



Maximize Business Value with Cloud FinOps

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Intro to Cloud FinOps

Public cloud adoption continues to accelerate at a torrential pace.

Prior to the pandemic, IaaS and PaaS public cloud usage grew 43% per year,¹ and the impacts of COVID-19 have only served to further accelerate digital transformation and enablement of a virtual workforce.

It is now forecasted that by 2030 the Fortune 500 alone may realize over \$1 trillion of EBITDA value drivers associated with public cloud enablement.² While the far-reaching impacts of public cloud adoption are becoming more clear, many customers struggle to achieve near-term value objectives under their current deployments. Surveys estimate that 30-35% of cloud spend was wasted in 2020,³ while upwards of 80% of CIOs believe they had not attained the business benefits of migrating to the cloud. Challenges range from establishing effective controls on democratized resources inside the organization, to dynamically ensuring optimization of new technologies, to accurately predicting consumption-driven cost trends.

In order to realize the transformational benefits of the cloud, organizations need to instill a culture of transparency and embed agile processes. We have distilled learnings from several organizations as they embark on their cloud journey and valuable insights derived from the [FinOps Foundation](#) community. This technical paper aims to outline a framework for building a solid foundation for cloud financial operations (FinOps).

Definition

An operational framework and cultural shift that brings technology, finance, and business together to drive financial accountability and accelerate business value realization through cloud transformation.

¹ IDC's Whole Cloud Forecast 2019

² McKinsey: Cloud's trillion-dollar prize is up for grabs, February 2021

³ Flexera 2020 State of Cloud Report

⁴ McKinsey Study: Unlocking business acceleration in a hybrid cloud world, July 2019

Shift in IT financial management

Traditional processes and cost controls, such as the use of capital expenditure (CapEx) budgets and purchase order processes to control IT spend, are often not adequately equipped to address cloud consumption that is largely driven by operational expenditures (OpEx).

In order to achieve transformation potential, companies need to evolve processes, organizational skills, and tools for managing cloud investments. Management of IT finances impacts five core disciplines:

1. Budget Cycle

Financial planning and analysis (FP&A) teams typically lead the annual business planning and budgeting process, in addition to quarterly forecasting and financial planning. To meet the demands and fast-moving, flexible landscape of cloud computing, planning, and budgeting teams are adopting a more frequent feedback loop so that operational decisions and financial planning can align.

To address constantly evolving business needs, both from rapid growth of new applications as well as accelerating migrations of workloads from the data center, organizations must adopt an agile mindset that allows them to reassess and potentially rebalance resources at a greater frequency.



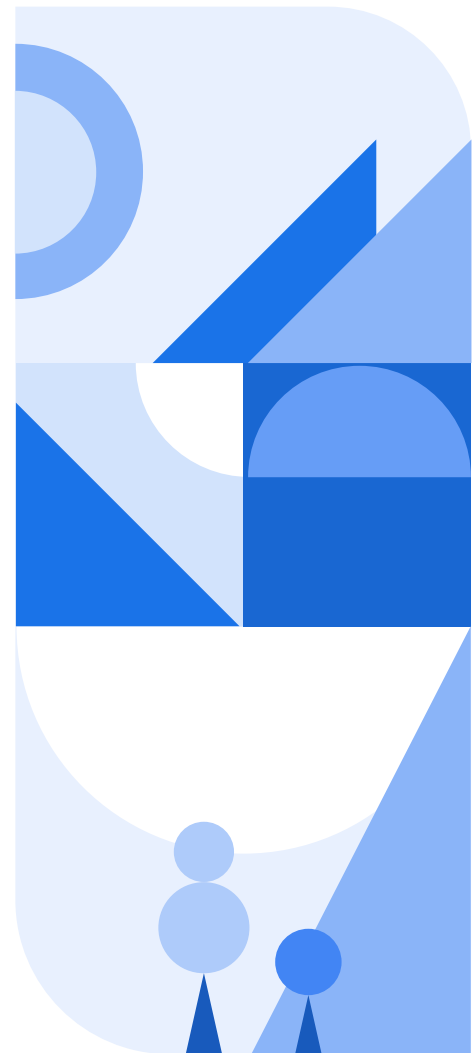
2. Cost ownership

Many companies manage their IT budgets centrally, where costs are allocated across business units based on revenue, headcount, and other factors. These budgets are managed by IT teams who are responsible for cutting costs and optimizing spend. This type of approach can limit visibility to usage of cloud resources and the source of cost overruns. Establishing either 'showback' or 'chargeback' processes provides the opportunity to shift cost accountability from IT to business teams, who can balance resource optimization with business demand drivers.

