Enterprise Strategy Group™ by TechTarget

WHITE PAPER

Migration and Modernization Considerations for Your Application Platform

Strategic Insights on Platform Evolution From Microsoft and Red Hat for Successful Migration and Modernization

By Paul Nashawaty, Principal Analyst

Enterprise Strategy Group

December 2023

Contents

Executive Summary

Most organizations now place public cloud services (e.g., IaaS, PaaS, SaaS) at the forefront of their infrastructure strategies, based on the unique requirements of the business. These requirements can include a reduced need for organizations to invest in and maintain their own on-premises IT resources, better scalability to quickly meet workload and user demands, and fewer wasted resources.

Many organizations are working on navigating the integration challenges posed by legacy systems within the existing technology stack, including addressing issues of interoperability and data flow between modern and legacy components.

For effective application modernization, organizations need to identify skill gaps. Addressing the shortage of expertise in modern technologies and frameworks is crucial for successful digital-transformation initiatives.

Organizations that currently run (or plan to run) at least some production applications on these public cloud services leverage different providers for specific benefits, including costs and usage discounts, application-specific performance enhancements, and developer-friendly ecosystems. Organizations also need to ensure ongoing maintenance, updates, and security measures of their different platforms.

Organizations need a comprehensive application platform that integrates familiar tools in order to help increase developer productivity, leading to faster deployment times and faster time to value.

Most organizations seek to allocate resources for GenAI to enhance code quality and application performance, as well as automate routine and repetitive tasks. In addition, organizations are committing development resources to establishing sturdy frameworks and leveraging agile platform-engineering teams to harness the potential of GenAI innovations in software development, including the creation of a simple, modern platform to help them more easily build and deploy AI-enabled applications.

Organizations need security to be baked into each component of the software-development cycle. Also, organizations should address security, data privacy, and compliance with industry standards during the modernization process—especially in regulated industries.

It is also important to understand where budgets reside in organizations—especially those for IT and digital transformation. Companies typically distribute their budget among legacy-system maintenance, application modernization, and emerging technologies.

Microsoft and Red Hat together are offering a jointly managed application platform for organizations to ensure the success of their modernization goals.

In addition, the Azure Red Hat OpenShift (ARO) comprehensive application platform can help organizations to consistently operate in the hybrid cloud and make that migration/modernization move easier. Specifically, the application platform enables developers to focus on building and scaling applications without having to radically change infrastructure and operations or maintain application development infrastructure. This way, DevOps teams can do more productive work, building, deploying, and running traditional and cloud-native applications at scale to deliver applications faster.

Decoding Budget Allocation, Bridging Skill Gaps, and Optimizing Technology Stacks for Business Advancement

Organizations are working on navigating the integration challenges posed by legacy systems within the existing technology stack, including addressing issues of interoperability and data flow between modern and legacy components. These technology stacks include varied programming languages, frameworks, and architectures. Organizations need to ensure that the current technology stack is scalable to accommodate future growth and evolving business needs. This requires evaluating technologies that align with industry trends and standards to future-proof the organization's technical infrastructure.

A research survey by TechTarget's Enterprise Strategy Group (ESG) shows that organizations still face a skills shortage, with 40% of survey respondents stating they see a lack of IT architecture and planning skills on their IT teams. The other top areas with skills shortages are IT orchestration and automation (38%) and cloud architecture/planning (37%). Since most organizations use public cloud computing platforms to some extent today, it's safe to say that IT architects have a strong working knowledge of and experience with these services. The same research shows that 57% of respondents said their organization is short on either cloud or IT architecture skills. This is worth noting as cloud and IT become increasingly interchangeable; virtually all organizations, regardless of size, count cloud as part of their IT strategy in the form of either third-party services or technologies that enable those capabilities in self-supported data centers.[1]

Organizations are also challenged by the skill gap in integration and interoperability expertise and by the need to build competencies in integrating and maintaining systems across the organization's technology stack. Organizations need to focus on skills that facilitate smooth interoperability between different technologies, ensuring seamless data flow and communication. Organizations are also identifying and bridging gaps in expertise related to emerging technologies, such as AI, ML, blockchain, and IoT.

