At the Intersection of the Cloud and Digital Transformation: Security, Operability, and IT Functionality

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SECURITY, OPERABILITY, AND IT FUNCTIONALITY

The digital transformation of business workloads revolutionizes both internal business operations and the customer experience. Connectivity, scalability, efficiency, agility—these resounding value props echo in leadership meetings and entice organizations to undertake the migration of workloads to cloud environments. Indeed, cloud computing accelerates business process, reinforces availability and recovery, generates cost-savings, and positions IT departments as strategic players for business growth.
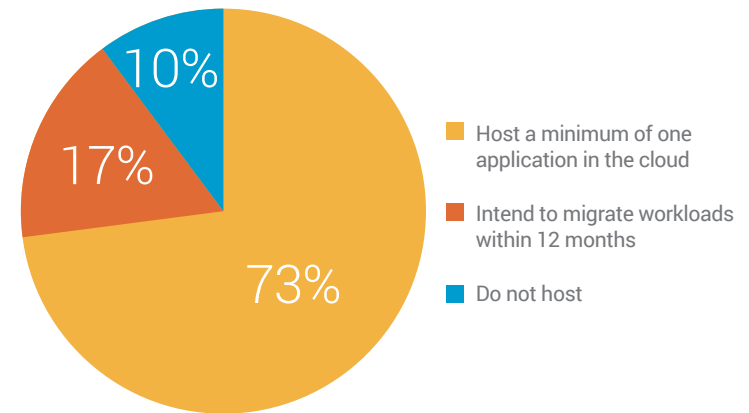
CLOUD MIGRATION PREVAILS

IDG's 2018 Cloud Computing Survey finds that 73% of enterprises host at a minimum one application in the cloud and another 17% intend to migrate workloads within 12 months. And technology-dependent industries are on track to achieve 100% cloud-centered operations. According to LogicMonitor's Cloud Visions 2020, 83% of all enterprise operations will be hosted in the cloud by 2020.

Just as the dawn of computing augmented how we capture and share knowledge, so does the cloud transform our experience with information. Moreover, cloud computing prevails as an almighty business information technology initiative and is certain to be recalled as the dominating and revolutionary trend of the early aughts.

The cloud, for it to rise to its lofty expectations, mandates similarly evolved, strategic solutions governing its application. And while challenges and opportunities inherent to cloud migration and management are shared in some form or another across organizations, these solutions must be differentiated for each business's specific needs and requirements.

To better equip organizations to lead cloud transformation, this eBook will evaluate both the reasons behind and results of businesses' increasing cloud investments in order to build an understanding of the business landscape in the cloud. This analysis will provide readers with a holistic understanding of cloud computing and guide their strategic planning for cloud deployment and expansion. As reports show, the cloud will almost singularly command business process in a matter of years—whether this tool bolsters and redefines your operations or provokes needless challenges and crippling losses, starts here.

IDG REPORT: ENTERPRISE CLOUD USE

- 10%
- 17%
- 73%

Host a minimum of one application in the cloud

Intend to migrate workloads within 12 months

Do not host

LOGICMONITOR REPORT: ENTERPRISE WORKLOAD % IN CLOUD BY 2020

- 17%
- 83%

Enterprise workloads not in the cloud

Enterprise workloads in the cloud
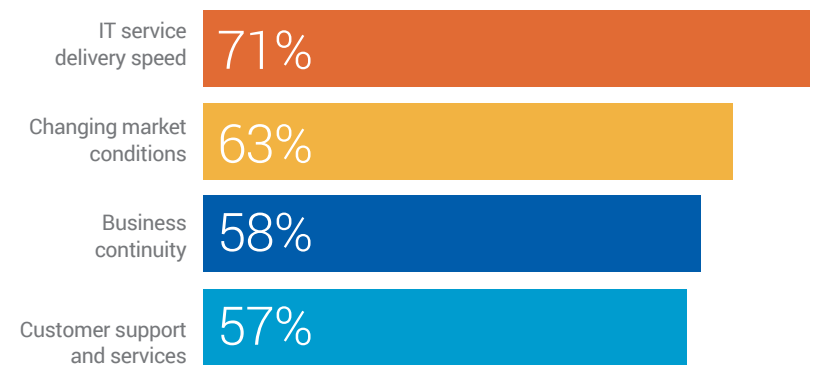
UNDERSTANDING THE CLOUD PUSH

