Reducing IT Costs with Observability

Five ways Engineering leaders can optimize spend

DATADOG

Executive Summary

Reduce, control, and optimize costs with observability

In an environment of continuous change one constant remains: uncertainty. As the global economic outlook continues to be an area of concern, engineering leaders are facing increasing pressure to reduce IT cost.

The primary methods of achieving cost efficiencies include reducing, controlling, and optimizing costs. Typically, businesses reduce spend first, but this can result in diminished productivity and output. Finding ways to control and optimize costs can actually be a more effective means of streamlining spending over the long term.

In this eBook, informed by Datadog customers' experience, we'll dive into five ways IT leaders can use their monitoring and observability solutions to reduce, control, and optimize costs:

1. Build a Cost-Conscious Culture
2. Consolidate Multiple Monitoring Tools
3. Control Cloud Infrastructure Spend
4. Optimize Application Resource Consumption
5. Decrease Data Storage Costs

The five ways to optimize spend that we will cover in this eBook are:

Build a Cost-Conscious Culture 1

Consolidate Multiple Monitoring Tools 2

Control Cloud Infrastructure Spend 3

Optimize Application Resource Consumption 4

Decrease Data Storage Costs 5

CHAPTER 1

Build a Cost-Conscious Culture

Visibility into and awareness of costs empower users across the organization to make cost-conscious decisions and ensure that cost optimization is part of engineering teams' goals.

BUILD A COST-CONSCIOUS CULTURE

A key enabler to achieve cost efficiencies is for engineering leaders to build a cost-conscious culture through developing a company-wide awareness of IT spend. This allows engineering teams to incorporate cost metrics into their day-to-day workflow to ensure cost measurement and optimization are part of their goals. Providing visibility into infrastructure and application consumption costs is necessary to build such a culture, yet engineering leaders often do not have access to the tooling to provide this level of detail. This is where a holistic monitoring solution that ties application, resource and infrastructure consumption together is critical.

A company-wide awareness of costs at a granular team level also enables engineering leaders to move from a 'showback' to a 'chargeback' cost model. A 'showback' model provides an overview document summarizing current IT spend. In a 'chargeback' model, departments are not only notified of their current technology usage, but are also liable to paying for what they consume. With this model, teams feel more pressure to use resources efficiently because their technology consumption incurs a direct financial cost that is specific to their team. In this way, a 'chargeback' model is often thought to be more effective in reducing costs.

CUSTOMER STORY: US-BASED FINANCIAL SERVICES FIRM

An American bank serves their communities with business and personal banking, insurance, and investment services. With economic headwinds ahead, their tech teams are constantly looking for ways to optimize costs across the board.

