

## White Paper

# Using Application Migration and Modernization to Supercharge Business Agility and Resiliency

Sponsored by: IBM

Gard Little  
June 2022

Peter Marston

## EXECUTIVE SUMMARY

---

Priorities for application modernization have elevated. The COVID-19 pandemic quickly exposed how vulnerable many organizations are without having the right data and insights from their applications to quickly respond to as well as get ahead of business change. Unfortunately, for many, inability to offer digital experiences (in addition to or in place of physical ones), as well as lacking insights to spiking or imploding customer demands, caused many organizations to absorb higher costs and forego opportunities. As a result, organizations have elevated their priority to modernize applications.

This IDC white paper examines the challenges that organizations with legacy IT and multicloud environments face and how IBM's cloud application migration and modernization services can help organizations establish, cultivate, and nurture future-resilient cloud solutions that foster rapid business innovation and elevate business performance while enabling organizations to fully harness the benefits of modern application architectures.

## Modernization Propels Transformation to the Next-Generation Enterprise

The pandemic has caused many organizations to rethink how their business applications support business processes as well as their application portfolio management. Lacking real-time data and rapid data processing capabilities, combined with imperfect supply chain operations, forced many organizations to revamp how they manage cash flow effectively and build business resiliency measures for future disruptions. Because of this, organizations are looking to modernize their applications as a means to not only bolster cash flow more effectively but also increase organizational flexibility, agility, and resiliency. IDC has observed that:

- **Customer satisfaction and operational efficiency lead business resiliency imperatives.** As organizations climb out of the economic hardships that the pandemic caused, they're looking to recover by achieving key business objectives. As organizations continue to solve business impediments that the pandemic caused, IDC's *Business Resilience Survey* has found that organizations' top business priorities center on customer satisfaction and operational efficiency (see Figure 1).
- **Organizations have elevated modernization priority to achieve imperatives.** To achieve business imperatives on customer satisfaction and operational efficiency, organizations are looking toward modernizing processes and applications to improve customer experiences and boost cash flow. Along these lines, IDC has found that organizations are dedicating more of their application development and management budgets to application modernization. Nearly seven years ago,

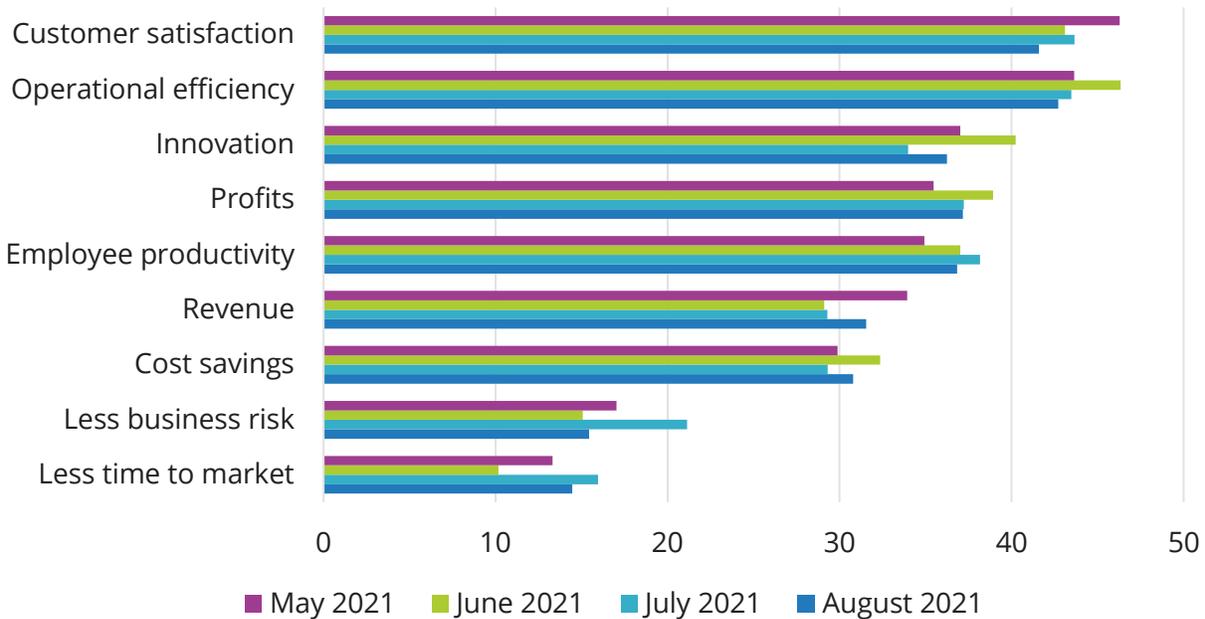
cost savings and efficiency gains were the drivers for cloud migration and application modernization. But now, drivers have evolved from reducing costs and driving efficiency gains to increasing business speed, agility, innovation, and performance, especially after the pandemic has submarined business performance. In fact, IDC data shows that 71% of organizations view application modernization as a very high or top priority today, with nearly 84% rating modernization as a very high or top priority within the next three years (see Figure 2).

- **More of the application portfolio is being transformed to the cloud to backstop modernization.** Cloud has emerged as the primary foundation by which organizations tie modernization to business imperatives. IDC data has revealed that organizations estimate that 40% of their application portfolios have been migrated to cloud today, and in three years, they estimate that 50% of their portfolios will be modernized to the cloud (see Figure 3).
- **Modernization has moved from being a one-time initiative to continuous.** As application modernization priorities rise and top tactics shift, organizations also face a new dilemma regarding long-term, strategic choices in relation to application modernization. IDC has found that nearly 40% of the applications in a portfolio require modernization today, with approximately 50% requiring modernization in the future, thereby paving the way for organizations to embed continuous application modernization as part of their ongoing application operations versus approaching modernization as an initiative undertaken every few years.