As a strategic investment leveraging information storage, management, and application to achieve efficient, interconnected, and optimized operation, the cloud extends beyond the simple outsourcing of data hosting. IDG's cloud survey report affirms that: "Despite years of discussion about the cloud as a source of cost savings, respondents report that the primary reason for their cloud investments is to enable IT to meet business demands for speed, agility, and responsiveness."
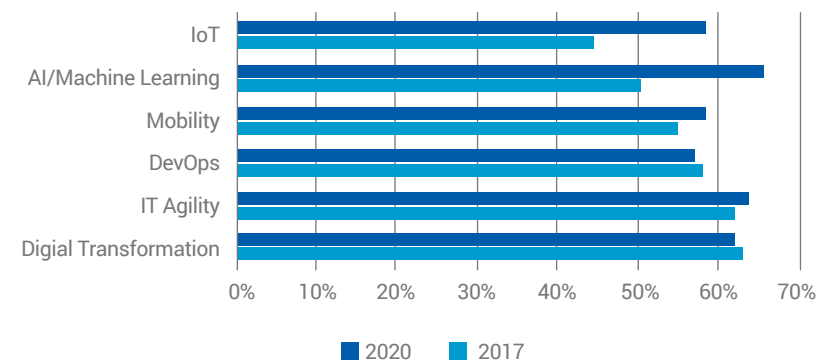
The Cloud's Emerging Benefits
Cloud computing evolves business process by providing increased flexibility in scaling operations, which reduces expenditures and reorients IT resources toward growth-centric, innovative activities. It is therefore unsurprising that respondents to IDG's Cloud Computing Survey highlight strategic, business-wide initiatives as the primary driver of their cloud investment. LogicMonitor's Cloud Vision 2020 report also analyzes the landscape of cloud incentives for business and similarly depicts evolving business-wide initiatives.

While digital transformation (63%) and IT agility (62%) presently rank as the two primary drivers toward public cloud, IoT will likely exceed these as the primary driver toward public cloud solutions, though digital transformation and IT agility still remain equally as important and relevant. This trend demonstrates that cloud benefits are ever-growing as organizations discover strategic ways to deepen and extend their cloud investment through digital transformation.

IDG REPORT: REASONS TO PURSUE CLOUD COMPUTING

IT service delivery speed	71%
Changing market conditions	63%
Business continuity	58%
Customer support and services	57%

LOGICMONITOR: REASONS TO PURSUE CLOUD COMPUTING

	2020	2017
IoT		
AI/Machine Learning		
Mobility		
DevOps		
IT Agility		
Digial Transformation		

0%   10%   20%   30%   40%   50%   60%   70%
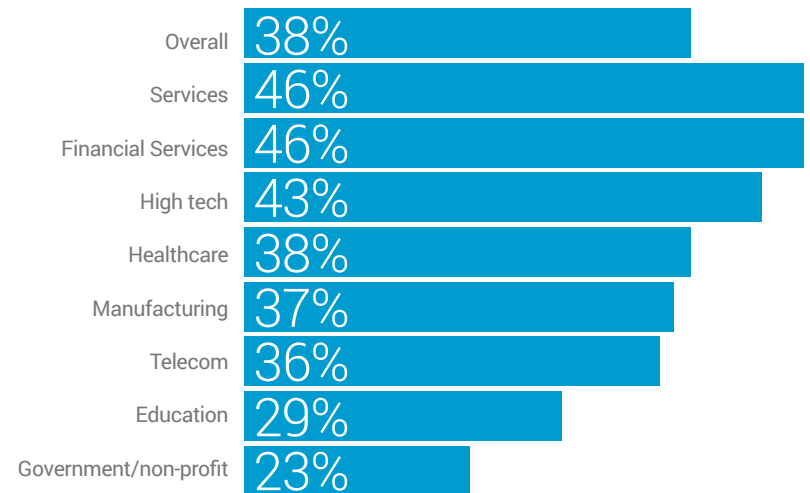
■ 2020   ■ 2017

