



The Next Generation of Cloud Management Starts with a Cloud Center of Excellence

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Executive summary

When it comes to driving success in the public cloud, many organizations find that the biggest hurdle they must overcome is not related to technology. As Drew Firment, former head of the cloud center of excellence for Capital One put it, “The success of cloud adoption and migrations comes down to your people—and the investments you make in a talent transformation program. Until you focus on the number one bottleneck to the flow of cloud adoption, improvements made anywhere else are an illusion.”¹

To help close this gap, leading organizations are establishing a formalized cloud center of excellence (CCoE), sometimes known as a cloud business office, cloud strategy office, or cloud program office. In this white paper, we will identify best practices to establish a CCoE and the three key areas of excellence: financial management, operations, and security and compliance.

What is a cloud center of excellence?

Building centers of excellence within an organization is a tried and trusted approach to facilitating organizational transformation. They can be especially beneficial for driving the adoption of new technology or processes within an organization, particularly when that change is significant and far reaching. When we consider the implications of public cloud adoption on an organization, it’s clear that utilizing best practices to support such a significant change is critical to ensuring the success of any cloud adoption program.

A CCoE is a cross-functional team that is tasked with supporting and governing the execution of the organization’s cloud strategy. They do this by establishing policies and guardrails, driving collaboration and adoption of best practices across a range of disciplines—from operations, finance and engineering to security and enterprise architecture—as well as evaluating and potentially supporting the implementation of new and existing cloud technologies. Where a CCoE may differ from other centers of excellence is that this team is more likely to be a long-term entity. The ever-changing landscape of public and private cloud means that in many cases the CCoE will be an ongoing function.

One of the early proponents of the term cloud center of excellence was Stephen Orban, who blogged about it in 2016. At the time, Orban was the global head of enterprise strategy at Amazon Web Services (AWS). He has since become the company’s general manager of AWS Data Exchange, and his vision for a CCoE involved a team responsible for developing a framework for cloud operations, governing the IT infrastructure, and building best practices across the business. More than four years later, this vision is becoming a reality at many enterprises.

1. A Cloud Guru. “Cloud Adoption and Talent Transformation.” Drew Firment. May 2, 2018.

What to call your cloud center of excellence

While the term “cloud center of excellence” is broadly understood and accepted in the industry at this point, it’s rarely the actual name that organizations use for their CCoE. When considering names for a CCoE, it’s important to pick a name that broadcasts the message you want to send to your organization. It will also define the scope and responsibilities of the team within the organization. Many companies shy away from using the term “excellence” in the actual title because it might come across as exclusionary or pretentious.

“At MediaMarktSaturn, we’ve started to grow a community of experts, and now we want to evolve this into a cloud center of excellence—although without calling it a CCoE, because we saw that people don’t always like the word ‘excellence.’ Instead, we call it the cloud consulting group. It’s a way of distributing knowledge about the cloud across the business, from people who know the processes and the best practices.”

Thomas Pfeigler, Technical Product Owner for Cloud Platforms, MediaMarktSaturn

Common names for CCoE teams:

- Cloud business office
- Cloud strategy office
- Cloud community of practice
- Cloud consulting group
- Cloud capability center

Key responsibilities of a cloud center of excellence

Supporting the execution of the cloud strategy may seem daunting, but the key responsibilities of the CCoE can be broken down into three areas.

1. Own and execute the cloud strategy

First and foremost, the job of a CCoE is to define the organization's cloud strategy with inputs and guidance from the executive team. The cloud strategy will define what the organization's key goals and objectives are when it comes to cloud. It will help answer questions about which workloads or business units are best suited for using cloud computing services, how quickly the organization will migrate, which cloud providers best meet the business's overall objectives, and how application and infrastructure architectures will evolve. These strategies set high-level parameters for operating, and it's up to the CCoE to determine how to put these concepts into practice, and then continue to refine and enforce them.

2. Drive collaboration and best practices across key stakeholders

The CCoE will identify who within the organization needs to come together to ensure cloud objectives are defined, measured and aligned to business goals. Collaboration will typically be required of individuals responsible for managing cloud costs, cloud operations, cloud security, application development and enterprise architecture. Once assembled, this group will collect and develop best practices, workflows, alerts and actions for the relevant functions. At some organizations, it will also make sense to form an advisory group with leaders from finance, procurement, legal, security and lines of business. This advisory group will review strategy, influence decisions and may be consulted when building guidelines.