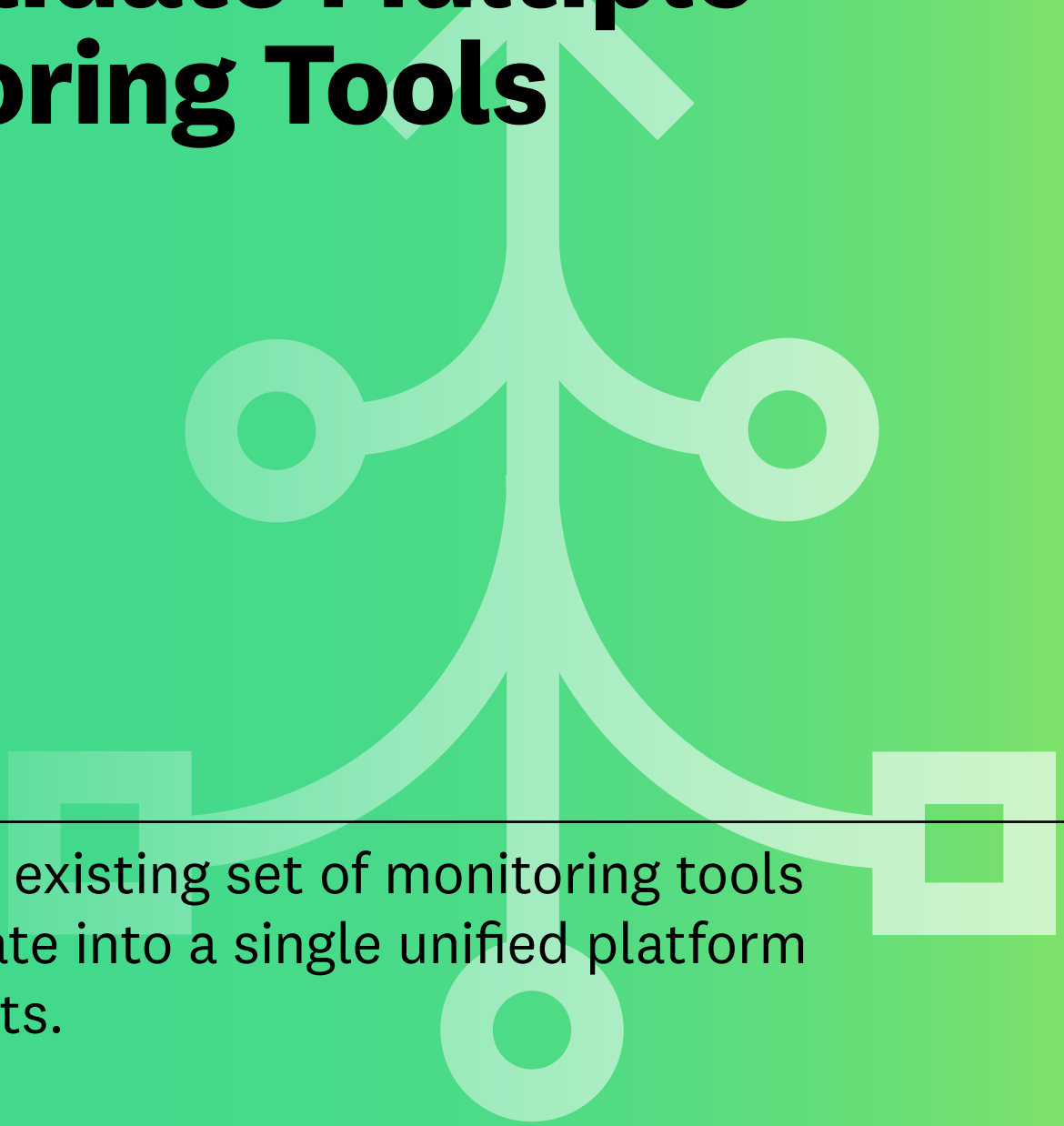
The first step that engineering leadership took was to put cost awareness at the forefront of their business and build a stronger cost-conscious culture. In order to do so, they had to provide teams with the right tools and best practices to understand their daily costs and make decisions to save money going forward.

The bank adopted Datadog's unified monitoring platform as a holistic view of their environment. With Datadog's full stack visibility, the team was able to see that certain operational settings or features, such as debug on their enterprise content management service, were sometimes accidentally left on when not actively being used. This resulted in wasted spend every second. By allowing the team to see these settings and make cost-conscious decisions to turn them off when possible, the team saw annual cost savings of $700,000.

$700,000
COST SAVINGS

CHAPTER 2

Consolidate Multiple Monitoring Tools



Evaluate your existing set of monitoring tools and consolidate into a single unified platform to reduce costs.

CONSOLIDATE MULTIPLE MONITORING TOOLS

One of the most impactful steps engineering leaders can take to maximize cost efficiencies is to eliminate tool sprawl: teams often use different tools for APM, log management, and RUM, resulting in a collection of multiple monitoring tools that can be expensive and difficult to manage. We found that, according to Gartner[1], "57% of surveyed organizations* use more than ten IT monitoring tools to manage increasingly complex architecture."

We found that each tool requires:

- its own initial investment cost, maintenance cost, and resource cost
- a high number of specialized FTEs to deploy and manage, which are expensive to employ and could result in siloed monitoring teams
- its own licensing, hosting, and professional services costs

This situation is often exacerbated in larger organizations which may use a different monitoring stack across countries, or product groups.

To reduce this overall cost, organizations should consider adopting a single unified platform. This allows your business to decommission old tools and reallocate the license, maintenance, and labor operating spend to other needs and areas of investment in the organization.

*n= 225 organizations. 1. Gartner®, 3 Top Priorities to Optimize Your Investments in Application Performance Monitoring Tools, August 5, 2021.