3. Spend controls and predictability

Traditionally, companies have used their CapEx budget and purchase order process to control their level of IT spend, and to drive their financial forecast process using their depreciation schedule of prior CapEx purchases along with trend-based estimates of OpEx spend.

These processes limit ability to effectively control largely OpEx-driven cloud spend, while forecasting using trend-based methods can result in variances of 25% or more. Companies that have successfully adopted cloud financial controls can utilize automated budgeting and spend control tools to enable engineering teams to dynamically provision cloud resources, while creating real-time notifications on spending thresholds. Furthermore, the use of driver-based forecasting models have enabled a high degree of spend predictability.



4. Financial governance

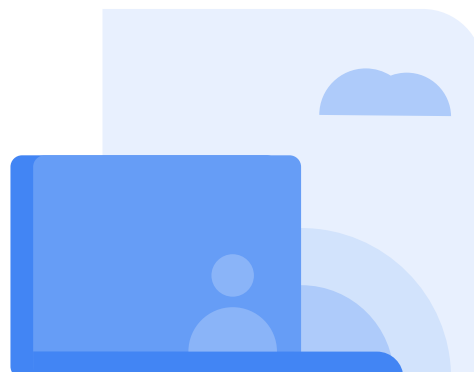
The adoption of cloud has created a shift from traditional data center CapEx to a new financial model that may involve both approaches to capitalization as well as OpEX treatment. Many customers are actively investigating accounting treatment for new cloud structures and offerings, potentially highlighting outdated financial guidelines.

The lack of clear cloud accounting guidelines may cause delays in adoption of cloud capabilities and harnessing the benefits of the shift. Staying ahead of cloud advancements calls for clear guidelines and financial policies to identify and allocate cloud spend areas.



5. Partnership

We are beyond a time when IT could operate with minimal cross-functional partnerships and collaboration. It is not purely a necessary cost to the business—rather, it is an accelerator in capturing value for the organization. Strong partnerships across IT and business teams are a vital component to realizing cloud value.



Cloud FinOps framework

Including a FinOps strategy is an essential element for any enterprise making significant investments in PaaS or IaaS capabilities.

The ability to link a cloud migration business case with value metrics to a detailed cost visibility dashboard with automated expense controls is essential to the mission control of your company's next IT 'moonshot'. Below is a framework for achieving five core aspects of the cloud transformation journey, in pursuit of realizing the business value of cloud.

Guiding principles

Regardless of the organization size and their experience in cloud, we have seen these guiding principles deeply rooted for successful execution of cloud FinOps:



Cost transparency

Access to real-time billing/cost data at all layers in the organization.



Collaboration

Partner with IT Finance, Application Development, and Infrastructure teams for cloud financial management.



Variable nature of cloud

Embrace the pay-as-you-go nature of cloud and benefit by serving your customers dynamically during their constantly changing needs.



Business Value Realization

FinOps is successful when decisions are made from a business value perspective.



Blamelessness

Treat mistakes as blameless opportunities to learn and improve existing processes.



Accountability

Hold application teams responsible for value realization reporting and cost optimization with a set of clearly defined KPIs and metrics.



Agility

Drive agile processes for budgeting and planning within IT by promoting iterative budget allocation, IT spending, and forecasting.

Cloud FinOps pillar

1

Accountability and enablement

A core ingredient to building a culture of cost and value awareness, accountability, and enablement charts the course for both the process and cultural transformation journey in cloud FinOps.

The primary goal here is to help drive financial accountability and accelerate business value realization by streamlining IT financial processes and enabling frictionless cloud governance. Enablement empowers IT, finance, and business teams with training to better understand cloud resources and strategies to efficiently deploy and manage them. Driving accountability and enablement starts with a charter and core governance policies, and then guides the transformation of processes that link finance, IT, and business owners.