3. Evaluate and utilize technology to support business initiatives

One of the key components of executing on a cloud strategy is determining how the organization will access, secure, manage, integrate and govern across public cloud and hybrid environments. This includes not only the selection of public and private cloud providers, but also evaluating and implementing cloud management solutions for the enterprise.

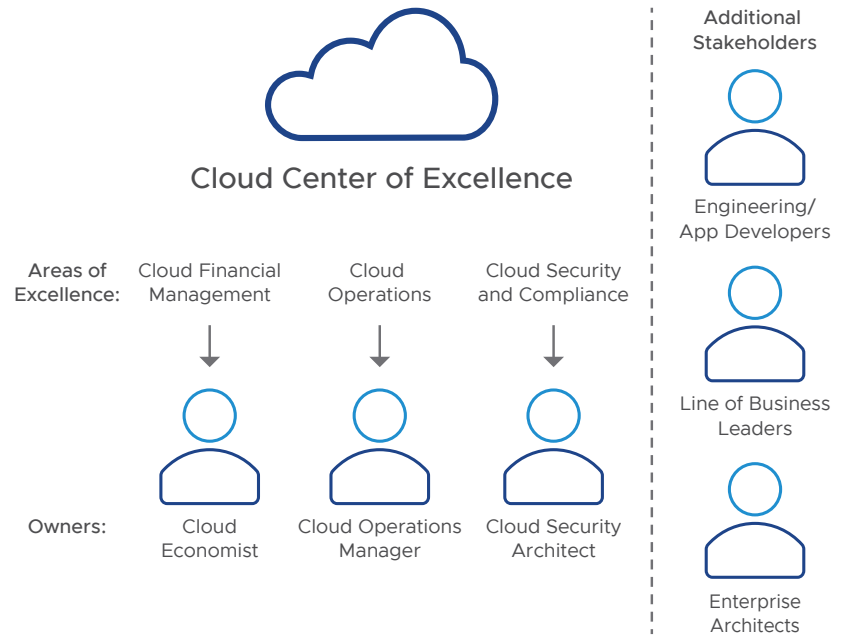


Figure 1: Sample structure of a CCoE.

Set the tone: Advise or prescribe?

Members of the CCoE should think of themselves as advisors providing best practices, architectural standards, and guidance to teams and departments. Ultimately, the CCoE is a governing body that is held accountable for the organization's success in the cloud. CCoEs must walk a fine line of providing advice and guidance in some areas (e.g., tagging strategies, architectures) and prescriptive rules in other areas (e.g., security and compliance policies). Finding the right balance of guidelines and guardrails and securing buy-in from different lines of business are some of the biggest challenges to navigate.

The more a CCoE can build and nurture a collaborative community, the more successful it will be. The leader of the CCoE at a large software company cautions that it's critical for the CCoE to take the time to establish a community of support with mutual trust to be successful. This includes creating a broad cross-functional group of stakeholders that represents many different teams and will provide a balanced perspective.

Areas of excellence in your CCoE

Taking an organizational view, a cloud center of excellence will typically span three core areas: financial management, operations, and security and compliance.

Financial management	Operations	Security and compliance
<p>Continuously optimizing and aligning cloud investments to business initiatives.</p> <p>A mature cloud financial management function must:</p> <ul style="list-style-type: none"> • Profoundly understand how all components of a modern cloud environment contribute to TCO • Make business decisions based on accurate ROI analysis • Cultivate financial accountability and ownership across groups 	<p>Managing and delivering cloud services that meet the availability, performance, recoverability, quality and scalability needs of the business.</p> <p>A mature cloud operations function must:</p> <ul style="list-style-type: none"> • Help ensure operations meet and exceed business requirements • Identify and act on areas to improve operational efficiency • Drive operational consistency across groups 	<p>Proactively detecting and remediating vulnerabilities in your cloud environment.</p> <p>A mature cloud security and compliance function must:</p> <ul style="list-style-type: none"> • Help ensure continuous compliance with relevant standards • Stay up to date with the changing threat and compliance landscape • Translate business requirements into cloud security standards

Figure 2: Three core areas in a CCoE.