**FIGURE 1**

**Top Business Priorities, 2021**

Q. *What are your organization's top 3 business priorities?*



n = 832 for May 2021 data, n = 796 for June 2021 data, n = 791 for July 2021 data, n = 920 for August 2021 data

Source: IDC's *Business Resilience Survey*, May, June, July, and August 2021

**FIGURE 2**

**Application Modernization Goals**

Q. Which of the following best represents the primary goal your organization expects (or would expect) to achieve with application modernization, regardless of what priority your organization has with application modernization?



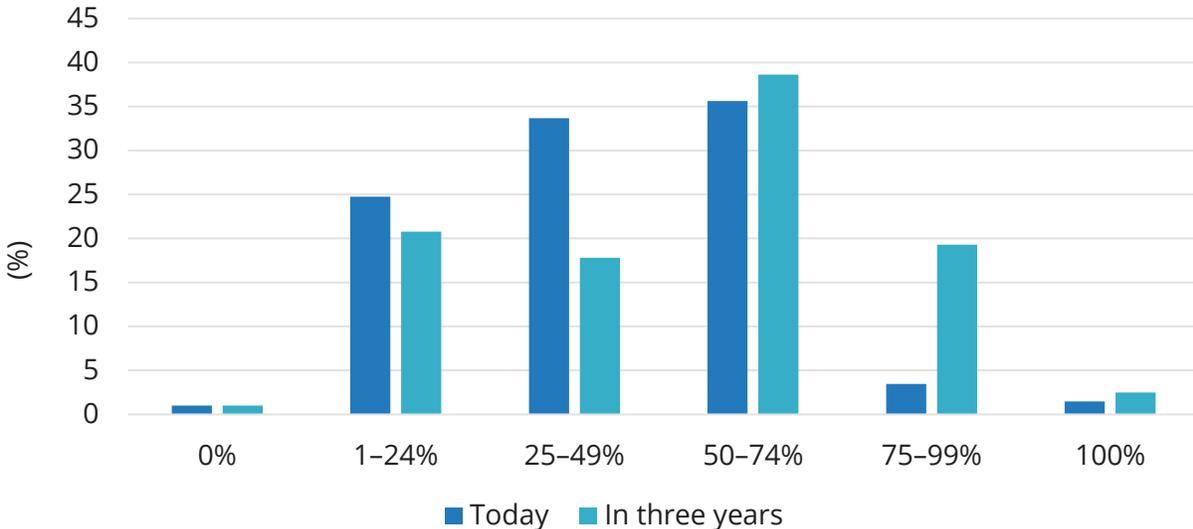
n = 202

Source: IDC's Application Services Survey, 4Q20

FIGURE 3

### Application Portfolio Modernized to the Cloud

Q. *Approximately what percentage of your organization's application portfolio would you estimate has been modernized to a cloud environment today, and what percentage of your organization's application portfolio would you estimate will be modernized to a cloud environment in three years?*



Source: IDC's Application Services Survey, 4Q20

### Key Challenges Can Upset Modernization and Migration Success

While many organizations have made progress with modernizing and migrating their applications, achieving successful results along modernization journey can be challenging. Modernization initiatives, especially for large organizations with highly diversified and integrated application portfolios, are complex. Beyond executing technical modernization tasks, organizations must also establish governance models, build change management plans, and deeply understand process dependencies and intricacies. Through conversations that IDC has conducted with more than two dozen organizations, IDC has discovered that many organizations fall into pitfalls along various stages of modernization journeys. Failing to establish robust change management plans, establishing clear definitions of what the modernization end state will look like, and being prepared to work differently often are key challenges. Challenges with application modernization are spread (see Figure 4). Yet most impactful fall against four areas:

- **Lack of leadership and management oversight.** A lack of leadership and management oversight as part of modernization initiatives can lead to chaos. Modernization efforts that lack a champion and leader typically stall as competing parties have diversified interests and the diversity of interests may be detrimental to the success of the modernization program. In addition, lack of sound management oversight and governance can lead to inefficient decision making, increased costs, and extended project timelines.
- **Insufficient strategies.** Not having the right business and IT strategy can easily set modernization initiatives astray. Not fully understanding how applications and their underlying

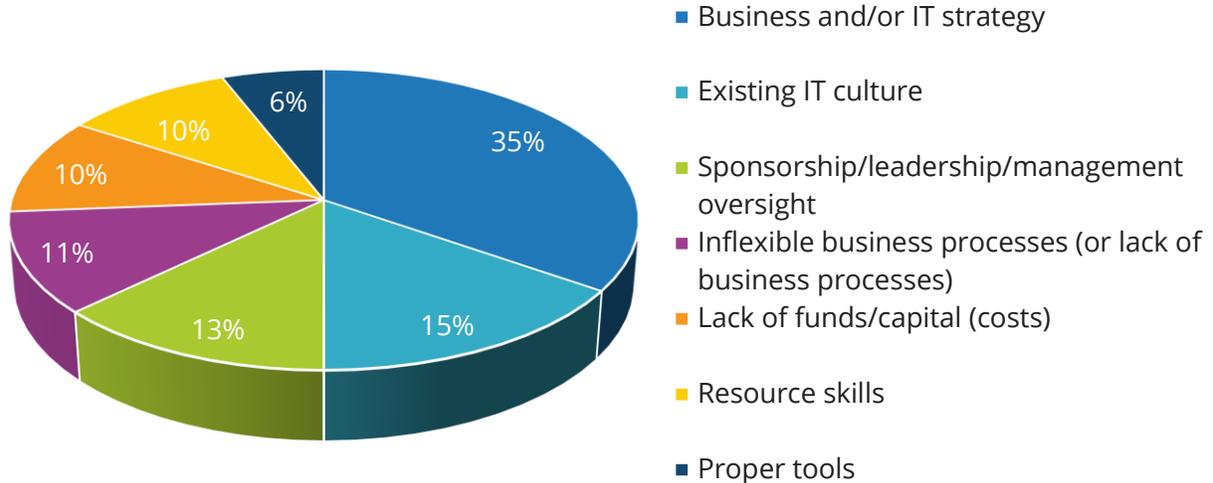
data support and impact business processes can undermine the utility and business value that organizations expect upon investment. In addition, failing to comprehend what modernization means for long-term application strategies and application portfolio management as a going concern can lead organizations to waste cash and foster inefficiencies, thereby supplanting business objectives and yielding lackluster returns on investment.

