nagarro

Is Cloud stealthily eating up your budget?

It's time you adopt FinOps

An ebook to help you kick-start your FinOps journey and adopt best practices to optimize your cloud spend

Content

Introduction

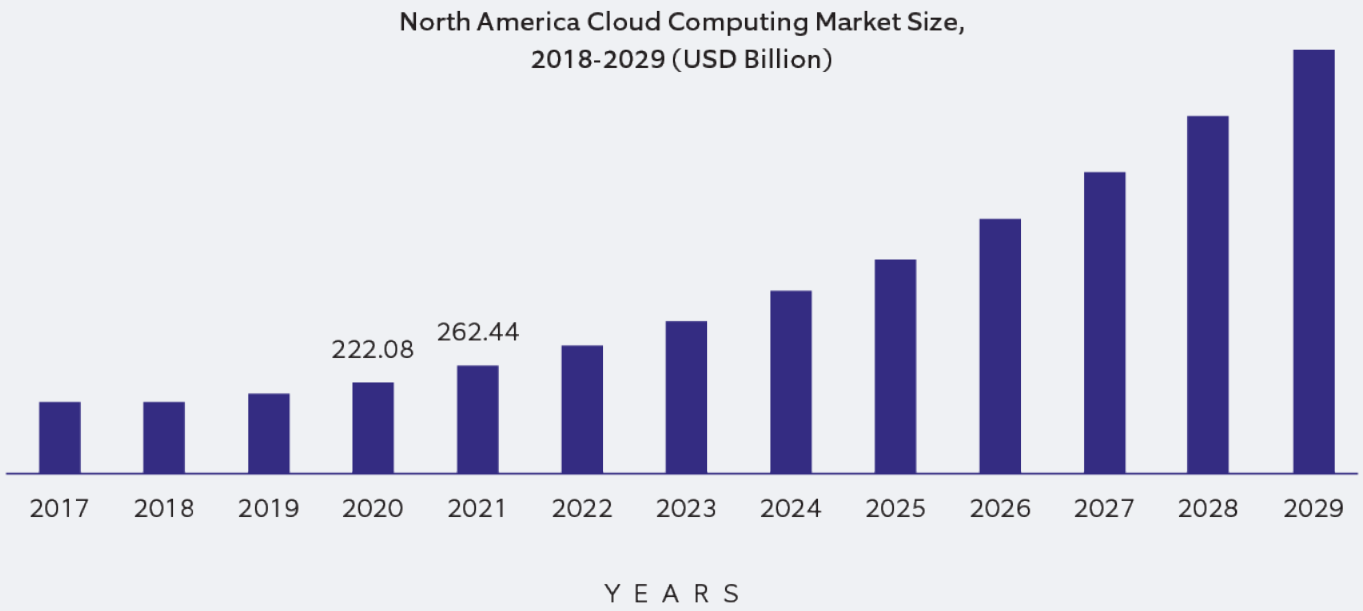
With ever-evolving business priorities, technology leaders look forward to remaining innovative, scalable, and resilient. And it would not be wrong to say that since the advent of cloud technologies over a decade ago, cloud modernization has enabled businesses to generate value by enhancing performance, bringing agility, and becoming more operationally resilient. However, it does come with challenges; one of the most critical ones is to manage the spiraling cloud costs. If we go by Flexera's 2022 State of the Cloud Report*, organizations averagely waste approximately 32% of their cloud spend.

But why/how? Cloud pricing can be incredibly complex and difficult to understand, especially with thousands of different SKUs, various dynamic pricing models, and various discount plans offered by several cloud service providers in the market.

In this ebook, we explore how pertinent it has become to execute FinOps – an evolving cloud cost management and optimization discipline, right from the initial discovery stages and Proof of Value (PoVs) through to the continuing operation of production workloads to minimize costs and maximize ROI (Return on Investment) on the cloud.

Per Fortune Business Insights report, the global cloud computing market is projected to grow from $480.04 billion in 2022 to $1,712.44 billion by 2029, at a CAGR of 19.9% in the forecast period.

*** https://info.flexera.com/CM-REPORT-State-of-theCloud?id=ELQ-Redirect**



While cloud offers several benefits such as agility, scalability, and flexibility, it collides with the business-as-usual operating model. It pushes IT, finance, and business teams to control and optimize cloud costs. Organizations track cost drivers and measure and mitigate the rising costs of cloud computing. Furthermore, add to the complexity of managing cloud costs.

The dirty little secret of cloud spend is that the bill never really goes down."

- J.R. Storment, Executive Director of the FinOps Foundation

To avoid overpaying for cloud services while also being able to focus on innovation & digitization initiatives, we have listed below a few questions so that you can evaluate the current state and take requisite steps to optimize cloud costs:

What is the scale of your company's cloud spending with respect to the total revenue?

Where do you stand in the cloud modernization journey – still rebasing refactoring, re-platforming, or rebuilding?

How much are you spending on cloud currently – monthly, weekly, daily, etc.?

How much cloud spend do you forecast for the next quarter/fiscal year?

How close are estimated costs vs. actual spending?

What does the distribution of cloud spending look like among different cloud types (if multi-cloud), your business units, departments, teams, products/ projects, etc.?

Which factors (such as storage, compute, database(s), containers, IaaS/PaaS, etc.) are driving your cloud spend the most?

How do you know if you are faring well in the cloud? Are you able to optimize cloud costs?

FinOps fundamentals

Let's look at some of the fundamentals of FinOps that will help us learn more about this emerging and evolving practice.

What is FinOps?