BROADENING IT RESPONSIBILITIES

Unsurprisingly, IT departments describe mounting pressure to migrate to the cloud. While only a quarter of government and non-profit IT employees surveyed by IDG express this sentiment, the volume surges to half of IT employees in services and financial services. In line with this, IT spend on non-cloud operations is forecasted to drop to 31% from 52% between 2018 and 2020.
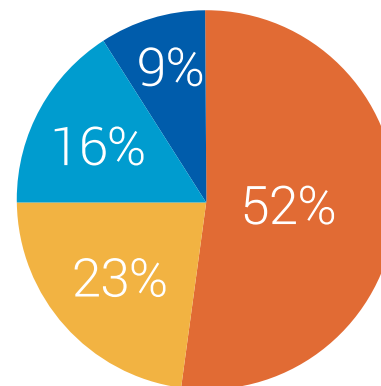
As a result, much of the trends that are likely to dominate the deployment and management of the cloud will lend themselves as larger narratives in IT and digital transformation. A Gartner Report estimates that 28% of spending in enterprise IT markets will shift to the cloud by 2020, as compared to 19% in 2018. With this shift, growth in cloud-related IT spend will exceed traditional IT investments.

The cloud is modernizing IT operations, and this transition will be a defining feature in the evolution of digital transformation and punctuate much of the business and organizational change narrative in the coming years.
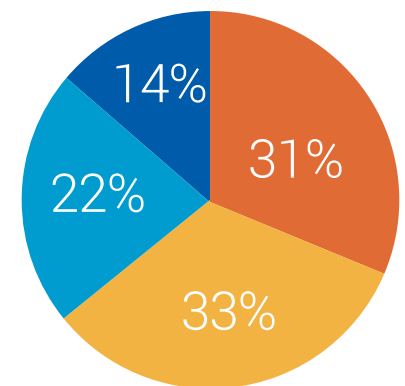
IDG REPORT:
IT CITES MOUNTING PRESSURE TO MOVE TO CLOUD

Overall	38%
Services	46%
Financial Services	46%
High tech	43%
Healthcare	38%
Manufacturing	37%
Telecom	36%
Education	29%
Government/non-profit	23%

IDG REPORT:
IT ENVIRONMENT 2018

- 9%
- 16%
- 23%
- 52%

IDG REPORT:
IT ENVIRONMENT 2020
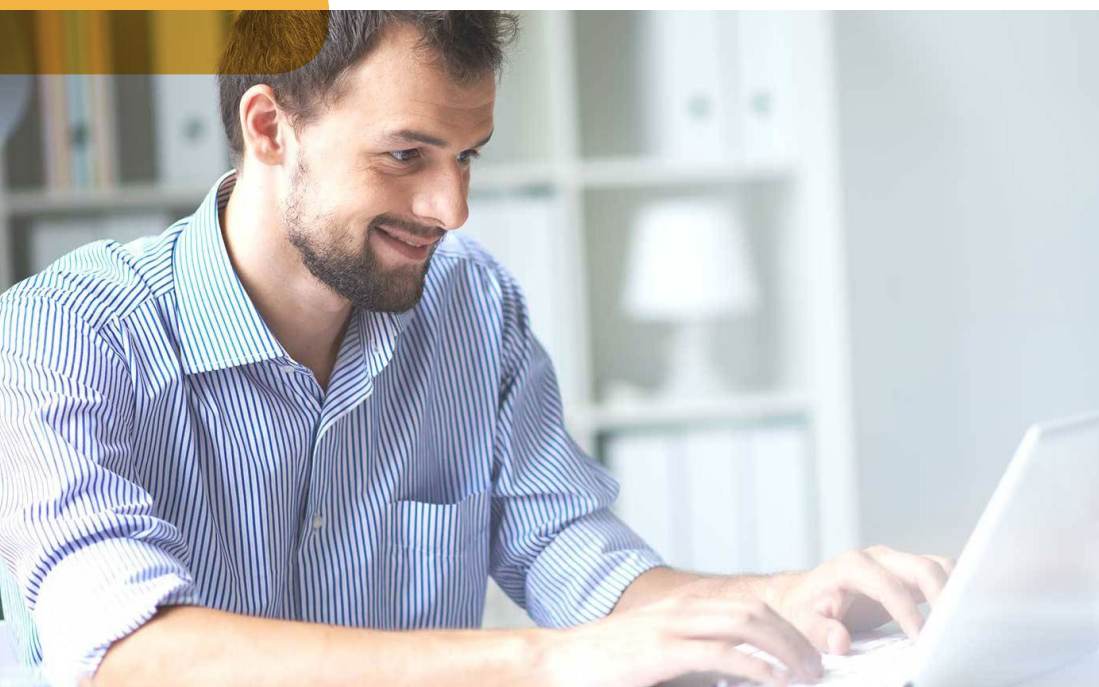
- 14%
- 22%
- 31%
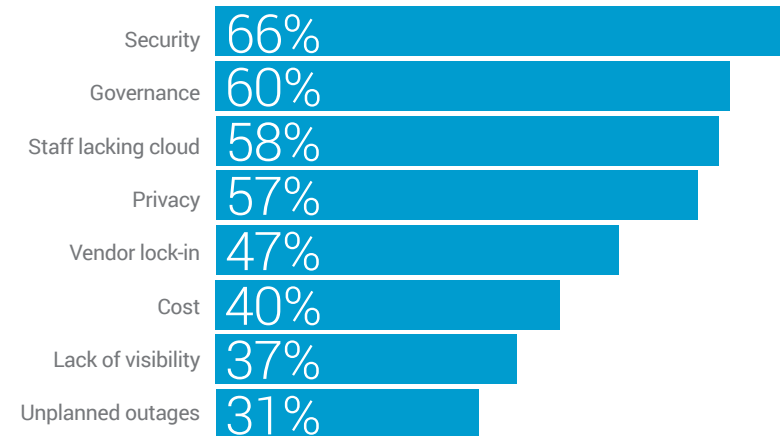- 33%

