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Demystifying Cloud Adoption for the New Digital World

Cost Analysis and Optimization

White Paper

Introduction

2020 was a historical year for Cloud adoption - and while Cloud forms a decisive milestone in the digital transformation roadmap, most organizations are struggling to derive the gains that were promised on their cloud spend at the adoption stage. According to McKinsey, only 7% of executives found it difficult to present a compelling business case for cloud adoption in 2015 - as opposed to 23% in 2019. At the same time, cloud costs have been simultaneously on a downhill trajectory - AWS alone dropped the costs of its services by over 60x since its launch until 2020. These numbers demonstrate the gravity of the trouble with the Cloud.

So, what's the way forward? Yet another McKinsey study found that cloud-enabled operations can unlock $1tn shareholder value in the industrials sector alone. The cloud economy remains bullish, and leading companies are demonstrating the same with double-digit growth figures. Most companies go 30% overboard on their cloud budget, and 80% of enterprises consider cloud cost optimization a pressing challenge in an increasingly sophisticated digital scape. Zensar now helps enterprises leverage their cloud spend to the fullest with cutting-edge optimization strategies that are granularly tuned to your digital operations.

The trouble with cloud

Where is the real trouble with the Cloud? Here are five challenges that impede the value of Cloud in today's context:

1. High complexity design

High complexity kills cloud's RoI by design - and almost 47% of c-suite executives concur on this fact, according to a Deloitte survey. Whether this complexity is found in the operating model, application design, or management, it ultimately trickles down to the invoices.

2. Lack of visibility:

While over 90% of companies are paying for Cloud, few understand what they are paying for. This problem multiplies by the organization's size, application portfolio, geographical spread, and most importantly, lack of accountability.

3. Poor application architecture:

Suboptimal compute configurations, overcommitment of resources, inefficient pipelining, and network provisioning - are just a select few examples of how applications can cost more than they are supposed to. This problem is tied to the next one.

4. Business-tech alignment:

Lack of clear ownership of products, and more importantly, lack of granular insight into demand and impact can drive the cloud strategy south - in other words, services run without answering the why of business value.

5. A static approach:

In today's IT worldview, enterprises need to continuously reevaluate and realign their Cloud strategy - and consequently take a predictive approach to budgeting, after understanding the unit-cost economics and technical drivers of value creation. In such a world, a static approach is bound to fall behind.

Cloud Cost Optimization

Now that we know what impedes the RoI from the cloud, how can enterprises move to a zero-waste cloud strategy? Here are some of the top maxims of cloud cost optimizations from the top three Cloud service providers:

1. Setting the guardrails

Before Cloud adoption, standardizing practices right from the foundations can help enterprises save thousands of dollars in the long run. These can be policy-level interventions, like setting up checkpoints or limits on the degree of freedom various roles carry to provision a compute instance for example - or building adherence to best practices such as shutting down instances when not in use. Automating provisioning through IaC solutions like Terraform can help keep these guardrails in place, especially for maintaining production and testing environments.

Moreover, peculiar situations can arise in various environments. For example, in Azure, enterprises often leave unattached disk storages running after terminating the VM instances - which can cost them thousands of dollars. To account for these leakages, enterprises must learn to recognize the symptoms, and policy-level interventions must be implemented by leveraging waterproof

access-management practices and creating accountability through a tiered approach to privileges. Google recommends allocating cloud budget by teams and

2. Creating visibility

Lack of visibility creates bigger problems than sub-optimal usage and wastage of resources - namely, lack of accountability, and the inability to know where you're spending more than needed. While there are several ways to create visibility, it is critical to de-duplicate the time and efforts that are being spent to maintain it. Impact-based tracking, for example, can be easy to achieve if allocation follows a labeling strategy - which can help pinpoint which resources belong to which teams, consequently resulting in granular visibility into the cost components.

Also, most Cloud ecosystems facilitate cost management controls through various functionalities like notification triggers, usage quotas, and dashboarding - that can help turn insights from real-time visibility into a defined response mechanism. Ultimately, visibility results in the ability to achieve business-IT synergy concretely and paves the way for further fine-tuning of costs based on utilization and performance optimization.

3. Resource cost optimization

In compute and storage-intensive applications, attaining visibility into resource allocation and usage isn't enough - instead enterprises, must direct efforts towards understanding the workloads, and how they vary based. The variations can be based on many factors - like time of the day, the criticality of the underlying applications and/or systems, desired performance levels, and even compliance and data residency requirements that implicate the business flow in question.

