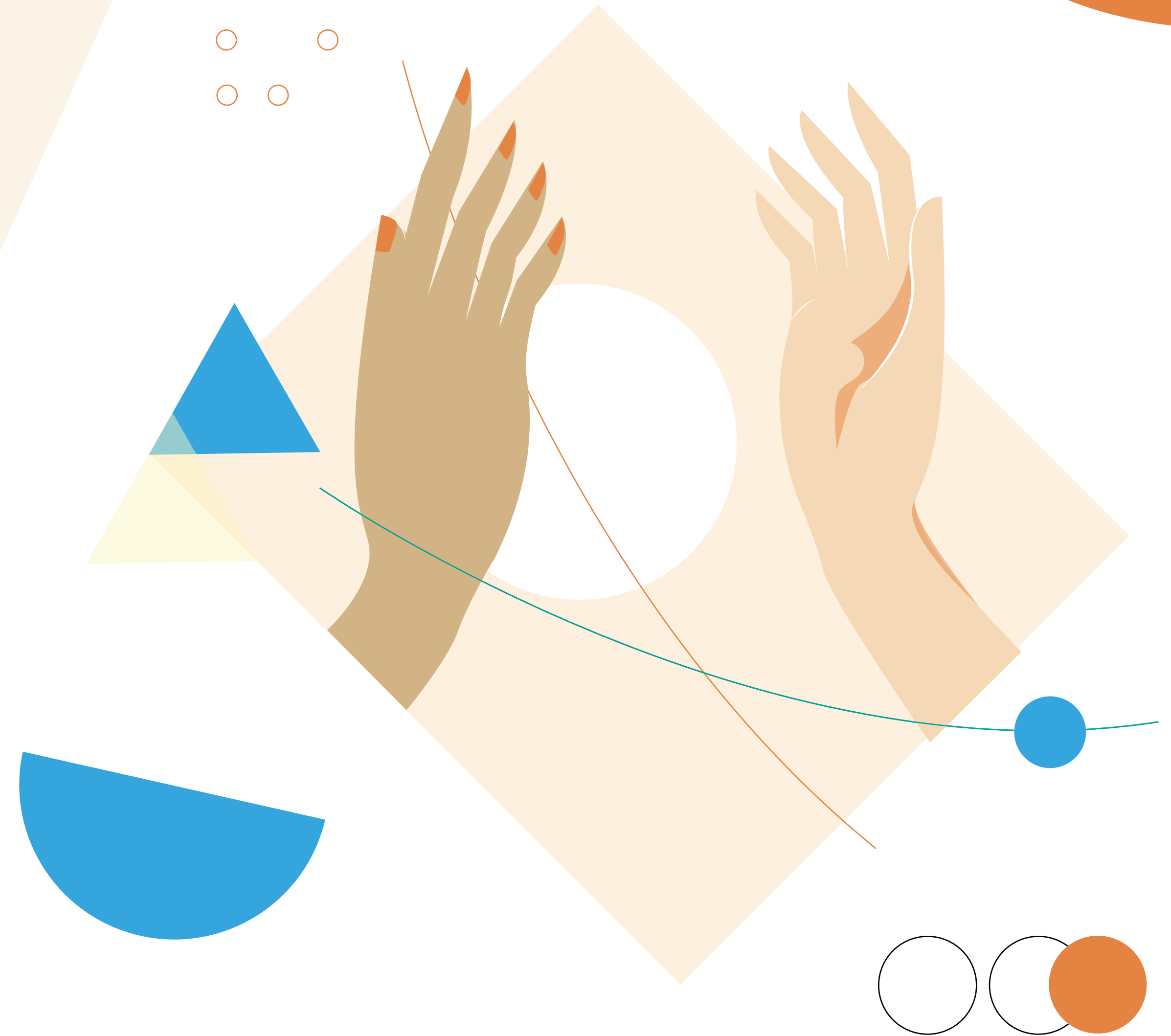


Ebook

# 5 Insights into Innovating in the Cloud



# An introduction

Digitally native businesses have clear cloud goals, along with a plan to achieve them. But sometimes, even experts need a hand — especially when relying on technology that is evolving with every deployment, iteration or modernization.

DoiT employs a global team of cloud architects and engineers who provide expert guidance, troubleshooting and cloud support for your Engineering, Ops and DevOps teams. Since 2011 we've partnered with Google Cloud to bring these additive services to customers at zero cost.

Here, we explore 5 insights into innovating in the cloud, drawing on the success of some of the companies DoiT has helped make more of their cloud consumption.