■ Non-Cloud ■ SaaS ■ IaaS ■ PaaS

ACTION-ORIENTED CLOUD STRATEGY

Concerns with cloud computing, whether they address vulnerabilities or best practices, will determine the experience of its deployment and utilization. In this way, practical and compelling cloud strategy will seek to preempt risk and gird future operations.
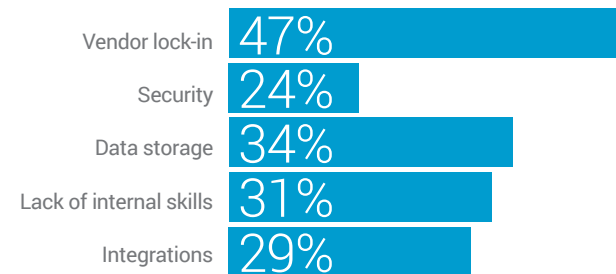
To surmise, the concern of stakeholders falls into two major buckets: data protection and operability. Protection refers to security measures that protect critical workloads and confidential customer data, both of which are integral to business growth and longevity. More multi-faceted, operability concerns the cloud's efficacy and long-term functionality. The remainder of this eBook will explore these two branches and their influence over cloud strategy.

LOGICMONITOR REPORT: TOP CLOUD CONCERNS

Concern	Percentage
Security	66%
Governance	60%
Staff lacking cloud	58%
Privacy	57%
Vendor lock-in	47%
Cost	40%
Lack of visibility	37%
Unplanned outages	31%

IDG REPORT: TOP CLOUD CONCERNS

| Concern	Percentage
Vendor lock-in	47%
Security	24%
Data storage	34%
Lack of internal skills	31%
Integrations	29%

DATA PROTECTION IN THE CLOUD

Beyond the fact that security, compliant workloads, and privacy are leading concerns of business executives, a 2018 survey by IBM reports that 78% of consumers rank a company's ability to protect user data as 'extremely important'.

What does this mean for the cloud? As the cloud becomes the epicenter of most business operation, this digital transformation of business process creates risk for both consumer and company data. The stakes are high—major data breaches, e.g. attacks like the Equifax hack or WannaCry malware attacks, expose vulnerabilities and evidence the steep cost of these vulnerabilities. And despite growth in security spending, Gartner finds that organizations have lost $400 billion to cyber theft and fraud.

The good news is that while data protection concerns exist, cloud native solutions mitigate these risks while simultaneously cultivating a company's application of cloud technologies and accelerating their growth. For example, a Gartner survey of senior level executives finds that cloud computing ranks as their top concern with information disclosure and General Data Protection Regulation (GDPR) compliancy fueling this.

