



DIGITAL & TECHNOLOGY SERVICES

Public Cloud Migration for a Legacy Enterprise Application

Migration to the public cloud offers significant opportunities for scalability, cost optimization, and operational resilience.

However, many organizations underestimate the complexity of these transitions, especially when dealing with deeply integrated, business-critical systems with complex workloads—leading to a high rate of failure in cloud initiatives. According to Gartner, 60% of infrastructure and operations leaders will experience public cloud cost overruns that negatively impact their on-premises budgets through 2024.¹ Additionally, 83% of data migration projects either fail or exceed their budgets and schedules, with average cost overruns of 30% and time overruns of 41%.²



Executive Summary

This white paper outlines a proven, phased cloud migration strategy designed to increase the likelihood of success. Business leaders will gain insights into structuring cloud transformation programs that reduce risk, accelerate value realization, and ensure long-term sustainability.

A foundational step in this journey is selecting the appropriate cloud deployment model—on-prem, public cloud, hybrid cloud, or multi-cloud—based on workload characteristics, compliance needs, and strategic goals. Each model offers distinct advantages and trade-offs in terms of control, scalability, and cost.

Additionally, organizations should consider the potential for cloud repatriation as part of long-term planning. Repatriation involves moving workloads back to on-prem or private environments when it becomes more cost-effective, secure, or operationally efficient to do so. Factoring in this flexibility ensures a more resilient and adaptable cloud strategy.

As large and mid-sized enterprises move beyond migrating simpler applications, transitioning business-critical workloads—while inherently risky—can unlock substantial value when executed effectively. Our comprehensive framework of critical considerations will help guide successful public cloud adoption in complex enterprise environments.

¹ Meghan Rimol, "6 Ways Cloud Migration Costs Go Off the Rails," Gartner, July 7, 2021, <https://www.gartner.com/smarterwithgartner/6-ways-cloud-migration-costs-go-off-the-rails>

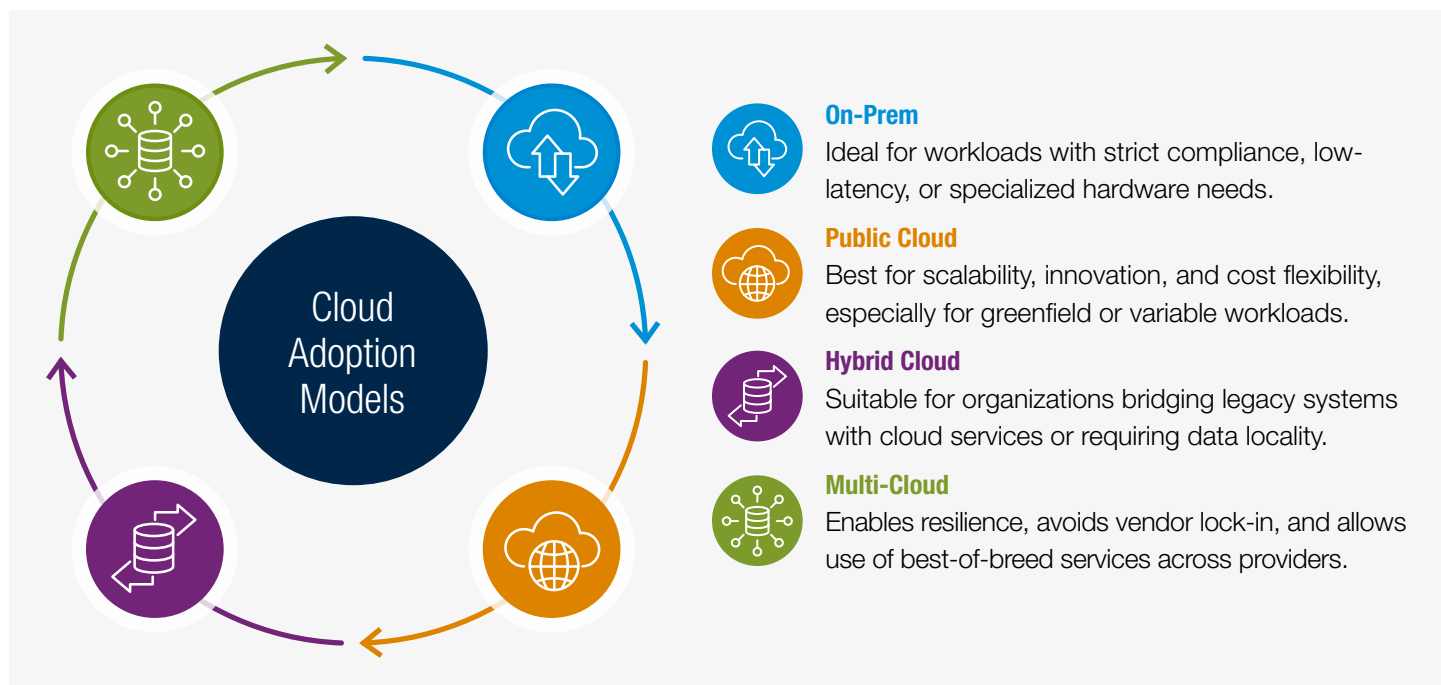
² Sakshi Kulshreshtha, "Data Migration Challenges and Solutions for 2025," citing Gartner, Hevo, December 20, 2024, <https://hevodata.com/learn/data-migration-challenges-and-best-practices/>



