



Cloud Cost Management

Cultivating cost-effective cloud operations

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The market imperative for cloud cost management

In the dynamic landscape of modern business operations, cloud computing has emerged as a transformative force, offering unparalleled scalability and resource optimization. This transformation, however, is not without its challenges: unexpected cloud expenses can disrupt even the most carefully constructed budgets.

The ability to anticipate and manage consumption costs becomes critical, especially as the trend of multi-cloud adoption gains traction, adding layers of complexity.

A cloud cost blueprint for success

Therefore, a cloud cost management strategy becomes a blueprint for future-proofing cloud service consumption and costs, as well as providing a comprehensive framework for budgeting and shared responsibility. The prevalence of multi-cloud environments only underscores the urgency of establishing an effective cost management approach and embedded controls. In-depth visibility into cloud usage and associated costs becomes not just a goal but a critical necessity.

More than just a practice, cloud cost management stands as a strategic asset, empowering organizations to meticulously monitor and influence their expenditures on cloud services. As cloud deployments become increasingly intricate, the task of eliminating and managing costs grows equally complex.



Benefits of using a cloud cost management strategy are multifaceted:



DECREASED COSTS

Strategic planning helps organizations steer clear of overspending on underutilized resources



PREDICTABILITY

Unexpected surges in costs become a thing of the past, fostering stability and foresight



EFFICIENCY

In-depth cost analysis minimizes waste and optimizes resource utilization



PERFORMANCE

Smooth operations can be achieved without compromising cost-effectiveness



VISIBILITY

The strategy provides a clear view into the intricacies of cloud expenses, how to ensure cost transparency that aids informed decision-making

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One of the key artifacts we create with clients is the FinOps Strategy which ensures early collaboration with the finance team, and concerns and requirements are met early in the build process.”

JO REID, SENIOR DIRECTOR TECHNOLOGY, CLOUD AND DEVOPS COE

Realizing the full financial impact of cloud adoption

Extracting the full benefits of moving to the cloud is not a passive outcome but must be managed through proactive engineering steps. Successful FinOps means collaborating with engineering to align and automate within a Cloud Centre of Excellence to implement these practice steps:

1. COST OWNERSHIP/ALLOCATION

All costs need to be identified and correctly attributed to their drivers by tagging (tagging strategy) to avoid orphaned costs

2. INDUSTRIALIZED BUSINESS CASE PROCESS

Develop the necessary templates and skillsets to create adoption business cases efficiently and accurately, particularly when examining target state benefits (e.g., “all-in” run costs and pro-forma savings)

3. COST RISK GUARDRAILS

Cloud services are categorized according to their spend risk with more stringent controls and limits placed around services posing the highest spend risk

4. BUDGET ALERTS AND SPEND CONTROLS

Set budget alerts for each account, validated when onboarding workloads. If there’s a spending problem, it should be identified early, and the team is given help to improve their practices

5. COST MANAGEMENT TOOLS

Provide real-time cloud native cost reporting and dashboards, as adoption grows and matures select and provide access to a SaaS cost management tool. This will provide cost transparency and build confidence to be cost-conscious with engineering teams

6. MULTI-CLOUD VISIBILITY

Ensure that appropriate behaviors, systems and tools are in place to facilitate real-time cost visibility across all utilized cloud service providers

According to Publicis Sapient analysis, by investing in cloud management tools, it is possible to optimize cloud spending and *achieve a reduction of 15 to 30 percent within a span of 12 weeks.*

What to consider with cloud cost management: key factors

One of the primary concerns around cloud, from a chief finance officer (CFO) perspective, is uncontrolled and unexpected operating expense (OpEx) costs. The ability to show responsibility and usage, costs and value is key to helping the organization move from the traditional capital expenditure (CapEx) fixed-cost model. The primary considerations are:

1 CAPEX TO OPEX TRANSITION

- Shift from fixed CapEx depreciation to pay-as-you-go OpEx
- Impacts on accounting practices and financial treatment

