

REGION FOCUS: WORLDWIDE

The Business Value of Google Cloud IaaS



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Table of Contents



CLICK BELOW TO NAVIGATE TO EACH SECTION IN THIS DOCUMENT.

Executive Summary	3
Situation Overview	3
Business Value Highlights	3
Google Cloud IaaS Overview	4
Compute	5
Storage	5
Networking	6
The Business Value of Google Cloud IaaS Services	6
Study Firmographics	6
Choice and Use of the Google Cloud IaaS Solution	7
Business Value and Quantified Benefits	9
Operational Impacts of Google Cloud	11
The Business Impact of Google Cloud IaaS	18
ROI Summary	23
Challenges/Opportunities	23
Conclusion	24
Appendix 1: Methodology	25
Appendix 2: Supplemental Data	26
About the IDC Analysts	28
Message from the Sponsor	29

Executive Summary

Google IaaS is a cloud service model that offers on-demand infrastructure resources including AI optimized compute, storage, networking, and virtualization. Infrastructure as a service (IaaS) is attractive because it eliminates the need to acquire computing resources by purchasing equipment through lengthy and cumbersome procurement processes and making additional opex investments for physical space, power and cooling, specialized staffing, and other needs. IDC conducted research that explored the value and benefits for organizations of using Google Cloud IaaS to support their enterprise applications. The project included nine interviews with companies that had experience with or knowledge about its benefits and costs.

Based on extensive quantitative and qualitative data derived from these interviews, IDC calculates that study participants will realize significant business value and a 318% 5-year return on investment by:

- Lowering infrastructure costs for running business-critical enterprise applications
- Enabling IT infrastructure, security, and applications-oriented teams to work more efficiently and effectively
- Minimizing productivity and revenue losses associated with unplanned outages
- Increasing employee productivity levels to improve business results and annual revenues

Situation Overview

Cloud services have transformed the way applications are developed, secured, and managed. Organizations of every type, size, and industry are using the cloud for a wide variety of use cases to automate operations, deliver rich customer experiences, and bring new products and services to market.

Business Value Highlights

Click each highlight below to navigate to related content within this document.

- ➡ **318%** 5-year ROI
- ➡ **10 months** to payback
- ⬇️ **51%** reduced cost of operations over 5 years
- ⬆️ **57%** more efficient IT infrastructure management teams
- ⬆️ **Nearly 3X** more time of IT staff time spent on innovation and other activities
- ⬆️ **34%** more effective IT security teams
- ⬆️ **75%** faster deployment of new application features
- ⬆️ **\$3.23 million** additional revenue gained
- ⬆️ **6.3 hours** of additional productivity gained per end user

By removing the burden of owning and managing physical infrastructure, cloud computing unlocks several benefits:

- **Agility:** The cloud provides easy access to a broad range of technologies, enabling faster innovation. It is possible to spin up resources as needed — from infrastructure services, such as compute and storage, to databases, machine learning, data lakes, and advanced analytics.
- **Elasticity:** With cloud computing, it is not necessary to over-provision resources up front to handle peak levels of application demand in the future. Instead, provision the number of resources that are currently needed with the ability to scale up and down as needed.
- **Cost savings:** The cloud trades capital expenses (such as datacenters and physical servers) for variable expenses, and charges are based on actual consumption. And the variable expenses are much lower because of the economies of scale.
- **Global scale:** With the cloud, expanding to new geographic regions and deploying globally happen in minutes. Putting applications in closer proximity to end users improves response times and overall availability.

Given these benefits, cloud adoption continues to grow. IDC expects the worldwide market for cloud services to reach \$1.1 trillion in 2026. That is a staggering number, but it is reflective of the continued migration of existing enterprise applications to the cloud as well as the creation of new cloud-native applications that take advantage of artificial intelligence (AI) and other transformative technologies.



Cost savings:

The cloud trades capital expenses (such as datacenters and physical servers) for variable expenses, and charges are based on actual consumption. And the variable expenses are much lower because of the economies of scale.

Google Cloud IaaS Overview

First launched in 2008 as Google App Engine, Google Cloud has since evolved into a sophisticated public cloud IaaS platform with global scale. It has set the pace for container orchestration through the creation of Kubernetes, which has emerged as the de facto standard for containers throughout the industry. In the *IDC MarketScape: Worldwide Public Cloud Infrastructure as a Service 2022 Vendor Assessment*, Google Cloud was recognized as a leader in the cloud infrastructure market.

Unlike other cloud providers, Google Cloud does not believe that the rapid introduction of new cloud services is in the best interest of its customers. Instead, it focuses on a simplified portfolio with an emphasis on cloud services that are optimized for specific workloads. The company has also been increasing its partnerships with enterprise OEMs and ISVs to help bridge traditional on-premises environments with the cloud.

The following is a sampling of key Google Cloud infrastructure services.

Compute

Google Cloud offers several virtual machine, container, and serverless compute services:

- **Compute Engine:** Includes predefined and custom virtual machine types that are optimized for scale out, general purpose, ultra-high memory, and compute-intensive workloads
- **Google Kubernetes Engine:** Deploys, manages, and scales containerized applications on Kubernetes with features that include Autopilot mode, container-native networking and security, and prebuilt Kubernetes application templates
- **AI Optimized Infrastructure:** Portfolio of Google's own Cloud TPUs plus graphics processing units (GPUs) powered by NVIDIA, all optimized for compute-intensive workloads like machine learning, generative AI, scientific computing, and 3D visualization
- **App Engine:** Serverless application platform for apps and back ends that is fully managed with support for popular development languages and a range of developer tools
- **VMware Engine:** A fully integrated VMware experience that allows customers to migrate apps, tools, and processes without any changes: includes all the hardware and VMware licenses required to run in a dedicated VMware software-defined datacenter (SDDC)

Storage

Google Cloud offers several storage services for object, file, and block needs:

- **Cloud Storage:** A managed service for object storage that includes features like automatic storage class transitions, dual-region buckets, and SLA (service-level agreement)-backed backed replication

- **Persistent Disk:** A block storage service that is fully integrated with Compute Engine and Google Kubernetes Engine that is dynamically provisioned and managed at scale
- **Filestore:** High-performance, fully managed file storage with 99.99% regional availability and instantaneous backups and snapshots

Networking

Google offers several networking services:

- **Cloud Armor:** Enterprise-grade distributed denial of service (DDoS) defense that features adaptive protection, support for hybrid and multicloud deployments, pre-configured WAF rules, and bot management
- **Cloud content delivery network (CDN):** A content delivery network that features universal support for any origin or back end, in-depth security, fine-grain cache controls, and route matching
- **Cloud Load Balancing:** High-performance, scalable load balancing including multiregion failover, with software-defined flexibility and seamless autoscaling

As organizations look to incorporate hybrid and multicloud into their infrastructure architecture, Google Distributed Cloud can extend applications on-premises and in hosted environments to support edge computing and digital sovereignty requirements.

In addition to cloud infrastructure services, Google Cloud has a complete portfolio that spans managed databases, data analytics, developer tools, and security.

The Business Value of Google Cloud IaaS Services

Study Firmographics

IDC conducted research that explored the value and benefits of using Google Cloud IaaS to support their enterprise applications. The project included nine interviews with organizations that were using this solution and had experience with or knowledge about its benefits and costs.

During the interviews, companies were asked a variety of quantitative and qualitative questions about Google Cloud IaaS’ impact on their IT operations, core businesses, and costs.

Table 1 presents the aggregated firmographics of interviewed organizations. The organizations that IDC interviewed had a base of 65,389 employees with annual revenues of \$14.6 billion, indicating the involvement of several large companies. This workforce was supported by an IT staff of 3,404 managing 819 business applications. In terms of geographic distribution, six companies were based in the United States with the remainder in Germany and the UK. There was a good mix of vertical markets represented including the financial services (4), government, healthcare, real estate, retail, and utilities sectors. (Note: All numbers cited represent averages.)

TABLE 1
Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	65,389	18,000	1,500–300,000
Number of IT staff	3,404	1,000	300– 2,000
Number of business applications	819	200	20–6,000
Revenue per year	\$14.6B	\$5.0B	\$126.3M–\$59.0B
Countries	United States (6), United Kingdom (2), Germany		
Industries	Financial services (4), government, healthcare, real estate, retail, utilities		

Source: IDC Business Value Research, May 2023

Choice and Use of the Google Cloud IaaS Solution

The organizations interviewed by IDC described their rationale for selecting Google Cloud IaaS as a robust foundation for supporting their enterprise applications. Study participants commented that Google Cloud IaaS gave their organizations the ability to achieve cost-effective scalability while accelerating the process of bringing business-critical applications to production and deploying them to start generating revenue.

In addition, interviewed organizations appreciated that the solution helped them address productivity challenges and deal with various inefficiencies in running VMware and other enterprise applications on premises.

Study participants elaborated on these and other selection criteria:

Looking for scalability that is economical, North American real estate:

“We recognize that time-to-market is extremely valuable, especially in the market today, and we don’t need the extra overhead cost in time having it on prem vs. having it in the cloud. From a security perspective, it’s more secure on the cloud than it is on prem. There were years of saying “No, it’s more secure on prem than in the cloud” – many attacks have happened recently – I think that has finally shifted.”

Needed something that could support organization’s time-to-market needs, North American financial services:

“We had operational challenges such as needing more resources. The biggest problem, the whole crux of this modernization, is efficiencies and time-to-market. It took us way too long to bring these apps to production and deploy them and start generating revenue. That was really the problem we were focused on starting with Google.”

A desire for an infrastructure platform that could handle all of their business needs, North American financial services:

“We went with Google Cloud because of the challenges of scalability, difficulty of integrations, productivity challenges, and inefficiency of running VMware on [on-premises] infrastructure. We looked at a number of solutions. However, most of our use cases are around data, and for data processing we found Google Cloud was the best.”

Google could handle all of their data analytics needs, North American financial services:

“We have chosen Google Cloud as our primary data analytical solution. We leverage Google’s data analytics and machine learning capabilities as part of our cloud partnership. With VMware we have actually migrated all our workload machines which data scientists and data architects were using, so that they can perform their operations on the data efficiently and smoothly.”

Choose Google for AI/ML capabilities and support, North American real estate:

“Some of their capabilities in big-table, some of their AI/ML capabilities, and their support model and customer success organization really stood out compared to their competitors.”

Table 2 (next page) describes the organizational usage associated with interviewed companies’ deployment of Google Cloud IaaS. On average, Google Cloud IaaS was associated with 5,886 internal users and 103 applications. Twenty-five percent of total revenue was supported by the platform.

TABLE 2

Google Cloud Use

	Average	Median
Number of TBs	2,426	80
Average number of Google Cloud VMs	1,698	300
Maximum number of Google Cloud VMs	4,296	653
Number of databases	439	300
Number of applications	103	35
Number of VMware applications	38	20
Number of SAP applications	7	2
Number of internal users	5,586	5,000
Percent of revenue supported by applications supported by Google Cloud	25%	15%

Source: IDC Business Value Research May, 2023

Business Value and Quantified Benefits

IDC's Business Value model quantifies the benefits for organizations using Google Cloud IaaS to manage their enterprise applications by lowering infrastructure costs for running business-critical enterprise applications and enabling IT infrastructure, security, and applications-oriented teams to work more efficiently and effectively. The platform helped these companies to minimize productivity and revenue losses associated with unplanned outages. It also increased employee productivity levels to improve business results and annual revenues.

