

**Cloud CoE Approach to Drive Cloud Adoption and Governance** 

# What is Cloud CoE?

Many organizations are in the process of transforming their traditional data centers to the cloud and are looking to move their workloads effectively and efficiently. There are several teams involved in this transformation. In doing this, organizations want to make sure a correct strategy and governance model that aligns with their business initiatives and goals is followed. One way to achieve this is to set up a dedicated Cloud Center of Excellence (CCoE) team, a centralized team, to drive the initiatives and best practices per industry standards and proven architecture to achieve business goals.

The Cloud Center of Excellence (CCoE) is a cross-functional team (or) organizational unit within the company responsible for Cloud adoption, best practices, security and governance. The team will bring innovation, the best cloud tools and culture, while the company moves to the Cloud.

The Cloud CoE team plays an authorized role and supports the business & technical teams to follow the right strategy and lay the roadmap for the journey to the cloud. The primary purpose of a Cloud CoE is to bring in innovation, improve efficiency, and increase the quality of products, services, or processes within the organization. It typically brings together experts and stakeholders from various departments, functions, and levels of the organization to share knowledge, collaborate, and develop solutions to complex problems. They can be a pool of experts from their technical and functional domains to provide the expertise and make sure to help the business move to the cloud and adopt the cloud framework.

# Why does an organization need a Cloud CoE?



## **Rapid Cloud Adoption**

A Cloud CoE will support organizations in expediting their cloud adoption by providing guidance, expertise, best practices, and recommendations on which cloud will suit the organization. This will allow the teams to leverage the right cloud services more effectively and avoid mistakes in cloud setup.



#### **Governance and Compliance**

The Cloud CoE establishes cloud governance policies and enforces compliance with industry regulations and organizational standards. This ensures data security, privacy, and regulatory compliance in the cloud.



### **Enhanced Security**

The Cloud CoE will establish and ensure that cloud-based applications and services are securely deployed. A CCoE, through establishing security guidelines and best practices, can assist organizations in preventing potential security breaches and vulnerabilities.



## **Best Practices**

The Cloud CoE promotes best practices in cloud architecture, security, and development, enhancing application design, safety, and efficiency in cloud services.



#### Innovation

By fostering a culture of innovation, the CoE encourages experimentation and the adoption of emerging cloud technologies. This can lead to the transformation and development of new products, services, and solutions. Embrace cloud-native architecture principles like microservices, serverless computing, and containerization. These approaches can lead to more scalable and cost-effective solutions.



### **Improved Decision-Making**

The CoE provides data-driven insights and recommendations based on the current architecture, services, cloud usage, and performance metrics. This empowers leadership and helps to make informed decisions regarding cloud resource investment.



## **Cost Optimization**

One of the foremost goals of a Cloud CoE is to ensure that cloud resources are used efficiently and lead to cost savings. They can implement cost management strategies, monitor spending, and optimize resource utilization.



## **Skills Development**

The CoE will provide constant cloud training and development opportunities for teams and employees to enhance their cloud skills. This will help the organization build a capable workforce that effectively works with cloud technologies.



## Scalability

Cloud CoEs are adaptable and can scale with the organization's needs. They can provide recommendations on accommodating the growing cloud usage and emerging technologies.



## **Tracking of Resources**

The Cloud CoE will manage the cloud resources in a centralized dashboard, track the resources, and provide visibility to make it easier to allocate and de-allocate resources as needed. This helps prevent resource sprawl and enhances resource utilization.

# How does a Cloud CoE achieve a Cloud Adoption Lifecycle?



#### **Cloud Integration**

Support in evaluating interoperability for hybrid multicloudenvironments

## **Cloud Maturity**

Extracting the benefits of cloud and reporting to other business units for adoption

Recommend enterprise-wide cloud adoption

# **Cloud Governance Guiding Principles & Benefits**

**Value Optimization:** Analyze and monitor cloud spend, usage and ROI to drive a cost-effective and efficient cloud strategy for the organization.

| Cloud Governance       | Principles   | Benefits   |  |
|------------------------|--|--|--|
| Cloud Governance       | Analyze and monitor cloud spending,<br>usage, and ROI to drive a cost-<br>effective and efficient cloud strategy<br>for the organization.  | Ensures the organization provides<br>the business with the most value<br>from cloud usage and the charge<br>backtracking system.               |  |
| Visibility             | Provide clear visibility of resources<br>and informed communication across<br>cloud governance to have faster<br>decision-making that is understood<br>and meets the needs of key cloud<br>stakeholders. | Ensures that cloud management<br>decisions are based on data and<br>timely, accurate, and available<br>information.                            |  |
| Compliance             | Determine and monitor whether cloud<br>processes adhere to applicable<br>strategies, policies, and standard<br>requirements across the organization.   | Provides consistency and<br>standardization of cloud management<br>processes in a risk-based and controlled<br>manner.                         |  |
| Accountability         | Establish the roles and responsibilities<br>of cloud management to drive<br>accountability for the successful and<br>sustainable execution of platform<br>strategy.                                      | Key stakeholders understand the<br>importance and value of their role in<br>achieving cloud objectives<br>and goals.                           |  |
| Continuous Improvement | Periodically evaluate cloud governance<br>and management procedures to find<br>areas where maturity and strategic<br>skills could be improved.   | Ensures that cloud capabilities are<br>continuously driven towards higher<br>optimization and remain<br>consistent with industry<br>standards. |  |

# **Governance Domain**

Cloud governance refers to procedures that help users function in the cloud, where operations are effective and users can track and adjust operations if necessary. A cloud governance domain is merely current governance practices applied to cloud operations, not brand-new ideas or procedures.