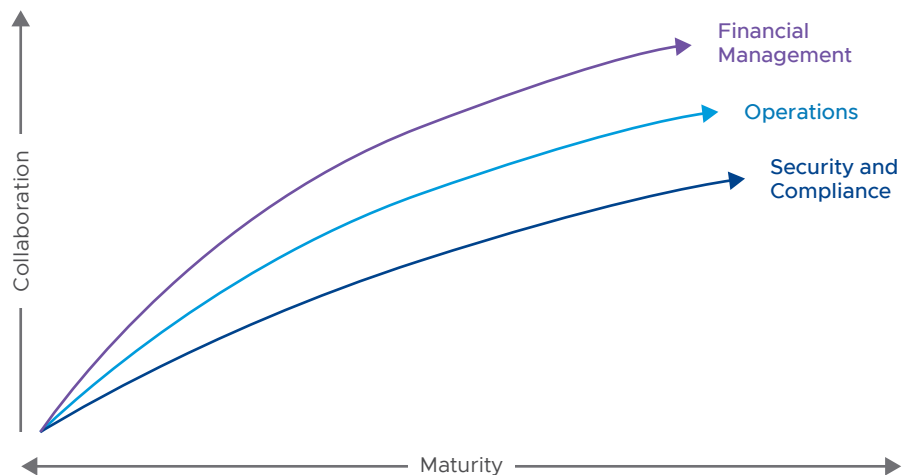


Figure 3: How collaboration correlates to maturity across the areas of excellence.

In addition to the responsibilities outlined in Figure 2, it's critical that each area of excellence has documented best practices that can scale across the organization. This includes identifying best practices within groups that can be adopted more broadly, and bringing in outside standards and practices that will benefit the organization.

Three steps to establishing a CCoE

Ready to get started with establishing your CCoE? Take the following steps to get up and running.

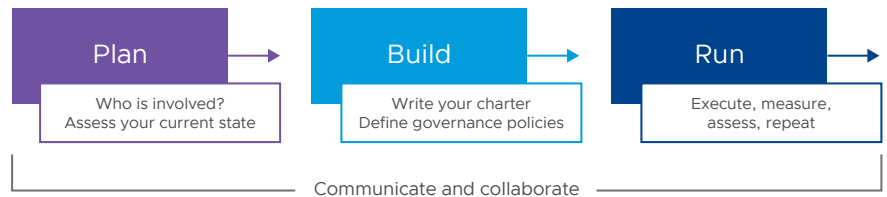


Figure 4: Three steps to establishing your CCoE.

Step 1: Plan – Assess your current state, define roles and responsibilities

Your first step is all about planning and determining the strategy that will dictate the rollout of your CCoE. Begin by answering the following questions.

Who should be involved in the CCoE?

Determining who sits on the CCoE will be one of the first steps you need to take. You should consider involving stakeholders from any area of your organization that will be affected by the adoption of cloud. Teams should be as durable as possible to keep initiatives on track. Best practice dictates that you start the team small, with three to five individuals from the areas outlined in Figure 5.

What are the strategic outcomes we're trying to achieve with our CCoE?

It's critical to ensure CCoE outcomes are aligned to business outcomes. For example, is the ultimate goal of the CCoE to enable agility at any cost? Or is the goal to drive toward a specific cost of goods sold (COGS), or perhaps a balance between the two?

Where are we today from a maturity perspective, and where do we want to be?

In our white paper, [Benchmark Your Cloud Maturity: A Framework for Best Practices](#), we outline a cloud management maturity model that crosses the three key areas of a CCoE. Using this framework, you can assess your organization's current state and define your desired future state. This process will help determine tactics and priorities.

Who will be our executive sponsor?

It is vitally important that the team is supported by senior leadership within the organization. Leadership should be sufficiently empowered to enable the CCoE to shape the way that the business will adopt and use public cloud resources. Support at the right levels of your organization is critical to success.

Follow the leader

To be successful, the CCoE must have a clear leader. But who? In many organizations, this job falls to the cloud architect. They have the advantage of looking across many different domains and can understand long-term and short-term priorities.

What are the roles and responsibilities of CCoE members?

Your CCoE is tasked with setting out a framework and path for the rest of the organization to follow as you adopt cloud services. If you recruit team members from the functions referenced in Figure 5, you'll find that they naturally adopt roles aligned to their professional experience. A collaborative approach is essential as all of these areas are intrinsically related—decisions in one area will have implications for the others.