In their comments to IDC, study participants described these benefits in detail:

Critical time-to-market, EMEA financial services:

"In financial services, it's all about time-to-market. The earlier you can release your solution, the faster it is for you to gain market share. So by going with [Google Cloud], we can deploy applications much quicker, at a much faster pace, and maximize our chance of gaining market share."

Machine learning and AI, North American retail:

“Most of the reason we’re in Google is for machine learning, or the AI initiatives. That has the most compute, machine learning has a lot of demand. Google has a pretty good headway into catering to some toolsets in AI and machine learning that we want to leverage – that’s how we got there.”

Support with predictable pricing, North American healthcare:

“We can predict and plan our expenses in Google Cloud, how much computing power we need or how much storage – it’s all flexible and discussable, and we have a very good experience with Google. For all parts of our business, I allocate this kind of money, and get this kind of computing power and storage – it’s actually very useful. It makes my life much easier, at least for the near future.”

Improved operational efficiency leads to better time-to-market, North American financial services:

“We’ve found some operational efficiencies that we didn’t have before Google Cloud. Some of the processes, the workflows, we’ve definitely been able to improve our time-to-market with new applications – it’s much faster in [Google Cloud] than it was prior.”

Google Cloud has global reach and is continuously innovating, EMEA financial services:

“The number one thing is automation, self-service. Compared to on-prem provisioning, it takes minutes to provision resources in Google Cloud, whereas it takes a lot longer on prem. As a bank, we’re heavily regulated, so we also operate our own datacenters, but we realized years ago it’s just not cost-effective. We will never be as good as public cloud. We should not be in the business of hosting our own datacenters. We can never reach that level of scalability. The second part is reliability. Given that Google Cloud operates their services in all the regions where we operate, they meet our needs from a service delivery perspective. The third part is the cost. Compared to our on-prem hosting cost, costs are lower in Google Cloud. They also offer infrastructure-as-a-service, platform-as-a-service, serverless computing – Google, to us, is considered an innovator, meaning they are constantly innovating to come up with new solutions.”

Based on quantitative and qualitative data derived from interviews with the nine intensive users of Google Cloud IaaS, IDC quantified the value study participants will receive over five years at an annual average of 318% return on investment (ROI). Additional metrics are presented in the sections that follow.



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Machine learning and AI, North American retail

Operational Impacts of Google Cloud

IDC predicts by 2025, the cloud will surpass on-premises infrastructure as the primary location where operational data is stored, managed, and analyzed for 65% of A2000 organizations. In addition, the coming years will see the rise of as-a-service processes and smart products with expanded emphasis on adding as-a-service (aaS) elements such as enhanced customer experience and intelligent process automation to digitally enhance physical and virtual products.

In this context, Google Cloud IaaS's value proposition is to provide a cloud service model that offers on-demand infrastructure resources including compute, storage, networking, and virtualization. IaaS is attractive because it eliminates the need to acquire computing resources by purchasing equipment through lengthy and cumbersome procurement processes and making additional opex investments for physical space, power and cooling, specialized staffing, and other needs.

Interviewed organizations confirmed that Google Cloud IaaS addressed many of the challenges that companies now face in their digital transformation journey. In their comments, they noted that the solution provided an optimum level of scalability, reliability, and pricing. They also appreciated that Google Cloud IaaS offered robust enterprise applications support while freeing up time to work on more strategic projects.

Study participants elaborated on these and other benefits:

Scalability, flexibility, reliability, and price, EMEA utilities:

“At a technical level, the ability to scale, and flexibility were the two biggest benefits. So we can handle different workloads, traffic spikes. Scaling up and down really at all levels, so making sure we’ve got the right storage and network in place. That is the main technical benefit for the department. Reliability is another one. We’ve got a strong, highly resilient, and reliable infrastructure in place, with high reliability. That is definitely another key strength. Competitively priced as well compared to others – we did quite an extensive review of the marketplace before we invested in Google Cloud and, compared to its competitors, it’s quite competitive.”

VMware applications support, North American real estate:

“The configuration using VMware is so much faster than having to do it on actual hardware itself. We can also incorporate that for VMware from our quality testing into some of our automation processes, as well as our continuous integration/continuous delivery (CI/CD) processes, to help look into that process before we move into production. Those are various benefits from a quality and time perspective.”

Reduction in infrastructure and increased flexibility, North American healthcare:

“We don’t need as much hardware as before, because these guys allow us to use a lot of VMware, and a lot of applications result in us having to be involved in hardware, software, maintenance, and everything else. If I need more I can just call and get more.”

Time freed up to work on more strategic projects, EMEA financial services:

“By not worrying too much about underlying infrastructure, our IT folks have more time to work with the business to understand their pain points better, to come up with strategic solutions of how to tackle these problems, rather than tactical solutions. Tactical solutions, quick fixes, may resolve issues quicker, but they don’t give long-term benefits. Strategic thinking is all about the long term, delivering a solution that’s going to last a long time, and also meeting different requirements better. So, we’re not constantly in this firefighting mode – now we spend more time on planning for strategic solutions.”

IDC looked at impacts on IT teams. Companies reported staff time reduction for day-to-day infrastructure needs, particularly with respect to enterprise applications. As shown in **Table 3**, after adoption, interviewed companies saw a 57% productivity boost. This amounted to the equivalent of freeing up 117 full-time employees (FTEs) and resulted in an annual productivity-based business value of \$11.7 million for each organization.



