# Navigate Disruption and Drive Positive Business Outcomes with Cloud Migration

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# In this White Paper

This IDC paper presents a business value-driven approach to cloud migration in support of digital transformation and adapting to unforeseen disruptions. The goal is to provide, or at least contribute to, a blueprint for a successful and resilient enterprise that seamlessly operates in the cloud. Multiple case studies have been included to share lessons learned and best practices while demonstrating how industry leaders use cloud migration as a change agent for their company's digital transformation. Quotes in this white paper are derived from IDC interviews with AWS Cloud customers.

# IDC Opinion

**Disruptions, whether planned or unforeseen, come in many forms and can vary significantly in impact and duration. Natural disasters can be widespread or isolated. Over the last decade, technological innovation and the resulting changes in generational attitudes and preferences is a prime example of high intensity and long duration disruption.**

COVID-19, on the other hand, is certainly high impact given the widespread human and economic damage, and duration is still to be determined. In our societal response to the current disruption caused by the pandemic which is occurring simultaneously with ongoing digital disruption, there is much to be learned from businesses that have already responded to the technological and behavioral changes brought on by digital technologies.

Public cloud and software-as-a-service serve as the bedrock on which to construct highly resilient, efficient, and agile digital business models that can help withstand disruptions of virtually any impact and duration. The inherent distributed and connected nature of public cloud, and the speed and innovation the public cloud enables, helps businesses make seemingly impossible pivots in response to change. From a global automobile manufacturer transforming its facilities to produce respiratory equipment, to a local municipality leveraging automation innovation to construct a state-of-the-art water treatment facility, the examples of such pivots are all around us, in every industry and segment. The real hazard posed by disruption is to underestimate the will and ingenuity of the people running these businesses.

**Over 57%**

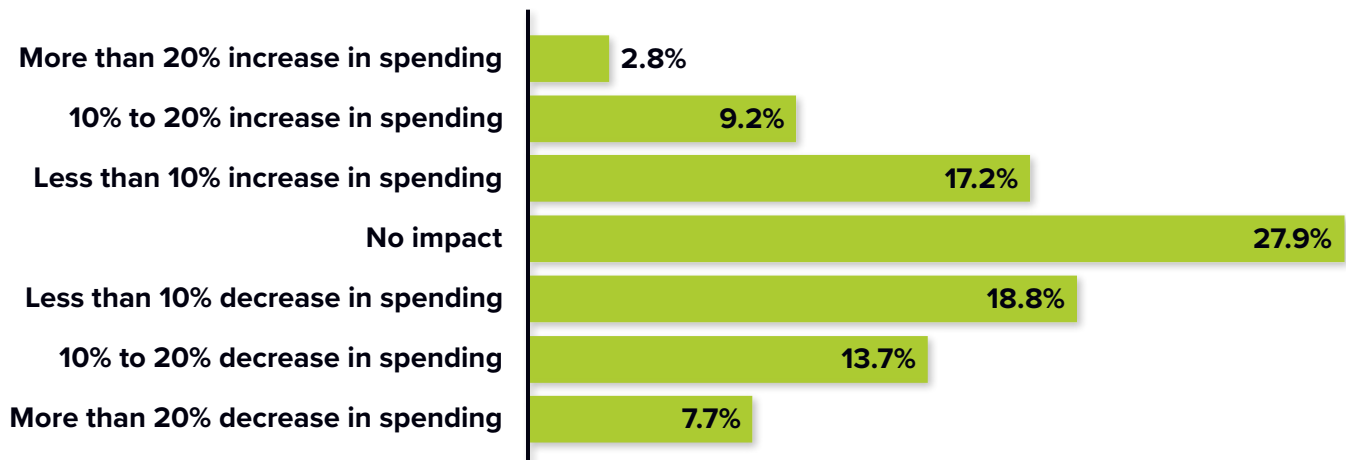**of organizations plan to increase or maintain IaaS spending levels despite COVID-19.**

Digital companies invest in continuous learning to adapt to changing realities. They leverage data to learn about the changing needs of customers, and they design infrastructure for large-scale and ongoing change to respond quickly with new digital processes and experiences. This is happening in real time right now. Public cloud continues to enable business agility, allowing companies to operate as smoothly as possible, regardless of external variables.

IDC COVID-19 research is continuously updated to reflect current business sentiment and plans for IT spending for the remainder of 2020. The data show that businesses prioritize investments in new, cloud-enabled capabilities that help simplify and standardize new business processes for a much larger remote workforce with a concentrated focus on customer experience. Retaining customers during this period of disruption is paramount for a strong emergence from the crisis.

Businesses continue to prioritize investments in IT projects that have a strong ROI and hasten the move to cloud for business-critical workloads to reduce or eliminate infrastructure cost while increasing scalability during the journey to recovery and growth. Companies invest in innovation accelerators like IoT, AI and machine learning, and advanced analytics to automate repetitive processes for greater speed and efficiency while broadly applying data-driven insight to inform smarter decisions. Figure 1 and Figure 2 (next page) show the latest data.

## FIGURE 1

## COVID-19 Impact on 2020 IaaS Spend

Compared to your organization's originally budgeted IT spending plans, in 2020 overall, how do you think your organization's actual spending on IaaS will be affected due to COVID-19?

| Category | Percentage |
|---|---|
| More than 20% increase in spending | 2.8% |
| 10% to 20% increase in spending | 9.2% |
| Less than 10% increase in spending | 17.2% |
| No impact | 27.9% |
| Less than 10% decrease in spending | 18.8% |
| 10% to 20% decrease in spending | 13.7% |
| More than 20% decrease in spending | 7.7% |

