TCS Global Cloud Study for Travel, Transportation, and Logistics

How Cloud Drives Business Innovation

Introduction

Over the past few years, travel, transportation, and logistics companies have experienced major global events and significant shifts in consumer behavior. Both necessitated rapid adaptation, spurring digital transformation and innovative new business models across railways, airlines, shipping, logistics, and distribution centers.

The widespread adoption of cloud has emerged as a pivotal accelerator of modernization. Once viewed primarily as a one-dimensional IT infrastructure, the acceptance of cloud as a secure, responsive platform has become a strategy for business transformation and growth. It provides the unifying digital foundation for a connected future and expanded capabilities to optimize operations and elevate the customer experience.

By serving as a catalyst for innovation, cloud offers myriad opportunities to address longstanding industry challenges while unlocking new opportunities for growth. The global cloud study from TCS reveals that while travel, transportation, and logistics organizations are eager to unlock the promise of cloud-enabled innovation, they have yet to tap into its full potential.

Driving innovation through cloud

The companies surveyed not only recognize cloud's role in innovation strategies, but have a much greater level of confidence in its potential compared to other industries. Three-fourths of the travel, transportation, and logistics businesses we surveyed say cloud is crucial to their organization's future as a catalyst for innovation, compared to 59% of total respondents across all industries.

75%

of travel, transportation, and logistics companies surveyed say cloud is crucial to their organization's future as a catalyst for innovation, compared to

59%

of total respondents across all industries.

Where do they want to accelerate innovation through cloud? In addition to improved customer experiences and new business models, more than half say "new ways of aligning purpose with business strategies (e.g., sustainability efforts)" is a top wish-list item – the highest percentage of all industries.
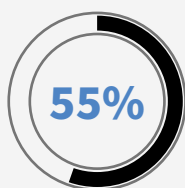
55% New ways of aligning purpose with business strategies (e.g., sustainability efforts)
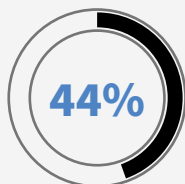
**44%** New business models
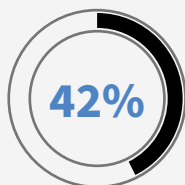
42% Improved customer experiences

Q. "Pick the top 3 most desired outcomes for cloud-enabled innovation at your enterprise

Travel, transportation and logistics companies are increasingly putting sustainability at the core of their operations. Ecofriendly initiatives such as optimized travel routes, reduced waste, and shared resources are reshaping the end-to-end value chain. Airlines – long viewed as one of the largest contributors to global carbon emissions – have set ambitious net-zero goals for 2050 and continue to embrace new ways to reduce fuel consumption and emissions.