This and other security and compliance related initiatives are heightening the importance of cloud services, which will swell cloud spending to a $300 billion business by 2020. Businesses are recognizing that strong partnerships with cloud services providers will elevate their operations and help them secure workloads. This support in turn allows businesses to reorient their IT department towards growth-centric initiatives.
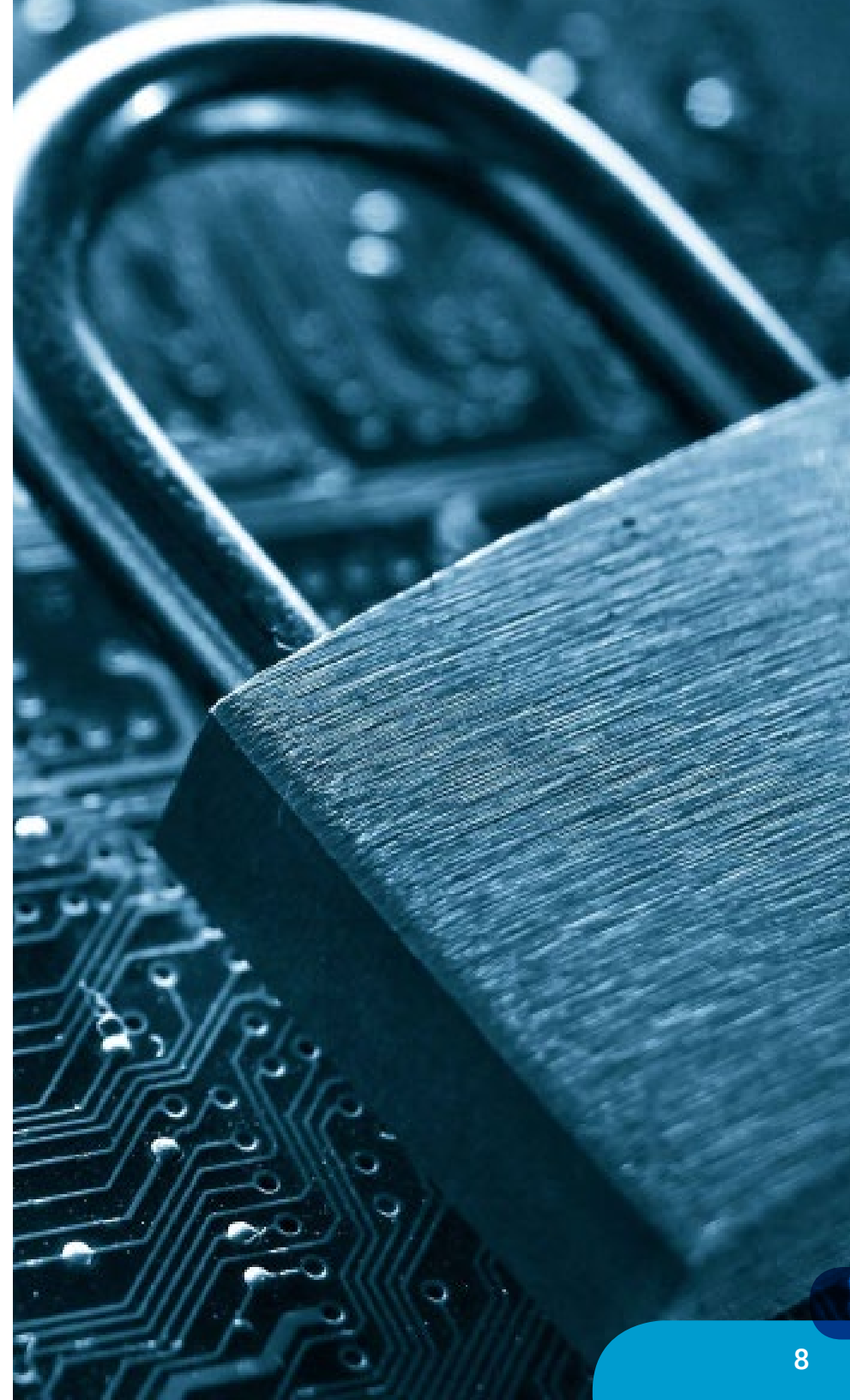
OPTIMIZED AND LONG-TERM OPERABILITY IN THE CLOUD

Functional cloud environments must be architected and engineered to suit the respective operations they will host. As businesses and their workloads are complex, so too must their cloud environments embody this. Enter the hybrid cloud—the archetype of differentiated cloud deployment.

There are two strands within hybrid environments: a blend of public and private deployments and deployment across two or more public clouds. Of course, a third type of hybrid environment exists as a combination of these.