n = 801  |  Source: IDC COVID-19 Impact on IT Spending Survey, July 2020

**FIGURE 2**

## COVID-19 Impact on IoT and AI 2020 Spend

■ **IoT**    ■ **AI**

Compared to your organization's originally budgeted IT spending plans, in 2020 overall, how do you think your organization's actual spending on IoT and AI will be affected due to COVID-19?
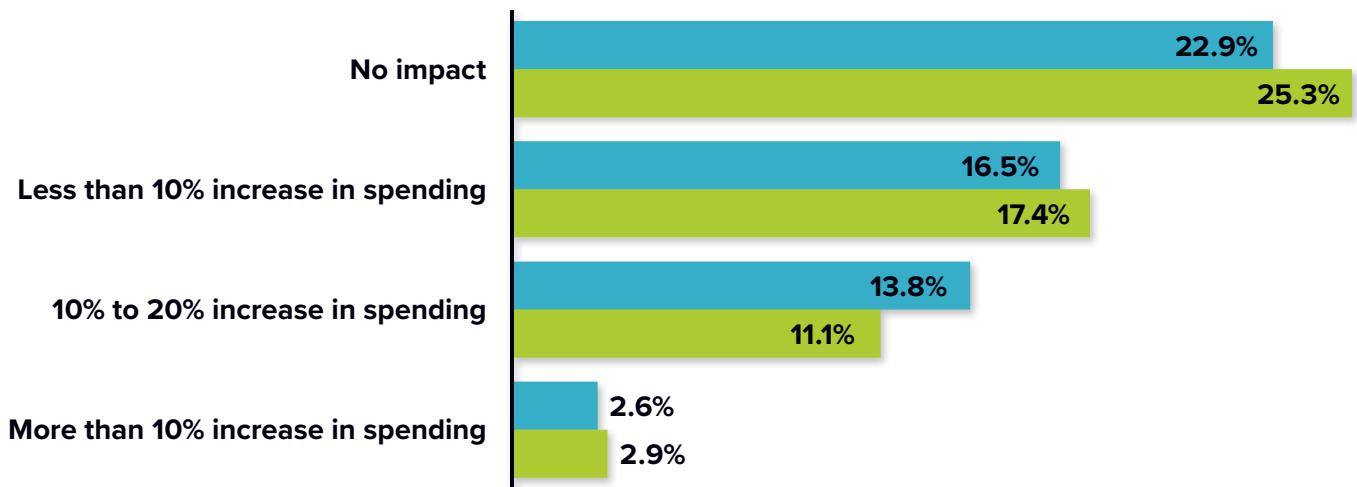
| | IoT | AI |
|---|---|---|
| No impact | 22.9% | 25.3% |
| Less than 10% increase in spending | 16.5% | 17.4% |
| 10% to 20% increase in spending | 13.8% | 11.1% |
| More than 10% increase in spending | 2.6% | 2.9% |

n = 801  |  Source: IDC COVID-19 Impact on IT Spending Survey, July 2020

Businesses need the scalability, agility, and resiliency of public cloud to navigate from the current crisis and economic slowdown, as well as return to growth and the next normal. If you are wondering why a digital operating model is important, consider the case of Ant Financial. The cloud-native financial services company serves more than 700 million customers with fewer than 10,000 employees. That is efficiency. Compare this to Bank of America with 200,000 employees serving 67 million customers. Ant Financial ranks as one of the world's most valuable financial services firms.

*IDC has interviewed numerous IT and line-of-business executives regarding the decision to move to cloud.* What is clear is that the level of cloud maturity has progressed from opportunistic use of public cloud as a point solution to an optimized, enterprise-wide use of public cloud to accelerate digital transformation. Capitalizing on the lessons learned by businesses that have progressed in their cloud maturity journey helps to de-risk decisions and improve outcomes. Mega-cloud providers (hyperscalers) continuously update and introduce new offerings that reflect experience gained from thousands of successful cloud migrations. Innovations in automation hasten the migration processes, improve resiliency, and ensure a more predictable transition and outcome. Using automation, IT resources are free to focus on delivering new business services that leverage a modern infrastructure to drive innovation and agility.

**66** We needed to get away from our on-premises environment for a variety of reasons — mostly for data security — and we were long overdue for this move because our servers were breaking regularly. We look at other hyperscalers, but AWS gave us the best option, and we felt their security measures were more far-reaching. **99**

**IT Architect, Manufacturing, USA**

**66** We have reduced costs with AWS and gained flexibility around purchasing and procurement. Also, we've reduced operational risk with all the compliance documents we must create. We benefit from the speed with which we can get users up and running, which is really the speed of getting online and the speed of issue resolution. **99**

**IT Manager, Healthcare**

# State of Cloud Migration

**The move to public cloud is first and foremost a business decision that requires a shared understanding of the positive business outcomes across the executive team, lines of business, and IT.**

The cases cited in this paper reference mainly business-critical workloads deployed in public cloud in service of modernization and transformation.

**Modernization:** updating and replacing rigid on-premises legacy systems with more agile, scalable, and resilient cloud-native services

**Digital transformation:** is the ubiquitous use of digital technology to fundamentally change how the business operates and delivers value to customers.
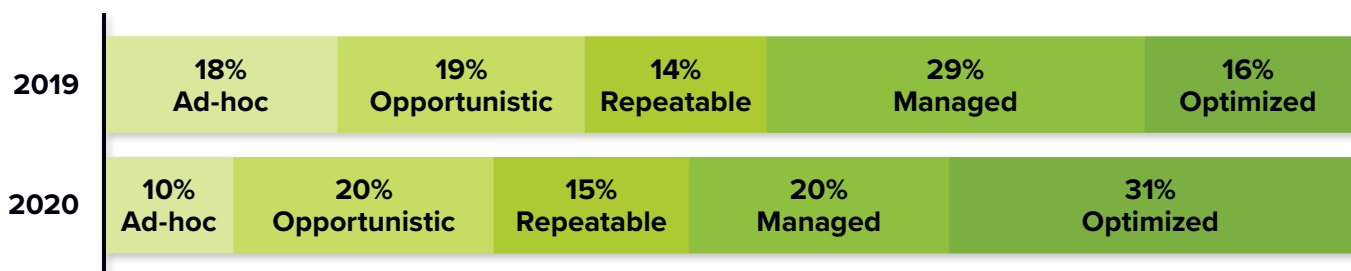
As businesses mature in their cloud experience, the cumulative benefits of faster time to market, superior user and customer experience, increased operational efficiency, and automation, typically exceed what was originally captured in the business case.