- **Rigid IT cultures.** Modernization journeys are much more than technical implementation and technology refactoring initiatives. New processes, methodologies, organizational structures, and mindsets are critical variables to ensure successful modernization and migration outcomes. Organizations require incentives and motivation to change behaviors, inside and outside the IT organization, and an inability to evolve culture along with technology changes often leads to failed modernization results and missed opportunities.
- **Talent crunch (i.e., lack of right skills/capabilities and rate of change of skill expectations).** Modernizing applications often requires up-to-date technical skills to ensure smooth transitions from legacy applications to modern ones. However, maintaining and updating skills in-house often forces enterprises to build, evolve, and maintain professional development curriculums. Such actions put strains on enterprises to continually invest in talent. As a result, it's common for enterprises to experience talent gaps as they fall behind with keeping skills relevant for talent they possess.

**FIGURE 4**

### Top Challenges with Application Modernization

Q. Which of the following is the biggest challenge your organization faces with accomplishing its application modernization goals?



Source: IDC's Application Services Survey, 4Q20

### Use Lessons Learned to Fortify Migration and Modernization Success

IDC believes migration and modernization to the cloud is more than a technical upgrade, and numerous discussions with end-user organizations and implementation service providers have confirmed this belief. Organizations need to combine strategy, execution, and cultural change management together to ensure risk mitigation and value generation for their modernization programs.

There are multiple business and technology dimensions organizations should use to frame their approach to maximize the success and value for a successful cloud migration or application transformation.

The following lessons learned helped organizations optimize results:

- **Bolster strategy through setting up project charter, partnerships, and business cases.** To learn how organizations approach application modernization, IDC has discovered through numerous interviews that establishing a business charter for modernization programs, justifying initiatives through business cases, and leaning on ecosystems are essential activities required for strategic planning to enhance likelihood of modernization success. Interviewees stressed it is critical for line-of-business resources to own aspects of driving modernization and especially be involved through the testing phase to ensure modernized applications meet user needs. By stressing this at the outset of project charters, it ensures that business lines have full control of their destinies with input from IT on which applications get modernized and how budgets are allocated for modernization initiatives at early stages. Building business cases through cash flow analysis can help delineate which applications have greater business impact (and risk). Through business case development, organizations can not only measure the impact but also use cash flow analysis as a tool to fund prioritization. Leaning on an ecosystem of services (and software) partners can also help enhance likelihood of modernization success. Organizations can not only divide, distribute, and offload work tasks to partners but also tap into expertise and best practices that generate more value from modernization.
- **Lean on leadership to dictate and guide direction and governance.** Having executive leadership from business and IT partner together, sponsor, and shepherd modernization initiatives helps increase the likelihood for successful modernization. When line-of-business executives step into sponsorship roles for modernization initiatives, the sponsorship creates accountability and visibility across the organization outside of IT. Interviewees have told IDC that once they inserted executive leadership within their modernization program offices, it not only powered greater impressions of modernization importance but also bolstered stronger comradery across IT and business lines for week-to-week successes and issues escalation and resolution. In short, using an executive leader who buys into application modernization amplifies the initiative's visibility, accountability, and attention moving forward and also motivates personnel to focus energies on making modernization successful endeavors.
- **Leverage testing as a means to mitigate risk.** Mitigating risk is essential for modernization. Several companies have told IDC that a key lesson learned revolves around mitigating risk better with modernization initiatives. What the firms said was that test planning and test case development wasn't as sufficient as they needed, and testing life cycles failed to cover technical overlaps that existed between integrated applications. As a result, the organizations have restructured some of the ways they approach testing, like tying tests to clear business results and devising ways to test modernized applications in production at lowered risk during nonbusiness hours.
- **Recognize architectural implications on the application portfolio and adhere to standards.** The way applications are designed on dedicated hardware and the way they're designed on the cloud are very different. Discussions with organizations on modernization have revealed it's critical to understand the nuances for application integration, ongoing application management and performance, and workload management to ensure architectural design-optimized efficiencies for application operations. In addition, heavy customizations to packaged applications can create monstrosities for future modernization, maintenance, and upkeep efforts. Interviews with government organizations and several commercial sector businesses

have stressed added customizations come at present and future costs, and to ensure time to value is achieved as fast as possible, organizations should seek to leverage standard configurations first and then evaluate where functionality and usability gaps exist that require customization.

