Innovation's Role in Reducing Cloud Spend
The Importance of Cloud Cost Management

Overview

Leveraging data-driven insights, teams developing and managing cloud applications and infrastructure can deliver solutions that provide better user experiences while also reducing total cost of ownership. When considering how you manage cloud cost there are three primary paths that can be taken to lower total cost of ownership, both technical and non-technical. In this article, we introduce how leveraging data-driven analysis and tools can improve decisions that impact short- and long-term spend.

Key Insights

1. How to offset forecasted cloud spend through improved cost management practices.

2. Primary paths for cloud spend optimization: FinOps, Architecture, and Licensing.

3. Practical steps to improve everyday decision making affecting long-term spend.
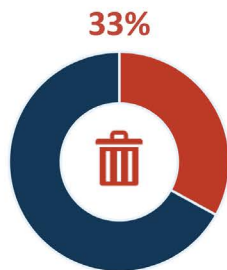
Why Cost Management is Important

Reducing cloud spend is more important than ever, most organization are spending beyond their planned budget as a result of not fully realizing the cloud's financial benefits. Managing cloud costs has become a top, strategic priority for most IT executives as accelerated growth, high waste rates, and tighter budgets are forcing them to understand and improve cloud spend.
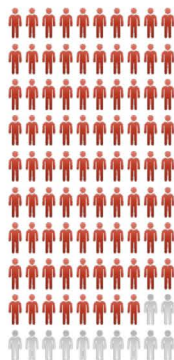
Figure 1: The Importance of Cloud Cost Management
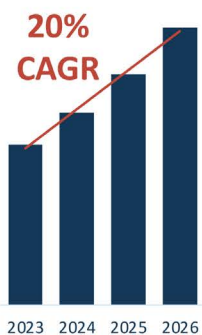
|				
20% CAGR 2023 2024 2025 2026	**33%**		**15% to 25% OFF** Savings!	**10%**
Accelerated cloud adoption will continue to drive 20% growth through 2026[1]	Up to a third of all cloud spending is waste[2]	88% of IT executives indicate optimizing existing resources and reducing cloud spend is a top priority[3]	Quick Wins could reduce wasted spend by 15% to 25%[4]	Capping waste to 10% would offset the majority of expected growth spend[5]

Recent research has uncovered:

- Organizations are forecasted to accelerate cloud adoption through 2026.[1]
- Up to a third of all cloud spending is waste.[2]
- Most IT executives indicate optimizing resources and reducing cloud spend is a top priority.[3]
- Cost management quick wins could reduce wasted spend by 15% to 25%.[4]
- Capping total waste spend at 10% would offset forecasted cloud growth costs.[5]

Many organizations are leaving a lot of money on the table by not optimizing their cloud cost management practices. SMX research has concluded that modernizing FinOps practices with a goal of capping waste spend to 10% would offset most of the growth in cloud costs expected over the next three years.

To illustrate this, on a base of $1M in spend, organizations could avoid $400K per year within 3 years through the implementation of quick wins and adoption of FinOps best practices. Cumulative savings over the 3-year period would exceed $900,000, more than 90% of the initial baseline.

