

THE OTHER SAAS: WHY SERVICE PROVIDERS SHOULD THINK STORAGE

STRATEGIC WHITE PAPER

As enterprises move more of their business-critical data to the cloud and consumers begin to entrust personal data to the cloud, the storage opportunity for service providers grows. Research confirms there are serious gaps in today's storage offerings. Service providers with a carrier cloud and the Alcatel-Lucent CloudBand Management System can bring the superior performance, availability and reliability of their networks to storage offerings. They can deliver and manage business-grade storage services with higher security and more advanced capabilities than today's storage offerings. And they will be ready to win new revenues from consumers looking for data protection and privacy in the cloud.

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CLOUDBAND CHANGES THE GAME IN STORAGE

With a carrier cloud architecture and the Alcatel-Lucent CloudBand Management System, service providers can develop Storage as a Service (SaaS) offerings that fill crucial gaps in today's storage offerings and provide cost benefits over third-party and in-house storage options.

A carrier cloud architecture brings the advantages of service providers' distributed footprint and superior network performance, availability and reliability to the cloud. The CloudBand Management System orchestrates, automates and optimizes services across the service provider's network and data center resources. As illustrated in Figure 1, it provides a global view of, and control over, the entire service delivery environment as a single pool of resources. It also includes an OSS/BSS layer that integrates with service providers' OSS/BSS systems and processes.

Figure 1. The CloudBand Management System understands the entire service delivery environment



The ability to view and manage their carrier-grade network and data center resources as a whole allows service providers to offer business-grade storage services with faster system response times, guaranteed performance and higher levels of security than today's storage offerings. And it puts them in a strong position to win new revenues from consumers as they look to protect their personal data in the cloud.

SERVICE PROVIDERS CAN SET NEW STANDARDS IN STORAGE

Let's take a closer look at how a carrier cloud architecture and the CloudBand Management System enable service providers to overcome key weaknesses in today's cloud storage services.

A distributed footprint reduces latency: Latency is a known problem in many of today's cloud storage offerings because the data center is typically far removed from the customer site. In its analysis of the storage market, technology research firm, Gartner, has publicly stated that while services available do "offer a low-cost tier of storage," there are sometimes drawbacks to them, such as long latencies and limited bandwidth¹.

A carrier cloud architecture takes data center resources to service providers' central offices. By bringing the cloud closer to customers, service providers can offer storage services with latency levels that are lower than those that cloud storage providers with centralized cloud architectures can provide.

With the CloudBand Management System, service providers can match the location of cloud storage resources to their customers' latency requirements. They can also match workloads to network traffic patterns, for example to specify that large data recovery tasks take place during off-peak traffic periods or that they avoid the core network. This ensures the recovery procedure happens in a timely manner without affecting prime-time network traffic.

End-to-end SLAs guarantee performance: Traditional cloud storage providers' control over performance ends at the doorstep of their data center. However, because service providers own the access network, they can guarantee service quality and performance from the data center all the way to the customer premises.

In addition, because the CloudBand Management System allows them to manage the network and the distributed data centers as a single pool of resources, service providers can place storage workloads in the optimal data center to meet performance SLAs. Advanced cloud resource placement algorithms determine the optimal placement for each workload based on performance requirements as well as other factors such as geography and business policies.

Higher security ensures compliance, privacy: Many enterprises must store data off-site in a highly secure manner to comply with regulatory requirements. And consumers are concerned with privacy and protection of their personal data.

A carrier cloud architecture brings the redundancy, failure detection and automated recovery capabilities that are built-in to service providers' networks to cloud storage services. Requirements for data security, data privacy and compliance with industry accountability and accounting practices and policies can all be incorporated into SLAs and business policies that are managed by the CloudBand Management System. Service providers can manage business policies across their own distributed clouds and third-party federated clouds. They can also offer audits and real-time analytics to monitor security and compliance.

¹ Gartner: The pros and cons of storage as a service, Ellen Messmer, Network World, June 16, 2011.

Owning the network reduces bandwidth costs: Rising bandwidth costs is a major concern for anyone looking at cloud storage services. As Gartner analyst Stanley Zaffros, pointed out at the 2011 Gartner IT Infrastructure, Operations and Management Summit, “bandwidth charges can exceed the monthly storage costs².”

