

REGION FOCUS: WORLDWIDE

The Business Value of Migrating and Modernizing to Microsoft Azure



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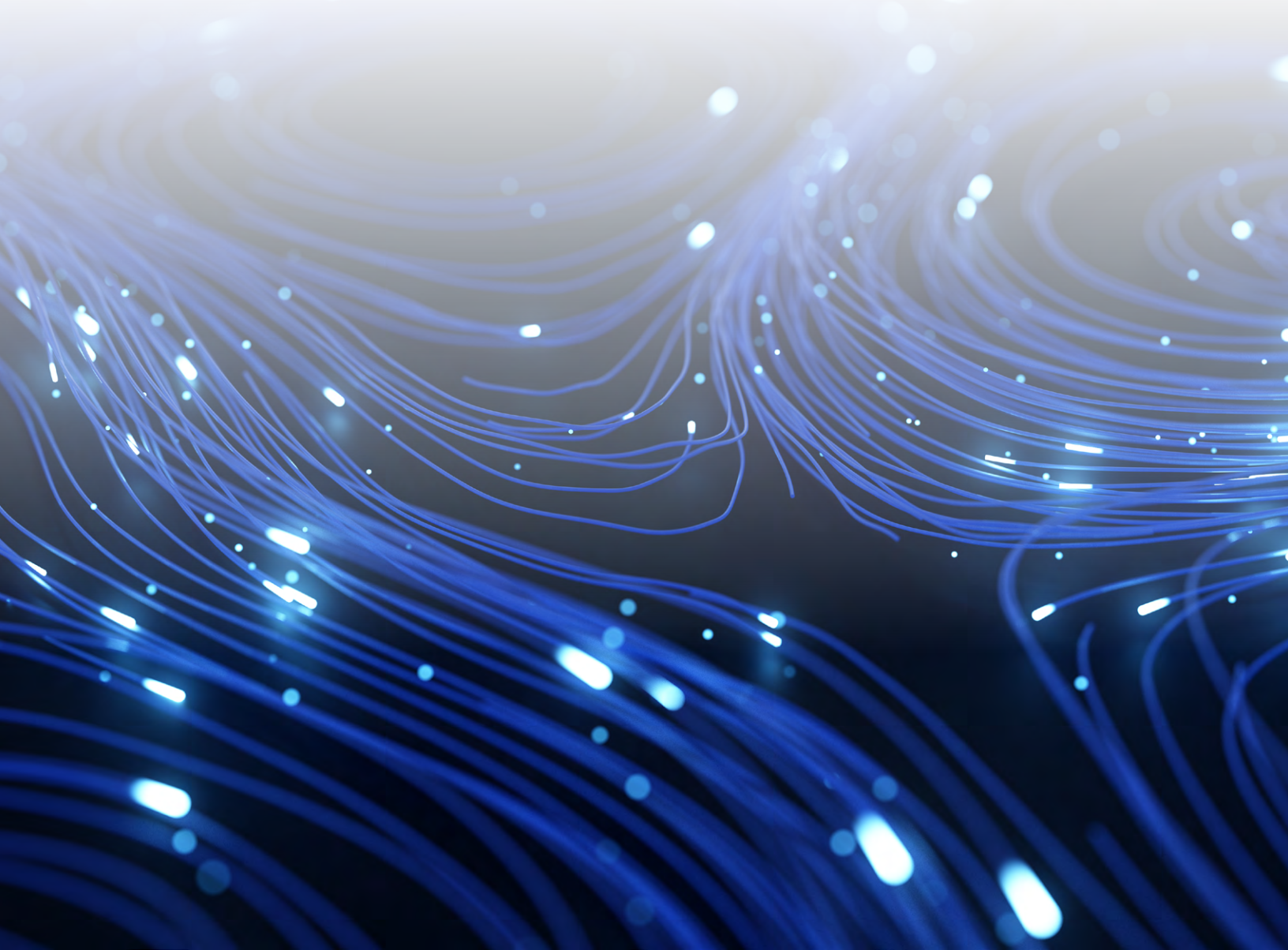


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Executive Summary

Digital transformation is a priority for enterprises looking to increase business agility by automating operations, delivering rich customer experiences, and launching new products and services. Today, building and sustaining a competitive advantage is linked not to size or strength but to the ability to change — to move quickly, adapt, and seize opportunities.

To be successful, organizations need to modernize the applications that their business depends on. The process replaces older technology stacks with cloud-native ones, which enable applications to be more scalable, fault-tolerant, and secure than their traditional counterparts.

IDC assessed the impact of using Microsoft Azure as a platform for cloud migration and application modernization by conducting in-depth interviews with Microsoft customers about their experiences.

Study participants reported that Microsoft Azure has provided an agile, high-performing, and efficient cloud platform for many of their most important applications and services.

IDC's research demonstrates that interviewed Microsoft customers are realizing significant value by migrating to and modernizing on the Microsoft Azure platform worth an annual average of \$30.31 million per organization (\$545,400 per 100 users) by:

- **Reducing infrastructure costs for running these workloads** by avoiding the need to overprovision infrastructure capacity, establishing hybrid environments, optimizing licensing costs, and taking advantage of cost-effective access to new technologies
- **Enabling IT infrastructure and security teams** by automating many day-to-day responsibilities and minimizing work associated with infrastructure silos
- **Empowering innovation** through flexible access to IT resources that drive increased agility and more impactful development activities
- **Providing a secure, reliable, and high-performing platform** to deliver the best possible user experience for employees and customers
- **Increasing revenue** by establishing and maintaining competitive differentiation through scalability, performance, data analytics, time to market, and user experience

Business Value Highlights

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

- ↑ **391%**
three-year return on investment (ROI)
- ↓ **10 months**
to payback
- ↓ **37%**
lower three-year cost of operations
- ↓ **16%**
lower infrastructure costs
- ↑ **53%**
more efficient IT infrastructure teams
- ↑ **87%**
faster deployment of IT resources
- ↑ **46%**
higher developer productivity
- ↓ **86%**
less unplanned downtime
- ↑ **\$139 million**
higher revenue per year per organization

Situation Overview

Modernization is the act of updating organizational processes, systems, and tools to the most current versions or best practices. In the context of cloud computing, modernization is the process of transitioning an organization's applications, processes, and data management to a cloud-first approach. The goal is to improve organizational and technological performance, enhance the quality of customer and employee experiences, and accelerate time to market for new offerings and updates.

Benefits related to modernization fall into four categories:

- **Accelerated innovation and time to market:** When organizations don't have to devote as much time and resources to maintaining apps and infrastructure, they can spend more time innovating. Cloud-based tools and services further help streamline the development process, resulting in faster time to market.
- **Security and reliability:** With a cloud-first approach, organizations can use built-in updating and security capabilities to help safeguard their workloads. Other built-in features can include task automation for important things like high availability, disaster recovery, backups, and performance monitoring.
- **Compatibility and agility:** The advantage of modernizing apps isn't just that they'll be able to work with the most current technology; it's that they'll keep working even as the technology evolves. This seamlessness allows for quick updates and changes to meet current and future business needs. It can also enable automatic scaling so that apps continue to work well when there are sudden increases in demand—and to instantly reduce costs when there are sudden decreases in demand.
- **Efficiency:** When done thoughtfully, modernizing existing apps can be easier than creating new ones from scratch. That way, organizations can build on existing investments rather than sink time and money into something new. App modernization also helps retain many current processes and maintain business continuity compared with plugging completely new apps into existing operations.