Tactical

Initial charter for creating accountability and enablement established.



Strategic

Cloud governance and policies are understood within the organization.



Transformational

Strong partnership with Finance and Business teams to periodically review and optimize spend.

Cloud FinOps pillar

2

Measurement and realization

Foundational to any good process is accurate data and effective metrics, which start with the labeling and tagging data architecture behind your company's use of cloud resources.

While many common tags include IT-driven designators such as application, environment, and project, it is important to design a direct connection to your P&L into your labeling and tagging architecture, by including cost centers or the chart of accounts as tags. Automation of tagging will ensure that all taggable resources are deployed with accurate labels. This data will subsequently enable KPIs that both monitor the efficiency of cloud resources as well as measure organizational value objectives.



Like many aspects of cloud FinOps, metrics and KPIs are commonly a journey.

Customers typically start this journey with resource optimization metrics such as actual vs. budget per service, % underutilization of services (including aged snapshots, idle instances, and over-sized resources), right-sizing opportunity value, and spend per application. Pricing optimization metrics typically start with Committed Use Discount and Preemptible Instance coverage ratios and idle on-demand resource ratios, while compliance metrics focus on label, security, cost, and usage compliance.

Once these foundational metrics are established, development of more advanced KPIs can include operational and security stability (incidence or downtime rates), devops release frequency, return on innovation, and unit metrics (cost per customer served). Unit metrics can be a very powerful tool to connect across business functions, providing at the same time an operational metric on cost consistency, a target for architecting future cost structure, and a connection to sales and marketing demand drivers. Developing effective unit metrics requires close coordination between finance, IT, and business owners to identify the Book of Record, reporting cycle and cutoffs, and designing for auditability.

Effective measures not only create awareness and enable agile processes, but also support a culture that celebrates success and rewards teams for achieving new milestones.



Tactical

Established set of assets level KPIs for cost optimization.



Strategic

KPIs are mapped to business services and outcomes.



Transformational

Cost optimization culture embedded into the organization.

Cloud FinOps pillar

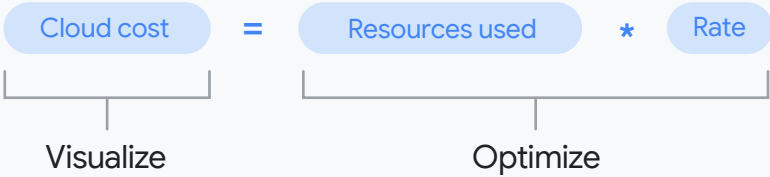
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Cost optimization

Cloud cost optimization is not just about cutting costs—it's about knowing where to spend your money to maximize the business value.

It is an iterative and continuous process that provides a consistent methodology to visualize and manage cloud consumption in a most cost effective manner. Success in cost optimization can result not only in significant reductions of cloud spend, but also in re-architecting for improved application performance to manage user demand growth within the same cost envelope.

Equation for cloud cost



Tactical

Limited use of resource and rate optimization across various teams.



Strategic

Access to timely and accurate cost reports. Accountability for resource and rate optimization.



Transformational

Business value tracking aligned and cost optimization embedded at all layers.

Cost optimization strategies address three factors:



Cost visibility

Identify what you spend, how services are billed, and more importantly the ability to showcase why you spent a specific amount to achieve a business outcome. This is foundational to fully understanding and [organizing](#) cloud costs. This is where business, IT, and Finance come together to define tagging policies and accurately map the costs back to business units for value tracking.



Resource optimization

Focus on eliminating [cloud waste](#) (idle resources), autoscale where necessary, and rightsize the compute and storage tier to only use what you need. Often this function is decentralized, since engineering has the most context on where and how to optimize the resource used.



Rate optimization

Leverage deeper discounts using reservations such as [committed usage](#), preemptible VMs, flat rate pricing, as well as volume and contract discounting where you pay lower rates for the same resources. To maximize cost optimization, often these decisions are made centrally by FinOps or CoE teams.