## IDC tracks cloud maturity across five stages of adoption:

| 1 Ad-hoc | 2 Opportunistic | 3 Repeatable | 4 Managed | 5 Optimized |
|---|---|---|---|---|

**FIGURE 3**

## IDC Cloud Maturity Benchmark

Which statement best describes your organization's cloud strategy today and in 24 months?

| | Ad-hoc | Opportunistic | Repeatable | Managed | Optimized |
|---|---|---|---|---|---|
| **2019** | 18% | 19% | 14% | 29% | 16% |
| **2020** | 10% | 20% | 15% | 20% | 31% |

n = 1,940  |  Source: IDC Industry CloudPath, 2020

Reaching the managed and optimized stages of cloud maturity requires broad implementation of cloud-native services that are proactively managed and strategically aligned with digital transformation efforts.
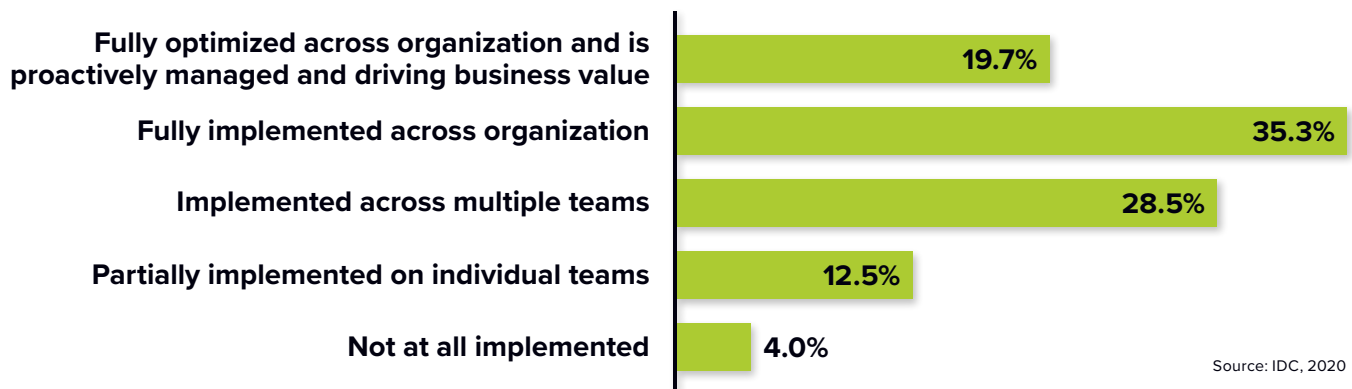
> **Cloud optimized organizations operate a center of excellence (COE) for sharing best practices and lessons learned. The COE is a team of architects, executives, developers, and admins who lead the development of new capabilities across the enterprise to ensure organizational alignment and achieve economies of scale.**

As the business moves along its cloud trajectory, operational efficiency and increased staff productivity create opportunities for collaborative innovation across functions such as product development, process optimization and customer experience. As a result, the transformation to a digital operating model dramatically alters the business' expectations of IT. To respond, IT must effectively manage competing pressures between governance and user enablement. Figure 4 shows how businesses are progressing on their journey to cloud-enabled transformation.

**FIGURE 4**

**Enterprise-wide Shared Processes and Best Practices**

To what degree are cloud processes and best practices implemented across the organization?

| Category | Percentage |
| --- | --- |
| Fully optimized across organization and is proactively managed and driving business value | 19.7% |
| Fully implemented across organization | 35.3% |
| Implemented across multiple teams | 28.5% |
| Partially implemented on individual teams | 12.5% |
| Not at all implemented | 4.0% |

Source: IDC, 2020

"We really don't have much to manage, we don't have any hardware issues, but we still have workstations to take care of, and we can do a much better job meeting the needs, and being more responsive to our employees."
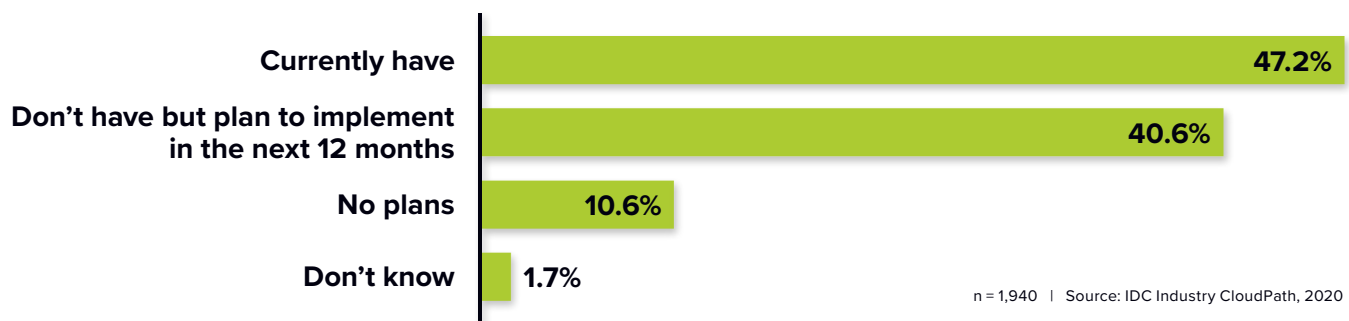
**IT Director, Healthcare**

Today, infrastructure and operations teams must demonstrate measurable improvements in business KPIs to justify continued investment, and there is greater focus on ROI during periods of significant disruption and the ensuring economic uncertainty.

A business value approach to cloud migration underscores the pace at which businesses often experience secondary and tertiary benefits of public cloud. Businesses can and should take advantage of early adopter experiences during the planning phase to build on and strengthen their business case. Figure 5 highlights this trend.

**FIGURE 5**

## Cloud Deployments Linked to Business Case

Which of the following cloud deployment best practices have you put into practice?

Percentage of organizations who follow the best practice of linking cloud deployments to a business case

| | |
|---|---|
| Currently have | 47.2% |
| Don't have but plan to implement in the next 12 months | 40.6% |
| No plans | 10.6% |
| Don't know | 1.7% |

n = 1,940  |  Source: IDC Industry CloudPath, 2020

"We took the stance when we moved to public cloud to offer infrastructure as code to look down the DevOps road of continuous integration delivery. That made us look at what we are doing on premises and change the deployment models, to bring in more automation and start to use on premise more like a public cloud. The move to public cloud brought another language beyond the traditional IT initiative that we had not considered."

**Cloud Architect, Global Manufacturer, EMEA**

"We're always asked by our customers to demonstrate value; increase value. Certainly, this year the migration to the cloud has made that a lot easier because we've not only been able to demonstrate the performance improvements and cost reductions, we've also been able to help them drive down their costs ever further."

