



FinOps eBook

From FinOps to proven
cloud cost management
& optimization strategies

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About the author



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Nick Smirnov is a FinOps and digital transformation enthusiast with more than 10 years of expertise working with public clouds and in enterprise software development. As a CEO and co-founder of Hystax, Nick has been developing software for cloud financial management and cost optimization during the last several years.

Working with world-renowned managed service providers, cloud services providers and telecommunication companies, Nick got a great experience and real understanding of the most important challenges of cloud adoption and a way to successfully solve it. Nick is passionate about cloud and FinOps methodology and helps companies navigate cloud cost management more effectively.

To complement his cloud 'addiction', Nick devotes his additional time to learning several foreign languages, working out at the gym and traveling with his family.




Introduction

Today's companies are continuing to engage with cloud computing to optimize key performance metrics and making greater investments in the cloud. As a result, they're seeing not only scalable, reliable and always-available IT infrastructure, but providing better services for end customers. A variety of industries benefit from cloud adoption, including healthcare, retail, finance, education and government.



Yet when an initial cloud migration is completed, issues likely arise. One challenge which often rears its head is the implementation of cloud financial management and cost optimization. Over the last several years, there has been a consistent problem - a lack of real FinOps practitioners who can fuel best practices, implement fresh ideas and set up smooth and efficient cloud cost management processes.

As cloud vendors offer more services, and cloud infrastructure continues to be dynamically developing, FinOps is not a one-day task. It is an ongoing process of improvement and optimization.

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This eBook will cover the main principles of FinOps, practical tips and best practices in order to make FinOps more available for everyone involved in the process, from engineering, finance, operations, product management and leadership. This eBook covers the implementation of basic FinOps principles to shed light on alternative ways of conducting cloud cost optimization. It will help you build a solid financial management strategy and understand the importance of real-time optimization and explore cost saving opportunities.

What is FinOps

FinOps is a relatively new concept in a cloud computing area. It's actively developing and being implemented to help companies adopt a cloud environment in a smart, secure and transparent way.



FinOps brings together the ideas of engineering teams and financial departments to establish a transparent and defined process, when private or public clouds of different cloud providers in multiple locations are used optimally and consider cost, performance, capacity and company perspectives. It helps to build a process of constant optimization, improve cloud usage experience, control cloud resources and their expenses.

FinOps is not about saving some money on your cloud IT infrastructure. This methodology aims to build an effective cloud environment to ensure the quickest and most profitable business growth, enable more productivity, new features releases and higher ROI. FinOps is all about profitable, flexible and agile management, as well as successful and meaningful collaboration among departments, such as engineering, financial and management. It is a continuous process of improvement on all IT processes in order to identify and remove bottlenecks and blockers, enable engineering teams to update products faster, implement cloud migration strategies in a timely manner and fully identify when you're in the red or when it's time to invest more.



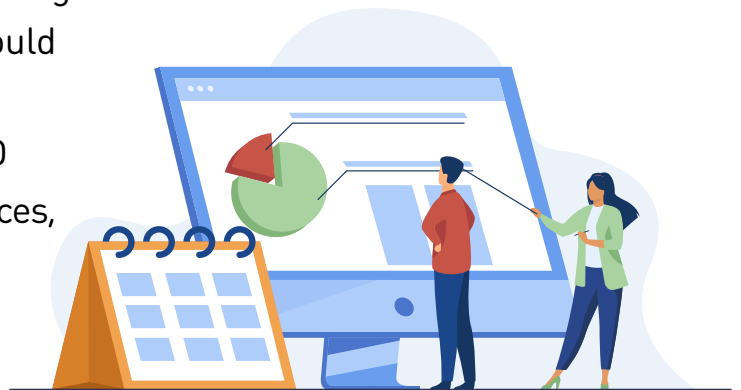
The difference between cloud cost management and FinOps

The majority of the people know what cloud cost management means and they are familiar with AWS Cost Explorer, Azure Advisor and some other vendors. But now there is a new term 'FinOps' which people are not familiar with yet and in the majority of the cases use in the meaning of cloud cost management. But this is something different.

Both terms cover how to save on a cloud cost, however there is a huge difference in how the process is executed and who the people responsible for it are.

Cloud cost management solutions are built for a few IT guys who run the analysis, get a 50-page report on what they need to optimize or improve and then, theoretically, they need to implement these reports and reduce a cloud bill. But in reality, the IT people can cover only 20–30% of the report themselves and to proceed with the rest they have to collaborate with resource owners explaining to them

what needs to be done and why they should do that. And those resource owners are engineers running their jobs, tests, R&D workloads. When engineers create resources, they prefer to launch more, with thicker flavor as it saves time and reduces the number of issues with high internal



resource utilization, getting out of memory etc. We all know that they are extremely busy and prefer to focus on other things than cloud cost optimization. For them, to execute items from the report means to allocate some time for that and take the additional risk that there might be issues if they rightsize or remove resources. That leads to deprioritizing or postponing the task and the IT guy has nothing to do with it.

FinOps, at the same time, involves the whole FinOps team in the cost-saving process and this team consists of executive engineering leaders, a financial team and engineers who are the main cost generators as they run automation, launch VMs and forget to clean up. Engineers need to have only one simple task in this process: be aware of their resources and be responsible for their lifecycle. Proper FinOps software should generate targeted recommendations to IT guys to cover 'low-hanging fruit' cloud cost optimizations and engineers to track and notify about their resources. Just simple TTL and proper tagging make the process truly transparent for engineers as well as easy to execute on a regular basis.



Cloud cost management solves immediate problems while FinOps and, in addition, builds a process. It doesn't matter what number you see as a possible saving in your cloud cost management solution if you cannot implement all the recommendations, and it is impossible without a proper process and engaging engineers.

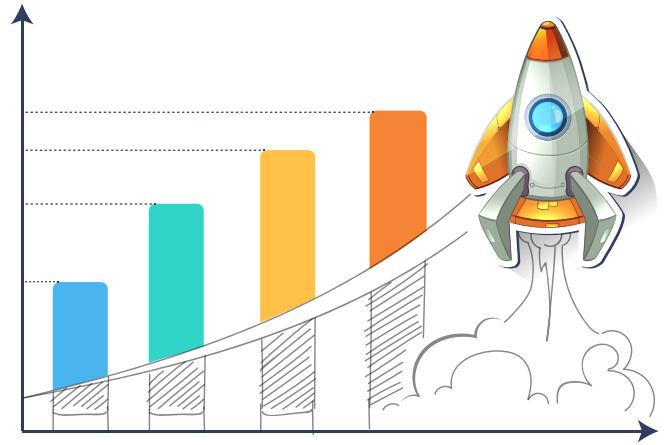
To summarize the difference between cloud cost management and FinOps have a look at the following table:

Cloud cost management	FinOps
Focused on an IT guy who needs to chase R&D teams to tag and rightsize resources, remove unused	Focused on the whole FinOps team including engineers who generate the majority of costs
Gives a report to help in a short-term, in a few months issues return	Builds a cost-saving long-term process by engaging and educating the team
R&D team is disconnected from the cost-saving process and has no responsibility	IT guys are responsible for building best practices, engineers - for their own resources and TTLs, OptScale - for educating teams and delivering best practices

Many software solutions mention that they provide FinOps capabilities (looks like it's a new trend) but take into account that the majority of them are great for sporadic cloud cost management but don't help with establishing a process and engaging engineers.



Why FinOps is gaining momentum



Consequences of a legacy IT infrastructure

The problems of legacy IT infrastructure aren't just aging servers and outdated software. Some companies have a significant number of combinations of software infrastructure stacks, doubling the complexity and price of maintaining the environment. This problem takes significant time, effort and budget of an IT staff. For instance, labor costs scale as the number of configurations increases. Different teams are required to operate, integrate and maintain disparate infrastructures and configurations.

Implementing an agile, modern infrastructure opens new opportunities by decreasing labor, maintenance and other operating costs. It also frees your team up to deliver new products or services. The key to success is a proper cloud migration strategy, followed by FinOps methodology.