- **Focus energies on strengthening culture, user experience, and sourcing.** Organizations that have undertaken modernization programs often comment that the technical implementation is the easier part. Larger areas of work focus have tended to be devising ways to help cultures acclimate to modernized applications, roles, and processes, as well as ensuring applications meet user needs and desired experiences for how users work. In addition, organizations have shared with IDC that implementation of modernization initiatives should be started closer to core teams (physically) so that inertia can be built within the broader organization in one location first and then applied and grown to other locations and other business units. Keys for resourcing center on recruiting team members that possess strong collaboration skills and personality traits, embrace change, and are open to taking risks as well as experimenting with new technologies, approaches, processes, and ways of working.
- **Figure out the right communication cadence and project and change management.** Communicating early to users and leaders what application modernization is and isn't as well as overcommunicating the value of application modernization is necessary. The companies IDC interviewed explained they learned to emphasize the importance of communication at the beginning of their organizations' initiatives. What they've done to continually improve their modernization competencies is set and manage business expectations and communicate consistently and frequently with all affected parties. In addition, organizations shared how indispensable project planning and management and change management are. Organizations noted that some of the finer details of their modernization initiatives had major impacts. As such, they've allocated more time to ironing out planning before executing tasks. Moreover, from a change management perspective, organizations shared that they spend significant efforts assessing the impacts of technology change on people and processes. They also work to build sturdy plans that train and prepare personnel, test process changes, and establish sound communication channels to limit disruption of change. The companies have established formal change management programs, led by PMOs and supported by C-level executives, to drive modernization programs and projects as well as be accountable for program delivery.

## IBM's Solution

### *Overview of Offering*

IBM believes modernizing applications and migrating to a hybrid multicloud platform accelerate cloud-enabled transformation (or digital reinvention). IBM provides an end-to-end services approach from strategy and implementation to managed services to meet clients wherever they are on their cloud journey (see Figure 5). These services are offered to the market as client journeys/pathways designed to enable IBM to engage clients in business-driven conversations around a compelling end-to-end value proposition. The following five client journeys/pathways are aligned to market-based client imperatives and business outcomes:

- **Modernize the application estate.** Drive continuous modernization of the entire estate for any hyperscaler, cloud, or edge.
- **Develop cloud-native applications and platforms.** Design, build, and optimize innovative, secure, and resilient cloud applications, regardless of hyperscaler.
- **Increase business agility and productivity at scale.** Foster scalable transformation by driving adoption of KPI-driven DevSecOps and shift-left operating models.

- **Transform application operations and service management.** Streamline workflows with an automation-first approach to drive a consistent operating model across the estate.
- **Manage and optimize the multicloud estate.** Build and implement a single control pane for seamless, end-to-end cloud management services across the estate.

**FIGURE 5**

## IBM's End-to-End Services Offerings

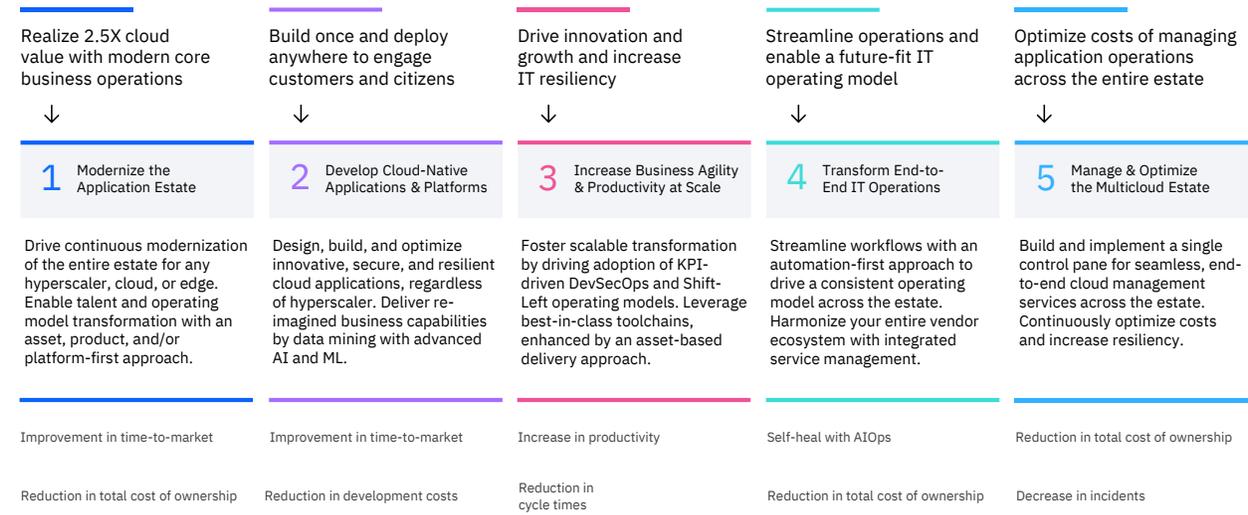


Source: IBM, 2022

The modernization journey is not always smooth, and clients face several challenges when they embark on modernizing their application estate. Typical challenges encountered include achieving speed to value; uncertainty in interactions and dependencies; dealing with IT system complexity; aligning process change with application transformation; decoupling apps and data; managing inflexible platforms, tools, and methods; operating in a federated organization context; and last but not the least, availability of key skills and talent. IBM believes that mapping business outcomes to customer journeys can address these challenges (see Figure 6).

**FIGURE 6**

**Customer Journeys Mapped to Client Imperatives and Business Outcomes**



Source: IBM, 2022

IBM addresses these client imperatives by:

- Aligning the modernization journey to the right set of business outcomes
- Defining clarity of the target application portfolio
- Accelerating modernization with methods and tools to deliver the right outcomes
- Delivering via a new operating model

IBM's migration and modernization portfolio covers a broad spectrum of the application landscape including custom-built and commercial off-the-shelf applications (COTs); packaged applications such as SAP, Oracle, and Microsoft Dynamics; custom industry applications; and analytical applications and data. In addition, as part of the migration and modernization portfolio, IBM modernizes mainframe environments through the adoption of cloud-native development models to modernize legacy capabilities incrementally without resulting in business/operations risk.

