

JULY 2017

▶ **CLOUD OBJECT STORAGE: NOT JUST LOW COST, BUT HIGH VALUE**



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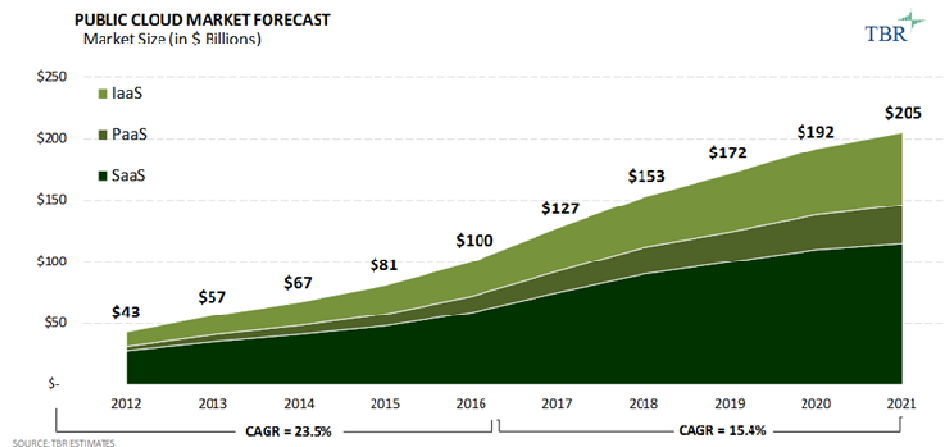


INTRODUCTION:

The cloud question is shifting from 'what can it save in my budget' to 'what can it do for my business'

The novelty of reducing IT expenses and shifting from a capital expenditure to operating expenditure model for cloud is wearing thin. These benefits are still important, but now more than ever customers need to see how cloud can be utilized to improve efficiencies, enable faster decision making and ultimately help drive and improve business outcomes. To achieve these benefits that stretch beyond just cost savings, the way in which cloud solutions are evaluated and purchased is fundamentally changing, even for public cloud. Cloud adoption was often far more siloed, with infrastructure adoption largely from IT departments and SaaS and PaaS largely from lines of business (LOBs). Now it is becoming more of a collaborative process using decisions sanctioned by the IT department. For many organizations, cloud adoption is, albeit slowly, moving from a decentralized montage to a centralized process backed by IT.

Against a backdrop of changing customer behavior and use cases, the investment in public cloud continues to expand. Cloud adoption is maturing, particularly in the U.S., and public cloud spend is expected to increase sixfold from \$20 billion in 2010 to \$127 billion in 2017. Continued, double-digit growth is expected for each of the next five years. This ongoing growth in public cloud spend is fueled by enterprise and SMB IT transformations that are calling for more workloads to move to the cloud, driven by the desire to transform both IT and business processes.





As adoption of public cloud accelerates in most organizations, emphasis increases on delivering business value and how best to create business insights from cloud-resident data. As companies, enterprises in particular, store more data in the cloud from both on-premises and cloud-native applications, the demand for analytics emerges. With that comes the need for secure, reliable and accessible data storage. Public cloud customers are spending a larger percentage of their public cloud budgets on the infrastructure layer to help address this growing need for storage capacity. Enterprises are looking to public cloud service providers to help mitigate and deal with some of the challenges and complexities that are emerging because of this explosion in data, including cost-effectively analyzing and ingesting data, which is where cloud object storage solutions can be an attractive option.

▼ **CLOUD OBJECT STORAGE IS FOR EXTRACTING DATA VALUE**

Cloud is changing the way customers support initiatives that impact their business, but the role of data in that equation remains very much the same. Without the ability to draw the correct conclusions from the growing volumes of data being created and managed, decisions might be made faster but could very well fall short of the desired business outcomes. The massive data growth being generated by increased adoption of cloud and analytics is further compounding storage strategies, as most of today's capacity growth is largely fueled by unstructured data, such as video, social media, photos and multimedia documents, including webpages. Today's data storage remains costly and cumbersome as companies are quickly realizing their legacy storage architectures are ill-equipped to support the increased demands of existing and new business workloads.

The rapid adoption of public cloud storage services, a subset of the growing Infrastructure as a Service (IaaS) market, addressed at least some of the data storage pain points currently experienced. Public cloud storage brought scalable storage capacity, spread across geographic distances, with many of the management capabilities integrated close at hand. However, shifting delivery to cloud does not address the gaps between traditional storage area networks (SAN) and network-attached storage (NAS) architectures, and the types of data being accumulated or the types of insight that need to be drawn from the data.