"FinOps is an evolving cloud financial management discipline and cultural practice that enables organizations to get maximum business value by helping engineering, finance, technology, and business teams to collaborate on data-driven spending decisions."
FinOps.org

At the core of it, FinOps empowers teams to make well-informed trade-offs between speed, cost, and quality when making cloud architecture and investment decisions. FinOps helps bring financial accountability to each layer, where everyone can take ownership of their cloud usage. It is not about saving money; it is all about making money.

FinOps framework

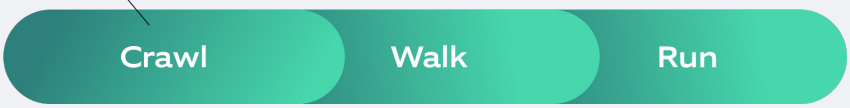
Alongside driving collaboration between cross-functional teams to manage cloud spending, FinOps establishes governance procedures to enforce best practices for cloud financial management. FinOps framework consists of the personas, process, the guiding principles, and six interdependent domains to bring financial accountability across the organization. It also includes the following iterative phases:

1. **Inform:** Get visibility into cloud cost and drive team ownership with an aim to achieve financial accountability.
2. **Optimize:** Take steps to reduce cloud costs by making well-informed decisions about resource usage and by efficiently using financial levers to lower rates.
3. **Operate**: Refine the business goals and scale operational efforts through continuous improvement.

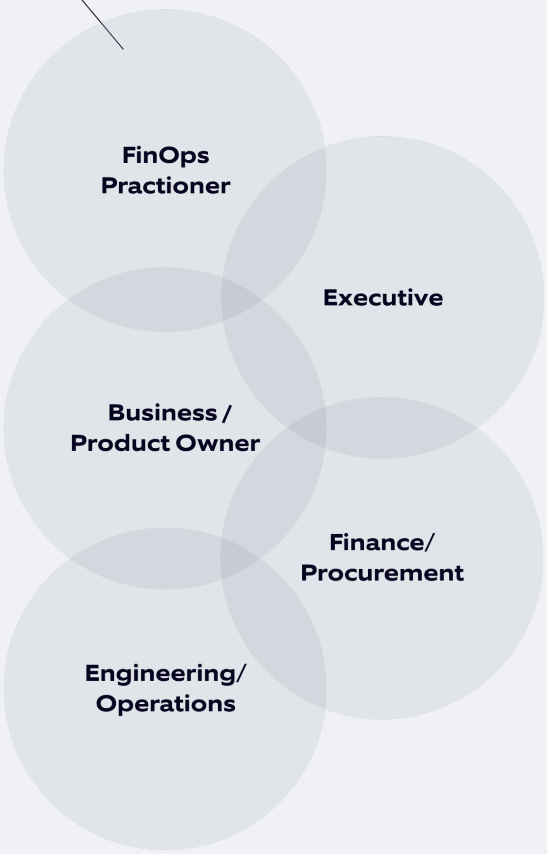
Key principles

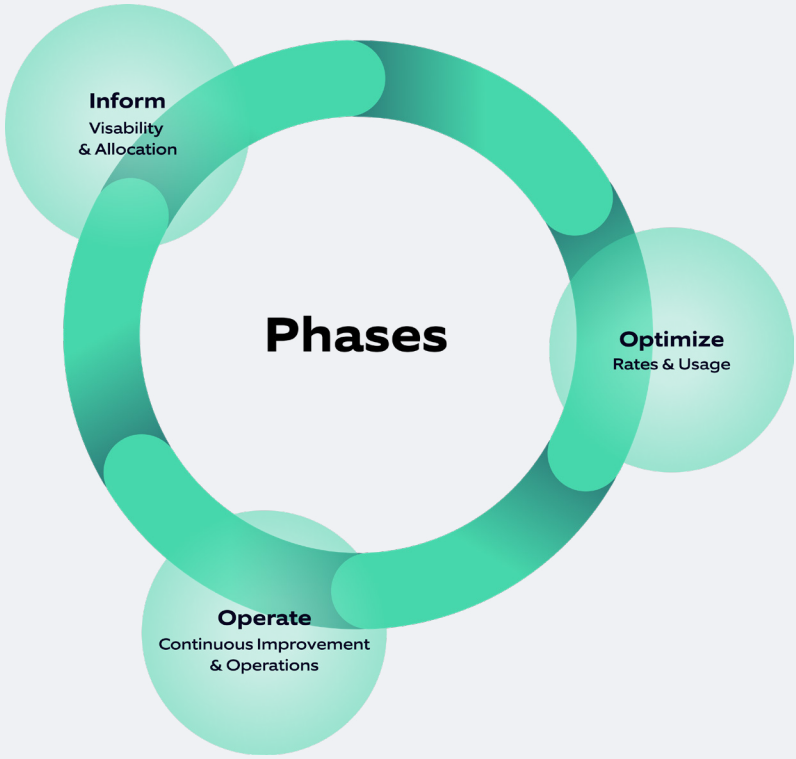
- Teams need to collaborate
- Everyone takes ownership of their cloud usage
- A centralized team drives FinOps
- Reports should be accessible and timely
- Decisions are driven by the business value of cloud
- Take advantage of the variable cost model of the cloud