When it comes to their sustainability goals, travel, transportation, and logistics respondents see cloud as an important – and thus far, largely successful—factor. Nearly three-fourths (71%) of respondents say cloud technologies have helped their organizations achieve sustainability goals
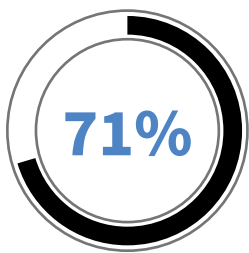
71% of respondents say cloud technologies have helped their organizations achieve sustainability goals
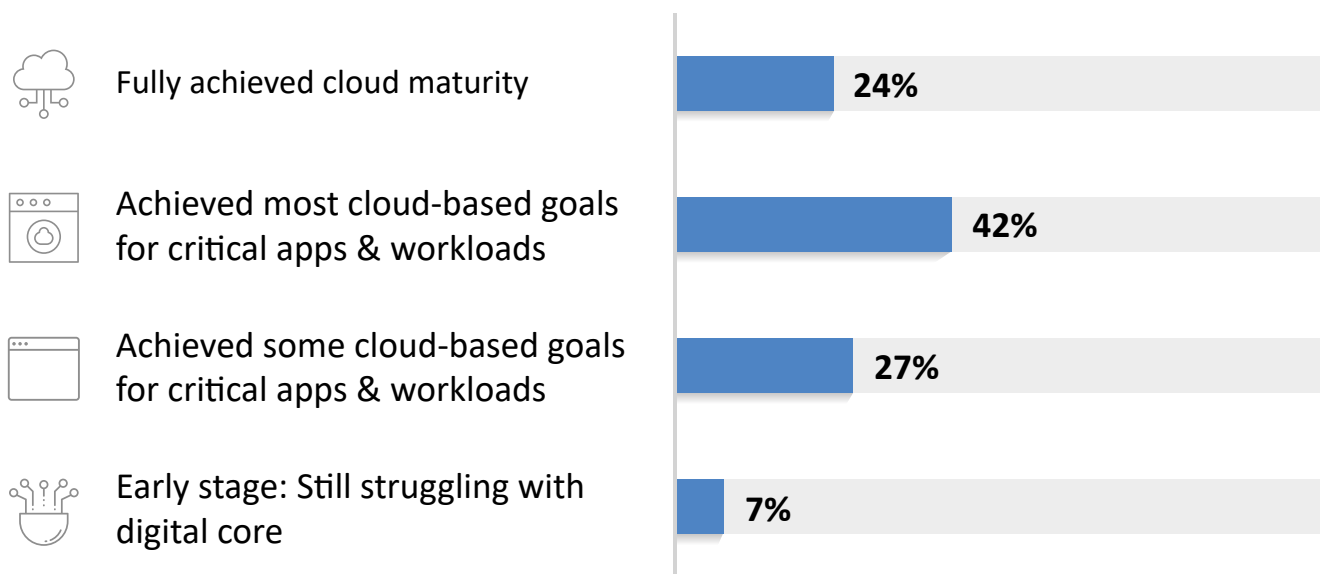
Further, respondents say they are increasingly using cloud to track critical data indicators of sustainability. More than half (58%) say they are using cloud to track air and water quality management.

Charting cloud maturity and progress

The vast majority of travel, transportation, and logistics companies have taken the initial steps on their cloud journey. They've invested in the foundation of a strong digital core, with cloud as the unifying digital fabric. Others are gradually adopting their core systems as existing cloud-based processes and capabilities prove viable, function by function.

Less than a quarter (24%) of respondents reported full cloud maturity at this time (vs 27% of total industries), though an additional 42% indicated significant progress toward this goal.

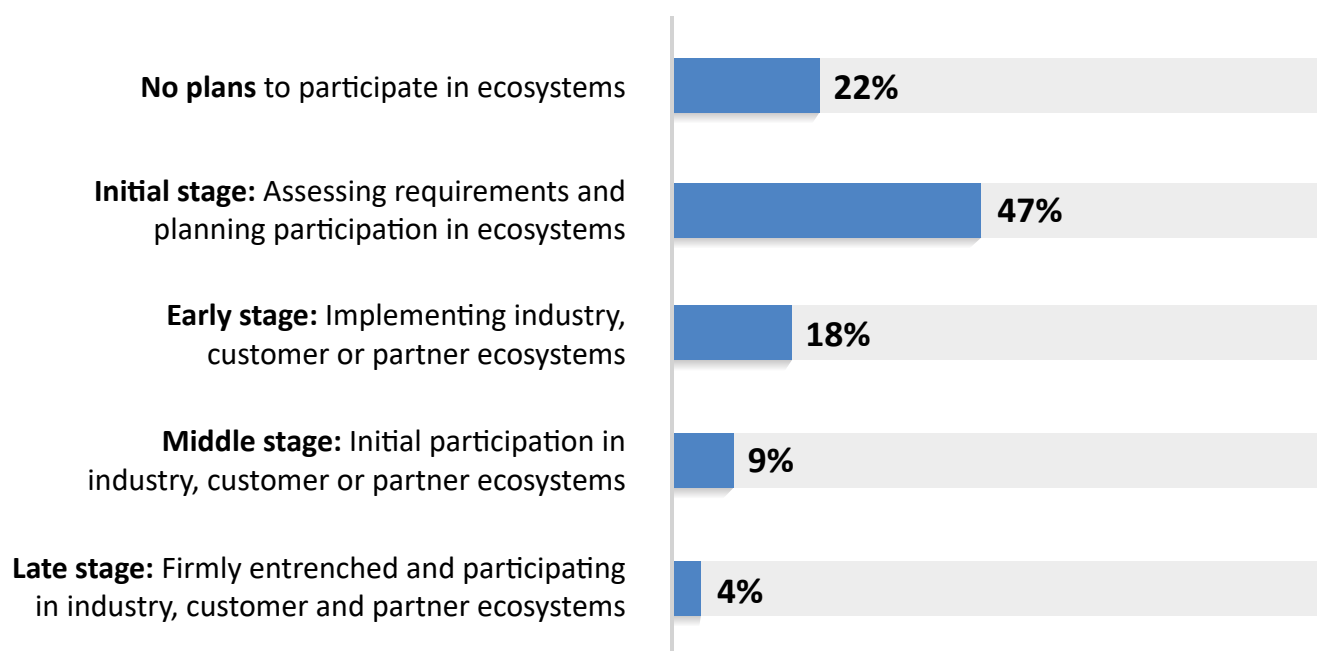|	
Fully achieved cloud maturity	24%
Achieved most cloud-based goals for critical apps & workloads	42%
Achieved some cloud-based goals for critical apps & workloads	27%
Early stage: Still struggling with digital core	7%

