



A guide to **financial governance** in the cloud

The path to predictable cloud costs

Google Cloud

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A Guide to Financial Governance in the Cloud

The path to predictable cloud costs

With a growing number of enterprises making the move from on-premise infrastructure to on-demand cloud services, there has been a major shift from CapEx to OpEx spending. According to Computer Economics, 65% of organizations are increasing IT operational spending, while IT capital expenditures are at a 5-year low of 18%, dropping from 23% in 2014¹. This transition entails big process and organizational changes and new best practices. We've reached an inflection point where new methods are needed to understand, control, and manage IT costs.

Budgeting is no longer a one-time operational process completed annually. Instead, spending must be monitored and controlled on an ongoing basis due to the dynamic nature of public cloud use within organizations. How infrastructure is procured has radically changed, too. It's now decentralized. Any employee can spin up resources in seconds. Yesterday's solutions for the control and predictability of infrastructure expenditures don't work well in this new era of cloud services.

Cloud provides organizations with a platform for more dynamic decision-making, accelerated innovation, and a myriad of other benefits. But cloud also requires vigilance and real-time monitoring. A recent Google study² on cloud financial governance among IT and Finance professionals found that lack of predictability is the single greatest cloud cost management pain point. Respondents cited the need for simplified billing and more accurate and predictable budget forecasting. They welcomed guidance on how to collaboratively work with cloud resource owners to find cost efficiencies and implement cost optimization.

Finance and IT need cloud financial governance tools to make cloud costs more predictable. Tools that are easy to use and that help uncover opportunities for optimizing costs and usage are business critical. Fortunately, those tools are now available.

A recent Google study on cloud financial governance among IT and Finance professionals found that **lack of predictability is the single greatest cloud cost management pain point.**²

Why cloud financial governance is critical

Financial governance for cloud services is ever more critical as worldwide spending grows. Public cloud services and infrastructure are forecast to reach \$160 billion this year, an increase of 23.2% over 2017, according to a recent report by [IDC](#)³. By 2021, spending is expected to grow by 73% over 2018 to \$277 billion. With rapid growth comes the need for more precise, real-time control of cloud services, which can mean the difference between peace of mind and spiraling costs that lead to budget overruns.

Pay for what you need, when you need it: this is the promise of the cloud. Too often, though, the very accessibility that makes cloud platforms attractive leads to reduced control and mushrooming costs. Often, this is inadvertent — an engineer spins up a virtual machine, then forgets to shut it down, or a seemingly minor change to an application leads to spiraling storage costs.

A 2018 survey⁴ of 300 IT executives by [SoftwareONE](#) found that unpredictable costs and lack of visibility and transparency into cloud usage were the most cited pain points in managing cloud environments. Respondents to the [RightScale](#)⁵ 2018 State of the Cloud Report, said that more than a third of their cloud spend was wasted due to inefficiencies, such as underutilized compute resources. By 2020, Gartner predicts that organizations that lack cost optimization processes will average 40% overspend in public cloud.⁶

Cost management is a major challenge for cloud adopters

53%

IT decision makers said that cost and budget were a key pain point for them.⁷

61%

IT & finance professionals cited lack of predictability as the single greatest cloud cost management pain point.⁸

75%

IT & finance professionals cited IT cost management as highly important to their organization.⁹

40%

amount of overspending in public cloud predicted by 2020 in organizations that lack cost optimization processes.⁶

