Cost & Capital

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Cloud Computing Sourcing

Key Takeaways

- **Market Penetration –** As of mid-2014, 87% of tech executives reported utilizing outsourced computing power for at least one task.
- **Market Growth –** The service areas that comprise the cloud computing market are expected to grow at a 20-45% CAGR through 2018.
- **Price War Impact –** Price wars between the major players have caused prices to decline by 20-80% depending on the service provided.
- **SLA Developments –** Recent developments in the market are changing the traditional structure of contracts. A greater emphasis should be placed on SLA requirements and penalties.
- **Sourcing Impact –** Escalating price wars and service differentiation have rendered many organizations' cost models and SLAs obsolete. Procurement Departments should engage with IT to ensure pricing and SLAs reflect their organization's needs and the current market dynamics.

Authors

Tom Bokowy
(208) 610-0032
tbokowy@costandcapital.com

Ryan Hatcher
(617) 459-0356
rhatcher@costandcapital.com

Cost and Capital Partners *is a management consulting firm that works with companies to improve cost and capital efficiency. Our client base includes Fortune 1000 companies from the energy, transportation, industrial, automotive, electronics, hospitality, process, consumer and white goods industries. We work with clients to improve results and enhance visibility for strategy development.*

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Introduction

Over the past ten years, Cloud Computing has made the journey from a nascent industry to a transformational force. As of mid-2014, according to the Wall Street Journal, 87% of technology executives reported using outsourced computing power for at least one task. Despite this seemingly high penetration, the cloud market continues to expand at a rapid rate. Depending on the type of service, annual growth rates through 2018 are anticipated to be 20-40%. This will drive the public and private enterprise cloud computing market size to over 100 BUSD by 2018. Other areas such as cloud advertising will experience an even larger growth rate and market size.

The cloud industry's rapid growth is driving some of the leading service providers into price wars while others try to differentiate their service models to avoid commoditization. The price wars have driven pricing for some basic services, such as storage, down 85% in the past year. These drastic changes in pricing and SLA agreements have caused many IT Departments' cost models and decision matrices to become obsolete. Purchasing leaders should work closely with their peers in IT to review current needs, examine existing pricing and SLAs, and develop new cost models to determine savings opportunities.

This paper will provide an overview of the cloud computing market as well as the impact of recent market developments on cost models and SLAs. It will then examine the steps that organizations can take to ensure their contracts are aligned to the current market environment.

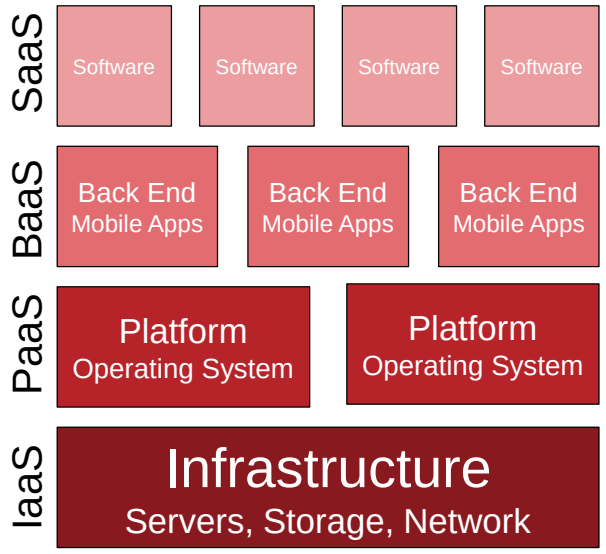
Market Overview

Types of Cloud Services

For most businesses, there are three key types of cloud services:

- IaaS (Infrastructure as a Service) is the most basic form of cloud services. It can largely be viewed as a utility as it primarily relates to larger scale network management and data storage. IaaS allows businesses to maintain their platforms and software in-house while outsourcing infrastructure such as servers.
- PaaS (Platform as a Service) primarily offers virtual application infrastructure services. Examples include operating systems, databases and web servers. These resources help to allocate resources depending on demand and can thus help to offload the responsibility of peak demand management to the cloud provider.
- SaaS (Software as a Service) provides companies with access to software that is externally managed. These remotely managed applications and processes help companies reduce internal maintenance and support costs since these responsibilities are offloaded to the cloud provider.