2 DUAL RUNNING FUNDING

- Managing CapEx depreciation alongside growing OpEx as consumption increases

3 VARIABILITY OF BILLING

- Unpredictable cloud bills due to elastic consumption
- Impact on operational costs with fixed consumption models
- Independent purchases within the organization

4 ACCOUNT STRUCTURE AND BILLING

- Setting up correct account structures with CSPs
- Impact on cost transparency and discount tiering
- Establishing a billing cycle management process

5 CHALLENGES OF SHARED SERVICES

- Allocating shared services in monthly bills (e.g., load balancers, Kubernetes clusters)

6 CHALLENGES OF FORECASTING

- Complex billing structures and pricing variations across CSPs
- Budget alignment during the onboarding process

7 COST OF DATA EGRESS AND REPLICATION

- Considering costs for moving data out of the cloud
- Important in multi-cloud solutions

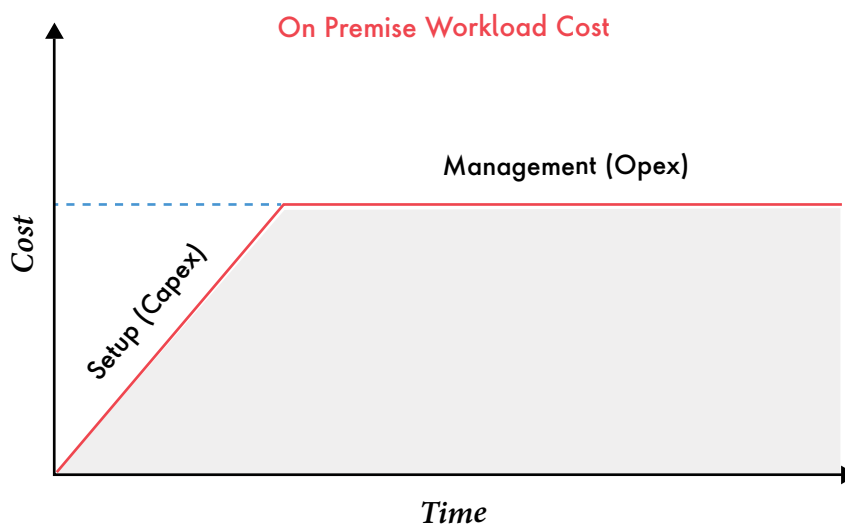
8 SHIFT IN OWNERSHIP AND BEHAVIOR

- Promoting short-lived, cost-optimized consumption with decentralized ownership
- Encouraged by direct billing to motivate proactive cloud estate management

Responsibility of cost and capacity management

The cloud “pay-on-consumption” model requires the utilization of only the necessary resources, as the management of costs is consistently influenced by the interplay of scalability, capacity and elasticity.

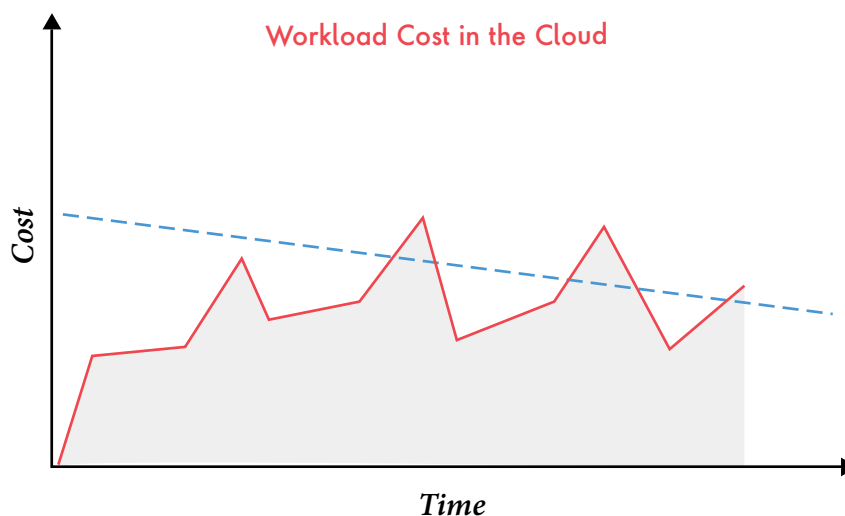
FROM INFRASTRUCTURE



In the On-Prem infrastructure, the IT costs were considering the setup cost (Capex) and the management cost (Opex) of an application, relying on a number of static and constant values, such as the networking infrastructure, the cost of operating a server, and so on.