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TABLE 3

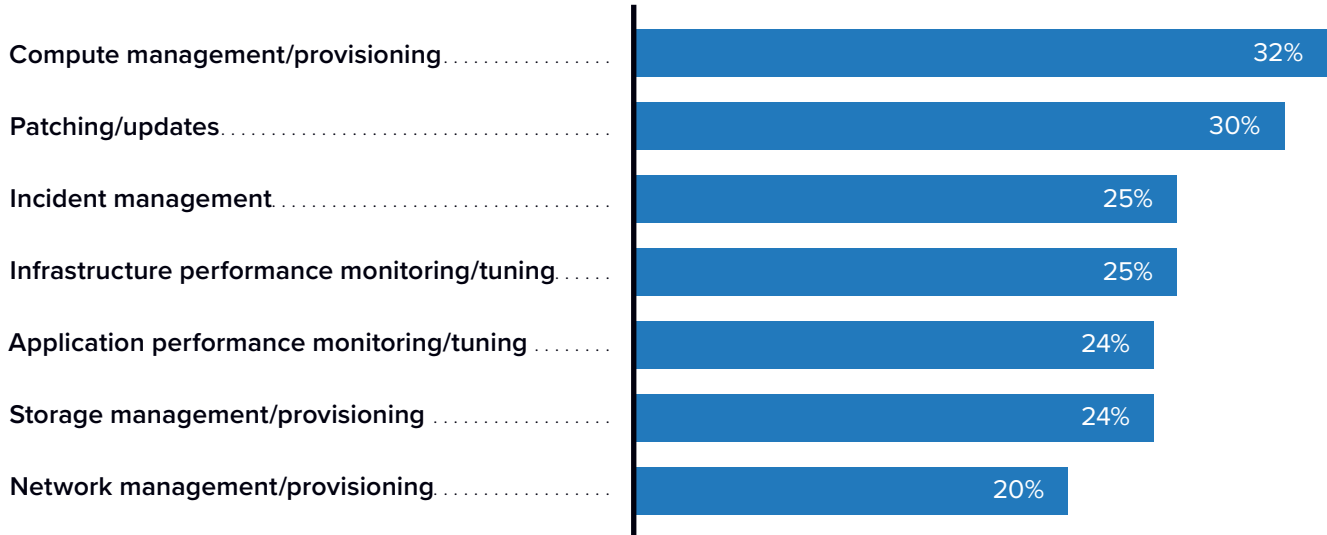
IT Management Staff Impact

	Before Google Cloud	With Google Cloud	Difference	Benefit
Management of IT Infrastructure, FTEs per organization per year	206.20	89.10	117.10	57%
Equivalent value of staff time per year	\$20.60M	\$8.91M	\$11.70M	57%

Source: IDC Business Value Research, May 2023

IDC then drilled down on benefits for IT infrastructure teams by identifying a series of key tasks that IT infrastructure would typically work on. **Figure 1** (next page) presents the time savings for each activity. As shown, the greatest improvements were seen in compute management/provisioning (32%); patching/updates (30%); and incident management (25%). Additional metrics are presented.

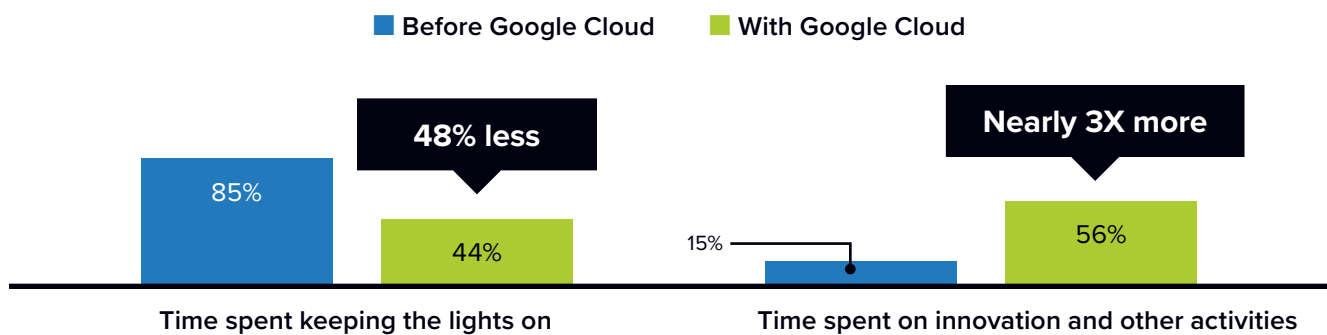
FIGURE 1
IT Infrastructure Impact by Activity
 (% quicker)



n = 9; Source: IDC Business Value Research, May 2023

As mentioned in **Table 3** (previous page), organizations were able to free up a significant amount of their IT infrastructure team’s time. Interviewed companies reported to IDC that their adoption of Google Cloud IaaS enabled their IT teams to achieve a greater focus on innovation and other strategic business activities. These teams spent 48% less time keeping the lights on and tripled the amount of time they were able to spend on innovation and other activities that more directly supported their businesses (see **Figure 2**).

FIGURE 2
IT Infrastructure Impact by Activity
 (% time)

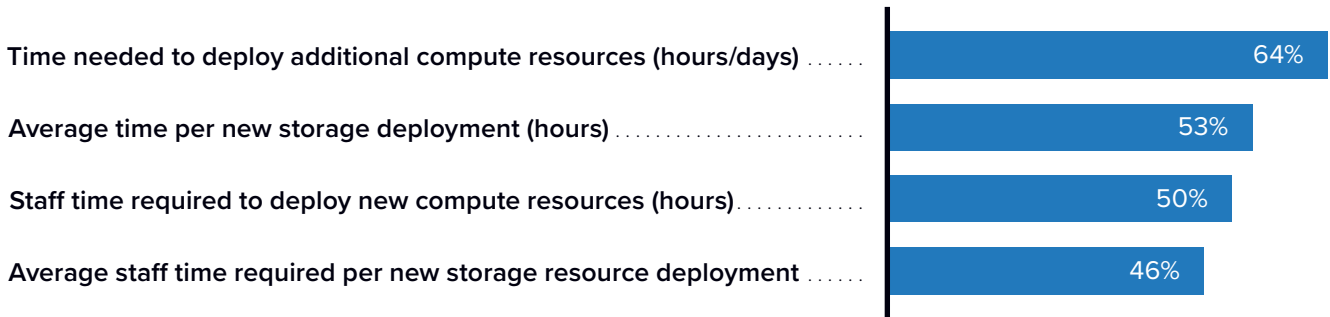


n = 9; Source: IDC Business Value Research, May 2023

For an accessible version of the data in this figure, see [Figure 2 Supplemental Data](#) in Appendix 2.

