

# Cloud Cost Optimization: Common Causes of Wasted Cloud Spend by Healthcare Businesses



**Harshal Sawant**

Asst. Vice President & Tech Consulting Head,  
CitiusTech

## Insights

- Most healthcare enterprises are struggling with optimizing their cloud spending and scaling deployments, which are essential for staying competitive.
- Oftentimes, healthcare organizations struggle with deciding whether to fund their cloud initiatives through CapEx or OpEx.
- By not optimizing storage classes for different data types, healthcare organizations may end up overpaying for storage that is not necessary.

## Abstract

The adoption of cloud technology in the healthcare industry has been underway for some time now. However, until the first half of the last decade, only a few leading healthcare providers were implementing it due to its inherent complexity and resource requirements. In recent times, there has been a shift in this trend as cloud computing initiatives have become more widespread across the healthcare sector. According to a survey conducted in the US in 2019, [one out of two healthcare C-suite executives](#) stated that cloud computing was deployed at their organization. This is further evidenced by the projected growth of the healthcare cloud computing market, which is anticipated to reach a value of [\\$89.4 billion by 2027](#), a significant increase from last year's estimate of \$39.4 billion.

However, with this massive cloud adoption, comes new challenges. Many healthcare enterprises are struggling with optimizing their cloud spending and scaling deployments, which are essential for staying competitive. Implementing cloud adoption initiatives without proper planning and management can lead to efficiency loss, revenue leakage, and wasted expenditure. Our experience of working with leading healthcare institutions across the continuum has allowed us to uncover the root causes for this issue. This white paper explores some common reasons why healthcare organizations fail to maximize the returns on their cloud investments. By shedding light on these causes, we hope to provide insights and solutions to help healthcare organizations optimize their cloud spending

and derive greater business value from their cloud adoption initiatives.

## Introduction

According to a study conducted by Harvard among leading executives of global healthcare providers, only [37% reported successful adoption of the cloud](#). Furthermore, the study showed that [only three](#) out of ten executives expressed confidence in their cloud initiatives to drive timely business outcomes. It stands to reason why a majority of the healthcare leadership is inclined towards accelerating their operations through further cloud adoption. However, it is imperative that this implementation be done in a cost-effective manner.

For instance, healthcare enterprises need a deeper understanding of how cloud technology can enhance their existing operational models. Healthcare providers today are often under pressure to rapidly adopt cloud services to keep up with competitors or address pressing business needs. ***Unfortunately, as many organizations prematurely onboard the cloud bandwagon without developing a well-devised strategy, they incur unnecessary costs.***

Another key challenge that healthcare providers face is the need for more skilled expertise and bandwidth to ensure the efficient usage of cloud technologies. Many healthcare organizations fail to address this issue, which can lead to increased costs due to the hiring of additional personnel for management and operations. Evidently,

despite cloud adoption becoming increasingly common across the healthcare spectrum, many industry players are unable to mitigate avoidable costs.

## Healthcare's wasted spending epidemic

Several key areas in the cloud adoption strategies of healthcare businesses have commonly been found to be sub-optimal, resulting in escalated costs. Recent studies have shown that much of the cloud budgets are often spent on services that are not utilized to their full potential. For instance, in 2020, [wasted cloud spend was estimated at \\$17.6 billion](#), due to reasons varying from non-production, oversized, and idle resources. As we dive deeper into the key areas, we observe that the reasons are varied and complex.

### Reason 1: Complex cloud pricing and the CapEx versus OpEx conundrum

Cloud providers typically offer a variety of pricing models, including pay-as-you-go, reserved instances, and spot instances, among others. Each pricing model has its own advantages and drawbacks, and choosing the wrong pricing model can result in unexpected costs. For instance, a healthcare organization may opt for pay-as-you-go pricing for their cloud resources, which allows them to pay only for the resources they use. ***However, if they experience sudden spikes in demand or unexpected usage patterns, they may end up paying more than anticipated.***

Moreover, healthcare organizations may struggle with deciding whether to fund their cloud initiatives through CapEx or OpEx. CapEx refers to the upfront cost of purchasing hardware and software, while OpEx refers to the ongoing costs of operating and maintaining the cloud environment. As OpEx usually has an impact on a healthcare firm's earnings before interests, taxes, depreciation, and amortization (EBITDA), earmarking cloud investments as OpEx can affect the revenue. This decision affects pricing and budgeting since CapEx requires a significant initial

investment, whereas OpEx can be spread out over time.

### Reason 2: Absence of visibility and centralized governance

When healthcare organizations use multiple cloud service providers, they may have different billing models, cost structures, and pricing for each provider. This can make it challenging to compare costs across providers, leading to difficulties in determining which provider offers the best value for a specific service. Additionally, different providers may offer different levels of transparency and reporting for costs, making it more challenging for healthcare organizations to gauge overall cloud costs accurately.

Multiple accounts may also exist within each cloud service provider to manage different functions within the healthcare institution. Without a centralized governance framework, tracking the costs of individual accounts can be difficult, leading to reduced accountability and transparency. Further, ***extra costs can be incurred when particular accounts overprovision resources independently without considering the healthcare organization's overall cloud usage and needs.***

### Reason 3: No storage class optimization and investment overkill

Healthcare data can be stored on the cloud with varying levels of accessibility, durability, and performance, each with a corresponding price point. For instance, standard storage may offer higher accessibility and lower durability at increased costs, while infrequent access storage may offer higher durability but lower accessibility at a lower price. By not optimizing storage classes for different data types, healthcare organizations may end up overpaying for storage that is not necessary.

