The Business Value of Migrating and Modernizing IT Estate with Microsoft Azure

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BUSINESS VALUE HIGHLIGHTS

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344%
three-year ROI

$902,700
in annual benefits per migrated and modernized business application

78%
faster to execute business change

39%
higher development team productivity

43%
faster to market new products and solutions

19%
higher productivity, impacted line of business users

90%
less unplanned downtime

69%
more IT time to focus on innovation

Executive Summary

Microsoft Azure offers a robust platform for data and application modernization by providing a comprehensive suite of tools, services, and solutions to help organizations transition their existing applications and workloads to cloud-based deployments. This platform aims to improve performance, scalability, security, and innovation capabilities by streamlining the ability of organizations to quickly leverage cloud-based products and solutions to enhance existing digital solutions.

IDC evaluated the business and operational impact of migrating and modernizing infrastructure, data, and applications with Microsoft Azure solutions and services. Interviews with organizations that have undertaken such modernization efforts reveal significant and consistent positive results, particularly in terms of improved business outcomes and efficiencies. This includes meeting the needs of customers and employees more readily and efficiently, with enhanced agility, scalability, and performance.

Based on these interviews, IDC calculates that study participants will realize benefits worth an annual average of $46.13 million per organization ($902,700 per migrated and modernized application) by:

- Providing a highly scalable and high-performing infrastructure for development activities and carrying out changes to business operations
- Meeting customer demand with more relevant, timely, and quality services and solutions
- Delivering more impactful applications and solutions to employees, helping them maximize their productivity levels
- Improving the reliability and availability of key applications to reduce business costs associated with outages and poor performance
- Achieving cost efficiencies in terms of providing, running, and securing application infrastructure

Situation Overview

Application modernization and transformation initiatives are crucial in today's rapidly evolving technological landscape. These initiatives involve updating and extending applications, workloads, and systems to ensure they are scalable, resilient, and capable of meeting evolving customer demands and expectations. Modernization and transformation enable organizations to enhance and update their digital solutions, keeping pace with evolving changes.

Migration and modernization efforts generally occur through three distinct approaches: rehosting, replatforming, and refactoring. Rehosting, often referred to as "lift and shift," involves moving applications to the cloud with minimal changes to their architecture, code base, or functionality. Replatforming allows applications to optimally leverage cloud-based products and services without significant alterations to their architecture. Refactoring entails a comprehensive transformation of an application's architecture, enabling it to support new functionalities more efficiently in the future.

IDC research demonstrates that organizations leverage all three migration and modernization modalities in parallel, depending on the specific application or workload in question. While rehosting requires the least time and effort to implement, IDC research indicates that it delivers fewer business benefits than either replatforming or refactoring. Meanwhile, refactoring typically takes years to complete and requires an even longer period for organizations to fully realize its benefits. In the case of replatforming, IDC research has shown that it streamlines the integration of cloud-based products and services with existing solutions, leading to numerous business and operational benefits.

This paper focuses on the benefits of replatforming using the Microsoft Azure platform. The paper highlights how replatforming enables the realization of benefits, including cost savings, enhanced developer productivity, increased revenue, augmented innovation, improved security, and the streamlined integration of new application functionality, such as intelligence, personalization, and an improved user experience. The paper quantifies how replatforming can help businesses achieve their modernization goals while minimizing disruption and maximizing ROI.

Catalysts for Cloud Migration and Modernization

Key drivers for modernization and transformation initiatives include the following:

Need to Transition from On-Premises Datacenters

One of the key drivers for cloud migration and modernization is the need to move away from on-premises datacenters, which are costly, inflexible, and resource-intensive. Moreover, traditional datacenters require significant capital expenditures and lack the scalability and agility needed to compete in the contemporary digital economy. Transitioning to cloud-based environments enables organizations to reduce capital expenses, improve scalability through elastic infrastructure, and enhance developer productivity by fostering innovation and collaboration. Additionally, transitioning from datacenters to the cloud enables businesses to modernize their applications by leveraging cloud-native features that specialize in improved performance, security, and customer experience.

Intensification of the Urgency for App Modernization and Transformation

The rapid pace of innovation in contemporary development is driving increased urgency for application modernization and transformation. For starters, the velocity of innovation has catalyzed the accumulation of technical debt, making it crucial for organizations to continuously evolve their applications to stay competitive, meet customer demands, and leverage the latest technological advancements. This urgency is growing due to the need to improve operational efficiency, reduce costs, and deliver new features and capabilities faster. Additionally, app modernization and transformation are increasingly central to enabling organizations to integrate AI technologies and AI-related functionality expeditiously. Modernization initiatives enhance the AI-readiness of organizations by strategically positioning them to more effectively integrate AI into their portfolio of digital solutions.

Ability of Cloud-Native Applications to Maximize Cloud-Based Products and Services

Cloud-native applications can fully leverage the benefits of cloud-based products and services. By utilizing microservices, containers, and serverless computing, these applications can achieve greater scalability, resilience, and efficiency. This capability accelerates the modernization process, allowing organizations to quickly adapt to changing market conditions and customer needs while optimizing resource utilization and reducing infrastructure overhead.

Deepened Integration of AI and Generative AI

The integration of AI and generative AI (GenAI) into contemporary development and enterprise software is becoming more profound. These technologies enable applications to offer intelligent features such as predictive analytics, natural language processing, and automated decision-making. As a result, end users now expect applications to demonstrate a higher level of intelligence, providing personalized experiences, automating routine tasks, and delivering actionable insights.

Amplified Customer Expectations for User Experiences

Customer expectations for applications have evolved significantly, with a strong emphasis on delivering rich, delightful user experiences. Modern applications must offer intuitive interfaces, seamless interactions, and engaging content to meet the heightened expectations of users. This trend underscores the importance of user-centric design and continuous improvement in application development to ensure customer satisfaction and loyalty.

Facilitation of Data-Driven Decision-Making

Modernizing applications enables organizations to implement data-driven decision-making processes that leverage up-to-date data. By modernizing their data infrastructure, organizations can support advanced analytics and real-time insights, enabling more informed and timely decisions. This capability is crucial for staying competitive in a data-centric world, where the ability to quickly analyze and act on data can drive significant business value.

Microsoft Azure as a Platform for Data and Application Modernization

Azure technologies that enable application modernization and transformation initiatives include the following:

Azure Kubernetes Service
Azure Kubernetes Service (AKS) simplifies the deployment, management, and operations of Kubernetes. By using AKS, organizations can expediently manage containerized applications to ensure scalability, high availability, and efficient resource utilization. This service supports the adoption of microservices architectures, enabling faster development cycles and more resilient applications.

