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# Creating a Culture of Cost Transparency and Accountability

## AWS Whitepaper



# **Creating a Culture of Cost Transparency and Accountability: AWS Whitepaper**

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# From Cloud Cost to Cloud Value

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## Abstract

This is the fifth in a series of whitepapers designed to support your cloud journey. This paper seeks to empower you to maximize value from your investments, improve forecasting accuracy and cost predictability, create a culture of ownership and cost transparency, and continuously measure your optimization status.

This paper discusses the tools, best practices, and tips that your organization can use to create a lean cost culture and maximize the benefits of the cloud.

## Introduction

Migrating to the cloud is an iterative process that evolves as your organization develops new skills, processes, tools, and capabilities. These skills build momentum and accelerate your migration efforts.

The prospect of moving to the cloud does not need to be a daunting or arduous proposition. Establishing the right cultural foundation to build on is key to a successful migration. Because cloud services are purchased, deployed, and managed in fundamentally different ways from traditional IT, adopting them successfully requires a cultural shift as well as a technological one inside organizations.

Culture consists of the attitudes and behaviors that define how a business operates. Organizations can improve cost optimization by promoting a culture where employees view change as normal and welcome responsibility in the interest of following best practices and adapting to new technology. This is what *lean cost culture* means.

In traditional environments, IT infrastructure requires significant upfront investment and labor. The decision to incur these costs typically must go through multiple layers of approval. In legacy IT models, IT purchases are ordered and managed through a central services model at significant expense. What's more, the sources of these costs are difficult to identify and allocate, in part because of limited transparency.

The cloud presents an entirely different situation. IT infrastructure requires more limited capital investments, and labor can focus on undifferentiated work as opposed to managing infrastructure. You can easily spin up cloud services without IT intervention using a departmental credit card. Specialist teams are not always required to get infrastructure to a functioning state, and business units can more easily deploy their own technology needs. While the initial costs might be lower, they are also easier to incur. Without the right infrastructure and processes in place, costs are not always easy to manage.

There's also a major difference in how cloud services and data center infrastructure are paid for. If you create a virtual machine on a physical server in a data center, there's no inherent way to measure the cost of that action. If you create this machine in the cloud, costs immediately begin to accrue. Cloud costs are tightly coupled with usage, often down to the second. Most actions have a hard-dollar cost implication.

Because cloud resources are easier to deploy and incur usage-based costs, organizations must rely on good governance and user behavior to manage costs—in other words, they need to create a lean cost culture. This is especially important because, with the cloud and modern agile DevOps practices, implementation is a continuous cycle with new resources, services, and projects being adopted regularly.

A lean cost culture is essential when architecting cloud-based solutions and should be part of planning, design, and development. Cost management should not be delegated only after the technology has been developed.

Fortunately, in many ways, creating a lean cost culture is much easier to do in the Amazon Web Services (AWS) Cloud than in the data center environment. You can closely track the costs incurred by specific individuals, groups, projects, or functions. Your teams can share information through consoles and reports. Rich cost analytics and management tools are built into the platform, and cost-saving management automation is relatively easy to implement. By using the tools, best practices, and tips detailed in this paper, your organization can maximize the benefits of the cloud while keeping costs under control.

Ultimately, the goal is to move from thinking about cloud costs to understanding cloud value—the return on investment (ROI) your organization obtains from various initiatives and workloads that leverage the cloud. It's important to understand not just what you're spending, but the value you're getting in return. A bigger bill doesn't necessarily indicate a problem if it means you're growing your business, your margins, or your capabilities.

Therefore, your organization needs to clearly identify key performance indicators and success factors that are impacted by cloud adoption. In the absence of well-identified metrics, determining success is complicated and it can be difficult to derive value. Examples of categories that can help define success are business agility, operational resiliency, and total cost of ownership.

One example of how to evaluate cloud value is by looking at unit cost. The unit can be any object of value in your organization, such as subscribers, API calls, or page views. The unit cost is the total cost of a service divided by the number of units. By focusing on reducing unit cost over time and understanding how spending and margins are related, you can concentrate on getting more for your money. Arriving at this level of understanding can be an incremental process. Best practices that can help get you there are discussed in the following sections.

# Speed and Cost Tradeoffs

With cost optimization, as with the other pillars in the [AWS Well-Architected Framework](#), there are trade-offs to consider, for example, whether to optimize for speed-to-market or for cost. In some cases, it's best to optimize for speed—going to market quickly, shipping new features, or simply meeting a deadline—rather than investing in upfront cost optimization.

Sometimes design decisions are directed by haste rather than data, and the temptation always exists to overcompensate *just in case* rather than spend time benchmarking for the most cost-optimal deployment. This might lead to overprovisioned and under-optimized deployments. However, this is a reasonable choice when you need to *lift and shift* resources from your on-premises environment to the cloud and then optimize afterward.

Investing in a cost optimization strategy upfront allows you to realize the economic benefits of the cloud more readily by ensuring a consistent adherence to best practices and avoiding unnecessary overprovisioning.

# Cost is Everyone's Responsibility

All teams can help manage cloud costs, and cost optimization is everyone's responsibility. Many variables affect cost, and different levers can be pulled to drive operational excellence. The following are examples of different teams that need to consider cost optimization:

- Engineering needs to know the cost of deploying resources and how to architect for cost optimization.
- Finance needs cost data for accounting, reporting, and decision making.
- Operations makes large-scale decisions that affect IT costs.
- Business decision makers must track costs against budgets and understand ROI.
- Executives need to understand the impact of cloud spending to help with divestitures, acquisitions, and organizational strategy.