Public cloud consumption growth

There is no better time than now to start implementing cloud technologies and FinOps principles for your business.

Cloud integration is on the rise and businesses are quickly discovering the tremendous benefits that come with it. In fact, 92% of companies have at least a portion of their IT department in the cloud¹. Compared to 2020, revenue from public cloud will grow by 16% in 2021, and another 15% in 2022². Global cloud spending will grow seven times faster than overall IT spending through this period. There are forecasts that worldwide spending on public cloud services and infrastructure will nearly double, to around \$500 billion, by 2023.

It's not a surprise that well-established public cloud platforms — Amazon Web Services, Microsoft Azure and Google Cloud Platform — will reinforce their leadership in the cloud market in 2021. AWS will confidently stay on top, while MS Azure, GCP, and Alibaba will continue their growth to try to minimize the gap.



What are the main FinOps principles?

Bare metal, private and public clouds offer not only different ways to provision and maintain resources, but offer different opportunities in how procurement and financial departments should treat and deal with them.

Bare metal and private clouds in the majority of the cases are about CapEx, when companies purchase and upgrade hardware and software licenses in some cycles, lease space and power, and pay salaries to personnel. Public clouds are based on OpEx with monthly or annual bills and a mindset of leasing but not owning. If you are a small company, it's not a big deal to adjust your processes, but for a huge company it's a real pain: private clouds with CapEx, public with OpEx, engineering teams provisioning resources in multiple locations and without any limits in public clouds transforming into enormous bills, financial departments having on-premise and public resources and different accounting categories. These realities present obstacles to cloud adoption across big companies and showcase why they often still prefer not to go hybrid cloud.

To eliminate the barrier, FinOps methodology was created and is actively developing today with thousands of practitioners and enterprise companies as members and sponsors.

FinOps is a process and a set of best practices to bring the following aspects to companies and stakeholders:



Unpredicted cloud bills

When investing thousands of dollars into cloud infrastructure, it is obligatory to be sure that you do so in a proper way. An interesting lesson emerged from 2020 to help one understand the importance of setting up FinOps practice and to avoid budget overruns in future. It was a free trial experiment³ which ended with a whopping \$72,000 bill overnight.

It sounds impossible, but this is the real case of an unpredicted GCP bill. In such circumstances, it's fair to say that FinOps is a necessity nowadays.

This year, wasted cloud spend is expected to exceed \$17.6 billion. More than \$11 billion of this wastage is expected from idle resources, while the additional \$6.6 billion is attributed to oversized resources. These numbers are often the result of a lack of access to actual data.

Gartner predicts that enterprises that lack cost optimization processes will average 40% overspend in public cloud this year.

With a focus not only on budgets, but also on overall cloud usage and cloud health, any FinOps team can identify patterns in cloud usage, provide real-time optimization insights and prevent significant overspends. Regular cloud cost optimization and management help to constantly analyze your cloud usage and advise how you can get better performance with less cost.

That's why FinOps has been becoming a mainstream as a foundation of cost-efficient cloud management for several years. Daily usage of FinOps methodology helps to overcome a set of evergreen problems: inaccurate forecasting of evolving bills, overspending for unused cloud resources, non-transparent shared cost, etc. Thus, cloud cost management is important for reasons beyond simple cost control. In particular, good cloud cost management gives businesses the ability to plan for the future, reduce waste, and forecast both their costs and their resource needs.

Managing cloud costs is like creating a solid foundation. Get it right and all kinds of perfect, long lasting business processes can be built on top. Get it wrong and, in the long run, it will cost more and cause a whole heap of trouble. The benefits of a FinOps strategy is clear.

Sources:

¹ <https://www.idg.com/tools-for-marketers/2020-cloud-computing-study>

² <https://www.gartner.com/en/newsroom/press-releases/2019-11-13-gartner-forecasts-worldwide-public-cloud-revenue-to-grow-17-percent-in-2020>

³ https://www.theregister.com/2020/12/10/google_cloud_over_run

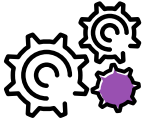




Visibility – cloud spending transparency and forecasting



Optimization – cloud expense optimization



Control – an established process of monitoring and controlling cloud resources and their expenses



Collaboration – FinOps is not about one person at a company but a constant collaboration between engineers and their managers, between R&D, Operations and Financial departments, CTO, CIO and VPs offices

Here is a list of people (but not limited to just these positions) engaged in the **FinOps process**:



Before jumping into the steps to adopting FinOps, it's important to define the end goal - to build a transparent and defined process, when clouds are used in an optimal way from cost, performance, R&D and company goals perspective and money waste are set to minimum.



FinOps principles: Visibility

Private clouds have regions, tenants, clusters, etc. Public clouds have linked accounts, regions, IAM users and so on. Usually, it is a complex task to figure out how much is spent on each application, or by any team, but this is crucial to understand bottlenecks, budget & forecast and avoid wastage.

Visibility, in case of FinOps, means identifying organizational units and mapping them onto cloud resources with preserving historical data for further trend analysis. Units refer to items like business units, teams, individual engineers, applications, cloud services and asset pools. As cloud resources are constantly changing, it's important not only to capture the current state, but also to develop a process of getting visibility in dynamics.

What practices to get the visibility are:

1. Identify the units (mentioned above) to be tracked.

Don't spread at the beginning trying to control everything, focus on what's most important. Start with business units, teams and individual engineers, as it's a good way to begin the FinOps education process.

2. Define a policy how to identify resources belonging to a specific unit.

It can be either tagging or a resource naming convention. What's important is that when you define it, you should follow it to succeed.

3. Define a policy to identify resource creators.

It's tricky to figure out resource creators in public clouds, so it is extremely helpful to have a policy for that, even if it is just a Jenkins job. Later, you may need to figure out who or what created an unassigned resource, and this approach will help.

4. Create budgets and charts to track units.

Use cost management tools to properly track budgets.



5. Set TTL rules and create clean-up jobs.

Don't allow any resources without TTL. TTL can be set with tags or as a part of a name and it helps to avoid wastage and understand the purpose of the resources better.

6. Review your budgets in dynamics.

Unmanaged cloud expenses have a tendency to grow. You need to keep an eye on them to prioritize what budgets need immediate action.

7. Avoid unassigned resources.

You should build a habit of zero tolerance to orphaned or unassigned resources. The more such resources you have, the less transparency you get.

8. Don't forget about 'hidden costs', cloud accounts and regions.

A cloud is not just about VMs or containers; there are dozens of other services and items that cost money, but are not so obvious. One of the most important aspects is network traffic, which can be a significant chunk of your cloud bill.

9. Don't forget that your resources can be spread between multiple cloud accounts and regions.

Taking those principles to action can immediately shed light on your current cloud expenses and opens the door to optimization, which will be discussed in the next chapter.





FinOps principles: Cloud optimization

Cloud optimization appears to be low-hanging fruit, but there's good and bad news. The good news - in the majority of cases, you can quickly see instant results from FinOps. The bad news - you have to work on it constantly. One-time optimization gives results, however in a few months you can get back to your previous cloud bill.

There are a few practices you can use to optimize cloud resources and reduce your cloud bill. The most important factor is to establish a process of smart and conscious resource consumption and provisioning so you would deal not just with the results, but make optimization an integral part of all your internal processes.

Here are a few ways to optimize your current expenses, followed by how to make it a part of the entire cloud provisioning process.

There are hundreds of cloud resource optimization tools. Some are really advanced, some just look at machine monitoring metrics and offer cheaper solutions. Focus on what you can do yourself with your team and without any tools. It's important to analyze the market and identify a solution that conforms with FinOps standards and can help you with all the four FinOps principles.

You may want to consciously focus on IaaS services, as they are the most common. All items should work for all public clouds.

Unused resources

Start with unused resources you can clean up:

1. List all the volumes and snapshots not being attached to any VMs or used to create images. Review and remove them. When you remove images, don't forget to revise snapshots as they are tied to images.
2. List all the stopped VMs and check if they are needed. If they don't cost you anything as a VM, they still have volumes attached.



