



Save money



Effective Cost Management on Azure.

(by Stefan Rapp, 18th June 2025, 15:45 – 16:30)



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PLATINUM



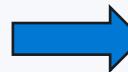
GOLD



The “Cost” Hurricane

Why is the focus on **Cost Management** so essential?

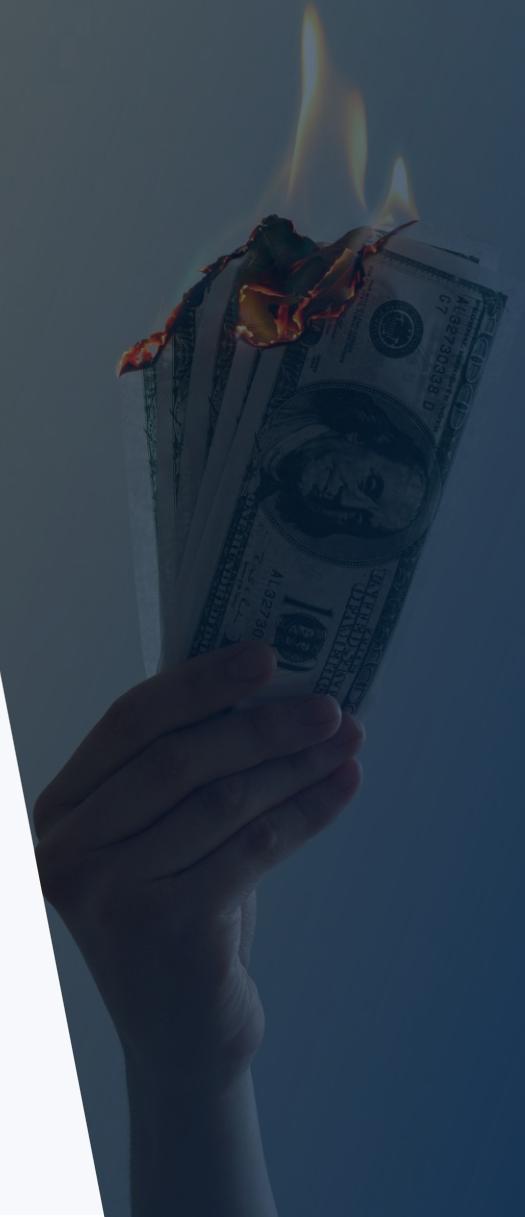
- Innovation Day 2018 Netherlands
 - Build an Application with an **Azure Logic App.**
 - Hurricane #*Katrina* (📅 August 2005)
 - Powerful, devastating and historic tropical cyclone.
 - Caused 1,392 fatalities and damages estimated at \$125 billion
 - Particularly in the city of New Orleans and its surrounding area.
 - Let the app run and forget about it! 🏃 
 - Hurricane #*Michael* (📅 Oktober 2018)
 - Powerful and destructive tropical
 - Became the first Category 5 hurricane
 - More requests → App scales  
- ~ 43k € Azure Consumption 💰 💰 💰



This is about you!

It is too **simple** to say that we want **autonomy** but keep **blind** for the cost!

- Freedom/Autonomy  vs.  Costs
- Culture of **Cost Awareness & Ownership.**





Azure Cloud Costs – #1

“FinOps” as Foundation

What is “FinOps”?

The definition of “*FinOps*” according to the FinOps Framework.

“FinOps is an operational **framework and cultural practice** which maximizes the **business value** of cloud and technology, enables timely data-driven decision making, and creates financial accountability through collaboration between engineering, finance, and business teams.

Source: [FinOps Foundation](#)

*“Price is what you pay,
value is what you get.”*

Source: Warren Buffet



FinOps is about spending **less!** ↓



- Spend
- Waste
- Value



FinOps is about spending **more effective!** 🏆



- Max. business value

After DevOps, DevSecOps, WhateverOps,...

Integrate Financial Management

Make Data-driven Decisions

Take Ownership of cloud usage



Keep Freedom & Innovation

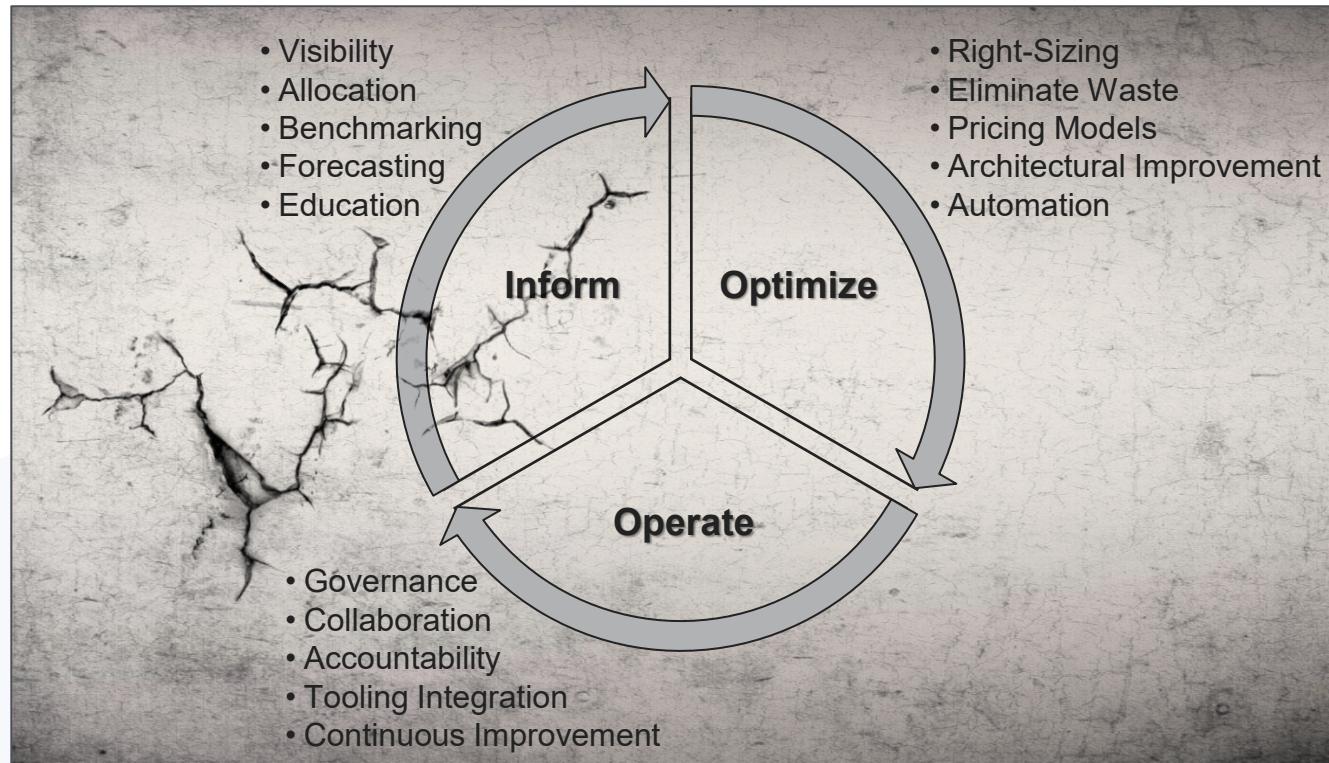
Create Financial Accountability

Collaboration between:
• Engineering
• Finance
• Business

Maximize the business value of the cloud!