CUSTOMER STORY: MULTINATIONAL CONSUMER ELECTRONICS COMPANY

In order to provide consistently excellent customer service, one of the world's leading PC and mobile device companies needed to make sure their internal technologies and operations ran just as well as their products.

To do this, their teams had multiple tools in place, all of which came with their own costs and complexities. With a siloed monitoring landscape, the engineering teams struggled with incident management during real-time consumer product demo outages and saw increased risk of revenue loss as a result.

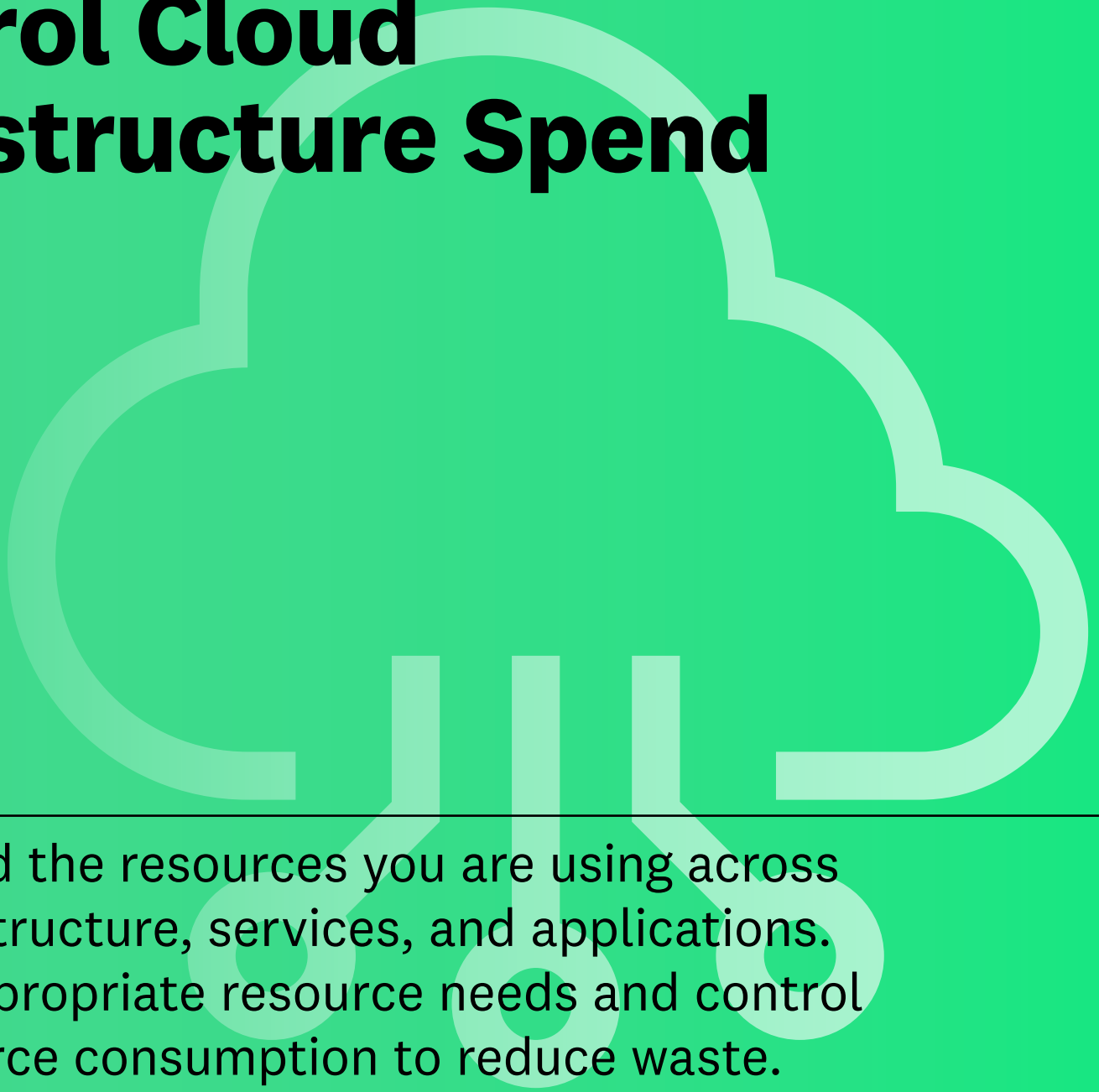
This company decided to consolidate 3 monitoring tools - including their APM, logging and infrastructure products - onto the Datadog platform. By investing in Datadog's unified three-pillar platform—metrics, traces, and logs—they saved $1.7 million in annual tool spend and unlocked a Return on Investment (ROI) of 305% in one year.