Because service providers own the network, they can offer better bandwidth prices than cloud storage providers that must lease bandwidth. In addition, they can use the CloudBand Management System and their distributed footprint to place workloads so they do not need to traverse the core network, further reducing bandwidth costs.

A trusted relationship reassures customers: Today, many cloud storage providers do not offer any technical support by phone, and they may be located thousands of miles away from their customers. They’re also typically a new provider for customers, with a new business style and new business systems to adapt to.

Service providers already have long-standing customer relationships, widespread technical support resources and proven OSS/BSS systems. They can offer familiarity, phone and on-the-ground support, and a single bill for network and cloud storage services.

THE STORAGE OPPORTUNITY IS GROWING

As more and more data is stored in the cloud, the opportunity for service providers to offer storage services to their enterprise and consumer customers grows. Industry research firm IDC estimates that by 2015, nearly 20 percent of the 7.9 zettabytes of information in the total digital universe will pass through the cloud and perhaps as much as 10 percent will be maintained in a cloud³. According to Forrester research, by 2016 the total market forecast for storage services will be six billion United States dollars⁴.

Interestingly for service providers, research compiled by Alcatel-Lucent shows that only 19 percent of companies currently offering storage services target both the enterprise and consumer markets⁵.

Service providers have long served both enterprises and consumers. With some estimates predicting that the amount of information managed by enterprise data centers will grow by 50 times over the next decade⁶, enterprises are an immediate target for carrier-grade storage services.

² Gartner: The pros and cons of storage as a service, Ellen Messmer, Network World, June 16, 2011.

³ Gartner: The pros and cons of storage as a service, Ellen Messmer, Network World, June 16, 2011.

⁴ Forrester Research Inc.

⁵ Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites, Forrester research and press releases.

⁶ The 2011 IDC Digital Universe Study, sponsored by EMC.

ENTERPRISES NEED SUPERIOR STORAGE NOW

According to Gartner, cloud storage services include storage management, bulk Infrastructure as a Service (IaaS) and other value-added services, such as backup, archiving, file synchronization and data recovery. Services should be focused on enterprise needs with security, better integration with on-premises applications, existing storage and device management policies. Gartner divides the segment into the following categories⁷:

- Enterprise-capable backup services
- Archiving services
- Primary storage services such as file synchronization and sharing
- Other value-added services

Small and medium-sized businesses (SMBs) are a good target for business-grade storage services because they often lack the internal resources and infrastructure to manage their own storage requirements. In addition to providing better response times, performance, security and customer service, service providers have an opportunity to address the gaps in today's enterprise cloud storage offerings — most of which are aimed at the consumer market. Business-grade cloud storage offerings should provide:

- Scheduled or automated backup services. In its comparison of cloud storage offerings, Alcatel-Lucent found that close to 20 percent of cloud storage providers do not offer this crucial capability⁸.
- Version control for multiple versions of an electronic document. Alcatel-Lucent found that only 27 percent of cloud storage companies currently offer version control capabilities⁹.
- Continuous backup and synchronization of files on multiple computers within a network, offline file synchronization capabilities and full restoration of deleted files. With its relatively low performance requirements, Forrester sees file storage as one of the most likely use cases to move data to the cloud¹⁰.
- Support for all file types and easy access to those files from any fixed or mobile device.
- File redundancy in case of disaster.
- Folder and file sharing for collaboration.
- Granular access management for private and shared data.
- Scalability to accommodate business growth and new compliance or legal requirements.
- Integration with other cloud-based business applications, such as Google Docs or Salesforce.

While free cloud storage offerings are a significant trend in the consumer market, only 14 percent of companies offer free storage to enterprises¹¹. And enterprises that manage their own data storage requirements are likely spending more than they would if they stored data in the cloud. According to Forrester Research Inc., storage acquisition costs, along with staff, facility and power costs, redundancy requirements, maintenance requirements and inefficiencies drive costs for in-house storage higher than most enterprises realize¹².

7 Gartner: Market Definitions and Methodology: Public Cloud Services, June 27, 2012

8 Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites and press releases.