Maturity



Personas





FinOps domains and capabilites across the various stages

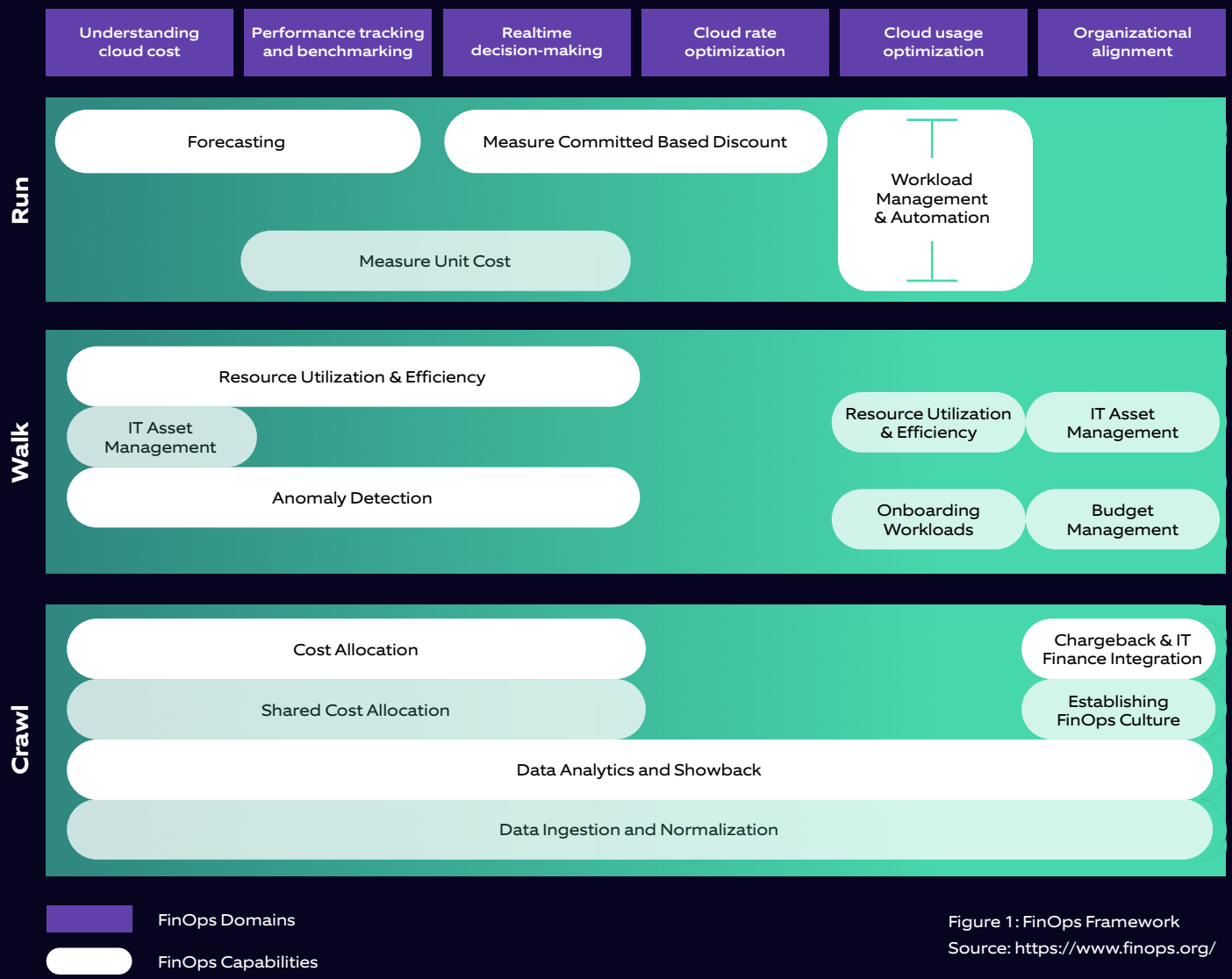


Figure 1: FinOps Framework
Source: https://www.finops.org/

Why do we need FinOps?

FinOps can help you accelerate company growth, gain strategic competitive advantage, improve operational resilience as well as deliver innovative, market-leading solutions cost-effectively – all this while optimizing cloud bills.

Over the last 6-7 years, most organizations heavily relied on on-premises data centers funded primarily through Capital Expenditure (CapEx). This model resulted in limited optimization options, long cycle times, and siloed or hierarchical purchasing power. Spending, tracking, and forecasting – all were fixed and controlled, with no or limited flexibility within the forecast period.

Today, we are living in the era of cloud. Businesses across all industry verticals, including banking and financial services, healthcare, automotive, and insurance, are migrating to the cloud thanks to the benefits it offers, including reduced costs, variable spending, increased flexibility, and on-demand scalability (to name a few).

There is an evident increase in investment in Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS), cloud storage, computing, as well as other cloud-based services like security, process monitoring, and data processing. However, without proper tracking, monitoring, and governance in place, the result is often an unexpected cost, resulting in several innovative IT projects being delayed or stopped.

As an engineering leader, you would certainly not want to overspend or end up making a wrong decision because of any incorrect understanding of costs, isn't it?

You would rather want to gain control of your cloud spend, just like one of our leading clients from the home automation industry did.

An IoT SaaS provider built a private cloud to collect data of all its deployments to offer insights to its customers about predictive maintenance, saving energy, and more.

They anticipated their workload to double over the next 2 years implying spending of over USD 5 million yearly. Struggling to monitor cloud spending due to a lack of real-time visibility and cumbersome cloud billing reports, they:

- Implemented a thoughtful and well-defined tagging strategy to allocate cloud costs fully
- Deployed reporting tool for accountability across teams as well as business initiatives, and,
- Set up collaborative meetings with IT, finance, and engineering teams to discuss these reports at regular intervals.

This, notably, helped them optimize their cloud spending by ~26% while reducing the waste of unwanted cloud resources, rightsizing the over-provisioned ones, and negotiating better volume discounts with the CSPs (Cloud Service Providers).