Azure App Service
Azure App Service is a fully managed platform for building, deploying, and scaling web apps. It supports various programming languages and frameworks, including .NET, Java, Node.js, and Python. Azure App Service allows developers to focus on creating innovative applications without worrying about the minutiae of underlying infrastructure management. Furthermore, its integrated security patching, scaling, and infrastructure maintenance bolsters the productivity of developers by empowering them to focus on developing digital solutions as opposed to infrastructure and security-related considerations.

Azure AI and ML Services
Azure offers an extensive suite of AI and ML services, including Azure ML, Cognitive Services, the Azure OpenAI Service, and others, all accessible through Azure AI Foundry. These tools enable organizations to integrate advanced AI capabilities into their applications, such as natural language processing, computer vision, and predictive analytics. By leveraging these services, businesses can enhance their applications with intelligent features that improve decision-making, automate processes, and deliver personalized user experiences.

Azure SQL Database
Azure SQL Database is a fully managed relational database service that provides built-in intelligence, scalability, and security. It supports modernizing data infrastructure by offering features such as automatic tuning, threat detection, and advanced data analytics. This service enables organizations to migrate their on-premises databases to the cloud seamlessly by ensuring high availability and performance while reducing administrative overhead.

Azure DevOps

Azure DevOps provides a portfolio of development tools for planning, developing, delivering, and maintaining applications. It includes features such as version control, CI/CD pipelines, and automated testing. By using Azure DevOps, organizations can streamline their development processes, improve collaboration, and accelerate the delivery of high-quality applications.

Azure Cosmos DB

Azure Cosmos DB is a fully managed, globally distributed NoSQL database service for modern app development, offering high performance, low latency, and seamless scalability. Azure Cosmos DB supports multiple data models and APIs, making it ideal for applications that require real-time data processing and global distribution. This service helps organizations modernize their data infrastructure by empowering them to build responsive, high-performance applications that can scale globally.

Azure Database for PostgreSQL

Azure Database for PostgreSQL is a fully managed database service that simplifies the deployment, scaling, and management of PostgreSQL databases. It supports single and flexible server deployment options by offering high availability, automated maintenance, and enterprise-grade security. With features such as built-in AI-readiness, elastic scaling, and advanced monitoring tools, the service empowers developers to focus on building applications rather than managing database infrastructure. Additionally, Azure Database for PostgreSQL integrates seamlessly with other Azure services, enabling businesses to optimize performance, reduce costs, and leverage intelligent capabilities for modern application development.

These technologies collectively support modernization efforts on Azure, subsequently helping organizations stay competitive and innovative.

The Business Value of Modernizing Data and Applications with Microsoft Azure

Study Firmographics

IDC assessed the business, operational, and cost impacts on organizations that use Microsoft Azure solutions to migrate and modernize data and applications through in-depth interviews. These interviews aimed to understand the quantitative and qualitative impact of modernization initiatives with Microsoft Azure for organizations.

Table 1 provides a firmographic overview of the organizations participating in IDC's research. As shown, they shared an enterprise-level profile with 43,930 employees on average (median of 16,500 employees) and an annual revenue of $19.30 billion (median of $3.75 billion). Interviews reflected diverse experiences with modernization with Azure from a geographical perspective, with representation from North America, EMEA, and APAC, and industry vertical perspective, with representation from the retail (2), financial services (2), business and professional services, consumer goods, food/beverage, government, healthcare, and utilities sectors. Please see **Table 1** for additional details about study participants' firmographics.

TABLE 1

Firmographics of Interviewed Organizations

	Average	Median
Number of employees	43,930	16,500
Number of IT staff	2,091	1,300
Number of business applications	849	75
Revenue per year	$19.30B	$3.75B
Countries	United States (5), Germany (2), United Kingdom, India (2)	
Industries	Retail (2), Financial Services (2), Business and Professional Services, Consumer Goods, Food/Beverage, Government, Healthcare, Utilities	

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Modernizing Data and Applications with Microsoft Azure

IDC focused its research for this study on understanding the impact of using Microsoft Azure infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) solutions in driving efforts to migrate and modernize data and applications.

Specifically, the modernization of data and applications entailed three elements:

- Replatforming and rearchitecting applications and databases to more effectively meet the needs of customers and/or end users
- Optimizing applications and databases for the cloud to maximally leverage its associated universe of products and services
- Infusing applications with more innovative functionality in general and, in select cases, deepening the integration of AI and ML functionality into these applications

Study participants described the drivers of their modernization efforts, which were unique to their organizations but sought to address common challenges. Interviewed organizations reported commonly undertaking their modernization efforts with Microsoft Azure to achieve greater scalability, high availability, and more robust application environments, which are essential for handling unpredictable business volumes and seasonal spikes. Additionally, they sought to leverage advanced analytics, AI, and ML functionalities to enhance business processes, optimize costs, and drive innovation.

Study participants described their criteria in greater detail:

Replatforming to automate DevOps for faster releases (professional services, North America):

"We have replatformed all of our on-premises applications to Azure, enabling us to utilize more native databases and DevOps automation. This has allowed us to release code faster and iterate more quickly."

Move to microservices-based architecture and driving data analytics capabilities (insurance, APAC):

"We are shifting to a microservices-based architecture using Azure Kubernetes Service and leveraging the entire data fabric, from Synapse to Databricks, for our data analytics."

Application optimization in terms of performance, quality, and cost (consumer goods, EMEA):

"We are optimizing our current applications to OpenShift applications in the Azure cloud, achieving better efficiency in terms of performance, quality, and cost."

Modernized reporting platform means better product delivery (food/beverage, North America):

"We have modernized our operational reporting and inventory portal analysis applications using Python on Azure. This has improved our ability to deliver products quickly and increased our uptime."

Use of Microsoft Azure Services to Migrate and Modernize Data and Applications

Study participants leverage various Microsoft Azure solutions, including infrastructure-as-a-service, platform-as-a-service, and data- and industry-specific solutions, to drive their data and application modernization initiatives. The use of Azure PaaS solutions is integral to modernization, and most study participants reported using Azure App Service, Azure Kubernetes Service, and Azure Cognitive Services to fuel their modernization efforts, with significant use of Azure Logic Apps and Azure AI Services.

Interviewed Microsoft customers spoke in detail about the blend of Azure solutions they rely upon to drive their data and application modernization initiatives.

While their use cases commonly tie back to providing a more agile, flexible, analytics-friendly, and high-performing foundation for data and applications, the diversity in specific use cases underscores how study participants have leveraged Azure to pursue their own modernization efforts:

Azure Data Lake, Power BI, serverless infrastructure (financial services, North America):

"We use Azure Data Lake to analyze unstructured data and Power BI for reporting and event-driven applications. The serverless infrastructure and cloud-native applications hosted in Azure enable us to optimize structured data."