Figure 2: Offset Spend Growth with Improved FinOps Practices
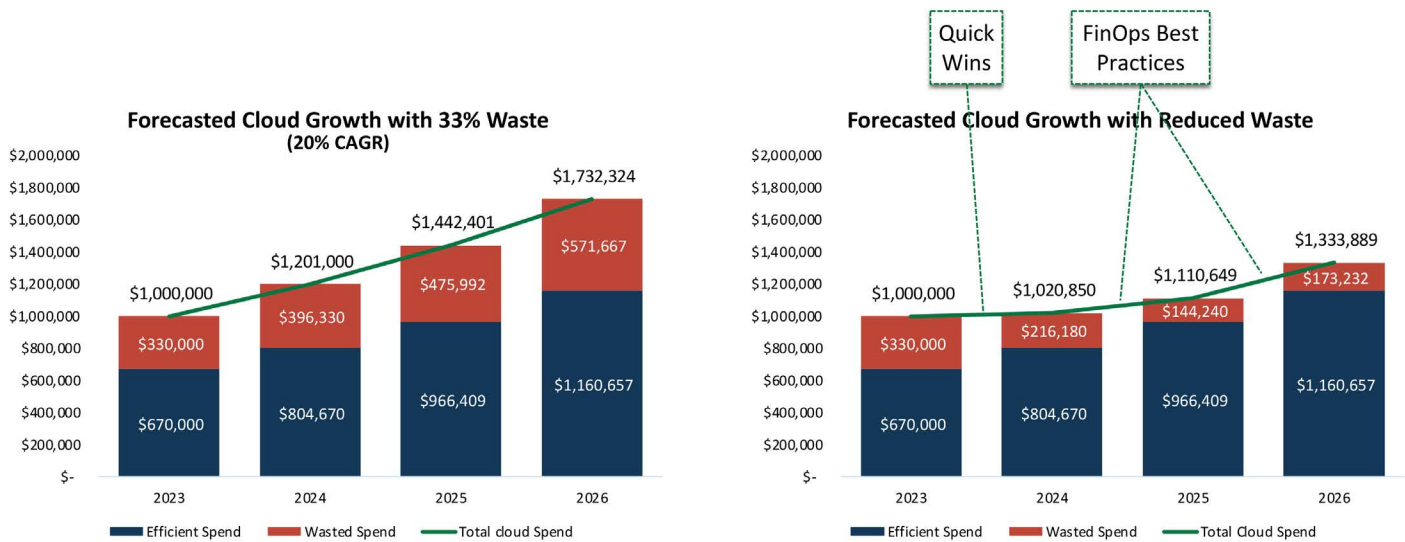
Primary Paths to Optimize Cloud Spend

There are three primary paths to optimize cloud spend – FinOps, Architecture and Licensing.

FinOps

On the non-technical side, we have Financial Operations, or **FinOps**. Most FinOps practices—like reserved instances and savings plans—can be applied immediately to reduce cloud spend without impacting applications. Other FinOps practices can be changed quickly, however, they require working with application owners to realize the benefits. For example, changing a record retention policy from 11 years to 7 would reduce storage spend, however, application owners need to retire older archives to realize the savings.

Licensing

Licensing optimization often requires a combination of non-technical and technical solutions. For example, renegotiating contracts with vendors doesn't require architectural changes, however, retiring Oracle licenses would require application owners to replace their databases.

[1]Gartner "Forecast: Public Cloud Services, Worldwide, 2020-2026, 4Q22 Update" | [2]Gartner, Flexera, Forbes, InfoWorld, McKinsey | [3]Anodot Software, "2022 State of Cloud Cost Report" | [4]McKinsey "More for less: Five ways to lower cloud costs without destroying value" | [5]SMX Research

Architecture

On the technical side we have **Architecture**. One of the most sustainable ways to optimize total cost of ownership is to reward cost to value decision making. Embedding Total Cost of Ownership (TCO) analysis tools in solution design stages engrains cost factors into teams selecting infrastructure in support of their applications. Conducting periodic Site Reliability Engineering (SRE) assessments and Well Architected Reviews (WAR) identify service duplication, overprovisioned infrastructure, and underutilized resources. Teams should set aside at least one sprint cycle per quarter to modernize infrastructure and reduce technical debt.