FinOps Cycle

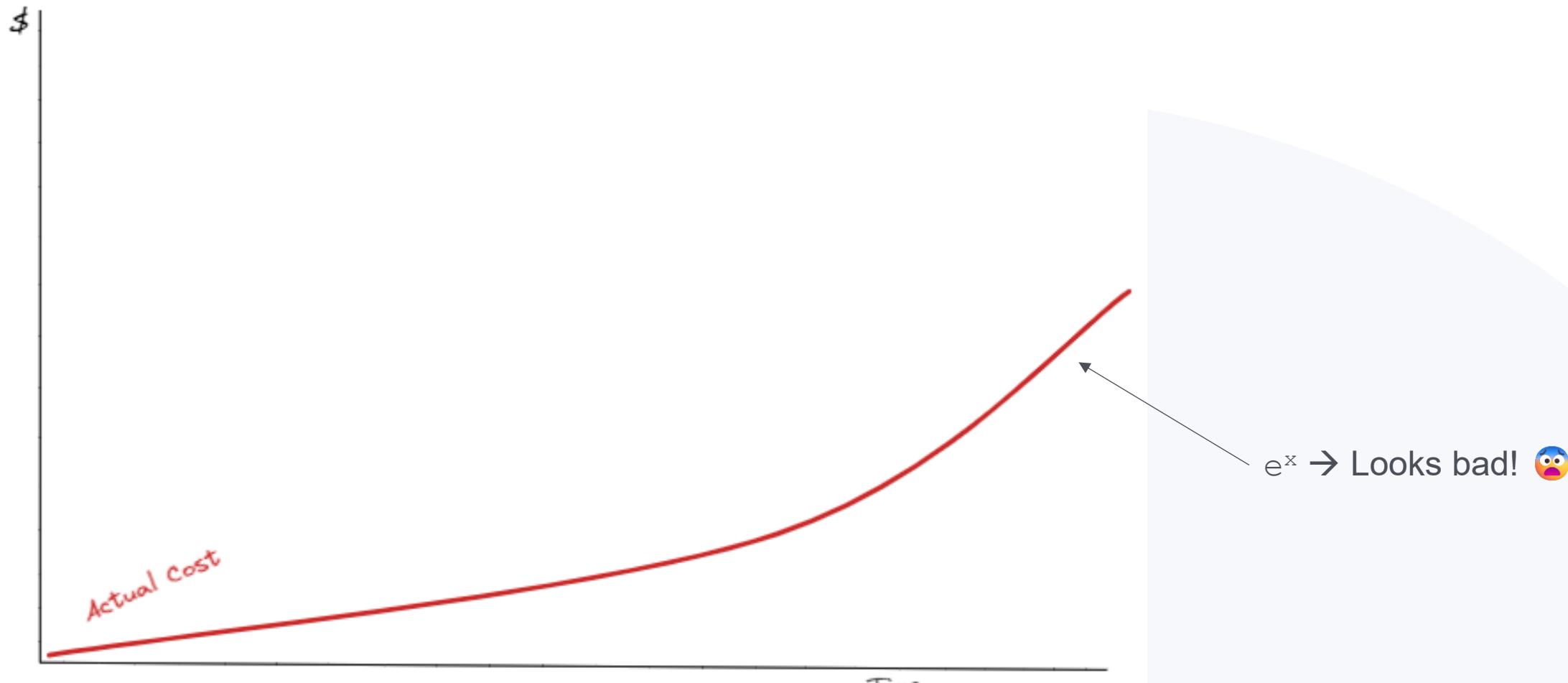
It is not purely about **saving costs** but about innovate and do the **right things** to **optimize** cloud usage.



- No set it and forget it! → FinOps process
- Keep costs for **long-term** under control.

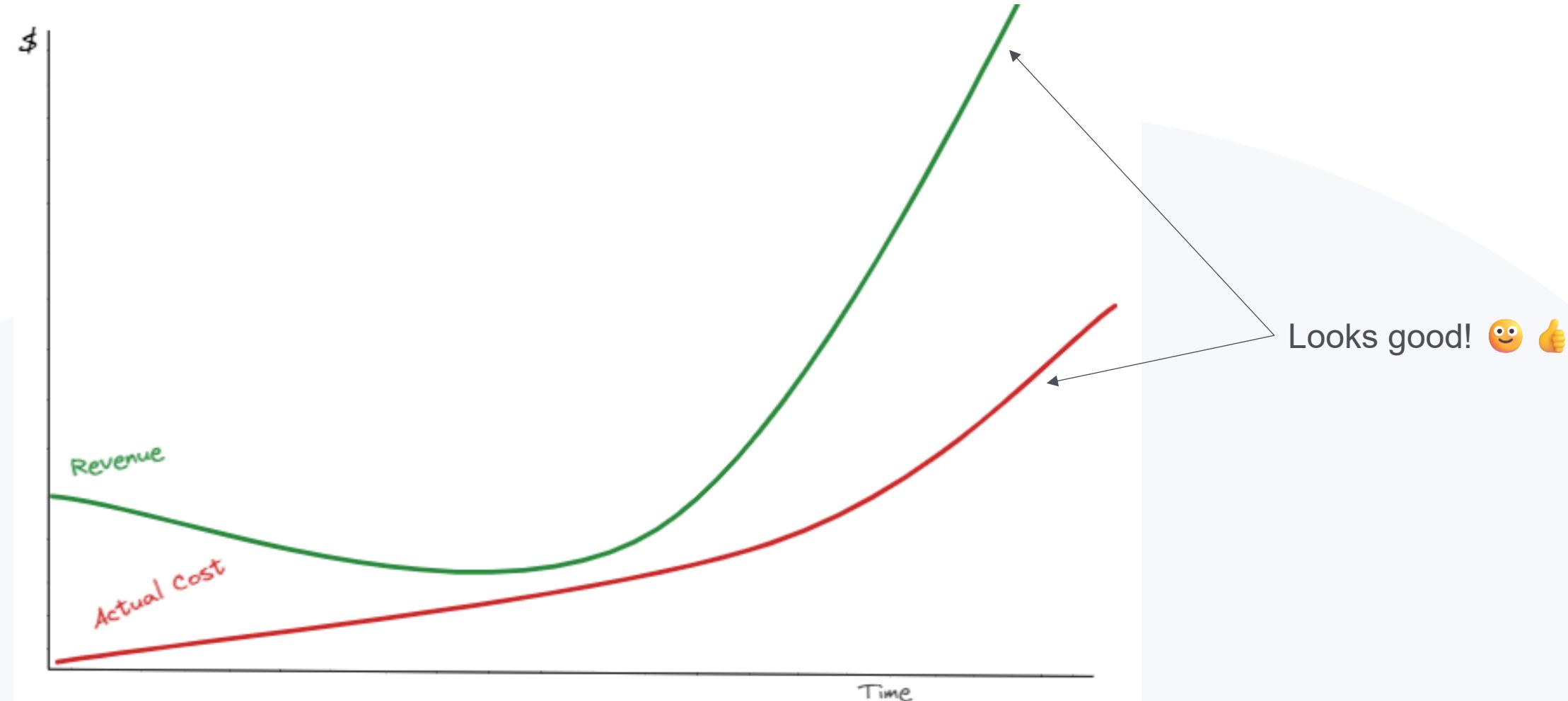
“Cloud is too expensive” 💰

Start with the Visibility of your costs.