$1.7 MILLION
SAVED IN ANNUAL TOOL SPEND

305% **RETURN ON INVESTMENT** UNLOCKED IN ONE YEAR

CHAPTER 3

Control Cloud Infrastructure Spend



Understand the resources you are using across your infrastructure, services, and applications. Identify appropriate resource needs and control your resource consumption to reduce waste.

CONTROL CLOUD INFRASTRUCTURE SPEND

Organizations often move to the cloud in order to achieve the benefits of elasticity and scale: this allows organizations to quickly respond to increases in user activity, without compromising performance.

However, the shadow of quickly scaling cloud resources is that cloud spend can scale quickly as well. In many cases, the true extent of cloud spend overruns may not be fully understood as each engineering team analyzes spend only through the lens of their own resources This is why a holistic view that correlates infrastructure, service and application spend can be so powerful.

Organizations may benefit from regularly reviewing whether their infrastructure and metrics are running efficiently and what opportunities might exist to increase that efficiency. This can be done by optimizing the resources that are used the most, downsizing underutilized resources, and removing resources that are not being used at all. A reinforcing practice to support this may also include ensuring Finance teams are represented on Cloud Center of Excellence teams.

CUSTOMER STORY: GLOBAL ONLINE CLOTHING RETAILER

For an online clothing retailer, customer data is a critical component of delivering on their value proposition to provide a personalized shopping experience. Given their heavy data consumption, this company explored opportunities to optimize here first. They focused on using their Datadog dashboards to get full visibility into cloud spend and leveraged Datadog Powerpacks to automatically augment their operational data with new cost metrics. This visibility revealed significant opportunities for improvement. In one example a service owner realized they were utilizing a small fraction of their database clusters. It became a priority for that team to resize this database, and ultimately, they were able to achieve a 78% daily cost reduction on that singular database as a result.

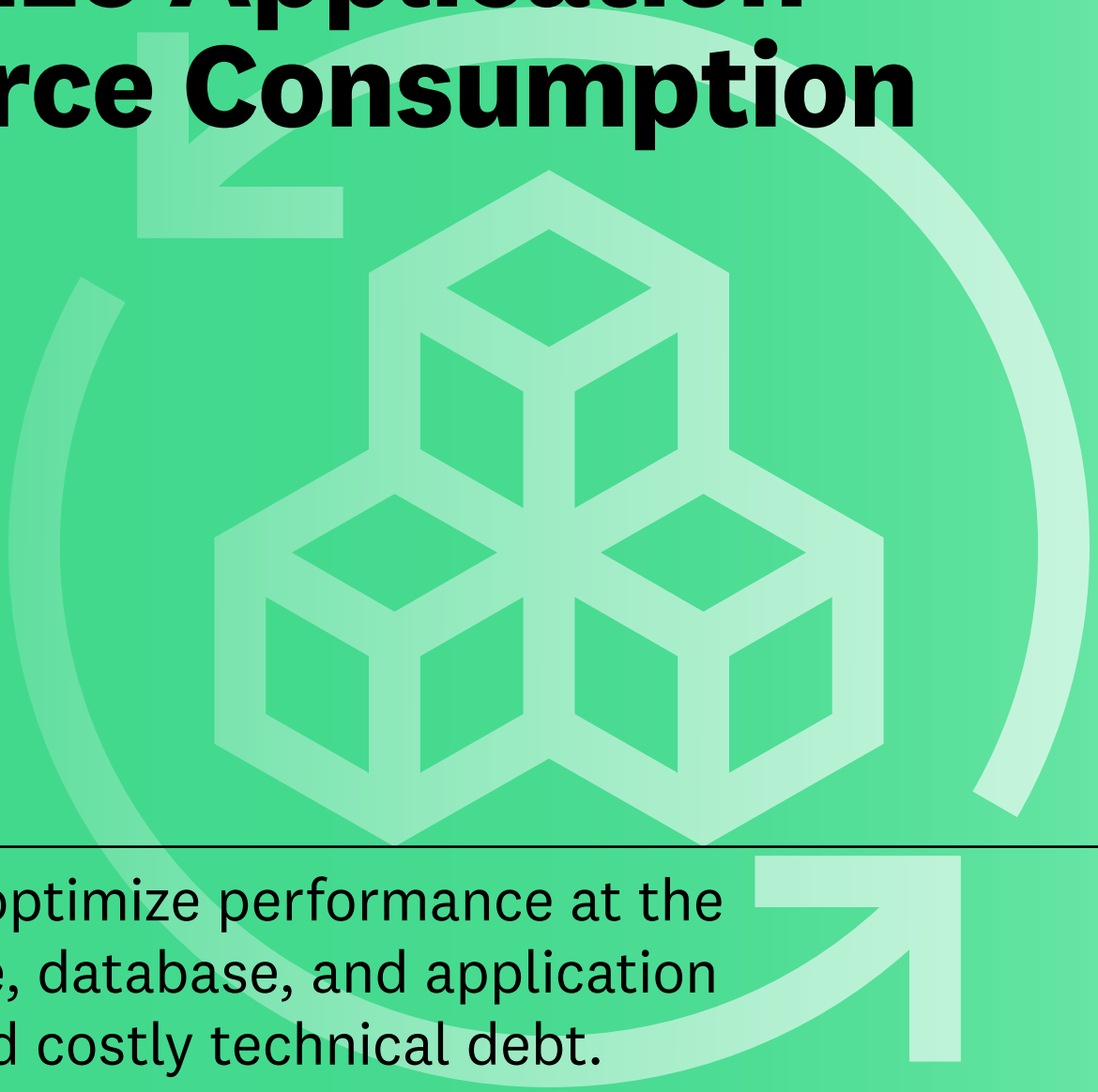
> “Best practices are important, but there’s no substitution for real measurement and cost optimization. Datadog Cloud Cost Management helped us attribute spend at a granular level over dozens of accounts to achieve significant savings whilst helping us bring cost data adjacent to operational metrics in a familiar environment for our engineering teams to monitor cost as part of overall service health.”
>
> - Engineering Team