Organizations' shifting their strategies from cloud-opportunistic to cloud-first has led to an acceleration of migration and modernization initiatives. In a 2021 IDC survey, 86% of respondents noted that their organization had modernized over half of its legacy applications, up from 65% in 2020.

Organizations' shifting their strategies from cloud-opportunistic to cloud-first has led to an acceleration of migration and modernization initiatives. In a separate IDC survey (*PaaSView and the Developer 2021*, IDC #US47836121, June 2021), 86% of respondents noted that their organization had modernized over half of its legacy applications, up from 65% in 2020. Looking forward, IDC expects that trend to continue.

Microsoft Azure as Platform for Cloud Migration and Data/Application Modernization

By modernizing applications with Microsoft Azure, customers can improve time to market by providing support for applications and databases using the framework language of their choice to help them achieve greater agility and scale in the cloud and be empowered to take advantage of low-code, containers, DevOps, machine learning (ML) and artificial intelligence (AI), managed databases, platform as a service (PaaS), and serverless. In addition, Azure can help deliver innovative experiences for customers and employees with data-driven insights across an organization's web apps, infrastructure, and databases to increase efficiencies. Furthermore, Azure can help businesses improve the security and reliability of applications and data by ensuring that services are constantly available with high levels of performance, thanks to a wide array of built-in security services and a global footprint across more than 60 regions.

However, not all applications and databases will follow the same path to the cloud. For that reason, Microsoft's approach to application and data modernization involves a portfolio evaluation process to help customers understand the best path to the cloud for their applications and databases based on their specific business and IT needs.



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Microsoft enables its customers to employ a mix of modernization strategies:

- **Rehost:** Sometimes called “lift-and-shift,” this modernization strategy emphasizes speed because it requires practically no code changes. Organizations take apps from their previous environment and transition them as is to their current environment.
- **Refactor (or repackage):** Refactoring prioritizes productivity as well as speed. With this strategy, apps need only minimal code changes so that they can connect easily to and make the most of a cloud-first environment.
- **Replatform:** This approach lies in between rehosting and refactoring. With replatforming, organizations make code changes so that apps can be used with cloud technologies.

- **Re-architect:** If an organization needs cloud scalability, re-architecting might be the right approach. With re-architecting, apps' functionality and code get modified and extended to scale better in the cloud.
- **Rebuild (or rewrite):** For re-creating an app using cloud solutions, rebuilding is sometimes the right option. It's a heavier lift, but it may be essential if existing apps have limited functionality or life span.
- **Replace:** If an app won't meet current or future business needs even after rebuilding, replacing it with a ready-made solution may be necessary. This approach can be faster than rebuilding and free up valuable development resources. But replacing apps could pose challenges, including interruptions to business processes and limitations to future modernization initiatives.

For chief information officers (CIOs), customer experience officers (CXOs), and database administrators (DBAs) who need to accelerate time to market, deliver more innovative experiences, improve security and reliability, and optimize costs, they can look to Microsoft Azure. It supports the entire gamut of application and data modernization, from AI, DevOps, and low-code to managed infrastructure and databases.

Figure 1 shows the Azure services commonly used in the modernization process.

FIGURE 1

Azure Application and Data Modernization Services



Azure App Service

Optimize costs, operate confidently, and ship features faster by bringing your apps and data to the cloud.



Azure Database for PostgreSQL

Focus on application innovation, not database management, with fully managed and intelligent PostgreSQL.



Azure SQL

Build apps that scale with the pace of your business with managed and intelligent SQL in the cloud.



Azure Database for MySQL

Easily set up, operate, and scale data with advanced security and high availability.



Azure Spring Apps

Bring modern microservice patterns to Spring Boot to eliminate boilerplate code and develop robust apps.



Migration tools for .NET and Java

Simplify the migration of your .NET and Java apps with minimal or no code changes.



Azure Kubernetes Service (AKS)

Deploy and manage containerized apps easily with a fully managed Kubernetes service.



Azure Migration and Modernization Program

Simplify your move to the cloud with the right mix of expert help at every stage of your migration journey.

Source: Microsoft, 2022

From the modernization of web applications to fully managed, highly productive PaaS services like Azure App Service and Azure Spring Cloud, customers can benefit from built-in scalability, high availability, an overall enterprise-grade service-level-agreement-backed uptime of 99.9% (99.995% for Azure SQL Database), and Microsoft's strong partner ecosystem of service offerings for industry-leading solutions from Red Hat, VMware, Oracle, IBM, Redis Labs, Confluent, Elastic, and more to run and extend apps on Azure.

To help simplify and accelerate the cloud adoption journey, the Azure Migration and Modernization Program (AMMP) offers a full-service experience, including technical guidance, training, and help finding an expert partner. AMMP provides support for a wide range of common migration and modernization scenarios and workloads. The program consists of prescriptive step-by-step guidance, offers and incentives based on customer needs, and curriculum to develop the necessary skills for organizations to achieve sustainable outcomes.

Two additional ways Microsoft helps its customers adopt the right strategies for cloud enablement:

- The Microsoft Cloud Adoption Framework for Azure is a full life-cycle framework that enables cloud architects, IT professionals, and business decision makers to achieve their cloud adoption goals. It provides best practices, documentation, and tools that help organizations create and implement business and technology strategies for the cloud.
- The Azure Well-Architected Framework is a set of guiding tenets that can be used to improve the quality of a workload. The framework consists of five pillars of architectural excellence that address reliability, security, cost optimization, operational excellence, and performance efficiency.

The Business Value of Microsoft Azure for Cloud Migration and Modernization

Study Demographics

IDC conducted research that explored the value and benefits of using Microsoft Azure as a platform for cloud migration and application modernization. The project included interviews with seven organizations that were using the Azure platform. Interviewed managers all had experience with and knowledge about its benefits and were asked a variety of quantitative and qualitative questions about the solution on their IT operations, core businesses, and costs.

Table 1 presents study demographics. The organizations that IDC interviewed had an average base of 15,343 employees and total average annual revenue of \$7.06 billion, indicating the involvement of several large organizations. This workforce was supported by an IT staff of 579 supporting 558 business-critical applications. In terms of geographic distribution, four companies were based in the United States, with the remainder in Australia, Poland, and the United Kingdom. In addition, a variety of vertical markets were represented, including the agriculture, energy, financial services, healthcare, professional services, retail, and transportation sectors.

TABLE 1
Demographics of Interviewed Organizations

	Average	Median
Number of employees	15,343	8,500
Number of IT staff	579	190
Number of business applications	558	300
Revenue per year	\$7.06B	\$5.18B
Countries	United States (4), Australia, Poland, United Kingdom	
Industries	Agriculture, energy, financial services, healthcare, professional services, retail, transportation	

n = 7; Source: IDC In-depth Interviews, June 2022

Decision to Use Microsoft Azure for Cloud Migration and Modernization

Interviewed organizations described the rationale behind their choice of Microsoft Azure to further their efforts in cloud migration and data/application modernization. There were two essential components to their decision: migrating workloads and applications to the cloud and having an optimal platform for the process of modernizing data and applications in the journey to effectuating digital transformation.