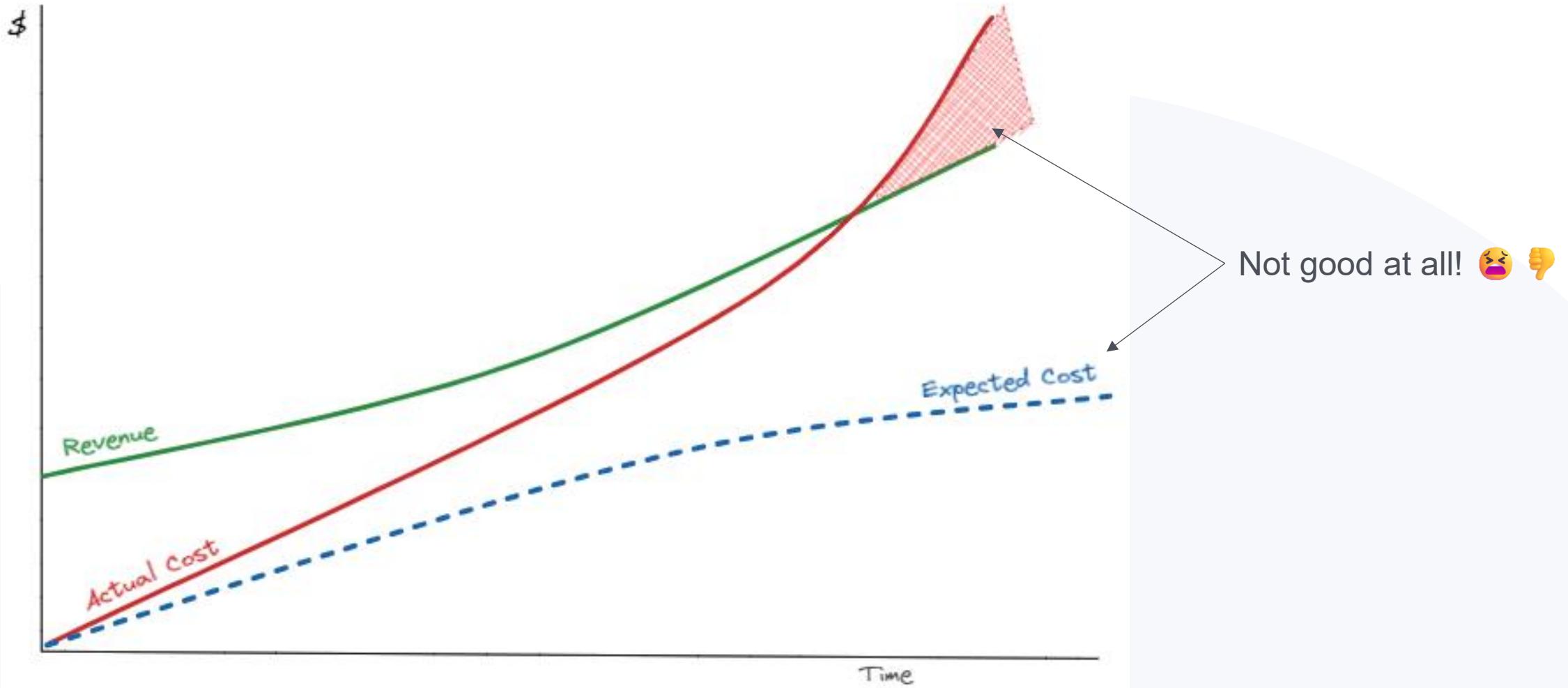
Still too expensive?

Look at your Cloud Spend in Context.



And now?

Look at your Cloud Spend with even more Context. What is the Reference line?



What is Cloud Spend?

Which **Factors** can be influenced regarding our cloud spend?



- Central team for handling the rates. → FinOps Team
- Decentralized teams care about usage. → App Team