Now let us explore how you can adopt FinOps and meet your objectives, accelerate company growth, gain strategic competitive advantage, improve operational resilience innovative, market-leading solutions cost-effectively.

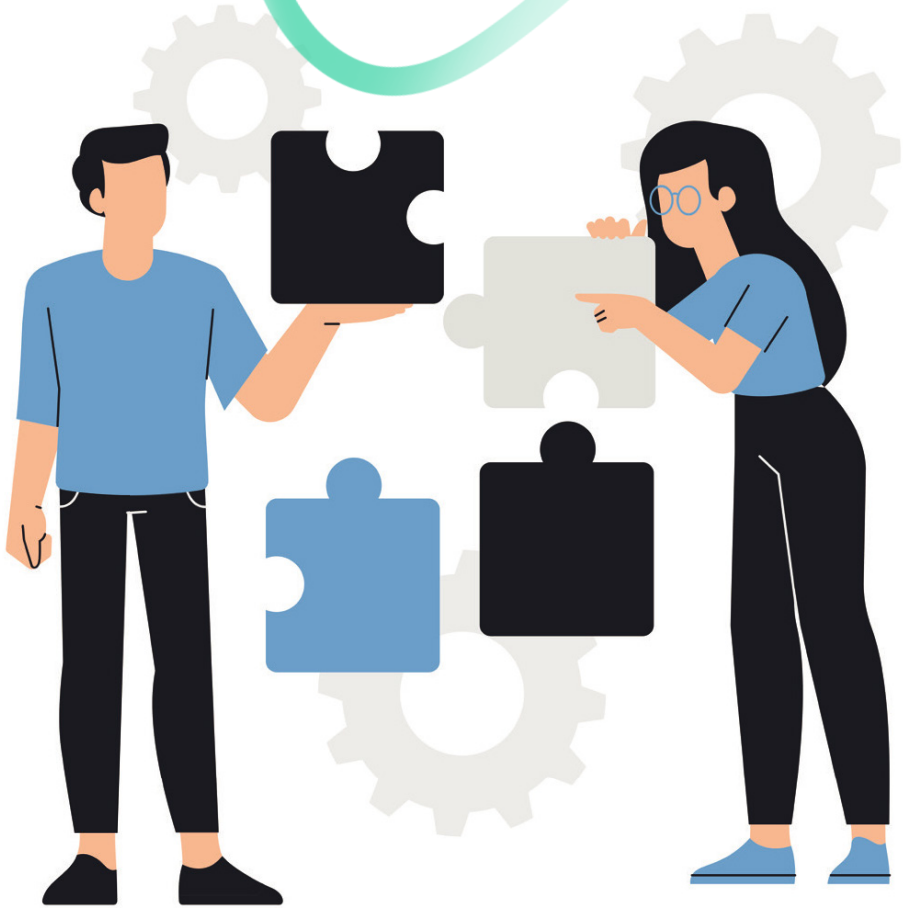
*https://www.apptio.com/blog/poor-cloud-cost-management-e_ects

FinOps – A new operating model for the Cloud

FinOps implementation requires building a cost-aware culture of cross-team collaboration between IT, finance, engineering, and business stakeholders.

This collaborative approach helps enterprises make ongoing, intelligent decisions to get maximum business value from cloud. To begin, a centralized FinOps team/individual backed by senior leadership can help drive a cultural shift within an organization. With representation from various organizational domains such as engineering/ops/infrastructure, finance/ procurement, executive, and business/ product owner, your FinOps team helps build communication channels and share knowledge of the cloud costing model as well as FinOps principles.

This team is responsible for collaborating with the rest of the organization to drive cloud strategy, governance, and cloud best practices.



In this model, here's a probable list of key roles that an organization should consider:

Sponsor:
Someone from the senior leadership or executive persona, the sponsor helps set up the FinOps team, finances the investment, and provides the business vision.

Head of Finance:
Helps implement FinOps practices within the Finance & procurement teams. The responsibilities include setting up FinOps reporting, invoicing models, and procurement policies.

FinOps Lead:
Head of the Finops function; responsible for education and collaboration between teams to ensure that the objectives are met. They also help implement FinOps practices while providing transparency on cost and optimizing consumption.

Cloud Architect:
Responsible for designing architectural models, running pilots on FinOps tools and processes, application modernization needs, reviewing cost savings recommendations, and driving innovation.

DevOps Lead:
Responsible for automating, monitoring, and optimizing workloads while ensuring cloud spend optimization.

Application Owner:
They must provide complete transparency with respect to cost and consumption for the respective application.

Finance Controller:
Helps follow up on FinOps reporting, analyze consumption models, and forecast the same.

Program Manager:
Responsible for running transformation programs and ensuring seamless change management. They can step in if any prioritization battles occur.

Whether it be purchasing more cloud resources at discounted rates, avoiding unnecessary costs, reducing/removing waste, or simply having better foresight as to when reserved instances are due to expire, it is only through the collaboration of these teams that organizations can make sure they are getting the most from their cloud investments.

