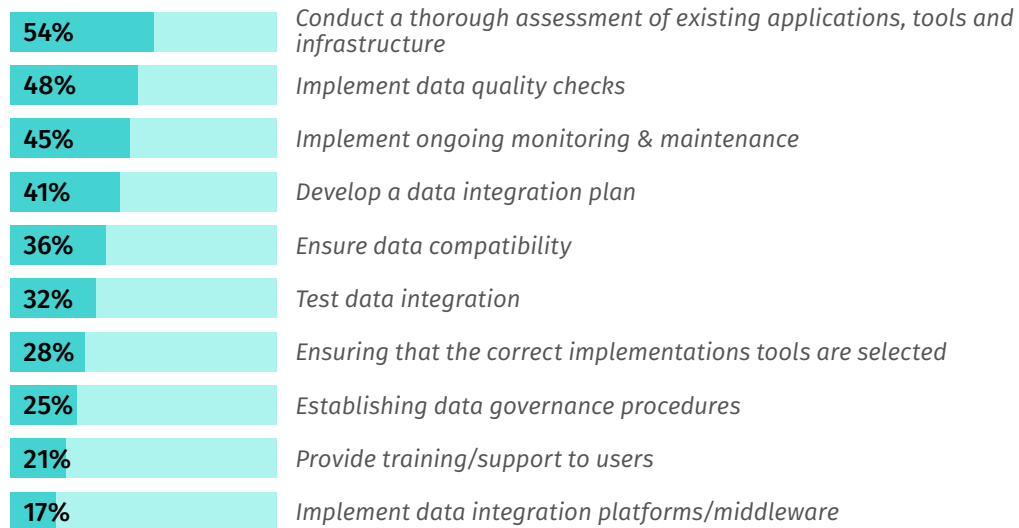
*How do you plan to mitigate these concerns?*



**Addressing data quality issues.** 53% of respondents' plans for mitigating data quality concerns involve improving data collection methods, 47% include integrity checks and 45% include validation checks.

### **Plans to address potential data integration issues**

*How do you plan to address potential data integration issues between your modernized data management systems and existing applications, tools or infrastructure?*



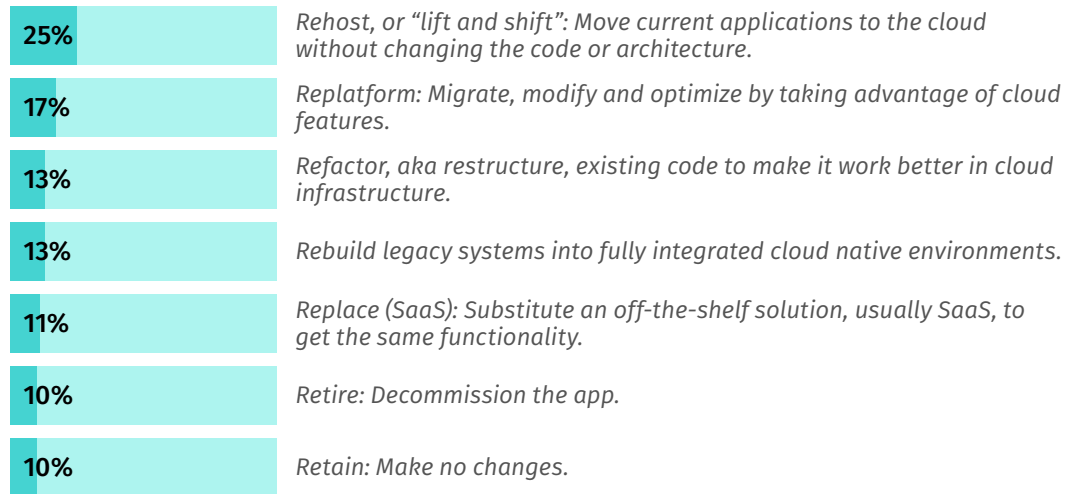
**Checking application and data integration before migrating data into the cloud can help to optimize the process.** To do so, 54% of respondents suggested assessing existing applications, tools and infrastructure. Companies should assess their applications and integration before moving to the cloud, rather than dealing with data integrity, validation and accuracy afterwards.