Enter cloud object storage (COS), an alternative to traditional storage architectures designed to support both the management and insight required by the customers to capitalize on the massive data explosion brought on by the digital era. Cloud object



storage provides a lower-cost alternative to traditional storage; supports massive amounts of unstructured data; and provides a scalable, self-healing, multitenant platform. In assessing the differences between file and block storage, object storage combines the data and metadata with a unique identifier that allows for more streamlined and rapid data retrieval from massive storage pools of unstructured data. The creation of global object storage pools to support massive volumes of data can enable IT to retrieve files faster, resulting in greater efficiencies.

Tying back to the desire to understand “what cloud can do for your business,” cloud object storage is being used to support not just IT efficiency, but also business strategy. Examples of use cases for retail, manufacturing, healthcare, media and broadcasting, and finance and banking verticals are outlined here:

Media and Broadcasting — With on-demand, streaming delivery models, media companies must leverage vast pools of data to inform both content and advertising decisions. Massive amounts of data are generated from the customer base that will require both short-term and longer-term access to help with real-time and trending analysis. Cloud object storage is utilized as the storage and analytics platform to provide the critical insights to various departments within the media company including advertising, operations, marketing and content delivery.

Manufacturing — A manufacturing plant is adopting Internet of Things (IoT) devices and sensors to not only capture real time data, but also provide specific analysis around workflows and yields to help understand how it can increase plant efficiencies, especially during seasonal spikes where customer demands increase. Cloud object storage solutions with flexible pricing structures and cloud-integrated analytics can help such manufacturing use cases.

Retail — Similar to media and broadcasting companies, retail shops are continually expanding the analysis capabilities that can drive customer loyalty. Specifically, as it relates to consumer buying behavior and perception, retailers are driving more personalized “push” marketing campaigns. Retailers are interested in not only capturing data on what customers are buying today, but also capturing the customers’ shopping history and patterns. Cloud object storage solutions provide the ideal platform for accessing current and historical customer data, and leveraging an analytics platform can help determine buying patterns that can shape future customer interactions.



IBM IN THE CLOUD MARKET LANDSCAPE: IBM'S ENTERPRISE APPROACH COMES BACK IN VOGUE

IBM continues to find innovative ways to create business value from new IT infrastructure as much of its portfolio, revenue and strategy are shifting to emerging areas like cloud. It is still focused on enterprise capabilities, value over cost, and true business solutions.

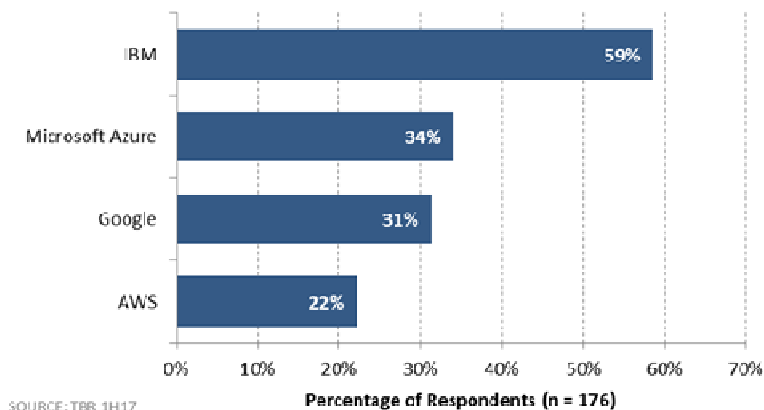
While those tenets may have seemed dated in the early days of "low-cost cloud," they are back in vogue as customers evaluate what can be enabled with cloud, rather than just saved in the cost of IT delivery. As a result, across Technology Business Research, Inc.'s (TBR) Cloud Customer

Research Program, IBM is the leading vendor or among the top ranks nearly across the board among enterprises. IBM's broad portfolio spanning cloud "as a Service" solutions, professional services, and hardware and software for on-premises private clouds, largely backed by analytics and security, sets it apart from vendors that have a narrower scope of cloud capabilities.