IBM's key value proposition for modernization is to deliver business acceleration by modernizing the current portfolio (the now) through application, VM, and data migration; workload containerization; re-architecting of applications (microservices, APIs, events); and mainframe and middleware modernization. This modernization enables creating an environment that is conducive to creating the new environment, one that encompasses custom native application development, DevSecOps/site reliability engineering (SRE) enablement, API development and exposure, and enterprise and partner application and integration (e.g., blockchain, IoT, and industry cloud solutions) (see Figure 7).

The provider leverages its *IBM Garage approach* – an agile, modern application delivery methodology – that accelerates application deployment and ensures application quality. IBM Garage assets, methods, and accelerators are used to accelerate the modernized journey. The IBM Garage Method for Cloud combines industry expertise with rapid minimum viable product (MVP)-based and experience-led development using virtual work practices to deliver business outcomes. IBM's

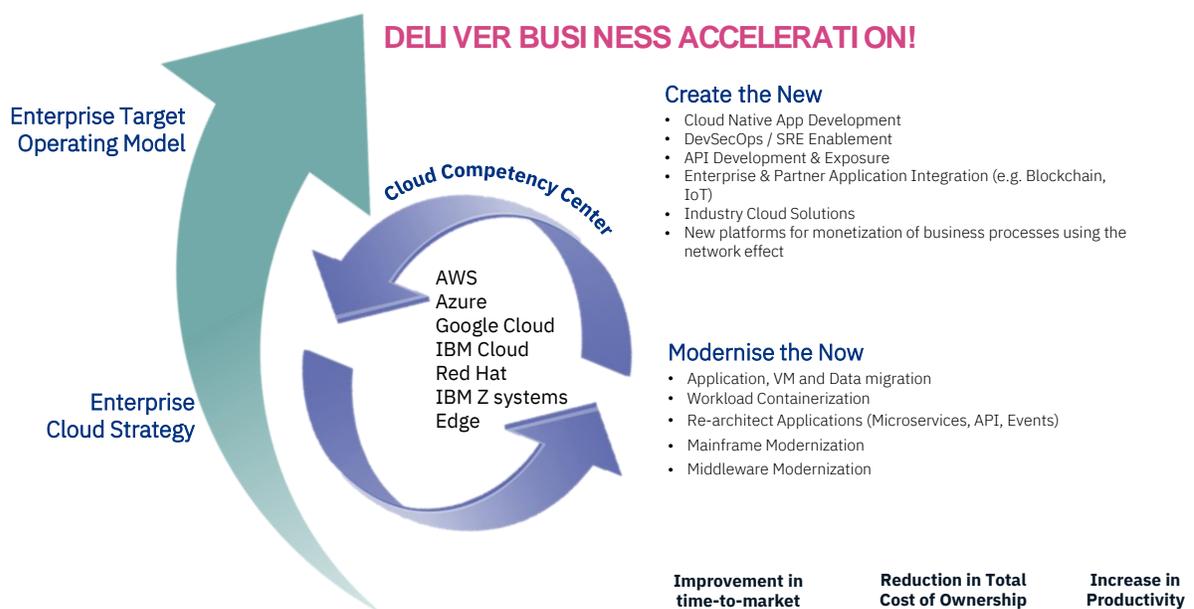
approach to modernization isn't a one solution fits all. Instead, the provider believes that every modernization journey is unique. Its analysis and assessment capabilities identify patterns and align to outcomes, allowing IBM to tailor client modernization journeys in a way that is unique for each client, yet also flexible enough to harness the standardization advantages of IBM's industry and hyperscaler accelerators.

IBM is building hybrid cloud journeys to accelerate cloud transformation. The hybrid cloud journeys help organizations address the breadth and complexity of the application landscape, achieve DevOps transformation at scale, and enable consistency in the hybrid multicloud operating model.

IBM has codified its proven experience with transformation into the IBM Consulting Cloud Accelerator to deliver these journeys. The IBM Consulting Cloud Accelerator comprises accelerators that are harvested and tested from client projects. These assets are leveraged to perform rapid discovery, quantification of benefits, automated migration, and code generation for day 2 operations and managed services.

**FIGURE 7**

**Create the New, Modernize the Now**



Source: IBM, 2022

**Establish a Modernization Strategy**

As a first step, IBM works with clients to define an outcome-driven modernization strategy through:

- Identifying and prioritizing modernization goals using the IBM business value frameworks
- Analyzing existing applications, process, and infrastructure portfolio to identify outcome-aligned priorities using IBM discovery and insights tools

- Defining migration strategy and landing zones for workloads using solution patterns and hybrid cloud journeys
- Creating a business case that supports the strategy along with the road map using ROI models leveraging proven technical and financial analysis tools

IBM collaboratively engages with clients to cocreate modernization goals with a focus on business goals and adapting technology to achieve the enterprise vision. Here, IBM leverages its artificial intelligence (AI)-enabled integrated discovery and insight tools such as Cloud Affinity, Cloud Transformation Insights, Candidate Microservices Advisor, and Process Mining with Celonis to help develop a rapid point of view on the modernization strategy and landing zone for each application workload. In addition, security is a top focus within IBM's services. Developing a security strategy and plan early in the process is critical to reduce the potential cost and complexity of implementing security practices later in the life cycle. IBM utilizes its Secure Cloud Framework to ensure security and compliance throughout the program, without impacting agility and speed and also uses its Cloud Business Tool to establish a framework to track and realize value through transformation. IBM's Secure Cloud Framework provides an integrated approach – from assessment to developing requirements to structuring a robust road map – for a successful cybersecurity posture in any cloud migration/modernization.

### ***Establish a Foundation and Minimum Viable Product***

The IBM Garage Methodology cocreates, co-executes, and collaborates with clients by bringing together an open, seamless set of practices with a human-centric, outcome-first approach. The methodology drives enterprise design thinking at scale, is built on agile principles for colocated and distributed teams, leverages DevOps tools and techniques for continued delivery and operations, fosters digital talent and culture change, and enables site reliability engineering.