More specifically, study participants chose Azure to bolster their competitive advantage by enhancing their agility and leveraging new technologies. The ability to align with their existing broader Microsoft ecosystems already in use was another key consideration. Study participants also appreciated how the platform helped them transition from a capex- to an opex-based IT model while at the same time fostering more effective development approaches and capabilities.

Study participants commented on key aspects of their decisions:

Create unified ecosystem (healthcare, Australia):

“We considered other clouds as well. ... The primary reason we chose Azure was that we had very strong existing relationships with Microsoft and a large part of our other ecosystems such as Microsoft 365, Dynamics CRM, and Power BI were already in the Microsoft ecosystem.”

Drive agility, move to operating expense model (financial services, United States):

“We wanted to be more agile and nimble with Microsoft Azure and move away from capital investments to operating expenses. ... We also looked to build cloud-native apps when we refactor legacy applications in a modern way.”

Licensing efficiencies and ease of migration (agriculture, United States):

“Microsoft made it attractive to bring your own license because we have so many Windows and SQL Server licenses, so we don’t have to buy them all over again. ... Also, we are a Hyper-V shop, which is close to what Microsoft Azure is, which made moving to the cloud easier.”

Strong offering in context of broader use of Microsoft solutions (professional services, United States):

“Azure stood up very well against competing options and was competitive. We also saw potential benefits of greater integration, since we’re a Microsoft shop already. So that was a big driver and a big plus that everything worked together well.”



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Professional services respondent
United States

Use of Microsoft Azure for Cloud Migration and Modernization

IDC evaluated how study participants are leveraging Microsoft Azure to further their migration and modernization efforts.

Looking specifically at modernization, study participants provided insight into what they view as modernization on the Microsoft Azure platform, including:

- Experimenting with machine learning
- Focusing on PaaS, containerization, Kubernetes, and global load balancing
- Converting monolithic applications written in older languages
- Refactoring them as containerized microservices running on Azure

The extent to which study participants are using Microsoft Azure as a platform for not just migration but also modernization is reflected in their reporting that they either have already modernized or plan to modernize 91% of workloads running on Azure.

Table 2 provides a snapshot of the use of Microsoft Azure across interviewed organizations. As shown, while study participants are running slightly more than one third of their IT environments in the public cloud, Microsoft Azure makes up a substantial average of 78% of their public cloud environments. Further, study participants reported using an average of 1,650 Azure virtual machines, with a maximum of 1,952 Azure virtual machines (VMs), to run and support an average of 107 applications. They linked 70% of their total annual revenue to applications or workloads running on Microsoft Azure, demonstrating its importance as a core business platform for them. Additional details are presented.

TABLE 2
Microsoft Azure Use by Interviewed Organizations

	Average	Median
Percentage of business applications in public cloud	35%	23%
Microsoft Azure as percentage of organization’s cloud environment	78%	80%
Average number of Azure VMs	1,650	300
Maximum number of Azure VMs	1,952	350
Number of applications	107	65
Number of internal users of applications	5,557	1,750
Percentage of revenue	70%	90%
Number of terabytes (TB)	351	25

n = 7; Source: IDC In-depth Interviews, June 2022

Business Value and Quantified Benefits of Microsoft Azure for Cloud Migration and Modernization

IDC’s research shows how organizations can use Microsoft Azure as a platform for migrating and modernizing their data and applications. Study participants reported establishing more

cost-effective and agile IT platforms compared with their on-premises environments, thereby enabling business activities through the use of new technologies and the delivery of timely and robust new functionalities and applications.

Interviewed Microsoft customers provided details about how Azure has delivered value to them as they migrate and modernize their IT environments:

Improved speed, access, agility (professional services, United States):

“We benefit with Microsoft Azure from the speed to provision and the speed to turn on applications, especially because we do a lot of merger & acquisitions, and then just the ease of anytime-anywhere access to applications.”

Access to new types of services in on-demand fashion (financial services, United States):

“Microsoft Azure provides services that we don’t have to build in-house. A good example is a machine learning engine. We don’t have to build it out. We can just consume it as a service with Microsoft Azure. ... Basically, we have the ability to expand and contract in terms of human capital to meet demand.”

Foundational change in how development occurs (transportation, United Kingdom):

“Microsoft Azure has radically changed the way we run projects and how we do our building and testing of applications. In the old world on old hardware, finding UAT environments was hard. Now, we can just spin them up as and when required.”

Innovation, modernization, security (retail, Poland):

“From the business perspective we strongly believe innovation is the most important benefit of Microsoft Azure. ... Done correctly, it’s really a competitive advantage. ... The second benefit is application modernization, and we cannot forget about security because as our business starts to be more omni-digital, we really need to take care for that.”

Based on interviews with Microsoft customers that have migrated and/or modernized applications on the Azure cloud, IDC calculates that they will realize benefits worth an annual average of \$545,400 per 100 users (\$30.31 million per organization) in the following areas:

- **Business productivity benefits:** Study participants realize higher revenue by better addressing customer demand, providing an improved customer experience, and delivering new services and products faster to the market. IDC quantifies the value of net revenue gains at an average of \$290,200 per 100 users per year (\$16.13 million per organization).