**GM, Infrastructure, Cloud, and Workplace , Financial Services, APAC**

A business value first approach to modernization and transformation with public cloud creates unprecedented opportunities for innovation across the business through rapid cycles of experimentation, combined with advanced analytics and AI-enabled automation, helping companies pivot at seemingly impossible speed from "what is" to "what if." The results include superior resiliency, workforce productivity, and operational efficiency. The ability to move toward rapid iterations of experimentation relies on embracing experimentation across the business supported by the ability to capture, unify and analyze data from disparate sources to inform fact-based decisions.

"We have the time now to look at new technology innovation, we can focus on mobile and deliver more products to the business, which they have been asking for. It has been a big game changer for us."

**IT Director, Retail**

"They [internal stakeholders] have a good understanding of what information they want to capture. We are working jointly with users to assess things such as the sensors and AI-enabled automation to understand how we can capture that information; how we can ingest that information as well and bring it into a central location where they can then do their analysis."

**Principle Account Manager, Global Manufacturer, EMEA**

# Public Cloud IaaS and PaaS

IDC continues to observe the acceleration of cloud maturity in the form of enterprise-wide cloud adoption for business-critical application workloads. This trend has only increased to address the exponential growth in remote workers and other significant changes resulting from COVID-19.

Data show that 48% of companies currently use IaaS and 57% currently use PaaS, with 25% planning to migrate over the next 12 months. Businesses are rapidly progressing along the maturity curve with 51% of companies working toward managed and optimized use of cloud across the enterprise by 2021.

At the optimized stage, business value is compounded by moving mission- and business-critical application workloads to cloud. Businesses report that 80% of migrated applications workloads are very important or mission critical, reflecting the increased confidence in public cloud security and resilience.

**48%**

**of companies currently use IaaS.**

**57%**

**of companies currently use PaaS.**
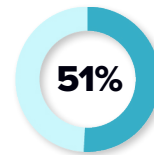
**51%**

**of companies are working toward managed and optimized use of cloud across the enterprise by 2021.**

n = 1,940  |  Source: Industry CloudPath 2019

"We needed to get away from our on-premises environment for a variety of reasons—mostly for data security—and we were long overdue for this move because our servers were breaking regularly. We look at other hyperscalers, but AWS gave us the best option, and we felt their security measures were more far-reaching."

**IT Architect, Manufacturing, USA**

"We're a culture of security-first anyway, and we define all data that must meet GDPR for instance, We knew up front exactly what requirements we had to meet for this data, and we're also well aware of the AWS technology that we could use to ensure that was the case."
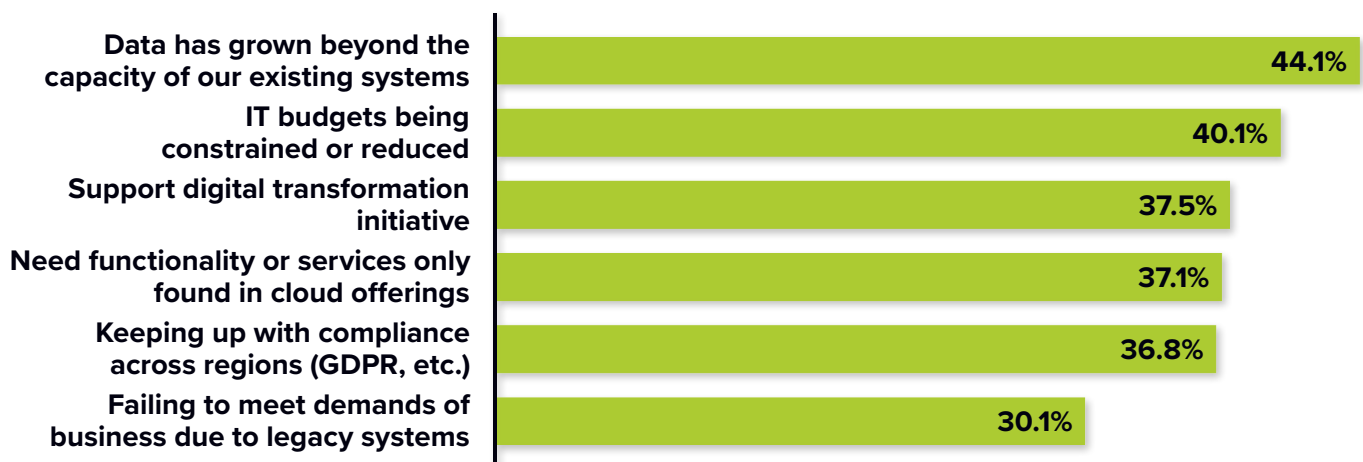
**Principle Account Manager, Manufacturing, EMEA**

"We've reduced risk for the data we have to host because of GDPR with AWS and created the ability to re-purpose our internal hardware for more crucial revenue generating initiatives. We do not have to spend much time or attention on the workloads on AWS, so we can focus on other parts of our business to begin migration to the cloud."

**IT Architect, Manufacturing, USA**

The importance of data-related business drivers is highlighted in Figure 6 which shows results from IDC's *Industry CloudPath 2020* survey. As the case examples below illustrate, these responses are tightly coupled to business strategy. In fact, two of the top six expectations for public cloud before implementation involved business goals rather than purely technology-related benefits: improved business agility ranked second at 42%, followed by driving innovation in the business at 39%.

**FIGURE 6**

## Public Cloud Migration Drivers

Which of the following "trigger events" have been most important in leading you to use cloud services?

| | |
|---|---|
| Data has grown beyond the capacity of our existing systems | 44.1% |
| IT budgets being constrained or reduced | 40.1% |
| Support digital transformation initiative | 37.5% |
| Need functionality or services only found in cloud offerings | 37.1% |
| Keeping up with compliance across regions (GDPR, etc.) | 36.8% |
| Failing to meet demands of business due to legacy systems | 30.1% |

n = 1,940  |  Source: IDC Industry CloudPath, 2020

# Every Migration Journey Is Unique

**Like many other high-impact initiatives, the cloud transformation journey is ongoing, spanning months and potentially years. While there is no one-size-fits-all blueprint for implementation, businesses should make a point of learning about and incorporating lessons learned from businesses that are further along the cloud maturity curve. Every company's journey will differ and must consider the unique structural, cultural, and operating dynamics of the business.**

What follows are findings from interviews with AWS customers from around the world that illustrate how organizations have proactively managed change brought on by modernization through cloud migration. Participants represent large global organizations across several industry verticals, including manufacturing, finance, retail, and transportation.