VM re-flavoursing

Moving on to VM re-flavoursing: review performance metrics from your VMs and see whether you need to choose less expensive flavours. It would be nice to start with recurring resources like CI/CD jobs as you'll get a measurable result quicker.

Reserved instances and saving plans

Consider reserved instances and saving plans. Be cautious: reserved instances and saving plans which aren't properly calculated can increase your expenses instead of reducing. You can find more articles online.

Spot instances

Consider spot instances. They are 2–4x cheaper than on-demand and are ideal for CI/CD jobs and short-term tasks.

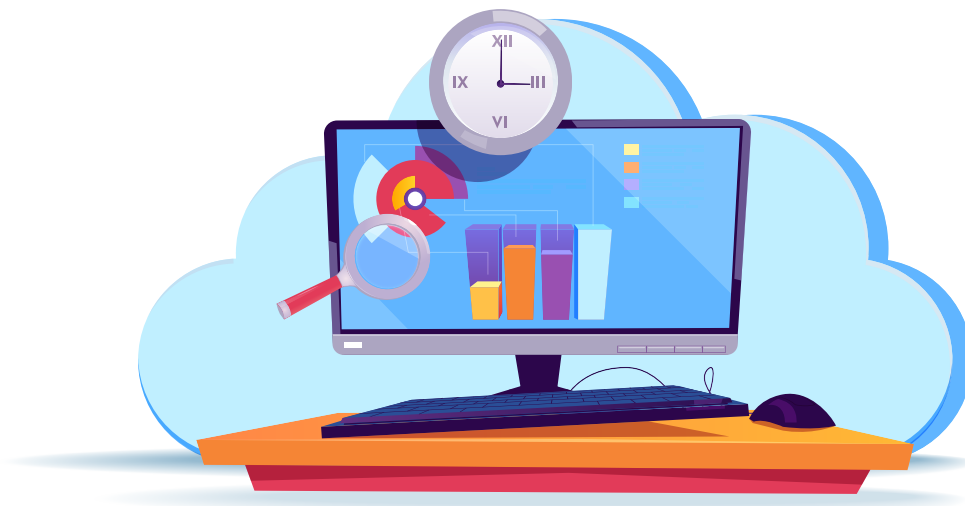
Storage and networking optimization

1. Review your cross-region and outbound traffic. Both are not free and can astonish you when you dig deeper.
2. Turn on and configure retention settings for partial objects in all your object storage buckets. In object storage you pay for allocated space and sometimes you have partially loaded objects there which consume storage but are useless as they are not integral.
3. Find duplicates and buckets/folders belonging to inactive users and projects. Proper orders in any object storage are rare if at all to occur.
4. Consider using cold storage for some of your buckets and folders and this type of storage is way cheaper.
5. Consider using CDN services instead of just object storage. You can improve your user experience and save on costs of storage and outbound traffic.

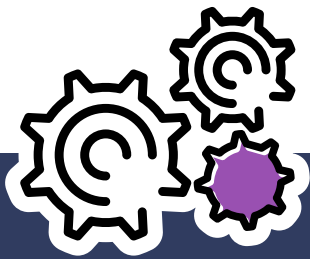


Let's also consider **building the process** that should help you bring more order and use clouds in an optimal way.

1. Tag all resources. You can use multiple tags to identify owners of the resources, TTL, project, team, whatever. Resources without a tag should be removed.
2. Create a clean up script that will use a TTL tag and remove expired resources. Don't rely on your engineers to clean up resources manually, or Jenkins jobs to do it automatically. CI/CD jobs can fail and engineers can forget and go for a PTO.
3. Create a FinOps team to review the steps above and implement them. You need to do so regularly or it won't work properly.
4. Consider other clouds and regions. Not all regions have the same instance price and performance. You should actively monitor those metrics to provision in the best performing and cost-efficient cloud, region and availability zone.
5. Find a software solution to assist you. Focus not just on a tool with the best marketing but on the one that really adopts and sets FinOps standards. Cloud optimization tools are not enough.



You should think about FinOps not only when you are a company with \$1B revenue and 1,000s employees, but from the first day of your company as clouds can either boost growth or be a real pain – up to almost ruining your business (here is one of the examples). FinOps is dedicated to help you get the best out of the clouds paying only what you should.



FinOps principles: Control

Being able to see historical data of your cloud spending and optimize it is important, but it's crucial to have an opportunity to build a process when funds are allocated and used only for what they should and with an option to manage and forecast the expenses.

The benefits of the control are clear, but let's summarize them:

- It's the main driver of constant optimization when there are no hidden costs, orphaned or unused resources.
- No budget overspending - you know your budget and can forecast the spending projecting it on the current month, quarter, or in some cases even, year.
- No destruction to your team when the team periodically has to review the expenses and figure out a way to optimize to stay under budget.

Here is some practical advice for FinOps teams on how to build a proper control process.

Building this process:

1. Create a separate budget for every granular item

Create a separate budget for every granular item you would like to track. It can be (but not limited to) either a CI/CD job, or an application cluster, a R&D team, a PoC project, etc.

2. Assign an owner to every specific budget

Don't expect that one person can properly track more than seven budgets. This can be a DevOps engineer or a team member of your FinOps team.

3. Identify a rule on how resources should fall under a specific budget and an owner

It can be a tag or a resource name prefix/postfix or some other rules used at your company. Ideally, if the resources can fall under budgets automatically (CI/CD job resources created with a tag, engineers use their name in prefix etc.).

4. Set TTL rules

It can be another tag or, for example, a rule to remove resources older than 24 hours if they don't contain some specific 'do-not-delete' tag.



5. Create a cleanup script

Create a cleanup script to be periodically launched and to remove resources with expired TTL. Don't forget about volumes, snapshots and images, they are costly resources, but at your company, you should have other categories.

6. Compose a script or use third-party cloud cost management tools

Compose a script or use third-party cloud cost management tools to calculate and track budget forecasts and give up-to-date cloud expense data to every resource owner. Cloud-native tools are very limited in a way you can track expenses—keep in mind that the main idea of the cloud for you is to spend more, not to save. Consider sending the data to the budget and resource owners every Friday morning so that they have time to review and fix the issues before the weekend.

7. Send instant alerts

The script from p.6 should be able to send instant alerts if there is an actual budget overspend or the forecast is 1.5 bigger than your budget. It gives more room for some corrective actions.

8. Control reserved instances and saving plans usage


It is alarming how many companies take those options, but still use them.

9. Control spot instance usage for CI/CD jobs

For the majority of the recurring jobs, your team can use spot instances but the team may not be familiar with the functionality.

10. Educate your team

This is the most important step.



Educate your team about the steps and explain why they are important. Running all the steps above is a process, but not a one time action. The majority of the companies fail exactly because of forgetting to execute the steps recurrently.

Keep also in mind that there are cloud cost management tools that can help with the principle and take care of the majority, but not all, of the steps. If your team doesn't take it seriously or isn't educated, you won't get the best out of FinOps.



FinOps principles: Collaboration

The fourth and final principle of the FinOps methodology is collaboration. There is practically no room for development without collaboration, we interact with other people to get feedback, grow and complete some complex tasks which cannot be done on our own. Proper cloud usage is exactly an example of such a task. Don't only interact within a team of engineers or within one department, but employ cross-functional collaboration with a company where engineers, operational, finance and executive teams are involved.

This strategy is important because actions and decisions made by one functional team influence others and the impact can be significant or even fatal for a business. Just imagine the case when an R&D team starts a new project and provisions hundreds of new VMs for that without proper budget planning or notifying the finance and executive team about a cloud bill forecast. Imagine the executive team cutting costs without proper planning with engineers.

The majority of cloud actions cost money, this is the nature of clouds. You pay for computing, storage, traffic, PaaS, marketplace products etc. Staying in budget and R&D elasticity is an equilibrium that is not possible to achieve with one person. For small businesses, it should be at least about the collaboration between CTO/VP of engineering and CFO, for medium-sized and enterprise companies the process and collaboration should be more complex. There should be a FinOps team (it doesn't mean that they need to sit in one room at the same time) of executive team members translating company strategy; finance people responsible for budgeting, financial control and forecasting; and engineers/operations/DevOps team that works directly with a cloud.