Digital manufacturing platform and AI (consumer goods, EMEA):

"We are using Azure's digital manufacturing platform to consolidate production applications. This includes incorporating AI components for proactive maintenance and tool changes and setting up centralized databases in the Azure cloud."

Azure Kubernetes Service (government, EMEA):

"We use Azure Kubernetes Service to develop new cloud-native applications based on a microservices architecture. Additionally, we have facilitated the migration and modernization of traditional on-premises datacenter applications using Azure VMware Service."

Data lakehouse architecture (insurance, APAC):

"Our entire data lakehouse architecture, built on Azure, supports analytical workloads and BI. It runs multiple models for financial and health underwriting and manages customer servicing journeys."

Table 2 provides an overview of the study participants' migrated and modernized data and application environments. As shown, they reported having migrated and modernized an average of 51 applications with Azure. These applications, which are often among their most data-heavy and technologically advanced applications, require an average of 444 Azure virtual instances and over 55 petabytes of storage and data capacity.

TABLE 2

Migrated and Modernized Data and Application Environments, Microsoft Azure

Demographics	Average	Median
Number of migrated and modernized applications	51	12
Number of Azure VMs for migrated and modernized applications	444	95
Data volume for migrated and modernized applications, TBs	55,717	175

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Business Value and Quantified Benefits of Modernizing Data and Applications with Microsoft Azure

Study participants have leveraged the modernization of important data and applications with Microsoft Azure to make significant positive strides in their ability to deliver high-quality and impactful solutions to customers and operate more efficiently. In many cases, these benefits tie back to having the ability to leverage insights from operational data and generate value through the use of newer technologies such as AI- and ML-based solutions. Study participants cited benefits from enhanced scalability, performance, reliability, and security related to their modernization efforts.

Interviewed Microsoft customers provided specific examples of the types of use cases and business activities that modernization with Azure drives that reflect these objectives:

- Ingesting and analyzing unstructured data to understand consumer behavior and target marketing solutions using AI and ML
- Enabling larger-scale data management to process larger data volumes and apply ML to drive business strategies such as price optimization

- Using GitHub and Copilot to drive development capabilities and Omnichat for streamlining build system processes
- Integrating AI and ML into customer service bots and leveraging OpenAI to serve internal contact center agents
- Using Azure cognitive services to ensure better processing of information to leverage in development and DevOps processes
- Applying AI and ML to gain deeper business insights and take appropriate steps to scale and respond to business needs
- Analyzing revenue trends faster to capture more revenue and move faster to address business demand

Study participants directly linked these types of modernization-driven use cases to improved business results and operational efficiencies.

Direct customer quotes reflect their ability to derive important competitive differentiation through data and application modernization with Azure:

Advanced analytics to drive business activities and decisions (professional services, North America):

"We can now use advanced analytics for business strategy in areas such as price optimization and customer acquisition by applying ML to pricing algorithms within Azure and Databricks."

Ability to leverage bot-based capabilities (insurance, APAC):

"We can initially augment our workforce with bots and eventually replace humans with humanoids and autonomous agents. These agents will be empowered to make decisions as we used to, making them more emotionally based and competent in handling transactions."

Price benefits and higher quality (consumer goods, EMEA):

"We are saving resources by modernizing with Azure and eliminating local replications. Instead, we provide access through VDIs. This has improved our production processes, end-to-end simulations, and impact analysis for the logistics of the products we are building."

Scalability to readily meet peak demand (retail, APAC):

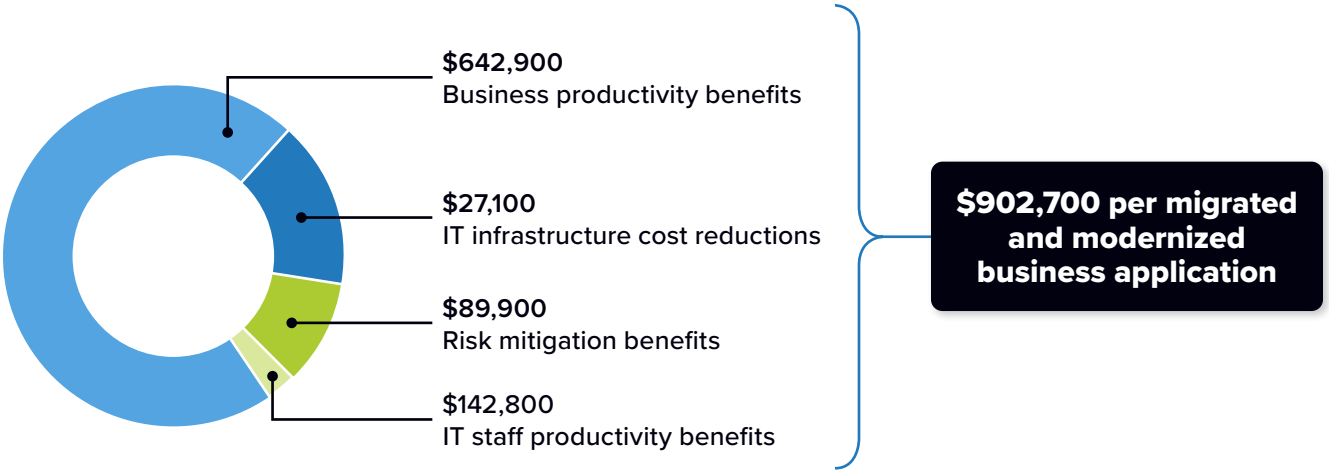
"During peak seasons, using Azure allows us to scale our infrastructure without prohibitive costs, ensuring smooth operations and customer satisfaction."

Based on interviews with Microsoft customers that are modernizing significant amounts of data and applications with Azure, IDC calculates that they will realize annual benefits worth an average of $902,700 per migrated and modernized application ($46.13 million per organization) in the following areas:

- **Business productivity benefits:**
  Study participants reported driving significant business growth and operational efficiencies, including higher employee productivity, through data and application modernization with Azure. IDC values these revenue and productivity gains at an annual average of $642,900 per migrated and modernized application ($32.85 million per organization).
- **IT staff productivity benefits:**
  Study participants enable development, infrastructure, and security teams to work with less friction and capture efficiencies from access to new technologies. IDC calculates that these teams will realize efficiencies and productivity gains worth an annual average of $142,800 per migrated and modernized application ($7.30 million per organization).
- **Risk mitigation (user productivity benefits):**
  Study participants benefit from higher availability of key applications, which reduces productivity and revenue costs associated with outages. IDC estimates that these benefits will be worth an annual average of $89,900 per migrated and modernized application ($4.59 million per organization).
- **IT infrastructure cost savings:**
  Study participants establish optimized and more cost-effective infrastructure environments, saving an annual average of $27,100 per migrated and modernized application ($1.38 million per organization).