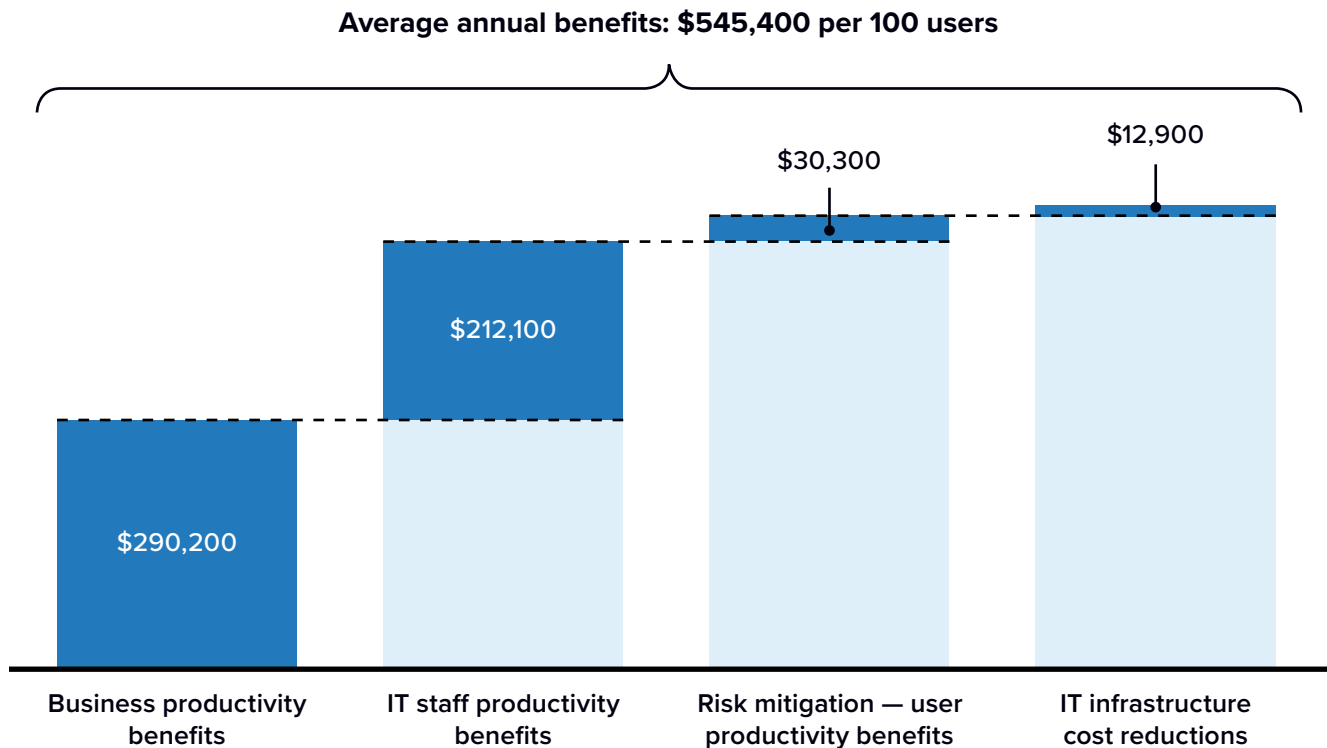


We strongly believe innovation is the most important benefit of Microsoft Azure. ... Done correctly, it’s really a competitive advantage.”

Retail respondent
Poland

- **IT staff productivity benefits:** Interviewed Microsoft customers enable their IT infrastructure, security, and DBA teams to work more efficiently and empower development teams to deliver more value to their organizations. IDC puts the value of resultant efficiencies and productivity gains at an annual average of \$212,100 per 100 users (\$11.79 million per organization).
- **Risk mitigation — user productivity benefits:** Study participants reduce the frequency, duration, and impact of unplanned outages. As a result, their employees suffer fewer interruptions, and their businesses lose less revenue. IDC values productivity and net revenue gains at an annual average of \$30,300 per 100 users (\$1.68 million per organization).
- **IT infrastructure cost reductions:** Interviewed organizations optimize their infrastructure costs for running equivalent workloads with Microsoft Azure. IDC calculates that they will save an annual average of \$12,900 per 100 users (\$0.72 million per organization).

FIGURE 2
Average Annual Benefits per 100 Users
 (\$ per 100 users)



n = 7; Source: IDC In-depth Interviews, June 2022

Cost Efficiencies with Microsoft Azure

Study participants reported the ability to optimize infrastructure costs by migrating to the Azure cloud for running equivalent workloads. In addition, they found that they were able to use and deploy modern technologies such as Kubernetes and microservices that further their modernization and digital transformation efforts while also enabling cost efficiencies. Microsoft Azure's scalable architecture also allows study participants to adjust their IT resources up or down as workload demands and business needs fluctuate. Therefore, they can shut down unused resources while rightsizing underused resources and reserving instances to ensure consistent workloads. Study participants noted that with Azure, they were able to gain significant savings by eliminating expensive storage infrastructure and support contracts. They also appreciated staffing benefits associated with enhanced resource allocation as well as cost-effective use of advanced analytics.

The comments below illustrate these benefits.

Significant infrastructure and licensing cost savings (retail, Poland):

"We had a very big data warehouse in our old datacenter which was run on [a vendor solution] that we are migrating to Microsoft Azure. This is a huge savings getting rid of the expensive storage contract, infrastructure contract, and expensive support contract."

More cost-effective, but value relates primarily to flexibility (agriculture, United States):

"There is no way we could have stayed in the private cloud because it was just too expensive. ... The real value of Microsoft Azure, though, is really more about flexibility in manpower convenience, enhanced resource allocation because we don't have to run our own servers and things like that and not having to refresh the equipment."

Cost-effective use of advanced analytics (energy, United States):

"We are moving reporting into more advanced analytics with Microsoft Azure to get predictive and prescriptive type analytics. ... We could have done that on premises, with a lot more capital investment. ... Looking forward, it would have taken a couple hundred thousand dollars and we'd have to add another two to three people with on-premises."

As shown in **Figure 3** (next page), IDC calculates that study participants will save an average of 16% on direct infrastructure-related costs with Microsoft Azure, saving over \$900,000 per organization per year.



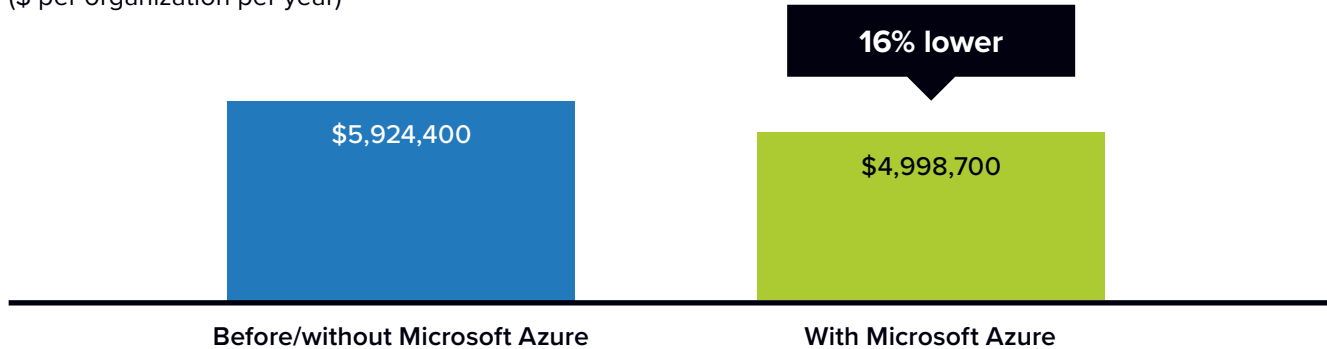
We are moving reporting into more advanced analytics with Microsoft Azure to get predictive and prescriptive type analytics."

Energy respondent
United States

FIGURE 3

Annualized Infrastructure Costs

(\$ per organization per year)



n = 7; Source: IDC In-depth Interviews, June 2022

Enabling Cost Efficiencies with Hybrid IT Environment

In addition to consumption-based cost efficiencies, study participants noted cost efficiencies related to maintaining a hybrid IT environment with Microsoft Azure. They cited accessing a hybrid licensing model that allows them to reduce the costs of running their workloads in the cloud by leveraging their preexisting Microsoft licenses while keeping specific workloads in an on-premises environment. Further, they reported that they appreciated the ease of maintaining a hybrid IT environment with Microsoft Azure, which essentially allows them to easily choose the best resources for running different workloads based on nature of the workload.

They offered these comments:

Enables use of hybrid environment for certain applications (professional services, United States):

“Around 30 of our applications still have an on-premises component. Microsoft Azure helps enable a hybrid environment by tying everything into the Active Directory, which is part of our hybrid solution, and that’s enormously helpful, and goes back to that integration.”

Maintain hybrid environment based on application needs (healthcare, Australia):

“We probably have about 30% of our workloads on premises with a hybrid environment because we’re moving some to Azure and keeping some on premises. It depends on the nature of the application. Some we’d like to go to the cloud, but they are not ready.”