The FinOps team should be responsible for:

1. Defining cloud usage strategy
2. Defining and adjusting cloud budgets
3. Setting cloud usage practices
4. Reviewing results and adjusting if necessary



Some crucial roles in the FinOps team:

- 1. Financial analyst and controller** - a person that translates expectations and goals from the finance team. It can be CFO or somebody from the CFO office.
- 2. Cloud practices visioner** - a person who sets cloud usage best practices, educates engineers how to properly use clouds and explains why cloud expenses should be another KPI in R&D. Usually, it's either a separate role or somebody from the DevOps team.
- 3. Executives** - Senior VP or a C-level person who controls how the collaboration works and reviews results.
- 4. Engineers** - use clouds according to the best practices and budgets, report if there are any escalations.



The main reason why companies do not succeed with clouds, or have serious issues using them, is the lack of proper collaboration and planning. Cloud is another fragile asset companies have at their disposal, but it brings outstanding results only if used properly. Don't underestimate the value of cross-functional collaboration and or cloud usage and get to another level.

What needs to be done to build the FinOps at your company

FinOps is a new term and the community is just developing, but it's the right move to help big companies adopt clouds in a smart, secure and transparent way. Start small and you will see positive results soon.

The most difficult step is to get a push from the company executive team that FinOps needs to be adopted. The process can't be established (but, of course, some of the practices can be used) if there is no intention from CTO, CIO, CFO and VPs as they need to motivate their teams and build collaboration.

Create a team that will be responsible for the FinOps adoption. It should define the procedure, timeline and best practices to implement. It should have at least one team member from engineering, operations, DevOps and financial teams to cover multiple aspects of the problem. Constant education. If you don't explain to your engineers why they need to keep costs in mind and what process to follow, you will not succeed. FinOps is about a process and only then about granular actions.

Start small, grow later. Don't try to scale the process to the whole company. Start with a one team, establish a process and then scale it on other teams and departments. Use cloud cost management and cloud arbitrage solution to assist with the FinOps adoption. There are multiple tools on the market that can help with cost management, optimization and assisting with optimal resource provisioning.

Measure and adjust. Keep in mind that FinOps for multi-cloud and hybrid cloud environments is different. Not all the recipes work for every company. The FinOps adoption team should have regular sync ups to control results and adjust if necessary.



Engage engineers in cloud cost saving

There is plenty of cloud cost management software, dozens of cloud cost optimization scenarios and strategies but practically all of them have a serious issue that limits the result of saving.

The main idea of traditional cloud cost management tools is to scan your cloud billing and discover existing resources to give you a recipe of what needs to be done to save on your cloud bill. The main focus is on:

- unused resources (volumes, AMIs, snapshots, elastic IPs)
- issues with rightsizing - when the wrong flavor is selected and, in the majority of the cases, downsize can be applied
- reserved instances and saving plan

And that is a really nice report with a nice and appealing number of X dollars possible savings. But the problem is who the user of this data is. Usually, there are one or two IT guys responsible for cloud cost saving. They can take SRE, CloudOps, DevOps or Central IT positions, in different companies they have different titles. And they can definitely purchase more reserved capacity or saving plans but when it comes to unused resources or rightsizing, they can't just go and apply recommendations, they have to interact with the resource owners. And this interaction kills the majority of the cost saving potential as those one or two guys have to talk to engineers and SREs, make them review the resources, explain their goals.

Engineers want to write code and close Jira tickets. They don't go to cloud consoles, forget to clean up resources and don't care about costs. And now they need to change flavors taking risks that some jobs will fail with out of memory, review some old resources. It's obvious that they will do their best to postpone such tasks and avoid discussions. As a result, usually, companies can save only 20–30% of that nice possible savings amount, IT guys will do their best to avoid the next round of communication with engineers and a company just accepts that they cannot save more.



How can it be improved? Only by engaging engineers in the process. Yes, we remember that they don't care about costs and don't want to take new responsibilities but engineers need to have only one simple task: to be responsible for their own resources and their lifecycle and a company's task is to give them instruments to make the process simple and non-intrusive.

In the ideal case companies should use tools that:

- give a way to set and update TTLs, notifications about expiration. Setting tags and running a script to send emails can be an option
- give engineers a way to track their resources, get alerts, update TTLs via Slack or Microsoft Teams
- give personalized recommendations about engineer's resources so he or she doesn't need to interact with IT guys
- give managers and budget owners a way to track progress and results to make corrective actions if necessary
- educate engineers and managers and simplify their usage of the instruments and explain the business need of such actions



As a result, it gives not just one or two iterations of cloud cost optimization but builds a simple but invaluable process where R&D team that generates a significant chunk of cloud expenses helps to save and engineers don't feel they have another annoying task, just to take care about their resources.

As with the majority of things in IT, the best principles and standards are only as good as how well they are followed by the whole team. The limiting factor and risks, more often than not, aren't the effect that modern technologies offer, but the people and processes involved. The intersection of an engineering team comes into play when it gets to FinOps adoption and cost optimization. So if you are eager to be aware of the cost of deploying resources and how to architect for cost optimization, you definitely need to actively involve your engineering team in FinOps and cloud cost savings.

Today when a lot of companies rely on an OpEx environment, an engineering team feels a lot of freedom and can effortlessly spin up resources as desired to run their services. It is recognized that for many cloud users, it's often a challenge - where engineering spins up resources without standardized guidelines such as setting up budgets, TTL, alerts and notifications, appropriate resource tagging and frequent cadence - to view cost from an engineering and finance perspective. Although this 'freedom' empowers velocity and better product development, it's not the optimal way to build an R&D process.

Involving engineers as owners of the majority of resources is a critical issue in order to define budgets, keep cloud costs under control and forecast expenses correctly. Every team member can help build an effective cloud usage experience and manage cloud costs.



When should you start FinOps?



Businesses are interested in moving to the cloud for a number of reasons. Perhaps the most common is the fact that public clouds grant businesses with a tremendous amount of external, remote resources at a remarkably lower cost than it would take to implement physical infrastructure of the same scope. Connecting to the public cloud can technically be done in an instant, while physical implementation of the same amount of computing power would require planning, ordering equipment, receiving the order, unpacking it, setting up by the IT team and then ongoing maintenance. In the same sense, many operations are choosing to shift their infrastructure away from their current physical setup and into the cloud, cutting the costs of owning and maintaining physical servers and other hardware and, at the same time, increasing their virtual bandwidth.

Even if you have switched from CapEx to OpEx using public cloud and have already optimised your expenses, you must be aware of having more saving opportunities available. It doesn't matter how much money you invest into your cloud IT infrastructure. There is no reason to wait for the first heavy bill from AWS or another vendor to start implementing FinOps. Although you'll find a lot of ways to save your IT budget in case of a thousandth cloud bill, starting FinOps from the first VM in a cloud prevents you from unpredictable cloud bills, unassigned and idle resources.

Don't wait till a cloud bill becomes complicated and all things go off the rails. Huge overspends of IT departments on their cloud infrastructure often lead to harsh restriction of budget or even serious cutdown. It can affect a business in general or become a bottleneck for your engineering department. Unfortunately, big overspends are the most common driver for CIO or CFO to pay more attention to cloud spends.

Implement all main FinOps principles mentioned above from Day 1. Of course while your infrastructure will be growing, more recommendations will appear. But the main principles such as visibility and control can be easily implemented in the earliest stages. You can start from simple tagging of resources and then grow up to your own FinOps department.

In general, it's not important which way leads your company to the understanding of the importance of FinOps value. If you already realized that you are willing to change your approach to cloud costs, it's the first, small, but incredibly important step towards smart cloud consumption and better unit economics. The value of starting the process as soon as possible can't be underestimated and benefits will appear almost immediately.