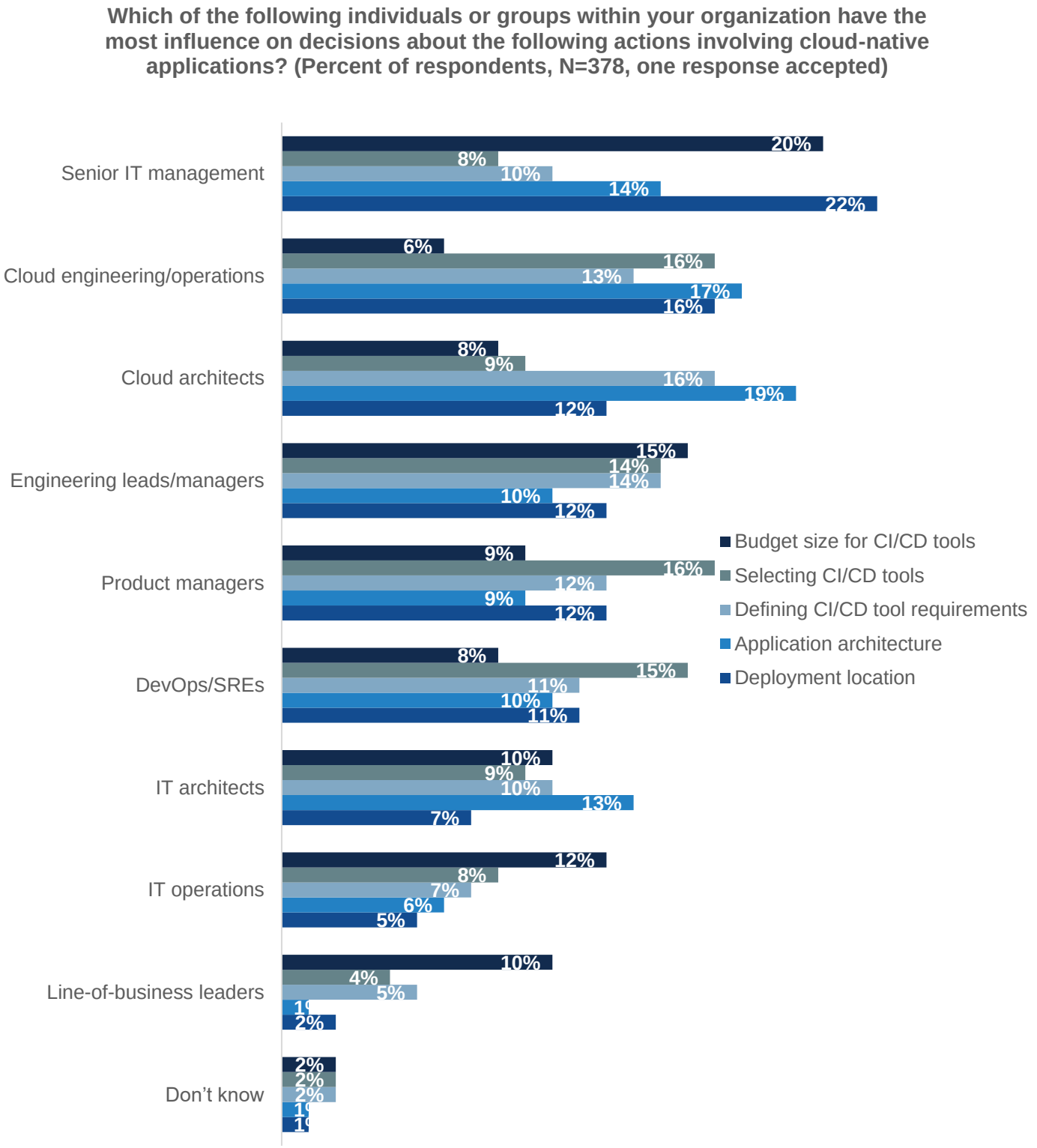
Organizations are cultivating skills in Agile methodologies and DevOps practices to enhance collaboration between development and operations teams. In addition, they are working to address challenges related to continuous integration/continuous delivery (CI/CD) and automation to improve the speed and efficiency of the software-development lifecycle.

Several groups have an impact and influence on the decisions driving the purchase of CI/CD tools used to develop and deploy cloud-native applications. Historically, IT leadership exclusively led these decisions. Still, influencers across DevOps and application development are more heavily influencing the budgets set by IT leadership. This trend also appeared in a survey by ESG in which senior IT management was most often named by respondents as being responsible for setting the budget (see Figure 1). Meanwhile, those involved in operations, such as cloud architects, engineers, and DevOps teams, were chosen as the groups most likely to select the tools. Senior IT management was also named most often as the group responsible for choosing the deployment location, though the choice of cloud architecture was usually left to cloud engineers and architects.[2]

[1] Source: Enterprise Strategy Group Research Report, *2023 Technology Spending Intentions Survey,* November 2022.

[2] Source: Enterprise Strategy Group Research Report, *Distributed Cloud Series: The Mainstreaming of Cloud-native Apps and Methodologies*, July 2023.