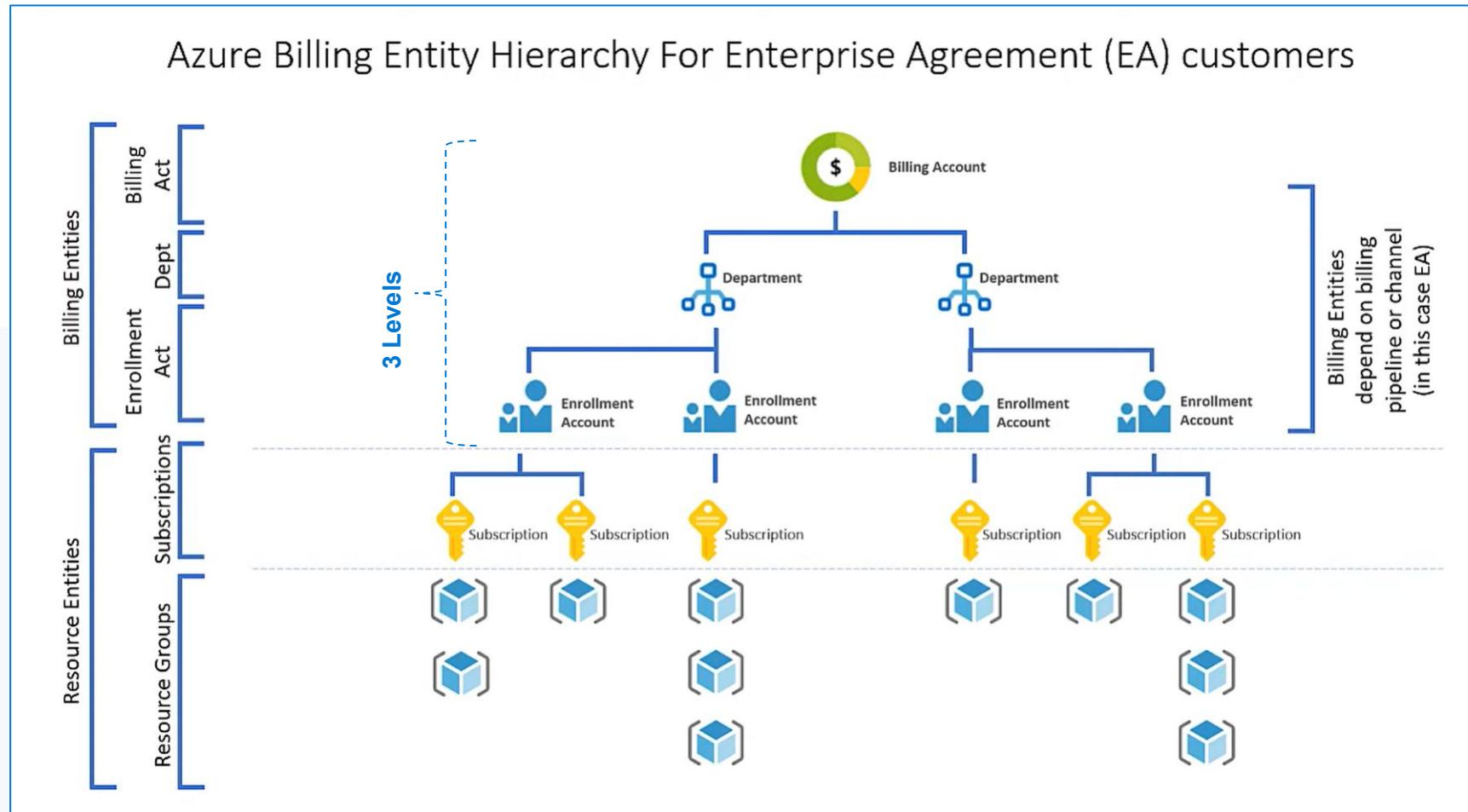


Azure Cloud Costs – #2

Transparency & Visibility
in Azure

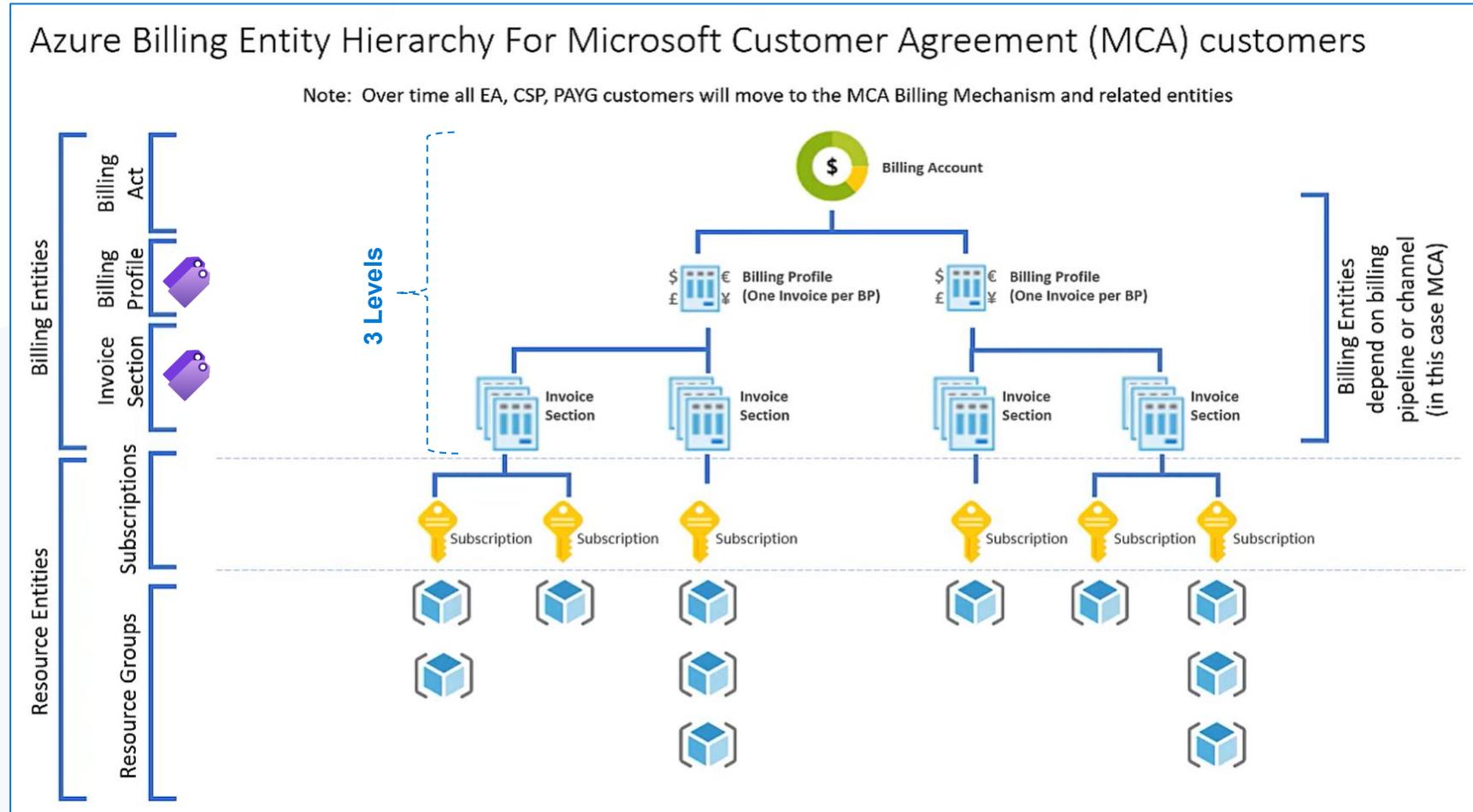
Azure Billing Hierarchy (EA)

How does the billing for EA customers work? 



Azure Billing Hierarchy (MCA)

How does the billing for MCA customers work? 

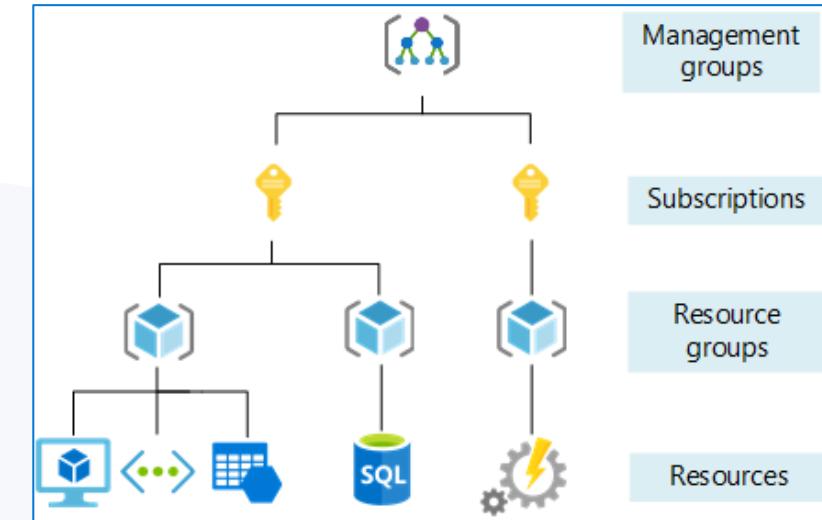


Billing Hierarchy → Ensure that the right organizational units are paying for the services.

Azure Resource Hierarchy

Cost Allocation → Divide up a consolidated invoice. 📁 → 💰

- Plays a **foundational** role in Azure Cost Management. 💹
- Defines how spendings are **organized, tracked, and controlled**. 💰
- Supports the **assignment** of costs to different groups. 🔑
- Based on their **consumption** of resources. 📈
- Used for **budgeting and forecasting**. 🔎



Billing Hierarchy

Reflects the **organizational structure** of the account owner.