These improvements in the way that IT infrastructure teams were able to operate in turn translated into improved speed in the deployment of new compute and storage resources. **Figure 3** quantifies many of these improvements. After adoption, the time needed to deploy additional compute resources was reduced by 64%. In addition, the average time for new storage deployments was reduced by 53% and new compute resources could be deployed 50% faster.

FIGURE 3
Infrastructure Agility Impact
 (% quicker)



n = 9; Source: IDC Business Value Research, May 2023

Another value proposition for Google Cloud IaaS related to benefits for help desk teams. Study participants told IDC that Google Cloud IaaS helped these teams by reducing the number of calls and helping them resolve problems more quickly (see **Figure 4**).

FIGURE 4
Help Desk Impact
 (% improvement)



n = 9; Source: IDC Business Value Research, May 2023

Business resiliency is critical in today’s volatile environments with the need to keep incidences of unplanned downtime to a minimum. Interviewed organizations reported that they were able to minimize the frequency and impact of unplanned downtime. This translated into improved digital experiences and less business and operational risk from outages involving core business applications.

Figure 5 evaluates reductions in unplanned downtime. After adoption, Mean Time to Resolve (MTTR) was reduced by 41%. Equally important, the number of outages per year, system-wide, was reduced by 29%.

FIGURE 5
Unplanned Downtime Impact
(% quicker)



n = 9; Source: IDC Business Value Research, May 2023

Another significant aspect of the Google Cloud IaaS platform is improving application migration, which helped interviewed companies drive faster time to market. Because IaaS offers virtually infinite flexibility and scalability, enterprises were able to get tasks done more efficiently, thereby ensuring faster development life cycles. As one participant noted: *“Google has allowed us to migrate data from one source to another. For the typical type of use case for the data migration, Google has saved us 15% more, as compared to other cloud providers.”*

Table 4 (next page) quantifies these impacts. After adoption, interviewed companies saw a 20% productivity boost for teams working on migration. This amounted to the equivalent of adding 45 FTEs and resulted in an annual productivity-based business value of \$4.51 million for each organization.

TABLE 4

Application Migration Staff Impact

	Before Google Cloud	With Google Cloud	Difference	Benefit
Application Migration Project Teams, FTEs per organization per year	221.00	175.90	45.10	20%
Time to migrate applications (months)	3.70	2.80	0.90	25%
Equivalent value of staff time, one-time	\$22.10M	\$17.60M	\$4.51M	20%

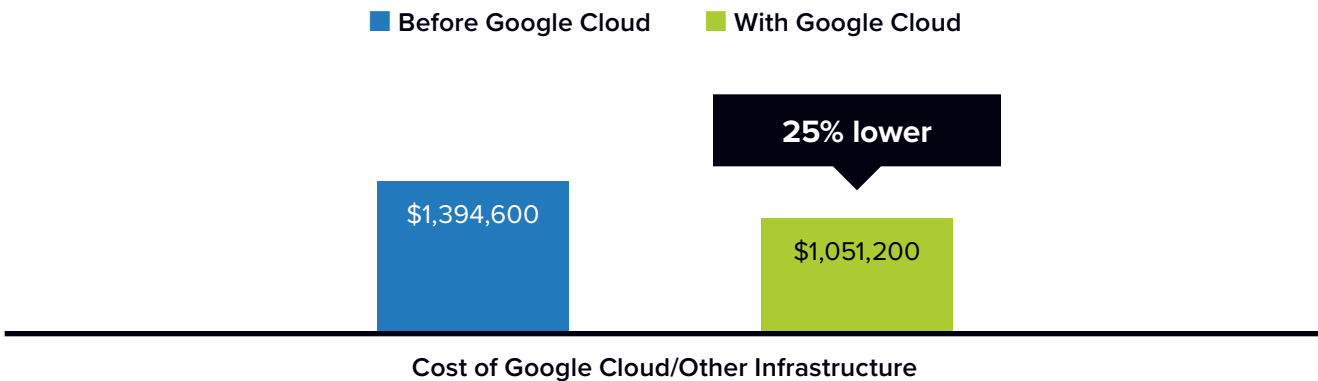
Source: IDC Business Value Research, May 2023

IDC then evaluated the infrastructure-related cost effectiveness of Google Cloud IaaS. **Figure 6** shows IDC’s projections for IT infrastructure savings per 100 VMs, over a five-year period. As shown, the solution offers 25% savings as compared with previous or alternative solutions.

FIGURE 6

Five-Year IT Infrastructure Savings per 100 VMs

(\$ per 100 VMs over 5 years)