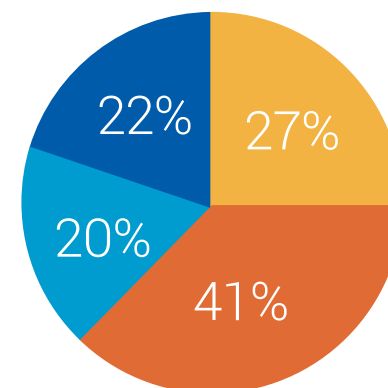# THE PUBLIC AND PRIVATE CLOUD HYBRID ENVIRONMENT

LogicMonitor's report depicts the evolution of hybrid environments of this nature. The renewed private cloud push is in part a response to security and compliance mandates as well as migration challenges due to complex, multi-faceted workloads and legacy applications' architectural design, which can incite business disruption when migrating. In addition, cost efficiency, interoperability, and an expansion of digital services promote hybrid cloud adoption. The latter of which helps to accelerate cloud deployment and mitigates obstacles of re-platforming aforementioned applications and workloads. In this way, a hybrid environment serves as a bridge, or stepping stone, to the public cloud.

Reports indicate growing penchants toward these environments. A Market and Markets report on the Hybrid cloud forecasts a compound annual growth rate for the industry to grow 17% between 2017 and 2023. Similarly, a Market Research Future report predicts a compound annual growth of 21% for the private cloud market.

LOGICMONITOR REPORT: COMPUTING ENVIRONMENT 2017

18% / 31% / 37% / 19%
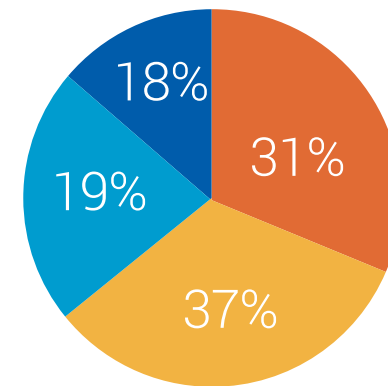
LOGICMONITOR REPORT: COMPUTING ENVIRONMENT 2020

22% / 27% / 41% / 20%

On-Premises   Public   Private   Hybrid

THE MULTI-PUBLIC CLOUD HYBRID ENVIRONMENT

Alternatively, organizations are hosting applications and workloads across multiple public cloud platforms. While AWS remains the largest, Azure and Google are quickly gaining market share.

Moreover, businesses deploying workloads to public clouds are increasingly embracing Azure and Google as viable alternatives to the omnipotent AWS. Market share of the three in 2020 is forecasted to be 21%, 18%, and 51%, respectively, which is a sharp increase for Azure and Google who boast a 13% and 6% market share presently.

Why the inclination toward multi-cloud deployments? IDG's report references that 42% of respondents are addressing major concerns of lock-in, cost, and efficiency by working with multiple cloud providers to host workloads in the best-suited environment. Of these, 54% are doing this at the suggestion of IT to seek benefits including improved availability, speed, cloud options, flexibility, and disaster recovery. Multi-cloud deployments will therefore be critical for implementing a host of cloud-native workloads and applications.

CONCLUDING THOUGHTS

The state of cloud computing is one marked by innovation and continuous change. As cloud environments become the epicenter of business operations, organizations seek bespoke solutions to maximize investment and propel business growth.

In returning to the above cited concerns detailed within IDG and LogicMonitor's reports, it becomes clear that cloud-based solutions address these.

Cloud services providers alleviate concerns about security, governance and compliance, and privacy, while also supplementing the skills and experience of internal teams. Multi-cloud deployments minimize vendor lock-in. Differentiated hybrid environments optimize cloud operations for cost, integration, security, and visibility. Finally, public and hybrid environments bolster availability with data storage in multiple locations thereby assuaging fears of outages.

Thus, while concerns about cloud computing persist, partnerships forged with cloud services providers and multi-functional and integrated environments alleviate risks inherent in cloud computing. In summary, IDG's report opines: "Organizations are no longer questioning whether they should move to the cloud. They're now focusing squarely on how best to leverage the new generation of cloud services by adopting new delivery models and enabling multi-cloud architectures."

How will you architect and manage cloud environments for optimal security and operability and enable digital transformation to position IT as a leader of business growth?

Atmosera delivers modern cloud services that maximize the advantages of cloud-based infrastructures. Offering private, hybrid, and public cloud solutions, Atmosera works closely with customers to architect, deploy, and optimize cloud architectures with advanced services that deliver strategic business outcomes. Atmosera's expertise simplifies the process of cloud transformation, and our 20+ years of experience managing complex IT environments provides our customers with the confidence and trust in their cloud journey.

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