On-Prem IT infrastructures are mostly adopting an overpowered resource model, with high management costs and expensive slow, change.

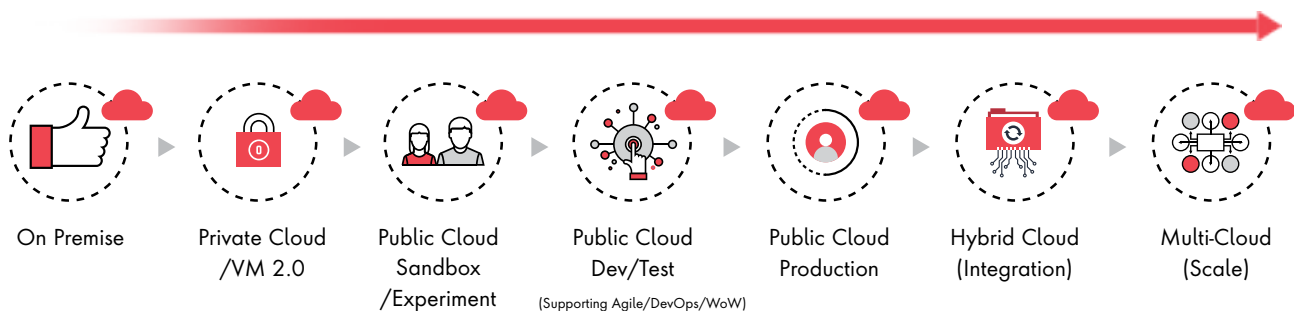
TO APPLICATIONS



In the Cloud, everything is extremely flexible with a greater impact on the Governance; the difference between planned Cost and actual consumption is not constant and tends to adjust in time, as monitoring provides the data to assess and reduce the natural initial divergence.

Cloud flexibility changes the way Cost is managed, the Applications become owners of their Cost & Capacity control and planning, as first line of responsibility.

Making the move to the cloud: strategies for successful transition



The cloud adoption journey typically starts with selecting a single cloud provider, allowing organizations to experiment, embrace new processes and foster learning. As they explore cloud benefits like scalability, elasticity and cost efficiency, they transition to innovation engineering approaches like DevOps and Infrastructure as Code (IaC).

Many enterprises then advance to engage with multiple cloud providers to mitigate risk, optimize costs and align with regulations. This multi-cloud strategy enhances resilience and risk management.



As the journey progresses, security, risk management and resilience become integrated into self-service cloud platforms. This shift can be facilitated by a Cloud Centre of Excellence, ensuring ongoing compliance and proactive cost optimization.

Using the FinOps framework in cloud software to manage costs

FinOps, short for “financial operations,” is a management practice that promotes shared responsibility for an organization’s cloud computing infrastructure and costs. Within a FinOps framework, information technology (IT), Cloud and DevOps groups collaborate with purchasing, finance and other teams to address cloud costs across the entire organization.

The core element of this management practice is the application of cost controls to cloud deployments, while preserving the developers’ access to cloud resources.

Establish FinOps principles and capabilities

There are some key principles and capabilities that must be incorporated to mitigate the cloud cost management considerations (see section above). For cost transparency and observability, always:

- Establish accountability for cloud costs and proactive optimization and reporting across all CSPs (within a Cloud Centre of Excellence (CCoE))
- Ensure the cloud tagging implementation is consistently applied across CSPs; there should be zero orphaned costs
- Aim for direct billing to consuming products/business functions to drive the right cloud consumption behaviors

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Zero orphaned costs is a key dependency on building trust between developers, engineers and finance. Nobody wants a billing surprise and an unplanned budget pressure.”