FIGURE 1

Average Annual Benefits per Migrated and Modernized Business Application



n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Agility and Development Benefits

Study participants credited the modernization of data and applications with Azure with significant gains in agility and scalability. Specifically, they cited improved ability to deliver IT resources quickly in support of business activities, which propels more effective development activities and allows for faster adaptation to business conditions and use of new technologies such as GenAI-based solutions. They noted that the use of Azure platform services, such as Azure DevOps and AI capabilities, has enabled faster development cycles and the implementation of more innovative solutions. Improved agility, which minimizes the extent to which infrastructure- and systems-related friction hinders changes and updates, has allowed organizations to bring new products and services to market more quickly. Study participants consistently linked these improvements in agility achieved through modernization of data and applications with Microsoft Azure to improved business results, as discussed later in this study.

Study participants provided examples of how they have improved their IT and organizational agility and scalability through their modernization of data and applications with Azure:

Scaling on the fly as needed (food/beverage, North America):

"Our ability to scale more compute or more storage as needed, and being able to do that on the fly is incredibly powerful. That's probably the biggest benefit of modernization with Azure."

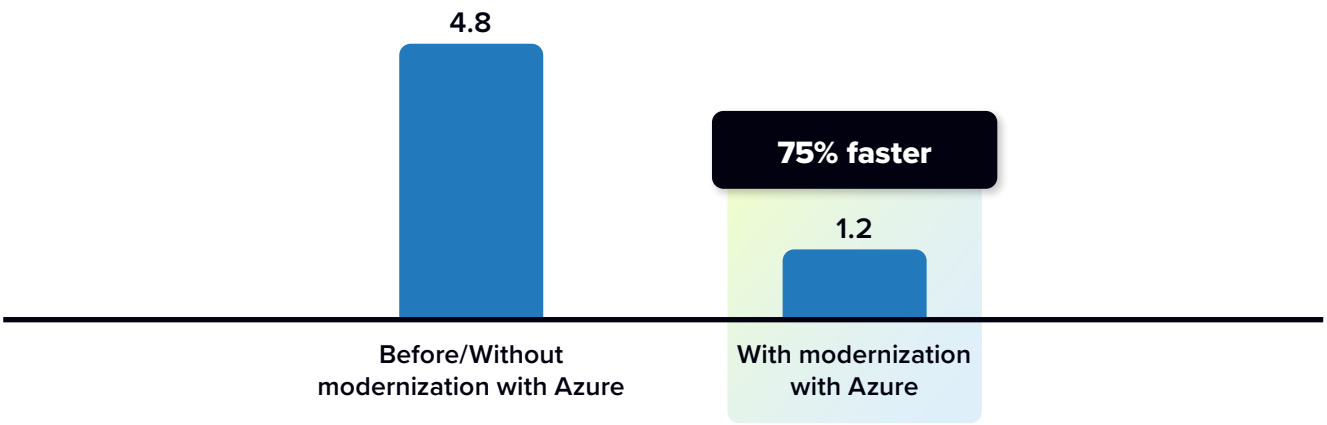
Faster to market and more secure releases (government, EMEA):
"Azure tooling enables us to provide faster time-to-market releases and generally higher-quality, more secure software products."

Figure 2 demonstrates the significant positive impact that modernization with Azure has had on interviewed Microsoft customers' ability to provide IT capacity as their businesses required. The interviewed government organization in EMEA noted: *"Infrastructure agility has been one of the biggest learning points for us. We can deliver infrastructure so much quicker with Azure modernization. If it took us two months to buy a server, now we can provide infrastructure within two hours. That rapidity with which we can respond makes things much easier."* As shown, they can now complete the process of providing new compute, storage, or other capacity 75% faster, thereby limiting any detrimental impact of capacity limitations.

FIGURE 2

Time to Deploy Infrastructure Resource Resources

(Number of days in total)



n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Development teams rely on consistent and unfettered access to capacity to plan, test, and deploy new software functionality. Owing to improvements in agility and the integration of new technologies that automate and enhance development activities, study participants linked modernization to significant increases in the effectiveness and throughput of these teams. The interviewed food/beverage company in North America commented on the value of streamlined and enhanced development capabilities: *"The modernization tools provided by Azure helped us reduce the amount of code needed, improve performance, and position us to receive new development-related functionality in the future."*

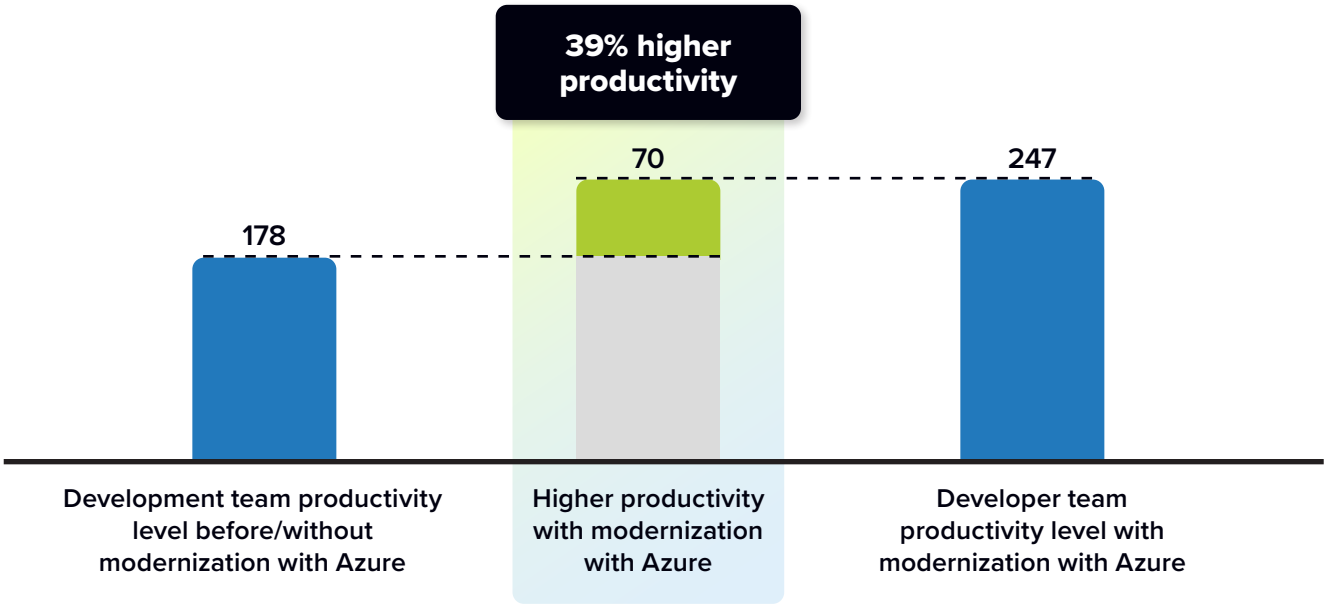
As shown in **Figure 3**, IDC calculates that, on average, their development teams achieve 39% productivity gains, reflecting the substantial impact of modernizing with Azure on their efforts to deliver new and updated software functionality to their businesses.

