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NUCLEUS RESEARCH

THE UNEXPECTED CHALLENGES OF CLOUD TRANSFORMATION

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THE BOTTOM LINE

Cloud transformation is business transformation and getting it right is more important than ever. However, organizations of all sizes and industries face unique challenges when undertaking cloud transformation projects. Many are blinded by the promises of transformative benefits of infrastructure cost savings, improved scalability, and dramatically accelerated development cycles; however, the path to realize these benefits is not always so clearly outlined. Organizations face challenges managing and securing their more complex multi-cloud and hybrid architectures. And modern application development — which relies on cloud-native technologies — also requires new approaches to realize the benefits of these revolutionary technologies.

OVERVIEW

Cloud transformation is not a one-size-fits-all process; it depends on business objectives, company size, industry, data volume, compute requirements, infrastructure types, providers, and locations, among other criteria. That being said, the payoff is well-worth the investment for companies that successfully navigate the journey and manage the inherent complexities of operating across a multi-cloud and hybrid environment. Nucleus interviewed IT and security leaders from 35 global enterprises to learn about the challenges companies face in the cloud and throughout their own digital transformation experiences. In partnership with Splunk, we analyzed the results and have developed some key recommendations for executives who are focused on transforming their business through the cloud.

We found that companies were able to shorten the development cycle to deploy new capabilities and application updates by approximately 11 days on average (from 15 days to 4 days) by adopting more agile development methodologies enabled by the cloud. Additionally, these organizations were able to reduce workload hosting costs (for data storage and compute) by 40 percent on average post-migration from eliminating or scaling back on-premises hardware and optimizing resource consumption in the cloud.

At a strategic level, a key motivating factor driving these cloud strategies is the necessity to unify data to eliminate regional or departmental silos and enable company-wide visibility and analytics to accelerate data-driven decision making from the top down. With cloud services, companies can more easily implement procedures around regular reporting, identifying and tracking valuable key performance indicators, and generally implement modern best practices for analytics at enterprise scale. Enabling analytics with the intention of becoming more data-driven was mentioned as a goal of the cloud investment for nearly 4 out of every 5 customers interviewed. We are confident this will continue to grow as more companies realize the necessity of becoming data-driven to remain competitive. However, as these organizations move to multiple clouds, the reporting and tracking capabilities provided by each cloud service provider may lead to cloud-dependent silos, making it difficult to get a comprehensive view of all of an organization's data and applications. They will need a centralized platform to enable this enterprise-wide view, or the cloud transformations

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intended to drive speed, agility and innovative service delivery for the organization will likely have the opposite result.

Unfortunately, realizing these transformative benefits is not simply a matter of lifting and shifting data and workloads from on-premises servers to cloud providers. Companies looking to succeed in their cloud transformation journey need to be aware of the additional complexities and challenges that arise as a result of their new architecture and deployment cycles. These challenges go far beyond only organizational changes, to the changing security demands to maintain clear visibility and control across their multiple cloud providers. Providers all have a varied set of security responsibilities, with much of the required demands still falling on customers to maintain, which is critical to the security of the entire organization's ecosystem and success. IT and security leaders need to work together to develop a clear, unified strategy for managing the multi-cloud and hybrid environment. By working together to create a unified cloud security strategy across the enterprise, security leaders can enable teams to accelerate their digital transformation, while reducing risks presented by the constantly changing business demands.

THE CHALLENGES

After conducting interviews with IT and security leaders at global enterprises (selected as companies operating in multiple global regions and producing at least $200 million in annual revenue), we analyzed the results to identify the most common challenges that companies face throughout their cloud transformation journeys.

COST AND DATA MANAGEMENT

The first challenge area is managing the potential added cost and complexity that accompanies a hybrid environment with multiple cloud and on-premises systems. With most cloud service providers relying on usage-based pricing, costs can quickly mount to an unfeasible level if companies do not manage resource consumption. Companies require a centralized solution to monitor resource consumption and enable analytics for optimizing these KPIs to deliver the best applications to stakeholders at the lowest ongoing cost to the organization.

Along with controlling costs, organizations face the accompanying challenge of integrating and observing data to understand infrastructure and application performance across an increasingly complex technology ecosystem. Most companies will leverage private and public clouds (often from multiple different providers) with existing on-premises data centers. Of the interviewed customers, 88 percent are using multiple cloud providers for

different aspects of their digital transformation initiatives, demonstrating that managing these different services and ensuring they are working together in a secure, transparent, and efficient manner is critical to a successful cloud strategy.