78%

DAILY COST REDUCTION

CHAPTER 4

Optimize Application Resource Consumption



Monitor and optimize performance at the infrastructure, database, and application levels to avoid costly technical debt.

OPTIMIZE APPLICATION RESOURCE CONSUMPTION

As organizations have modernized their application architectures, complexity has significantly increased. This increase in complexity reflects an increase in the number of services to manage and monitor as organizations move to microservice architectures and also reflects an increase in deployment complexity as organizations have adopted containers.

With increased complexity and interdependency across an organization's technology stack, it has become increasingly difficult to identify where there are the greatest opportunities for optimization without adversely impacting performance.

This concern is often particularly marked for those organizations that have migrated to the cloud through a 'lift and shift' approach. In these cases, engineering leaders are often all too aware that they may not be using application resources in the most efficient way, but are wary of making changes because of a lack of visibility into the underlying application.

Continuous, low-overhead code profiling can provide visibility into how each individual line of code performs in production. With continuous profiling, you can find performance regressions without affecting application performance or having to reproduce issues for hours or days in non-production environments. Monitoring production code behavior also enables visibility into resource-heavy methods and code lines, which allows teams to optimize CPU and memory utilization and save costs. Tracking CPU utilization per service and endpoint can help you ensure that you're using the appropriate resources for your workload, while database monitoring and query optimization can help reduce total compute costs.

