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How Your Peers Are Experiencing Their Journeys to the Cloud

New research reveals the top expectations, challenges, use cases, and data analytics capabilities for modern organizations.

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By now, every innovative company is either in the cloud or considering migration. In fact, over 70% of companies are mandating that all new data analytics applications must use cloud-based platforms, according to new customer and market research from Actian, titled "Data Analytics Journey to the Cloud".

Our research offers new insights into what today's business and technical leaders are experiencing as they migrate to the cloud. This eBook captures these perspectives to inform stakeholders as they move more data and analytics workloads to the cloud and seek to optimize the cloud's unique benefits.

Key Takeaways from Cloud Migrations

Survey results found that key factors driving an organization's move to the cloud include:

- Data privacy, data security, and compliance are the main reasons organization's move to the cloud.

- Data privacy and regulatory compliance are primary concerns, along with ethical data use.

- Issues with data privacy and integration with applications and legacy systems are top pain points.

- Data security, privacy, and integration are the most used cloud technologies.

- Customer 360 and inancial risk management are the top use cases.

- Organizations say they need more cloud computing training for their IT staff.

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Cross-section of Industries and Roles

Our research is based on more than 450 survey responses from employees holding positions in the data and analytics, business, and technical areas of their organizations. Respondents' roles varied:

Director	C-Suite	Vice President	Manager
46%	**25%**	**20%**	**9%**

Respondents represented a wide range of industries—more than 15 verticals total. The top industries include technology, retail, manufacturing, and financial services. The majority of responding organizations had annual revenues at or below $500 million:

$251M - $500M	$100M - $250M	$501M - $750M	$751M - $1B
46%	**25%**	**20%**	**9%**

Businesses can be more confident in their move to the cloud, improve planning, and better leverage cloud resources by understanding how other organizations approach their migration. Companies already in a cloud, multi-cloud, or hybrid environment can use the insights in this eBook to modernize applications, business processes, and data analytics in the cloud.

Early Stage of Data Analytics Maturity

Research looked at companies' levels of data analytics maturity. Surprisingly, nearly half of the market is at an early stage of maturity, with 13% still considering cloud data analytics, which is the lowest stage of maturity.

When answering the question "Which of the following best represents your current state of data analytics maturity," organizations responded:

13% Considering

18% Planning

14% Starting

26% Full transition

29% Optimizing and expanding

Top Drivers of Cloud Transitions

More companies are moving their analytics to the cloud from on-premises infrastructure. So, what is driving businesses to the cloud? Data privacy, data security, compliance, and scalability lead the way, followed by application modernization and the need to improve availability, reliability, and analytics capabilities.

Fifty-seven percent of companies view the cloud as a way to make managing data privacy, data security, and compliance easier. Organizations frequently move to modern platforms managed by cloud service providers that are experts in these areas. Their clouds offer the latest in access management, security controls, security monitoring, and automated threat response, and they provide faster mitigation and resilience if an attack occurs. Plus, cloud service providers strengthen compliance because they must follow regulations, frameworks, and laws of the countries where they operate.
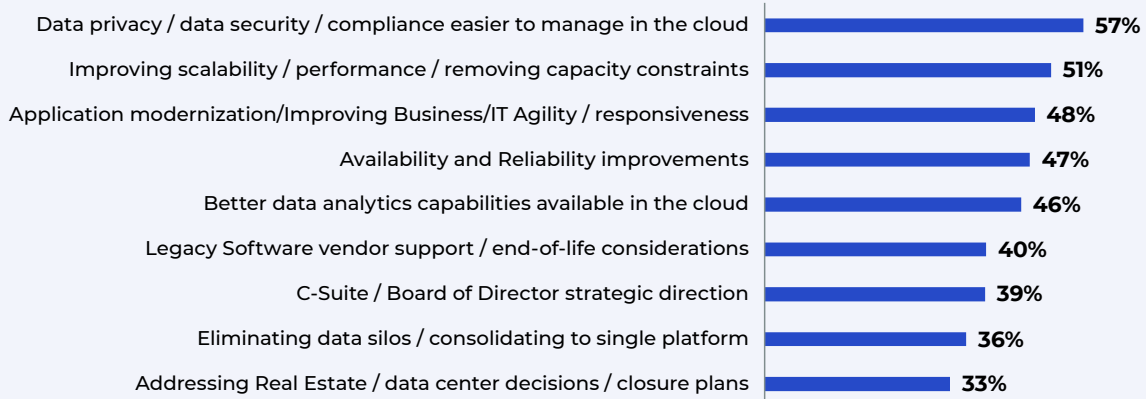
As 48% of companies seek to modernize their applications and strive for greater agility, they are embracing a cloud-first principle. They need the innovation of cloud service providers to execute their digital strategies. Ongoing advancements in analytics, data services, security, and integration are at organizations' immediate disposal when they migrate to a cloud service provider's platform. And, with the help of automation and orchestration in the cloud, provisioning, de-provisioning, and re-deploying resources can be simpler and faster than on-premises.