JO REID, SENIOR DIRECTOR TECHNOLOGY, CLOUD AND DEVOPS COE

FinOps capabilities

- **A centralized team drives FinOps**

Some activities must be centralized in order to reduce duplication, such as cost reporting and anomaly detection. Other activities make the most sense when applied “in the aggregate,” such as identifying bulk discounts or negotiating rates. This often resides as a function with a Cloud CoE

- **Decisions are driven by the cloud business value, so pick the right Key Performance Indicators (KPIs)/Objectives and Key Results (OKRs)**

There are constant trade-offs between cost, quality and speed. By itself, total cost is often a poor measure. Sometimes it is strategically more important to increase revenue by focusing on short-term features or improved reliability, even if costs increase. Other times, cost considerations will influence the appropriate service levels to offer customers

- **Everyone takes ownership of their cloud usage**

Cloud resources can be charged by the second (or less), making near real-time cost analysis and reporting critical. These costs should be shared with all relevant stakeholders, although each may require a different style of report

- **Take advantage of the variable cost model of the cloud and continuously optimize**

This is an opportunity to reduce costs; turn off unused resources, experiment quickly without long-term commitments and make regular, incremental improvements to optimize cloud usage

“Teams need to collaborate: No one team can tackle FinOps. It requires near real-time collaboration and continual improvement to deliver efficiency and innovation. FinOps needs to be a cross-cutting team to make sure everyone is aligned and following best practices.”

**JO REID, SENIOR
DIRECTOR
TECHNOLOGY, CLOUD
AND DEVOPS COE**

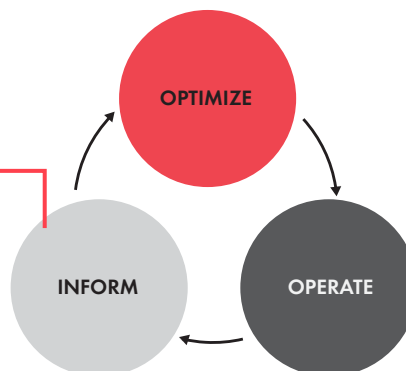
FinOps lifecycle: building scalable and controllable cloud cost solutions

Cost is one of the top priorities for Cloud COE with a continual process of refinement and improvement to control cloud costs, and you will exploit the variable cost model to your advantage

Automated:

- Budget definition for each subscription
- Budget alerts (70%, 90%) on usage
- Daily/weekly forecast notifications for each subscription

- How much am I spending on cloud?
- How is it trending and what is driving it?
- How do I know if spend is going off-track/out of tolerance?
- How optimized is my environment?



Usage Optimization

- Is autoscaling built into workloads?
- Does everything need to be on 24x7?
- What is unused or underutilized?

Rate Optimization

- Are we paying the lowest possible rates?
- “Cost as a metric” culture
- Are budgets and forecasts accurate?
- What optimization processes can be automated?
- Is my cloud spend providing business value?