CUSTOMER STORY: INTERNATIONAL MEDIA & ENTERTAINMENT GROUP

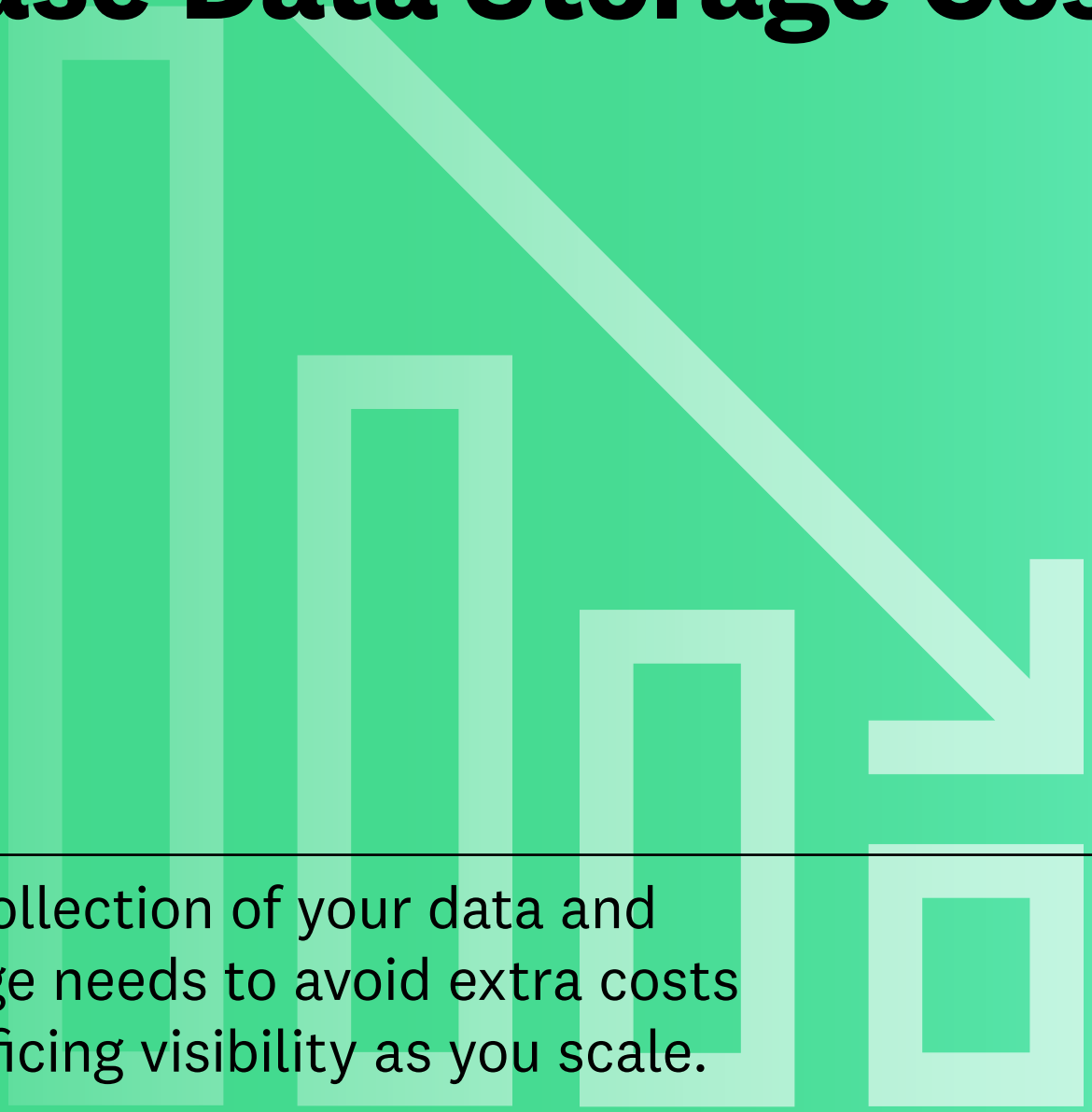
A leading multi-channel entertainment group has digital content delivered through websites, mobile apps, smart TV apps, and Hybrid Broadcast Broadband TV apps.

To succeed in a highly competitive market, the engineering team needed to execute efficiently. However, the team was constrained by the lack of a monitoring platform that could provide visibility across the entire application and enable engineers to trace requests across services. The company adopted Datadog APM and Continuous Profiler to spot garbage collection inefficiencies resulting in a cost reduction of nearly 80%.

COST REDUCTION
OF NEARLY
80%

CHAPTER 5

Decrease Data Storage Costs



Control the collection of your data and reduce storage needs to avoid extra costs without sacrificing visibility as you scale.

DECREASE DATA STORAGE COSTS

Across industries, organizations are seeing an increasing need to capture more data. For many, there is a competitive imperative to personalize customer experiences that has driven this need. In regulated industries such as financial services, healthcare and public sector, there may also be a compliance imperative. And lastly, security best practices are also driving the need to store application data in anticipation of the requirement to refer back to it should a future cyber incident occur.