Figure 3: Primary Paths to Reduce Cloud Spend: SMX 20Rs Framework

"Non-technical"   "Technical"

FinOps

- **Review** costs continually
- **Reserved** instances and savings plans
- **Resource** spike and sprawl alerts
- **Retention** and data lifecycle policies
- **Roadmap** and strategy to achieve specific cost management goals
- **Reinvent** FinOps with workflow, automation, and data-driven approach

Licensing

- **Regular** software and licensing audits
- **Restrict** use of vendors to approved list
- **Reject** third-party vendors with low value returns
- **Remove** or deactivate licenses
- **Recycle** and optimize licenses
- **Renegotiate** and consolidate licenses
- **Repurchase** with different vendors
- **Remix** pricing models: pay-as-you-go, subscription, tiered, volume discount

Architecture

- **Reward** cost to value decision making
- **Right size** compute, database, and storage
- **Refactor** into cost effective services
- **Relocate** apps closer to end users
- **Reduce** unnecessary data transfer charges: outbound, cross region, cross AZ
- **Retire** applications and infrastructure

Data-driven Innovations are Lining Up to Simplify Cost Management

Four key trends are lining up like ducks in a row to help organizations better understand cloud spend and apply new, data-driven capabilities to better manage it and realize cost savings.

Figure 4: Innovations are Lining up to Simplify Cost Management

4 Key Innovations …

Strategic Cost Management programs adapted for cloud

AI/ML powered advisory combined with automation

Software Asset Management tools enhance cost advisory capabilities

DevSecFinOps engrains cost analysis and decision making across the IT lifecycle

… made possible by data-driven capabilities

- Historic cloud spend and utilization data
- On prem vs. cloud comparison data
- Benchmark data
- Maturity model / best practice assessment frameworks

- Powerful, easy-to-use dashboards and reporting tools
- Mature, actionable AI/ML powered advice
- Automation of cost management advisory recommendations via ITSM workflow integration
- ITSM to CSP APIs integration to adjust savings plans, right size instances, and terminate resources

- AI/ML powered analytics identify excess and unused licenses
- Identification of overlapping functionality across vendors and CSP native services
- BI support for contract renewals
- Automation of licensing optimization via ITSM workflow integration

- Simplification of financial processes with workflow and automation
- 90%+ cost allocation via asset tagging policies
- Budget, TCO, and cost analysis tools embedded in product teams
- Cost frameworks in solution architecture

Strategic Cost Management

The adaptation of **Strategic Cost Management** practices for cloud is a powerful tool that organizations have used for decades to improve profitability and liquidity. In the IT space, strategic cost management has historically been applied to reduce maintenance spending and increase money available for innovation.

For decades, IT cost management strategies and processes have been refined to optimize complex financials for capital intensive, on-premises data centers. Adopting cloud requires new, fundamentally different cost management practices that align with cloud's pay-as-you-go model. Cost Management Strategies facilitate this transition by exploring best practices, identifying gaps, and developing new capabilities. The three main objectives are:

1. Improve deep transparency in cloud spend.

2. Develop targeted programs that reduce spend.

3. Create behaviors that are sustainable over time.

AI/ML Powered Advisory Tools

A growing list of 'out-of-the-box' **AI/ML powered advisory tools** are making it easier to explore optimization opportunities beyond just reserved instances and compute optimization. Cloud native tools—such as AWS Cost Management and Cost Explorer—combined with third-party tools—including CloudHealth and Anodot—provide mature, out of the box optimization recommendations across diverse spend dimensions like:

- Reserved instances and savings plans
- Right sizing of compute, storage, and database
- Resource spikes and sprawl prevention
- Data storage, retention, and lifecycle management
- Refactoring and modernization opportunities

Software Asset Management (SAM) Tools

Software Asset Management tools have enhanced their cost advisory capabilities. In addition to identifying unused licenses, SAM tools are adding new capabilities to simplify processes to identify overlapping functionality, standardize vendors, reassign unused licenses, and right size licensing during contract renewals.

A key focus area has been to identify overlapping functionality across on premises and CSP services, a highly useful feature for companies exiting data centers. Firewalls, traffic management, VM hypervisors, and backup tools—to name a few—are evaluated for savings and spend reduction as users and traffic shift to the cloud.

