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We are at the tipping point of becoming a digital economy. IDC predicts that by 2023, more than 50% of GDP will be delivered by products and services from digitally transformed enterprises — organizations that can scale their business and innovate at a pace an order of magnitude greater than traditional businesses. That requires modernizing apps.

Why a Data Strategy Is the Glue for Application Modernization

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Questions posed by: Splunk Inc.

Answers by: Archana Venkatraman, Associate Research Director, Cloud Data Management, IDC Europe

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Q. What is the business case for application modernization? Does this go beyond just a technology strategy?

A. Digital transformation is no longer a priority; it is an imperative. The current pandemic has only reinforced the importance of digital transformation and the key role of IT in agility, resilience, flexibility, and adaptability. Organizations that depend on rigid, monolithic legacy systems and applications are finding themselves unable to adapt to unforeseen market conditions or deliver on digital business mandates. They are facing growing technical debt, costs and complexities of maintaining legacy systems, and modern security vulnerabilities.

And the clock is ticking. IDC estimates that by 2025, 60% of enterprises in Europe will be prolific software producers, with code deployed daily, over 90% of new apps cloud native, 75% of code externally sourced, and 1.2 times more developers.

Enterprises are stepping up their investments and commitment to software development. For example, carmaker Volkswagen has pledged $9 billion through a five-year program to boost in-house software development capacity and to grow its internal development capability from 3,000 FTEs to 10,000 FTEs. Financial services firm Nationwide has kick-started a five-year investment program with $5.5 billion for application and infrastructure modernization and replatforming. It wants to create an internal cloud-native hub with 1,000 new developer hires.

Enterprises cannot deliver on digital innovation objectives by developing only a few net-new cloud-native applications that leverage modern technologies such as cloud, containers, microservices architectures, analytics, automated application delivery, next-generation security, and developer tools and codes. These will just be digital islands yielding limited benefits, largely because they don't easily connect to existing systems that operate the business. Digital success requires enterprises to leverage this new breed of powerful technologies to modernize their existing critical applications so they can build impactful digital competencies, speed, and efficiency.

"The big cloud-native promise to our business is the ability to go from idea to production within 48 hours," according to a multinational financial services company. At a time when IT is laser focused on delivering value to the business, ensuring cost efficiency, accelerating migration to the cloud, and application rationalization and modernization are becoming strategic priorities.

Q. Which teams should be involved in application modernization planning and execution strategies?

A. Application modernization planning and execution, as well as cloud migration, are no longer just pet projects of IT teams. Successful application modernization is a result of multi-stakeholder collaboration with each of the following personas responsible for different objectives:

- **Board members** are responsible for outlining and measuring strategic business objectives, culture change mandates, compliance and governance strategies, and timelines to meet objectives.
- **Line-of-business (LOB) teams or application owners** are responsible for developing the use case and business outcomes for modern, dynamic applications and determining adoption by business units as well as the value to those units and how it will translate to competitive advantage.
- **C-suite executives** (i.e., CIOs, CTOs, CDOs) need to perform a balancing act, providing clear guidelines on budgets, broad cloud strategy, standards, and operations guidance without restricting application architects and developers from exploring and experimenting. They must encourage the culture of "test fast, fail fast, innovate fast."
- **Enterprise architects and core IT teams** evangelize the need to become software producers and digital innovators as well as track alignment among IT, development, and business. They also work closely with operations teams to evaluate and implement automation and artificial intelligence/machine learning (AI/ML) strategies to ensure operability and high availability.
- **IT operations** continuously monitors, manages, and adapts to change for business continuity, resilience, and security. Teams must develop interoperability and integration among systems and ensure application performance, speed, and availability.
- **Developers and DevOps teams** accelerate an iterative application development life cycle, keeping a sharp focus on customer experience as well as development speed and agility. They liaise with LOB and operations teams to modernize applications within given parameters. Their core objectives are to develop skills and modernize applications to ensure speed, scale, and security.
- **Security and governance teams** need to create a squad of security warriors to become embedded across operations and developer and IT architect teams to nurture a security-minded culture and provide best practice guidelines and security guardrails for success. They also identify risks, especially around privacy, licensing breaches, and cloud migration loopholes.
- **Data strategists** are responsible for monitoring and analyzing the IT estate from end to end (from edge to core to multicloud environments) to recommend modernization strategies, identify anomalies, and highlight potential compliance or cost issues. These professionals connect the systems' health and operations to business KPIs.

Q. How should organizations leverage data as they approach application modernization?

A. IDC's 2019 *DevOps Survey* revealed that the top 4 technology bottlenecks in organizations' application delivery are integration into legacy app environments (72%), code standardization (53%), quality of data and insights (51%), and security, compliance, and governance (50%).