The methodology describes how to start implementing the practices in an organization. Workflows describe a set of activities that an organization needs to complete and realize an outcome. For example, a workflow that discusses how to define a minimum viable product (MVP) describes activities and related practices to create an implementable MVP.

IBM's Platform Engineering Accelerators serve as the basis for cloud migration and modernization through prebuilt architectures, robust security foundation, and automated environment setup. This ensures the ability to securely scale through standardized ways of working and protocols that establish the foundation throughout the organization. IBM's approach is to help mitigate complexity with solution patterns that have typical migration and modernization models identified through hundreds of prior successful implementations and hybrid cloud journeys. The offerings are prepackaged, prescriptive solutions that accelerate the identified solution patterns.

To achieve optimal results, IBM uses tools, assets, and accelerators. They can be classified across three categories:

- IBM assets enabled by IBM Research:
  - **Examples:** Candidate Microservices Adviser (CMA), Monolith Application Modernizer (MAM), Data Modernization Accelerator (DMA), Project CodeNet
- Hyperscaler-mandated native tools:
  - **AWS:** AWS Application Discovery Service, AWS Application Migration Service, AWS Database Migration Service

- **Azure – Azure Migrate:** Discovery and Assessment, Server Migration, Data Migration Assistant, Movere, Turbonomic
- **GCP:** Migrate for Compute Engine, gsutil command-line tool/Cloud Console, Storage Transfer Service
- **IBM Cloud:** API Connect, Cloudant, Watson Discovery, Watson OpenScale, Watson AIOps, Watson Studio
- Ecosystem partner tools:
  - **IBM Technology:** Red Hat, Cloud Paks, Instana, Turbonomic, Watson AIOps, DevOps Commander, Nordcloud Klarify, Platform Engineering Essentials
  - **Third-party tools:** CAST, Cloudscape, Celonis, Cloudamize, Tekton, Kabanero, Terraform, Txture, Zerto, PlateSpin, VMware, Veeam, vSphere/vMotion

IBM's hybrid cloud journeys are certified with hyperscalers and drive standardization and speed with lower risk and reduced cost to implement. Its experiential architecture approach involves endless cycles of analysis, design, and review to accelerate MVP realization of the blueprint architecture without compromising delivery. The assets to support the experiential architecture approach include:

- **IBM Cloud Architecture Center** – An online site providing guidance for base solution architectures across diverse technical and industry use cases, complemented by reference architectures from hybrid cloud journeys
- **Architecture Lab Environment** – A development environment ready with DevSecOps and IBM Accelerators for conceiving and realizing architecture backlogs and proof of concepts (POCs)
- **Coexistence playbook** – A playbook that provides detailed guidance to realize coexistence aspects for data replication and consistency protection. (The guidance consists of base concepts, design patterns, and hyperscaler-specific and common realization alternatives, across all cloud platforms.)
- **Collaboration with IBM Research to develop modernization tools** – IBM Research leveraging its AI expertise to develop Accelerators for Application Modernization with AI. (These accelerators help clients reduce modernization efforts and costs through advanced AI techniques. It includes a series of tools for optimization, including analysis and containerization, microservices recommendations, and continuous, guided feedback and AI learning.)

### ***Build and Deploy at Scale***

After establishing the strategy and MVP, IBM extends solutioning with a proven, scalable delivery model; a center of excellence (COE); and continuous management. IBM utilizes the modernization factory approach, integrated delivery model, and DevSecOps practices to scale at migration and modernization. IBM also utilizes SRE principles for continuous measurement and management and establishes a COE to institutionalize best practices, upskill resources, and provide continuous support for modernization.

IBM's modernization factory is a squad-based, workstream-centric way of working that achieves rapid modernization at scale. Continuous migration and modernization is executed in waves at the factory through an integrated delivery model supported by automated infrastructure provisioning and automated testing platforms. The modernization factory is supported by a 24 x 7 dynamic delivery model with a large number of certified experts across major hyperscaler platforms and next-generation application modernization technologies.

IBM's integrated approach for cloud application management ensures seamless transition and efficient operations post migration/modernization. IBM leverages instrumentation for monitoring and logging of applications, supported by key engineering practices such as DevSecOps, SRE, infrastructure as a code, and performance engineering.

## Cloud Migration and Application Modernization Case Studies

IDC interviewed three organizations to understand the backgrounds and results of their cloud migration and application modernization initiatives. We sought to learn their firsthand experiences with charting a cloud migration and application modernization strategy, how they approached project implementation, and what they're doing to operate their cloud migration and application modernization initiatives moving forward. Through the interviews, IDC found that migration and modernization objectives centered on meeting corporate digital transformation imperatives, improving customer intimacy and loyalty, and driving economic development. Conversely, we also found that key challenges – such as not focusing enough attention on implementation communication, underestimating time and resources spent on cultural transformation, and following a uniform approach for application migration – can lead to lackluster results. IDC also found that successful initiatives require best practices in change management. Ensuring top management support and building effective governance structures and processes to control and guide transformation direction were critical for success. When cloud migration and application modernization initiatives are managed effectively, organizations can reap the benefits of optimizing cash on technology spend to boost business performance, improving responsiveness to customer needs and demands, and simplifying future datacenter maintenance activities.

### *Swire Beverages*

Swire Beverages Ltd., had run into challenges with rapidly and easily assimilating new acquisitions into its corporate umbrella and integrating new territories as part of its business in a timely fashion. From an IT standpoint, acquisition of new organizations and territories stressed the organization's ability to scale and flexibly meet customer demands. Nearly 90% of the company's datacenter infrastructure had become obsolete, and the organization was hesitant to refresh its infrastructure assets through large capital investments that might take more than five years to pay back. Because of the rapid rate of territory acquisitions and complexity of territory integration, Swire needed a technology backbone that enabled the business to scale quickly and was flexible to changing business conditions.