#### Security

Establish dedicated cloud security experts to manage information and data confidentiality, availability and integrity risks. Institute security measures over APIs as part of cloud security operations.

#### Operations

Ensure technology policies and processes are followed in the cloud and requirements across the organization, including supporting resiliency strategies, scalability, and objectives.

#### Performance

Ensure the right metrics are monitored and set up in the monitoring tool to analyze the application's performance on the cloud, deduct the anomalies, and provide recommendations on the implementation. The centralized dashboard view allows the stakeholders to view the performance of the application on the cloud.



#### **Data Management**

Establish dedicated cloud security experts to manage information and data confidentiality, availability and integrity risks. Institute security measures over APIs as part of cloud security operations.

#### **Financial Management**

Determine the TCO (Total Cost of Ownership) of cloud services, resources, and licenses and track the consumption based on tagging strategy and provide cost transparency and chargeback mechanism.

#### Asset & Configuration Management

Utilising Infrastructure as Code (IaC) is a way to manage infrastructure. IaC describes what to operate or deploy in your environment to support the application rather than relying on cloud engineers to start and stop resources. This way, the assets and configuration in the cloud are up-to-date.

# **Cloud Management**

Cloud management is the process of maintaining oversight and administrative control of cloud computing products and services, whether deployed on public, private, or hybrid cloud environments. Cloud management combines different software products and technologies to provide a cohesive management strategy and process.

Cloud management platforms offer the administrative visibility and capability of cloud cost management software, cloud infrastructure monitoring software, cloud infrastructure automation software, and more.

#### **Cloud Cost Management**

Cloud cost management helps the organization view and control cloud-related spending by monitoring resource usage and computing demands. Cloud cost management supports the organization in reducing cloud waste by alerting users of lowered utilized resources or automatically scaling use to optimal rates.

# Cloud CoE will support setting up the cloud management framework and tools to capture the metrics below and measure the cost.

#### **Naming Standard**

Establishing a global tagging strategy across all CSPs. The strategy will define the naming standard and its scenario for reference. All resources can only be assigned by predefined tags to maintain consistency and enable ease of charge back to the Business units and Groups.

#### **Map Resources**

All resources should be tagged based on the tagging strategy. The tag enables grouping by business unit, cost center, project, application name, etc. The tagging should be created at the time of resource provisioning.

#### Charge Back & Analyse, Budget Setting

With proper tags, the cost can be split by business units & cost centers within the organization. The fee is charged back to the corresponding units within the organization. Analyse and track the spending.

# The cloud CoE will provide advice and recommendations on the following key challenges:

#### **Transparency**

rectified through real-time monitoring of the environment and understanding of resource types and associated utilization.

#### Governance

addressed through joint responsibilities between CSP and organization, ranging from SLA establishment, roles and responsibilities, and operations practices.

#### **Predictability**

addressed through the combination of tooling and monitoring practices to identify the required resources and their consumption, enabling consistent billing (i.e., cloud usage, capacity, and utilization).

## **Cloud CoE Models**

The Cloud CoE team can be set up using three different approaches. Each approach has pros and cons, which the organization can collectively decide. The three models are the In-House CCoE team, Outsourced, and Hybrid model.

#### In-House CCoE Team

This model is within the current organizational structure and approach to managing the cloud resources within the organization. In this model, organizations will establish and maintain their internal team from different departments to oversee the cloud adoption.

### **Outsourced Model**

This model lets out the complete team to the third-party vendor, i.e., contracting to the external service provider and overseeing the organization's cloud resources and initiatives. In this model, the organization's comprehensive CCoE initiatives and adoption are handled by the specialized vendor (or) partner.

# **Hybrid Model**

In this model approach, the management of cloud resources and initiatives within the organization will be combined with centralized and federated CCoE models. The core team will be within the organization, and the specialized partners will leverage their expertise.

# The table below depicts the approaches an organization can consider when forming the Cloud CoE model.

|   | In-house | Outsourced | Hybrid |
|---|----------|------------|--------|
| Control   | High     | Low        | Medium |
| Business Alignment                                      | High     | Low        | Medium |
| Cloud Expertise   | Low      | High       | Medium |
| Security  | High     | Low        | Medium |
| Scalability   | Low      | High       | Medium |
| Cost Savings  | Low      | High       | Medium |
| Access to internal<br>& external resources<br>Operation | Medium   | Medium     | High   |
| Operation<br>Complexity                                 | Low      | High       | Medium |

In the table, high – the most advantageous, medium – moderately good and low – the least helpful.

# CONCLUSION

The choice of the Cloud CoE model depends on several factors such as organization size, complexity, culture, adoption goals, and type of business. Cloud CoE is essential for any organization going through a digital transformation and wishes to shift its applications to the cloud. By establishing cloud best practices, guidelines, and governance policies, a CCoE can assist organizations in saving money, improving collaboration, increasing efficiency, improving security, promoting innovation, and making sure its efforts align with the organization's overall goals and strategies.

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Rama Rajah Yogaraja is a Senior Multi-Cloud Architect, DevSecOps Consultant with over 15+ years of IT experience spanning various domains and industry verticals. He is an expert in Cloud Transformations, Migrations & Automation, and has successfully managed large-scale consulting and delivery. He is a passionate Cloud professional with expertise in establishing and leading Cloud Center of Excellence initiatives. He has a proven track record of driving cloud adoption, optimizing cloud resources, and enhancing cloud governance within organizations in terms of People, Process, Technology and Business Envision. Experience includes crafting strategies, implementing best practices, and fostering a culture of continuous improvement in the cloud domain.

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