FIGURE 3

Impact on Development Team Productivity

(Equivalent productivity in FTEs)

For an accessible version of the data in this figure, see Figure 3 Supplemental Data in Appendix 3.



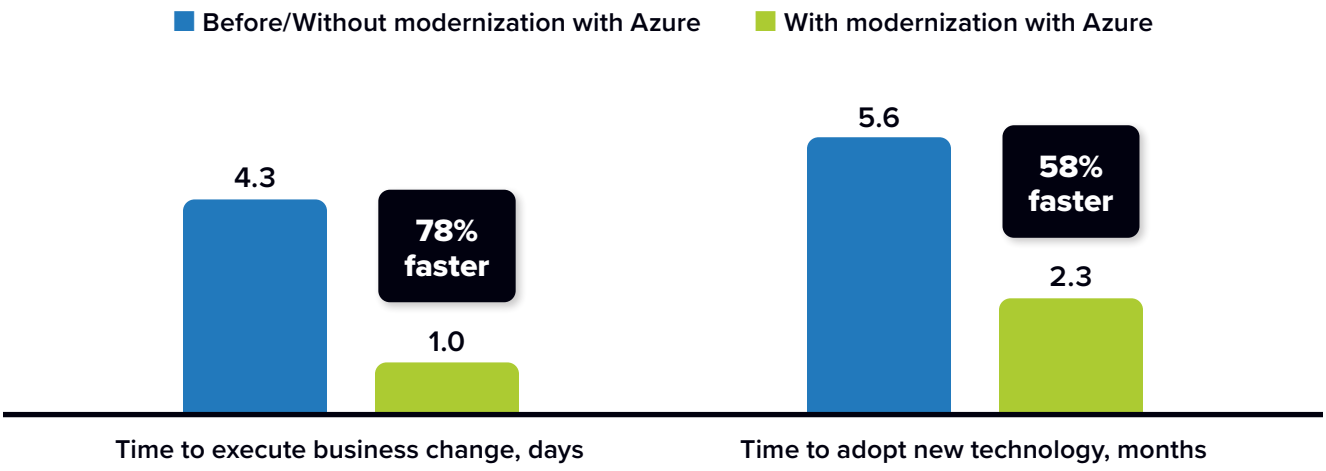
n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Figure 4 (next page) shows the impact of modernization with Azure on the study participants' overall flexibility. It measures their ability to carry out two types of activities fundamental to any business: implementing changes to business operations and adopting new technologies. Organizations that cannot complete these activities on time are more likely to struggle in establishing or maintaining competitive differentiation. As shown, interviewed organizations linked modernization with Azure to execute business changes 78% faster on average and adopt impactful new technologies by 58% on average. These improvements, along with modernization with Azure, shave precious days or even months off the time required for interviewed customers to respond to business needs, which has cascading positive effects on their ability to meet customer demand and achieve better business outcomes.

FIGURE 4

Time to Execute Changes and Adopt New Business Technology

For an accessible version of the data in this figure, see Figure 4 Supplemental Data in Appendix 3.



n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Business and Operational Benefits

Study participants tied their modernization of data and applications with Microsoft Azure to better business and operational results. They noted, in particular, their ability to move faster and with greater intent to meet customer demand through faster go-to-market strategies, leveraging improved development capabilities. They spoke about better leveraging operational data to their competitive advantage and infusing applications and services with cutting-edge technologies. They explained that using Azure's data services, such as Azure Synapse and Cosmos DB, provided them with better data management and analytics capabilities. This leads to more informed decision-making and the ability to leverage data for strategic advantages.

Interviewed Microsoft customers provided examples of business and operational benefits they achieved through modernization with Azure:

Ease of delivering services to target market (consumer goods, EMEA):
"We can now provide services quite easily to the enterprise market and OEMs via this platform and share and develop together with other companies in our space."

Higher revenue from improved uptime and resiliency (insurance, APAC):
"We have higher uptime and better resilience, which directly results in higher revenue transactions for both B2C and B2B business."

Cost optimization and ability to leverage GenAI and ML (financial services, North America):

"The biggest benefits have been cost optimization and the ability to leverage generative AI and ML work."

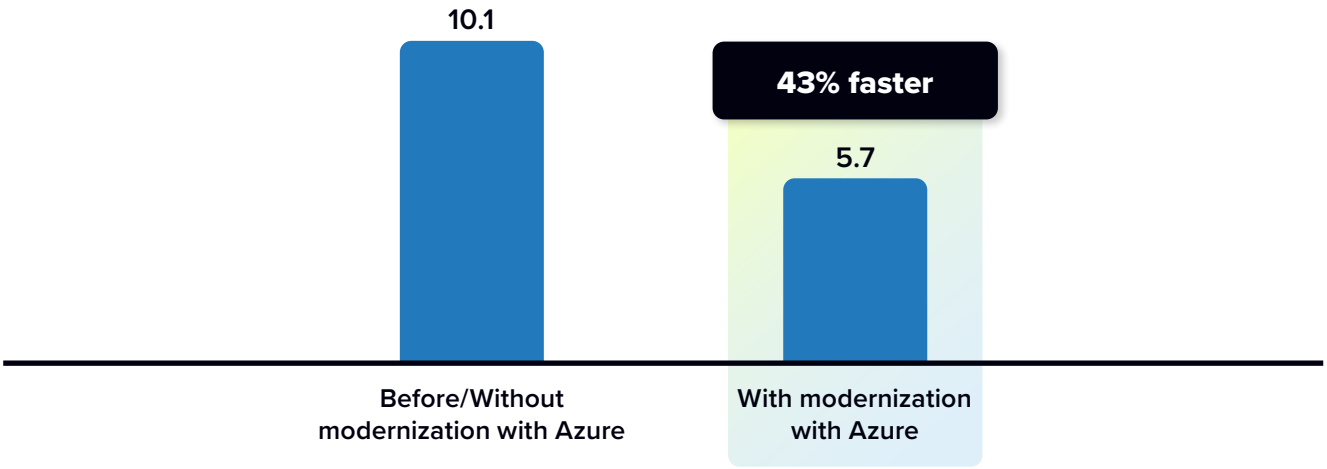
Figure 5 shows how study participants have improved their time to market for new products and services through modernization with Azure. The EMEA governmental organization explained: "Our modernized cloud platform with Azure introduced API management services, enabling us to provide a better-managed API service that's more secure, utilizing Azure APIM. This has improved our software development life cycle by moving legacy applications to Azure DevOps tooling."