With initial modernization efforts underway, travel, transportation, and logistics organizations can begin unlocking innovation with business processes and models for greater insights and customer experiences. And toward the final stages of adoption, companies begin maturing into a cloud-native environment and participating in transformative partner ecosystems that truly maximize the perpetual value of cloud.

Given the multitude of partners and providers, digital ecosystems hold particular value for travel, transportation, and logistics companies. Digital ecosystems forged on cloud-based platforms can allow transportation companies to integrate and engage with external partners and competitors to unlock new forms of value

Currently, many travel, transportation, and logistics companies have been surprisingly slow to participate in digital ecosystems, given the advantages. Around two-thirds of respondents across all regions surveyed are still in the initial or early stages of ecosystem participation.

Percentage of respondents at each stage of digital ecosystems maturity

Stage	
No plans to participate in ecosystems	22%
Initial stage: Assessing requirements and planning participation in ecosystems	47%
Early stage: Implementing industry, customer or partner ecosystems	18%
Middle stage: Initial participation in industry, customer or partner ecosystems	9%
Late stage: Firmly entrenched and participating in industry, customer and partner ecosystems	4%

# Fueling the next wave of artificial intelligence

By providing the scalable infrastructure and resources to harness large amounts of data, cloud has accelerated the adoption of data-intensive technologies. Travel, transportation, and logistics organizations have been quick to capitalize on these technologies, with a strong emphasis on artificial intelligence (AI) capabilities.

While companies are using AI for increasingly sophisticated dynamic pricing, improved demand forecasting and biometric identification, the advent of generative artificial intelligence (GenAI) will further expand the capabilities of AI with the potential for transformational impact.

84%
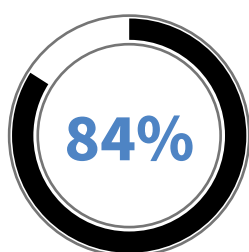
of transportation respondents say they increased investments in artificial intelligence/machine learning (AI/ML) in the past 1 – 2 years
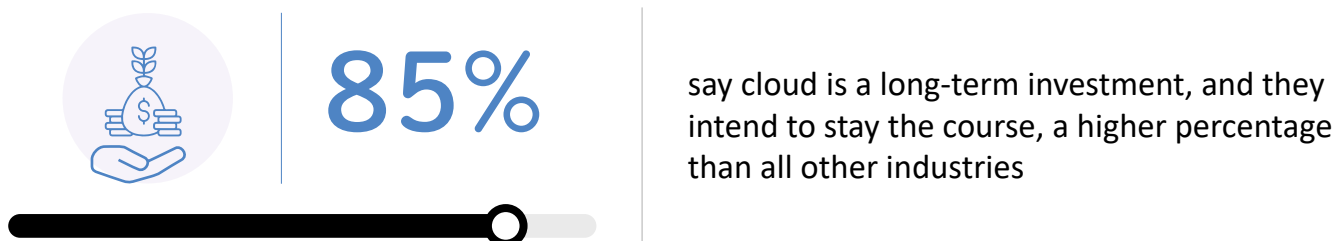
and