We have seen many successful examples like [Optiva](#), [MD Insider](#), and [Raycatch](#) where customers optimize their total cost of ownership by leveraging Google-managed services as well as serverless offerings to offload operational overhead, thus allowing them to focus on growing their business. See Appendix A for a cost optimization matrix.

To learn more about the cost optimization strategy in detail, check out the free technical paper, "[Understanding the principles of cost optimization](#)," explore our [solutions guide](#), or see how [OpenX](#) reduced their per-unit cost by more than 60% on Google Cloud. For a holistic view on deploying applications with operational excellence, security, reliability, and performance along with cost check out [Architecture Framework](#).

Cloud FinOps pillar

4

Planning and forecasting

Preparing for a data center technology refresh typically takes six to nine months or longer on infrastructure that will be used for five years or more.

It requires customers to assess long-term workload demands and acquire infrastructure with significant advanced notice. The average data center utilizes less than half of its compute capacity over its lifecycle due to physical hardware immutability. By comparison, customers can establish 'hand-in-glove' sizing of cloud resources, eliminating wasteful overhead, and leverage auto-scaling technology to burst when demand does. This allows for much less waste and better business results.

Establishing accurate financial forecasting requires rethinking traditional approaches to depreciation run-outs and trend-based forecasting of maintenance and licensing costs. Using workload-specific forecasting models that leverage a combination of trend-based models for steady-state workloads, driver-based models for scaling applications, as well as monthly variance analysis can greatly improve the accuracy of dynamic cloud needs.



Tactical

Manual invoice reconciliation and cost allocation.



Strategic

Partial visibility into accounting of cloud spend.



Transformational

Budget planning and forecasting closely aligned with variable consumption model in the cloud.

Cloud FinOps pillar

5

Tools and accelerators

Employing proper tools and accelerators are important to fully benefiting from FinOps practices.

In earlier stages, companies may have limited their ability to report detailed analysis of cloud spend. As practices mature and improve, labeling and tagging of resources proves valuable to understanding costs for specific projects and teams. These capabilities become even more powerful through automated monitoring of resources through a dashboard that offers insights on spend and value.



Tactical

Limited capability to report on accurate accounting of cloud spend.



Strategic

Basic cloud resource tagging/labeling are available.



Transformational





Automated tools and reporting dashboard to manage cloud spend and value.

Maximize business value

Capturing business value with cloud requires a shift in mindset of continuously optimizing overall cloud spend and ensuring that resource usage aligns to investments that are revenue-driving, innovative, or cost-cutting.

Metrics for business value realization

Business value realization falls across several factors: cost efficiency, velocity, and innovation. We suggest assigning KPIs to the following metric categories:

			
Cost efficiency	Resiliency	Velocity	Innovation
Measure cost efficiency through infrastructure savings, migration, and support costs.	Enhance operational resiliency with improvement in service quality and security risk posture.	Increase time to market by accelerating fluidity in product and service delivery.	Enable a culture of rapid experimentation to drive innovation and cloud transformation.
Infrastructure	Service quality	Developer productivity	Return on innovation
Support	Security posture	Release frequency	Employee experience
Implementation	Operational stability	Business agility	Customer satisfaction

Partner with Google and FinOps Foundation on cloud FinOps

So, where are you now in your FinOps journey, and how do you move beyond the challenges ahead? Google can help you start the conversation and accelerate your path to maximizing business value with the cloud.

No matter where you are on the cloud transformation journey, through an interactive session with Google, we bring executives across the organization together to work toward a shared vision and a plan to accelerate and realize business value in the cloud. If you are interested in more information, please [contact us](#) and / or join the vibrant community of [Finops Foundation](#).