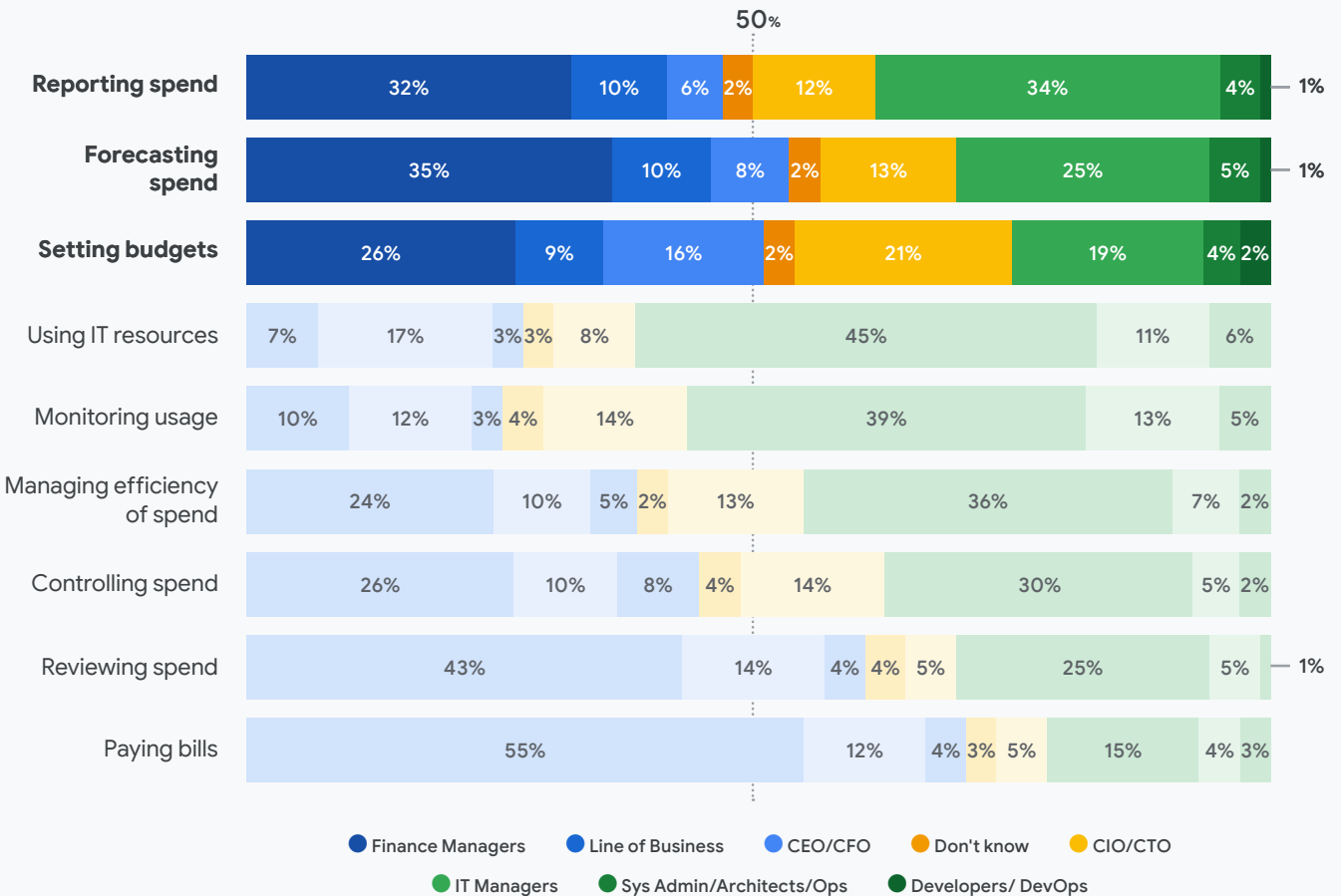
Organizational collaboration required

The responsibility for preventing budget overruns and eliminating unauthorized use of cloud resources requires close collaboration between IT and Finance. A Google study¹⁰ on cloud financial governance revealed that IT teams play a key role in the selection of cloud service providers but that Finance also provides important inputs during the process, with

the ultimate decision made by C-level executives. After the decision is made, Finance plays an important oversight role in reporting and forecasting spend and budgeting. The oversight roles for both IT and Finance personnel require real-time monitoring and reporting of usage and costs to support real-time decisions.

IT and Finance's role in managing costs

Question: Thinking about how your organization manages its IT costs, please select who at your organization is primarily responsible for each of the following cost management stages.