89%
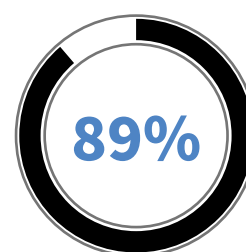
say they plan to invest in AI/ML in the next 1 – 2 years

In addition, more than half of travel, transportation, and logistics organizations say they plan to invest in edge/IoT technologies over the next 1-2 years, compared to 48% of total respondents across all industries.

Identifying and overcoming barriers to innovation

The majority of respondents surveyed show a strong commitment to an innovation-led transformation rooted in cloud and take the long view of cloud investments.
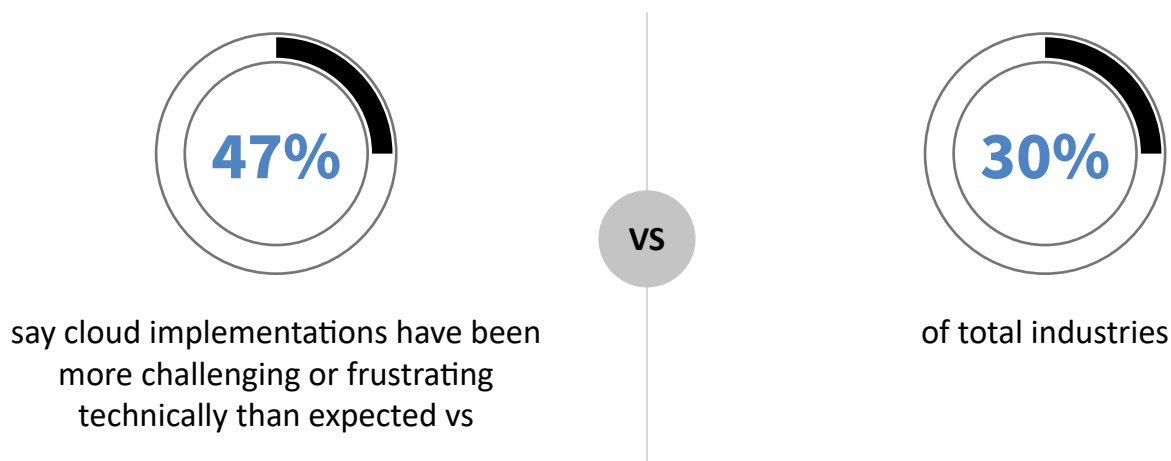
85%

say cloud is a long-term investment, and they intend to stay the course, a higher percentage than all other industries

Percentage of respondents selecting "agree" or "significantly agree" that "our leadership recognizes that cloud is a long-term investment and intends to stay the course"

Although the overall outlook is optimistic, respondents noted several obstacles impeding their progress. Respondents indicate cost pressures, data governance and difficulties around complex, fragmented operations are areas of particular concern.

Implementation and ROI obstacles

Having gone through the initial acceleration of investments in the past few years, some organizations say they have hit unexpected technical challenges with cloud implementations.

47%

say cloud implementations have been more challenging or frustrating technically than expected vs

VS

30%

of total industries

Transportation companies also indicate greater uneasiness around ROI than other industries. 38% say they feel increasing pressure and scrutiny to justify cloud investments, compared to 23% of total industries. As indicated earlier, one strategy travel, transportation, and logistics companies are using is a segmented approach to cloud adoption through individual functions such as HR, finance, etc.

However, a segmented approach can also make it difficult to align overall enterprise-wide business needs with investments. A sizable number of respondents see room for improvement when it comes to aligning their cloud investments with their requirements.

While nearly half say they have invested appropriately in cloud in the past three years, nearly as many say they over-invested over that same time period. Another 15% say they under-invested, slightly over the aggregate.