While many cloud migration initiatives are in support of efforts to transform current operations, there is usually one or more operational challenge that makes the move to cloud a top priority. Oftentimes these technology-driven initiatives lead to a greater focus on business outcomes that may have been outside of the original intent of the project.

### TRANSPORTATION CASE IN POINT:

### German Multinational Conglomerate

One of the company's subsidiaries was faced with an involuntary closure of a datacenter at the end of its contract term. A cross-functional team of stakeholders engaged in a three-months long effort to create a comprehensive business case for public cloud. The committee included an IT director, chief architect, operations director, application-level user groups, a principal account manager, engineers from the customer business unit, and representatives from security and compliance.

The costs identified in the business case included hiring external consultants and Full-time equivalents (FTEs) with cloud experience, upgrading/adding network links, and replacing engineers who were reassigned to assist in the migration. The company acknowledges that it had a considerable cloud skills gap to address so the priority was to distribute knowledge across all operational teams through a cloud center of excellence (COE). Addressing the skills gap required hiring for new roles and training current staff.

**Approach**

Internal stakeholders preferred a cloud-first strategy, adhering to established compliance and security guidelines. They employed a data-driven approach that kicked-off with assessments of the company's infrastructure. Based on the results, phase one was determined to be 250 instances, using AWS Cloud Endure Migration as the migration tool. The company also chose Cloudamize to monitor each machine for 30 days to determine CPU and memory profiles and analyze network traffic. Agents were installed on individual machines to determine interdependencies and the cost to move servers to AWS. Each machine was assessed based on different CPU usage scenarios to allow extra burst capacity. The decision was made to use a 60% CPU utilization scenario. Projecting network traffic and usage patterns helped the team better understand data costs.

"Our [internal] customers generally have a shared database layer and if we were to move that database layer, we need to understand every application that makes use of that because the cost of the SQL license and Oracle license. A lot of these systems mature over time and grow, as people come and leave the organizations."

"Within Cloudamize, we are able to monitor a network connection and also we can see all the SQL connections that go into that server so we know which rev and application servers use which switch and which BI servers report and query the database so we're able to identify those connections inbound to build a bigger picture."

**Cloud Architect, Global Conglomerate, EMEA**

"The biggest challenge was training people. My experience across companies I've worked for is that 20% of the workforce gets very excited and will go out there and proactively learn, then you've got to encourage the others along a little bit. We've also now developed a leaner training strategy as well."

**Cloud Architect, Multinational Conglomerate, EMEA**

**Outcomes**

The company realized that performance gains—up to 60% for some applications—far exceeded the infrastructure and operating cost savings from moving to cloud. Running on AWS delivered far greater resiliency than the company experienced on-premises. The team started experimenting with AWS services on a trial basis to drive innovation.

Unifying siloed data stores posed significant challenges and hampered transformation efforts particularly in HR, where systems spanned multiple architectures.

"Doing things in the cloud, we know we can just destroy instances, we can just destroy services if they don't work and we only pay for the testing time. This encourages experimentation."

**Cloud Architect, Multinational Conglomerate, EMEA**

"An internal customer recently moved to a new HR application. They needed to integrate data from their sickness tracking application with their HR management system. Using various AWS services, we've been able to build for them an information exchange so it's pretty much event driven. It takes a feed from their sickness management application and passes data into their HR system."

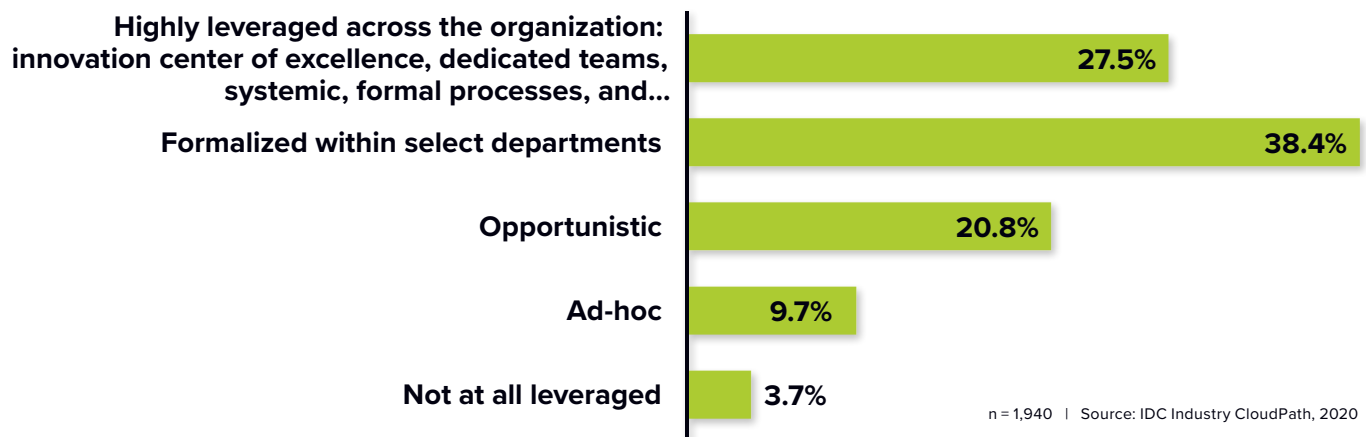**Principal Account Manager, Multinational Conglomerate, EMEA**

# Innovate More and Faster

Execution speed and innovation consistently appear at the top of the list of most desired cloud benefits, which not coincidentally, strongly impact each other. For example, one company realized the *"organization had become slow"* and less competitive; innovation was constrained by legacy outsourcing agreements, noting *"there was no motivation even to perform any level of innovation in order to improve how our people interacted with our systems."* Figure 7 highlights results from a recent IDC survey on management innovation.