Figure 1: Types of Cloud Services



Source: Cost & Capital Research.

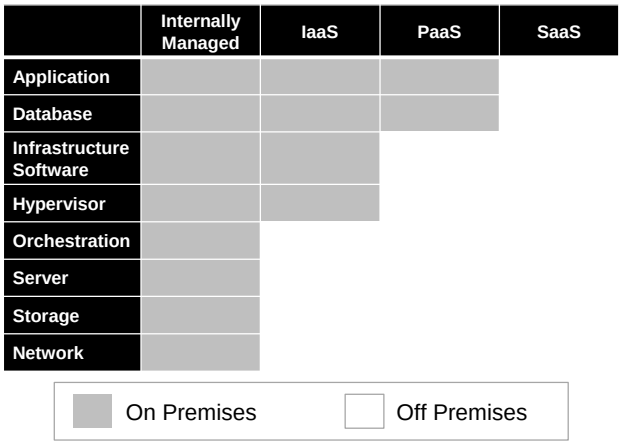
A forth type, BaaS (Backend as a Service) is primarily utilized for mobile applications. It helps link apps to backend storage as well as with several features such as push notifications and user management. BaaS is the least mature of the cloud services, but is expected to experience significant growth over the next few years.

Most corporations employ at least one level of the aforementioned cloud services. According to the Wall Street Journal, as of mid-2014, 87% of technology executives reported using outsourced computing power for at least one task.

Cloud Environments

Cloud computing can be deployed in several ways. If it is deployed within an enterprise (i.e. servers dedicated to one client), it is considered a private cloud. Some companies consider these to be more secure because all the data is still maintained within the company's IT ecosystem. If a company relies on outside servers that are shared with other companies or open to public use, the service is considered a public cloud. Public cloud services are generally offered via an Internet connection to the provider's infrastructure. In the current market, it is common for companies to deploy a combination of public and private cloud services. This setup is considered a hybrid cloud. Companies often prefer to store sensitive corporate data within their own network and access software and applications via a public cloud. Microsoft estimates that by 2020, 80% of the world's 2000 largest companies will still have more than 50% of their IT on-site. This implies that the vast majority of companies will continue to deploy a hybrid cloud solution.

Figure 2: **Management of IT Elements by Cloud Type**



Source: Cost & Capital Research, IT Candor

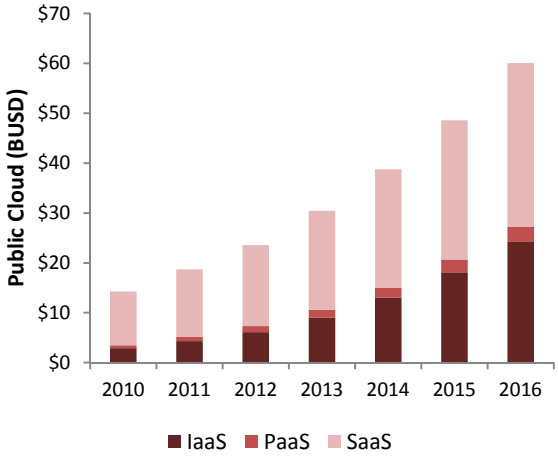
Market Size & Providers

The Cloud Computing market has grown significantly since 2010. The Public Cloud (i.e. cloud services not managed by client corporations' IT departments) market has grown at a CAGR of over 30% since 2010 and is expected to continue or exceed this rate through 2016. The IaaS, PaaS and SaaS segments are experiencing CAGRs or 41%, 28% and 20% respectively.