# Modernizing applications

## The Seven Rs

### Proportion of workloads being modernized

What proportion of your workloads are being modernized using the following approaches?



**The Seven Rs.** When it comes to application modernization, there are commonly seven main choices that all start with the letter R.

On average, the survey finds that companies employ all seven Rs of application modernization — ranging from rehosting (also called lift and shift) to rebuilding as cloud native applications to retaining the application (also known as doing nothing).

Rehosting is favored most, at 25%, followed by replatforming at 17% — meaning on average, 42% of applications could still benefit from further modernization. Only 13% of applications on average are being rebuilt to cloud native, which is often the modernization approach with the most benefit. Another 10% of applications are being retired, and 10% are retained or left unchanged.

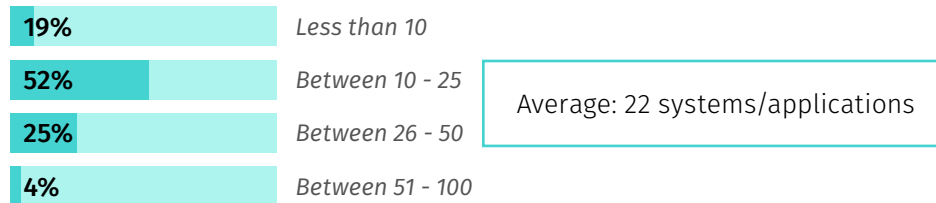
The fact that 42% of respondents expect to simply rehost or replatform indicates that many companies have not prioritized modernization and are missing opportunities to achieve efficiencies at scale and reduce costs.



## Challenges

### Legacy IT systems and applications currently in use

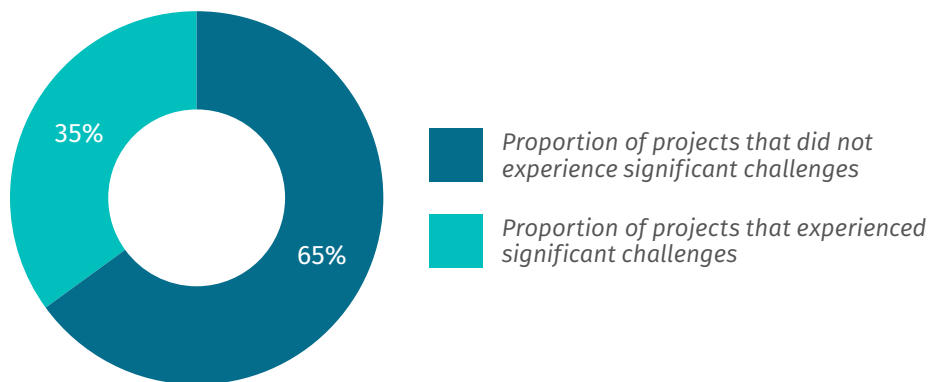
How many legacy IT systems and applications are currently in use within your organization?