**FIGURE 7**

## Management Innovation: Strategy, Structures, and Systems

To what degree is your organization leveraging cloud for management innovation?

| | |
|---|---|
| Highly leveraged across the organization: innovation center of excellence, dedicated teams, systemic, formal processes, and... | 27.5% |
| Formalized within select departments | 38.4% |
| Opportunistic | 20.8% |
| Ad-hoc | 9.7% |
| Not at all leveraged | 3.7% |

n = 1,940  |  Source: IDC Industry CloudPath, 2020

Improved agility consistently shows up at the top of business desired outcomes. The need to be more flexible and adapt quickly to changing conditions has never been more critical. Continuous learning and improvement are needed to keep pace with the velocity of change.

For some, the migration effort centers on user/customer experience and modernizing the workplace. Improvements in cross-border collaboration is a key tenet of the digital workplace. This often translates into SaaS and cloud-native enterprise information management systems being employed to vastly improve document creation and sharing. This was echoed by others who had solutions in place to allow for enhanced collaboration that were falling short of usage expectations. This has certainly become an even greater priority considering the current crisis and an exponentially greater number of remote users.

Of course, driving desired changes in behavior requires special attention to people and processes. In today's digital economy, several generations work side-by-side, each with different perspectives on, and understanding of, technology. More know-how is instantiated in the modern business applications that users rely on to do their jobs. Combined with AI-enabled automation, this can significantly relieve some of the burden of change management, as users are more engaged and receptive to the improved experience of using cloud-native business software and services.

A new generation of cloud-native SaaS running on public cloud elevates the role of workers by automating mundane, repetitive tasks, freeing people to focus on more gratifying high-value, high-impact activities. The proliferation of modern UI experiences that are adaptive, personalized, and simpler (consumer-grade experiences) reduces training and support costs and encourages more rapid adoption of new solutions. This minimizes the impact that complexity has on users.

"We have such different starting points for each [internal] customer. Some of our customers had to start at very basic levels; they had no knowledge of cloud services, and others were very quick to educate themselves, and those where customers really have become more comfortable in their own development environments. We couldn't afford a blueprinted approach to every customer because they were all starting from such different places in their own knowledge."

**Cloud Architect, Multinational Conglomerate, EMEA**

"One thing that became obvious is you need to align your internal tools to what your employees are familiar with. That really came out of that workplace epiphany."

**GM Infrastructure, Cloud, and Workplace, Financial Services**

**FINANCIAL SERVICES CASE IN POINT:**

## Regional Financial Services Company

A large regional financial services company with 35,000 employees situated across 800 locations chose AWS to securely modernize its workplace. Outsourcing agreements with large global systems integrators had severely hampered innovation. The company decided to move away from the opposing goals of an inefficient outsourcing model where it would take weeks and potentially cost millions of dollars in statements of work to stand up infrastructure in support of new initiatives.

The theme of execution speed was echoed by companies initially focused on infrastructure cost reduction, including one organization that wanted to move away from slow corporate networks heavily laden with security that hindered usage. Employees had trouble accessing applications through the VPN which drove the need for change. The company sought to remove network overhead to directly impact user experience and simplify the user environment while maintaining strict security and compliance. A similar message was echoed by other companies that needed to improve access, specifically for mobile users. In these cases, user experience was the business driver which ultimately led to speed, innovation, agility, and overall, more productive users.

"Our existing outsourcers were not keen to stand up new infrastructure. We ended up looking at AWS as a really neat way of avoiding some of these challenges, and with some of the early cloud engagements on our digital platforms, we were noticing incredibly fast decision making and incredibly fast outcomes."

**General Manager, Infrastructure, Cloud, and Workplace, Financial Services, APAC**

"When you're continually throwing new tools out there, adoption is one of the key elements. I had an epiphany about eight months ago when we first rolled out digital workplace solution which included an interface which is just internal Facebook. For the first time, I saw an application go from zero to 60% of users using the tool over a 30-day period almost instantly."

**Cloud Architect, Multinational Conglomerate, EMEA**

# Implementation Approach for Value-first Migrations

IT organizations guided by business value take a purposeful and inclusive approach to cloud migration and develop approaches to focus their efforts on the strategic goals of the business. The most common best practices involve value-based prioritization of application workloads, considering factors like material impact on the customer, regulatory requirements, cost, complexity and inertia.

Prioritization is akin to triage and can greatly influence the success of a migration initiative. One best practice that emerged from the research was the thoughtful categorization of application workloads to determine sequencing. A typical approach classified applications as material versus business critical. Business-critical workloads directly impact customers and their absence would inhibit a client's ability to accomplish a fundamental task, while material applications are those whose absence or delay may cause inconvenience for customers, but business could continue as usual. A financial services organization taking this approach started with non-material application workloads to minimize the risk due to a failed migration or poor performance of the application once migrated.

"Compliance was incredibly important. Our regulators insisted they be consulted on every material application that we moved to the cloud. The first round focused on non-material workloads to avoid the 12-week consultation process. We designed a program we call 30 in 50 where we migrated 30 non-material applications in 50 days to challenge ourselves, We created a framework to allow us to migrate applications which lists all the controls that we use in moving any material workload to cloud."

**GM, Infrastructure, Cloud, and Workplace, Financial Services, APAC**

Secondarily, companies looked at complexities related to application interdependencies, and elected to first migrate applications and processes that were not as tightly coupled with other systems.

As with most technology-related initiatives, change management is a critical success factor when migrating to the cloud. Unfortunately, it is an implementation component that is often underestimated. The most successful cloud migrations were those that focused on people and processes, linking user experience to business outcomes to reinforce stated goals.

Another organization drew parallels to wanting a *"normal consumer PC environment,"* which delivers benefits related to both user experience and corporate network overhead. Because nothing is stored on individual machines, there is *"no need to protect the machine so we can do away with burdensome security agents."* This enabled the company to deliver a user experience that was the same as their employee's home computer, allowing them to *"decommission that messy corporate network"* while ensuring high user adoption.

## Success Factors

The advantages of moving to cloud are well-documented. According to IDC's *Industry CloudPath,* the number one benefit is directly related to security. The next two benefits cited were business focused: respond faster to the changing needs of the business and innovation in support of digital transformation. Because innovation is such a key driver, research also revealed 61% of companies have been able to use cloud to increase their innovation pipeline, either systemically or through consistent and predictable opportunities.