Improvements in IT Team Efficiencies

Microsoft Azure has enabled IT infrastructure and security teams by automating many day-to-day tasks and minimizing the friction associated with infrastructure silos. These impacts are especially evident with various routine tasks such as the patches,

updates, and provisioning that Azure often automates. Combined, these efficiencies serve to increase the overall effectiveness and efficiency of these teams and free up team time to focus on other business-enabling activities. Not having to fight day-to-day fires makes time for innovation and projects that are more directly supportive of business operations.

Study participants commented on these and related benefits:

Dynamic and modern environment encourages higher-value work (healthcare, Australia):

“Microsoft Azure is obviously a much more dynamic environment than the on-premises environment. We have constant access to new features and tools available on Azure. ... This helps our team modernize our way of working and our skill set so that we can focus on things that are of a higher-order value than maintaining legacy hardware.”

Moving from fighting day-to-day fires to freeing up time for innovation (retail, Poland):

“Before Microsoft Azure, we spent no time on innovation because we were fighting to keep the lights on in our datacenter and the platform running. We were ensuring that there was enough storage for the logs, that the platform was performing, or we were fighting with the performance of the platform. ... Also, the number of times when our platform was down was too frequent. We were really fighting with having the time to go to home. Right now, we still are very much focused on innovation.”

Much more time available for innovation, substantial time savings for patching (financial services, United States):

“Our team can probably now spend about 40% of their time on innovation with Microsoft Azure, and this would be probably 15–20% on premises. They wouldn’t have time because they’d be doing other things; for instance, they’d be involved with troubleshooting infrastructure issues. ... In terms of patching, we used to have 30–40 people spending 10–15% of their time on patching, but now that’s down to basically nothing with Microsoft Azure.”

Visibility and common platform mean easier to manage (professional services, United States):

“With Microsoft Azure, we have greater visibility into our IT environment with a single platform and single pane of glass. So, it’s easier to manage—the logging, the monitoring—it’s all greatly simplified.”

Table 3 (next page) quantifies this impact on core IT infrastructure teams, with SSstudy participants reporting that these teams are 53% more efficient with Microsoft Azure. Looked at somewhat differently, these efficiencies mean that each IT infrastructure team member can handle more than double the number of workloads (114% more VMs per staff member, on average).



[Microsoft Azure] helps our team modernize our way of working so we can focus on things that are of a higher-order value.”

Healthcare respondent
Australia

For study participants, this means their IT infrastructure teams can better handle growing application and data volumes, and reallocate staff time to higher-value activities.

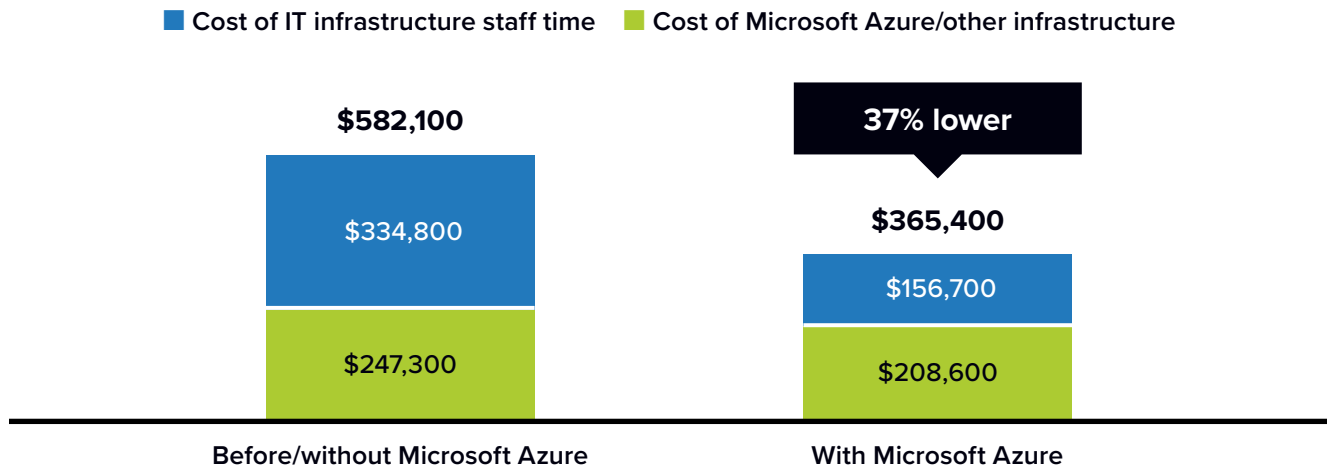
TABLE 3
Impact on IT Infrastructure and Administration Teams

	Before/Without Microsoft Azure	With Microsoft Azure	Difference	Percentage Benefit
Equivalent FTEs required for same workloads	80.2	37.6	42.7	53%
Value of equivalent FTE time required (\$ per organization per year)	\$8.0M	\$3.8M	\$4.3M	53%

n = 7; Source: IDC In-depth Interviews, June 2022

Combined with lower infrastructure costs, IT team efficiencies deliver a compelling value proposition in terms of cost of operations for Microsoft Azure. On average, IDC calculates that study participants will incur 37% lower costs to run equivalent workloads on Microsoft Azure, saving more than \$216,000 per 100 users over three years.

FIGURE 4
Three-Year Cost of Operations per 100 Users
(\$ per 100 users, three years)



n = 7; Source: IDC In-depth Interviews, June 2022

Innovation Benefits Through Agility and Enhanced Development

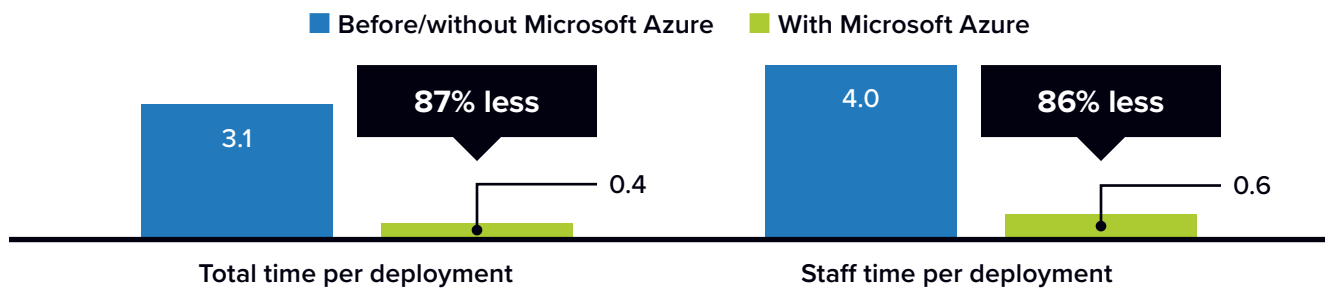
Resource agility is a critical dependency for the organizations studied, as they must continually find ways to better support business and customer needs. This often means deploying compute and storage resources swiftly and easily to speed up the delivery of new applications and functionality, and moving at the speed dictated by business operations. Study participants called out the scalability provided by Microsoft Azure in particular as beneficial in meeting business needs. As one study participant working in the transportation sector noted: *“We have some real peaks and troughs throughout the year in terms of demand as there are new campaigns. We can spin up resources on the fly now with Microsoft Azure, which we never could do before. And we can scale to higher capacities than we could before.”*