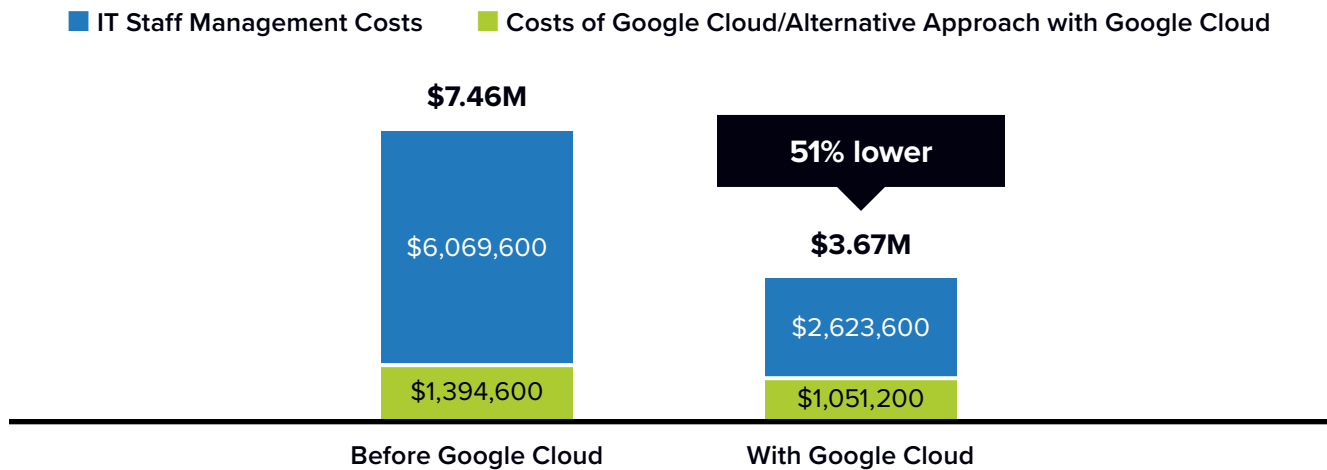


n = 9; Source: IDC Business Value Research, May 2023

For an accessible version of the data in this figure, see [Figure 6 Supplemental Data](#) in Appendix 2.

As such, organizations were able to reduce their total cost of operations (TCO) when considering the infrastructure cost savings combined with the management staff savings. **Figure 7** shows the results of IDC’s evaluation with projections for a reduction of half of their TCO over a five-year period.

FIGURE 7
Five-Year Cost of Operations per 100 VM
 (\$ per 100 VMs over 5 years)



n = 9; Source: IDC Business Value Research, May 2023
 For an accessible version of the data in this figure, see [Figure 7 Supplemental Data](#) in Appendix 2.

Improved security was also an identified improvement. As one study participant noted: *“We see benefits from the penetration tests, and the fact that the level of security is so much higher at Google Cloud than it would be on specific networks. For example, since this is now like an ERP system or an HR system, where it’s stored in our database, what level of security and penetration, would be different. Now that it’s on the cloud, there are no differences, it’s the same level of encryption and security, regardless of what content is there, which was not the case when it was on prem.”*

After adoption, IT security teams saw a 34% productivity boost (see **Table 5**, next page). This amounted to the equivalent of freeing up 49 FTEs and resulted in an annual productivity-based business value of \$4.92 million for each organization.

TABLE 5

IT Security Staff Impact

	Before Google Cloud	With Google Cloud	Difference	Benefit
IT Infrastructure Security Management, FTE equivalent per organization per year	144.30	95.20	49.20	34%
Equivalent value of staff time per year	\$14.40M	\$9.52M	\$4.92M	34%

Source: IDC Business Value Research, May 2023

The Business Impact of Google Cloud IaaS

Interviewed companies told IDC that Google Cloud IaaS implementation had direct and measurable benefits for their business operations. In their comments they further confirmed that many of the benefits already discussed, such as faster scalability and improved application performance, had positive downstream business impacts. Interviewed companies also called out better application diversity and improved customer experiences.

Study participants elaborated on these benefits:

Fast scalability, North American real estate:

“Let’s say we’re selling something and it’s going fabulously, better than we expected, and we need to scale and load this onto additional servers. We don’t have to go through that whole process of acquiring servers, getting the server setup configured, and waiting those months – we can do that in a few days using cloud technology.”

Improved application performance, North American real estate:

“The speed of the application has been improved by 10–15%. One of the reasons we wanted to move it to the cloud was that when our users were utilizing the system, they would get stuck in certain areas, or slow down and they would have to wait. Now that we’ve migrated this to the cloud, those issues don’t happen anymore.”

Improved customer experience, North American financial services:

“The customer experience has been improved because of the better features we have delivered. Customer satisfaction score has increased by half a percent.”

Application diversity, North American financial services:

“We have applications on Google that are handling transactional data and credit card transactions. That’s our core business so that one is business-critical. We also have a lot of fraud applications – that’s another area that we’re very focused on: mitigating fraud, better understanding fraud, and risk overall. The third area would be more marketing use cases – helping identify targets, marketing offer management, etc.”

IDC then quantified these anecdotal observations in several key areas, beginning with impacts for application developers. As shown in **Table 6**, after adoption, development and DevOps teams saw a 33% productivity boost. This amounted to the equivalent of adding 50 FTEs, or essentially having an average application developers/DevOps team of 152.9 FTEs be able to do the work of 203 FTEs. This resulted in an annual productivity-based business value of \$5.01 million for each organization.

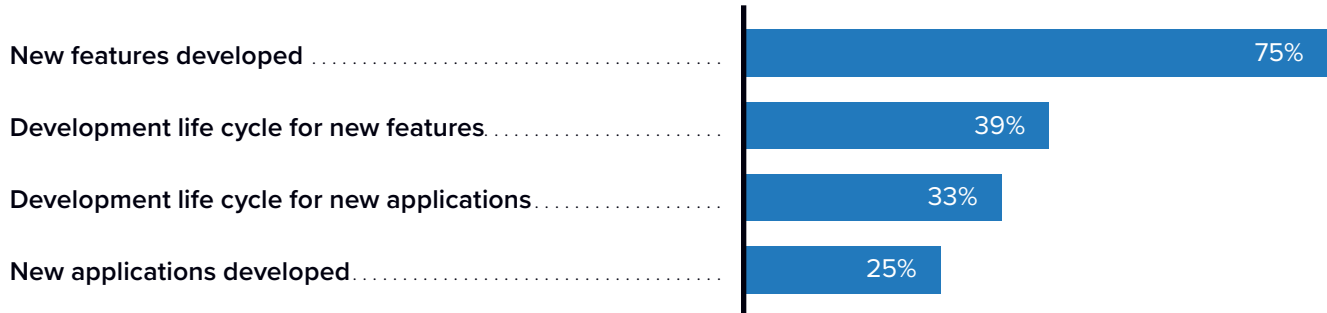
TABLE 6
Application Developer Impact

	Before Google Cloud	With Google Cloud	Difference	Benefit
AppDev, FTE equivalent per organization per year	152.90	203.00	50.10	33%
Equivalent value of AppDev team productivity per year per organization	\$15.30M	\$20.30M	\$5.01M	33%