SAM tools have traditionally supported end user license optimization, more recently they have added:

- Functionality duplication, emphasizing on premises and CSP service duplication.
- Utilization of components and features within applications.
- Contract terms including entitlements and restrictions.
- Pricing model analysis (flat, consumption, tiered, user, feature, prod vs. non-prod).
- BI support for vendor negotiation, including renewal dates published pricing.
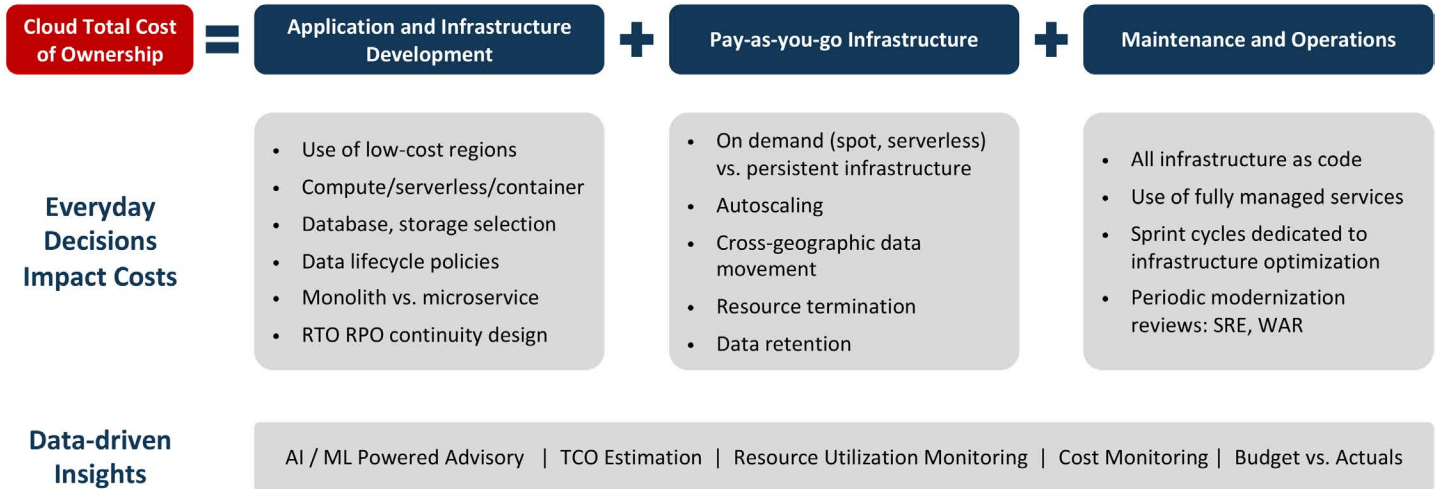
DevSecFinOps

Making a one-time spend reduction is easy, sustaining savings through time is more difficult. The simplification of financial processes through automation and improved data accuracy is enabling cost management practices to be federated out into product owners, architects, and development teams. By engraining cost frameworks and tools into the early stages of application and infrastructure solution design and decision making, organizations are putting the Fin in **DevSecFinOps**.

Improving Cloud ROI through Data Driven Decisions

Leveraging data-driven insights, technology teams can deliver solutions that improve outcomes and user experience while also reducing total cost of ownership. It's important to remember the Total Cost of Ownership (TCO) includes development costs, pay-as-you-go infrastructure spend, and labor needed to operate and maintain cloud environments and workloads.

Figure 5: Improving Cloud ROI through Data Driven Decisions

Cloud Total Cost of Ownership =	Application and Infrastructure Development	+	Pay-as-you-go Infrastructure	+	Maintenance and Operations
Everyday Decisions Impact Costs	• Use of low-cost regions • Compute/serverless/container • Database, storage selection • Data lifecycle policies • Monolith vs. microservice • RTO RPO continuity design		• On demand (spot, serverless) vs. persistent infrastructure • Autoscaling • Cross-geographic data movement • Resource termination • Data retention		• All infrastructure as code • Use of fully managed services • Sprint cycles dedicated to infrastructure optimization • Periodic modernization reviews: SRE, WAR
Data-driven Insights	AI / ML Powered Advisory | TCO Estimation | Resource Utilization Monitoring | Cost Monitoring | Budget vs. Actuals				

Application and infrastructure teams make everyday decisions that impact the costs of their solutions. Some decisions are immediate, like overprovisioning a server instance or failing to terminate unattached EBS volumes. These costs show up immediately on team dashboards and shortly after on the next bill.