In addition to storage class optimization, healthcare organizations may also overspend on infrastructure solutions that they do not need. For example, ***a healthcare institution may purchase costly high-performance computing infrastructure when they only have the need for processing a small amount of data.***

#### Reason 4: Lack of automation and change management

Healthcare organizations often have complex cloud environments that consist of a vast number of resources, such as virtual machines, databases, and storage systems. These resources may require frequent modifications, such as scaling up or down, to meet changing demand or to address performance issues which can result in unnecessary costs.

Inadequate automation and change management can make modifying systems slow and prone to errors. Manual scaling of virtual machines, for example, can involve multiple steps and take hours or days, depending on the complexity of the environment. This can further escalate cloud costs when resources are run beyond their necessity, especially in large cloud environments.

#### Track and redirect – Beyond cloud cost optimization

As an organization deeply ingrained with a healthcare DNA, CitiusTech understands that cost optimization is just one part of managing cloud spend for healthcare businesses. That is why we go beyond simply optimizing costs – we track cloud spend, break down costs, and convert it into a healthcare use case. With years of experience working in the healthcare sector exclusively, we understand the industry's

workings and intricate nuances. We can help healthcare organizations reduce their cloud costs and make better decisions suited to their needs.

This starts with benchmarking usage and spend against industry standards and best practices, to enable better decision-making around cloud resources. By enabling data-driven decisions, we help healthcare organizations optimize their cloud resources to align with their clinical and operational needs better. This includes identifying areas where they may be overspending or underutilizing resources, and making strategic adjustments to ensure maximum value.

By leveraging our expertise in healthcare and cloud computing, we are able to provide a unique value proposition that goes beyond traditional cost optimization solutions.

Elevating cloud optimization with FinOps

Our FinOps framework is designed to support healthcare businesses of all sizes and types, whether they have a single, hybrid, or multi-cloud strategy. Our approach is flexible and can be customized to meet the unique needs of each business.

The framework is built on four pillars – business integration, visibility, optimization, and governance and automation – which provide a comprehensive and holistic approach to cloud cost management. By focusing on these pillars, healthcare

### CitiusTech FinOps Framework Pillars

#### Business Integration

Evaluate the financial performance of your cloud operations and identify opportunities to integrate cloud costs into your business strategies.

#### Visibility

Track and analyze your daily cloud run rate, resource utilization and budget deviations for improved cost management.

#### Governance and Automation

Optimize your cloud costs through continuous monitoring, task automation and improved resource allocation.

#### Optimization

Rightsize resources, reduce underutilization, and optimize the usage of reserved instances for operational efficiency and alignment at lower costs.

Figure 1: The four pillars of CitiusTech FinOps framework

Our FinOps framework provides a set of best practices to help healthcare institutions manage and optimize cloud costs. Within this framework, cost management and optimization are two key areas. Cost management involves identifying and eliminating idle and unused resources, mis-provisioned and legacy resources, and setting up rules-based alerts to prevent overrun. Optimization involves right-sizing resources to match current needs, making smart decisions about reserved instances, and improving resource-tagging. Additionally, automation and implementing show-back or chargeback methods can help healthcare companies optimize costs and create transparency and accountability for resource usage. By implementing these best practices, healthcare institutions can significantly reduce cloud costs and improve their overall cloud strategy.

***By incorporating over 600 industry best practices, our FinOps framework is designed to not just assist with cloud management and optimization for your business but enhance the efficiency, performance, and availability of all your cloud resources.***

Let us explore how our cloud cost optimization solutions have delivered quick business value for leading enterprises in the healthcare ecosystem.

## Case in point

A leading revenue integrity solutions provider in the US aspired to identify and shed unwanted costs from their cloud deployments. They leveraged a FinOps-based approach to optimize their Azure infrastructure costs and manage resource deployment across multiple business units. This involved a resource tagging strategy to introduce standard tags to help analyze costs by business units and cost centers more effectively. Azure policies were institutionalized to prevent users from creating Azure resources without using standard tags for accurate costs analysis. To that end, an Azure resource reorganization plan was developed to restructure the Azure Resource Manager (ARM) templates based on the business unit and cost center. With a Power BI dashboard, they were able to visualize cloud spend, display tagged and untagged resources, and a list of resources where cost optimization opportunities were available.

The revenue integrity solution provider realized cloud cost savings of \$15K per month, through the standardization of resource tagging, reorganization of resource groups, and reduced deployment time for Azure resources by 30%.

## Conclusion

Given the complexity of cloud environments, it is common for healthcare firms to face challenges in setting up a budget for their cloud infrastructure integration. Add to that, the prevalent lack of niche skillset and expertise to organize resources effectively, inefficient use of cloud resources and higher costs is oftentimes a given. With our expertise and robust scalable solutions, we have enabled several healthcare companies across the globe, to effectively devise a cloud integration roadmap, organize their cloud resources for distribution across business units, and monitor and manage their cloud operations in real time. CitiusTech has helped healthcare institutions save costs on their cloud adoption initiatives and day-to-day cloud operations while driving positive business outcomes.



## Reference links

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## Author

**Harshal Sawant**

AVP & Tech Consulting Head, CitiusTech

## About CitiusTech

Our vision is to Inspire new possibilities for the health ecosystem with technology and human ingenuity. At CitiusTech, we constantly strive to solve the industry's greatest challenges with technology, creativity, and agility. Together with the world's leading Healthcare and Lifesciences organizations and our partners, we aim to accelerate the transition to a human-first, sustainable, and digital healthcare ecosystem.

**To learn more about this contact us at**

[sales@citius.tech](mailto:sales@citius.tech)

**visit our website**

[www.citius.tech](http://www.citius.tech)