All of these trends have resulted in organizations dramatically increasing the volume of data that they ingest each day. However, less focus has been placed on how this data is stored, such that data storage costs for many organizations have become unsustainable, with some engineering leaders feeling the need to choose between managing cost and managing the volume of data that is stored. This concern is particularly marked for log management data.

To decrease storage costs, engineering leaders should reconsider where the data is stored i.e. is the most cost effective storage option being used, and how the data is stored i.e. for data for which immediate access is not required, are there more cost-effective vendor options.

CUSTOMER STORY: MULTINATIONAL GAMING COMPANY

A European video game developer was preparing to successfully beta launch a popular online game. They anticipated that post launch, log volumes would exceed 12 billion log events per day due to extremely high traffic peaks of up to 10 million players at once. The cost of indexing a high volume of logs would have been prohibitive with traditional logging tools.

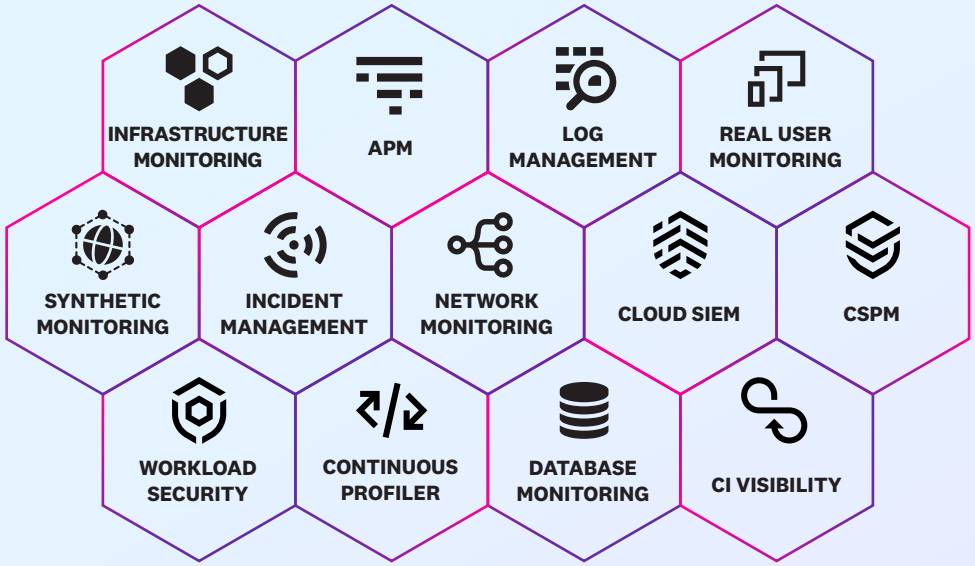
Datadog's log management solution decouples log ingestion and log indexing, enabling the team to collect all their logs and bring them into Datadog without fear of incurring an expensive log management bill. Engineers did not have to filter their logs upfront or remove any of the log content since neither the size of the log files nor the daily peak ingested volume affected their indexing costs with Datadog. By deploying Datadog, engineering teams were able to proactively troubleshoot issues by dynamically indexing and filtering through billions of logs in real time to find the logs that mattered to them. The video game developer was able to offer a stable and seamless experience to customers while cost-effectively ingesting and indexing 12 billion log events each day of the beta launch, ultimately paving the way for a successful general release three months later.

INGEST & INDEX
12 BILLION
LOG EVENTS

ABOUT DATADOG

We hope you enjoyed this eBook and are looking forward to reducing your overall IT spend using these strategies. Datadog offers technical post sales services to our customers including supporting, adopting and providing guidance over the comprehensive suite of products and features available at Datadog and how it relates to business value. To learn more about how your company can achieve these goals, reach out directly to your Datadog sales representative or customer success manager.

If you're new to Datadog, we invite you to download a free trial or attend our weekly technical training to learn more.



Datadog is the monitoring and security platform for cloud applications.

Our SaaS platform integrates and automates infrastructure monitoring, application performance monitoring and log management to provide unified, real-time observability of our customers' entire technology stack. Datadog is used by organizations of all sizes and across a wide range of industries to enable digital transformation and cloud migration, drive collaboration among development, operations, security and business teams, accelerate time to market for applications, reduce time to problem resolution, secure applications and infrastructure, understand user behavior and track key business metrics.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