Other decisions have longer term implications and are not as transparent. Launching an autoscaling group of persistent servers for applications that are accessed infrequently or with unpredictable demand can cost far more than serverless, when all lifecycle costs are considered. Data-driven insights and tools can help development teams optimize decisions by incorporating cost considerations early in solution design.

SMX FinOps

SMX regularly works with clients to develop cost management strategies and targeted programs that deliver and sustain significant savings on their total cloud spend. SMX Elevate FinOps engagements are delivered through outcome-based pricing and pay for themselves, typically in the same year.

SMX Elevate's approach accelerates cloud spend savings through our unique combination of highly certified Tech SMEs, AI/ML powered Intelligent Automation, and an extensive Knowledge Repository that captures and curates decades of experience delivering successful digital transformation and operating complex, highly regulated cloud workloads as a Gartner recognized Managed Service Provider (MSP).

Elevate is a technology-enabled, outcome-based approach to solving business challenges. SMX Elevate FinOps delivers value via a transparent, outcome-based pricing model that shares risks and rewards.
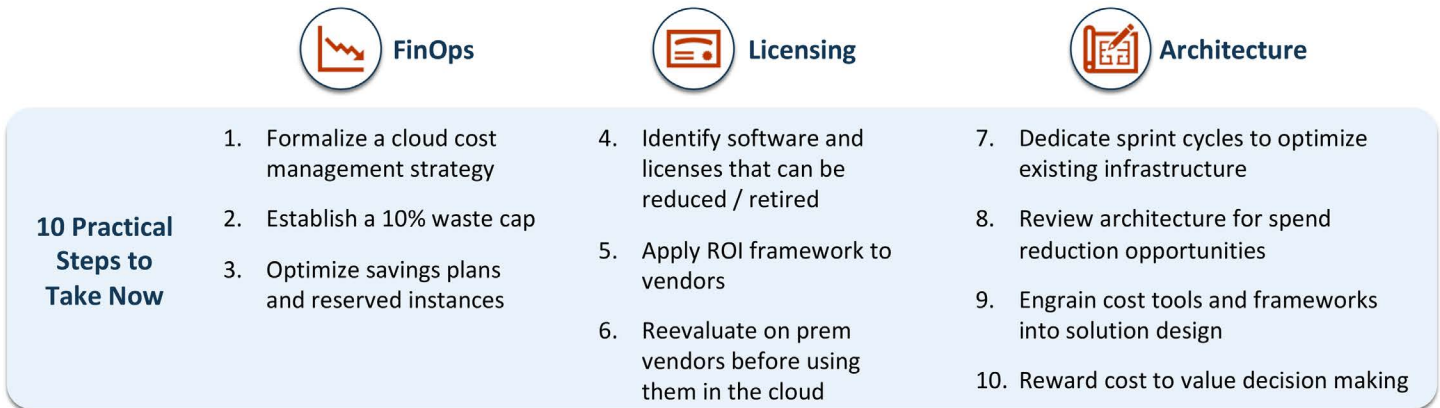
Figure 6: SMX FinOps is key service in our Elevate™ Approach
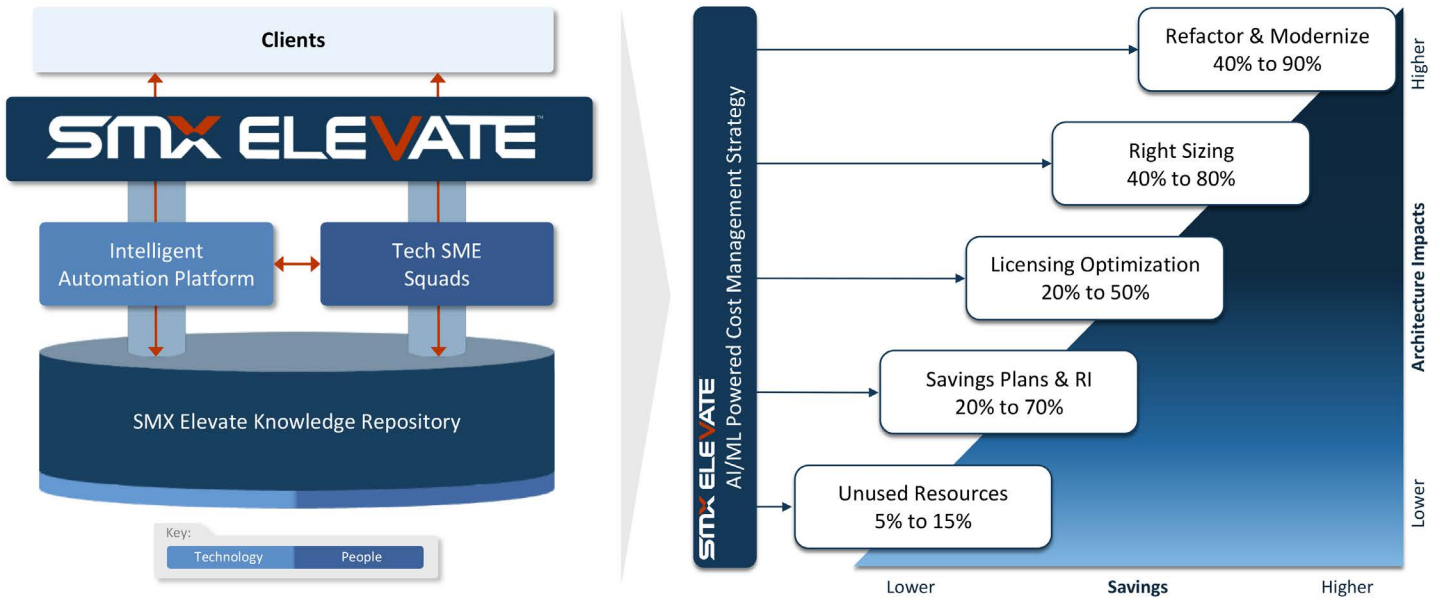
Practical Steps to Begin Your Cost Management Journey