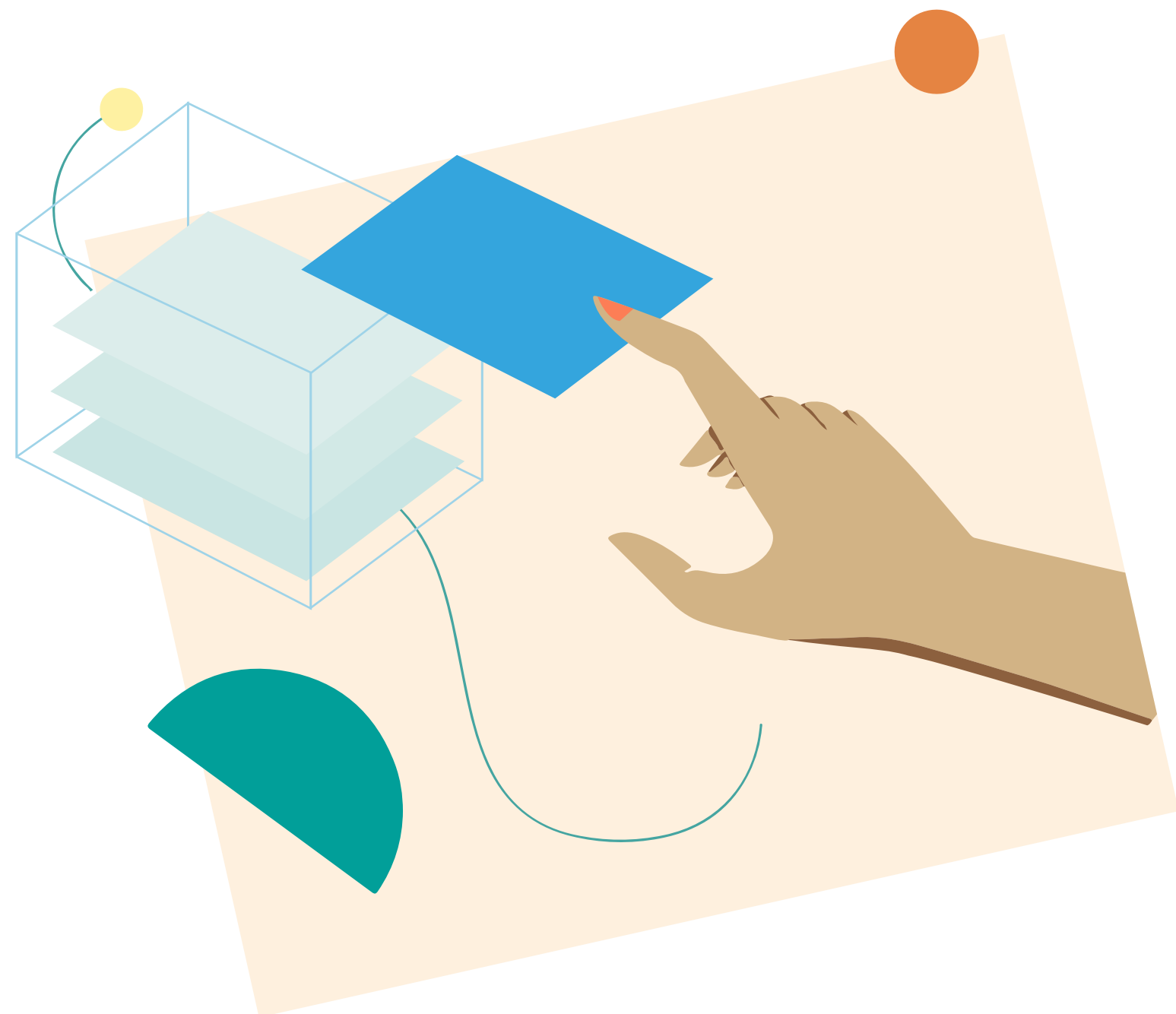
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## Innovation 1

# Containers, Kubernetes and Standardization

By embracing containers, Kubernetes and standardization, businesses can scale flexibly and on demand. It's also a way to save on costs and create new efficiencies, all while adding resilience to make IT infrastructure more reliable.



## Why it's important

Google Kubernetes Engine is the gold standard in container orchestration, powering various application services and components. It also handles all crucial aspects of resource management optimization, including horizontal auto-scaling and preemptible node-pools.

Where running applications manually or with home-grown scripts means more management toil and less automation, migration to Google Kubernetes Engine allows engineers to focus on innovation and meeting the needs of the market. Given Kubernetes is a global standard, it's also easier to add talent who know how to contribute as your company grows.

All of our workloads are containerized, and almost everything runs on Google Kubernetes Engine. This resource-efficient Google Cloud stack enables us to scale on demand to handle large data volumes, even with a small IT team.



**Matt Yule-Bennett**  
CTO at Pace Revenue

## Who has benefited

**Pace Revenue**, a hospitality pricing engine, runs property management systems data through complex machine learning algorithms.

To scale with a huge volume of data, Pace Revenue needed a lean infrastructure built entirely on Google Cloud. DoIT helped reorganize Pace Revenue's architecture so the pricing engine's workloads could be run on preemptible VMs instead.

**80%** of on-demand nodes were swapped for preemptible VMs on Google Kubernetes Engine, meaning a reduction of more than 50% in their overall compute cost.