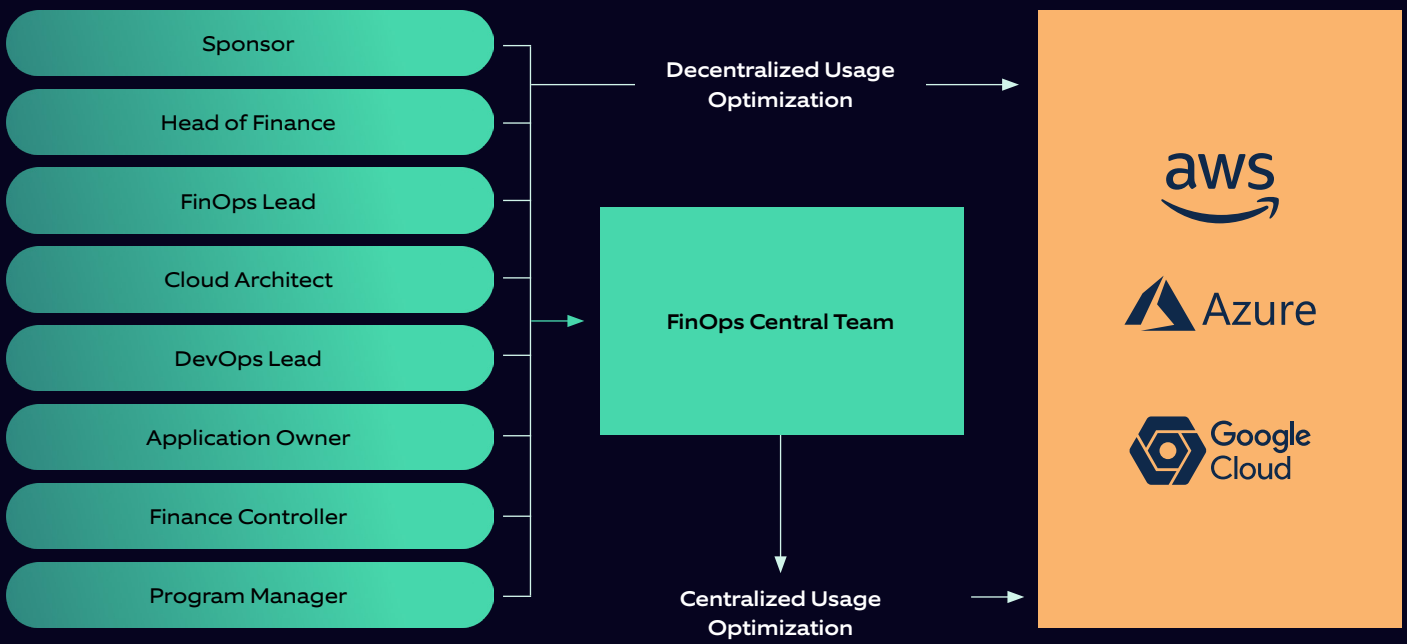


Figure 2: FinOps Team Structure

Why should a Cloud Architect, Ops Engineer, or Software Engineer care about FinOps?

According to the State of FinOps 2022 report, organizations' top-most FinOps challenge today is "Getting engineers to take action on cost optimization."

Engineers are more focused on innovation and scalability. They want to maximize as well as expedite the business value generation. Most engineers want to use the best resources available on the cloud to build their next innovation, and the associated cost implications may not be the first thought that comes to their mind. Cloud architects and engineers would account for the best practices to adopt cloud by leveraging the well-architected frameworks from various cloud service providers like Azure, AWS, or GCP.

However, at times, due to a unidirectional focus on innovation, business value creation, and delivering features, optimization of cloud spending takes a back seat. It is important to bring a layer of accountability to cloud spending to every layer of the organization, including the architects and engineers so that efforts are made to keep cloud spending in check and optimized.

Cloud architects and engineers must be mindful of the cost implications and make intelligent, data-driven decisions without cutting corners on innovation. They still have the freedom to experiment and are allowed to 'fail fast' while equally contributing to their organization's FinOps journey in parallel.

This is what we do in the **Inform stage** of the FinOps lifecycle. It includes building awareness of the cost of the cloud via a well-defined tagging strategy, fully allocating cloud costs, and establishing reporting means via custom or right FinOps tools.

Adopting FinOps helps in building a cost-aware culture throughout the organization.

FinOps team can help foster the culture of required education, training, and support that engineers may require to know about their cloud spending and what actions they can take to avoid unnecessary costs. The governance part will help with standardization and compliance.