Considering all of the capabilities needed to deliver and sustain cost savings, where do you begin? SMX recommends starting with the following 10 steps. They are easily achievable over the next 6 to 12 months and would deliver both quick wins and long-term benefits.

Figure 7: 10 Steps to Begin your Cloud Cost Management Journey

FinOps   **Licensing**   **Architecture**

10 Practical Steps to Take Now

1. Formalize a cloud cost management strategy
2. Establish a 10% waste cap
3. Optimize savings plans and reserved instances

4. Identify software and licenses that can be reduced / retired
5. Apply ROI framework to vendors
6. Reevaluate on prem vendors before using them in the cloud

7. Dedicate sprint cycles to optimize existing infrastructure
8. Review architecture for spend reduction opportunities
9. Engrain cost tools and frameworks into solution design
10. Reward cost to value decision making

Conclusion

Accelerated cloud adoption will continue to drive 20% growth through 2026. Delivering FinOps practices and AI/ML powered tools that cap waste spending to 10% would offset most of the forecasted growth.

Contact SMX at cloudassured@smxtech.com to start your Cloud Cost Management journey and take practical steps to reduce and sustain your total cost of ownership.

SMX harnesses the transformative power of technology to achieve mission success as a leader in digital and mission solutions, specializing in secure and advanced cloud, ISR, cyber, data analytics, engineering, space, and IT solutions. Operating in close proximity to our clients across the globe, the SMX team has a shared vision to deliver scalable and secure solutions to assure outcomes for the critical missions of our Government and commercial clients.

A few of our contracting vehicles: GSA ASTRO, GSA Alliant 2, GSA OASIS, NITAAC CIO-SP3, SeaPort-NxG, DIA SITE III, and GSA MAS IT.