**SecuredTouch** leverages fraud detection processes to increase revenue for businesses. They needed external APIs globally distributed in order to assure low latencies worldwide.

After migrating their production to Google Kubernetes Engines, all applicative services and middleware were managed by Kubernetes, keeping them highly available and scalable to accommodate peak times and on-demand expansions and updates.

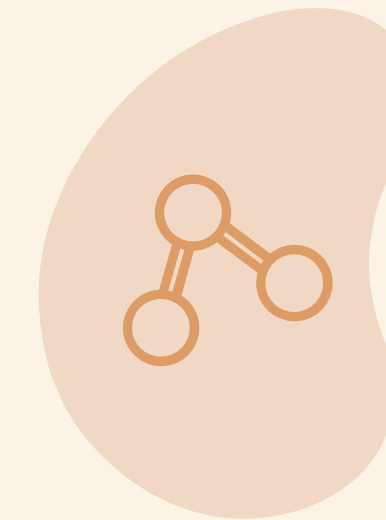
**100x** increase in web traffic in 2019 with continued dramatic growth in 2020.

## The key takeaways

By embracing containers, Kubernetes and standardization, businesses are able to:



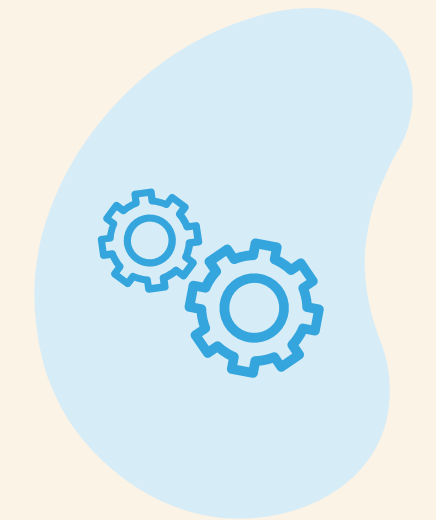
**Save on costs**



**Create new efficiencies**



**Enable easy scalability**

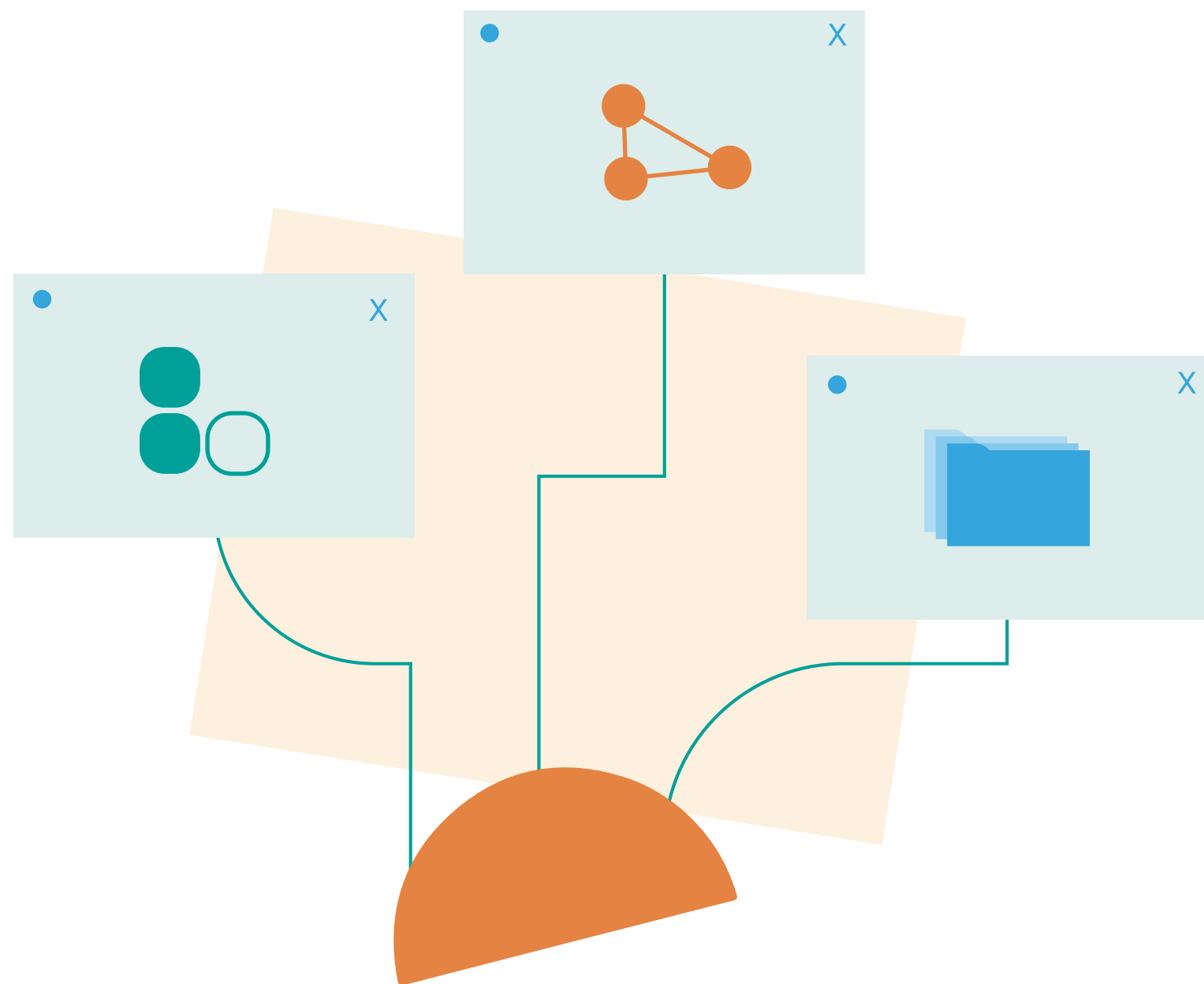


**Build a more reliable and resilient IT infrastructure**

## Innovation 2

# App Modernization and Standardization

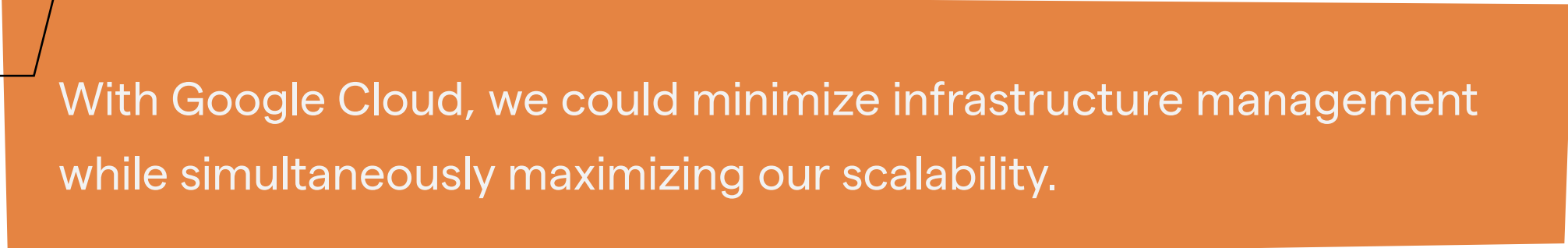
Through app modernization and standardization, businesses are able to scale elastically, minimize infrastructure management, optimize resources and free up time to focus on core issues.



## Why it's important

Business growth often results in capacity and maintenance issues for IT infrastructures, especially for on-premises and hybrid infrastructures. An app modernization journey recognizes the need to break up pieces of an app into smaller chunks to reduce cross-team dependencies that slow down release cycles. That means businesses can get to market faster with fewer risks and less testing.