This is in line with our interviews with AWS clients, which identified IT and technology efficiency gains that led to business benefits. Several discussions even revealed companies that directly attributed revenue growth to their cloud migration. In one case, a $6 billion retailer attributed increases in revenue to its mobile cloud strategy which increased productivity and provided real-time data for faster decision-making. Another example involved an $8 billion global manufacturer that cited a 5% increase in revenue due to its ability to better allocate internal resources to more comprehensive revenue generating processes like R&D.

Improvements in innovation and employee productivity were commonly cited success factors, often enabled through technology efficiency gains. A food and beverage manufacturer reports that IT is now *"spending more time engineering vs. supporting,"* and less time "fighting fires." Another transportation company put it this way: *"with AWS … it's 'set it and forget it,'"* lauding the fact that the company no longer needs to constantly monitor infrastructure and can now work on other projects. A US retailer claims IT is 50% more productive and now able focus on innovation directly tied to the business, like a mobile initiative. For a very large global transportation

company, innovation meant the ability to integrate two disparate systems to provide business value: first, two different HR applications for better employee time management, and second, integration of GPS data with an analytics platform. These integrations enabled the business to combine information in unique ways to allow for new questions to be asked of data that was already being captured.

Other organizations have built on the concept of innovation, combining it with speed to enable agility, which has become a critical success factor for companies seeking to better respond to the changing business environment. Several respondents talked about "robust pipelines," one for continuous services to drive innovation and agility, and several others to take advantage of sensor data and IoT, in one case to improve maintenance and safety. Companies should also be aware that advanced technologies like predictive analytics, IoT, and machine learning, which were the three most important technology considerations when selecting a cloud provider, are often only available in the cloud so migration is necessary to access them.

Cost savings related to scalability creates business benefits and opens the door to new initiatives instigated by the business. One food manufacturer was able to *"do consumption-based modeling for major events, spin up multiple servers for them and then spin them down"* without paying for those additional servers to be running year-round. Similarly, a healthcare organization cited as a major benefit the ability to add workloads during the busy holiday season without buying new hardware and decreasing loads quickly after the need passed.

Scalability in terms of quickly adding users is another benefit that enables business flexibility, as a different healthcare company described: *"When our sales group hired 50 new people at one time, it required the IT group to do well over a full day of hardware work and upgrades just to have these new users on the on-premises system. If we had to do that now, adding 50 new users ... on AWS would take just a couple minutes."* A modern approach to supporting a merger or acquisition leverages public cloud to avoid the cost, complexity, and delay of adding to the business' internal IT landscape.

IDC recently interviewed a select group of IT executives and managers to learn about the results of moving to AWS for their Windows workloads (see Figure 8, next page).

**FIGURE 8**

## The Business Value of Efficiently Running High-Performing Windows Workloads in the AWS Cloud

### Key Results

**56%**
lower 5-year cost of operations

**442%**
5-year ROI

**98%**
reduction in unplanned downtime

### Benefits

| IT | Agility | Development | Business Operations |
|---|---|---|---|
| **37%** lower infrastructure costs | **71%** faster deployment compute | **26%** higher developer productivity | **32%** higher gross productivity, impacted user |
| **75%** more efficient infrastructure teams | **75%** faster deployment storage | **41%** faster development cycle | **$6.05M** higher revenue per organization |

Source: The Business Value of Efficiently Running High-Performing Windows Workloads in the AWS Cloud, IDC, June 2019

"We chose AWS specifically for our Windows workloads because it has a more robust infrastructure and as far as the cloud space, it's the outright leader. Using Security Groups was a big benefit and segmentation is huge for us."

**Technology Manager, Transportation**

# Perceived Barriers

Fundamentally, companies cannot get hung up on technology at the expense of user experience. The financial services company that provided the most comprehensive case study summed it up this way:

"The growth in what technology offers to the business is huge, and it's just really important that we align what we're doing to the needs of the business users, otherwise it's all for naught. The technology strategy should be linked to the business strategy and clearly communicated to all stakeholders. Otherwise, this barrier may become an obstacle that is extremely difficult to overcome."

**GM, Infrastructure, Cloud, and Workplace, Financial Services, APAC**

Other impediments to implementation center on visible executive support for change management and the availability of necessary skills. For those that recognized the importance of managing change and addressed user adoption up front, oftentimes by engaging users early in the selection process and prioritizing intuitive and familiar interfaces, the transition was much smoother. This should be considered a significant lesson learned for those still evaluating a move to cloud.

IDC strongly recommends that enthusiasm for a change of this magnitude starts at the top with active and ongoing executive team support throughout the migration and transformation process. It permeates everything related to the project. If employees sense a lack of resolve from the executive team, you can expect they will be less than fully engaged, impeding the necessary behavioral and cultural change. There is tremendous power behind a respected executive who is willing to stake his or her reputation and job by voicing support to the board or owners of the business, something that should be communicated with examples throughout the process.

# Innovation as a Key Driver

**As evidenced by the preponderance of references throughout this paper, innovation is a key driver for cloud migration and deserves additional commentary.**

While a potentially misunderstood buzzword, innovation imparts new creative approaches to both existing and unforeseen circumstances, often requiring business agility to address issues or problems. Examples of innovation are evident throughout the current crisis. This becomes relevant to public cloud because companies are now able to continuously experiment, learn, revise, and release without having to spend time or money provisioning infrastructure to support the new process.

A key advantage of AWS as a partner is the company's cloud legacy that goes back more than a decade, providing access to deep expertise and volumes of lessons learned and best practices. Customer success drives the AWS engagement process, working backwards from desired outcomes to engineer cloud solutions that expand the innovation potential of the business. In the financial services case in point, the company leveraged data integration and advanced analytics to deliver broadly accessible and timely insights. The company benefited from the ability to experiment with identifying and unifying appropriate data sources. This would have been impractical if not impossible to attempt in a traditional IT environment. As evidenced by this example, innovation is much more than big breakthrough ideas. More often, it is the cumulative impact of many smaller changes as the business reshapes how it delivers value for customers.

"With AWS, we can now spin up new environments and give autonomy to our development team to play and to explore. It's a happy coincidence that the playing oftentimes results in new, more impactful and efficient solutions."