🎯 Organizational goals & preferences

Resource Hierarchy

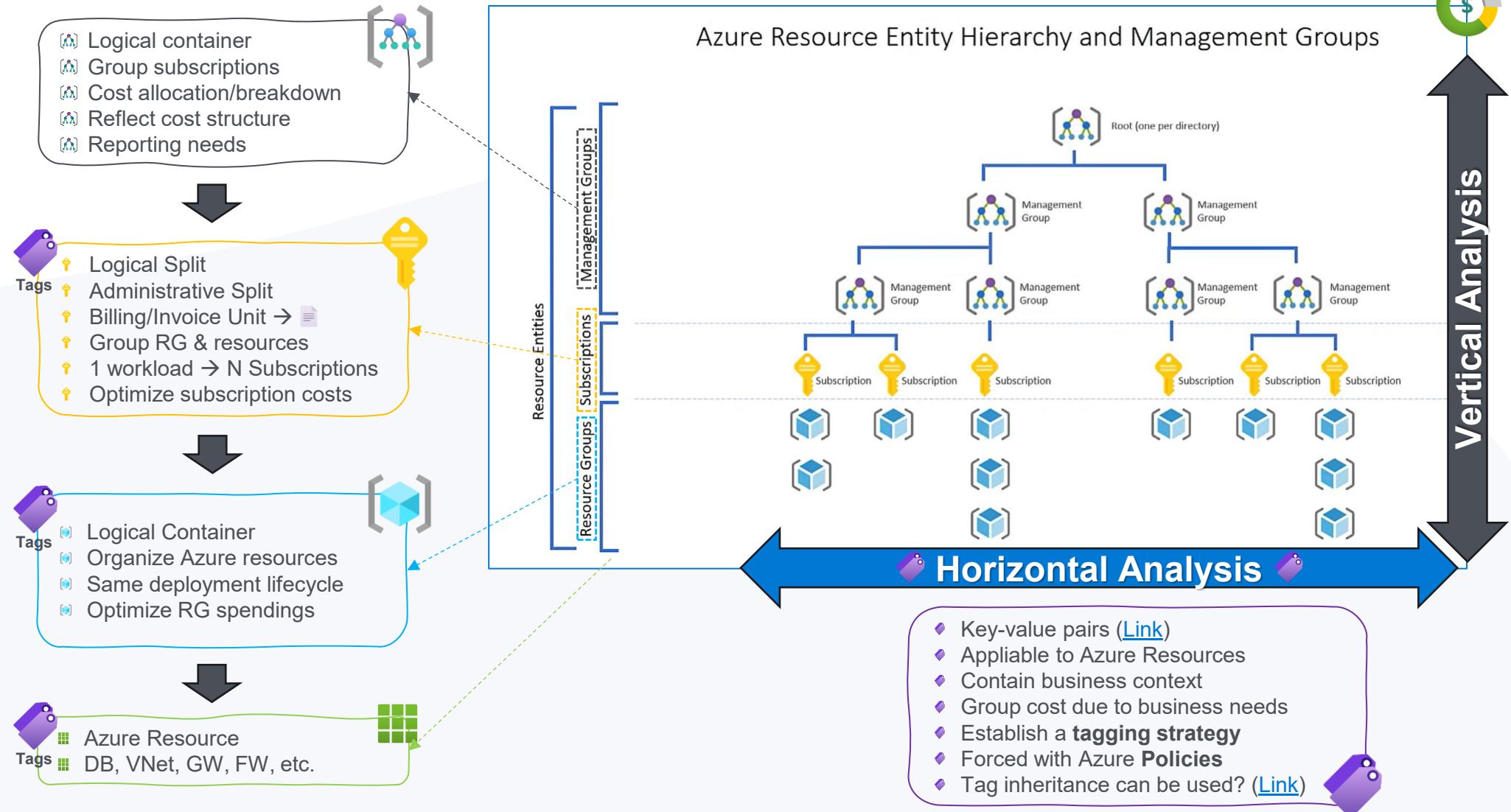
Reflects the **logical grouping** of the resources used in Azure.

🎯 Technical & operational needs



Azure Resource Hierarchy

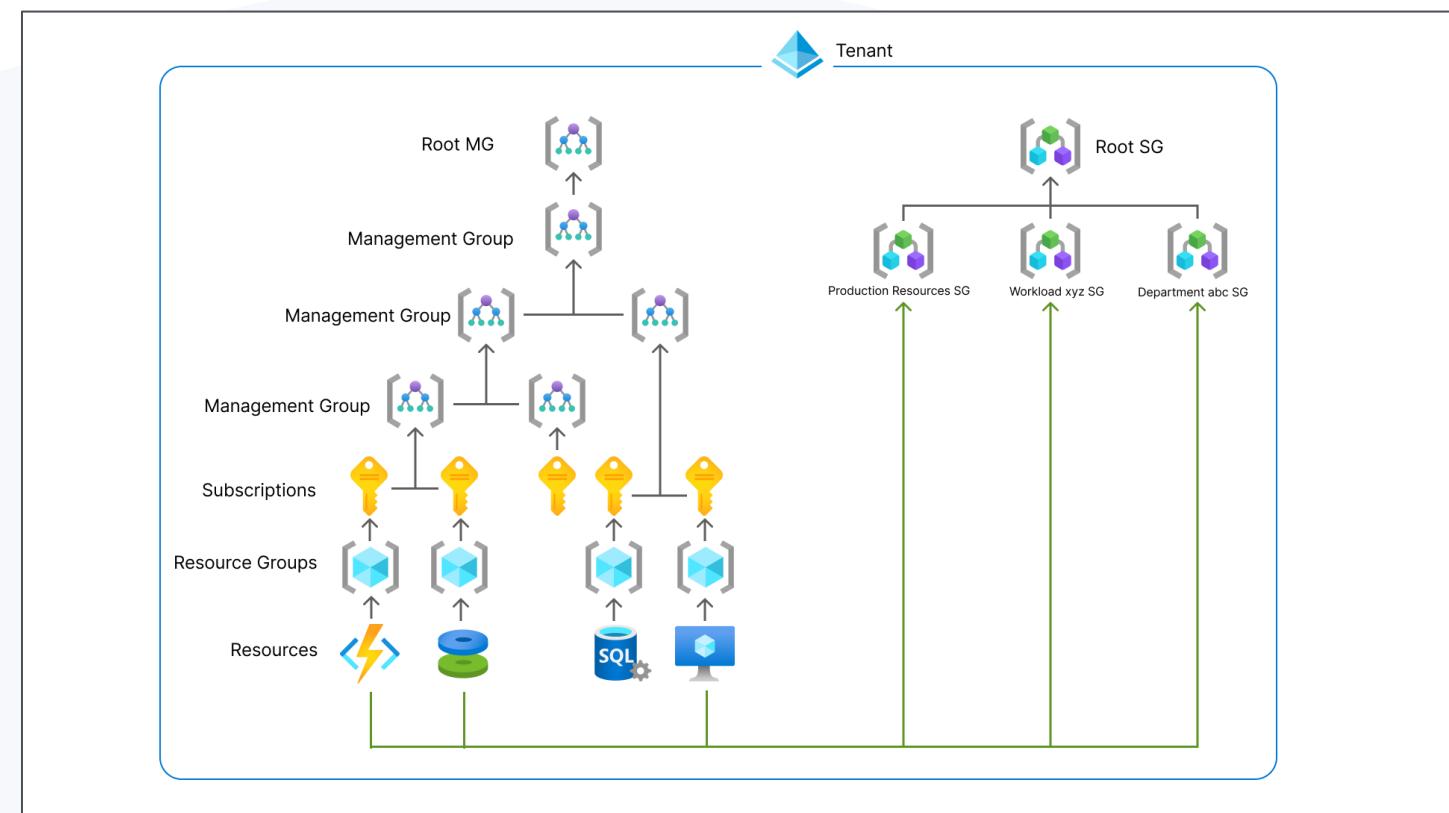
Where to assign budgets, tags, cost alerts, RBAC and policies?



(New) Service Groups

Organize and manage resources across **subscriptions** and resource groups (RGs).

- Multiple/Parallel Hierarchy
- Unified view and management capabilities
- ⚠️ **Cost Management** 🎉 Not yet!





Azure Cloud Costs – #3

Reduction & Optimization
on Azure ☁

Rate Reduction

Check for better rates, as it is exactly the same Azure Service.

Pay-as-you-go (on-demand)

Spot Instances (VMs)

Reserved Instances

Saving Plans

Commitment-Based Discounts

Enterprise Agreement

Dev/Test Subscriptions

Hybrid Benefits





Example – Azure VM Rates

1 VM → West Europe → **Standard_D4_v5** (4 vCPUs, 16 GB RAM) → 730 Hours (1 month) → Standard Windows



Azure Reservations

Save money by committing to **1-year or 3-year** plans.

What ?

- Reduce costs by **up to** 72% from pay-as-you-go.
- Only certain products are covered. → [List](#)
- Discount **automatically** applies to matching resources.
- Pay **up front**  or **monthly**  → Costs are the same!
- Are applied on an **hourly** basis (UTC date). 



Why ?