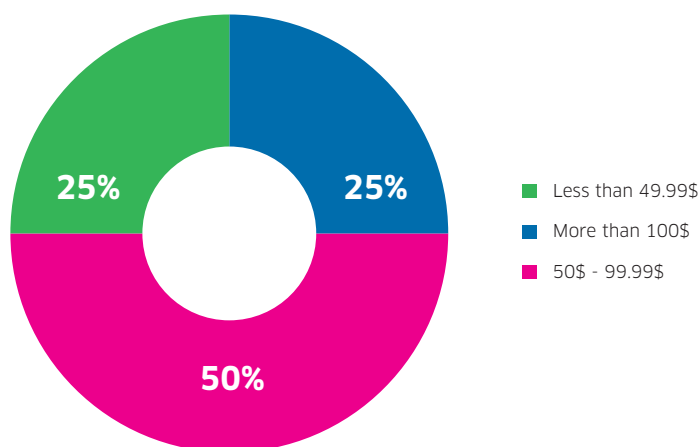
9 Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites and press releases.

10 Forrester Research Inc., File Storage Costs Less In The Cloud Than In-House, Andrew Reichman, August 25, 2011.

11 Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites and press releases.

12 Forrester Research Inc., File Storage Costs Less In The Cloud Than In-House, Andrew Reichman, August 25, 2011.

Figure 2. Monthly storage costs for 1 TB of data



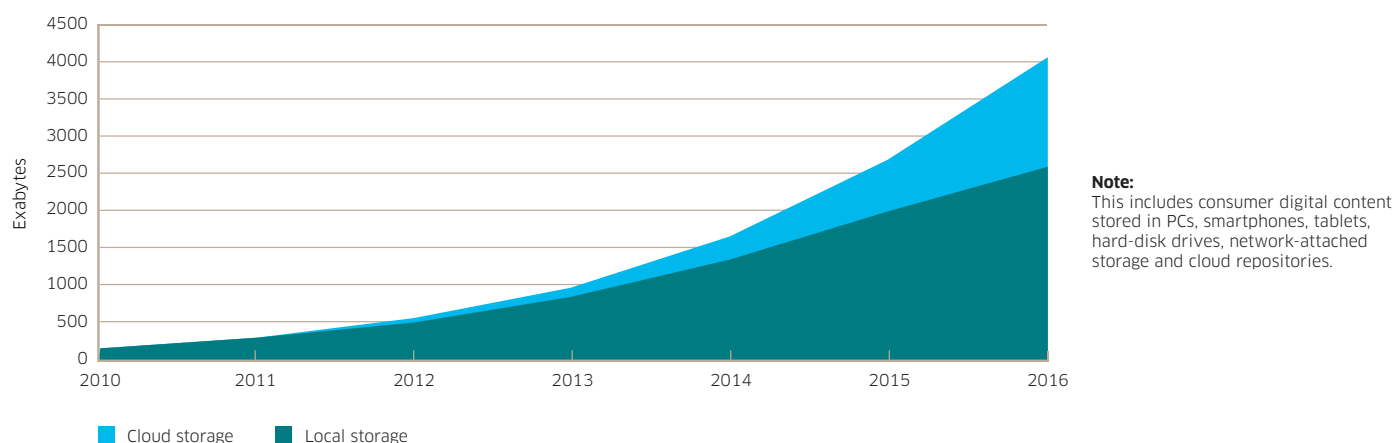
With the right pricing strategy, service providers can compete with traditional cloud storage providers and attract enterprise customers that don't want the costs or hassles of storing data in-house. As illustrated in Figure 2, half of today's cloud storage offerings for 1 TB of data are priced between 50 and 100 United States dollars per month¹³.

CONSUMERS WILL GET SERIOUS ABOUT STORAGE

As consumers begin to store more of their personal data in the cloud — medical details, class notes, financial information, personal identification information — they will also want the added data protection and privacy that service providers can provide in storage offerings.

By 2016, cloud storage will represent one-third of all storage means for consumers, with movies and videos accounting for more than half of storage requirements¹⁴.

