# Cloud Governance
# Key Driver in Journey to
# Public Cloud

## Abstract

With cloud adoption soaring to an all-time high (91% of enterprises use cloud[1]), most enterprises report that managing cloud spend and cloud governance are their top two challenges. Governance is key to ensure IT infrastructure delivers business results – cost-effectively and consistently. While most organizations have adequate governance processes for on-premise IT infrastructure and applications, ensuring the same in the case of on-premise to cloud migration requires a different approach.

In the public cloud environment, for instance, ensuring effective cloud governance becomes harder as beyond provisioning, it is more like a Do-It-Yourself environment wherein enterprises have to themselves set up, provision and manage their cloud platforms. This requires identifying who are authenticated users, what type of access to give to each, who is authorized to provision cloud services, types of cloud services allowed to be provisioned, cloud regions allowed, etc.

Lack of effective governance controls can quickly lead to cloud sprawl, policy non-compliance, increased security risk and cost escalation. This paper details a comprehensive cloud governance framework across the three horizons of a typical cloud adoption journey.

[1]   RightScale, 2019 State of the Cloud Report, https://resources.flexera.com/web/media/documents/rightscale-2019-state-of-the-cloud-report-from-flexera.pdf

# Governance across three horizons of the cloud adoption journey

Cloud adoption journey (see Figure 1) typically happens over three horizons and cloud governance has different significance in each of them.

**Adopt and migrate:** Formulating a cloud migration strategy results in the selection of the cloud platforms and identification of business outcome via cloud transformations. In the case of public cloud adoption, on-premise infrastructure and applications are migrated to the public cloud platform of choice using lift and shift and optimized mode thereby maximizing the leverage of cloud platform-as-a-service (PaaS). Cloud governance framework is also established in this horizon and sets the tone for the rest of cloud adoption journey.

**Modernize and transform business:** Applications that are systems of engagement and differentiation are modernized and new cloud-native applications are created with microservices architecture using serverless and containers approach. New data lakes are set up on cloud using the entire data platform ecosystem on public cloud and cognitive applications are developed using artificial intelligence (AI) and machine learning (ML) services. Industry solutions are implemented to solve business problems that leverage the entire public cloud ecosystem of including applications and data platform, AI, ML, IoT and blockchain services. DevOps is implemented at enterprise scale to drive agile transformation journeys. Effective cloud governance in this horizon enables accelerated delivery of modernization and transformation programs without worrying about security and cost escalation risks.

**Future-ready state:** Leveraging next-generation cloud technologies, new innovative business models and solutions are conceptualized to make enterprises future ready. In this horizon, cloud governance helps balance the need for freedom to innovate with the need to provide the necessary safeguards for protecting the intellectual property and acts as a catalyst to nurture innovation across the ecosystem.
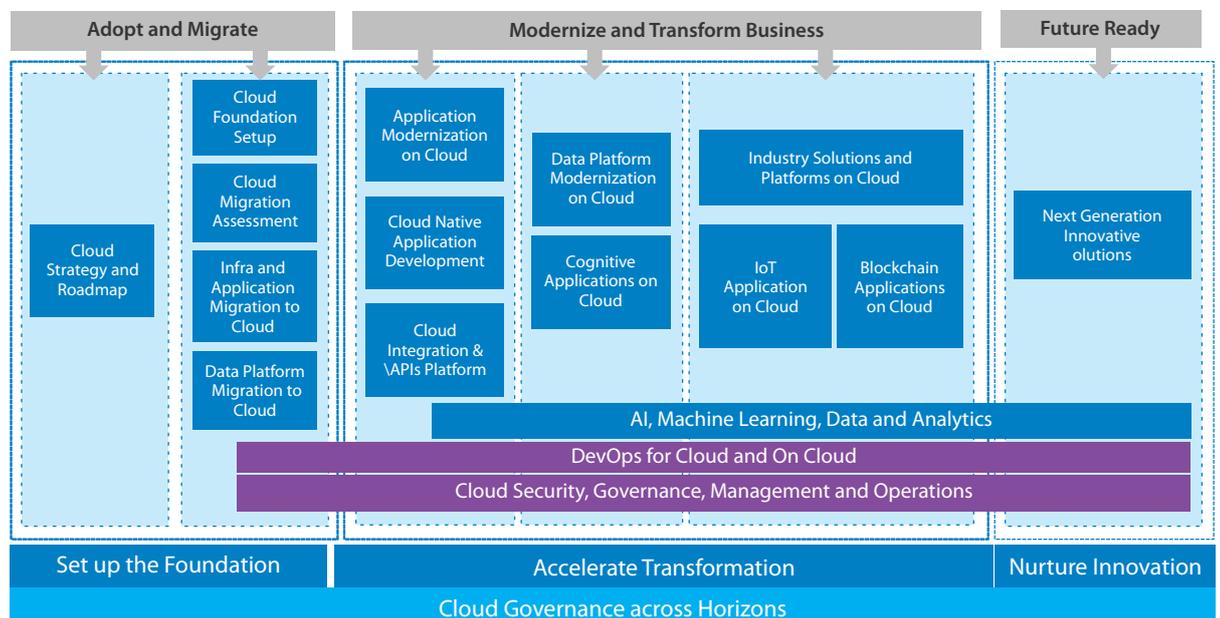