In the past, few of these roles were tasked with the responsibility of understanding—let alone managing—IT costs. Now, stakeholders need training, policies, and tools to do this effectively. The best starting point is to create visibility into cloud costs.

# Promoting Visibility, Transparency, and Accountability

In the cloud, it's easy to get into a situation where the people watching costs are not the same people incurring them. One of the goals of creating a lean cost culture is turning everybody into a cost-watcher. By providing alerts, dashboards, and reports relevant to each stakeholder, you reduce the feedback loop between the data and the action that is required to make corrections.

In addition to giving stakeholders visibility, it's a good idea to encourage transparency—in other words, let teams see how others are spending—showcasing trends, best practices, and opportunities for improvement. This can help create a shared sense of ownership over cloud costs and incentivize people to minimize them. You can even go so far as to encourage friendly rivalries between teams to achieve higher levels of optimization through gamification.

To achieve true success, cost optimization must become a cultural norm in your organization. Get everyone involved. Encourage everyone to track their cost optimization daily so they can establish a habit of efficiency and see the daily impact of their cost savings over time.

Although everyone shares the ownership of cost optimization, best practices call for someone to take primary responsibility for cost optimization. Typically, this is someone from either the finance or IT department who is responsible for ensuring that cost controls are monitored so that business goals can be met. The cost-optimization engineer makes sure that the organization is positioned to derive optimal value from the decision to adopt AWS. As the organization matures, this role can become a Cloud Center of Excellence responsible for continually driving cost-optimization best practices. For more on developing a Cloud Center of Excellence, see the [second whitepaper](#) in this series.



# Determining Cost Allocation

To help you understand your responsibility for cloud costs, use AWS tools for resource allocation. The two main mechanisms of cost allocation in AWS are linked accounts and tags.

## Linked Accounts

Linked accounts let you split your AWS bill by cost center or business unit, while centralizing payment through the organizational account. Linked accounts are managed through the [consolidated billing feature](#) in [AWS Organizations](#). With consolidated billing, you can see a combined view of AWS charges incurred by all your accounts. You can also get a cost report for each member account that is associated with your master account.

## Tags

To help you manage your instances, images, and other Amazon EC2 resources, you can optionally assign your own metadata to each resource in the form of *tags*. Tags enable you to categorize your AWS resources in different ways, for example, by purpose, owner, or environment. You can use tags for many purposes, and they are an especially powerful way to create a lean cost culture.

[AWS Cost Explorer](#) and detailed billing reports let you analyze your AWS costs by tag. Typically, you use business tags such as **cost center/business unit**, **customer**, or **project** to associate AWS costs with traditional cost-allocation dimensions. However, a cost-allocation report can include any tag, which means you can easily associate costs with technical or security dimensions such as specific applications, environments, or compliance programs.

Using tags can make it easy to create usage reports specific to role, business function, application, project, and more. Your organization should create a common taxonomy as early as possible—one that embodies the organizational structure and enables easy accountability for costs. It is also important to track untagged resources because these can represent unallocated costs. Many organizations enforce tagging programmatically and even implement a *tag or terminate* rule. With proper tagging, people can easily see which costs they are responsible for.

# Evangelizing Best Practices

As with all cloud activities, the key to developing best practices stems from infusing a business culture into everything you do. When a culture of accountability and transparency becomes intrinsic to the way you conduct business, you can see benefits quickly.

A cost-conscious cloud culture does not come about on its own. Changing processes and behaviors takes time and effort. Clear policies around cost ownership, deployment processes, reporting, and other best practices should be developed and evangelized across your organization. Training can help staff understand how cloud costs work and steps they can take to eliminate waste.

Some fundamental policies to consider include:

- Turning off unused resources
- Using [Amazon EC2 Spot Instances](#), [Amazon EC2 Reserved Instances](#), and other service reservation types where appropriate
- Using [alerts](#), [notifications](#), and [AWS Budgets](#) to help teams stay on track
- Reporting waste on a team- and company-level
- Applying showbacks and chargebacks to enable cost accountability
- Setting up dashboards to enable widespread monitoring of cloud usage
- Setting up communication cadences to ensure visibility of cost management issues to the right people

# Conclusion

Every organization is different. Some organizations are used to rapid change and will adopt a lean cost culture quickly. Others have more entrenched processes and approaches and will require more time to get there. The key is to understand that cultural change is required and that it should be addressed early in the cloud adoption journey. More than any specific tool or approach, getting your people on board is the foundation of cost management success.

# Resources

- [AWS Architecture Center](#)
- [AWS Whitepapers](#)
- [AWS Architecture Monthly](#)
- [AWS Architecture Blog](#)
- [This Is My Architecture videos](#)
- [AWS Answers](#)
- [AWS Documentation](#)

# Document Details

## Contributors

The following individuals and organizations contributed to this document:

- Amilcar Alfaro, Sr. Product Marketing Manager, AWS
- Erin Carlson, Marketing Manager, AWS
- Keith Jarrett, WW BD Lead - Cost Optimization, AWS Business Development

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# AWS Glossary

For the latest AWS terminology, see the [AWS Glossary](#) in the *AWS General Reference*.