Cloud Adoption Models

Cloud adoption is no longer a question of “if,” but “how fast” and “how well.” Organizations are increasingly moving to the public cloud to achieve agility, scalability, and cost efficiency. However, cloud migration is not a simple lift-and-shift exercise—it requires a strategic approach that addresses technical, organizational, and financial dimensions.

Choosing the right deployment model—on-prem, public cloud, hybrid cloud, or multi-cloud—is a foundational decision that shapes the entire transformation journey:



Cloud Migration Considerations

The cloud migration considerations consist of six key dimensions that collectively ensure a holistic and sustainable migration strategy:



1. Governance and Execution

Effective governance is essential for successful cloud migration, especially for complex, multi-year initiatives. Establishing the effort as a leadership and business priority ensures alignment with strategic goals and secures executive sponsorship. Strong stakeholder engagement across business and IT fosters collaboration—critical for medium to large enterprises with business-critical systems and high-volume users, such as call centers. Timely communication keeps teams aligned and responsive. If there are significant changes to the underlying data and data shared, working closely with on-prem downstream consumers who have not migrated to the public cloud is a critical task that needs to be closely managed and tracked. Robust project and program management provide structure, while proactive risk identifications such as resource realignment based on lessons learned. This helps mitigate disruptions during complex phases that require additional development and testing.



2. Technical Architecture and Quality Assurance

Resilient and scalable technical architecture is key to long-term success in the cloud. Seasoned information, technical and data architects, along with principal engineers, should lead the design of the target state architecture to ensure it meets business and technical requirements. A centralized tollgate process prior to development and prior to product rollout ensures consistency in cloud architecture, design, development, and security standards. Automated code deployment and unit testing through CI/CD pipelines accelerate delivery while maintaining quality. Rigorous integration and user acceptance testing validate functionality and performance. Downstream data consumer testing ensures that data flows and dependencies are preserved. Finally, production parallel and chaos testing simulate real-world scenarios to validate system resilience and readiness.



3. Workforce and Capability Strategy

A well-rounded workforce strategy is essential to support cloud transformation and sustain operations post-migration. Striking the right balance between internal employees and external consultants provides both continuity and specialized expertise. Engaging teams across locations ensure effective knowledge transfer and robust post-migration support, especially for a 24/5 or 24/7 system. Investing in talent through cloud training and certification programs upgrades internal capabilities and fosters a culture of continuous learning and helps in uplifting morale. Hiring experienced cloud practitioners or leveraging third-party experts accelerates delivery and can avoid costly mistakes and reduce risk, ensuring that the organization is equipped with the right skills at every stage of the journey.