Three most prominent cost management stages distinguished above. Source: Google Internal Data

In this same Google study¹⁰, 75% of professionals said IT cost management was of the highest importance to their organization. When IT and Finance professionals were asked what capabilities were the most sought after for cloud cost management, their top four answers were identical:

- 1 Keep costs within the budget
- 2 Identify opportunities for IT cost savings
- 3 Forecast IT spend
- 4 Keep IT costs consistent and limit surprises

Most important cost management tasks require planning and greater predictability

Question: Please select the **three** tasks you feel are **most** important for executing successful and smooth IT cost management processes.

	Total	Finance	IT
Keeping costs within the budget	43%	42%	44%
Identifying opportunities for IT cost savings	35%	37%	33%
Forecasting IT spend	33%	33%	33%
Keeping IT costs consistent and limiting surprises	32%	32%	32%
Trust between IT and Finance	26%	25%	27%
Evaluating efficiency of IT spend	25%	21%	28%
Communicating priorities between IT and Finance	20%	23%	18%
Project-level spend allocation	19%	23%	16%
Automating tasks	19%	14%	23%

Four most prominent IT cost management tasks distinguished above. Source: Google Internal Data

Sizing cloud deployments, managing capacity across multiple teams, and monitoring costs are vital, but these activities can be complex for organizations to handle on their own at enterprise-scale. The good news is that public cloud providers now offer a variety of controls, including usage quotas, budget alerts, and organizational permissions, to help enterprises keep cloud deployments, resource usage, and costs in check.

Toward more effective governance in the cloud

New controls provide a better approach to cloud financial governance. Precise permissions ensure that only the right individuals in an organization have the power to deploy cloud resources. In addition, companies can prevent overspending with quotas and usage notifications that can be configured to automatically throttle or cap services.

These features are meant to provide insights into cloud spend so companies can act immediately to limit unnecessary resource usage and charges.

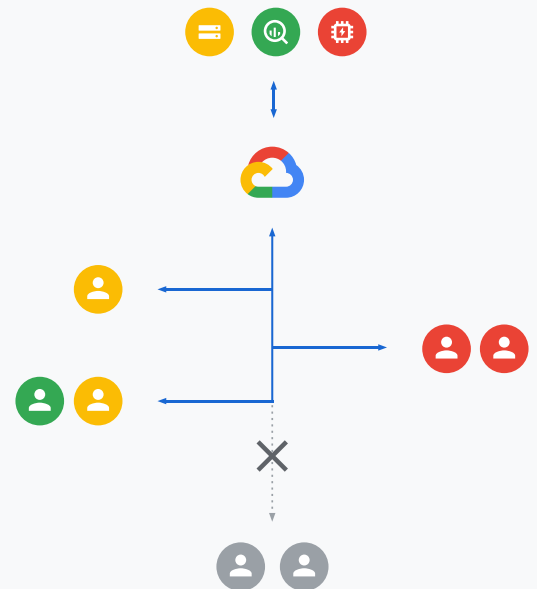
Here are three types of controls every enterprise should insist on when considering public cloud services:

- 1 Controlling who can use and manage cloud resources** with granular policies and permissions helps organizations reduce risk and keep cloud costs in check. Today's cloud financial governance strategy should consider including the use of [least privilege policy](#), which allows only authorized users to provision resources. This level of control helps enforce usage and management restrictions across an organization, with enforcement down to a specific application or workload. These permissions can also take into account regulatory requirements unique to the organization or industry.

"90% of the respondents agree that public cloud will save money for their organizations... However, few companies have implemented financial management processes for public cloud. Therefore, few have any idea whether they are achieving their goals or possibly spending even more than running their own data centers."