Swire engaged IBM to help manage the cloud migration and application migration effort and guide the company through transformation. IBM had a previous relationship with Swire. The provider had helped Swire with its SAP implementation, and its inside knowledge around Swire's application portfolio landscape and IT environments made IBM a strong fit to help Swire migrate its application portfolio as well as transform Swire's datacenters to the cloud.

IBM helped Swire build a 14-month cloud migration and application modernization plan that consisted of two major phases. Through the migration, IBM helped Swire not only manage and serve as the testing services provider for the initiative but also coordinate and manage AWS technologies and professional services as part of the transformation effort.

After six months, Swire completed the first phase of its cloud migration by transforming its datacenter to cloud and moving 70% of its targeted applications to the cloud. Nearly seven months later, Swire completed its second phase, where it had moved its sales force automation function – which supports

roughly 10,000 sales personnel – to the cloud. Key benefits that Swire was quick to realize included optimizing utility of its infrastructure assets – which helped eliminate costs for unused datacenter capacity that Swire experienced in the past – and creating the autoscaling and flexibility the firm needed to enable increased response times for sales personnel to more quickly and accurately fulfill customer demands. A by-product of Swire's decision to undertake cloud migration and application modernization also helped the firm simplify its overall datacenter maintenance.

Having established a solid platform for future expansion, Swire is focused on the next steps, including driving digital transformation further throughout other geographic regions of the organization. The first step in Swire's digital transformation has been completed, but Swire intends to expand its cloud datacenter platform to more territories in Asia to bolster the company's competitiveness and improve customer relationships.

### ***T&I Innovation Center***

T&I Innovation Center is a consortium of six regional banking institutions in Japan, known as the TSUBASA Alliance. The organization was formed in 2016 with the aim of helping the banking industry in Japan plan and develop new financial services offerings with a common IT platform that can spawn innovation. The TSUBASA Alliance, supported by IBM Japan, came together to develop a shared core banking system and technology that member banks and fintech firms could utilize to develop applications using a common platform. By using a common platform, banking organizations could better execute core operational activities and provide customers with enhanced banking experiences. In addition, this alliance is expanding its scope to other business aspects (i.e., international business, inheritance, and trusts), and it is a unique approach in the Japanese regional banking industry. T&I was established to expand this ecosystem to fintech firms, and it recognized that open APIs were critical for developing new digital financial services.

Key challenges for Japanese banks have traditionally centered on lacking an ability to improve and provide superior customer experience due to the high costs of deploying and integrating new technologies. New technology deployment and integration tended to increase operational costs and adversely affect the banks' business cash flow. The existing IT backbones that the banks had in place hindered their ability to service a wide range of varying customer needs and demands and hampered their ability to make in-process changes based on evolving business conditions.

Realizing that economic value could be improved across various banking institutions by improving customer experiences through updating core banking technologies, the TSUBASA Alliance began to shape a vision for a new technology backbone that could digitize banking operations and serve as a catalyst for future innovation in banking services. T&I sought assistance from a third-party service provider to help shape the vision as well as transform the vision into real change for the Japanese banking industry. The organization selected IBM from among a crowded field of services providers because of IBM's strategic approach to the problem, deep technical expertise (e.g., systems integration required for highly reliable and scalable systems), and ability to link IT solutions with business outcomes.

With IBM, T&I built what is called the TSUBASA FinTech Platform, an open banking API platform; likewise, T&I built an application and PaaS platform called the TSUBASA FinTech Service Contents Platform using container technology and IBM's private cloud. The open API platform, launched in April 2018, and the modern PaaS platform, launched in March 2019, have given T&I modern platforms that enable banks to enhance processes and outcomes with third-party providers. The platforms also have

opened the door for banks to engage with and collaborate with fintech firms that can serve to spur new business opportunities with prospects that the banks previously have had difficulty reaching.

## ***Lloyds Banking Group***

In 2008, the global financial crisis created significant challenges for financial institutions seeking to upgrade their technology infrastructure. For many years leading up to 2008, Lloyds Banking Group had been running IT infrastructure and services for several U.K. banks using older infrastructure assets. Leading up to and during the financial crisis, Lloyds had been hard at work building out a new, on-premises datacenter infrastructure that was equipped with advanced technologies to better support its evolving business needs and drive higher levels of efficiency in IT operations. The financial crisis, however, spawned many new regulatory requirements that constrained Lloyds' ability to freely utilize working capital. Because new regulatory requirements limited Lloyds' ability to obtain capital, Lloyds had to stretch both its use of cash and the duration of its datacenter buildout. In 2014, when the new datacenter project was completed, regulatory and business pressures forced Lloyds to evaluate alternatives to its on-premises datacenter and disaster recovery strategy. The up-front capital and shortened time-to-value requirements from regulators and Lloyds' business lines were too great to make further on-premises datacenter expansion work.

Because of these challenges, Lloyds explored alternatives to its on-premises datacenter strategy. Minimizing costs and increasing speed to market were key drivers in determining a new datacenter strategy and infrastructure solution that could not only address regulatory mandates but also empower Lloyds' core business functions to more flexibly and rapidly take advantage of new business opportunities and enhance customer loyalty. In 2015, Lloyds began evaluating a cloud strategy for its datacenter, and by 2017, its infrastructure solution approach evolved to a multicloud strategy.