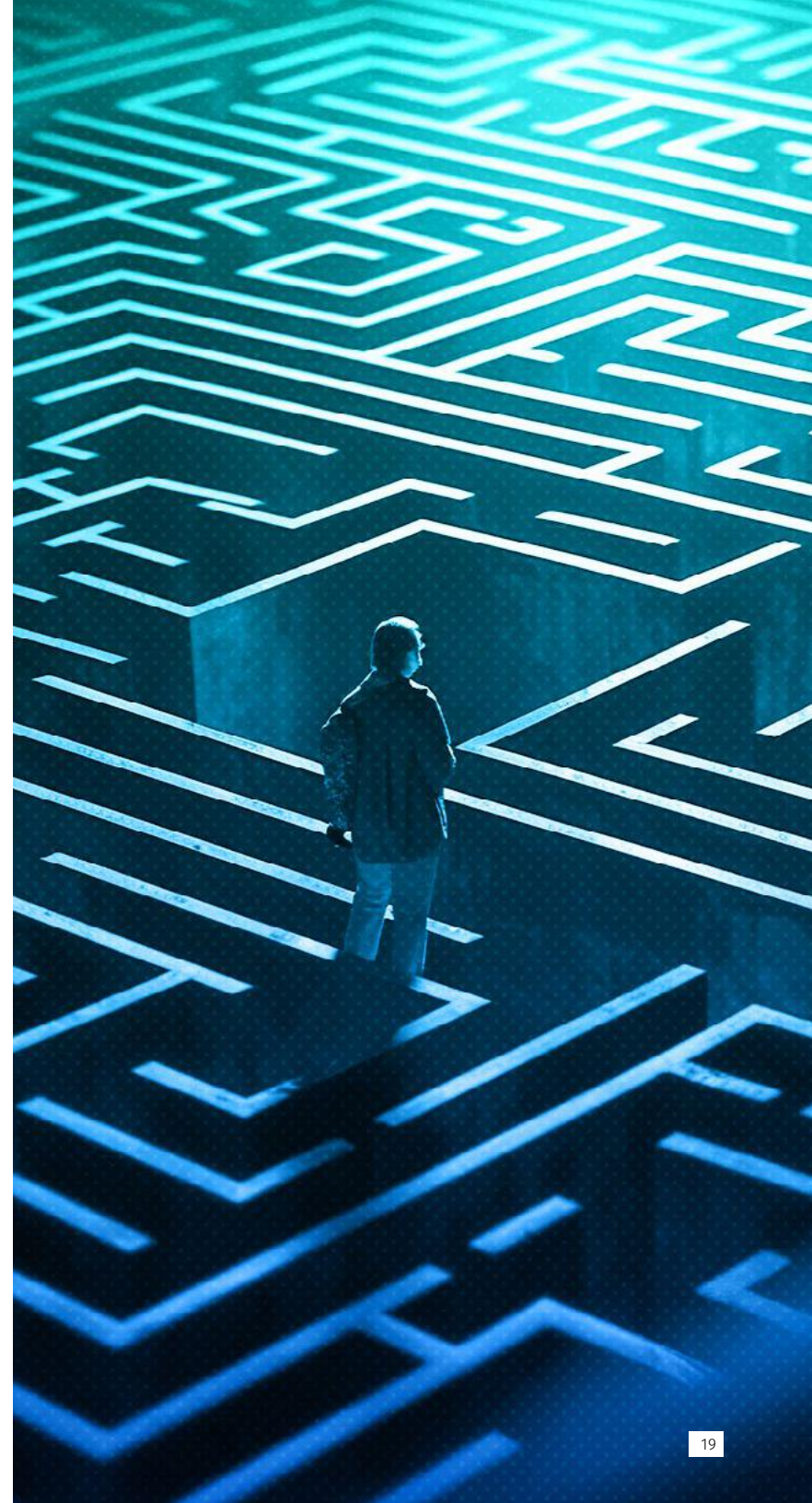
**Half of legacy IT and apps can be modernized, half can't.** Respondents say that companies can modernize half of legacy IT and applications. Cost, security/compliance, and compatibility prevent modernization of the rest.

### Experience of projects moved to the cloud

For those workloads you have moved to the cloud, what proportion of projects went as planned and what proportion did you experience significant challenges on?