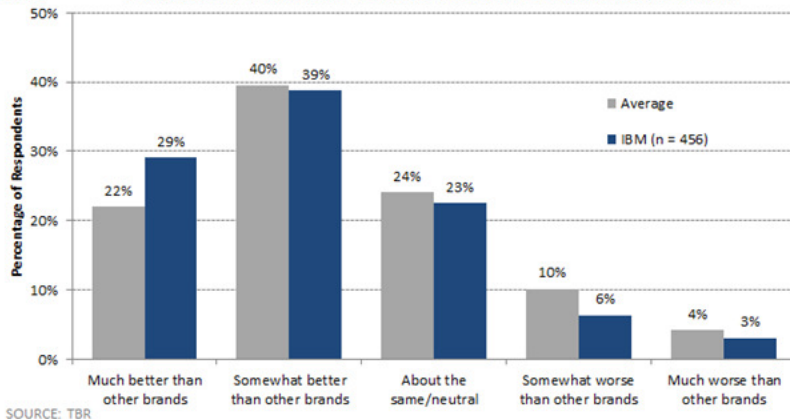
Reasons enterprises cite* working with IBM span from its enterprise-ready portfolio and robustness of features to brand familiarity. These factors, among others, have



PUBLIC CLOUD IaaS VENDOR ADOPTION



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propelled IBM to the top of the public cloud IaaS adoption leaderboards, according to TBR's 1H17 Public Cloud Customer Research. Though Amazon Web Services (AWS)

*TBR surveyed over 300 enterprise-level public cloud adopters, 176 of whom were public cloud IaaS adopters. The global study surveyed respondents in the U.S., U.K., France, Germany, India and China. Company size requirements were as follows: minimum of 500 FTEs in the U.S. and minimum of 250 FTEs in all other countries surveyed.

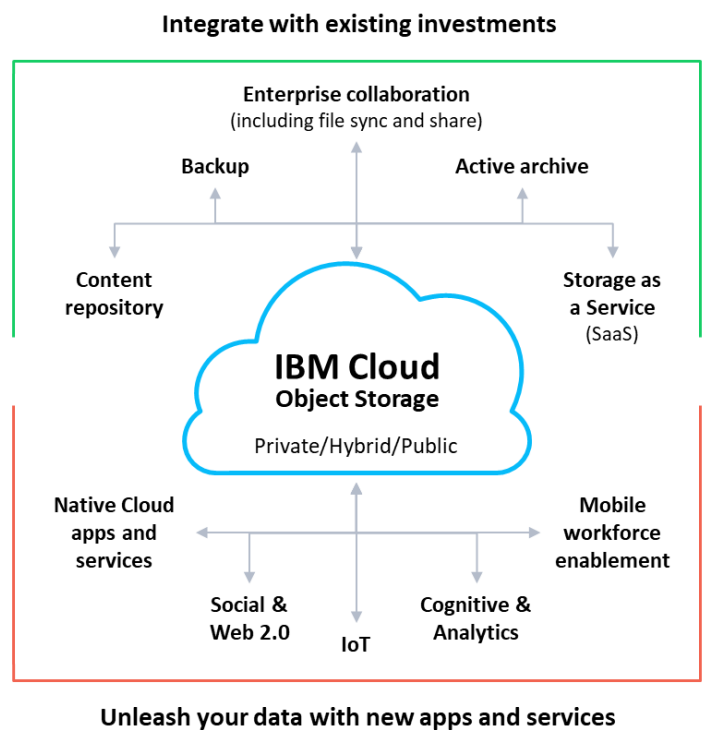


is often known as the front-runner in the IaaS space, particularly when it comes to sheer revenue size, IBM's incumbency in the large enterprise results in a favorable rating in our surveys. Further, IBM is estimated as holding the No. 2 spot behind AWS in public cloud IaaS revenue, which includes cloud object storage, according to TBR's *1Q17 Public Cloud Benchmark*.

TBR surveys suggest the brand sentiment surrounding IBM is positive. For example, 29% of survey respondents indicated they consider IBM "much better" than other brands, compared to an average of 22% of other vendors' customers. Despite the market advantages of public cloud pure plays such as AWS in IaaS, Microsoft in PaaS and Salesforce in SaaS, IBM's brand reputation among customers sets it up for long-term success.

IBM IS UNIQUELY POSITIONED TO UNLOCK THE BUSINESS VALUE OF CLOUD OBJECT STORAGE

With investments in cloud overall and object storage in particular, IBM has carved out a unique value proposition. Cloud delivery is the first part of the value equation, and IBM combined its extensive on-premises IT delivery experience with acquisitions and development to create the Bluemix platform, which leverages more than 60 data centers across 19 countries. Specific to Cloud Object Storage, IBM acquired Cleversafe technology to help customers seeking more cost-effective, highly scalable and secure storage alternatives. The result of that combination of cloud platforms and COS technology is an architecture that provides delivery flexibility across on premises, hosted private cloud, public cloud and hybrid cloud deployments. Beyond just COS, IBM's focus on emerging technologies like blockchain, cognitive and data economies creates a value proposition that has few rivals. As many customers have experienced, with objectives ranging beyond technology to the business strategy, change can be difficult and cookie-cutter





solutions frequently insufficient. With customers lacking a simple answer to how to apply COS technology within their businesses, IBM's services team is there to ensure benefits of COS do not just stop at the technology and IT cost-savings. For these reasons, IBM is worth considering for customers looking to shift storage workloads to the cloud and searching for a new architecture that can deliver data insights to fuel business services and decisions.