By architecting their IT and business environments for agility and taking advantage of powerful new technologies, they can move significantly faster, reducing the average time it takes to deliver a new product or service by 43%, which is 4.4 months faster on average.

FIGURE 5

Time to Market for New Products/Services

(Number of weeks)



n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Table 3 (next page) provides IDC's analysis of the incremental business impact for study participants of modernizing with Azure in terms of revenue gains. As shown, IDC calculates that study participants will realize substantial revenue gains of $208.05 million per year per organization ($4.07 million per migrated and modernized application). These significant revenue gains reflect the competitive differentiation that interviewed Microsoft customers have achieved by modernizing data and applications with Azure.

TABLE 3

Business Productivity Benefits, Higher Revenue

Revenue	Per Organization	Per Migrated and Modernized Application
Higher revenue per year	$208.05M	$4.07M
Assumed operating margin	15%	15%
Higher net revenue per year	$31.21M	$610,700

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

In addition to revenue gains, study participants linked improvements in employee productivity levels to modernization with Azure. They explained that modernization initiatives result in the delivery of more relevant, timely, and impactful business applications and services to employees, which allows them to focus on the most important aspects of their jobs and perform more effectively and efficiently. As shown in **Table 4,** IDC calculates that interviewed organizations' modernization initiatives with Azure have resulted in average productivity gains of 19% for nearly 8,000 employees.

TABLE 4

User Productivity Impact

Equivalent Productivity, FTEs per organization	Before/Without Modernization with Azure	With Modernization with Azure	Difference	Benefit
Equivalent productivity level, FTEs per organization	7,941	**9,464**	1,524	19%
Equivalent productivity level, net productivity gain, FTEs per organization	7,941	**8,169**	229	3%

Table 4 continued on the next page

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Equivalent Productivity, FTEs per organization	Before/Without Modernization with Azure	With Modernization with Azure	Difference	Benefit
Value of equivalent net productivity per organization	$555.85M	**$571.84M**	$16.00M	3%
Value of equivalent net productivity per migrated and modernized application	$10.88M	**$11.19M**	$313,100	3%

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Improved Performance and Reliability

Organizations highlighted the connection between modernizing data and applications with Azure and their ability to scale their applications seamlessly to handle increased workloads, especially during peak times. This scalability ensures better performance and availability of IT systems and applications. In turn, study participants have reduced the frequency with which business applications and services are not available to employees and customers.

Interviewed Microsoft customers provided examples of how modernization with Azure has positively affected application performance and reliability:

Higher SLAs and better availability (government, EMEA):

"Availability has improved because we can achieve greater uptime compared to when we didn't have these modern applications in Azure. Previously, we couldn't offer such high SLAs to our business users. With Azure, we can easily maintain up to 99.9% availability."

Reduced revenue loss (insurance, EMEA):

"We have higher uptime and better resilience with modernization with Azure, and every minute of downtime counts toward revenue loss. So, the biggest benefit for us is the ability to provide higher uptime, directly resulting in higher revenue transactions."

Table 5 (next page) presents IDC's findings on the impact of modernization with Azure on unplanned downtime metrics. As shown, study participants reported reducing the frequency of unexpected outages by 61% and resolving outages 74% faster. This has resulted in a reduced business and operational impact of unplanned downtime, both in terms of employee productivity losses (90% lower) and revenue lost during outages (45% lower).

TABLE 5

Impact on Unplanned Downtime KPIs

Unplanned Downtime KPIs	Before/Without Modernization with Azure	With Modernization with Azure	Difference	Benefit
Number of unplanned outages per year	7.5	**2.9**	4.6	61%
MTTR, hours	12.0	**3.1**	9.0	74%
Hours of productive time lost per user per year	3.8	**0.4**	3.4	90%
Productivity loss per year in FTEs per organization	89.3	**9.0**	80.4	90%
Value of lost productivity per organization per year	$6.25M	**$627,100**	$5.63M	90%
Value of lost revenue per organization per year	$14.14M	**$7.92M**	$6.22M	45%

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Cost and Operational Efficiencies

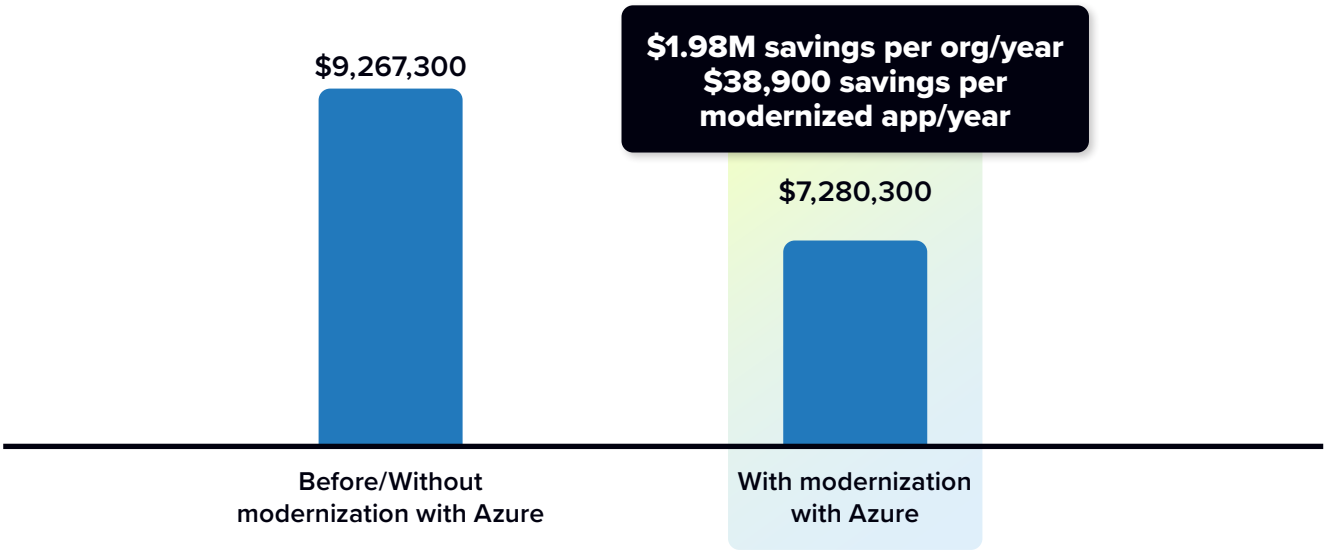
Modernizing data and applications with Azure and the broader shift to Azure has often resulted in better cost management and operational efficiencies for study participants. They have been able to architect infrastructures that more effectively and efficiently meet their actual business needs with overprovisioning or technical debt associated with legacy systems. Interviewed organizations noted avoiding large capital expenditures of building and maintaining their own datacenters and other on-premises infrastructures that they would require to run their migrated and modernized data and applications and benefit from a pay-as-you-go model, leading to significant cost savings and operational efficiencies. The North American financial services organization explained: *"One of the biggest benefits from modernizing with Azure has been cost optimization. There are on-premises compute environments that can handle the generative AI and ML work we're doing, but we would have to invest heavily in them and own the infrastructure."*