Yet another reason 47% of companies are turning to the cloud is that they need an effective, flexible, and efficient way to maximize data availability along with the need for reliable delivery of data wherever and whenever users need it. Servers, storage, data servers, or an entire network can easily recover and continue operations in the cloud.

Forty-six percent of businesses also see the opportunity to improve their analytics capabilities in the cloud. The cloud makes it easier to handle larger data sets and provides access to a rich ecosystem of cutting-edge technologies for building advanced analytics such as machine learning and deep learning. Elastic clouds also enable quick experimentation of ideas by supporting rapid model training and retraining.

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Q1: Which of the following factors/objectives are considered when deciding whether to transition your data analytics to the cloud? n=450

Drivers of Cloud Transition

Driver	%
Data privacy / data security / compliance easier to manage in the cloud	57%
Improving scalability / performance / removing capacity constraints	51%
Application modernization/Improving Business/IT Agility / responsiveness	48%
Availability and Reliability improvements	47%
Better data analytics capabilities available in the cloud	46%
Legacy Software vendor support / end-of-life considerations	40%
C-Suite / Board of Director strategic direction	39%
Eliminating data silos / consolidating to single platform	36%
Addressing Real Estate / data center decisions / closure plans	33%

• Data Privacy and Scalability led the way
• Application Modernization, Reliability and Improved Analytics capabilities were also key drivers

Why Are Companies Migrating to the Cloud?

Cloud elasticity provides the ability to grow or shrink CPU, memory, and storage resources to adapt to the changing demands of an organization. This helps explain why the cloud has become so attractive for over half of the organizations in the survey. They want to operate in the cloud to improve their scalability and performance as well as to remove capacity constraints for their dynamic workloads.
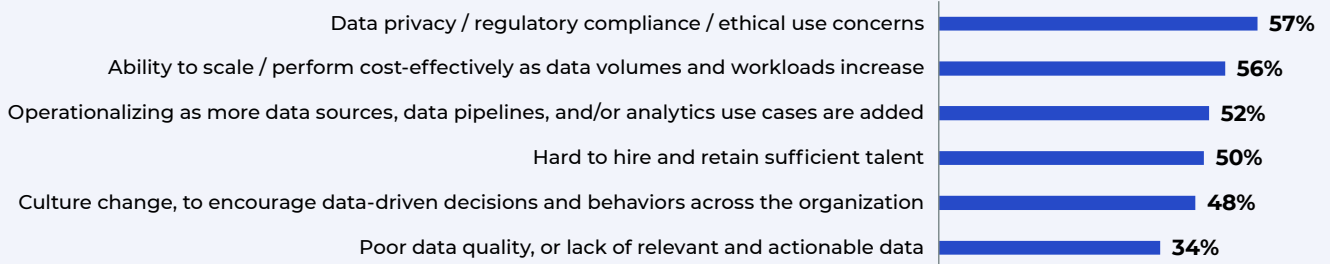
Several Issues Are Causing Data Analytics Challenges

Data analysis is becoming a more difficult challenge by the day. Data privacy, regulatory compliance, and ethical use top the list of concerns. The ability to scale cost effectively came in a close second and operationalizing as more data sources, data pipelines, and use cases are added was third.

How do companies democratize data while protecting privacy, complying with regulations, and ensuring ethical use? This is a challenge that 57% of organizations experience. In a fragmented privacy compliance environment, organizations are scrambling to make sure their analytics complies with all the different rules and regulations. Plus, many organizations are tested by the need to protect sensitive data because access requirements can vary greatly by users, geographies, products, business functions, and customer identities.