Significant effort is required to understand the various moving parts that influence the workloads - once an understanding has been achieved, resource needs can be forecasted, based on which, provisioning and cost-tracking can be automated. Moreover, harmonizing the instance configuration between multiple requirements can help reduce the number of instances required - in one case, according to a McKinsey study, an enterprise could right-size from 20 VMs to just 3.

Other ways of optimizing through usage include cost-conscious querying, a hygiene checklist for terminating zombie assets across regular intervals, clearing disk images/snapshots as backups are replaced by newer ones, or even modernizing through serverless design and centralized storage management. With the latter, a company was able to achieve over 90% cost savings on Azure using Azure Functions. Where teams own and maintain portfolios, or their parts, positive reinforcement and active gamification strategies can be used to reward and acknowledge the ones that build the highest standards of cost optimization into their work.

4. A long-term strategy

Cost optimization on the Cloud is not a one-time process, and those that treat it as such fail to leverage the real edge in Cloud adoption - that is, the ability to dynamically scale your resource consumption up and down and exploit the various arbitrage opportunities that exist for a few moments. The ability to deploy infrastructure-as-code and functionalities for automating usage can lend greater impact to workload reviews and fresh analyses of workloads in new configurations that are made possible through the release of newer services and offerings.

Moreover, enterprises must understand the flexibility that comes built into services with long-term lock-ins - for example, reserved instances, which can be modified, exchanged, and canceled at an adjusted refund premium at any point. To open up your Cloud strategy to such opportunities, it is critical to align the application owners, finance teams, and other relevant stakeholders - and this alignment must reflect in the identity access management policy through consistency and predictability.

Moreover, cross-functional teams that drive the finances and operations on a day-to-day basis must be geared with sourcing skills, analytical skills, and be aware of the business and technical requirements and timelines while effectively breaking down decisions in the language of the product teams they manage.

How Zensar will help in Cost Analysis and Adoption

When it comes to managing cost on Cloud, Zensar stands out in the league of commoditized service providers. As most organizations embrace multi and hybrid Cloud scenarios, it becomes very difficult for customers to visualize their total cost of Cloud ownership leading to even dimmer visibility of optimization. Zensar transparently manages Cloud costs through its Cloud management platform and performs optimization of workloads as a continuous exercise.

- **Performs deep-dive Cloud cost analysis:**
Dashboards and reports providing forecasts over future cost and cost comparison.

- **Optimizes Cloud spend through chargeback/show back capabilities:**
Provides a solution for interdepartmental chargeback capability through integration with your billing/invoice solutions

- **Conducts thorough lifecycle management:**
Manages lifecycles for instances hosting workloads that are out-of-date or non-compliant, thereby saving costs.

- **Perform rightsizing, increasing the cost savings:**
Ensures compute instances are allocated the correct resources for their workloads, minimizing costs, and maximizing performance.

- **Resource Optimization in Compute & Storage:**
Monitors and optimizes compute, and storage resources across the digital estate through our turnkey automated solutions.

- **Optimal use of reserved instances:**
Get maximum cost savings through reserve instances without worrying about reserve instance lock-in. Our solution takes care of buying and selling of reserved instances.

- **Optimized Hybrid & Multi-Cloud Deployment Models:**
Optimize the architecture with the correct balance of on-prem and Cloud deployments while saving costs.

- **Boost Savings on Spot Instances for Stateless & Stateful Workloads:**
Achieve 90% savings, while leveraging Cloud enterprise SLAs at par with on-demand instances and not worrying about Spot Reclaims.

The proven offering bundle has been battle-tested with deployments at several customer environments spanning a rainbow of industries. The customers struggling on cost while having diversified deployments in on-prem, hybrid, and multi-cloud environments have been early and enthusiastic adopters of the innovative solution.

Conclusion

Cloudonomics is a real word now - this demonstrates the expanse of complexity that cloud can unfold if not kept in check. Optimizing costs post cloud adoption can help CIOs get their IT strategy back on track and focus on the next big milestone - that is, aiming for Cloud maturity, and moving to serverless paradigms, hyper-optimized high-density workloads, and a zero-waste approach toward their Cloud deployments. While different CSPs have introduced services that optimize costs in certain scenarios (like Recomennder on GCP and CloudFront or Elastic Load Balancer in AWS), an enterprise-wide Cloud cost optimization can help CIOs fix leakages that were previously invisible to them and deliver on the promise that Cloud computing brought in the original business case. In the coming decade, Cloud-based cost competitiveness will set the leaders apart and become a critical factor for digital success for businesses.