DEVOPS MANAGEMENT

One of the most sought-after results from a successful cloud strategy is the accelerated development timeline from adopting a more agile development cycle. The cloud facilitates microservices-based architecture, so applications can be built and deployed rapidly as collections of reusable functions. This dramatically reduces duplication of development efforts and allows a company to standardize code more easily across its development teams. That said, a company cannot simply dive headfirst into a continuous integration/continuous delivery (CI/CD) strategy without first understanding and managing the potential challenges around problem identification and issue remediation in this new world. While the benefits of this development model to business agility and cost-reduction are clear, organizations must be ready to manage the increased risk of more frequent deployments and harder-to-find issues.

OBSERVABILITY

Additionally, with a more complex environment underpinning these workloads once they are running in the cloud, the need arises to move from "monitoring" to "observability," the capability to detect, investigate and resolve not just the known areas that should be monitored but also the "unknown unknowns." Observability enables proactive management of infrastructure and applications' resource consumption, performance, and availability to ensure consistent customer experience and business performance. Companies need visibility within applications to understand how they are performing, what resources they are utilizing, and what data is being accessed and created. This allows for proactive monitoring and analysis to prevent critical applications from failing; in the event of failure, having insight and performance data can help accelerate troubleshooting and issue resolution. This challenge extends outside of the application to the greater ecosystem; as the number and interconnectedness of cloud services grows, the need for observability grows with it. Seventy-eight percent of customers interviewed cited the need for holistic visibility into workflow performance across infrastructure providers in order to improve application uptime and user experience.

A DATA STRATEGY

This need for visibility extends beyond applications to the data itself. With data being stored across multiple clouds and data centers, companies need a comprehensive and up-to-date understanding of what data is being stored in each location. Further, an integration strategy needs to be defined in order to unify relevant data that is housed in different locations to enable more sophisticated and higher-value analytics. Organizations cannot rush to scale in the cloud without adapting their data strategy to account for the change. Leveraging data to guide decision-making and to predict future disruptions (and plan for how to best mitigate them) is only becoming more essential. A company that neglects to build a modern, cloud-oriented data strategy will face high risk of seeing its cloud-driven transformation projects fail. Additionally, as regulations around consumer privacy and data governance become more prevalent, companies need clear, transparent audit trails and data governance protocols to ensure they keep up with the new and evolving compliance regulations. Seventy-two percent of interviewed customers are concerned about future data privacy and localization regulations and cited the need for a centralized control-level solution that gives organization-level insight to where data originates, what it is used for, and the users/applications with permission to access it.

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Companies that fail to address these challenge areas will be hard-pressed to realize the well-documented benefits of cloud transformation including cost savings, increased development agility, remote access and simplified collaboration, and analytics adoption. Cloud transformation is not like flipping a switch, but instead a constant effort to manage the additional complexities and benefits that come with leveraging a transformative technology like cloud in unique, ever-changing hybrid environments.

LOOKING AHEAD

The key benefit areas that customers referenced as a result of successful cloud transformation projects include cost savings from retired on-premises data centers, the associated maintenance costs and personnel support. On average, customers reduced their spend on storage and compute resources by 40 percent. Often, these companies were able to redeploy development teams who were previously responsible for maintaining

infrastructure to value-add tasks since the cloud provider keeps the network up and running. Additionally, these companies realized further cost savings from adopting microservices-based architecture and shortening development cycles by 50 to 70 percent, on average. This resulted in a general improvement in the quality of new development due to the ease of integrating apps with new capabilities and services from the cloud provider. The most common example is AI-based capabilities such as sentiment analysis and facial recognition that customers can leverage in their apps as-a-service instead of having to build the capabilities from scratch internally.

To realize these benefits, customers must proactively address the unexpected challenges that arise throughout the cloud transformation journey. Most critically, organizations must develop a data strategy that goes hand-in-hand with their cloud strategy. Of the interviewed customers, within the next five years, 85 percent intend to maintain hybrid infrastructure environments consisting of private and public cloud components (from multiple providers) and existing on-premises assets. This highlights the fact that these complexities will remain key challenges to be addressed for years to come, and IT and security leaders must be aware and proactive in developing strategies for data management and usage that help alleviate the inherent complexities of cloud projects and ensure the project outcomes are financially compelling and future-proof.

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So what kind of data platform should organizations invest in to overcome the challenges we've discussed and ensure their cloud-driven business transformation projects are successful? We recommend that the platform have the ability to ingest data of any structure from any source. This includes public and private clouds, on-premises, IoT and beyond. Second, the platform should connect data across IT, DevOps, Security and the business to ensure a holistic and integrated view into performance of the technology and business ecosystem. Third, the platform should work for organizations wherever they are on their cloud journey, whether that is optimizing performance for remaining on-prem systems or building apps with cloud-native approaches. And finally, the platform must be able to help organizations manage beyond the feasibility of human scale with technologies like real-time data streaming, ML/AI-based alerts and triage, and automation of issue remediation.

We are confident that leveraging a data platform with these capabilities will help accelerate organizations' ability to scale in the cloud and drive their transformation agendas.