	Invested appropriately	Over-invested	Under-invested
Transportation & logistics respondents	45%	40%	15%
Total respondents	51%	36%	13%

Q. "Thinking back on the past 3 years, how would you describe your company's cloud investments?"

Data governance

With vast amounts of data generated from multiple sources such as shipments, vehicles, routes and customers, travel, transportation, and logistics companies must have robust mechanisms in place to share, discover, and access data. That requires a strong commitment to data governance as part of an overall strategy to secure more value from data, particularly as these organizations accelerate the adoption of emergent AI technologies.
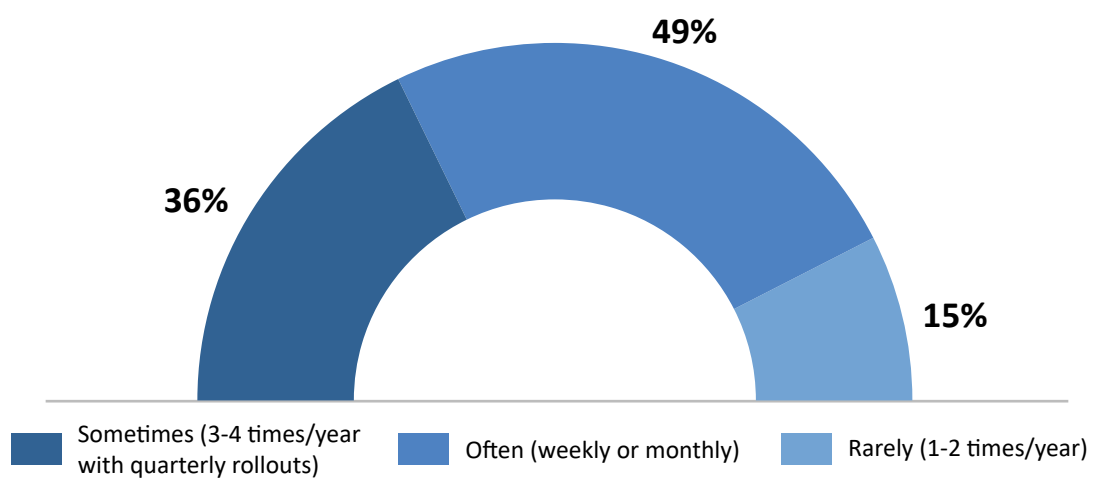
Just 33% of transportation organizations say they excel in data governance and experience no issues, just under the 34% reported by the total industries combined.

Legacy systems

Many travel, transportation, and logistics companies still rely on older business processes and operations that are increasingly impacting their ability to innovate. 38% of respondents cited "Accumulated complexity and rigidity of business processes and operations" as a top obstacle to cloud innovation, the highest of all industries.

Part of the challenge might be a dependency on legacy systems that support their core business processes, applications and data. In addition to being inflexible and cost-intensive, these legacy systems can hamper the ability to innovate and meet new business requirements.