**Cloud Architect, Manufacturing, EMEA**

# More than a Decade in the Making

**43%**

**of migrating companies rely on automated migration tools offered by cloud service providers to accelerate workload migration.**

**The AWS Migration Acceleration Program (MAP) reflects more than a decade of experience helping businesses capture the business value of moving business critical workloads to public cloud. That experience is instantiated in the program's migration tools and services. Results from IDC's *Industry CloudPath* survey show that 43% of migrating companies rely on automated migration tools offered by cloud service providers to accelerate workload migration.**

MAP is a robust set of tools and methodologies to automate and accelerate large scale migrations efficiently and predictably. A concern for many businesses planning the move to cloud is disrupting the value the business is delivering today. MAP offers decision support capabilities, training, and migration methodology, along with discovery tools and business calculator to help the business make informed decisions that consider the impact on current operations. Workflow and automation capabilities streamline setup, and flow over the entire migration journey. A large and growing ecosystem of certified partners provide the experience and skills to work closely with customers to execute migrations. Fundamental to MAP is building a data-driven understanding of the customer's environment from which a reasonable plan can be created and iterated on over time.

## Application Portfolio Assessment

To execute successful migration strategy, the business needs a full accounting of all the applications running across the estate with details on interdependencies. Rehost or lift and shift is the simplest approach to moving applications to public cloud. This often represents half or more of the customer's application portfolio, leveraging tools to automate the process. As businesses mature in their use of public cloud, the need for increased agility and workload portability drives the decision to rearchitect or purchase new cloud-native applications that take advantage of a microservices and containerized architecture.

The AWS Migration Pattern Library (MPL) is a large and growing repository of migration patterns that can be referenced to streamline the movement of workloads from on-premises to AWS. Documented migration and operational patterns are applied to hasten workload movement, reduce risk, and achieve the desired outcome. AWS Control Tower simplifies provisioning new AWS instances and ensures these accounts conform to a company's policies. The move to cloud creates a lot of extra work for IT and having extra capacity helps avoid delays cause by internal constraints.

## AWS Managed Services (AMS)

With AMS, most of operational burden caused by transforming run time tasks becomes the responsibility of AWS. By transferring the undifferentiated work to AMS, internal resources have more time to focus on business value activities. AWS Landing Zone applies automation and best practices to setup and manage multiple accounts and services. Furthermore, AMS services are designed for migrations at scale, helping customers navigate the digital transformation process from planning through ongoing management and support, reducing the number of incidents and providing built-in compliance certifications.

# Technology Buyer Guidance

As companies move business-critical and material workloads to public cloud, they uncover new opportunities for increasing business value. Companies that are further along the journey to cloud maturity offer valuable insight that should be factored into migration planning.

## IDC offers the following guidance:

**Secure full executive team support.**
Communicate early and often, demonstrating with actions the level of commitment to change.

**Engage a broad audience of users early in the process to fully understand the impact on user jobs to be done and opportunities to simplify and standardize processes while driving efficiency.**
Success requires an adjustment to the activities performed by workers. Relying on what has worked well in the past is a recipe for failure. Address resistance by demonstrating how the change positively impacts how users work. Use a cloud COE to share innovations happening across the enterprise to create excitement. Define the importance of innovation for the future.

**Create a framework for prioritizing the movement of workloads based on what works for the business.**
It is not possible to do everything at once, so determine the most appropriate approach for your unique situation. Establish early wins to build momentum and an appetite for disruption. Obviously, if there are operational challenges that have a material impact on the business, these cases are the first to be addressed.

**Track progress against specific business-focused metrics to gauge success.**
If building innovation capacity is a stated priority, what does that look like for a business? How is it measured? Discard old notions about what is innovation. Data show that the cumulative impact of continuous smaller innovation exceeds "big-bang" innovation. Think in terms of fast and steady.

**Encourage people to challenge the current thinking in the context of internal governance, standards, and policy.**
AWS offers one of the most comprehensive portfolios for managing security and compliance that should be used to uphold company-wide standards.

**Outsource the undifferentiated.**
Augment internal competencies with AWS managed and professional services. Leverage training, knowledge transfer, and practical innovation techniques that are part of every AWS engagement.

**Consider forming a rotating cross-functional council assigned to the COE and whose members act as a clearing house for new ideas, moving rapidly from design to proof of concept, and production.**
An organization will be well served by the kind of continuous learning that comes from this approach.

# About the Analyst

**Frank Della Rosa**
**Research Director, SaaS and Cloud Software, IDC**

Frank's core research focus provides in-depth analysis, strategy, and guidance to both technology suppliers, and mid-market and enterprise buyers on various aspects of cloud computing, including hybrid cloud and multi-cloud adoption, strategy, buyer behavior, and trends across vertical markets, business application categories, and geographies. Frank also provides analysis on ISVs' journey to SaaS, enterprise adoption, SaaS management, cloud maturity, market forecasts, supplier market shares, and cloud marketplaces. In addition to these topics, planned research will cover, the proliferation of SaaS platforms, changing buyer demographics, and SaaS-embedded innovation accelerators like AI, machine learning, and extended reality. Based on his extensive experience in buyer personas, Frank's research also includes an emphasis on the broadening impact of SaaS and cloud services on IT and line-of-business buyer behavior.

**More about Frank Della Rosa**

# Message from the Sponsor

## AWS Migrations

Successful organizations migrate significant parts of their application portfolios at the start of their journey by leveraging AWS expertise to develop their organizational, operational, and technical capabilities at every phase along the way.

Following the guidance in this white paper will enable you to maximize the benefits of the cloud by migrating to AWS with urgency, purpose, and foresight. The end result: business transformation that helps you free up IT resources for projects and tasks that add real value, reach milestones and benchmarks faster, and create an ever-stronger migration business case that reinforces the buy-in, enthusiasm, and commitment of everyone in your organization.

As the leading public cloud provider, AWS gives you the confidence to set bold migration goals backed by over 13 years of experience being the world's most comprehensive and broadly adopted cloud platform.

AWS offers 175 fully featured services including the industry's most mature cloud migration tools, robust partner ecosystem with over 100 cloud migration competency partners and management from 77 Availability Zones (AZs) within 24 geographic regions globally. We've taken our years of experience with migrations and developed a broad set of programs and solutions to accelerate each step of your cloud journey.

**Get started with a free Migration Assessment**

## About IDC

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