Tagging strategies, ownership and governance for cloud and multi-cloud

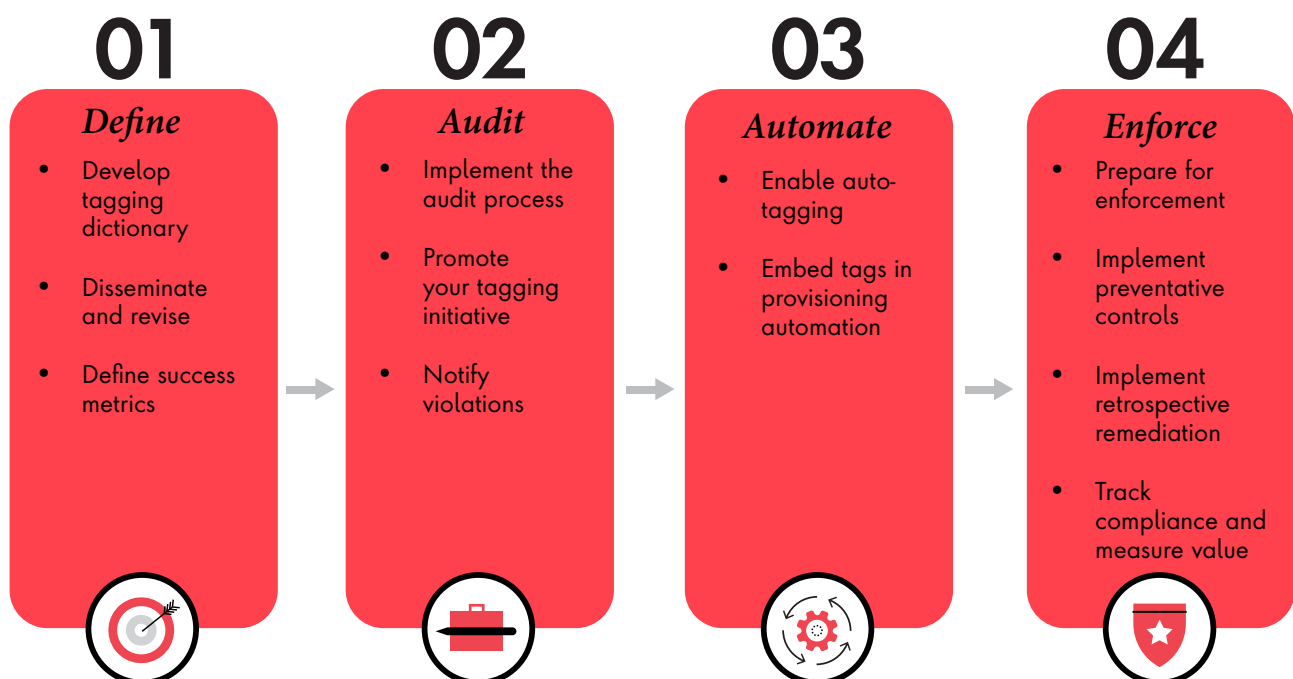
Tagging can be used as a tool to manage expenditure, as well as support automation and control usage.

All the hyper-scale CSPs (AWS, Azure, GCP) allow customers to assign metadata to their resources in the form of tags or labels. Each tag is a simple label consisting of a customer-defined key and an optional value that can make it easier to manage, search for and filter resources. Although there are no inherent types of tags, they do enable customers to categorize resources by purpose, owner, environment or other criteria.

Tagging governance

Proactive governance leverages tools or Identity and Access Management (IAM) resource-level permissions to ensure standardized tags are consistently applied at resource creation in the Cloud Service Catalog. This is where organizations can add portfolio and product tags that are combined and applied to a provisioned product automatically when launched. More rigorous forms of proactive governance include automated tasks (e.g., regularly scanning a cloud environment's tags or running scripts to quarantine or delete improperly tagged resources.)

The most pragmatic governance approach for a company evolving into this space is to enforce both and then, when proven, reduce reactive governance when appropriate over time.



General best practices for tagging

It is critical to remember that tagging is separate from code architecture.

To the cloud provider, tags are simply strings of characters with no semantic meaning. Because tags are only meaningful to a particular organization, they can be whatever the business wants them to be.

When creating a tagging strategy for resources, make sure it accurately represents organizationally relevant dimensions and adheres to the following tagging best practices:

- Get everyone involved in the process (Finance, Operations, Engineering) to understand what is needed. If some tagging already exists, audit and understand the gaps and levels of consistency
- Always use a standardized, case-sensitive format for tags, and implement it consistently across all resource types
- Consider tag dimensions that support the ability to manage resource access control, cost tracking, automation and organization
- Implement automated tools to help manage resource tags. It enables programmatic control of tags, which makes it easier to automatically manage, search and filter tags and resources
- Tags are free-form text, so consistent correct spelling is important
- It may be simple to start, but the growth over time will show where the value/benefit is justified and controlled
- It is not recommended to create large numbers of unique labels, such as time stamps or individual values for every Application Programming Interface (API) call
- Consider the ramifications of future changes, especially in relation to tag-based access control, automation and upstream billing reports
- Assign a tagging owner and keep the label policy/standards up to date