Further, these same ERP systems require frequent customizations. Because of new functionality or requirements, 36% of all travel, transportation, and logistics respondents reported the need to customize their ERP systems quarterly; 49% must do so monthly or even weekly.
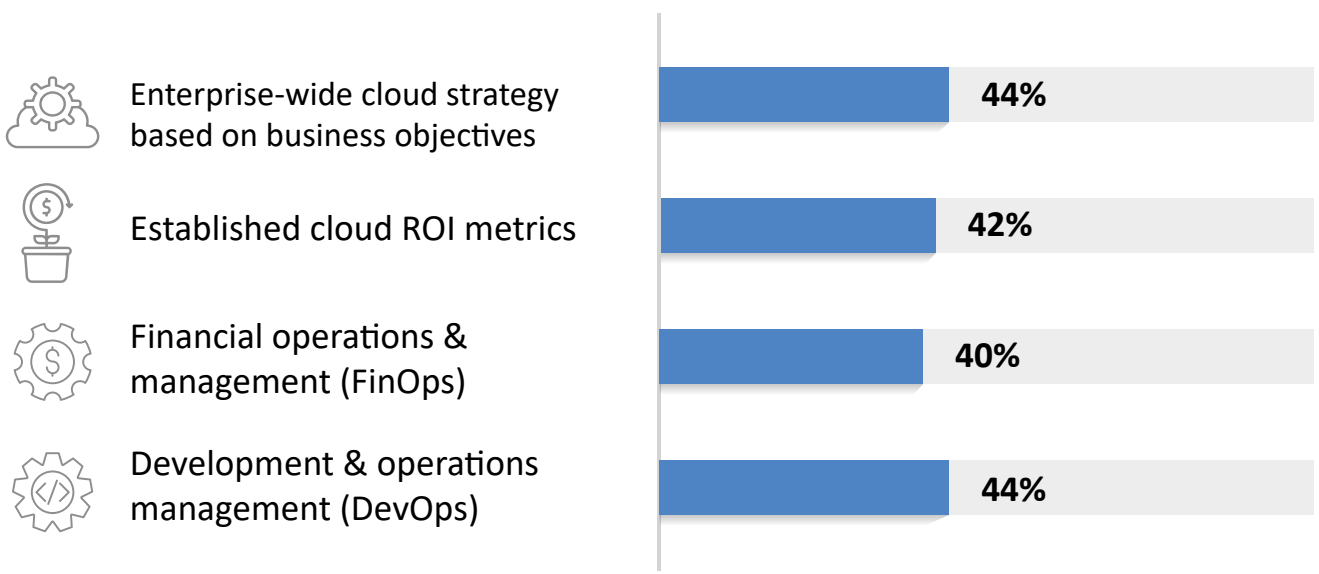
49%

36%

15%

■ Sometimes (3-4 times/year with quarterly rollouts) ■ Often (weekly or monthly) ■ Rarely (1-2 times/year)

Q. How often do you need to customize your ERP system to accommodate new functionality or business requirements? N=55

Unsurprisingly, more than half (58%) of organizations reported plans to increase investments in cloud-native ERP in the next 1-2 years.

Cloud expertise

Respondents also report struggling to find or develop critical cloud skills sets and capabilities. Many transportation organizations lack full proficiency in areas such as DevOps and cloud metrics.

Proportion of respondents who report proficiency challanges with skills and experience in the following areas

Enterprise-wide cloud strategy based on business objectives **44%**

Established cloud ROI metrics **42%**

Financial operations & management (FinOps) **40%**

Development & operations management (DevOps) **44%**

Realizing the true promise of cloud-enabled innovation

The travel, transportation, and logistics environment has experienced rapid transformation in the past several years, and this trend will likely accelerate. Cloud-enabled innovation can help companies better anticipate and adapt to these shifts, and our research suggests that many transportation organizations are making solid progress toward it. To continue moving forward, transportation organizations must prioritize:

Enabling next-generation customer experience. Cloud can fuel the next generation of AI, enabling real-time, accurate insights and contextual knowledge transfer to reinforce customer centricity. Intelligent assistant and hyper-personalized responses can guide interactions, while cloud based-predictive service modeling can enable near real-time adaptation to better meet customers' needs.

Achieving and maintaining critical skills. Identify and overcome shortfalls in capabilities that could impact growth and transformation. Multi-cloud approaches will likely enhance the need for broader skills requirements. In addition, gaps in data governance could prove serious impediments to newer technologies.

Evolving cloud-enabled sustainability. Look for new ways to assess the maturity of green IT ecosystems across cloud and on-premises infrastructures. Improve efficiencies for enabling sustainable services and initiatives across the value chain.

About the study

Tata Consultancy Services (TCS) conducted a global cloud study on the theme of cloud-enabled innovation. TCS surveyed 972 C-suite and IT senior executives and decision makers from companies with +$1 billion in annual revenue, across UK & Ireland, Continental Europe, North America, and APAC (India, Japan, Australia, NZ). The C-suite and IT senior executives and decision makers included 55 respondents in the travel, transportation, and logistics sector.

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