This journey usually involves building apps within containers not only to break into smaller services but also to bring Development and Operations closer together. This is the DevOps movement, and by using containers as one option, organizations can shift-left the responsibility of packaging apps with their dependencies.



With Google Cloud, we could minimize infrastructure management while simultaneously maximizing our scalability.



**Nikolaos Kapolis**

CTO at Arabesque AI



## Who has benefited

**Arabesque AI**, a proprietary artificial intelligence engine which analyzes and predicts financial market behavior, had the beginnings of a cloud presence but found aligning it with its own on-premise servers painful.

It turned to Google Cloud to form the backbone of its platform and migrated its entire infrastructure. Google Kubernetes Engine could manage much of the infrastructure overhead, and soon Cloud Run further reduced the burden.

As a growing company, research is a core business objective for us. With Google Cloud, most of our resources go toward research and only minimal effort is spent on operations. That's the opposite of what we had before, and means we can improve our platform at a much faster rate.



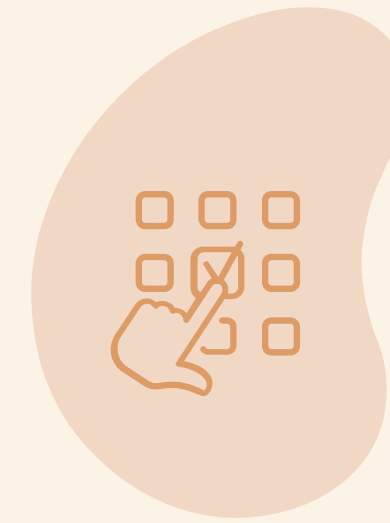
**Nikolaos Kapolis**  
CTO at Arabesque AI

## The key takeaways

By innovating with app modernization and standardization, there's a lot to gain:



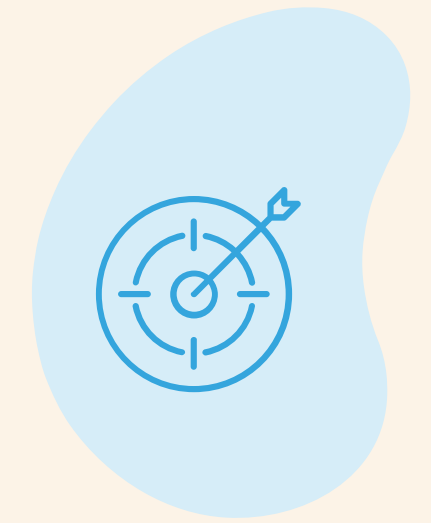
**Support rapid growth**



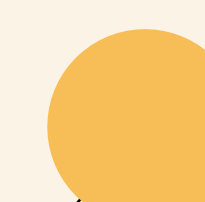
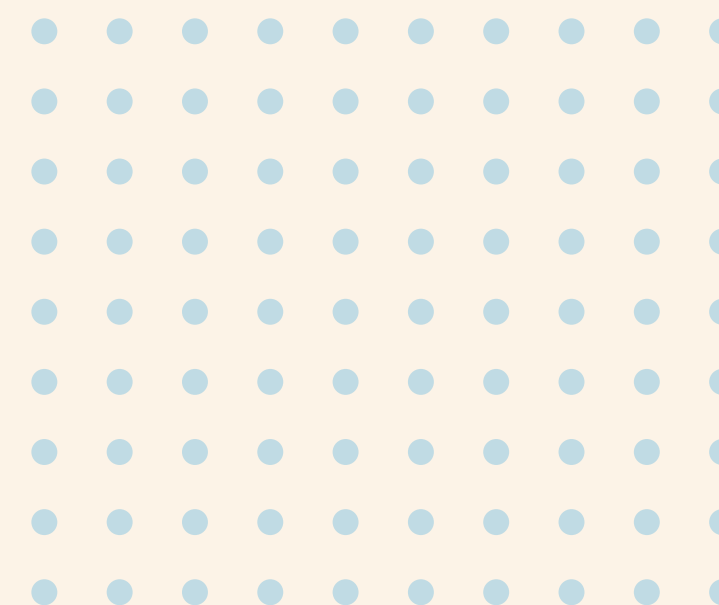
**Reduce infrastructure management**



**Optimize resources**



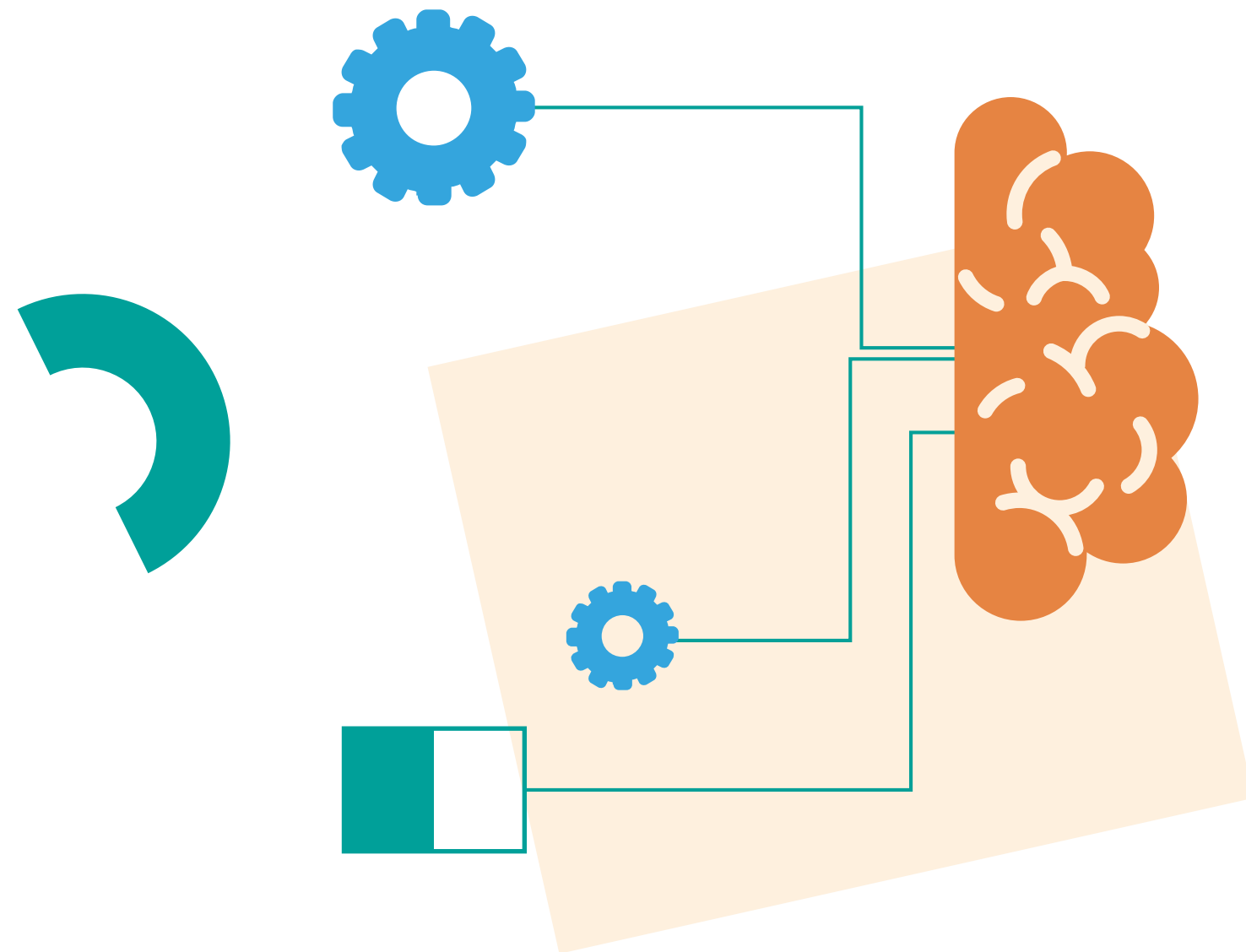
**Free up time for business priorities**