OpenX

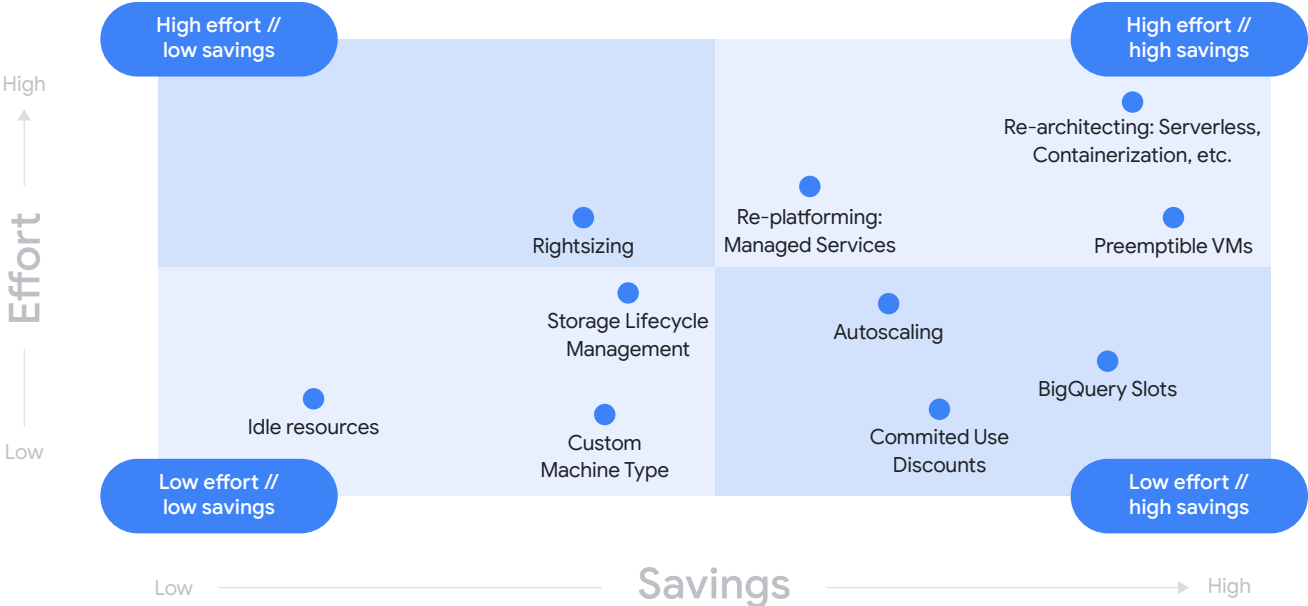
[Learn how](#) OpenX reduced their per unit cost by more than 60% on Google Cloud.

Get in touch

If you are interested in more information, please go to cloud.google.com/contact

Appendix A: Cost optimization matrix

Cost Optimization Matrix

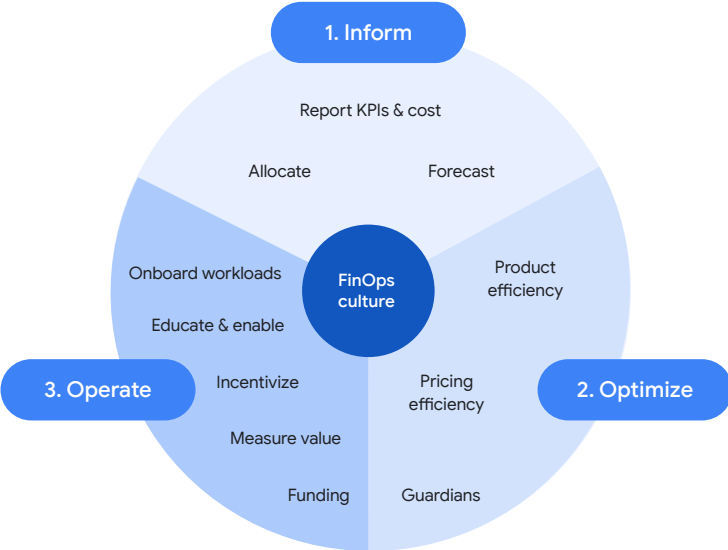


Appendix B:

Cloud FinOps lifecycle

Cloud FinOps epics organized across the FinOps lifecycle

To help guide our customers bringing the cloud FinOps capabilities and building blocks into action, Google has also aligned the cloud FinOps epics across the FinOps lifecycle (as proposed in [FinOps Foundation](#)).



-
- 1 Inform**
Make information visible
 - 2 Optimize**
Drive Cloud efficiently
 - 3 Operate**
Embed FinOps & drive self-sufficiently