Figure 3. Cloud storage for consumers will become increasingly important by 2016



Source: Gartner - Forecast: Consumer Digital Storage Needs, 2010-2016

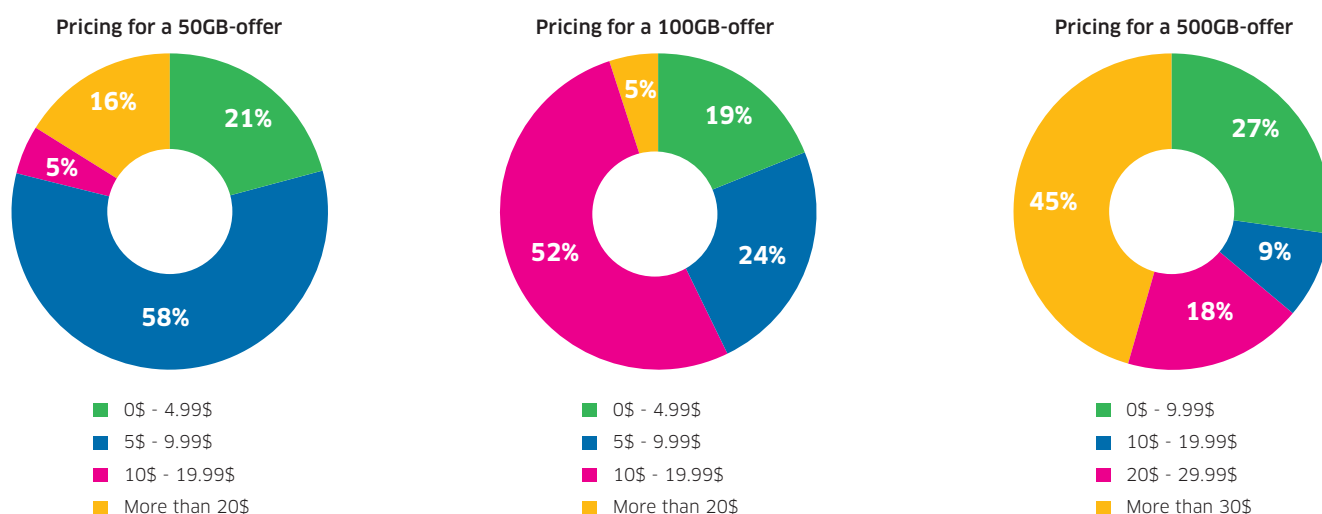
¹³ Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites and press releases.

¹⁴ Forrester Research Inc., File Storage Costs Less In The Cloud Than In-House, Andrew Reichman, August 25, 2011.

Word-of-mouth will be an important factor in building a successful consumer cloud storage business. Alcatel-Lucent research found that consumers use the most popular storage applications, not necessarily the cheapest. Sixty three percent of today's cloud storage providers for consumers follow a "freemium" business model offering an average of 5 GB of free storage and 20 percent offer additional free storage space for referrals¹⁵. Prices for storage vary greatly from provider to provider. Most companies offer the base service and will try to upsell additional services once consumers are locked in. Service Providers have a long standing relationship with customers and can add storage as a key enhancement to an existing data plan.

As illustrated in Figure 4, today's cloud storage offerings for consumers are diversified and the price range is wide.

Figure 4. Monthly pricing for consumer cloud storage offerings vary widely



CLOUD STORAGE HAS BECOME AN ESSENTIAL SERVICE

With more and more businesses and consumers relying on digital content, cloud storage has become an essential service. The risks of storing valuable business and personal data on local systems only are simply too high. Disasters — natural and man-made — can strike at any time. Human error, theft and system failures can also lead to unexpected, and potentially devastating, data losses. Service Providers can ensure a more secure environment for consumers and enterprise, leaving the most pessimistic of buyers at ease.

Storing data in the cloud protects it should any of these events occur. It also lets enterprise employees and consumers access key, business or personal data no matter where they are or what device they are using.

With a carrier cloud architecture and the CloudBand Management System, service providers can tap into the six billion dollar cloud storage opportunity, offering cloud storage services that capitalize on the weaknesses of existing products. They already have two key assets that traditional cloud storage providers will have great difficulty duplicating: A widespread, carrier-grade network and long-standing customer relationships.

¹⁵ Data compiled from Alcatel-Lucent cloud practice business consulting analysis, storage company web sites and press releases.

ABBREVIATIONS

SaaS	Storage as a Service
OSS	Operations support system
BSS	Business support system
SLA	Service level agreement
IaaS	Infrastructure as a Service

RESOURCES

For more information about the carrier cloud and CloudBand, visit www.alcatel-lucent.com/cloud.

CONTACTS

Valerie Noto
Alcatel-Lucent - Cloud
Valerie.Noto@alcatel-lucent.com

Aurore Le Tumelin
Alcatel-Lucent
Cloud Consulting Practice
Aurore.Le_Tumelin@alcatel-lucent.com

Debbie Bradshaw
Alcatel-Lucent Cloud Marketing
Debbie.Bradshaw@alcatel-lucent.com