Figure 5 quantifies these benefits, showing that interviewed organizations can deliver needed IT resources in far less time with Microsoft Azure, requiring an average of 87% less time overall and a similar 86% less staff time per deployment. A U.S. agriculture company described the real-world impact of having this type of agility with Microsoft Azure: *“Two weeks ago, we were collecting drone images and we ran out of space where it was being stored at the sites. The drones come back, we download the information onto storage, and it ran out of space. It took only two to three minutes to create storage on Azure, and data scientists were able to upload the images at 1.5TBs per day and not worry about that space running out. That’s incredible flexibility right there.”*

FIGURE 5

Impact on IT Agility

(Number of hours per deployment)



n = 7; Source: IDC In-depth Interviews, June 2022

Study participants also described application development as a core area where migration to and modernization on the Microsoft Azure platform has enabled improved outcomes. For most organizations, the ability to provide high-performing and impactful software functionality in a timely manner is foundational to their business success. Interviewed Microsoft customers reported leveraging enhanced agility and flexibility to deliver new applications and features faster to both employees and customers.

Further, study participants noted that their infrastructure and application teams could work more closely on the Microsoft Azure platform, thus enabling DevOps and other more efficient development approaches.

They highlighted these and other development-related benefits:

Enables DevOps approach, blending of various teams’ skills (healthcare, Australia):

“With Microsoft Azure, the application teams work directly with Azure on cloud architecture work. ... This means that the infrastructure and application teams work much closer together now in much more of a DevOps model, whereas before the boundaries were drawn a lot more rigorously and now there’s a blending of skills.”

Facilitates DevOps approaches (financial services, United States):

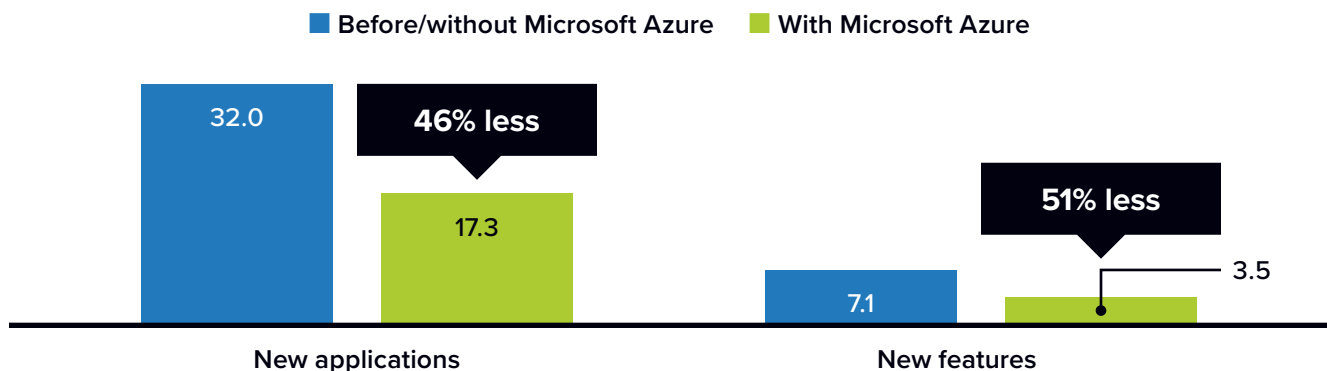
“Microsoft Azure facilitates DevOps for us. Right now, we have a dozen agile teams with 140 people. I’d say that they are saving 15–20% in efficiencies because they are on the Microsoft Azure cloud.”

Much faster delivery of new revenue-driving features (retail, Poland):

“Right now, we release more than half of our features shortly after the sprint is finished, which is usually two days later. Basically, we went from 12 weeks to two weeks with Microsoft Azure, and this is a huge, huge benefit. Some of the features were tightly bound to some expectation that they will bring additional revenue, and the faster release increased the productivity of the team.”

Figure 6 shows how study participants have lessened development lifecycles for new applications and features as they have migrated to and modernized on the Microsoft Azure platform. On average, they reported condensing development lifecycles for new applications by an average of 46% and for new features by an average of 51%. These metrics reflect their much-enhanced ability with Microsoft Azure to meet demand from their businesses for new functionality in a timely way.

FIGURE 6
Impact on Development Life cycles
 (Number of weeks)

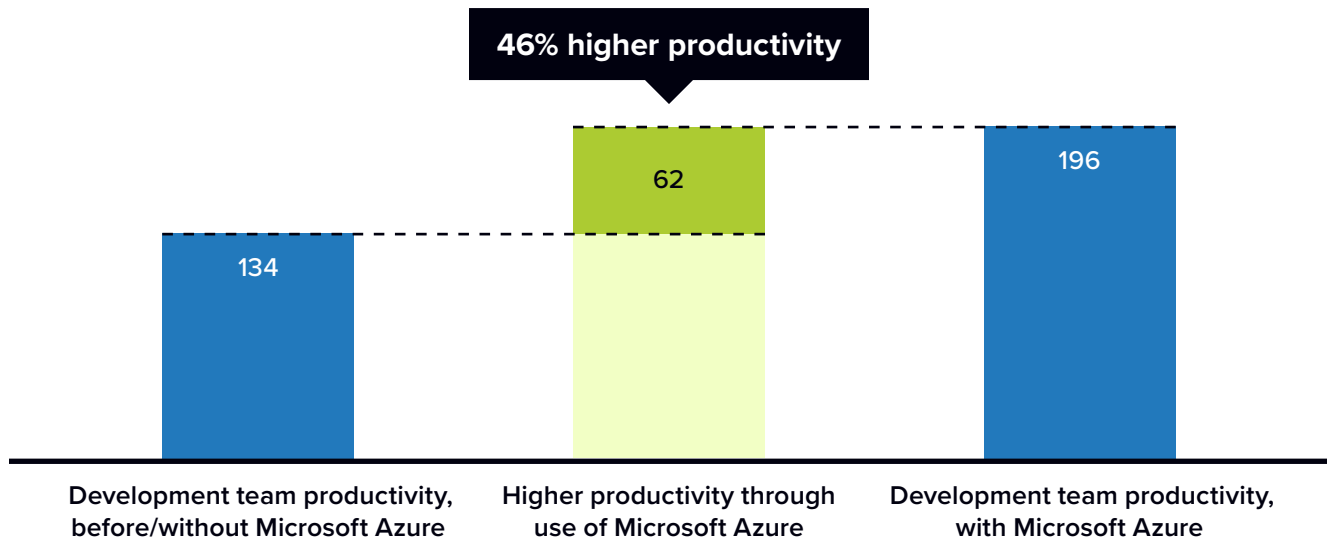


n = 7; Source: IDC In-depth Interviews, June 2022

IDC then drilled down on how improved and more robust development approaches benefit application development team productivity levels. Interviewed companies reported that with the Microsoft Azure platform, these teams could better match the needs of their businesses, thereby increasing their organizational value. For example, a healthcare organization in Australia explained: *“Microsoft Azure has impacted application development in that there’s a closer relationship with the architects. We just get a more rounded application. Previously, we would build applications without good internal consultation with the different areas like security infrastructure. Now, the teams are much more in sync and have a common understanding.”*

Study participants use Microsoft Azure as a platform for significant development activities as evidenced by having an average of 134 developers. As shown in **Figure 7**, IDC calculates that these developers are an average of 46% more productive as their organizations migrate to and modernize on Microsoft Azure.

