



Cloud Computing: Beyond the Buzz, Part 1

This is the first in a series of our “Cloud Computing: Beyond the Buzz” articles. The focus is on informing clients, making sense of the continuous stream of buzzwords and acronyms and to bring clarity to Cloud Computing. Kenny & Company’s “Educate, Navigate and Facilitate” approach to our Cloud Computing Consulting Services helps clients by educating them on the ever expanding cloud ecosystem, navigating through where they are at today, what is possible in the cloud, and where it makes sense from a business and IT strategy perspective to go next. We also facilitate the organizational readiness, process re-engineering, vendor evaluation and selection process as well as engagement management services.

How the IT Paradigm Progressed Towards the Cloud Concept

Cloud computing as an IT outsourcing model simply gives a name to brand the confluence of technologies that have evolved synergistically over the course of time leading to improvements in delivery and pricing.

History of Cloud Computing

The term Cloud Computing is the latest nomenclature for the concept of outsourcing IT services introduced long ago. Time-sharing was introduced in the 1960s and was one of the original IT outsourcing methods implemented by large companies, with a single computer serving multiple users concurrently. In his speech to MIT in 1961, John McCarthy was one of the first computer science thought leaders to suggest that computer time-sharing technology could be the future of how computers and applications could be sold similar to a utility model, like water or electricity. While this concept was very popular in the late 1960s, it lost momentum by the mid-1970s due to the limitations of the hardware, software and telecommunications technologies of the time. Around the same time, the Services Bureau business model was evolving and by the late 1980s major consulting and technology firms such as Andersen Consulting, EDS and IBM began offering Remote

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Instead, we've created a place where our ideas and opinions are grounded in experience, analysis and facts, leading to real problem solving and real solutions – a truly collaborative experience with our clients making their business our business.

We focus on getting the work done and prefer to let our work speak for itself. When we do speak, we don't talk about ourselves, but rather about what we do for our clients. We're proud of the strong character our entire team brings, the high intensity in which we thrive, and above all, doing great work.

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Management Services where a customer's systems, networks, and applications were monitored and managed remotely. In the following decade with advancements in technology and evolution of the internet, the late 1990s brought a new industry of IT outsourcing services with new categories of service providers entering the market. IDC originally introduced the term Application Service Provider or ASP where application services are delivered over the internet and "rented" by many customers. From a business model and pricing perspective, customers were typically entering multi-year service contracts with the monthly cost consisting of the applications with costs spread out over a period of time.

In February 2001, the article published by the Software & Information Industry (SIIA) "Strategic Backgrounder: Software as a Service" was the first time the term Software as a Service or SaaS was used to describe companies and their offerings in a much broader sense. The proliferation of the new business models, technologies and acronyms for differing approaches in the market place began creating confusion with the introduction of Application Service Provider (ASP), Application Infrastructure Providers (AIPs) Internet Business Service (IBS), Business Service Provider (BSP), Solutions Service Provider (SSP), etc. The Software as a Service term was meant to help overcome this growing lack of clarity and provide a broader definition of this business model.

The concept of the "cloud" was initially used by the telecommunications industry in the late 1990s when a cloud picture was used in Virtual Private Network (VPN) diagrams to highlight the network traffic and services that lies within the provider's or customer's responsibility. This visualization was then extending to the concept of Cloud Computing, where the computing infrastructures, platforms and software were accessed, utilized and managed remotely over the internet. As the SaaS model grew more popular initially by small and medium sized business and subsequently by large enterprise companies, a new generation of business applications leveraging the latest development technologies was designed to be delivered as a service. As a result, IT applications, infrastructure and platform technologies quickly followed leading to where we are today with an entire ecosystem of cutting edge technologies in the cloud with a variety of subscription based pricing models.