Figure 1. Cloud-native Strategies Influenced by a Range of Stakeholders



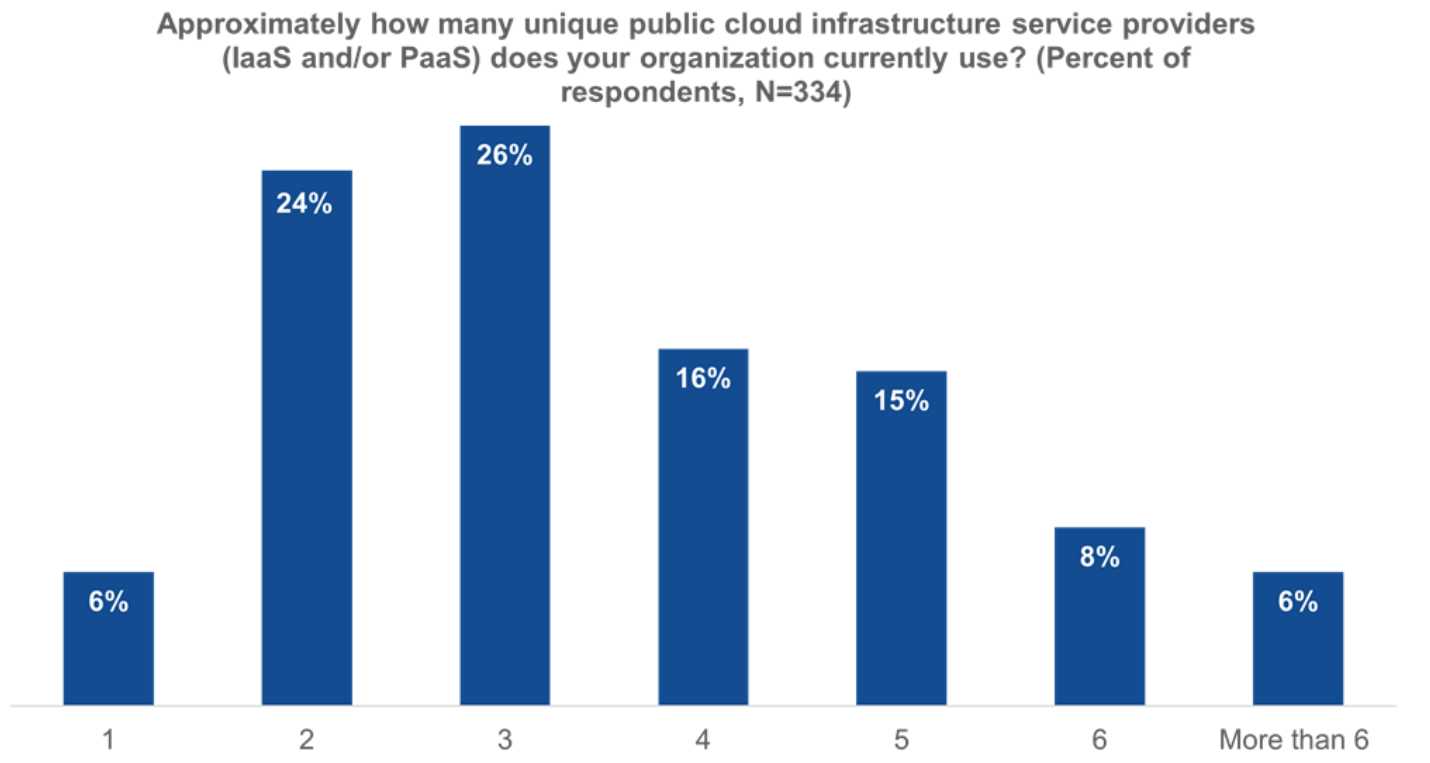
Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Navigating Multi-Cloud Adoption for Agile Enterprises

Multi-cloud is now the norm as production applications shift off premises. Most organizations now place public cloud services at the forefront of their infrastructure strategies, with 95% of organizations stating they are using two or more cloud providers (see Figure 2). Nearly all these organizations currently run (or plan to run) at least some production applications on these services, and many organizations are leveraging different providers for specific benefits, from costs and usage discounts to application-specific performance enhancements and developer-friendly ecosystems. Due to the presence of multiple cloud providers in most environments, organizations also reported that it is very important or even critical that applications are portable because IT teams and developers alike need the flexibility to shift applications and associated data between deployment locations, such as on-premises data centers, cloud services, and even the edge.[3]

Although public cloud services are a natural fit for cloud-native applications, these applications are being deployed everywhere. For example, 42% of organizations said their cloud-native applications are (or will be) deployed in a combination of cloud platforms and private data centers.[4]

Figure 2. Nearly All Organizations Are Using Two or More Cloud Infrastructure Providers



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

[3] Ibid.
[4] Ibid.