— Gartner, Inc.¹¹

Restrict resource access and cost views with granular policies and permissions

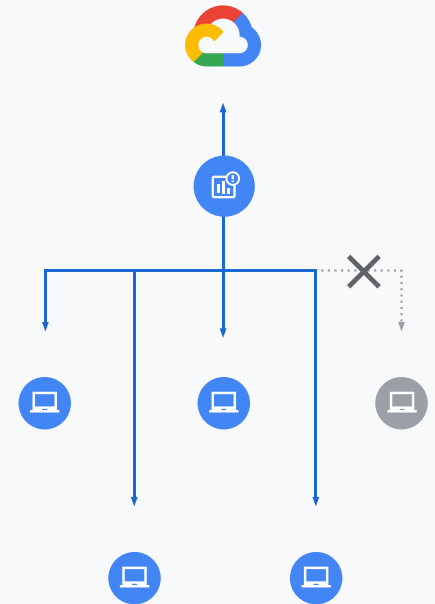


Using policies and permissions, access to production environments can be restricted to only a few trusted users, for example. A less stringent financial governance strategy might be appropriate in the case of dev/test environments. Here, you might choose to relax access controls, but enforce low usage quotas tied to budgets to quickly terminate resource usage when budget totals are reached.

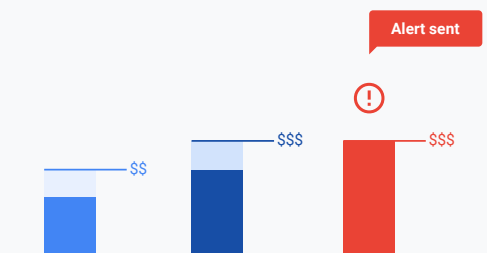
- 2 Controlling the rate at which cloud services can be consumed** with resource quota policies helps prevent unforeseen spikes in usage. For example, admins can set a quota for maximum concurrent compute usage, triggering alerts or service throttling when the quota is reached. Other quotas might be set for total daily use or per-user use.
- 3 Controlling spending** with programmatic budget notifications and automated budget actions makes it easier to stay within defined budgets and increase predictability. These tools can be used to drive more efficient cloud resource usage. Admins can create budgets that track month-to-date spending, monitor usage, and send alerts when usage is approaching preset thresholds. Powerful, easy-to-use budget controls and access to cost data can help companies control and cap cloud usage and costs. Usage and cost data can make teams aware of the impact they are having on overall spend and lead to changes in behavior. Purchase recommendations also make it easier to identify cost savings opportunities.

These proactive and reactive controls let companies exert more governance over their cloud spending. They empower admins to govern resources and costs proactively via programmatic tools instead of requiring manual intervention.

Throttle resources using quota policies to prevent unforeseen spikes in usage



Get alerted when exceeding set budget thresholds



Controlling cloud costs with Google Cloud financial governance

Cloud financial governance requirements may vary from company to company and department to department based on many factors – industry, applications, number of users, etc. But the availability of controls should be a critical factor to consider when choosing a public cloud provider.

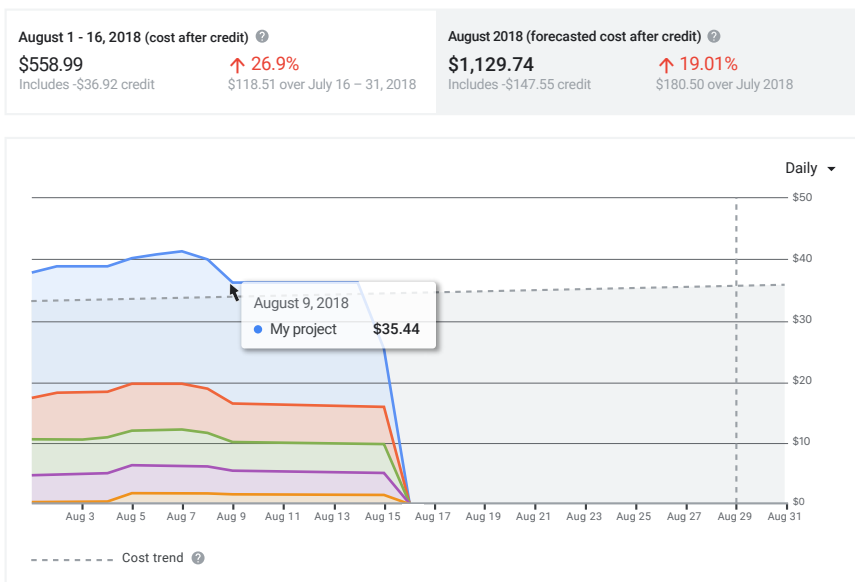
At Google Cloud, we strive to provide enterprises with financial governance tools that offer greater clarity, accountability, and control, making it easier to align strategic priorities with cloud usage. We have designed governance tools for both technical and non-technical users alike to simplify the billing process and make the cloud predictable at any scale. Our goal is to make cost management easy so that you can focus on getting the most out of your cloud spend.