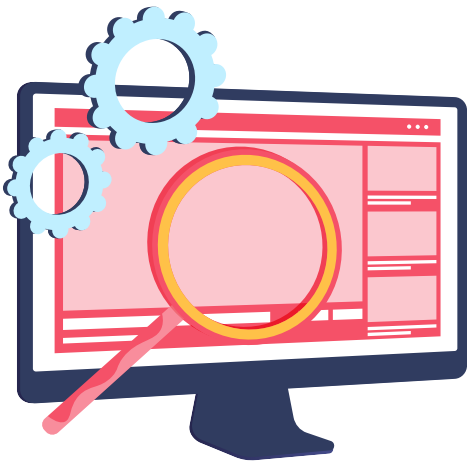


What are the main cloud cost management and optimization challenges?

Cloud cost management and efficient optimization is the trickiest task and the main challenge after cloud migration is finished. To avoid concerns connected with resources and cost management, you need strong and live collaboration between the following teams: government, finance, operation, product management and engineering.

Public cloud vendors offer businesses many options to choose from in terms of cost models and financial structures for cloud optimization. Due to a complex nature of a cloud and with multiple opportunities at bay, business leaders are constantly looking for how to alter and improve their financial management strategies. They opt for effective cloud cost optimization to be realized.

So what are the main challenges facing business with regard to cloud financial management today? When it comes to financial cloud management some of the most commonly cited pain points include handling shared costs, forecasting correctly, aligning technology leaders with others in the organization and getting engineers to act. Additional factors to take into account include eliminating unnecessary cloud waste and accounting for non-IaaS costs.



You may face the following challenges:

Lack of visibility.

The complexity of the most cloud service providers' continually varying billing practices and the invoices they provide. Furthermore if a cloud platform is not well-managed by an enterprise administrator or well equipped, the data may get leaked via a pen drive or an email. Therefore, it can become difficult for the administrator to find out who leaked the information.

Limited functionality.

Lack of crucial features of native cloud service providers tools makes the cloud management and cost optimization process very complex.

Lack of automation.

Manual tagging, dozens of clean up scripts, weekly reports created by an amateur responsible person can easily become a mess. The bigger the IT team gets, the harder it is to set and control all these tagging rules.

Oversizing.

There are several reasons that lead to oversizing and they might be rooted in the design process: inaccurate demand forecast, wrong sizing because of weak performance of testing methods, extra added capacity when there is no real need.

Forecasting complexity.

Accurate forecasting requires a set up workflows and processes, deep expertise and real-time data. Changes of your cloud consumption may be unpredictable, pricing models may vary, so numerous factors must be taken into account to build a perfect forecast. If you use separate cloud providers, it's highly likely that you'll face even more difficulties. It's always difficult to predict your spendings before you migrate clouds, which can lead to overspending instead of saving.

Lack of experience, time and desire.

Who is responsible for this task in your company? A CFO with hands full of other stuff, or an engineer who is not interested in cloud costs and just willing to finish a new release ASAP. It's a common problem that a responsible person has no appropriate experience, knowledge base or just enough time to control the whole IT department.



Once these challenges are solved, you'll have a right-sized, efficient, optimised and elastic cloud in place. However, the cloud cost optimization process needs to continue throughout the production lifecycle as your demand and IT services evolve.

Deep-diving into FinOps and overcoming challenges

FinOps should be part of the company's culture. Team members should be instituting best practices for FinOps solutions and collaborating in order to make informed decisions, optimize cloud spends and operate smoothly.

Like any business unit, **collaboration of stakeholders** is the key to success. If FinOps team members don't collaborate, it will be difficult to provide business value and generate FinOps cloud reports. It's also critical in order to define budgets and forecast correctly. Different stakeholders include:

- **Executives**, such as your head of infrastructure, CTO, CIO and others in cloud management
- **Business & product owners**, such as your director of cloud operations and business operations manager
- **Finance**, such as advisors, technology procurement officers
- **Engineering & operations**, such as devops, software engineers and engineering managers

Collaborating with the latter group mentioned is an important piece to enlisting an effective FinOps strategy. **Getting the company's engineers to take actions is often one of the biggest struggles in cloud financial management.** Having a centralized team can help to overcome challenges, including assigning true ownership of cloud usage to stakeholders to keep them responsible.

Additionally, businesses will run into further challenges if they do not **understand fully-loaded costs**. It's important to assign tag strategy and compliance, as well as map spending data to the business.



Having a siloed procurement team simply does not work. To effectively determine costs, **businesses need a FinOps team that is cross-functional and working together** to come up with procurement best practices and optimize cloud rates and management. Additionally, cloud vendors often offer discounting options and ensuring all stakeholders are aware of these can help to save the business significantly. They can also decide on pre-purchase capacity and licensing in order to further optimize their efforts.

In order for this cross-functional team to operate effectively, they need to align their goals to those of the overall business. From identifying business use cases to developing a clear communication strategy, there are many things this team can do to ensure success. Encouraging them to set up a regular cadence of meetings and regroupings, as well as debriefs during times which make sense for your business, so they can come prepared and seek common solutions together is critical.

Creating a **template of sorts for decision making processes across units** can also prove helpful. This framework will also help to determine whether decisions being made are in alignment with those of the business itself. These regular meetings can also help to bring the smartest minds of your company together to discuss further optimization strategies. Sometimes individuals more on the outside are able to provide a different point of view or bring forward additional information which can help business leaders optimize their cloud spends more thoroughly.

The move toward cloud financial management collaboration enables today's companies and those involved in every relevant sector of the business to actively participate in the process. This joint effort will undoubtedly help companies to increase efficiency, optimize cloud usage and reduce cloud spend.



A cloud bill is a document that shows how much your business spends on cloud services. Think of it as a grocery store receipt which consists of a list and prices for each item. It's critical to be able to decipher the specifics of your cloud bill to know what you're actually paying for. It also helps you figure out how you can optimize your cloud spend.

An example of a typical cloud bill. It's often difficult to understand it fully without due preparation.

Nevertheless, upon receiving your cloud bill, the first thing you should ask yourself is: “Why is my bill so high?” Since it’s typically not obvious what exactly you’re paying for and, more important, where you may be overspending. Often, business leaders find out that they’re paying for services they never knew existed. Plus, there’s another issue - it’s not always clear what terms on the bill correspond to which cloud services.

One of drawbacks of using multi-cloud infrastructure is that you'll often see different terms for the same services across your cloud accounts.

Common services to keep an eye on are **cloud computing, cloud storage and cloud networking.**



Cloud computing

Cloud computing is the most common cloud service you're likely paying for; and it's pretty easy to define. In simple terms, it's the core service that enables you to deploy and run your software remotely. In Google Cloud Platform, it's called Compute Engine, while in AWS, you can find it by the name EC2.

In the overwhelming majority of cases, cloud computing resources are underutilized. Therefore, the best thing you can do to save is to review the virtual machine usage carefully and downscale it to your actual needs. If you're able to accurately forecast your future demand for cloud computing for the upcoming months, or years, you can save up to 72% (depending on the service provider) of VM costs by opting for reserved instances or by using savings plans. Most public cloud services offer significant discounts for paying in advance.

Cloud storage

Cloud storage is arguably the second most common and costly cloud service. It's exactly what it sounds like — a way to store and move your data in the cloud. Cloud providers have developed services to meet the requirements of modern cloud-based businesses. Most of them fall under two categories — object storage and block storage. Whichever service you're using, there's significant room for cost reduction. To realize this, you need to sort out your cloud bill by tagging snapshots, volumes and images. This process will allow you to get rid of unused resources.