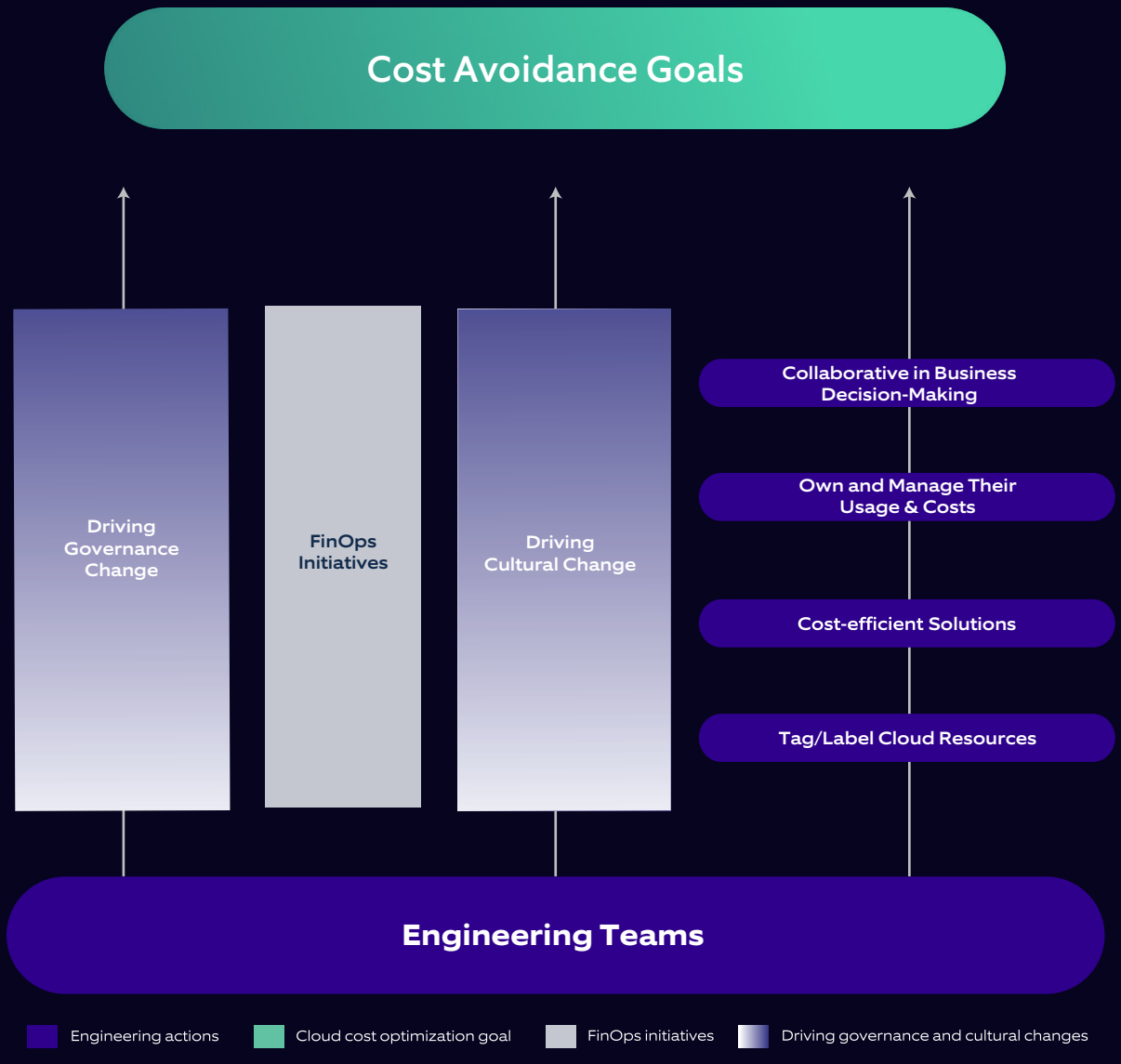


Figure 3: Cultural & governance initiatives
Source: https://www.finops.org/introduction/what-is-finops/

Steps to kick-start your FinOps journey

Here are the key steps involved in kick-starting your FinOps journey:

1 **Plan:** To create a roadmap for cloud financial management, you must start by identifying the key stakeholders to discuss the adoption strategy, research pain points such as lack of visibility of cloud spending, etc., and which teams are getting affected. Basis the research, you must create a dedicated FinOps team, identify tool requirements and KPIs (Key Performance Indicators) to measure FinOps function, and drive resourcing. Some examples of initial KPIs could be:

a. At least 50% of the resources are allocated

b. Committed Use Discount coverage is 60%

c. Forecast Spend v/s Actual Spend variance is 20%

2 **Socialize:** Next step is to identify the accounts/projects/product teams that would be ideal candidates for early adopters of FinOps in your organization; create a stakeholder committee and drive their agreement on the operating model. This entails communicating a high-level roadmap and driving conversations with the impacted teams like IT/Finance, procurement leads, business stakeholders, and engineers on understanding their issues, discussing proposed KPIs, customizing the FinOps model (inform, optimize and operate), etc.

3 **Prepare:** As a FinOps lead, you must assess FinOps readiness and set up a cloud governance framework that underlines policies, tools, and processes to run applications across cloud providers by following the best practices. You must also ensure alignment between all cross-functional teams so they can efficiently leverage the Cloud while meeting their business objectives. Another step for seamless change management at the organization level is to follow the right approach, train the resources and make each application team responsible for their own cloud usage & budget. These wins with the early adopters should be documented to validate the working model.

4 **Launch:** Whether using a single cloud service provider like AWS (Amazon Web Services) or Azure or running in a multi-cloud/hybrid cloud environment, managing cloud costs manually is not easy. Many FinOps Foundation certified cloud cost management tools are available in the market, like Apptio's Cloudability, VMWare's CloudHealth, Flexera, etc. These tools can help avoid surprises with cloud spending and optimize costs.

They are well-equipped to speed up the adoption of FinOps as they:

a. Provide quick visibility into cloud usage and costs across all cloud accounts

b. Help in anomaly detection, budgeting, as well as forecasting for your Cloud spend

c. Provide savings recommendations across workloads, and some can even execute actions for you in the Cloud from within the tool

d. Automate the operations by easily connecting with your process management

This step also entails executing a communications plan, change management, and driving financial accountability.

5 **Report:** You must also develop cloud cost reporting or monitoring dashboards, drive cost accountability within teams, and create transparency across the organization.

All this can be done by:

a. Implementing a well-thought tagging strategy,

b. Developing uniform cost allocation,

c. Following showback and chargeback processes,

d. Developing benchmarks to gamify cost and value generation

e. Finalizing a set of business metrics (such as accurate budgets, accurate forecasts, unit cost economics, discount/ reservation coverage, and percentage of untagged resources and efficiency opportunity) that cloud cost can be measured against.

6 **Continue the FinOps journey:** You need to keep the momentum by evolving tools, tracking progress on the KPIs defined initially, and iterating over the FinOps cycle of Inform, Optimize, & Operate again & again.