The largest players in the IaaS market are Amazon, Microsoft and Google. Amongst these three, Amazon is the leader with about 30% of the market. Google and Microsoft each control 6-8% of the market. The fragmented nature and high growth of the IaaS market has led to significant price wars over the past several years. One result of these price wars is that providers are differentiating themselves from raw storage (i.e. hosting) to Managed Cloud Services (i.e. MSP). This distinction is primarily being pushed by providers that want to avoid the drive towards commoditization in IaaS.

PaaS is the smallest of the three key markets and is growing at a rate of 28% per year. Primary offerings include application development, application infrastructure and middleware, business intelligence platforms, and database management systems. Key providers in the PaaS market include Google, Microsoft and Salesforce.

Figure 3: **Global Public Cloud Market Size**



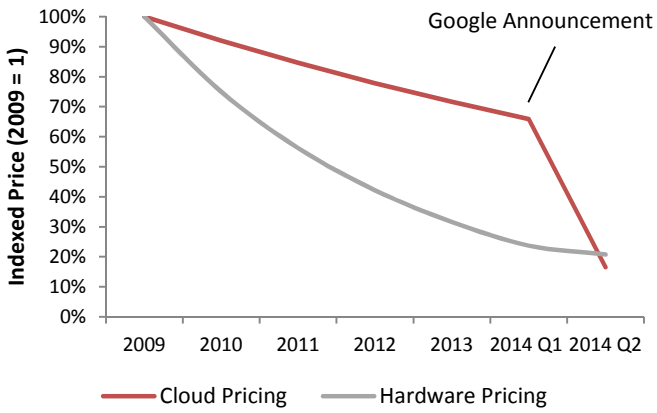
Source: Cost & Capital Research, Gartner

The SaaS space is generally accepted to have been started by Salesforce CRM. Many providers now occupy the space and specialize in offerings such as project management, security, network monitoring, customer service, help desk, business intelligence and analytics. Essentially every business function can have its IT needs met by an SaaS provider. The SaaS market is experiencing a CAGR of 20% and this growth rate is expected to continue over the next several years. The top providers in the SaaS arena are Salesforce, IBM, EA, Microsoft, Activision and Oracle. However, the SaaS market is highly fragmented and none of the top providers have a market share of more than 8%. Smaller players are estimated to control about 80% of the market.

Price War Implications

As cloud offerings continue to mature, the leading providers' pricing has steadily declined. Recently, the largest price cuts have been in the public cloud arena. However, despite previous price wars, in March of 2014, Google announced that in its opinion prices had not fallen far or fast enough. The company claimed that pricing should more closely follow Moore's law, which is the observation that the number of transistors on integrated circuits doubles every two years. As illustrated in Figure 4, Google stated that hardware prices fell 20-30% per year between 2009 and 2014, while public cloud pricing only fell 8% per year. They used this logic in their announcement to cut cloud pricing by 30-85%. The day after Google's announcement, Amazon cut its prices by 10-65%. Amazon's chief data scientist, Matt Wood, stated that the company has delivered computing power as if it was a utility. This view that the service is a utility will continue to encourage cloud providers to slash prices in a bid to achieve market dominance. Wood even went as far as to state that prices for basic cloud services could fall to, or close to, zero.

Figure 4: Price Development & 2014 Price War Impact



Source: Google

To counteract the recent price wars, some providers such as Rackspace, are separating their storage pricing from services and support packages. The company hopes to avoid commoditization by pushing customers that only want storage to other providers. Remaining customers would then pay a 'premium' for enhanced support.

The key impact of the recent price wars for buyers of cloud services is that many existing cost models are now obsolete. Buyers must review their cloud agreements to ensure that their company's needs are still aligned to the providers' offerings. It is also important to normalize pricing and offerings across providers since every cloud is built, sized and priced differently. If needs are no longer aligned, a strong IT department is needed to switch from one service to another.