Defining the "Cloud"

Every new paradigm shift in Information Technology creates new challenges and opportunities. Cloud computing is no different however; unlike previous paradigm shifts, cloud computing has the potential to offer substantial opportunities in a variety of IT scenarios to previously constrained businesses. The term "cloud" has evolved through technology innovation, new IT service delivery models and more flexible cost structures – a concept that is changing the way IT organizations meet business needs. While there are several definitions of what cloud computing is, the National Institute of Standards and Technology (NIST) defines cloud computing as "on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."

Essentially, cloud computing is the latest broad description in an ecosystem of technologies that deliver computing capabilities using a consumption based, utility like model. It encompasses all technology that is delivered from external providers as a service with cost based on usage over time.

What are the services that cloud computing can offer?

There are three principle service models used in cloud computing to deliver cloud services: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). As the cloud computing paradigm evolves there are more companies developing "X as a Service" categories, however, they still roll up in to one of the three service models identified above.

Infrastructure as a Service (IaaS) can be thought of as hosted data center elements (processing, storage, networks). The customer of the service does not manage or control the physical assets, but has control over all other aspects of the resources (operating systems, firewall rules, application configurations). IaaS provides customers with the most control over their cloud based resources out of all three scenarios.

IaaS Examples: Amazon Web Services, Terremark, RackSpace, Go-Grid, OpenStack.

Platform as a Service (PaaS) can be thought of as a hosted development environment where users deploy supported application code such as Java, Python, PHP, C#, etc. to their cloud computing environment which runs their code as an application to end users. The user does not manage most aspects of the underlying infrastructure, but has control over the configuration of their application.

PaaS Examples: Microsoft Azure, Google AppEngine, Heroku, Force.com

Software as a Service (SaaS) can be thought of as a hosted service or application. Customers pay to access applications running on Cloud infrastructure. The customer does not manage or control the underlying Cloud infrastructure or purchased application service other than portions intended to be customized by the end-user. SaaS provides customers with the least control over their resources.

SaaS Examples: Microsoft BPOS, Google Apps, Salesforce, Workday

How are clouds configured for deployment of services?

There are currently four distinct configurations that cloud computing can use for deploying services: As a private, public, community, or hybrid resource. Any organization may choose to outsource elements of their IT functions in a variety of deployment modes based on need.

A private cloud is setup using the physical resources (servers, storage arrays, switches, etc.) of a single organization and benefits only the organization's stakeholders. The organization's physical assets are configured with a cloud operating system to provide the five characteristics (on-demand, broad network access, resource pooling, rapid elasticity, and resource metering) of cloud computing. Private clouds can be useful for:

- Very large organizations who believe they can run their environment for cheaper than a public cloud service provider
- Organizations with highly sensitive or classified data involving legal or regulatory requirements
- Design factors requiring a high degree of assurance with low network latency

Examples of Private Cloud Products: Cisco, HP, OpenStack, Eucalyptus, Joyent

A public cloud is operated by a cloud service provider giving the general public access to their cloud services. End users pay for compute, storage, services, and network charges like a utility (unit costs or monthly fees).

Examples of Public Clouds: Amazon Web Services, Microsoft Azure, RackSpace, GoGrid

A community cloud is similar to a private cloud (same cloud operating systems used to manage the physical resources); however rather than one organization owning the assets for only their stakeholders, the community cloud consists of physical assets shared by several organizations and supports the community's stakeholders. "Community clouds are designed to address a specific community that has shared concerns with privacy, security requirements, policy, and compliance considerations. It may be managed by the organizations or a third party and may exist on premise or off premise." Some advantages inherent in a community cloud over private cloud are:

- Increased resources to plan governance and security policies – each community member can add to the collective brainstorm improving the overall IT governance and security posture
- Increased physical resources to make up the cloud – each community member will pay for a percentage of the physical assets but takes advantage of the full size of the community cloud
- More geographically distributed cloud make-up – each community member is located in a different location and thus provides additional multi-tenancy to the community cloud

Some disadvantages of running a community cloud over a private cloud:

- Requires all participants to enter into operating level agreements with each other – if any of the members do not perform actions required in operating agreements the whole community cloud can be affected adversely
- Requires trust in the physical security employed by other community members – each community member must follow similar security safeguards to prevent potential physical security breaches

Examples of groups that might employ Community Cloud: Banks, Healthcare Organizations, Government Agencies

A hybrid cloud combines private and public clouds, consisting of multiple internal and/or external providers, where they remain unique entities but are bound together by some technology (such as an API). A typical design pattern for hybrid clouds is for an organization to employ a small private cloud for their steady-state demand needs but to use a method known as bursting to handle peak periods of demand (perhaps by offloading additional compute or content delivery) that exceed the private cloud's capacity. Hybrids also provide additional flexibility for compute processes that need to be performed in a more private, dedicated cloud environment due to data sensitivity or regulations while less stringent transactions can be performed in a public domain.

*Examples of groups that might employ Hybrid Cloud:
Online Retail, Banks, Healthcare Organizations,
Government Agencies*

Enabling Technologies of this Paradigm

The recent paradigm of cloud computing can be attributed to improvements in several technologies and business practices. The most notable technical improvements are in the areas of virtualization, high-speed network bandwidth/availability and delivery method. Additionally, cloud computing has been enabled by a change in the thought process for how to bill for services.

In the last few years, high-speed network runs/fiber significantly increased, allowing higher redundancy and speeds at many geographic locations. Mobile data access also improved, making the consumption of a service much better from a user experience. In addition, web-based services built on the internet protocol suite became a standard for delivering most data. Rather than proprietary distribution methods, IP via TCP became the most common way to address and route data, allowing almost any machine with a web-browser to view data. These improvements to the uniformity, quality and availability of delivery method were critical to ensuring compute, storage and application services did not need to exist at point of consumption. Without the more ubiquitous nature of internet access available now, cloud computing would not be possible.

Virtualization technology has also progressed significantly in the past decade. There are more options available and the understanding of the concept in the technical community has allowed the cloud computing concept to exist. Cloud operating systems were built using virtualization techniques unlocking the hosting business' (or internal IT departments in the case of a private cloud)

real potential by providing the rapid flexibility and dynamic partitioning of their physical assets.

Another important aspect in the growing popularity of cloud computing as a successful strategy for outsourcing is that pricing models that have progressed as a result of the technological changes. Service providers (especially in the IaaS and PaaS space) can now invoice for very small units of consumed computing, storage, and network transport allowing businesses building services on in the cloud to have a much better understanding of their cost structure at every level of demand. Since the technology progressed to provision services based on demand, the service provider had to change their cost model to align with the new delivery model. This change benefited consumers tremendously as it removed significant variance in their cost structure over demand fluctuations and removed large barriers to entry for establishing new services; business no longer need to plan and budget for large amounts of capital to start a service. The culmination of these improvements in technical concepts and business processes set the cloud-computing hosting paradigm in motion as the right technologies were at the correct level of maturity.

Why Move to the Cloud?

The brief review of cloud history shows that IT outsourcing is not a new method, and that there have been significant benefits along with challenges in the past with IT outsourcing. As mentioned previously, the difference with this paradigm shift is that the key technologies are at the correct level of maturity mitigating some of the previous risks seen with end-user service dissatisfaction built on previous IT outsourcing paradigms. In a subsequent paper we will define a cloud computing maturity model that we use to help clients determining their cloud computing strategy.

Statistics for the Market Size and Reasons for its Growth Estimate

While not all market research figures are in agreement over the growth of cloud computing spend in the future, they all show significant increases in spending on cloud based services and products. Depending the source, forecasted spend on cloud computing ranges from \$44B to \$66B by 2012 as a result of IT organizations allocating higher percentages of their annual budget on cloud computing. Surveys of CIOs and IT executives indicate how cloud computing will grow to 10%-30% of overall IT budgets in the next 3 years with even the Federal Government committing 25% of their \$80B IT budget for 2011 to cloud computing.