- **Continuously** run instances of a service 
- **Consistent** resource usage → Break-even 

Supported Offers: [Link](#)

- Enterprise
 - MS-AZR-0017P
 - MS-AZR-0148P
- Pay-as-you-go
 - MS-AZR-0003P
 - MS-AZR-0023P
- Microsoft Customer Agreement (MCA)
- CSP Subscriptions
- Azure Sponsorship
 - MS-AZR-0036P

Attributes:

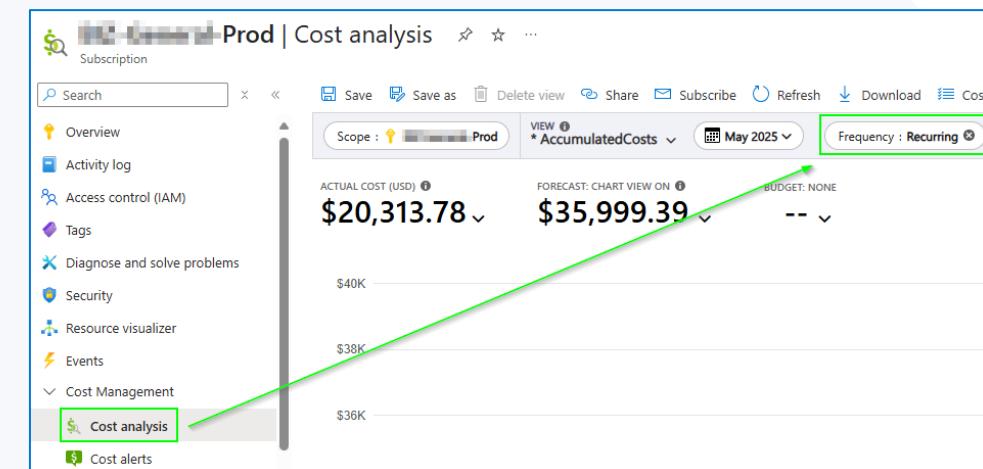
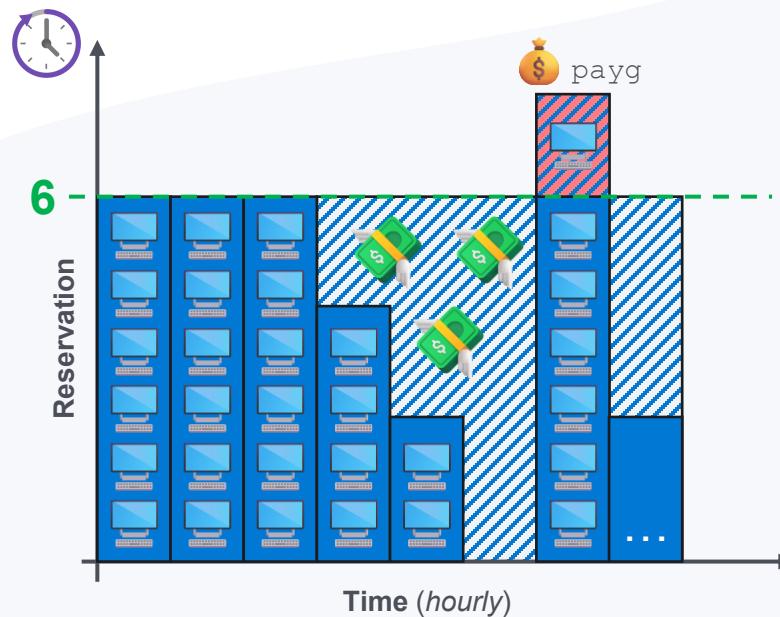
- SKU
- Region
- Scope [Link](#)
 1. Resource Group
 2. Subscription
 3. Management Group
 4. Shared (Billing Context)

Azure Reservations

Save money by committing to **1-year or 3-year** plans.



- Analyzing your **usage data**.
- Avoid purchasing more capacity than your historical usage → **Underutilized reservation!**
- Refund a reservation, up to **\$50,000 USD** in a 12-month rolling window, if you no longer need it.



Azure Saving Plans (for Compute)

Save money by committing to **1-year** or **3-year** plans.

What ?

- **Save** money on Azure services.
- Adds additional **flexibility**.
- Commitment to a **consistent amount** of usage for 1- or 3-year.
- Significant savings on **compute** resource.



Why ?

- Recommendations are based on previous usage 
- Actual savings will vary based on future usage 
- Not limited SKU, Region, Services.
- Share the Service plan with many resources.
-  No refund possible  → “use-it-or-lose-it”

Screenshot of the Azure portal interface for creating a Saving Plan:

Name *: Compute_SavingsPlan_06-02-2025_15-59

Billing subscription *: sub-[REDACTED]_de_sandbox-sb-[REDACTED]

Apply to any eligible resource *: Shared across the subscription's billing scope (BP-[REDACTED])

Term length *: 3 years

Hourly commitment in USD *: 4,495

Billing frequency *: Auto-renew *

Auto-renew *: 5,389 \$

4,949 \$ 
34.89% potential savings compared to your on-demand usage
87.51% of all your compute usage will now be covered by commitments

4,972 \$
33.97% potential savings compared to your on-demand usage
92.17% of all your compute usage will now be covered by commitments

4,744 \$
34.72% potential savings compared to your on-demand usage
90.25% of all your compute usage will now be covered by commitments

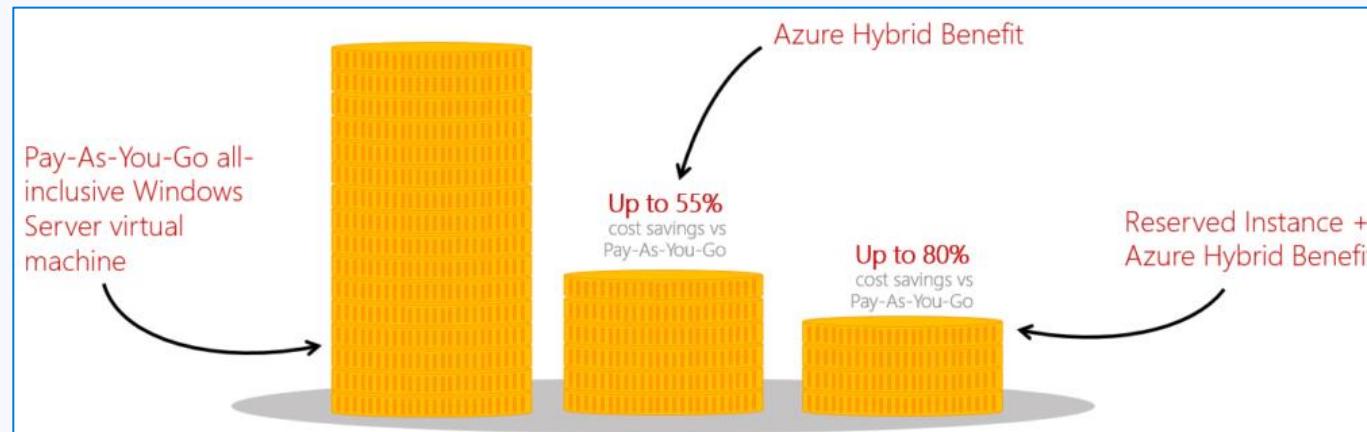
4,618 \$
34.88% potential savings compared to your on-demand usage
88.93% of all your compute usage will now be covered by commitments

Recommendations are based on previous usage for the selected scope and term. Actual savings will vary based on future usage

Azure Hybrid Benefit

Bring your own license (BYOL) or Subscription (BYOS)

- Use on-premises Licenses (Windows / Linux)
- Valid Software Assurance (SA) → Licensing Agreement
- **Datacenter** licenses can be used **on-premises & in the cloud**.
- **Standard** license... either... or.
- Automate it! → e.g., using Terraform



The screenshot shows the Azure Advisor Cost Optimization Workbook interface. The 'Rate optimization' tab is selected. In the 'Commitment discounts' section, the 'Azure Hybrid Benefit' button is highlighted. Below it, the 'Windows Virtual Machines' section is also highlighted. The 'Windows Azure Hybrid Benefit (AHB) Overview' section contains a note about core counts and priority levels. At the bottom, there's a summary table:

Subscription Name	Is AHB enabled?	Number of resources
Prod	AHB Enabled	59
QA	AHB Enabled	16

A circular progress bar at the bottom right indicates 75% completion.