Source: IDC Business Value Research, May 2023

Figure 8 (next page) provides another layer of detail on these benefits. Organizations told IDC that time-to-market was a significant benefit for using Google Cloud, and this showed in how developers were able to push out new applications and features quickly. As shown, there were 75% more new features developed along with a 39% faster development life cycle for new features. In addition, the development life cycle for new applications was improved by 33%.

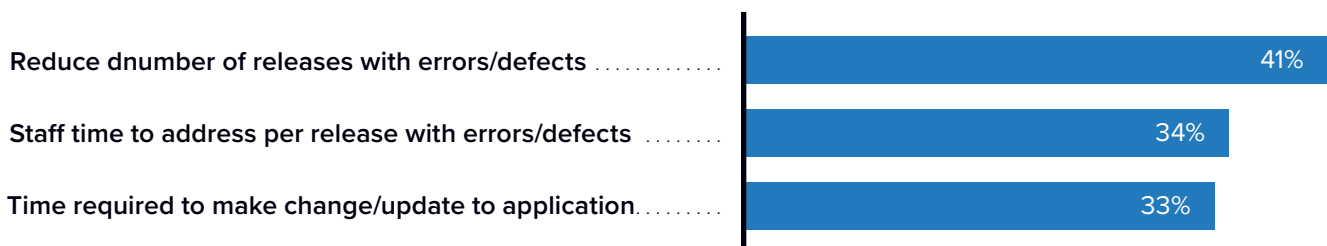
FIGURE 8
Application Development Impact
(% improvement)



n = 9; Source: IDC Business Value Research, May 2023

Organizations were not only producing more applications/features, but they were able to improve the quality of those applications and features being released. Study participants reported further benefits for application releases including a 41% reduction in the number of releases with errors/defects and 34% less staff time needed to address per release with errors/defects (see **Figure 9**).

FIGURE 9
Application Release Impact
(% improvement)



n = 9; Source: IDC Business Value Research, May 2023

Google Cloud is enabling IT organizations to structure their data in a way that is more compliant with stringent regulations, while being more visible to compliance teams.

According to one study participant: *“The proprietary in-built security elements of this solution have helped accelerate our compliance requirements with the regulator. We’ve got some workloads running credit card payments from customers and with internal processes and accreditations. We can prove compliance through the Google platform for these workloads.”* Another interviewee told IDC: *“We’ve been able to leverage Google Cloud to support audits and regulatory concerns and issues more so. The architecture we have in place in the cloud and some of the metrics, KPIs – we have better visibility into our data, which has helped with audits.”*

Table 7 shows these impacts. After adoption, interviewed companies saw a 10% time savings for compliance teams. This amounted to the equivalent of freeing up 10.4 FTEs and resulted in an annual productivity-based business value of \$728,000 for each organization.

TABLE 7
Compliance Impact

	Before Google Cloud	With Google Cloud	Difference	Benefit
Compliance Management, sFTE equivalent per organization per year	104.00	93.60	10.40	10%
Equivalent value of staff time per year	\$7.28M	\$6.55M	\$728,000	10%

Source: IDC Business Value Research, May 2023

The final area that IDC evaluated related to end-user productivity. Business impacts are foundational and are best represented at the end-user level. Users are more productive because they have a more reliable and scalable infrastructure platform supporting the enterprise applications they use on a regular basis. Study participants reported that their end users were more productive, as the data in **Table 8** (next page) illustrates, with a cumulative business value of \$1.31 million.

TABLE 8
End-User Impact

Enhanced User Productivity	Per Organization
Number of users impacted	602
Average productivity gains	3.10%
Productive hours gained per organization	35,165
Productive hours gained per user	6.30
End-user impact, FTE equivalent per organization per year	18.70
Value of end user time	\$1.31M

Source: IDC Business Value Research, May 2023

IDC looked at how Google Cloud was able to help these organizations grow their business. Interviewees reporting that having improved application performances would translate to additional revenue gains. **Table 9** shows IDC’s calculations for business operations and user impact with total additional revenue per year of \$3,226,200.

TABLE 9
Business Operations and User Impact

Business Impact – Revenue from Better Addressing Business Opportunities	Per Organization	Per Business Application	Per 100 VMs
Total additional revenue per year	\$3,226,200	\$133,000	\$189,900
Assumed operating margin	15%	15%	15%
Total recognized revenue, IDC model per year	\$483,900	\$20,000	\$8,700

Source: IDC Business Value Research, May 2023

ROI Summary

IDC's analysis of the financial and investment benefits related to study participants' use of Google Cloud IaaS is presented in **Table 10**. IDC calculates that, on a per-organization basis, interviewed organizations will achieve total discounted five-year benefits of \$78.0 million per organization (\$4.59 million per 100 VMs) based on the improvements cited. These benefits compare with projected total discounted investment costs over five years of \$18.7 million per organization (\$1.10 million per 100 VMs). At these levels of benefits and investment costs, IDC calculates that these organizations will achieve a five-year ROI of 318% and break even on their investment in approximately 10 months.