Here are some examples of how Google Cloud enables more effective cloud financial governance:

Clarity

- [Billing reports](#) within the GCP console provide at-a-glance views of current cost trends and forecasted spend to help you plan, track, and optimize cloud costs. By exporting to [BigQuery](#) and [Data Studio](#), you can also craft custom dashboards to dive deeper into your cloud usage and costs.
- [Billing APIs](#) make it possible to leverage third-party tools to programmatically manage billing for projects and access the full catalog of billable SKUs, public pricing, and relevant metadata.
- [Intelligent recommendations](#) for rightsizing virtual machines (VMs) make it simple to optimize resource utilization of VM instances to minimize costs.

Google Cloud Billing Reports



Presets
 Current month, all projects

Time range
 Usage data is currently available since January 2017
 Current month

Group by
 Project

Projects
 5 out of 8 projects

Products
 All products (9)

SKUs
 All SKUs (81)

Labels
 Example: env:test

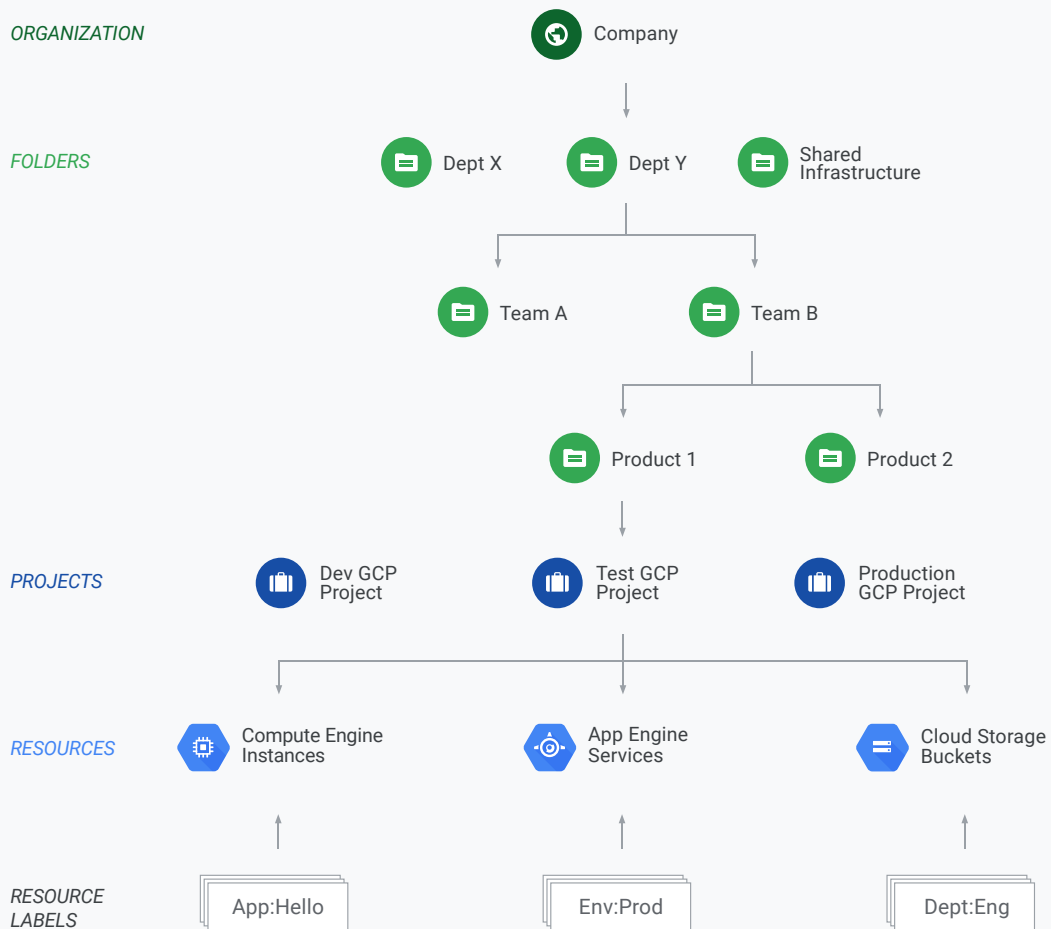
Include credits in cost

Reset

Accountability

- [Resource hierarchy](#) makes it simple to allocate cloud costs to departments and teams to drive clear accountability and better understand the ROI of your cloud investments. Designed to accommodate companies of all sizes, this flexible hierarchy lets you structure and manage your account by organization, folder, project, and resource, aligning with your business needs.
- [Resource labels](#) make it possible to group together multiple resources for further granularity. As an example, labels can be used to distinguish instances owned by different teams or cost centers.

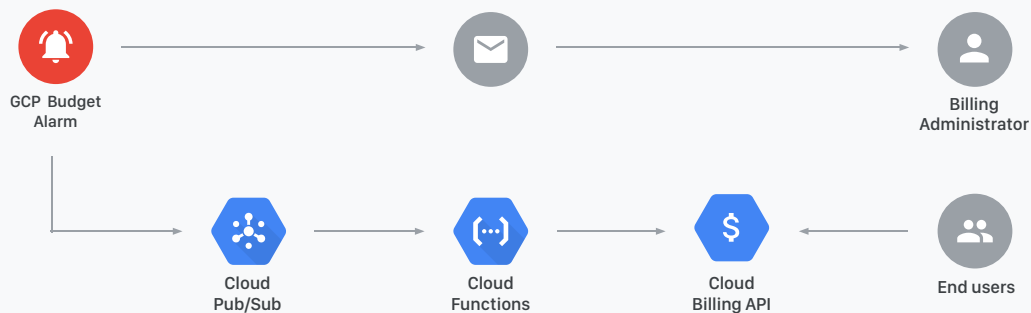
Resource hierarchy and labels



Control