Authors

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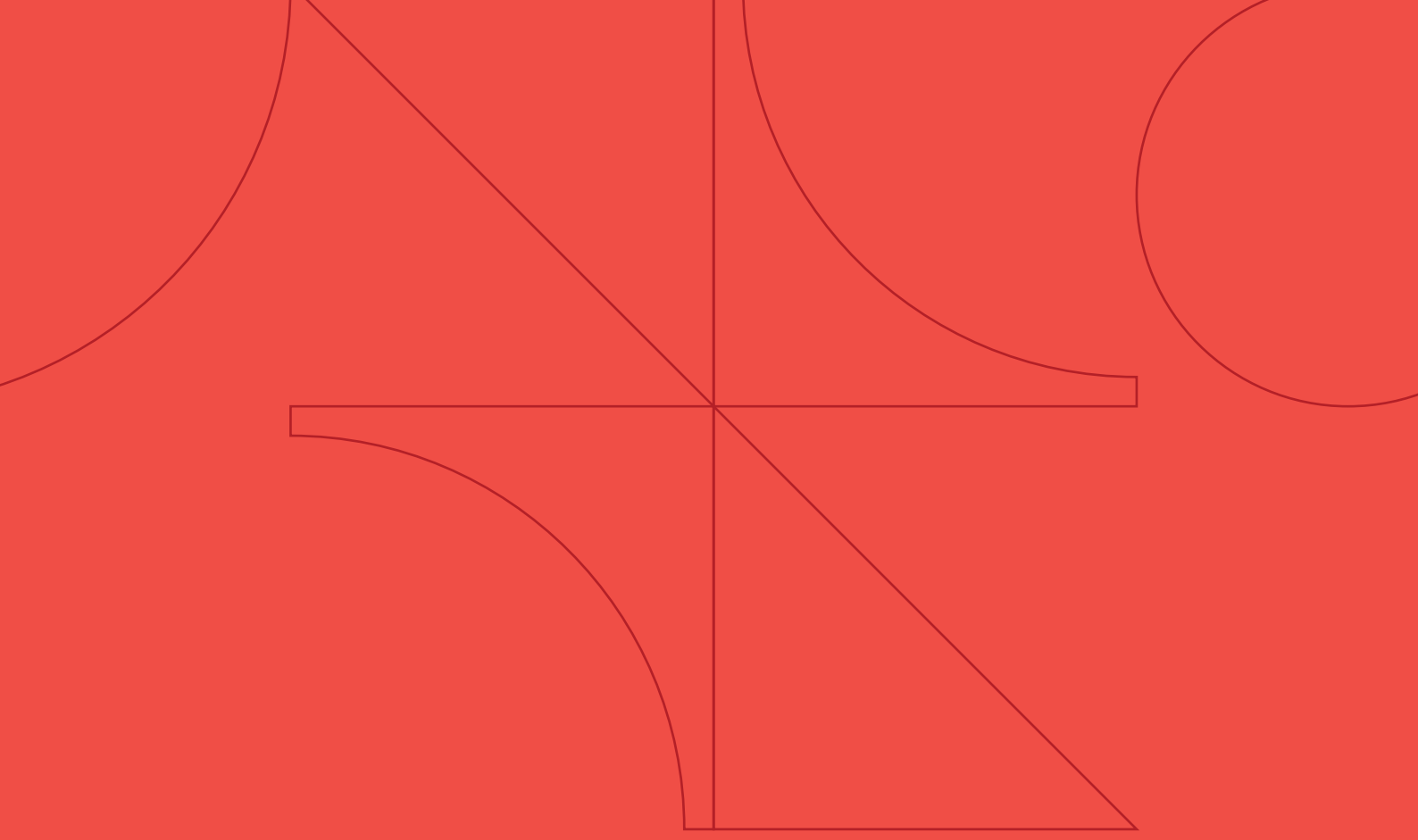

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We conceptualize, build, and manage digital products through experience design, data engineering, and advanced analytics for over 200 leading companies. Our solutions leverage industry-leading platforms, and help clients be competitive, agile, and disruptive as they navigate transformational changes with velocity.

With headquarters in Pune, India, our 10,000+ associates work across 33 locations, including San Jose, Seattle, Princeton, Cape Town, London, Singapore, and Mexico City.

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