Also, developing cohesive strategies for harmonizing applications and data across multiple cloud providers is important. Organizations want to ensure seamless interoperability to optimize performance, reliability, and data consistency. Two key implementations involved in this effort are consistent security measures and protocols across different cloud environments to create a unified, robust defense against potential threats and efficient data-management practices for a unified approach to storage, retrieval, and analysis.

Organizations that operate on premises but want to move to the cloud (e.g., Microsoft Azure) to modernize their applications and reap the efficiencies of the cloud find this task challenging. Modernizing is more than the migration itself; it requires upgrades, integration, and ongoing maintenance. Plus, organizations might need to still operate both on premises and on Azure. The solution, Azure Red Hat OpenShift (ARO), provides a comprehensive application platform that can help organizations consistently operate in the hybrid cloud and make that migration/modernization move to Azure easier.

Mastering Developer Velocity by Navigating Productivity Peaks With Managed Cloud Services

Organizations need a comprehensive application platform in order for developers to have the tools and services they need right out of the box. Using familiar, integrated tools helps increase productivity, leading to faster deployment times and faster time to value.

ARO provides an efficient path to application modernization and enables AI solutions. The solution is jointly engineered, managed, and supported by Microsoft and Red Hat. By harnessing the expertise of these two market leaders, organizations can offload Day 2 operations, including patching, updating, maintenance, and monitoring.

For example, ARO enables developers to focus on building and scaling applications without having to overhaul infrastructure and operations. ARO also gives developers access to integrated tools to help streamline and accelerate deployment. Overall, this improves operational efficiency by removing the need for developers to maintain application development infrastructure. When developers can build, deploy, and run traditional and cloud-native applications at scale, organizations can deliver applications and business value faster. This enables collaboration between IT operations, data science, and application developers.

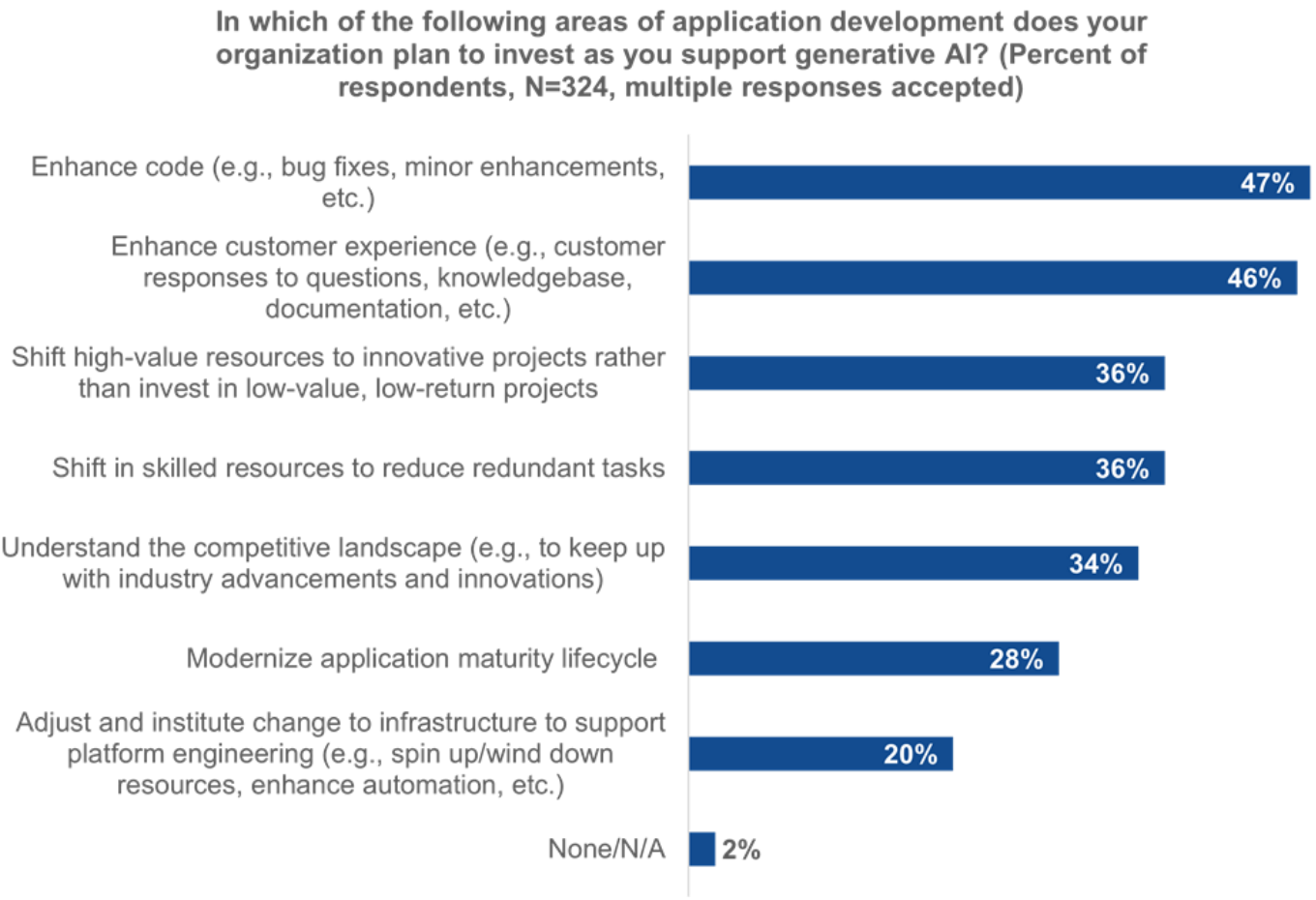
Kubernetes is an open source container orchestration platform that automates many of the manual processes involved in deploying, managing, and scaling containerized applications. But to become fully functional, it needs additional components, including authentication, networking, security, monitoring, logs management, and other tools. As an application platform, Red Hat OpenShift includes Kubernetes as a central component, in addition to providing registry, networking, telemetry, security, automation, and services.