	Function	Area/role	Tasks
Core members	Finance	Account and cost management/visibility	<ul style="list-style-type: none"> • Implement showback or chargeback models • Establish cost governance controls
	Operations	Asset management	<ul style="list-style-type: none"> • Define and implement a tagging strategy plus controls to govern it
	Security and compliance	Identity management and security	<ul style="list-style-type: none"> • Establish best practices for roles and permissions across cloud environments • Implement policies to identify risks
Optional additional members	Engineering	Templates and configuration	<ul style="list-style-type: none"> • Define standard templates and deployment patterns • Advise on implications of technology decisions
	Line-of-business leader	Business context	<ul style="list-style-type: none"> • Represent the specific needs of key lines of business • Provide context on business initiatives and goals
	Architecture	Reference architecture	<ul style="list-style-type: none"> • Define standards and repeatable patterns for the use of cloud services • Implement controls where necessary

Figure 5: Roles and tasks of CCoE team members.

Assess your current state to get a baseline for improvement

One of the key focus areas for a CCoE will be finding opportunities to share best practices across teams and driving consistency across lines of business. We've developed a cloud maturity framework and assessment tool you can use to benchmark your cloud practices against peers and discover areas that need improvement. [Read more about the framework](#) and [take the self-assessment](#).

Start by assessing the current state of your organization across cloud financial management, operations, and security and compliance. This will help you determine where the CCoE should focus initial efforts and give you a baseline you can use to show improvement across these functions.

Step 2: Build – Write your charter and define governance policies

Once you've formed the core team and assessed the current state, the next step is to build a charter document and define governance policies. Having a charter document to refer back to over time will be an invaluable resource as tough decisions are made. The charter doesn't need to be a novel, but it should cover three key areas: purpose, goals/objectives, and responsibilities. You should be able to outline your goals and objectives at the start, but governance policies may take some time to develop, refine and eventually automate.

Three elements of a CCoE charter:

- **Purpose** – Why are we doing all of this to begin with? Typically, the purpose of the CCoE is to facilitate the execution of the organization's cloud strategy. A secondary purpose may be to foster a community of practice and drive culture changes throughout the organization.
- **Goals/objectives** – The goals and objectives of the CCoE are directly linked to the organization's cloud strategy. They should be aligned with broader business initiatives.
- **Responsibilities** – Define the actions that need to be taken to meet goals and objectives, and assign ownership and timelines to each action item.

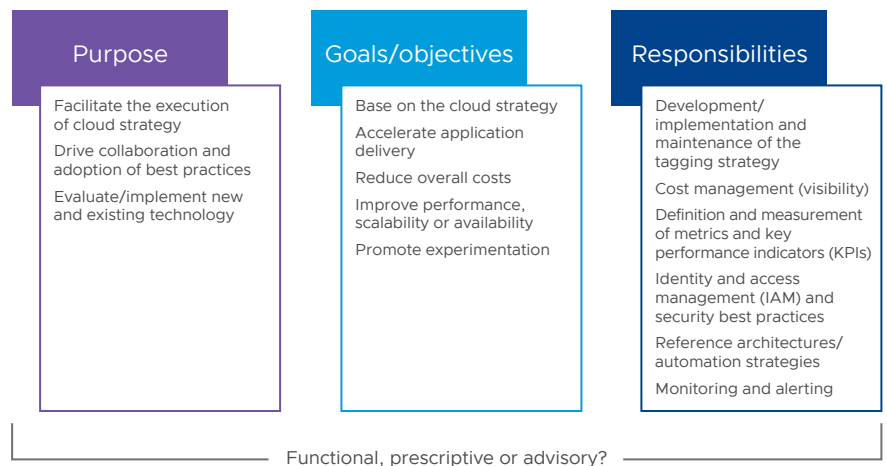


Figure 6: Example charter for a CCoE.

Many of the responsibilities the CCoE defines will ultimately require detailed specifications to be identified. For example, if a key responsibility of the CCoE is to eliminate wasted spend in the environment, the team will need to determine how much wasted spend should reasonably be eliminated, and how that will be done. Will you terminate unused volumes after one month, or after two weeks?