## Innovation 3

# Machine Learning

Machine learning allows organizations to leverage the vast amounts of data gathered and processed to predict and tune their systems automatically. For some, this can be applied to their own systems to improve reliability and responsiveness, and increase processing power through gained efficiencies.



## Why it's important

Companies have no shortage of data. In fact, storage of data is growing at a rapid rate thanks to ever-shrinking storage costs. But to benefit from this data, companies must leverage machine learning to extract value at a scale that cannot be matched by humans or handwritten programs.

Even at DoiT, we leverage machine learning throughout our cloud management platform for security purposes and to enhance customer's cloud experience. The platform provides customers with ML-powered cost anomaly detections, as well as forecasting and trending in the cloud analytics and reporting feature.

## Who has benefited

**Sift**, developers of the first ML-powered digital trust safety platform, needed a more scalable option for their data hosting environment. After positive experiences with Google Cloud, Sift embraced Cloud Bigtable, a NoSQL database as the company's primary datastore. It offered the horizontal scaling needed to manage data processing demands as they came in.

Sift leveraged DoIT's technology and expertise to scale usage up and down for tools like Google Cloud Storage and Cloud Bigtable, reducing costs while maintaining the responsiveness and reliability it needed to support customer demands.

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**34,000**

sites and apps feed data and machine learning into Sift's platform.

**Solera**, the market leader in automobile damage estimation, wanted to take advantage of an artificial intelligence and machine learning solution to process touchless claims. It settled on Google Cloud's solutions, which proved more robust and scalable than other platforms.

For Solera, having best-in-class AI technologies tightly integrated with the entire Google Cloud portfolio was a decisive factor. These additional capabilities meant that Solera could take advantage of the faster processing speed and sophisticated tools to complement its development focus.





Solera launched Qapter in 2020, using Google Cloud AI/ML products, including Google Kubernetes Engine, TensorFlow, Cloud GPUs (graphics processing units), Cloud TPU (Tensor Processing Unit), machine learning APIs and continuous integration and delivery products such as Cloud Build and Cloud Run to power an end-to-end claims management system that gets cars fixed and claims paid, fast and without human mediation.

DoiT demonstrated deep knowledge of both Google Cloud and the full-stack infrastructure that Qapter requires.



**Evan Davies**  
CTO at Solera Holdings

# 300 million

transactions between insurance companies, drivers and the automotive industry processed by Solera every year.

## The key takeaways

Machine learning is here to accelerate business growth and ease the pressure on engineers and systems. At the same time, it can help businesses achieve:



**Scalable data hosting**



**Savings on metric management**



**Faster processing speeds**



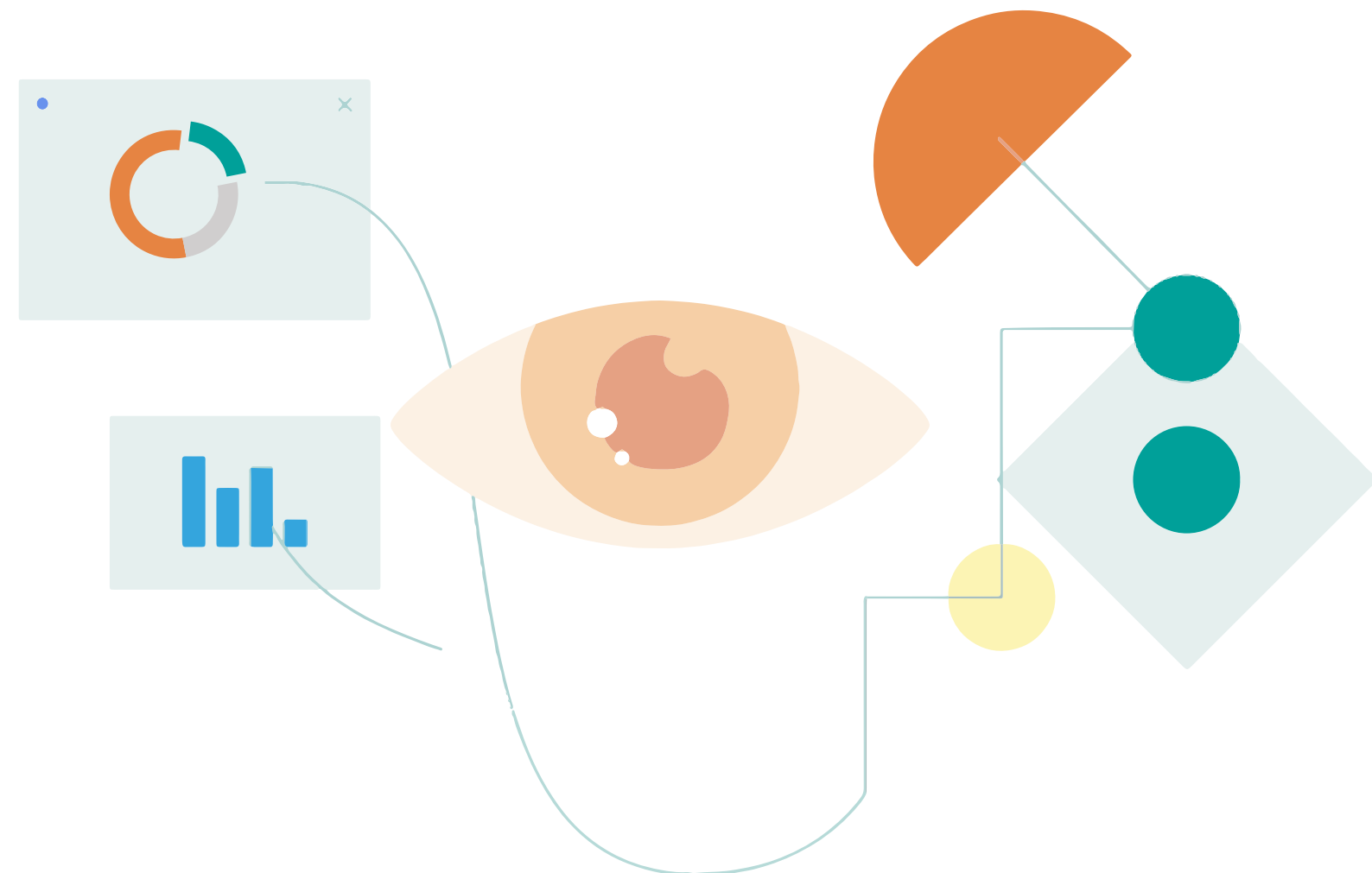
**Reduced costs while maintaining responsiveness and reliability**



## Innovation 4

# Big Data, BigQuery and Analytics

Big data, BigQuery and analytics provide vital insights. They empower everyone with real-time insights and data to drive decisions and innovation. With Google Cloud, businesses can run fast queries on large data sets, eliminate operational overhead on queries, improve turnaround times and adapt data pipelines with ease.



## Why it's important

Data analysis is growing in complexity, and customers are requiring faster and more regular access. BigQuery can function like a scalable data warehouse, providing easy access, powerful processing and effective analytics. Using Google Cloud, users can query up to petabytes of data with zero operational overhead.

BigQuery has proved extremely useful in our journey into the land of serverless data at scale, particularly for leveraging the Global Database of Events, Language, and Tone (GDELT) dataset in our Knowledge Graph efforts and the ability to cope with streaming insert and large-scale analytics.



**Matthais Baetens**

Senior Associate at Arabesque AI

## Who has benefited

**Arabesque AI** takes in data over several pipelines from third-party sources. Using a combination of Cloud Functions, Cloud Run, Pub/Sub and GKE, Arabesque AI loads these datasets into Cloud Storage. From there, BigQuery functions as Arabesque's scalable data warehouse, meaning ESG metrics and other market data can be easily accessed, processed and analyzed.

**Huq**, a data company measuring real-world factors like footfall in retail or transport, needed to run queries quickly over its extensive data set. At the same time, it needed to build and maintain multiple custom data pipelines.

By migrating to Google Cloud with help from DoiT, Huq could easily adapt their data pipelines and react quickly with up-to-date insight for its customers. This was particularly vital as customers of all sizes were keen to understand and respond to the economic impact of COVID-19.

Huq's enriched data asset contains:

**25bn**

new rows of  
anonymized  
geospatial data  
every month

**200mm**

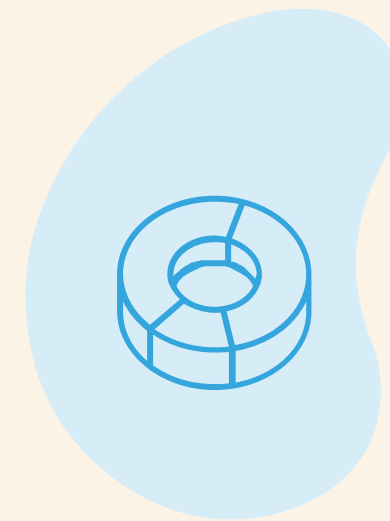
rows of continually-  
refreshed spatial  
reference data