A look at the technical/ architectural underpinnings of a good FinOps strategy

On the technical side, it's important how we set ourselves up with the right FinOps tooling, processes, and culture. If you have time, energy, and money to spend, maybe a custom tool could be a choice for you. However, we highly recommend that getting an on-the-shelf tool will help expedite FinOps adoption and its maturity in your organization. It not only saves development effort & time, but you will also shield yourself from the maintenance nightmare of keeping this in-house tool up to date with constant changes that cloud service providers keep publishing regularly. We divide the technical aspects into three key areas:

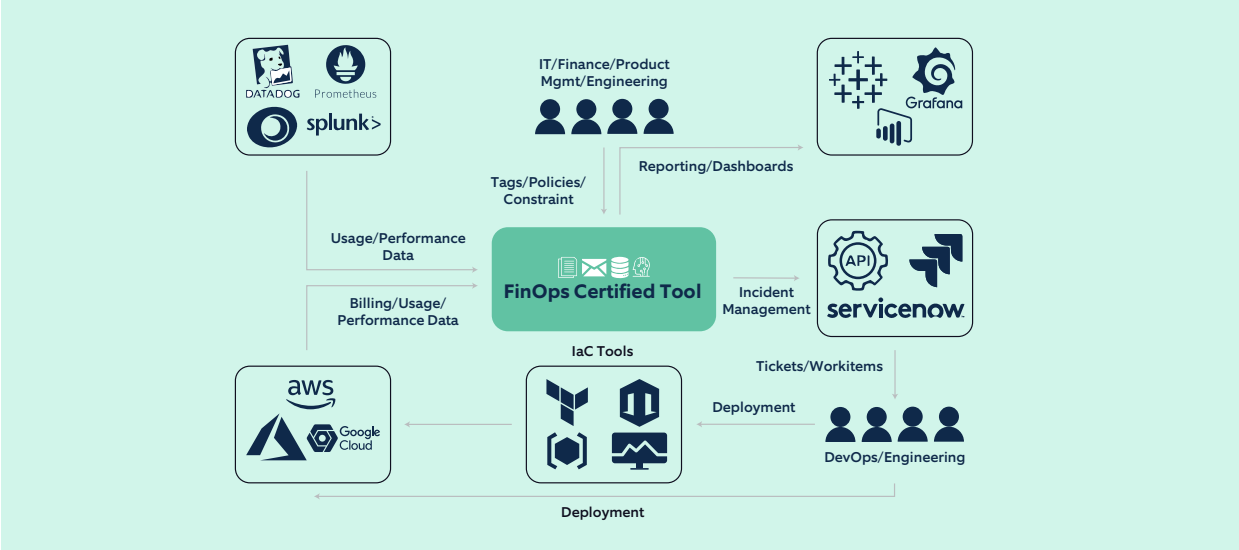
- Monitoring & reporting
- Defining & automating tagging strategy
- Operationalizing/implementing cloud cost optimization recommendations.

Steps we recommend for a robust FinOps strategy:

1 **Monitoring & Reporting:** Keeping a FinOps tool central to our reference architecture shown below (Figure-4), we suggest setting up pipelines to ingest usage and performance data of your applications into this tool. The tool should be able to provide you with reporting, budget forecasting, monitoring, and alerting capabilities.

2 **Defining & Automating Tagging Strategy:** A well-defined tagging strategy will go a long way in materializing the accurate Showback & Chargeback reports and your ability to allocate the Cloud spend. These reports can be used in regular cadence review or collaboration meetings to compare Actual Spend v/s Forecasted Spend, detect anomalies, view shared costs, and allocate costs to various organizational, functional, or financial units within the organization. FinOps-certified tools in the market can be leveraged to manage to, tag, and automate their hierarchy groupings with user-defined business rules. Leveraging Infrastructure as Code and Policy as Code can help you automate tagging as well as enforce compliance with the defined tagging strategy and naming conventions.

3 **Operationalizing/Implementing Cloud Cost Optimization Recommendations:** To act upon and operationalize the cost optimization recommendations generated by the tool or during review meetings, you should have processes, tools, and, above all, a culture in place to prioritize these recommendations. If your choice of FinOps tool can provide direct integrations with any incident management tools, you can surely save some manual efforts there. Once the cloud cost optimization recommendations have been prioritized for DevOps/Engineering teams, they can act on them. Some recommendations can be complex and may require modernization of application while some can be as trivial as stopping an unwanted VM or deleting unused blob storage, or rightsizing the already deployed databases or compute resources. Automating the infrastructure provisioning by leveraging Infrastructure as Code (IaC) tools will help you bring standardization, governance, and compliance to defined guidelines on provisioning cloud resources.



What are the best practices for optimizing Cloud spend?

1 **Create transparency and bring cross-functional teams together:** One of the most important roles of FinOps practitioners is to bring together Finance, Engineering, CloudOps, and IT professionals so they can collaborate and work efficiently towards a common objective of reducing cloud spending. You must also define a common vocabulary to develop a better understanding between the teams, as well as set up a cadence of regular meetings to get the required information and be able to track progress on usage & cost data. Some of the common terms include allocation metadata, cost & usage data, resources, cost allocation, amortized cost/amortization, blended/unblended rates, agile, lift & shift, rightsizing, etc.