TABLE 10
Five-Year ROI Analysis

	Per Organization	Per Business Application	Per 100 VMs
Benefit (discounted)	\$78.00M	\$756,600	\$4.59M
Investment (discounted)	\$18.70M	\$181,200	\$1.10M
Net present value	\$59.30M	\$575,400	\$3.49M
ROI (NPV/investment)	318%	318%	318%
Payback period	10 months	10 months	10 months
Discount factor	12%	12%	12%

Source: IDC Business Value Research, May 2023

Challenges/Opportunities

Google has been instrumental in the development of the Internet as we know it today. While many recognize the company as a leader in search, digital advertising, video delivery, and other consumer services, enterprises were uncertain as to whether Google is capable of and committed to delivering cloud infrastructure services for mission critical applications.

Much has changed since those early days. Under the leadership of Thomas Kurian, Google Cloud has expanded its service portfolio, increased its enterprise focus, and established important partnerships with respected ISVs and OEMs. Over the last two years, there has been a consistent cadence of high-profile announcements demonstrating Google Cloud is capable of serving both digital-native companies as well as the largest enterprises.

This will only accelerate as AI becomes an essential part of everyone's lives – an area where Google continues to make significant investments.

Conclusion

Whether to modernize existing applications or develop new ones, cloud has become the preferred choice for infrastructure. The ability to quickly provision resources, deploy globally, and scale on demand has increased the pace of innovation, resulting in positive business outcomes.

However, not all cloud infrastructure is created equal. Google Cloud has created a workload-optimized portfolio of services that addresses the needs of both digital-native companies and traditional enterprises and traditional enterprises, and infrastructure options available for virtualized, container-based or AI-enabled workloads. The company has also developed strategic partnerships with OEMs and ISVs to help bridge on-premises environments with the cloud.

Based on the interviews that IDC conducted in this study, organizations expressed appreciation for the scalability and resiliency that Google Cloud is able to offer. Organizations frequently mentioned performance as a key value driver, especially as they put in more complex data-backed applications and workloads. This has a tangible effect on their business needs, leading to more productive end users (to the tune of 6.3 hours per user) and additional opportunities to capture an average of \$3 million in additional revenue. As such, all of these benefits are enabling these organizations to achieve a 4-to-1 ROI on their investment into Google Cloud.

Appendix 1: Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of Google Cloud IaaS.

Based on interviews with these organizations, IDC performed a three-step process to calculate the ROI and payback period:

- 1. Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Google Cloud IaaS.** In this study, the benefits included IT cost reductions and avoidances, staff time savings and productivity benefits, and revenue gains.
- 2. Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Google Cloud IaaS and can include additional costs related to migrations, planning, consulting, and staff or user training.
- 3. Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Google Cloud IaaS over a five-year period.** ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For purposes of this analysis, IDC has used assumptions of an average fully loaded \$100,000 per year salary for IT staff members, and an average fully loaded salary of \$70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Further, because Google Cloud IaaS requires a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

Appendix 2: Supplemental Data

The tables in this appendix provide an accessible version of the data for the complex figures in this document. Click “Return to original figure” below each table to get back to the original data figure.

FIGURE 2 SUPPLEMENTAL DATA

IT Infrastructure Impact by Activity

	Time Spent Keeping the Lights On	Time Spent on Innovation- and Other Activities
Before Google Cloud	85	15
With Google Cloud	44	56
Difference	48% less	Nearly 3X more

n = 9; Source: IDC Business Value Research, May 2023

[Return to original figure](#)

FIGURE 6 SUPPLEMENTAL DATA

Five-Year IT Infrastructure Savings per 100 VMs

	Cost of Google Cloud/Other Infrastructure
Before Google Cloud	\$1,394,600
With Google Cloud	\$1,051,200
Difference	25% less

n = 9; Source: IDC Business Value Research, May 2023

[Return to original figure](#)

Appendix 2: Supplemental Data (continued)

FIGURE 7 SUPPLEMENTAL DATA
Five-Year Cost of Operations per 100 VMs

	Without Google Cloud	With Google Cloud
IT Staff Management Costs	\$6,069,600	\$2,623,600
Costs of Google Cloud/Alternative Approach with Google Cloud	\$1,394,600	\$1,051,200
Total	\$7.46M	\$3.67M
Difference		51% lower

n = 9; Source: IDC Business Value Research, May 2023

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About the IDC Analysts



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Harsh V. Singh is a senior research analyst for IDC's Business Value strategy practice, responsible for developing return-on-investment and cost-savings analysis on enterprise technological products. Harsh's work covers various solutions that include datacenter hardware, enterprise software, and cloud-based products and services. Harsh's research focuses on the financial and operational impact these products have on organizations that deploy and adopt them.

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Dave McCarthy is a vice president within IDC's worldwide infrastructure practice, where he leads a team of analysts covering shared (public) cloud, dedicated (private) cloud, and edge strategies. Benefitting both technology suppliers and IT decision makers, Dave's insights delve into how hybrid and distributed cloud platforms provide the foundation for next-generation workloads, enabling organizations to innovate faster, automate operations, and achieve digital resiliency. His research is available via syndicated research programs (subscription services), data products (IDC Trackers), and custom engagements.

[More about Dave McCarthy](#)

Message from the Sponsor



Google Cloud helps businesses and governments build quickly, securely, and cost effectively with the next generation of infrastructure designed to meet workload and industry needs.

This is important because there is unprecedented demand to use cloud infrastructure for new types of workloads (like AI), be more competitive, and ensure compliance. In this paper, we explore how to optimize critical workloads (SAP, VMware, etc.). As your journey continues, we provide a robust catalog of additional technologies to help you architect next-gen infrastructure that delivers the scale, efficiency, cost performance, reliability, and security you need today and tomorrow. This includes our infrastructure for AI and high performance computing (TPUs, GPUs), general-purpose computing (Google Compute Engine, GKE), flexible storage (Google Cloud Storage, Persistent Disk, Filestore), distributed computing (Google Distributed Cloud), planet-scale networking, and more. Infrastructure is no longer a commodity — it's an enabler of innovation and digital transformation for every organization.

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