*Figure 1: Governance and Cloud Adoption Journey*

## Public cloud governance: Six key objectives

Governance in the cloud ensures effective utilization of IT resources in a way that benefits business while adhering to applicable compliances. There are six key objectives of cloud governance for a public cloud platform:

- **Business value:** Cloud governance is very closely tied to the business value that the cloud adoption journey will deliver. An effective cloud governance framework helps align cloud adoption with business objectives across the three horizons and measures the business value delivered in an objective manner. The results of good cloud governance are measurable; organizations with above average IT governance have over 20% higher profits than those with inadequate governance following an otherwise similar IT strategy.[2]

- **Standardization:** Cloud governance brings in significant technology standardization and enforces use of approved cloud services. This helps reduce the technology debt and eases the management of cloud services, while reducing TCO.

- **Security and compliance:** Lack of cloud security and compliance can lead to potentially heavy financial, legal and reputational losses to organizations. One of the most important objectives of cloud governance is ensuring the security of infrastructure, applications and data. This also includes data sovereignty and regulatory compliance. Governance ensures that any noncompliance is recorded, tracked and disposed in a structured manner.

- **Audit readiness:** A cloud governance framework establishes a champion stage gate review process for infrastructure applications and data during an on-premise-to-cloud migration.

- **Cost optimization:** Cost optimization is a key focus of governance as it ensures that ROI from cloud adoption remains optimal throughout the journey.

- **Continuous improvement:** Unlike on-premise infrastructure where hardware refreshes typically happen once in three years, the cloud is continuously evolving. Cloud governance provides a process to periodically review the reference architecture, approved list of services, security controls and cost optimization techniques.

[2]    OMG, Practical Guide to Cloud Governance 2019, https://www.omg.org/cloud/deliverables/practical-guide-to-cloud-governance.pdf