Architecture Design Decisions

The rule of 10!

- **Most impactful** levers for cost avoidance in Azure!
- Examples:
 - Choosing PaaS over IaaS (e.g., Azure App Service vs. VMs)
 - Using serverless services (like Azure Functions or Logic Apps) when appropriate
 - Right-sizing resources during design (e.g., picking correct VM SKU or database tier)
- The **earlier** you make these decisions with cost in mind, the more **waste and rework** you can prevent.



Cost Avoidance

Which **strategy** and **actions** can be taken to prevent unnecessary cloud spending?

- Retention Policies (e.g., < 30 days, archiving)
- Delete resources & use automation
- Right-sizing resources during design phase (“*overprovisioning*”)
- Smart Combining (e.g., Azure NetApp Files, WebApp FW, etc.)
- Staging of environments (Prod & Non-Prod, same → But not equal!)
- Selective Use / Scaling (e.g., SKUs, Tiers)
- Re-Architecting





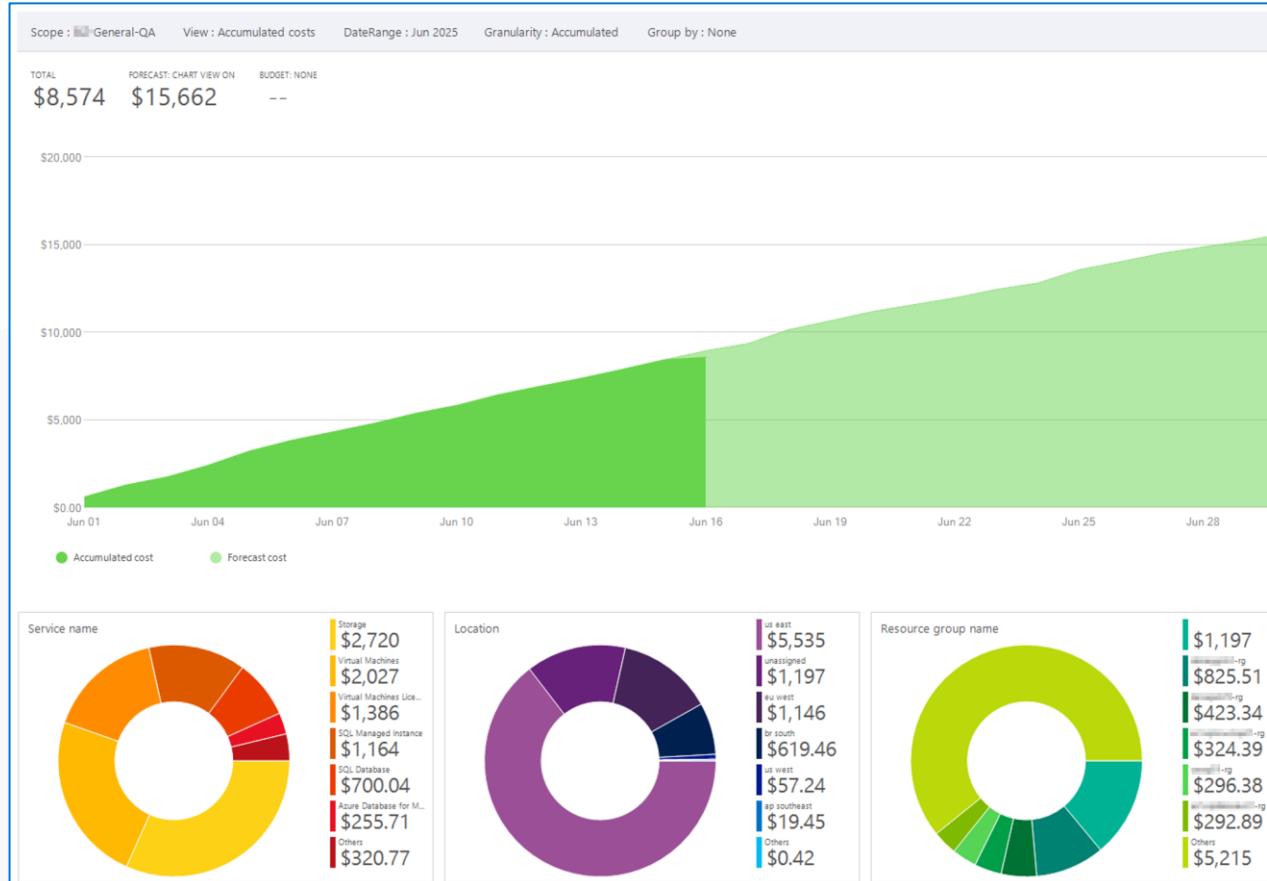
Azure Cloud Costs – #3

Tools & Features
on Azure

Azure Cost Analysis

Microsoft Cost Management is a suite of **FinOps** tools.

- Help to **analyze, monitor, and optimize** their Microsoft Cloud costs.



Azure Advisor

Follow **best practices** to optimize your Azure deployments.

- Analyzes resource **configuration** and usage **telemetry**.
- Get recommendations for a list of Azure Services.
- **Shut-down** unused resources.
- Improve the **Cost effectiveness!**
- Workbooks (orphaned resources)

The screenshot shows the Azure Advisor Overview page. It features a large yellow box with the word "Cost" and a "Score 54%" indicator. Below this, it displays "8 Recommendations" with a breakdown: 7 High impact, 1 Medium impact, and 0 Low impact. At the bottom, it shows "149 Impacted resources". The left sidebar includes links for Overview, Getting started, Advisor score, Workbooks, Assessments (Preview), and Recommendations (Cost, Security, Reliability, Operational excellence, Performance, All recommendations).

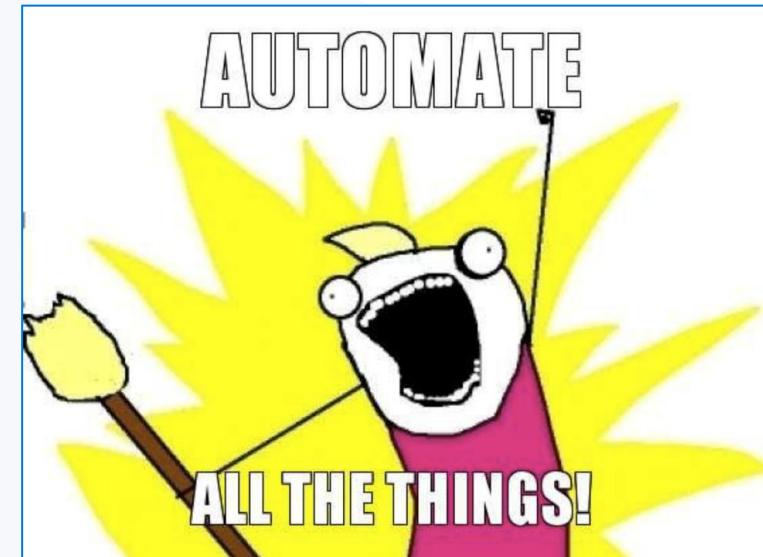
The screenshot shows the Azure Advisor Cost page. It highlights the "Cost" section under "Recommendations". Key statistics shown are "Total recommendations: 8", "Recommendations by impact: 7 High impact, 1 Medium impact, 0 Low impact", and "Impacted resources: 149". A table lists several recommendations with their descriptions and potential savings:

Description	Potential yearly savings based on retail pricing	Impacted resources
Consider App Service reserved instance to save over the on-demand costs	280 USD	1 Subscription
Consider virtual machine reserved instance to save over the on-demand costs	19,345 USD	1 Subscription
Consider SQL PaaS DB reserved instance to save over the pay-as-you-go costs	2,209 USD	1 Subscription
Consider purchasing a savings plan for compute to unlock lower prices	16,238 USD	1 Subscription
Consider Database for MySQL reserved instance to save over the pay-as-you-go costs	823 USD	1 Subscription
Consider SuseLinux reserved instance to save over the on-demand costs	287 USD	1 Subscription
Right-size or shutdown underutilized virtual machines	64,092 USD	43 Virtual machines
Review disks that are not attached to a VM and evaluate if you still need the disks	No data	105 Disks

Use Automation

Azure provides **several opportunities** to automate resource management.

- **Auto-Shutdown** of VMs (“*deallocate*”) → azurerm_dev_test_global_vm_shutdown_schedule
- [Start/Stop VMs v2 overview | Microsoft Learn](#) (deprecated!)
- Azure Automation **Runbooks** (e.g., *PowerShell*) in combination with **Azure Tags**.
- Azure Functions
- Azure Logic Apps
- Reporting & Notifications
- Orphaned Resource
 - KQL-Query
 - Azure Policies

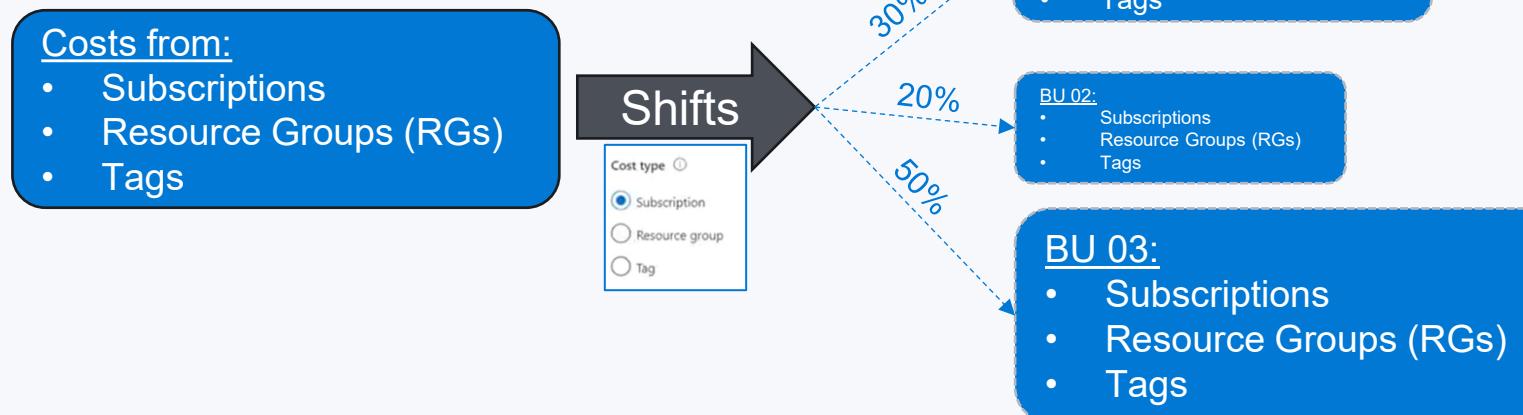
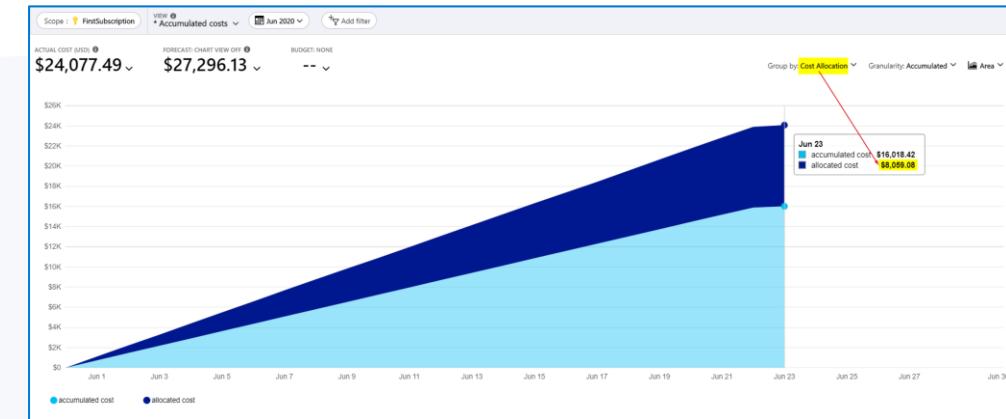


⚠ Avoid “*Ping-Pong*” with IaC and Azure Automation ⚠

Shared Resources & Allocations

Manage and show **Cost Accountability** from one place to another. → Charge back costs to others

- “Core” Azure services or resources are **centrally managed** (e.g., FW, VPN, etc.)
- **Reallocate/Distribute** the cost to the internal BUs.
- Allocated costs appear in **cost analysis**.
- Only available for EA and MCA billing accounts.
- Does not support purchases (reservations & savings plans).
- Does not affect your **billing invoice**.



Azure Cost Alerts (Budgets)

Monitor your Azure usage and spending.

- Set spending **thresholds** → Trigger Alerts 📲 → 🚩
- Trigger Automation 🚀 (*proactively*)
- Types:
 - Budget alerts
 - Credit alerts (Prepayment, EA)
 - Department spending quota alerts
 - Cost anomaly alert (*new, removed, changed costs*)
- Recommendation: Create it with **Subscription Vending** process.

⚠ Consumption is not stopped! ⚠





What are the essential take-aways?

5. Summary

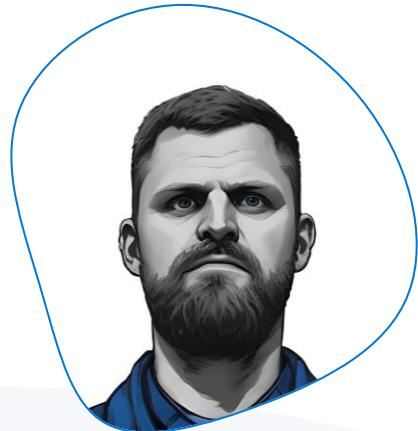
Summary

What are the essential take-aways?

- ✓ FinOps as part of the Cloud Strategy.
- ✓ Culture of Cost Awareness, Transparency & Ownership.
- ✓ Calculation before resource provisioning.
- ✓ Architecture Design Decisions → Cost focus!
- ✓ Bookings according to Requirements & Calculation.
- ✓ Follow Cost Avoidance actions.
- ✓ Use Azure Tools & Features from the beginning!



PROFILE – Speaker



Stefan Rapp

Cloud Solution Architect (CSA) & Microsoft MVP



Let's engage: <https://www.linkedin.com/in/rapster83/>

#AzureRocks 🤘🏼 💬 🎸



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