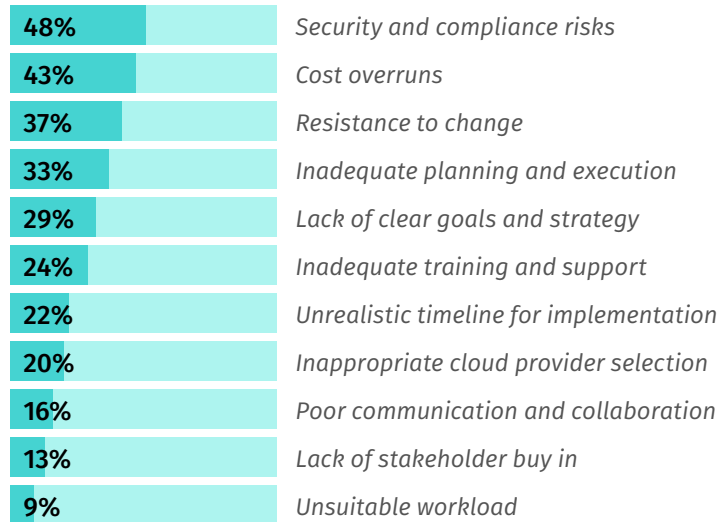


**Facing cloud challenges.** More than one-third (32%) of projects that moved to the cloud faced significant challenges on average.



### Most significant challenges faced when moving to the cloud

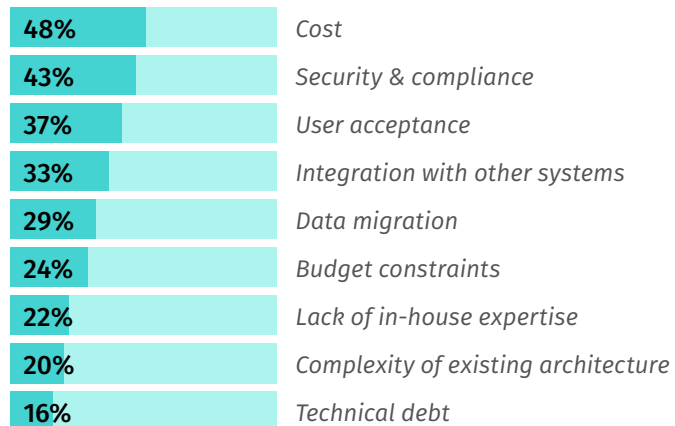
What were the most significant challenges you faced on those projects?



The biggest challenges that leadership and project management teams faced when moving to the cloud were security and compliance risks (48%), cost overruns (43%) and resistance to change (37%).

### Main challenges when modernizing organization's applications

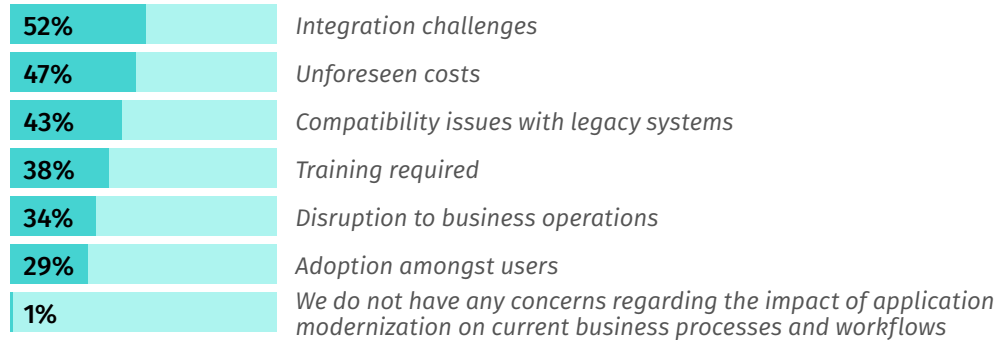
What are the main challenges you foresee when modernizing your organization's applications?



**Application modernization challenges** included costs (56%), security and compliance (51%), and user acceptance (46%).

### **Impact of application modernization on business processes**

*What concerns do you have, if any, regarding the potential impact of application modernization on your organization's current business processes and workflows?*