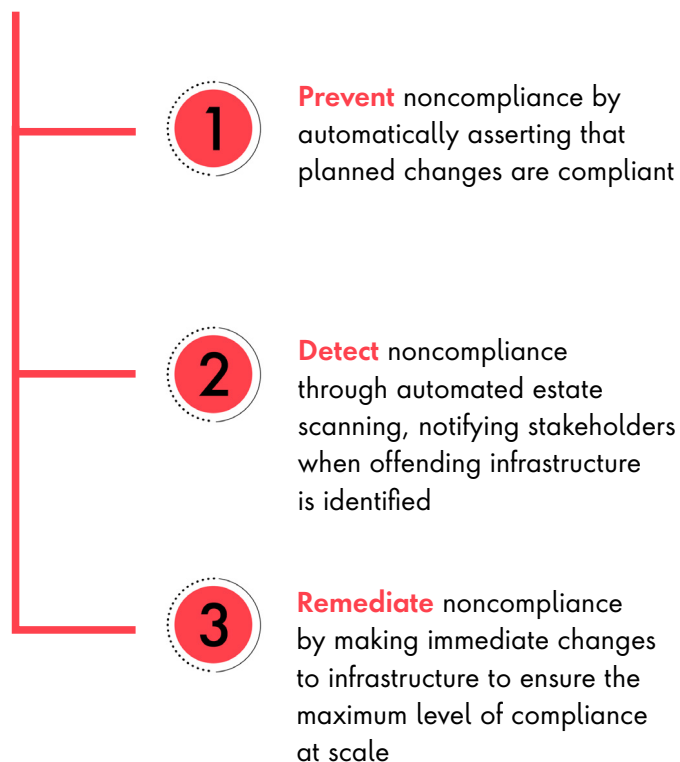
NOTE: Do not include sensitive information in labels. This includes information that may be personally identifiable, such as an individual's name or title. Labels are not designed to handle sensitive information.



Rogue cloud costs risk mitigation

As part of FinOps Operate, mitigate rogue cloud costs risk through clear accountabilities, transparency, observability and guardrails/compliance as code (CaC). To ensure ongoing compliance and effectively mitigate cost-related risks, a recommended approach involves establishing a continuous compliance mechanism. This mechanism would facilitate the adaptive refinement of services, rules and guardrails, as well as address risks associated with unauthorized cloud usage. This strategy is built upon

three fundamental pillars:



Assigning responsibility for appliance and workload scalability and capacity plays a pivotal role in harnessing the advantages of cloud elasticity. This approach is essential to maintain the visibility into the cost implications. This transparency can be achieved through the establishment of well-defined standards and principles, enabling a dynamic and transparent approach to cost and capacity management.