There are multiple ways to modernize applications and move to the cloud. According to IDC's *COVID-19 Impact on IT Spending Survey, Wave 5* conducted in May 2020, organizations have the following plans for business applications (such as CRM and ERP):

- 31% plan to retain or retire applications.
- 25% plan to replace applications with SaaS solutions.
- 21% plan to refactor on a component-level basis or completely re-architect to PaaS platforms.
- 18% plan to lift and shift and rehost on IaaS platforms.
- 4% plan to lift and shift and rehost on colocated or hosting services.

But how do organizations determine the right strategy for their applications, vision, and skills? The answer is data-driven insights. Data is essentially the glue for application modernization. A powerful data-driven strategy can make application modernization journeys successful.

A large logistics company said its cloud adoption strategy failed three times but succeeded the fourth time when it created a multi-persona cloud center of excellence team responsible for architecture, automation, governance, operations, and unified delivery model. This team uses data-driven insights into workloads to better understand metrics related to the performance, security, costs, availability, and usage of their applications to determine the right modernization and migration strategy. Today, amid the pandemic and growing demand for digital transactions, the company's app usage is up by nearly 90% — almost 130,000 transactions weekly that are delivered successfully.

Data can help gain invaluable insights into the bottlenecks in application delivery; identify redundancies, infrastructure challenges, and security and compliance issues; or help developers roll back an update if necessary. It also informs how applications are used to improve customer experiences and application features.

Data brings efficiency, compliance, cost management, and a risk-mitigated pathway to modernization. According to IDC's 2019 *DevOps Survey,* 41% of organizations cited optimizing application delivery capacity and cost as a top challenge in their application modernization programs. Insights can help overcome such challenges.

One organization that had poor visibility into its application estate migrated a "chatty" application onto the public cloud. As the application interacted with an on-premises application in an automated way, the organization received a large public cloud bill for data egress charges. Data can help identify, and track, the interdependencies between applications and match applications to a suitable platform.

With the growing convergence of cloud and container management solutions, along with the growth of open application programming interfaces (APIs), organizations will rely on shared analytics and data platforms to support end-to-end root cause analysis, cost management, automated configuration and remediation, and ongoing optimization activities. IDC also believes that virtual machine (VM) and cloud administrators will routinely manage the Kubernetes control plane as containerized workloads become increasingly critical to delivering valuable customer experiences.

In short, data can empower application modernization in the following ways:

- Automated analysis of technology, services, and process can identify key gaps between customer expectations around speed and the actual performance of IT or application services.
- Cloud-native continuous monitoring and observability can help collect and process all data to identify anomalous patterns or quickly pinpoint the root cause of problems for cloud-native apps. This empowers IT operators and developers to address problems before they become operational issues that could affect customer experience.
- ML-based optimization programs can recommend the best modernization approach for each application (e.g., with insights into some legacy applications that may still be performing well under demand stresses and are not priorities for modernization). Longer term, the recommendations can focus on a variety of other optimization criteria, such as delivery of expected business value.

Q. What common mistakes do organizations make as they approach application modernization initiatives?

A. One common mistake is not considering application modernization as part of a broader business transformation and innovation strategy. Outlining key digital business outcomes through application modernization can help tie the program with broad business strategies.

Enterprises must ensure that their "digital innovation factory" is tightly integrated with their product planning/management teams, which, in turn, should integrate digital offerings into their core product road maps.

Skills are also often overlooked. Organizations need to enlist and enhance digital innovation skills across all lines of business (LOBs) to scale up the digital innovation workforce. This requires solid guidelines, training/reskilling, and incentivization.

An area many organizations need to address is security investment fatigue. In conversations with IDC, 80% of organizations admitted they have overinvested in security solutions but are not confident about their security postures. IDC believes this is the case because many of the security tool investments are in point products that operate in silos and increase complexities but do not provide a holistic view across the complete application landscape within hybrid and/or multicloud environments.

Keeping up the security guard in a new and dynamic modern application world is key to building customer trust in a digital brand. It is critical to have full visibility across applications, including legacy workloads that live on-premises and cloud-native workloads in the public cloud. Investing in app/services management and monitoring tools that leverage

automation/AI to address security risks and eliminating data silos by integrating the tools can help. Containers, cloud, and DevOps represent a paradigm shift and call for a new approach to security. Organizations should avoid relying on conventional governance, security, and compliance approaches.

Other common mistakes we see are cloud sprawl and lack of rightsizing in the cloud. Establishing a consolidated view of cloud instances and applications in the cloud is necessary for planning costs. According to IDC's *COVID-19 Impact on IT Spending Survey, Wave 5* from May 2020, 30% of large organizations are rightsizing their cloud environments as a direct effect of the pandemic on IT strategies.

Ultimately, organizations must remember that efficient and effective application delivery requires change management, new skills, modern processes and workflows, and operations.