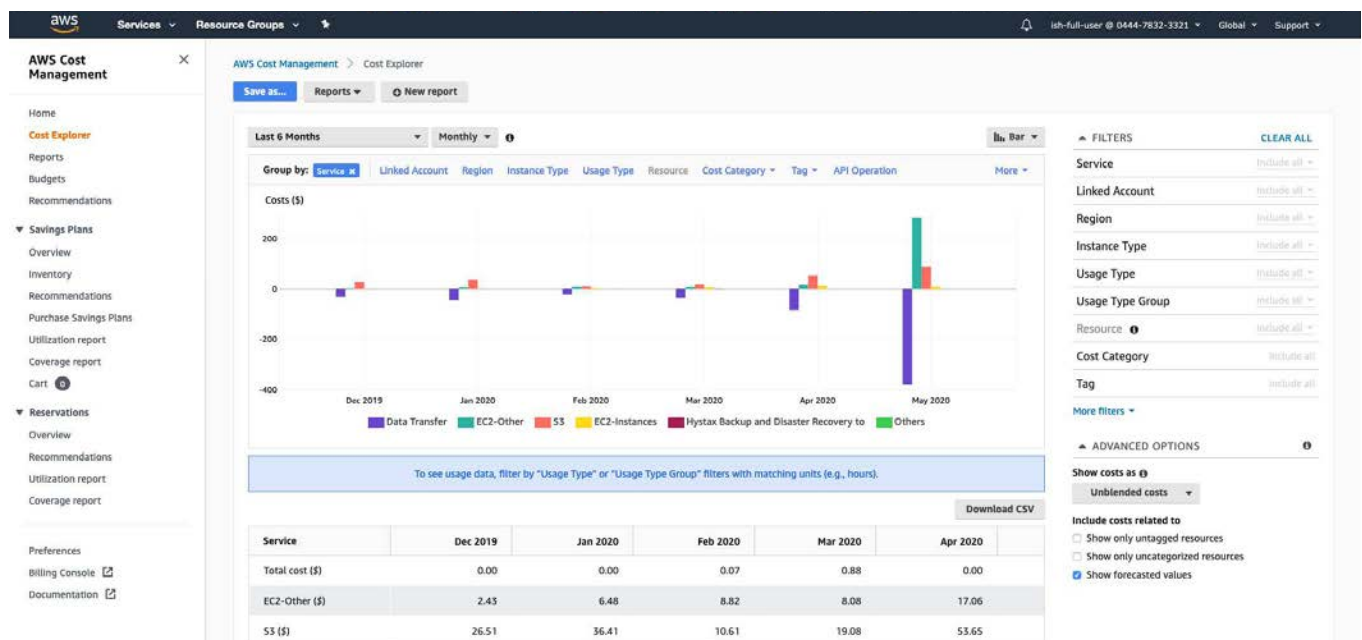
Cloud networking

Cloud networking is another essential budget line for the majority of organizations. This service enables you to deploy virtual networks on a cloud infrastructure to provide the transfer of data and communication across remote locations. The cloud networking spend varies substantially and depends heavily on the amount of cross-region traffic, the presence of data locality issues and failure to use CDN services. Business leaders can look to identify and eliminate these problems.

Using native cloud billing reporting tools: AWS Cost Explorer, Google Cloud Billing Report

Whether you're using cloud services from Amazon, Google or any other cloud provider, you're typically covered with billing reporting tools.

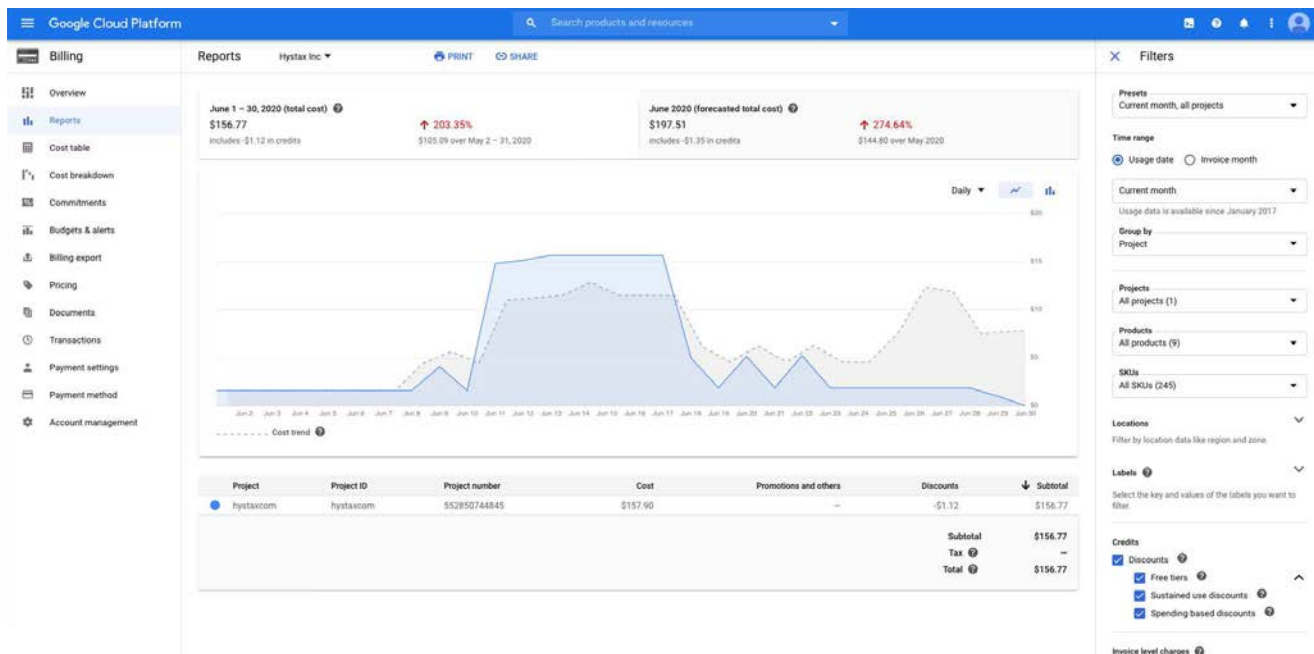
For instance, Amazon Cost Explorer allows you to view and analyze your costs and usage to the first approximation. It's equipped with several reports, which you can use to observe the historical data, get insights into how much you're likely to spend in the next three months and even get advice on what Reserved Instances to purchase. The tool has a number of predefined views that come in handy for most cloud users.



AWS Cost Management Dashboard



Like Amazon Cost Explorer, Google Cloud Billing Reports allow you to get a bird's-eye view of cloud usage costs while discovering and analyzing trends. The report offers some basic flexibility. Users can specify the desired time range and data range, apply certain filters and make groupings by project, product, stock-keeping unit or location during this analysis.



Google Cloud Platform Dashboard

Other cloud services, including Microsoft Azure, Oracle and others also have tools that allow you to handle your cloud costs. They're easy to set up and to use, but they can't boast rich functionality. Further, all of these reporting tools can only work with their respective cloud services. In the case where you are using a multi-cloud strategy, these silos prevent you from seeing the big picture. Finally, they don't provide enough transparency. The structure of these reports makes it nearly impossible to track the owner of certain resources or identify the individual who can be attributed to the overspending.

You need to clearly understand that implementing some of these scenarios will require you to remove resources so you should understand what you do, and what consequences will follow. Remember that you need to check and implement the steps for all the cloud regions in your account.

How to reduce your cloud bill

We share a few steps you can easily implement now to save some cash. Some of them are simple and obvious, but some are not.

You need to clearly understand that implementing some of these scenarios will require you to remove resources so you should understand what you do and what results will follow. Remember that you need to check and implement the steps for all the cloud regions in your account.

The top 5 steps you can take:

Step 1

List all the stopped instances in your account. Filter the ones that are stopped longer than some period (one or three months etc.), think if they are still needed and remove them otherwise.

Here are some AWS SDK queries to get list of stopped instances:

```
import boto3

client = boto3.client('ec2')

instances = []
result = client.describe_instances()
for reservation in result['Reservations']:
    for instance in reservation['Instances']:
        if instance['State']['Name'] == 'stopped':
            instances.append(instance)

print(len(instances))
```

Step 2

List all the unattached volumes and snapshots not used for any of the machines. Remove the unused.



Step 3

Clean up your S3 buckets. I've never seen an account without some thrash files and objects, duplicates, etc. If you need something, keep it in S3 or move into Glacier to save money.

Step 4

Identify unused IAM users and list their resources. There is a high probability of inheriting unnecessary cloud resources left when people quit. Think about whether you still need them.