Enterprise Strategy Group research found that most organizations seek to allocate resources for GenAI to enhance code quality (cited by 47%), thereby enhancing application performance. Additionally, they are gearing up for investments to facilitate a personalized and seamless customer experience (46%), enabling the delivery of custom-tailored solutions to address specific requirements and demands. Through harnessing GenAI to automate routine and repetitive tasks (36%), organizations can strategically reallocate valuable resources toward pioneering initiatives, cultivating innovation and propelling the organization toward heightened accomplishment (see Figure 3).[5]

[5] Source: Enterprise Strategy Group Research Report, *Beyond the GenAI Hype: Real-world Investments, Use Cases, and Concerns*, August 2023.

ARO can help allocate and shift resources for GenAI by enabling developers to focus on building and scaling applications without having to overhaul infrastructure and operations. In addition, the platform gives developers access to integrated tools and approaches to help streamline and accelerate deployment.

Figure 3. Application Development Improvements That Organizations Plan to Support with GenAI



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Microsoft and Red Hat: Better Together

Microsoft and Red Hat together offer flexible hybrid cloud solutions that help organizations align IT operations with business needs. They do this by providing solutions that help operate a modern, security-focused platform, accelerate application and service development, deliver consistent database experiences, and simplify as well as automate IT management.

By combining the Red Hat software stack and Microsoft Azure cloud platform, integrated solutions like ARO deliver flexibility, choice, and support for hybrid deployments. The combined solution provides organizations with the ability to build a customized cloud environment with flexible deployment options and time-based pricing.

With Microsoft Azure's advanced monitoring tools, organizations can collect cloud use and billing data with visibility and control over resource consumption and costs. With Red Hat Cloud Access, organizations can use their Red Hat subscriptions across public cloud platforms, including on Microsoft Azure.

Microsoft and Red Hat work together to help organizations to manage complexity, as well as migrate and modernize more quickly with their application, infrastructure, and automation solution set.

Conclusion

A hybrid cloud approach helps organizations achieve greater business agility and efficiency. But implementing a hybrid infrastructure strategy has its challenges and can be time-consuming. Organizations need to choose and integrate a combination of technologies that offer long-term value.

Microsoft and Red Hat offer flexible hybrid cloud solutions that help align IT operations with changing business needs. These solutions help organizations operate a modern, security-focused platform, accelerate application development, and simplify as well as automate IT management.

For organizations moving from on premises to the cloud and/or hybrid cloud, ARO provides a turnkey application platform with built-in CI/CD, monitoring, and developer tooling to help get started. The platform also makes it easier and faster to manage and shift workloads to Azure as business needs change.

If your organization is looking to build a common platform for business applications, Enterprise Strategy Group believes that you should consider the hybrid cloud solution from Microsoft and Red Hat: a "better together" approach.

About Enterprise Strategy Group
TechTarget's Enterprise Strategy Group provides focused and actionable market intelligence, demand-side research, analyst advisory services, GTM strategy guidance, solution validations, and custom content supporting enterprise technology buying and selling.

contact@esg-global.com
www.esg-global.com