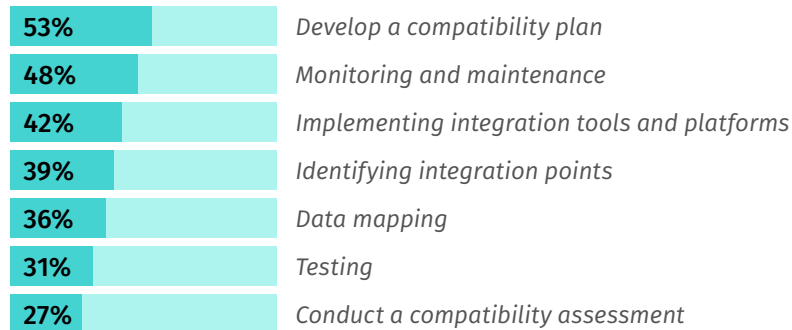


**Integration leads concerns on business processes.** 52% of those surveyed are concerned about integration challenges, 47% are worried about unanticipated costs and 43% are uncertain about compatibility with legacy systems due to the potential impact of application modernization on current processes and workflows.

## **Advice**

### **Addressing potential compatibility and integration issues**

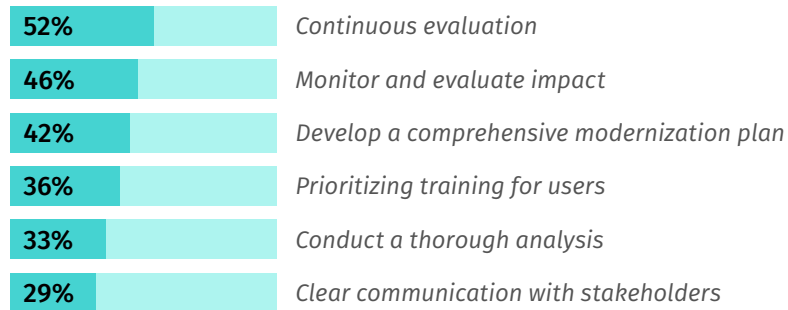
*How do you plan to address potential compatibility and integration issues between your modernized applications and existing systems, infrastructure or tools?*



**Top ways to address potential data compatibility and integration issues** include planning, monitoring and using appropriate tools.

## Plans to mitigate concerns of application modernization

How do you plan to mitigate these concerns?



**Overcoming concerns.** So what's the best advice for companies as they take on application modernization? Those surveyed offered these ways to mitigate challenges and keep modernization projects on track.

Around half (52%) of the respondents' strategies to tackle their application modernization concerns involve continuous evaluation, almost half (46%) cited monitoring and evaluating the impact, and about two in five (42%) entail creating an comprehensive plan.

## Conclusion

Based on the results of our survey, if you don't currently have modernization plans you need to get started now to pave the way for new technologies like AI in order to remain competitive. Assessing your data and applications is a key step to prepare for modernization. Following the advice outlined here to mitigate challenges will help you succeed.

## How Rackspace Technology can help

### A little outside expertise goes a long way

Just as you need to do a cost-benefit analysis to determine if cloud modernization is right for your organization, you need to also weigh the benefits of using a partner to help you modernize versus doing it on your own.

And while there are multiple approaches to cloud modernization, one thing that is constant is that many organizations can't do it by themselves. They simply don't have the in-house expertise, or the time and resources required to continue to operate the business while managing a cloud modernization initiative. Most organizations need a partner that can help make cloud modernization a reality.

Rackspace Technology can be the partner that helps you continuously modernize your legacy infrastructure, applications and data. Whether you need help with an immediate project, or you're ready to move forward with a long-term plan for transformation, we're here to help ensure you are getting the most value from your applications, data and cloud.

## How Rackspace Technology accelerates cloud modernization

We understand that cloud modernization is more than just the adaptation of technology to your environment. Cloud modernization requires a comprehensive approach to data and application mapping that aligns to intended business outcomes and your IT environment, while accounting for talent capabilities and gaps. Building on 20+ years of expertise across public cloud, private cloud and SaaS, Rackspace Technology can help you realize the benefits of cloud modernization and get the most out of those technology investments as you rapidly evolve.

Through our customer-first, cloud-first approach to service delivery, we enable continuous modernization across multicloud, data, apps and security, using leading technologies that are managed and optimized on the appropriate platform to drive the best business outcomes for our customers. This helps you to reduce costs, improve customer experiences and accelerate innovation to create market differentiation.