Q. What are IDC's recommendations to businesses?

A. Digital transformation requires traditional "crown jewel" applications to become agile, containerized, intuitive, and innovative and to integrate with modern cloud-native apps to deliver a full digital experience for the entire enterprise. Organizations also need to consider adapting their business processes, skills, and success metrics to suit modern digital enterprise needs.

We are facing an application onslaught. IDC predicts that by 2023, 500 million new digital apps and services will be developed and deployed — equivalent to the number of apps and services created over the past 40 years. These composite applications, as well as business-critical applications, need to be secure, available, resilient, and performant. Enterprises that not only monitor these applications but also analyze and troubleshoot the issues and fix the loopholes will be the ones that build digital trust and deliver consistent customer experiences. Only those that are prepared can seize the opportunity of the digital economy that awaits on the other side of the "U" recovery.

About the Analyst

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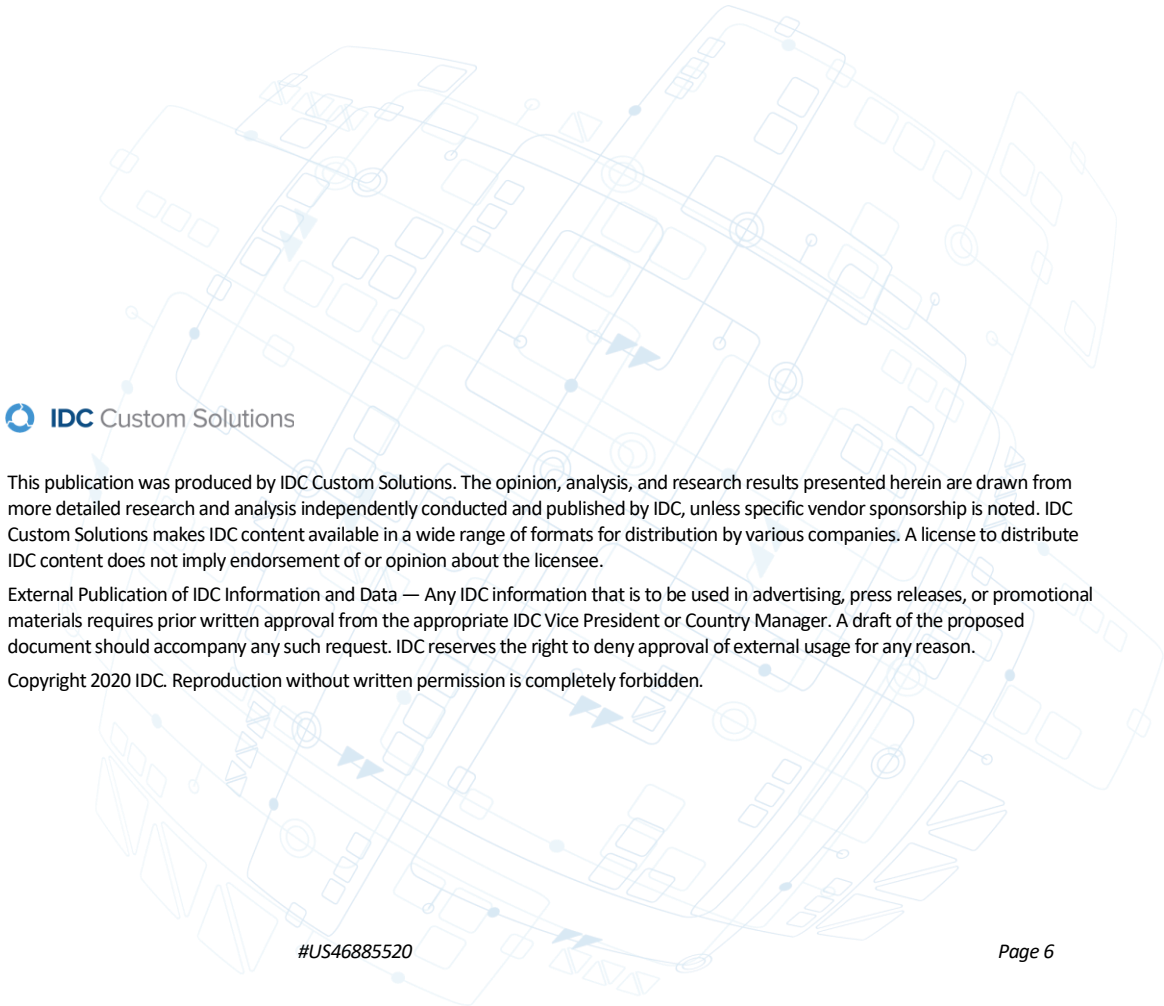
Archana's primary research coverage is cloud data management. She covers multiple topics including data protection, edge-to-cloud data trends, application and data availability, compliance, data integration, intelligent data management, DataOps, data quality, and multicloud priorities and trends. Archana is also a co-lead of the cloud practice and an active contributor to IDC's Europe's DevOps and AI research practices.



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