Step 5

Check whether you have cross-region traffic and, if yes, think if you really need it. It's one of the top cloud expenses, but people actually forget about it. If there is no reasonable cause to stay in different regions, consolidate resources under one region.



And TAG, TAG, TAG your resources. Have a proper naming policy. It's common when every engineer names resources as he or she wants, and later it's impossible to identify an owner.

Cost projection to reduce cloud costs

Cloud cost projection should be an ongoing process for your company. It involves estimating impacts of changes to your company's cloud hosting solution in order to reduce recurring expenses.

According to Synergy Research Group, companies spent over \$30 billion on cloud infrastructure services in the second quarter of 2020⁴, 33% percent more than the same time last year. Company cloud costs have increased between 30-50% every year since 2016, and they have no signs of decreasing.

Cloud cost projection is a powerful method to optimize your company's cloud deployment. Cost projection enables you to model future changes to your cloud deployments, including changes of cloud providers, regions and workloads.

This chapter goes over some suggestions on how you can add cost projections to your cloud financial management plans. First, use cloud cost projection to estimate the impact of changes to your company cloud costs. Then, model the impact of more granular changes. For example, migration to another cloud or region to reduce costs. Estimate how changes of your company's cloud provider or the regions hosting your company's cloud solutions can reduce your cloud spend.



Sources:

⁴ <https://www.srgresearch.com/articles/quarterly-cloud-spending-blows-past-30b-incremental-growth-continues-rise>





Investigate your current cloud solution

The first step in cloud expense management is to get a good sense of how your company currently spends money on cloud infrastructure. By keeping track of past expenses, you can model future expenses. You can also use historical spending patterns to model the forthcoming spending.

Most software asset management solutions offer customizable dashboards where you can see current costs on one page in real time. You can use reports to analyze spending based on a timeframe (day, week, month, year).



Create a cloud spend budget

A big part of cloud cost governance and budgeting system is not only keeping track of cloud cost spending, but cloud cost savings as well. Just as a financial budget helps keep costs in line, a cloud cost budget sets guidelines for maximum cloud spend.

You can integrate a financial plan and policies for expectations around cloud usage. For example, do you need to maximize high availability or fault tolerance? If your systems can sustain some amount of annual downtime, perhaps you'd skew your solution to be more highly available, for example.

Once you've developed a budget, you can see the impact of cutting cloud costs more granularly.



Migrate to another cloud or region to reduce costs

You can project your company's cloud costs against other cloud platforms and regions to see how to reduce cloud costs.



Cloud storage pricing comparison

Using the cloud cost comparison, for example, you may decide to migrate some storage from an Amazon S3 Standard to a Microsoft Azure Block Blobs. The storage pricing not only differs among the various cloud providers, but also is contingent on many multi-factor parameters.

For example, every cloud has a number of price options depending on a storage tier, locality and warm/cool storage type, so the cost projection becomes a complicated process due to a necessity of taking different dimensions into consideration.



Smart cost projection and cloud pricing comparison either on other platforms or within one cloud enables you to find out how to optimize cloud infrastructure and reduce costs.

For example, if you currently host a SaaS workload in multiple regions, you can project the cloud cost savings of migrating it to another region, based on usage, and see the savings before making the switch. This way, just as in financial budgeting, you can model the most effective cloud computing cost savings.

If most of your cloud activity comes from a specific region, you can use cost projections to estimate the value of switching to hosting from another region, if you're willing to sacrifice some availability for cost savings. For example, you could host Europe, the Middle East and Africa (EMEA) instances from Asia-Pacific (APAC) regions during off hours. That might be weekends, holidays and non-work hours for a business-facing app or during work hours for a leisure application.

You can also investigate the adoption of a multi-cloud model.



Evaluating a multi-cloud model

There are benefits and disadvantages of offering a multi-cloud system, where you use more than one cloud provider to host services. The benefits include reduced costs from discounts and plans by different cloud providers. Companies can also use software and operating systems offered by the cloud provider to optimize spend. For example, using Microsoft software in an Azure cloud or native products in AWS.

The disadvantages are that each cloud provider can have complex license terms and requirements. It also takes time to learn the intricacies of each vendor, or for IT staff to obtain training to use the products. The cost savings of a multi-cloud must be weighed against these outside costs that impact deployment.

Cost projections give you options so you can predict future savings. This process is a continuous cycle. Your company should regularly investigate, budget, deep dive into granular processes, and analyze the benefits of migrating to other cloud providers or regions.

Take advantage of cloud cost management to realize cost savings and forecast future expenses. Make cloud cost projection a part of your cloud expense management solution.



How to stop paying for idle cloud instances and services

Whether you're using AWS, Azure, Alibaba, Google Cloud or, more likely, implementing a multi-cloud strategy, wasted cloud spend is unfortunately nothing new. It probably comes as a little surprise that a cloud can be a costly investment for many businesses, especially when cloud usage is not managed properly. Despite the plethora of tech tools and deep analysis and data available to cloud users, many businesses neglect the details and miss the mark. Companies can greatly reduce cloud costs, and do so quite easily, with the right monitoring in place.

Cloud optimization can be achieved when stakeholders responsible for the cloud have systems in place to track cloud consumption and turn off idle resources. It's really that simple: companies can stop paying for resources that aren't used at the moment. The issue is that cloud companies will still charge you for the resources that are idle. Businesses need to ensure assigned stakeholders are to be held responsible for cloud resources. This role implies taking the time to effectively monitor, track and stop idle resources. In doing so, the cost savings can be highly notable.

Areas of cloud waste

For example, on demand resources for non-production purposes tend to account for a large portion of cloud wastage. These resources are often left running after staging, QA and development take place, but they're no longer needed. Many times, companies also continue to spend resources overnight and on the weekends when they could instead not run instances that aren't used.

From virtual machines to overprovisioned resources, there are many additional areas companies can consider to prevent cloud wastage. They include relational databases, containers and load balancers.



Some cloud platforms tend to be more flexible than others in turning off resources. For example, relational databases are often run unnecessarily. Specific types of RDS instances can be turned off on AWS, but not via Azure's SQL Database or Google Cloud Platforms SQL. Instead, they can be further analyzed and right-sized for cloud optimization and expenses decrease.

Additionally, since containers aren't super easy to turn on and off, they need to be further monitored. Looking at how your infrastructure is used, typically in non-production areas, can help you identify saving options. Also, you can set up alerts on AWS, MS Azure and Google Cloud to better track Load Balancers. While these can't be turned off when they're not being used, you can look to remove them when no instances are attached to them.

Let's break it down

If a company needs resources to be accessible for only half the day - 12 hours - they're overspending by 50% by allowing idle resources to run overnight. When factoring in the weekends as well, the savings of turning these resources off can amount up to 65%. The average instance comes in at approximately \$220/month, making the savings substantial for companies running anywhere from 20 to 1000 instances. Simply monitoring idle resources and programming them to turn off can save companies thousands of dollars.

Users looking to better cloud optimization also must pay attention to unused reserved instances. For example, AWS reserved instances and Azure reserved instances can only really save you money if you use them correctly.

Just like any other idle or unused cloud resource, unused reserved instances, whether they are Azure RI or AWS RI, can result in wasted spend nearly the same way any additional idle or unused resource can. Considering your infrastructure and taking advantage of the ability to use automated, trusted solutions to look at your RI can only be helpful in keeping your spend under control. Setting parameters and alerts to turn off idle resources will ensure you're allocating your budget to the cloud effectively.

Exploring unused reserved instances

Reserved instances mean cloud users must make prior commitments to usage, as well as stay acutely aware of projected costs. Each comes with its own complications.



When a business commits to renting instances for a fixed period of time due to a lower rate whether per-hour or per-second than on-demand, its ability to use specific instance types becomes limited to the purchasing plan chosen. Then, the business really doesn't get an understanding of its reserved instance usage until it receives the bill for payment. Business leaders often find themselves running their instances with zero insight into what will translate to being billed as reserved instances.