Pricing & Contract Considerations

Price Structure

Traditional cloud pricing typically has three key characteristics:

1. Pay as you go with minimal upfront costs
2. Usage based pricing
3. Elasticity which allows companies to consume more or less resources as needed

These characteristics apply to the variety of services and support that comprise a cloud offering. Sample price structures by service type include:

- IaaS: Per resource / per hour, day, month (e.g. servers (physical/virtual); processing power; memory; applications; back-up). Additional charges for upgraded support and implementation
- PaaS: Per user / month or per resource / per hour, day, month. Additional charges for upgraded resources, support
- SaaS: Per user or concurrent user / per month, year or per use. Additional charges for customization, implementation, upgraded support, and additional storage

Figure 5: IaaS Billable Items

Billable Item	Options
Virtual Machine	• CPU • Memory • Storage Capacity • Disk and Network I/O
Server Blade	Varies by type and size of hardware
Network Services	• Load Balancer • Firewall • Virtual Router
Security Services	• Isolation Level • Compliance Level
SLAs	• Best Effort • High Availability • Fault Tolerant
Data Services	• Data Encription • Data Compression • Backups • Data Availability & Redundancy
WAN Services	• VPN Connectivity • WAN Optimization

Source: Cisco

Figure 5 illustrates the various service options available for a typical IaaS solution. Depending on the agreed upon contract terms, these items might be charged in a fixed or variable manner. Fixed pricing models can be

independent on the number of users or resources the client utilizes while variable models charge customers for the amount of services they are actually using. A major benefit of outsourcing services to a cloud provider is the amount of visibility into usage statistics that can be gained. Organizations can better decide which departments should have access to which resources. For this reason, variable models are typically more beneficial for clients of cloud services. Regardless of whether fixed or variable pricing is decided upon, cloud users should ensure that pricing is broken out between basic infrastructure and services.

SLA Considerations

Basic hardware and software requirements are rapidly becoming commoditized. This is driving companies to attempt to differentiate themselves by offering revised service packages. Purchasing departments should work with IT and corporate leadership to determine what type of SLA will provide the most value for their organization.

If an organization has multiple cloud service providers, they will likely find large differences across their existing pricing agreements and SLAs. Industry councils have noted that standard SLA nomenclature does not currently exist across cloud providers. This can cause confusion within IT Departments when attempts are made to benchmark service commitments and quality. At a bare minimum, SLAs should set expectations related to availability, performance, security and compliance. Penalties should also be in place for situations where the provider does not meet its committed levels of service.

Case Study: July 2014 Rackspace Managed Cloud SLAs

Background: Rackspace, a cloud services provider, recently modified its service offering and pricing plan in an effort to differentiate itself from Amazon, Google and Microsoft. The company is making an effort to highlight its customer support and avoid customers that only want to utilize their servers for storage space. They have developed three SLA payout tiers. The payouts, or penalties, that Rackspace will pay if it does not meet its SLA, now range up to 200% of the customer's monthly spend.

1. Support SLA - An SLA that covers support circumstances within Rackspace's control.
   Credit percentage: Standard rate is 5% per every 30 minutes of downtime up to 100% of cloud monthly spend.
2. 2x SLA Accelerator Credit percentage – For Managed Operations service level customers; Rackspace doubles the credit percentage of all applicable SLA violations.
   Credit percentage: 2x up to 100% of cloud monthly spend. For example, if the standard payout is 5% per 30 minutes of downtime, Managed Operations are 10% per 30 minutes.
3. 10x SLA Accelerator Credit Payout for Planned Events
   Customer notifies Rackspace 14 days in advance; Rackspace provides recommendations which the customer institutes; customer signs program agreement.
   Credit payout: 10x up to 200% of monthly spend (up to one event per month). For example, if the standard payout is 5% per 30 minutes, it will become 50% per 30 minutes up to 200% of monthly spend.