Lloyds selected IBM to help build, strengthen, and execute its cloud strategy. IBM had been a large technology and service provider to Lloyds. Coupled with that, IBM possessed the right business knowledge and familiarity with Lloyds' applications and infrastructure landscape. IBM's private cloud offering, overall strategic fit, and previous relationship made the provider the right partner choice for Lloyds. IBM helped Lloyds develop a road map for its cloud datacenter and application migration plan, and, in September 2018, Lloyds began moving applications to IBM's private cloud. In less than six months, Lloyds has been able to realize key benefits such as reduced datacenter operational costs and increased time to value for application development life-cycle activities. Moreover, the time needed to procure and provision new applications has been dramatically reduced, from what had traditionally taken up to 18 weeks to spinning up core images within hours for application development. The cost savings associated with this move are comparable with what other large organizations have experienced.

The use of IBM's private cloud and further progression toward multicloud will help Lloyds become leaner in its IT operations. The reduced costs of operations and reduced time for infrastructure setup will help Lloyds redirect IT resources to more value-added strategy work, as well as restructure its datacenter operations to be more cost efficient. Going forward, Lloyds plans to move more of its application portfolio to private, public, and hybrid clouds based on application age, technical complexity, and integration requirements, and once the organization achieves critical mass with the cloud application migration, Lloyds expects that its business lines will begin to see the full benefits of business agility pass through.

## CHALLENGES AND OPPORTUNITIES

---

Organizations are increasingly leveraging partner ecosystems to aid them in managing their application portfolios and hosting environments so they can position internal resources to focus on activities other than IT and application management. As organizations lean more on partners to support and take over ownership of key application and hosting activities, service providers need to be aware of evolving market conditions and buyer preferences so that providers can be well suited to seize opportunities and extend relationships.

Migration and modernization services providers should:

- **Prepare to share more risk and possibly more rewards.** IDC deals analysis of application and outsourcing services contracts has shown that application and cloud services contractual agreements are evolving. Increasingly, buyers are demanding that providers share more risk in their relationships through different pricing models, such as fixed price and outcome-based services. To remain competitive, providers need to be well equipped to offer and provide services in the manner that clients expect and to balance this new risk-reward equation.
- **Leverage relevant client references to bullhorn capabilities.** A key finding of the IDC MarketScape for application modernization services was that buyer organizations tend to place significant importance on an application service provider's ability to provide relevant references. Through our interviews, we found that reference ability was the top criterion organizations used to ultimately select an application modernization partner. As part of the interviews IDC conducted, buyer feedback on references revealed that providers that supplied references from industries similar to those of prospective buyers, with similar modernization challenges, stood out against other providers that had been short listed. As such, application services providers should be prepared to leverage references that have high relevance to new prospects. The references should come from the same industries and have faced the same migration and modernization challenges. Sometimes, the right, relevant references can be the best outside sales reps for your application services.
- **Ensure flexibility of cloud options, including the use of partnership ecosystems.** With agility being the top driver for using hybrid cloud services, enterprises will depend on service providers to offer not only a wide array of cloud options, from private and public, but also the flexibility of consuming cloud utilizing any resource. This will require that service providers maintain an agnostic approach by utilizing not just their own cloud resources but also those of technology (hardware and software) vendors and cloud service provider partners (e.g., AWS, Azure, Google, and Alibaba).

## SUMMARY AND CONCLUSION

---

Cloud migration and application modernization help organizations unlock and expand agility. Through such initiatives, organizations are better positioned to not only achieve corporate imperatives but also build sustainable competitive advantage through IT. IDC believes cloud migration and application modernization will continue to grow in importance over the next several years as organizations seek to drive higher levels of business value and business agility in their application portfolios. Because of this, IDC believes organizations should:

- **Define clear and measurable goals and objectives.** Outline specifically what cloud migration and application modernization will bring and will not bring to your organization's business. Use

these goals and objectives as the anchoring foundation for how your organization intends to (and will) be successful across the various facets of application and datacenter management.

- **Revamp the governance and overarching performance measurement model.** The benefits of flexibility and agility come at a cost. Organizations can't simply build a solution and let it operate on its own, unmonitored. As organizations move to a multicloud model through their migration and modernization activities, they need to develop a uniform governance and oversight model to monitor performance and explore areas to tune agility higher. While the goal of migration is to enhance efficiencies and agility, organizations must still develop escalation paths and define measures of success to ensure cloud migration is providing and will continue to provide value. Having multiple hosting environments for the application portfolio can create varied layers of bureaucracy that can bog down an organization's ability to be agile. As such, organizations need to rethink and restructure how they manage their transformations as a going concern. Organizations should establish a set of resources that are responsible for guiding, directing, and managing the program, such as a steering or management committee, and ensure that the program has line-of-business representation, input, and buy-in.
- **Weigh trade-offs between providers that can be agnostic and offer an array of services.** A tricky part of selecting the right modernization and migration partner is avoiding any type of lock-in to ensure flexibility for potential future changes. In customer interviews IDC has conducted on the use of application service providers, organizations indicated that they have found the most prosperous relationships and business results with service providers that are flexible and adapt to buyer organization change versus providers that impose rigid, specific contractual agreements. While selecting a provider that is cloud agnostic has its advantages, buyer organizations generally have to manage multiple vendor relationships between the cloud provider and the application service provider, which can create complexity and elevate costs for multiple different service levels. Having a single provider that can offer its own cloud as well as provide application services simplifies service-level accountability but can create levels of lock-in. As a result, organizations need to carefully consider the trade-offs and make calculated decisions to fully understand the risks and depth of partnership that are part of the buyer and service provider relationship.

## About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

## Global Headquarters

140 Kendrick Street  
Building B  
Needham, MA 02494  
USA  
508.872.8200  
Twitter: @IDC  
[blogs.idc.com](https://blogs.idc.com)  
[www.idc.com](https://www.idc.com)

---

### Copyright Notice

External Publication of IDC Information and Data – Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2022 IDC. Reproduction without written permission is completely forbidden.