FIGURE 7
Impact on Development Team Productivity
(Equivalent productivity, FTEs per organization)



n = 7; Source: IDC In-depth Interviews, June 2022

Improved Security, Reliability, and Performance

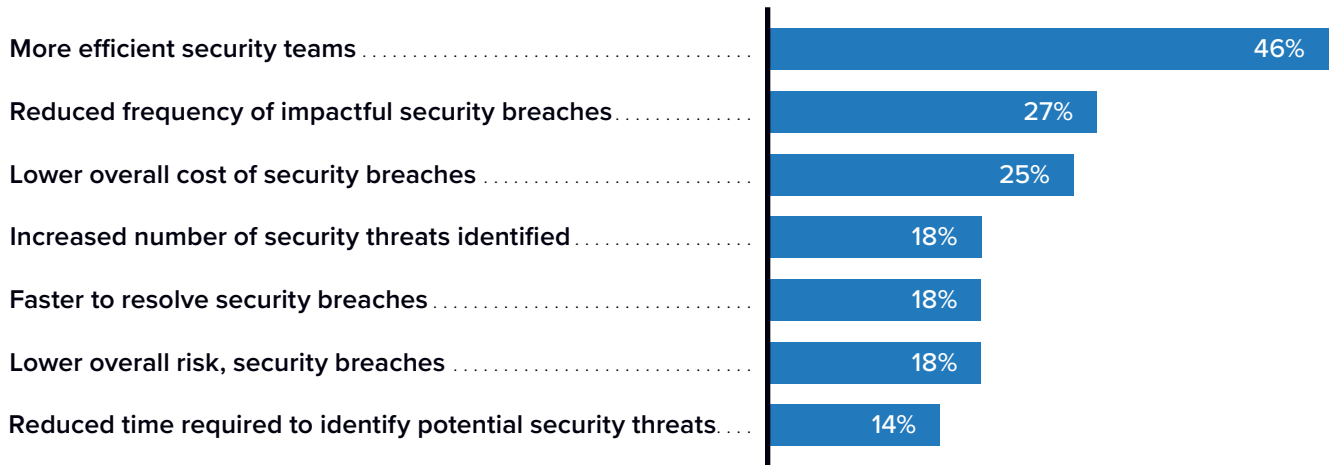
Interviewed organizations reported an array of security, performance, and reliability benefits with Microsoft Azure as the foundation for data and application migration and modernization efforts.

These included:

- Improved security to minimize risk, including limiting security threats and actual breaches
- Greater resiliency to minimize the impact of outages when they occurred
- Enhanced performance to provide better digital experiences for end users/customers

In terms of security, interviewed organizations reported that their security teams benefited from having a more unified IT platform with embedded security features, along with benefits from the ability to maintain hybrid environments more efficiently. Study participants recorded improved across-the-board security postures with Microsoft Azure, including an overall reduction in security breach–related costs and risk related to security breaches. IDC quantified these security benefits by identifying a number of specific KPIs as shown in **Figure 8**. With Microsoft Azure, interviewed organizations reported that their security teams were 46% more efficient and that they experienced an average of 27% fewer breaches along with a 25% reduction in the overall cost of breaches occurring. Additional metrics are presented.

FIGURE 8
Security-Related Benefits
 (Percentage benefit)



n = 7; Source: IDC In-depth Interviews, June 2022

Study participants called out the value of redundancy in case of hardware failure as a noteworthy benefit of the Microsoft Azure platform. They also commented on how embedded ML/AI capabilities allow for new compute and storage resources that allow them to spin up resources when needed to ensure application availability. They also appreciated the value of not being overly reliant on a single datacenter.

For example, a U.S.-based energy company commented: *“The ability to have redundancy with Microsoft Azure is beneficial. There is little to no business impact when we have an actual hardware failure, which happens rarely in Azure because we can spin up another environment for the workloads.”*

Table 4 shows the significant value for study participants of greater business continuity with Microsoft Azure. On average, study participants reported limiting productivity losses tied to unplanned outages by 86%, saving two hours of productive time per user per year. Further, they reported limiting the frequency and damage to their businesses caused by unexpected business interruptions, avoiding revenue losses worth an average of \$11.78 million per organization per year.

TABLE 4
Impact on Unplanned Downtime KPIs

	Before/Without Microsoft Azure	With Microsoft Azure	Difference	Percentage Benefit
Number of unplanned outages per year	53.0	9.0	44.0	82%
Mean time to repair (hours)	3.6	2.5	1.1	31%
Hours of productive time lost per user per year	2.3	0.3	2.0	86%
Productivity loss per year in FTEs per organization	6.8	1.0	5.8	86%
Value of lost productivity time per organization per year	\$477,700	\$67,400	\$410,200	86%
Value of lost revenue per organization per year	\$15.8M	\$4.0M	\$11.8M	75%

n = 7; Source: IDC In-depth Interviews, June 2022

Study participants also connected their use of Microsoft Azure as a platform for migration and modernization to improved overall IT and application performance. For example, a U.S. agriculture company explained: *“We’re so agile and so quick to get storage for drone images or data analytics with Microsoft Azure, and that agility and flexibility allows us to predict our crop yield better. Before, when we tried to give our customers our growth projections, what we were able to yield from a crop was off by a high percentage because it was all manual. Now that we have machine learning, our accuracy has increased significantly.”*

Meanwhile, a professional services firm in the U.S. commented on overall performance gains: *“Our applications are running better—probably one third better with Microsoft Azure, because it’s so much easier to get a faster processor or more servers or whatever. ... Also, no matter where you are in the world, performance is more or less the same with Microsoft Azure.”*

Business Impact: Higher Revenue

IDC’s research also confirms that study participants have realized improved business outcomes by migrating to and modernizing on Microsoft Azure. In general, they have improved their business prospects in terms of addressing customer demand, meeting customer expectations, and ultimately winning and/or retaining business. Interviewed organization appreciated the benefits with Microsoft Azure of faster delivery of new revenue-driving features, the ability to easily match IT resources to business requirements, and the ability to move new products and services to market more quickly.

Study participants provided rich examples of how they have enabled better business results by migrating to and modernizing on Microsoft Azure:

Create and establish competitive advantage through use of new technologies for impactful business services (retail, Poland):

“From day one with Microsoft Azure, our first project was something we call ‘dynamic pricing.’ This is purely machine learning, analytical engine, based on the daily transactions. We have millions of them calculating the best price for the customer based on some algorithms which are machine learning–driven. We see a huge benefit from them done with Microsoft Azure. ... The margin impact is a two-digit number.”

Major impact on core business functionality (agriculture, United States):

“We went from a 20% error rate down to about a 7% error rate with Microsoft Azure on our crop yield estimate. ... Our data scientists absolutely love it because we can pull in much more data than before volume-wise, and the speed of calculation is so much quicker to get it done now with Azure. ... It’s faster by at least 20% and probably more.”