**73**

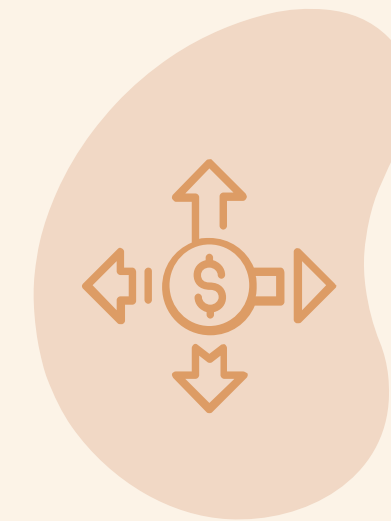
properties with  
diverse data types  
with over five  
years of history

## The key takeaways

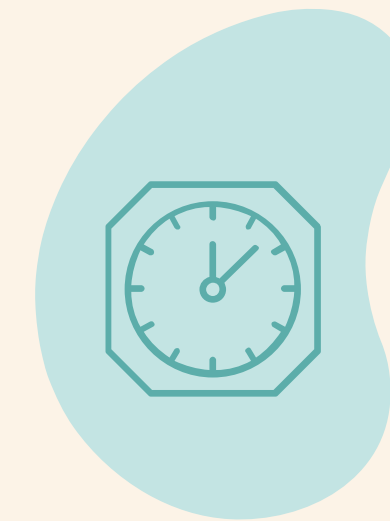
By embracing Google Cloud and taking full advantage of big data, BigQuery and analytics, businesses can benefit from:



**Fast queries on  
large data sets**



**Zero operational  
overheads  
on queries**



**Real-time insights  
for data driven  
decision making**



**Easy adaption  
of data pipelines**

## Innovation 5

# Cloud Cost Optimization

Governing, analyzing and optimizing cloud costs is critical to reducing IT overheads. Taking steps to optimize Kubernetes and leverage DoiT's comprehensive savings reports are essential for realizing savings.



## Why it's important

Many businesses are unaware of their savings potential in the cloud. Due to the on-demand, variable nature of the cloud, costs have a way of creeping up if you're not monitoring them closely. Once you understand your costs, you can start to put controls in place and optimize your spending.

Embracing best practices and optimizing use of Google Kubernetes Engine can impact hugely on a business's bottom line. This means making sure you're only paying for the compute you need, that storage costs and performances are optimized, and that BigQuery configurations aren't too expensive.

We didn't always have time to establish best practices before we started using cloud solutions, and we wondered if there was untapped savings potential in our stack. And of course, reducing our cloud spend became even more important when COVID-19 hit. That's why we approached DoiT International.



**Matt Yule-Bennett**  
CTO at Pace Revenue



Too many businesses are flying in the dark when it comes to cloud spending, unable to make sense of how much each project and application costs. Gaining end-to-end visibility of your cloud spend allows you to analyze and report costs in alignment with your business. DoiT's consulting services and cloud management platform help you not only uncover savings but also allocate costs fairly and accurately across projects or applications.

## Who has benefited

**Pace Revenue** worked with DoiT to cut cloud costs. After reviewing Pace Revenue's Google Cloud projects configuration, DoiT produced a comprehensive report highlighting all of the potential savings in the Pace Revenue IT stack with detailed instructions on how to implement them.

DoiT International gave us an incredibly thorough review of everything we're doing on Google Cloud. This included major savings potential in our use of Google Kubernetes Engine that promised a massive impact on our bottom line.



**Matt Yule-Bennett**  
CTO at Pace Revenue

## The key takeaways

A focus on cloud cost optimization with a little help from DoiT can result in:



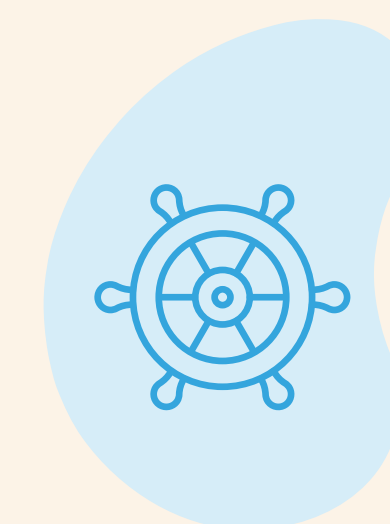
**Optimized  
cloud spend**



**Comprehensive  
savings reports**



**Early detection  
of cloud  
spend trends**



**Major savings  
through  
Kubernetes**



**Understanding  
of future  
cloud spend**

# Get more from your cloud

Since 2011 DoiT and Google Cloud have partnered to provide expert consultation to Google Cloud users at zero cost and with no long-term commitment requirements.



With 24/7 engineer-to-engineer support, comprehensive technical upskill training and one of the best customer satisfaction rates around, DoiT helps you unlock the full capabilities of the world's leading cloud platform.

**Book a call with DoiT today**

Book a call →