As shown in **Figure 6,** study participants reported benefiting from optimized infrastructure environments through modernization with Azure. On average, they reported 21% infrastructure cost savings, resulting in savings of an average of $1.98 million per organization per year ($38,900 per migrated and modernized application).

FIGURE 6

Impact on Cost of Azure Capacity

($ per year)



n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Establishing more modernized data and application environments with Azure has enabled efficiencies for IT infrastructure teams. The EMEA governmental organization explained that modernization has enabled it to level up its team's focus to user and business needs rather than day-to-day infrastructure matters: *"With Azure modernization, we're able to focus more on what the user needs are and zero in to solve those problems. Previously, technology was front and center. Now, it's not about the technology; it's about how we engage with the users in the business and solve issues with technology."* **Table 6** (next page) shows the efficiency gains for IT infrastructure teams achieved through modernization with Azure, including 33% average efficiencies and an average 69% increase in time available for innovative and other business-impacting activities.

TABLE 6

Impact on IT Infrastructure Teams

Efficiencies, FTEs per organization	Before/Without Modernization with Azure	With Modernization with Azure	Difference	Benefit
Equivalent FTEs required for same workloads	52.2	**35.2**	17.0	33%
Value of equivalent FTE time required ($ per organization per year)	$5.22M	**$3.52M**	$1.70M	33%
Percent of time available for innovation	21%	**36%**	15%	69%

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Many interviewed organizations noted the improved security features and compliance capabilities that Azure provides and are associated with their modernization efforts. Tools such as Azure Sentinel and built-in compliance frameworks help ensure data security and regulatory compliance more efficiently. They benefit from more robust encryption and security capabilities delivered through cloud infrastructure. The EMEA governmental organization commented: *"A key piece of technology for us is Azure Sentinel. It's heavily based on AI and enables us to monitor many millions of data points throughout the day, and it's able to alert us to potential security risks or events happening. There are massive benefits for being able to leverage new technologies."* **Table 7** shows the positive impact of modernization with Azure on security teams, with study participants reporting average efficiency gains of 34% for these teams.

TABLE 7

Impact on IT Security Teams

Efficiencies, FTEs per organization	Before/Without Modernization with Azure	With Modernization with Azure	Difference	Benefit
Equivalent FTEs required for same workloads	54.4	**35.8**	18.7	34%
Value of equivalent FTE time required ($ per organization per year)	$5.44M	**$3.58M**	$1.87M	34%

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

ROI Summary

Table 8 presents IDC's analysis of the financial benefits and costs associated with the interviewed organizations' modernization of data and applications with Microsoft Azure. As shown, IDC calculates that organizations will realize three-year discounted benefits worth an average of $105.22 million per organization ($2.06 million per migrated and modernized application). These benefits compare with three-year discounted investment costs of $23.68 million per organization ($463,300 per migrated and modernized application). While these results indicate the significant scale of modernization with Azure initiatives, they still result in a substantial positive return for study participants, averaging 344% over three years.

TABLE 8

ROI Analysis

Three-Year ROI Analysis	Per Organization	Per Migrated and Modernized Application
Benefit	$105.22M	$2.06M
Investment	$23.68M	$463,300
Net present value	$81.54M	$1.60M
ROI (NPV/investment)	**344%**	**344%**
Payback	**14 months**	**14 months**
Discount rate	12%	12%

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

Challenges/Opportunities

In the context of app modernization and transformation, Microsoft Azure faces two challenges:

- **Blistering pace of innovation:**
  The rapid maturation and proliferation of generative AI are driving an unprecedented pace of innovation. This intensifies the need for organizations to modernize more quickly and continuously. Modernization is no longer a one-time event but a continuous and incremental process. Organizations must adapt to this relentless pace, which requires constant vigilance and agility to integrate new technologies and stay competitive.
  The challenge lies in keeping up with rapid advancements and ensuring that their systems and processes are always up to date.

- **Need for specialized modernization skills:**
  As the technology landscape evolves, customers must acquire enhanced skills to navigate optimal pathways for modernization. This involves understanding the complexities of new technologies, such as generative AI, and how they can effectively integrate with existing systems. The challenge is acquiring these skills and continuously updating them to keep pace with ongoing innovations. Organizations must foster a culture of continuous learning and development to ensure their teams have the latest knowledge and expertise for successful modernization.

Conclusion

Modernizing data and applications is no longer just about improving scalability, availability, and cost efficiency; it is increasingly about enabling organizations to integrate AI and intelligence into their systems more rapidly and effectively. Traditional and aging systems often lack the flexibility and performance required to support AI-driven innovation, leaving businesses unable to capitalize on advancements in automation, predictive analytics, and intelligent user experiences. By modernizing their applications, organizations can transition to purpose-built, cloud-native architectures for AI workloads by ensuring they are scalable, secure, and capable of handling the demands of intelligent processing and real-time data analysis.

Microsoft Azure provides a comprehensive suite of tools tailored for this transformation, including Azure Kubernetes Service, Azure App Service, Azure AI and Machine Learning Services, and Azure Cosmos DB. These services streamline the modernization process in distinct ways: AKS enables containerization of applications for greater portability and scalability; Azure App Service provides a fully managed platform for rapid deployment of web applications with built-in AI integration capabilities; Azure AI services offer intelligent features that can work with applications through simple APIs; and Azure Cosmos DB delivers globally distributed, multi-model database services with optimization for high-throughput data operations essential for AI-enhanced applications. These technologies facilitate the transition to more modern application architectures that can leverage the profusion of cloud-based products and services available on Microsoft Azure.