These detailed specifications can be monitored with automation. Initially, it's a good idea to simply alert the relevant people when something in the environment falls out of policy. This gives the CCoE time to adjust policies to better meet the business's needs. When the same action must be taken over and over again in response to a policy breach, it's now time to automate that action, ensuring compliance.

Common cloud governance policies

Here are some common governance policies that you may want to consider.

Alert when:

- The monthly cost for any environment is projected to increase by more than 10 percent compared to the previous month
- The projected monthly cost for any department will exceed the budget by more than 5 percent
- Reservations are expiring in the next 60 to 90 days

Terminate when:

- Storage volumes have been unattached for more than two weeks
- Elastic IP addresses are not associated with an instance for more than two weeks
- Snapshots are not associated to any volumes

Step 3: Run – Execute, measure, assess

With the team defined and a charter written, the CCoE is ready to begin the work of guiding the organization toward more secure and cost-efficient cloud operations. Organizations that have successfully rolled out a CCoE that is well integrated across the business offer the following advice.

Gain executive sponsorship

An executive sponsor is a critical component to the success of your cloud center of excellence. This person should have good communication skills and ideally has considerable influence at the executive table.

An executive sponsor will help to:

- **Obtain critical resources** – Whether it's securing upfront budget to purchase a reservation or making the case for additional headcount, an influential executive sponsor will help ensure the CCoE has all the resources it needs to be successful.

- **Ensure alignment with business objectives** – The ultimate goal of the CCoE is to ensure cloud decisions align with broader business initiatives. The executive sponsor vets the governance policies created by the CCoE team and communicates to senior leadership how cloud management is bringing the business closer to its objectives.
- **Create buy-in** – Support from the top of the organization should be evident to teams across departments as it legitimizes the changes being driven by the CCoE. The executive sponsor is responsible for building that coalition of support at the top of the organization.

Build a community of practice

There are many ways to establish a community of practice, or a group of people sharing their cloud management experiences. Creating a regular forum for discussion will help to drive best practices and foster support for cloud initiatives. You should be inclusive and invite anyone who is interested in participating, no matter their role in the cloud. It's also a good idea to bring in guest presenters with new ideas from outside the organization.

Here are a few ways you can bring like-minded people together for a stimulating cloud discussion:

- Hold monthly cloud optimization stand-ups for teams that work together on a specific topic (e.g., financial management, security, app development)
- Offer free monthly/biweekly brown bag lunches or tech talks
- Organize hackathons to generate new optimization ideas
- Schedule quarterly roundtables with one main topic per table and share learnings
- Hold regular workshops/training to up-level cloud knowledge across your organization

Go to them, don't make them come to you

The goal should be to build trust and a mutual understanding of each other's challenges. The CCoE shouldn't be a nebulous group that throws out standards and expects people to follow them. By engaging directly with engineering to solve a real problem, the CCoE member learns about the need for resilient cloud architecture and the engineer learns about cost and/or security concerns. This process can be embedded in existing training protocols and, if desired, can include required certifications.

Provide context in reporting

It's important to always communicate cloud metrics in business context (e.g., cost per customer). As businesses move away from on-premises data centers and toward public cloud usage, it's normal to see your cloud spend increase over time. However, this increase in cloud spend should be communicated in context of what matters most to the business. If reducing your total cost per customer is the goal, then increases in cloud spending should be offset by decreases in data center costs, such that your total cost

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per customer is decreasing. In this case, it's critical to report the decrease in data center costs alongside the increase in cloud costs and highlight the overall decrease in cost per customer.

Wherever possible, you should also benchmark your organization against peers in the industry. Saying that you were able to reduce costs by 30 percent is a lot more powerful when you can provide the context that your peers only reduced spend by 15 percent in the same time frame.

Conclusion

The ultimate goal of cloud management is to correlate cloud decisions to business value and to teach others in the organization to do the same. Organizations should think of cloud spending as an investment and track their return on that investment through the lens of business KPIs. Making the organizational shift from operating in terms of sunk CapEx costs to managing OpEx investments can sometimes be more challenging than moving the actual infrastructure. To make this shift and to move at the speed of cloud without sacrificing integrity (i.e., security, reliability, performance efficiency, scalability), businesses should create a cloud center of excellence team. The CCoE team pursues a cloud strategy in alignment with business goals and ensures your organization can keep up with the pace of change in cloud management.