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Q2: Which of the following data analytics challenges are you facing / have you faced? n=450

Data Analytics Challenge

Challenge	%
Data privacy / regulatory compliance / ethical use concerns	57%
Ability to scale / perform cost-effectively as data volumes and workloads increase	56%
Operationalizing as more data sources, data pipelines, and/or analytics use cases are added	52%
Hard to hire and retain sufficient talent	50%
Culture change, to encourage data-driven decisions and behaviors across the organization	48%
Poor data quality, or lack of relevant and actionable data	34%

• Data Privacy and Scalability led the challenges faced

Growing Deployments Can Impact Costs

Companies tend to start small in the cloud and then run into trouble as their deployment grows. Often, organizations choose a simple point solution for their first project, but as they implement additional projects, they are quickly overwhelmed by the sheer volume of data from enterprise, software as a service, Internet of Things, and web data sources. Even if throwing more resources at the scalability problem would help—it usually doesn't, particularly if the platform isn't cloud native—organizations are under increasing pressure to align costs with business value and must be mindful of price performance.

Fifty-six percent of companies have trouble scaling their analytics cost effectively. Closely related to scalability challenges is the inability to operationalize increasing data sources, data pipelines, and use cases. Fifty-two percent of companies encounter these issues. This can make it hard for organizations to extend projects and share data with more users, limiting the ability to become a true data-driven business.
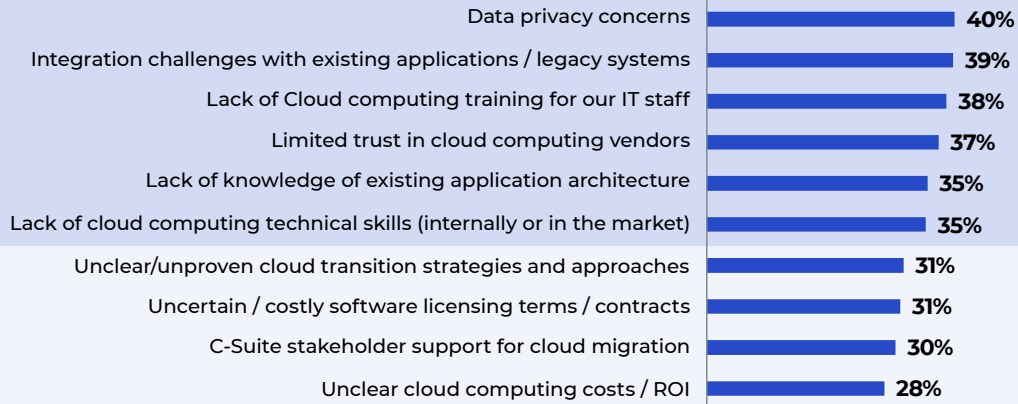
Cloud Migration Friction Points Can Turn into Roadblocks

Companies frequently encounter cloud migration friction points during their cloud journey. Data privacy issues and integration with applications and legacy systems are the two most common issues. Lack of cloud training came in third.

Non-compliance with privacy regulations is costly and can cause considerable damage to an organization's brand reputation. Given these potential issues, it's no wonder that 40% of organizations have privacy concerns for moving their data to the cloud. For example, companies in highly regulated industries such as finance and healthcare often prefer to store sensitive data on-premises.

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Q3: Which of the following friction points have you encountered during your data analytics transition to the cloud? n=391

Cloud Migration Friction Points

Friction Point	%
Data privacy concerns	40%
Integration challenges with existing applications / legacy systems	39%
Lack of Cloud computing training for our IT staff	38%
Limited trust in cloud computing vendors	37%
Lack of knowledge of existing application architecture	35%
Lack of cloud computing technical skills (internally or in the market)	35%
Unclear/unproven cloud transition strategies and approaches	31%
Uncertain / costly software licensing terms / contracts	31%
C-Suite stakeholder support for cloud migration	30%
Unclear cloud computing costs / ROI	28%

- Data Privacy issues and Integration with legacy systems were the most common
- Lack of Cloud training was #3

Data silos are hard to break down, with 39% of companies having integration challenges when moving their applications and legacy systems to the cloud. Without the right solution, integration can be complex, time consuming, and expensive. Data silos can slow down productivity, hinder business agility, and paint incorrect pictures of business events and customers.