The business value findings from IDC's research highlight significant benefits for organizations that have modernized infrastructure, data, and applications with Azure solutions. Quantitatively, interviewed organizations reported an average annual benefit of $902,700 per migrated and modernized application, which equates to an average 344% three-year ROI and a 14-month payback period. Specifically, modernization with Azure has driven significant operational efficiencies and performance gains, including a 39% increase in development team productivity, a 90% reduction in unplanned downtime, and a 69% increase in IT staff productivity. Moreover, study participants reported business gains such as 43% faster time to market for new products and services and 78% faster execution of business changes.

Modernizing with Microsoft Azure delivers substantial ROI metrics, including a benefit of $902,700 per application, a 344% three-year ROI, and a 14-month payback time frame. These solutions streamline operations and provide significant cost savings and efficiency improvements, positioning organizations for sustained growth and innovation. Importantly, modernizing with Azure empowers organizations to better prepare to integrate AI into their applications, thereby remaining competitive in a rapidly changing technology landscape.

Appendix 1: Methodology

IDC utilized its standard Business Value/ROI methodology for this project. This methodology gathers data from organizations that have undertaken modernization and are currently modernizing data and applications with Microsoft Azure IaaS and PaaS solutions.

Based on interviews with organizations that are modernizing data and applications with Microsoft Azure, IDC performed a three-step process to calculate the ROI and payback period:

1. **IDC gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of modernizing data and applications with Microsoft Azure.** In this study, the benefits included infrastructure cost savings, IT staff efficiencies, development productivity gains, user productivity gains, and higher net revenue.
2. **IDC created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments extend beyond the initial and annual costs of utilizing Microsoft Azure solutions to modernize data and applications and may also include additional costs related to migrations, planning, consulting, and staff or user training.
3. **IDC 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 to migrate and modernize data and applications over a three-year period. ROI is the ratio of the NPV and the discounted investment. The payback period is when cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on several assumptions, which are as follows::

- IDC multiplied time values by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For this analysis, IDC has used its standard 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 employees work 1,880 hours per year (47 weeks x 40 hours).
- IDC calculated the net present value of the three-year savings by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return, allowing for the missed opportunity cost. This accounts for the assumed cost of money and rate of return.
- 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.

Note: All dollar figures in this White Paper are in $USD.

Appendix 2: Quantified Benefits of Modernizing Data and Applications with Microsoft Azure

Table 9 provides a detailed assessment of the categories of benefits that study participants have achieved through the modernization of data and applications with Microsoft Azure, as this study describes. While the most significant financial benefits will accrue in terms of higher net revenue and higher net user productivity levels, study participants will realize important gains in mitigating risk, efficiencies for IT teams, and IT cost optimization. In total, IDC calculates that these benefits will be worth $46.13 million per organization per year ($902,700 per migrated and modernized application).

TABLE 9

Annual Quantified Financial Benefits

Category of Value	Average Quantitative Benefit	15% Margin Assumption Applied	Calculated Average Annual Value
Higher net revenue	$208.05M higher revenue per year	Yes	$21.72M
Higher net user productivity	19% higher productivity for 7,941 employees, $70,000 salary	Yes	$11.13M
Development team productivity gains	39% higher productivity, worth 69.2 FTEs, $100,000 salary	No	$4.81M
Unplanned downtime, net user productivity gains	90% less lost productivity, 3.4 lost hours of productivity avoided per user/year, 80.4 FTEs, $70,000 salary	No	$3.92M

Table 9 continued on the next page ➤

Table 9 continued from the previous page

Category of Value	Average Quantitative Benefit	15% Margin Assumption Applied	Calculated Average Annual Value
Infrastructure cost savings	$1.99M savings per year	No	$1.38M
Security team efficiencies	34% more efficient, 18.7 FTEs, $100,000 salary	No	$1.30M
IT infrastructure team efficiencies	33% more efficient, 17.0 FTEs, $100,000 salary	No	$1.19M
Unplanned downtime, net revenue gains	45% less lost revenue, $6.49M per organization per year	Yes	$677,700
Revenue gains, business enablement	$30.63M higher revenue per year	Yes	$3.56M
Total annual benefits	**$46.13M per organization/$902,700 per migrated and modernized application**		

Note: The calculated average annual value includes 10.9 months for deployment, year 1.
n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

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

Appendix 3: Supplemental Data

This appendix provides 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 3 SUPPLEMENTAL DATA

Impact on Development Team Productivity

	Equivalent productivity in FTEs	Difference
Development team productivity level before/without modernization with Azure	177	N/A
Developer team productivity level with modernization with Azure	247	N/A
Higher productivity with modernization with Azure	**70**	**39% higher productivity**

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

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FIGURE 4 SUPPLEMENTAL DATA

Time to Execute Changes and Adopt New Business Technology

	Time to execute business change, days	Time to adopt new technology, months
Before/Without modernization with Azure	4.3	5.6
With modernization with Azure	1.0	2.3
Difference	**78% faster**	**58% faster**

n = 10; Source: IDC Business Value In-Depth Interviews, January 2025

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About the IDC Analysts

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Dr. Arnal Dayaratna is research vice president of Software Development at IDC. Dayaratna focuses on software developer demographics, trends in programming languages and other application development tools, and the intersection of these development environments and the many emerging technologies that are enabling and driving digital transformation. Dayaratna's research examines how the changing nature of software development relates to broader trends in the technology landscape.

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in several technology areas, focusing on determining the return on investment 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.

More about Matthew Marden

Message from the Sponsor

The Future of Digital Transformation and Innovation with Microsoft Azure

In today's fast-paced digital landscape, artificial intelligence (AI) is becoming a cornerstone of business innovation and efficiency. Businesses are faced with the challenge of delivering experiences that are hyper personalized, real-time, and frictionless in order to stay relevant and competitive. Applications are the user interface of digital experiences. They're not just tools anymore—they're the primary way customers interact with brands, how employees get work done, and how innovation actually shows up in the real world. And today, with the rise of AI, applications are becoming not just faster and smarter at scale. This kind of intelligence demands a modern foundation. And that foundation is the cloud.

Modernizing your IT estate; migrating to cloud and rearchitecting for the future is a competitive necessity. Microsoft Azure isn't just a place to run your workloads. It's a platform for transformation, empowering innovation and delivering on business growth.

Microsoft Azure empowers business transformation, businesses can migrate and modernize their IT infrastructure, applications, data, and developer processes. This transformation enables organizations to harness the power of cloud computing, improve operational efficiency, and foster innovation. Microsoft Azure provides a comprehensive suite of tools and services that support seamless migration and modernization, robust security, and scalable solutions tailored to meet the unique needs of modern enterprises.

Contact us today to learn more about how Microsoft Azure can help you achieve your digital transformation goals and drive innovation across your organization.

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