4. Delivery Strategy and Optimization

A thoughtful delivery strategy maximizes the impact of cloud initiatives while minimizing disruption. Reviewing system rollout strategies, whether a big bang or phased approach—helps align technical feasibility with business readiness. Involving key business stakeholders and technology leaders in rationalization and prioritization ensures that the rollout is sequenced effectively and delivers value early. A phased rollout approach, especially for legacy systems, that might have not seen any changes to key capabilities, allows teams to incorporate lessons learned from earlier phases, continuously improving execution. Centralized knowledge management supports consistency, accelerates onboarding, and preserves institutional knowledge across teams and phases.



5. Security (Cyber and Cloud)

Data security is paramount in the cloud and must be reevaluated in the context of new architectures and threat landscapes. Reassessing data classification ensures that sensitive information is appropriately protected. Encrypting data both at rest and in transit safeguards against unauthorized access. Leveraging cloud-native security tools such as AWS Macie or Azure Purview enhances visibility and control over data assets. Implementing a Zero Trust access model strengthens identity and access management. Continuous monitoring and auditing provide real-time insights into security posture, while adherence to regulatory standards like GDPR and HIPAA ensures compliance and builds trust with stakeholders.



6. Cloud Migration Cost Considerations

Understanding and managing costs is critical to the success of cloud migration. Premigration cost modeling and total cost of ownership (TCO) analysis provide a clear financial baseline and help justify investment. One-time migration costs, including tools, training, and dual-running environments, must be planned and budgeted. Post-migration, organizations can optimize spending through rightsizing, reserved pricing, and other cost-saving measures. Establishing FinOps practices and cost governance ensures ongoing financial discipline. Implementing tagging, chargeback mechanisms, and continuous cost monitoring enable transparency and accountability across business units.



Cloud Repatriation Considerations

While cloud migration offers significant benefits, some organizations may later choose to repatriate certain workloads—moving them from the public cloud back to on-prem or private cloud environments. This decision is often driven by cost, performance, compliance, or control considerations.

Why Repatriation Happens:

- **Cost Optimization:** Some workloads may be more cost-effective to run on-prem, especially if they are stable and predictable.
- **Performance Needs:** Applications requiring ultra-low latency or high throughput may perform better in local environments.
- **Compliance and Data Sovereignty:** Regulatory or contractual obligations may require data to remain within specific geographic or physical boundaries.
- **Security and Control:** Organizations may prefer the visibility and control offered by on-prem infrastructure.
- **Vendor Lock-In:** Repatriation can reduce dependency on a single cloud provider and increase strategic flexibility.

When Repatriation Makes Sense:

- Stable, nonelastic workloads with predictable usage patterns
- Systems with high cloud egress costs or licensing inefficiencies
- Environments where full infrastructure control is required

Best Practices and Lessons Learned



01

Start with a clear business case and executive sponsorship.



02

Prioritize migration capability/workloads based on complexity and business value.



03

Invest in cloud skills and training early.



04

Use automation and CI/CD to accelerate and standardize deployments.



05

Continuously monitor security, performance, and cost.



06

Learn from each phase and apply lessons to future rollouts.



Conclusion

Cloud transformation is a journey that requires careful planning, cross-functional collaboration, and continuous improvement. By leveraging a structured framework and addressing key dimensions such as governance, architecture, security, and cost, organizations can de-risk their migration and unlock long-term value.

This could also be an opportunity to simplify the architecture and toolset and boost morale as you modernize the infrastructure. The next steps involve tailoring this framework to your organization's context, identifying quick wins, and building momentum through early deployments and incremental learnings.

CONTACTS



Joe Melfi
Managing Director
jmelfi@alvarezandmarsal.com



Praveen Saxena
Director
psaxena@alvarezandmarsal.com

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469873-51856/August 25
9745_Stg02

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