The lack of skilled cloud experts is making the transition to the cloud even more arduous. Thirty-eight percent of organizations said there was a lack of cloud computing training for their IT staff, and 35% indicated there was a lack of cloud computing technical skills, internally or in the market.
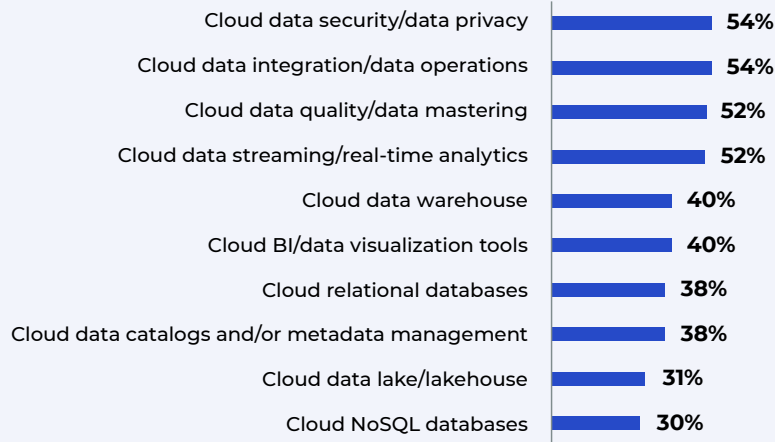
Further, the lack of knowledge of existing application architecture challenges 35% of companies trying to migrate to the cloud. This can happen for several reasons. Often staff with expertise have left the company, there's no documentation, and/or third-party applications and libraries are no longer available.

> Data silos are hard to break down, with 39% of companies having integration challenges when moving their applications and legacy systems to the cloud.

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Q4: Which of the following cloud-native analytics related technologies does your company currently have in operation?

Cloud Technologies in Operation

Technology	Percentage
Cloud data security/data privacy	54%
Cloud data integration/data operations	54%
Cloud data quality/data mastering	52%
Cloud data streaming/real-time analytics	52%
Cloud data warehouse	40%
Cloud BI/data visualization tools	40%
Cloud relational databases	38%
Cloud data catalogs and/or metadata management	38%
Cloud data lake/lakehouse	31%
Cloud NoSQL databases	30%

Cloud-Native Analytics Technologies in Operation

With organizations still recovering from COVID-19 causing an overnight push to the cloud, it's no surprise that respondents gave data security and privacy a first-place rating when asked about their current cloud technologies in operation.

Because companies are moving more applications to the cloud, it's also not surprising to see the strong demand for data integration technology and data quality. As more applications are pushed out to software as a service (SaaS) and platform as a service (PaaS) models, companies must implement plans to bring that data back to a centralized platform for analytics and make it usable for business decisions. To do that, companies have to first ensure that the data is secure and compliant. Then they need to be confident that their data is complete, clean, and timely before they can use it to deliver business value.
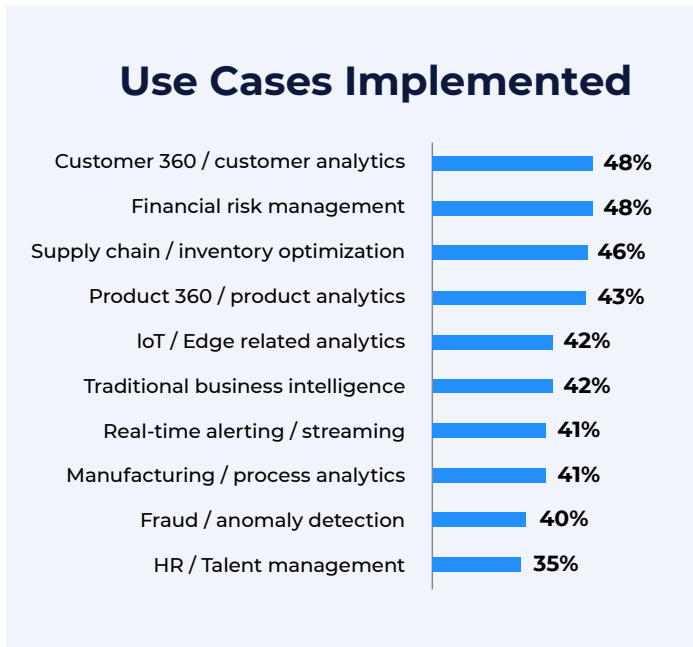
There is no denying that there's a strong demand for real-time data in today's business landscape. Fifty-two percent of survey participants already have a cloud-based technology for streaming data and performing real-time analytics.

The Growing Need for Real-Time Data

Real-time data allows businesses to stay ahead of the curve, spotting current and emerging trends and opportunities before their competitors do. It also allows for more agile decision making because businesses can quickly pivot their strategies based on the latest insights. In addition, businesses are increasingly analyzing real-time data streams in the cloud to tackle diverse use cases such as IoT sensor data analytics, fraud detection, online advertising, cybersecurity, log analytics, stock trading, and much more.

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Q5: Which of the following use cases for data analytics have you planned or implemented?