Cloud managers then have to wait until the next month when the platform provider reviews the reservations next to the business's actual usage. Only then, the reserved instances that match up with your workload are applied. While you can guess or try to forecast on your own, this reality offers business leaders with an unideal level of cost transparency. The onus is therefore more on you to track and project the usage. This 'manual' tracking undoubtedly can result in unused reservations which translate to wasted spend.

How to make reserved instances work for your business

The most savings generally come from standard RIs, which work best for steady-state usage. Scheduled reserved instances are quite similar, but work for instances within selected time frames, such as a weekly schedule. Additionally, a convertible RI offers a less significant discount when compared to an AWS on-demand instance, but it also offers the most flexibility. If you're likely in need of family, OS types and tenancies changes, convertible RIs will work best for you. Flexibility and alternatives might be more important in the scheme of things savings-wise.

The good news - we're all in this together

With cloud cost optimization top of mind to nearly every business and IT leader, more best practices continue to be shared. Experts are keen to offer practical and effective strategies on cloud usage optimization to keep unnecessary cloud spends at bay.

Across the board, it seems the first step is to set up a basic cloud asset governance plan. Cloud cost management should take visibility, ownership and permissions, lifecycle, and optimization into account. Getting a clear sense of these elements will help with cloud financial management (FinOps) to understand usage and idle cloud instances on a deeper level.



The deep-dive includes an analysis of each resource, enlisting tags to categorize assets, assigning users who are responsible for the resource itself and establishing a schedule to check on or eliminate the resource when it's no longer necessary.

However, even if a business has proper resources to do this due diligence on its own - and for multiple clouds — it's a tedious and manual process. Enlisting a partner to help manage all cloud instances and associated spends is the key.

How companies today are lowering OpEx with FinOps

As companies invest more in the cloud and digital transformation, they're seeking more effective strategies to take back valuable resources.

OpEx offers businesses two remarkable changes and efficiencies. First, companies no longer need to purchase technology and infrastructure that are required on premises. They're able to rent what is required instead.. Second, they can eliminate more risks and free their IT staff from some of the burden, associated with on-premise infrastructure.

Businesses which employ OpEx solutions effectively, find themselves with a greater awareness of their monthly spends. They're also able to save substantially on hardware and software and are more likely to pay for what is needed.

How to ensure OpEx is financially sound

When moving over - or having already moved over - to cloud-based OpEx offerings, company leaders should take the time to analyze their available budgets and financial benchmarks. While OpEx is highly likely to offer companies long-term savings, there are some costs to take into account for updating and maintaining architecture that works alongside business demands.



Where FinOps comes into play

Companies are likely to see their cloud spending grow month to month, yet fewer are taking the time to establish cloud cost control strategies. Financial Operations, more commonly referenced as FinOps, represent the intersection of Finance, DevOps and Business. The idea is that with cloud investments, more teams at a company must work together to optimize processes, keep costs in check and achieve the desired outcomes.

FinOps teams can identify cloud usage and come up with an operating expenses list. Operating expenses examples can be anything from infrastructure to resources to management of your cloud strategy. OpEx examples include employee salaries, rent, utilities, property taxes, and cost of goods sold, or COGS.

Cloud optimization will only come when you understand your OpEx cost and work with your team to formulate cloud usage recommendations based on it. Getting a clear understanding of your cloud consumption is surely the key to finding ways to reduce the cloud costs.

The Operating Ratio

The OpEx ratio shows the efficiency of your business's cloud management by comparing the total operating expense of the company to its net sales. The operating ratio shows how efficient a company's management is at keeping OpEx cloud costs low while generating revenue or sales.

Therefore, cloud cost management is a continuous process of optimisation. It's far from a one-off review. Thus, FinOps is super important in managing a business's instances in the cloud. Making sure the correct hardware is deployed for a business's requirements, while also recognizing cost savings can make or break a business's ability to scale.

With OpEx, it's important to note that a business will lose some control over its IT infrastructure. Using special cloud management tools can help to keep things in check so they are managed effectively. It can be tricky to keep internal stakeholders fully accountable and designating users with specific privileges and responsibilities within your overall cloud strategy can be critical.



The establishment of a FinOps process can ensure your cloud spend never goes unchecked. With the right data in place visible in an easy-to-use dashboard, cloud performance, cloud health monitoring and cloud price can all be managed more effectively each month.

With more data and insights and the use of multiple clouds, business leaders can stay more alert, and be alerted, when anything “off” occurs or spends increase. They can also get a better sense of cloud wastage to minimize OpEx costs with key data. This data helps the FinOps team to operate more effectively with more insights to share and act on a regular basis if needed.



Success stories of FinOps adopters

Despite the fact that FinOps is a relatively new approach to cloud management there is a wide range of FinOps adopters among SMB and enterprise companies. All of them have started their journey with an aim to get the most out of cloud adoption.

You can easily recognize such big names among FinOps adopters: Airbnb, PayPal, Starbucks, The New York Times, Twitter, Yelp, Shopify, Atlassian, NBCUniversal, etc. They are representatives of various industries, and they offer absolutely different services to their customers but all of them choose implementation of FinOps principles in order to provide the best services and ensure cost-efficiency of IT spends. Cost visibility and control, cloud bill reduction and reasonable consumption of cloud resources are the main goals of the majority of IT teams among small companies and corporations.

Needless to say that cloud vendors such as Amazon Web Services, VMware, Google Cloud Platform and Microsoft are a giant part of the FinOps community. Offering exceptional services to their customers, they also give instruments to implement FinOps in your company - CloudHealth (by VMware), AWS Cost Explorer and MS Azure Cost Management. Using cloud-native solutions and your internal resources you can create an efficient cloud infrastructure.



Experiences of different companies proves that it is possible to:

- reduce Amazon EC2 spend per unit by 45%, like Wildlife Studios⁵ - Brazilian one of largest mobile gaming company
- create more cost-aware consumption and cut cloud costs by 30%, like MicroStrategy⁶ - business analytics and mobility platform that helps enterprises to transform their business
- cut costs by 40% in 6 months using AWS native services and internal tools, like Lyft⁷ - a ridesharing services provider in the US and Canada
- save over \$100,000 a year, like Intuit⁸ - financial platform for both personal and business goals, headquartered in California

The key to success doesn't depend on the size of your company, industry or budgets spent on cloud services. Starting implementation of these simple FinOps principles that we've covered earlier (Visibility, Control, Collaboration, Cloud Cost Optimization) you'll definitely optimize your spends, create a more agile workflow and improve governance.

A huge range of available free and paid solutions make it affordable and possible. Don't try to copy strategies of other companies mentioned above. You should consider and take into account best practices but remember the fact that there is no universal solution and FinOps is not a one day task. It's a process of close collaboration among different teams who are not used to working together and sometimes don't fully understand each other's needs.

If you have already reached your cloud optimization goals, feel free to share your story with us and join the 'FinOps in practice' community on LinkedIn.

Sources:

⁵ <https://aws.amazon.com/solutions/case-studies/wildlife-studios-cost-management/>

⁶ <https://aws.amazon.com/solutions/case-studies/microstrategy-cost-management/>

⁷ <https://aws.amazon.com/ru/solutions/case-studies/lyft-cost-management/>

⁸ <https://www.cloudhealthtech.com/resources/case-study/intuit>



Conclusion

Investments in cloud infrastructure are becoming larger than ever before. Gartner analysts predict that business leaders are more eager than ever to increase their cloud usage and scale existing applications, a demand which is predicted to translate to \$284 billion in cloud infrastructure services spent by enterprises by 2024.

With businesses placing these substantial resources in the public cloud, it is crucial that they remain highly aware of their cloud spends. The challenge which comes with these on-demand service providers is that IT professionals often take a more hands-off approach.

Professionals often take the time to analyze and track their cloud spend data for the first few months when working with a new provider. However, once a level of trust is built, they tend to take a backseat. The result: professionals lose sight of opportunities for efficiencies to reduce their cloud costs.

You should now understand what business value FinOps gives to you, what needs to be done to build the strategy and how to realize it within your team. FinOps offers major benefits, including real-time reporting and visibility, efficient workflows, collaborative teams, operational flexibility, optimization and the right process at the right time.