- [Organizational policies](#) can be easily enforced with granular permissions at different levels in the resource hierarchy to ensure that the right individuals have the ability to spend within Google Cloud. You can control which users have administrative and cost viewing permissions for specified resources by setting [Cloud Identity and Access Management \(Cloud IAM\)](#) on these resources.
- [Cost management controls](#) help you more effectively plan and reduce the risk of overspending. [Quotas](#) limit the rate of cost accumulation and [budgets](#) allow you to more closely monitor costs and usage. Based on defined budget targets, [programmatically budget notifications](#) will broadcast alerts via your existing communications channels, such as Slack, and provide an automated way to throttle or cap costs to prevent unexpected activity from affecting your budgeted cloud spend.

Set up programmatic budget notifications and automated actions



Learn more about the tools that Google Cloud offers for cloud financial governance at <https://cloud.google.com/billing>

Appendix

1. [Computer Economics, IT Spending and Staffing Benchmarks 2018/2019: IT Budget and Cost Metrics by Industry and Organization Size](#)
2. Google Internal Data
3. [IDC Press Release, Worldwide Public Cloud Services Spending Forecast to Reach \\$160 Billion This Year, According to IDC, 18 January 2018](#)
4. [SoftwareONE, Managing and Understanding On-Premises and Cloud Spend](#)
5. [State of the Cloud Report™: 2018 Data to Navigate Your Multi-Cloud Strategy](#) by RightScale is licensed under [CC by 4.0](#)
6. [Gartner, Inc., Predicts 2018: The Cloud Platform Becomes the Expedited Path to Value](#), February 21, 2018
7. [451 Research, Voice of the Enterprise: Cloud Transformation, 2017](#)
8. Google Internal Data
9. Google Internal Data. "Highly important" is defined as 8 or higher on a 10-point scale, where 0 means "Not at all important" and 10 means "very important."
10. Google Internal Data
11. [Gartner, Inc., How to Manage Public Cloud Costs on Amazon Web Services and Microsoft Azure, November 20, 2017](#)



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