Use Cases Implemented

Use Case	Percent
Customer 360 / customer analytics	48%
Financial risk management	48%
Supply chain / inventory optimization	46%
Product 360 / product analytics	43%
IoT / Edge related analytics	42%
Traditional business intelligence	42%
Real-time alerting / streaming	41%
Manufacturing / process analytics	41%
Fraud / anomaly detection	40%
HR / Talent management	35%

Most Common Real-World Data Analytics Use Cases

Data analytics use cases are evenly distributed across organizations. As the research highlights, many departments are leveraging data for decision making across customer analytics, financial risk management, and supply chain optimization.

Leading the way, 48% of survey participants leveraged the cloud for customer 360 analytics. By collecting and aggregating customer data from multiple sources, such as social media, email campaigns, and website interactions, businesses can gain a comprehensive understanding of their customers' behaviors, preferences, and needs. For example, businesses can use a cloud data platform to identify trends and patterns in customer behavior, segment their customer base, and personalize marketing campaigns based on individual customer preferences.

Companies are also turning toward data analytics to mitigate financial risks and optimize their supply chain to gain a competitive edge. Forty-eight percent of respondents acknowledged the significance of analytics in managing financial risks, while 46% relied on data to streamline their supply chain operations.

Organizations can use data to identify potential supply chain risks, track inventory levels, and forecast demand. Using data analytics, companies can quickly react to—and even predict—disruptions and make informed decisions. For example, during the COVID-19 pandemic, companies that had access to real-time data were able to adapt to changing market conditions quickly. Companies should also be data driven to identify inefficiencies and bottlenecks in the supply chain and take prompt corrective actions.

How to Deliver New Capabilities During the Cloud Transition

Managing the transition to the cloud can be a daunting task for many companies. Despite the growth in cloud technologies over the last five years, businesses are still on a journey toward fully embracing the cloud. While the benefits are clear—improved flexibility, scalability, and cost savings—companies must still carefully manage their cloud transition to ensure a smooth journey.

With the increasing adoption of cloud technology, the demand for cloud talent has skyrocketed. Companies are looking for professionals with expertise in cloud computing to manage their data and infrastructure. However, with the fast-paced nature of the industry, technology is constantly changing and advancing. Fifty percent of respondents seek more vendor training to hone their skills. Forty-nine percent also turn to vendors and trusted advisors to help during the cloud migration planning process.

Rounding out the top three new capabilities needed during the cloud migration is the desire for improved licensing and contracts. Companies are moving away from perpetual licenses that have hefty support fees in favor of more flexible SaaS and consumption-based pricing. Consumption bills can be unpredictable, and companies must monitor usage to prevent runaway expenses.

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Ensure a Successful Outcome on Your Data Analytics Journey to the Cloud

Following a proven path and understanding common pain points help organizations successfully migrate to the cloud. Once the migration is complete, the right strategy enables companies to reach their goals and realize desired outcomes, such as modernizing in the cloud, scaling to meet growing data volumes, and benefitting from cloud computing.

Implementing a modern cloud data platform allows organizations to use advanced data analytics capabilities in the cloud. For example, the Avalanche Cloud Data Platform from Actian simplifies how people connect, manage, and analyze their data. The platform solves a frequent problem companies face in the cloud and on-premises—making data easy to access and use for everyone across the business who needs it.

Working with a company that has experience with cloud migrations helps organizations avoid friction points. This is another area where Actian can help. Whether companies want to migrate to the cloud with a lift and shift, refactoring, replatforming, or another approach, Actian has proven solutions and experience to accelerate the move.

Actian also offers flexible deployment options, including multi-cloud and hybrid cloud environments as well as on-premises. This allows organizations to choose where they run their workloads. The Actian platform is available on Google Cloud, Amazon Web Services (AWS), and Microsoft Azure.

As highlighted in this eBook, taking a strategic approach to cloud migration allows organizations to optimize the value of their data and analytics, achieve scalable growth, perform new use cases, and achieve other benefits. Working with the right partner can make the cloud journey fast and hassle-free while setting up success.

About Actian

Actian transforms business by simplifying how people connect, manage, and analyze data. The Avalanche Cloud Data Platform gives customers a flexible and comprehensive solution that enables fast innovation by gaining real-time insights, leveraging native data integration, and deploying anywhere. The Actian platform offers maximum interoperability by combining data integration, management, and analytics solutions across systems, while its partnership model makes scaling fast, efficient, and effective. Customers benefit from its always available support that proactively detects and solves potential issues, which is also a crucial feature for data intensive enterprises. For more information, please visit **www.Actian.com**.