Holistic positive operating impact, including on revenue (transportation, United Kingdom):

“The impact of Microsoft Azure has been hugely successful. It’s improved reliability. It’s increased our security posture overall. I think it’s helping with our carbon offset as well. ... We’re north of 20% higher revenue supported by Microsoft Azure.”



Our data scientists love [Azure] because we can pull in much more data than before, and the speed of calculation is so much quicker.”

Agriculture respondent
United States

Enables faster business growth with faster time to market for new services (healthcare, Australia):

“Our company is growing significantly, and I think it would be growing more slowly without Microsoft Azure—maybe 1–2% slower. ... It’s because of speed to market—we can build things much quicker, which means they are out there contributing to revenue.”

As the above examples demonstrate, interviewed Microsoft customers have realized important business gains by delivering more robust and timely products/services to their customers. For study participants, this results in higher revenue as they win more business more often, better maintain existing customers, and compete better on price.

Table 5 provides IDC’s analysis of the direct business impact of interviewed organizations’ use of Microsoft Azure, with the organizations achieving an average revenue gain of \$139.0 million per year per organization. For the purposes of its financial analysis, IDC applies a 15% margin assumption to calculate the net revenue benefit, which comes to an average of \$20.9 million per organization. (For additional details about IDC’s methodology, please see Appendix 1.)

TABLE 5
Business Productivity Benefits, Higher Revenue

	Per Organization	Per Microsoft Azure VM
Revenue Impact		
Total additional revenue per year	\$139.0M	\$84,300
Assumed operating margin	15%	15%
Total additional net revenue per year	\$20.9M	\$12,600

n = 7; Source: IDC In-depth Interviews, June 2022

ROI Summary

Table 6 (next page) presents IDC’s return on investment and analysis for study participants’ use of Microsoft Azure as a platform for cloud migration and modernization. As shown, IDC projects that they will achieve three-year discounted benefits worth an average of \$70.3 million per organization (\$1.3 million per 100 users) through IT cost savings, staff efficiencies and productivity gains, and higher revenue. These benefits compare with total three-year discounted costs of \$14.3 million per organization (\$0.3 million per 100 users). These levels of benefits and investment costs are projected to result in an average three-year ROI of 391% and a break-even point in their investment occurring in 10 months.

TABLE 6
ROI Analysis

	3-Year Average per Organization	3-Year Average per 100 Users
Benefit (discounted)	\$70.3M	\$1.3M
Investment (discounted)	\$14.3M	\$0.3M
Net present value (NPV)	\$56.0M	\$1.0M
Return on investment (ROI)	391%	391%
Payback period	10 months	10 months
Discount rate	12%	12%

n = 7; Source: IDC In-depth Interviews, June 2022

Challenges/Opportunities

Despite the benefits that organizations can achieve by executing on migration and modernization strategies, it is not without challenges. The most commonly cited barrier involves skill sets and training as IT staff and developers become familiar with cloud-native approaches to software-defined infrastructure and modern application design. There can also be cultural barriers within a company, as the shift to cloud impacts internal processes and budgeting.

To address these challenges, Microsoft offers a variety of resources to help customers with the transition, including documentation, code samples, and reference architectures. In addition, training and certification programs can help upskill existing employees and instill best practices across the organization.

For those that may need additional help, the Microsoft Partner Program consists of more than 8,500 Solutions Integrator (SI) partners, 2,000 qualified Independent Software Vendor (ISV) partners, and 3,700 partner data solutions. These partners can help customers at any point in their migration and modernization journey, making it easier and faster to gain the benefits of Microsoft Azure.

Conclusion

Digital transformation initiatives designed to provide robust, timely, and relevant digital experiences to customers increasingly fuel enterprise business strategies and results. Most organizations engage in digital transformation to increase business agility through automation, deliver richer customer experiences, and offer new products and services. The ability to meet customer and market demand is at the heart of digital transformation, with organizations' ability to move and adapt quickly to identify and take advantage of business opportunities now foundational to business success. For most organizations, achieving digital transformation requires modernizing applications and their underlying infrastructures, which has encouraged organizations to make use of cloud technologies, including infrastructure- and platform-as-a-service solutions.

This IDC study assessed the impact for organizations of using the Microsoft Azure cloud as a platform for migration and modernization of business data, applications, and services. Study participants reported that Microsoft Azure has enabled more cost-effective and agile IT operations compared with their legacy on-premises environments. Thus, they not only optimize direct IT costs but also gain from the use of new technologies accessible through the Azure cloud and the ability to deliver timely and robust new functionalities and applications to customers, employees, and other stakeholders. In terms of business results, interviewed Microsoft customers reported improving business outcomes by migrating to and modernizing on Azure by capturing more revenue by better addressing customer demand, meeting customer expectations, and ultimately winning and/or retaining more business.

As a result, IDC's analysis shows that study participants will realize strong value through their use of Microsoft Azure as a platform for data and application migration and modernization, projecting an average three-year ROI of 391% and breakeven in investment in 10 months.

Appendix 1

Methodology

IDC's standard Business Value/ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Microsoft Azure to run SQL Server and Windows Server workloads as the foundation for the model.

Based on interviews with organizations using Microsoft Azure, 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 using Microsoft Azure. In this study, the benefits included IT infrastructure cost savings, IT staff and development team efficiencies and productivity gains, reduced costs associated with risk, and higher revenue.
2. Created a complete investment (three-year total cost analysis) profile based on the interviews. Investments go beyond the initial and annual costs of using Microsoft Azure 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 Microsoft Azure over a three-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 manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year 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 three-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.
- IDC applies a net margin assumption (15%) for most user productivity gains and additional gross revenue attributed to interviewed organizations' use of Microsoft Azure resulting in the net productivity and revenue calculations applied to IDC's model.
- Because IT solutions require 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.

All dollar figures in this White Paper are in U.S. dollars.

Appendix 2

Quantified Benefits of Use of Microsoft Azure for Migration and Modernization

Table 7 provides details about the financial value that IDC calculates study participants will achieve on an annual basis over three years by migrating to and modernizing on the Microsoft Azure platform.

TABLE 7
Annual Quantified Financial Benefits

Category of Value	Average Quantitative Benefit	15% Margin Assumption Applied	Calculated Average Annual Value
IT infrastructure cost savings	16% savings, \$925,700 per year	No	\$715,700
IT infrastructure/administrative team efficiencies	42.7 FTEs, 53% efficiency, \$100K salary	No	\$3.3M
IT security team efficiencies	31.5 FTEs, 46% efficiency, \$100K salary	No	\$2.4M
DBA team efficiencies	16.7 FTEs, 40% efficiency, \$100K salary	No	\$1.3M
Application development team productivity gains	62 FTEs, 46% productivity gain, \$100K salary	No	\$4.8M
Productivity gains, reduced unplanned downtime	2.0 hours saved per user, 5.9 FTEs, \$70K salary	No	\$317,200
Revenue gains, reduced unplanned downtime	\$11.8M avoided revenue loss per year	Yes	\$1.4M
Revenue gains, business enablement	\$139.0M higher revenue per year	Yes	\$16.1M
Total annual benefits, use of Microsoft Azure	\$30.3M		

n = 7; Source: IDC In-depth Interviews, June 2022

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

About the IDC Analysts



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Dave 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. Benefiting 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.

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment (ROI) of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

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