Our 2,600+ certified technical experts can deliver a broad range of cloud modernization services across your infrastructure, application and data portfolio, and meet you anywhere on your modernization journey.

## Take the next steps

No matter where you are in your cloud modernization and optimization initiative, we're ready to help you move forward. Contact us and discover how we can help you bring your technology into the future.

[Learn more](#)





# About Amazon Web Services

Rackspace Technology is an Amazon Web Services Premier Services Partner with over 3,800 accreditations, 16 AWS competencies and 16 AWS service delivery designations. Rackspace Technology helps to assess, modernize and manage your modernization projects, leveraging the industry's most reliable infrastructure with the deepest set of services. AWS has more than 200 fully featured services for compute, storage, databases, networking, analytics, machine learning, artificial intelligence (AI), Internet of Things (IoT), mobile, security, hybrid, virtual and augmented reality and media. Together, we help accelerate your migration and modernization initiatives, resulting in faster innovation, improved efficiencies, revenue growth and reduced costs. Learn more at [aws.amazon.com](https://aws.amazon.com).

# 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](https://www.rackspace.com) or call 1-800-961-2888.

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Rackspace White Paper Q2-2023 Cloud Modernization SOL-TSK-6920 - June 21, 2023

# Appendix: methodology and audience profile

Our partner Coleman Parkes Research conducted the global survey of 1,420 IT decision-makers at companies and organizations in eight sectors during May 2023. Total respondents: (1,420).

## Country

15%	USA
11%	Germany
11%	India
10%	Australia
10%	Colombia
10%	Mexico
10%	UK
8%	Netherlands
8%	Singapore
7%	Middle East (UAE)

## Sector

15%	Financial Services/Insurance* 45% Banking 29% Insurance 27% Asset management
13%	Manufacturing & Logistics
13%	Retail
12%	Hospitality & Travel
12%	Government/Public Sector
9%	Media & Entertainment
9%	Energy Sector (Oil & Gas)
8%	Healthcare (Payer/Care provider)
4%	Pharma
4%	Bio-tech/Life Sciences

\* 220 financial service respondents

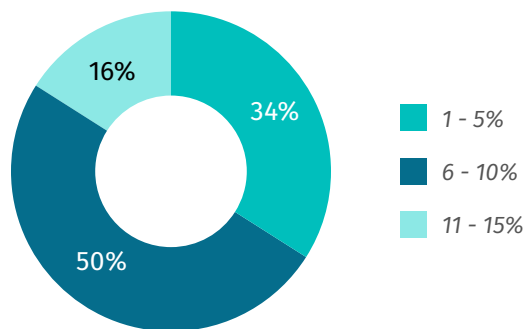
## Number of employees

42%	Less than 1,000
32%	1,000 - 4,999
13%	5,000 - 9,999
12%	10,000+

## Annual revenue FY 2022

11%	Less than \$5 million
12%	Between \$5 million - \$24 million
12%	Between \$25 million - \$49 million
12%	Between \$50 million - \$99 million
11%	Between \$100 million - \$249 million
12%	Between \$250 million - \$499 million
11%	Between \$500 million - \$999 million
11%	Between \$1 billion - \$3 billion
9%	\$3 billion or more

## Annual IT budget (% of annual revenue)



## Job title

8%	CTO (Chief Technology Officer)
8%	VP/Director/Head of IT
8%	Chief Engineer/Architect
8%	CIO (Chief Information Officer)
8%	VP/Director/Head of AI
8%	CFO (Chief Financial Officer)
8%	VP/Director/Head of Business Intelligence
8%	VP/Director/Head of Infrastructure/Product
7%	COO (Chief Operating Officer)
7%	VP/Director/Head of AI Analytics)
7%	CDO (Chief Data Officer)
7%	VP/Director/Head of Engineering
7%	Chief Data Scientist

## Responsibility

21%	Key decision maker
43%	Key influencer
29%	Influence part of the process
7%	Part of a decision-making team