## Establishing a cloud governance framework

The right framework to implement effective cloud governance at scale in public cloud platforms should span across the cloud life cycle activities (see Figure 2).
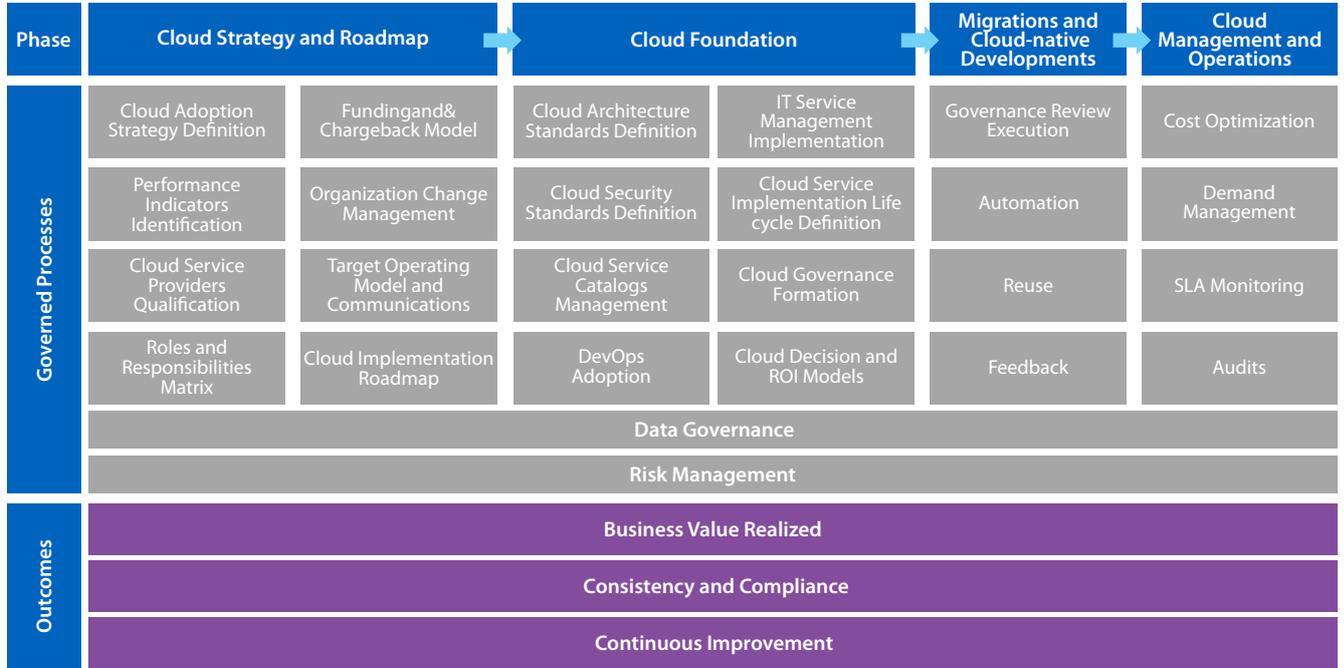
| Phase | Cloud Strategy and Roadmap | | Cloud Foundation | | Migrations and Cloud-native Developments | Cloud Management and Operations |
|---|---|---|---|---|---|---|
| **Governed Processes** | Cloud Adoption Strategy Definition | Fundingand& Chargeback Model | Cloud Architecture Standards Definition | IT Service Management Implementation | Governance Review Execution | Cost Optimization |
| | Performance Indicators Identification | Organization Change Management | Cloud Security Standards Definition | Cloud Service Implementation Life cycle Definition | Automation | Demand Management |
| | Cloud Service Providers Qualification | Target Operating Model and Communications | Cloud Service Catalogs Management | Cloud Governance Formation | Reuse | SLA Monitoring |
| | Roles and Responsibilities Matrix | Cloud Implementation Roadmap | DevOps Adoption | Cloud Decision and ROI Models | Feedback | Audits |
| | Data Governance | | | | | |
| | Risk Management | | | | | |
| **Outcomes** | Business Value Realized | | | | | |
| | Consistency and Compliance | | | | | |
| | Continuous Improvement | | | | | |

*Figure 2: Cloud Governance Framework*

While drawing up the cloud strategy, governance needs to ensure that the cloud adoption program is launched in the right direction and with the right objectives. Identification of organizational change management and risk mitigations strategies is key here.

In the cloud foundation stage, governance needs to ensure that the right combination of technology, people, and processes are put in place to drive the cloud adoption journey. Elements of cloud governance strategy related to change management, reference architectures, risk mitigations defined in the earlier phase need to be implemented here.

In the migrations and modernization stage, governance needs to ensure that cloud migrations and cloud-native development initiatives are following defined standards and best practices and any variance is tracked and reported. Governance focus in this phase is on bringing in the necessary velocity and agility to accelerate the cloud migration strategy and development on cloud, while minimizing the risks and ensuring optimized cloud adoption.

In the cloud management and operations stage, necessary governance controls need to be established to ensure agile, secure and optimized cloud operations that can respond to an ever-evolving landscape of cloud services and business needs.

## Cloud governance paves the way for cloud ecosystem modernization

The cloud is fundamentally an ecosystem play. The cloud ecosystem encompasses not only core technology elements such as infrastructure, applications and data but also includes people and process aspects both within an enterprise and all touch points outside such as partners and vendors. Leveraging the cloud ecosystem becomes critical when it comes to building future-ready enterprises as it requires combining the innovations from within the enterprise with the ones happening outside.

Cloud governance must not only address the modernization of cloud platforms to make them elastic, agile and scalable, but must also focus on developing people skills and aligning the existing enterprise processes with cloud imperatives for active participation in the ecosystem. The success of a cloud transformation program depends upon how well the modernization initiatives can be harmonized across people, processes and platform dimensions across the three horizons to achieve optimal business outcomes.

The cloud governance framework discussed here can be tailored to individual enterprise preferences and needs, and can be extended to multi-cloud environments that are witnessing growing adoption among large enterprises today.

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