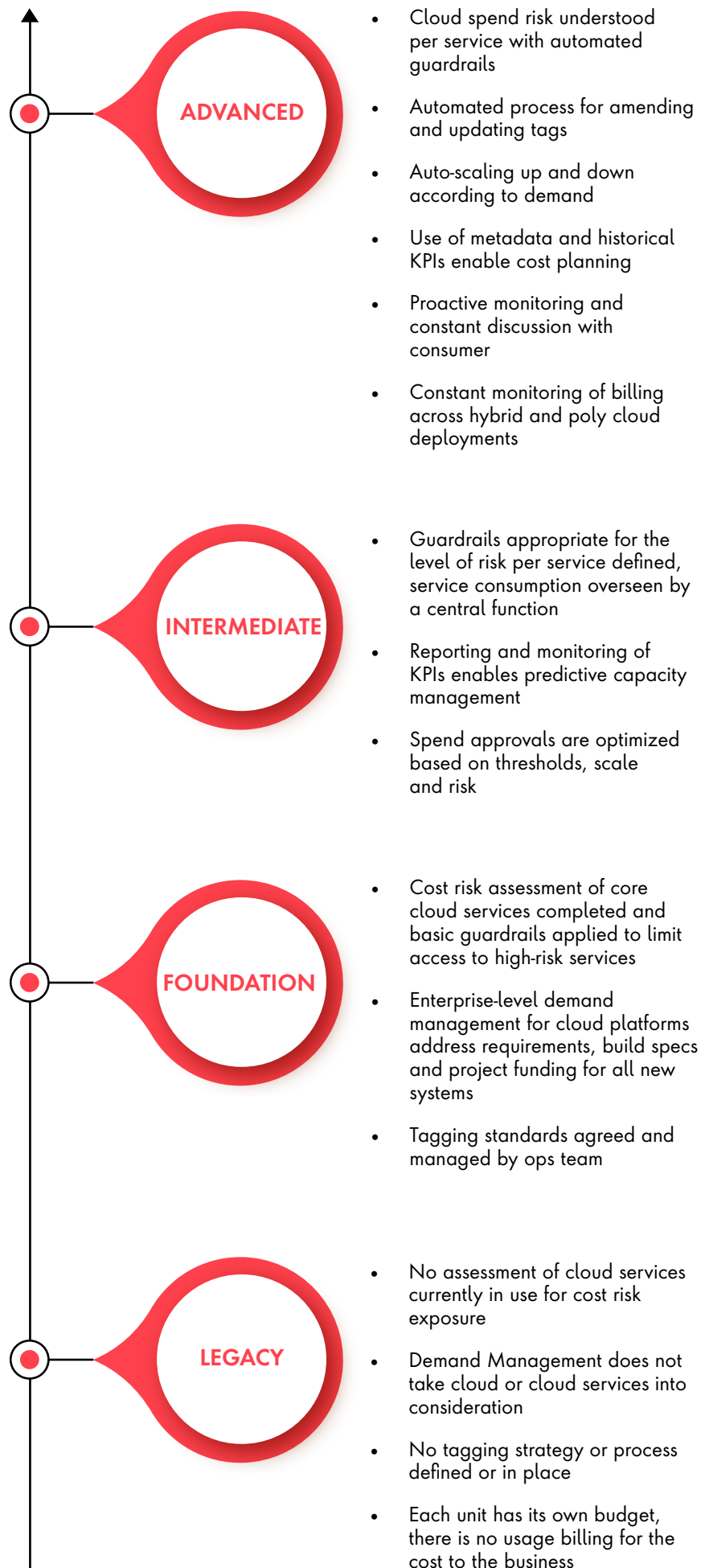
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Cloud impact transparency versus cloud maturity

To achieve transparency in cloud costs, it is critical to establish a continuous management process driven by data and powered by real-time information from applications.

Given that various organizations possess systems at varying stages of development, encompassing both cloud-based solutions and legacy systems, a comprehensive strategy is imperative. This strategy must address systems across all maturity levels, thus spanning the entirety of the infrastructure landscape. The gradual improvement of each system can be achieved through incremental steps, as illustrated in the diagram to the right.

This iterative process empowers the control and management of resources within a workload. By continually monitoring costs, it becomes feasible to adapt plans in the context of a highly flexible environment. This adaptive approach ensures that the specified service level for each workload is consistently met, while also maintaining compliance with relevant controls.





Conclusion

This playbook serves as a valuable guide for enterprises aiming to harness the benefits of cloud technology while maintaining a firm grip on their financial considerations.

By understanding and implementing the principles of optimal cloud cost management, organizations can pave the way for sustainable growth, streamlined operations and the maximization of resources—ultimately leading to a competitive edge in the ever-evolving landscape of cloud computing.

We understand the management of cloud costs and how to best implement cloud cost management.

Talk to us.

To find out more about cloud cost management, please contact:



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