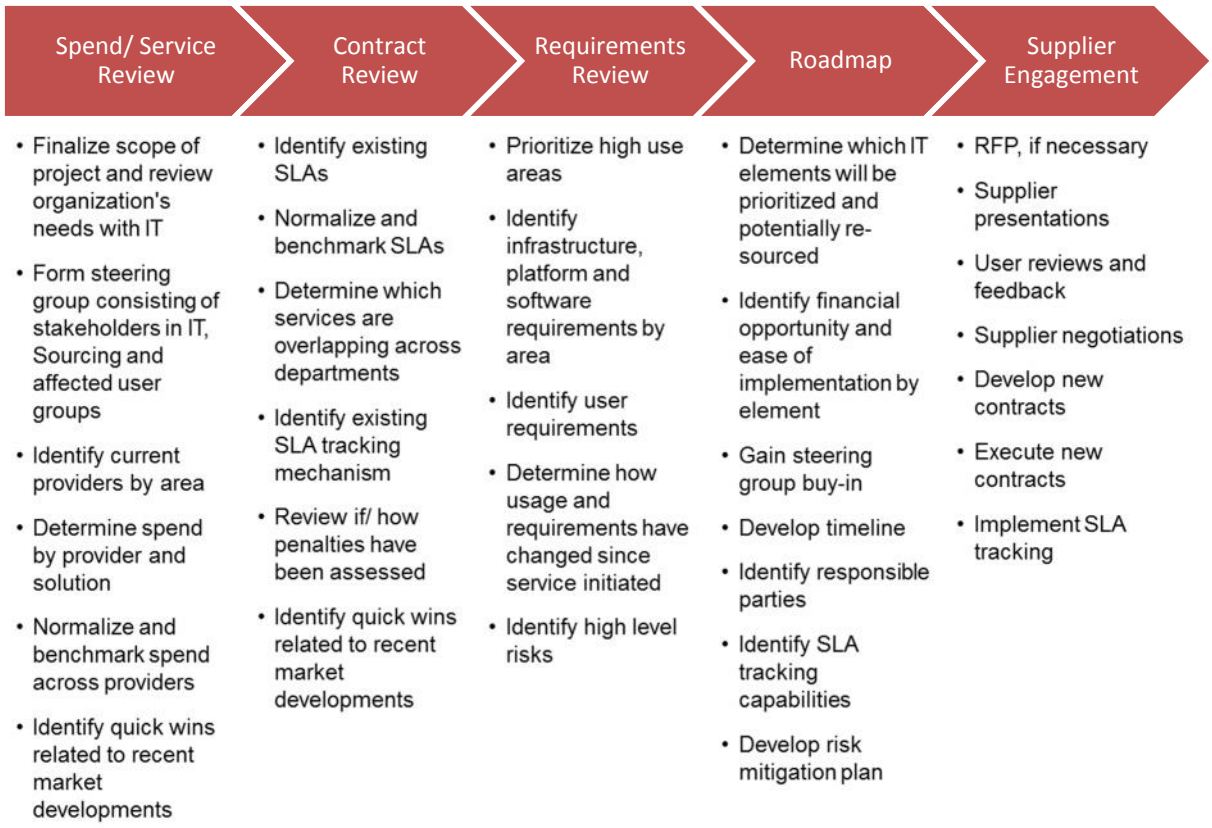
Source: Rackspace

Action Required

When executed correctly, cloud services can significantly reduce companies' IT expenses. Budgets can then be realigned to include less capital spending and more specialized support and development. The ongoing price wars and providers' attempts at differentiation via new SLA offerings have rendered many IT departments' cost models obsolete. Buyers of IT services should partner with their IT departments and key users to review how their existing providers' offerings align to the organization's short and long term needs.

As outlined in Figure 6, a steering group should be formed and a detailed review of the organization's Spend, Service, Contract, and Requirements should be conducted. Existing pricing, SLAs and payouts should be benchmarked and cost models reviewed. A roadmap should then be developed to prioritize which IT elements should be addressed based on potential financial impact and ease of implementation.

Figure 6: **Cloud Sourcing Review Approach**



Source: Cost & Capital Partners

About Cost and Capital Partners

Cost and Capital Partners helps clients understand how market developments will financially impact their organization. For additional information on how we can help benchmark and evaluate your existing IT pricing and service agreements, call Tom Bokowy, at (208) 610-0032.