2 **Set your KPIs:** FinOps heavily relies on KPIs as they help establish measurable benchmarks and metrics to monitor cloud resources as well as their consumption. Hence, you must start by setting up KPIs, and some of the most common ones are listed below as:

a. Variance % of forecast v/s actual bill
% of total tag coverage

b. Average price per hour of computing

c. Unit cost (spend divided by a business metric)

d. Usage on weekends vs. weekdays

e. Committed Use Discount coverage

f. RI (Reserved Instance) Coverage

You can find a comprehensive list of these KPIs that will help you get started at this link: **FinOps KPIs.**

3 **Optimize resources:** Once you know how much your organization is spending on cloud, the next step is to thoroughly plan and get hands-on on a detailed cost-benefit analysis to understand where and how the money is being spent. You can initiate this by mapping out current resources and chalking out an estimate of the budget required for each service for an entire year.

Consider this scenario: You discover that over the last one year, your company spent $5 million on cloud usage. However, the estimated budget was $3.5 million. Your team acknowledges that the organization has overspent but doesn't understand where and why.

Now you can use FinOps tools to get a breakdown of the cloud cost usage across each department and compare the Return on Investment (ROI) of the cloud assets as per their costs and subsequent business benefits. This will further help balance the cloud costs by eliminating any excess cost incurred.

4 **Set up a forecasting mechanism:** Develop and implement a robust forecasting mechanism for 3–36 months' time. You can leverage readily available cloud cost optimization tools for more accurate results. FinOps-certified cloud cost management tools can help avoid surprises with cloud spending and optimize costs. They offer a myriad of features such as:

a. Providing financial visibility and understanding of cloud costs

b. Helping ensure accurate cost allocation, so chargeback and showback are not a challenge

c. Benchmarking so that you can track progress and know how the teams are performing in terms of optimization, performance as well as quality

d. Helping forecast spending so you can create a budget efficiently and avoid unexpected cost spikes

e. Automating resource tagging efforts

f. Detecting anomalies automatically and notifying for spikes in cloud spend

5 **Anticipate provisioning requirements and ensure the right sizing of cloud configuration:** Once in the cloud, you must never overprovision when deploying new resources. You can instead rely on autoscaling/dimming, serverless offerings, and the elastic nature of the cloud to dynamically and quickly respond to fluctuations in demand. You must also keep a check on the instances that are running as it is often observed that instances run long after their need has ended, adding to the cloud bill.

6 **Get real-time visibility into Cloud spending:** To make the best of FinOps, you require real-time visibility into your cloud usage to be able to make well-informed decisions. The report must provide insights into in-depth cost allocation, chargeback, showback, cost forecasting, benchmarking, trend, and variance analysis.

7 **Create a cost-conscious culture**: Migrating to the cloud is a cultural change and a technology transformation. A key aspect of FinOps is to drive everyone to take accountability for their costs. This will help make cloud users be responsible for their spending and feel empowered to optimize it. Hence, you should strive to create a cost-conscious cloud culture that is focused on innovation and boosting performance while at the same time being aware of opportunities to optimize cloud cost.

8 **Drive FinOps with agility:** FinOps is successful when it is carried out in an agile manner. This means you must follow an iterative approach, a commitment to continuous improvement as well as automation. As an instance, you must drive agile processes for budgeting and planning within IT by promoting iterative budget allocation, IT spending, and forecasting. You must also define rules on how a FinOps process should be automated and automate configuration through policy as code.

Once you start to drive financial accountability throughout your cloud journey, you can reap several benefits – the most obvious one being proactively managing cloud costs effciently, innovating at faster operational resilience.

This will also help reduce resource waste and make the most of the resources with techniques like automatic scaling and load balancing.

With a well-crafted strategy, you can also align accountability to cloud users, build confidence around budgets and forecasts, as well as ensure smooth performance without increasing your budget.

Different stages of FinOps journey that you must follow:

STAGES	Crawl	Walk	Run
ACTIVITIES	**Reactive** • Frequent check-ins and workshops • Cloud evangelism • Quarterly cost reviews	**Proactive** • Teams begin to gamify • Wins are highlighted • Monitoring metrics to get ahead of issues	**Integrated** • High-quality training • Pre-allocated budgets • Automation is used for discovery and resolution
SAMPLE GOALS/KPIS	• Able to allocate at least 50% of spend • Target coverage of resource-based commitments discount is approximately 60% • Forecast spend to actual spend (accuracy variance to be 20%)	• Able to allocate at least 80% of spend • Target coverage of resource-based commitments discount is approximately 70% • Forecast spend to actual spend (accuracy variance to be 15%)	• Able to allocate at least 90% of spend • Target coverage of resource-based commitments discount is approximately 80% • Forecast spend to actual spend (accuracy variance to be 12%)

Figure 5: Different stages of FinOps journey

How can Nagarro help?

Today, cloud adoption is no longer a matter of if but of what, when, and how. And while you continue to invest in cloud storage, compute power, data processing, and other cloud-based services, we at Nagarro can help you optimize and control your cloud costs completely.

With a dedicated discipline of Cloud FinOps, we are well-equipped with the right expertise and a team of Certified FinOps Practitioners to help businesses start their FinOps journey and adopt the FinOps Framework to optimize their cloud costs or gain complete control over it.

You can contact us today by filling out this form.

About Nagarro

Nagarro is a global digital engineering leader with a full-service offering, including digital product engineering, digital commerce, customer experience, AI and ML-based solutions, Cloud, immersive technologies, IoT solutions, and consulting on next-generation ERP. We help our clients become innovative, digital-first companies through our entrepreneurial and agile mindset, and we deliver on our promise of thinking breakthroughs.

We have a broad and long-standing international customer base, primarily in Europe and North America. This includes many global blue-chip companies, leading independent software vendors (ISVs), other market and industry leaders, and public sector clients.

Today, we are over 17,000 experts across 32 countries, forming a Nation of Nagarrians, ready to help our customers succeed.

For more information, visit www.nagarro.com.