The specific differentiating capabilities of IBM's COS offering include:

Extensive cloud scaling — IBM Cloud now leverages over 60 global data centers in 19 countries and continues to expand with the recent announcement of new data centers in the U.K., Australia and Silicon Valley, Calif. IBM COS leverages the extensive portfolio of services that IBM Cloud offers including mobile, IoT, analytics and Watson. Through its vast coverage of global cloud data centers, customers can seamlessly scale both locally and globally with the assurance that their data is accessible, secure and protected.

Flexible deployment and pricing options — To meet the unique demands of its customers, IBM recently announced public Cloud Object Storage service options that include the following:

- Standard: Public, shared, Cloud Object Storage service with higher performance for frequently accessed data (active data that is accessed multiple times per month)
- Vault: Public, shared, Cloud Object Storage service for infrequently accessed data (less active data that is accessed once a month or less)
- Cold Vault: Public, shared, Cloud Object Storage service with rarely accessed data, requiring long-term data retention
- Flex: Public, shared, Cloud Object Storage service that supports dynamic data with varying month-to-month access needs and is ideal for mixed hot and cold workloads

All service classes support Amazon S3 APIs.

IBM Ecosystem Integration — IBM delivers tight integration into the greater IBM ecosystems including IBM Cloud and IBM Bluemix, Watson, IBM Cloud Video and IBM Z, resulting in holistic storage solutions that provide seamless, leading edge cloud, analytics and cognitive that are critical for businesses seeking to monetize their data.



Security and availability — IBM's COS platform delivers built-in security and availability through its SecureSlice and information dispersal technology. In the case of a regional outage or data breach, IBM is able to protect and disperse data across regions with no intervention required by the customer. To provide deeper security, IBM leverages built-in security that protects against digital and physical breaches, as well as providing confidentiality for data in motion and data at rest.

Low-cost, efficient data protection and recovery — These elements are achieved utilizing IBM's erasure coding methodology that protects data against drive, server, rack and site failures. Erasure coding delivers a more efficient means to protect and replicate data versus traditional means such as Redundant Array of Independent Disks (RAID) and replications.

Enterprise-Class Support — IBM COS offers IBM's extensive enterprise-class support capabilities at no additional charge. Compared to other cloud services provider companies, IBM delivers greater support capabilities such as multi-region availability and durability, strong data consistency for single and multi-region services, single-tenant off-premises object storage services, on-premises object storage systems and hybrid object storage.



CONCLUSION:

New architectures like COS and established vendors like IBM can ease the difficult transition from cloud project cost to business value

The shifting focus of cloud investments from cost savings to business value represents a precarious transition for customers. The technology architectures used and vendors that provided the initial wave of cloud solutions may not always deliver the solutions that reduce expense while also ensuring positive business outcomes for the adopting organizations. Cloud object storage offerings should be considered for use cases involving unstructured data that delivers business value for organizations, such as those highlighted across media, manufacturing and retail verticals.

Many vendors offer the core technology associated with COS. However, customers are rapidly recognizing that successfully extracting business value from cloud offerings is a more complex task than just having access to the technology. Implementing use cases such as the ones highlighted in this paper require internal alignment across IT and LOB stakeholders, change management, and integration across different systems and services. Few companies have the internal resources and culture to complete a full implementation on their own, which makes the availability of services and expertise throughout the process a significant benefit to ensure the full value of customer investments. For these reasons, IBM is a vendor to consider for use cases that call for COS technology. IBM's extensive investments to build a competitive cloud platform, unwavering focus on enterprise requirements, specific capabilities in COS, and wide range of services to support customers throughout the process combine for a unique value proposition suited to COS use cases.



ABOUT TBR

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Serving a global clientele, TBR provides timely and actionable market research and business intelligence in formats that are tailored to clients' needs. Our analysts are available to further address client-specific issues or information needs on an inquiry or proprietary consulting basis.

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