Key drivers for the increase in cloud spend are the lower upfront Capex costs and cost to maintain assets in addition to the flexibility to procure and utilize cloud technologies as Opex, enabling IT to respond faster to business needs. Research by IBM has demonstrated that up to 70% percent of IT budgets are spent on maintaining infrastructures where only 30% is spent on innovation, and Cisco's research states how through more agile IT delivery, Cloud Computing dramatically decreases time to market by more than 50% as well as 50% reduction in capital costs, and 25% to 30% reduction in operational costs.

Adopting cloud computing for aspects of the IT needs will help:

1. Increase the top-line growth potential by keeping the business relevant and competitive in their market via improved service quality, and allowing more capital to go to new services and products
2. Decrease the bottom line by reducing spending for the same or better level of service performance

Utilization of assets in traditional on-premise environments helps show where some of the large returns on investment originate from when adopting cloud computing with enterprise data center server utilization commonly averaging 5%-20% and as much as 85% sitting idle in distributed computing environments. A great example was given by eBay at Cloud Connect 2011 where they shared 2009 actual data of their server underutilization, and cost justification to moving part of their eBay.com marketplace to the public cloud. This resulted in approximately 25% cost savings which was then reinvested into product enhancements.

While technologies like virtualization has improved asset utilization, pure virtualization alone still leaves room for asset utilization optimization for both technical as well as organizational reasons. Virtualization initiatives typically hit reach a ceiling with virtual sprawl replacing server sprawl where shadow IT organizations are able to circumvent corporate IT security and compliance processes and consume bandwidth.

This is where we see one of the strong cases for cloud computing it is able to derive excellent returns on investment for adoption. IBM research shows that by establishing a proper cloud strategy and architecture, organizations "can increase the IT server or other component utilization up to 75% and reduce IT labor costs by 50% or more." Based on the type and size of an organization there are additional reasons to adopt cloud computing.

IT Departments at Large Organizations

Enterprise IT organizations will feel some urgency to adopt cloud based services in some way to compete with external market forces. Many CIOs are mandating cloud initiatives as a way to drive down costs and respond to business needs. As cloud based vendors make it easier to provision services with only a credit card, for amounts that will typically fall below accounting thresholds requiring a signoff, IT departments at large organizations will be challenged if they are not able to provide a similar response time. This new issue is beginning to change the way IT executives view their expanding role to manage and distribute IT services that adheres to existing security and governance policies, in addition to being the traditional custodians of IT assets and infrastructure. With this transition, IT staff will develop new skills in how they provision cloud services and align with business leaders to deliver a new generation of technology.

Traditional Small and Medium Business

Small and medium sized businesses (SMBs) have driven the consumption of cloud services due to the low cost and ease of manageability. Cloud computing will continue to create two important benefits for SMBs:

1. Allow limited funding available for building services to be diverted to the development of new capabilities rather than to capital expenditures and helping to reduce the operational risk of developing a service that has inconsistent profitability
2. Reduces IT support time for staff so that they can contribute to other initiatives within the organization

Adoption of cloud based services will decrease barriers to entry to new customer bases and market segments and creates a strategic advantage being able to invest and focus more on innovation and less on traditional IT costs and asset management.

Independent Software Vendors

ISVs represent a special case making cloud computing critical for the delivery of their software that brings new capabilities and functionality to the market. While security, performance and availability still remain the top concerns for customers, advancements in security technology and increasing levels of service availability will lead customers to strongly consider leveraging software in the cloud instead of building or buying an on-premise solution.

Overall cloud based implementation significantly reduces the business risk for the infrastructure of an ISV's SaaS solutions. Using the cloud as a basis for the service infrastructure will ensure that the costs from the infrastructure exactly match the demand for the service. If the ISV uses a utility pricing model with a standard fee over the infrastructure costs, they can reduce variability in the gross margins of their services.

The Changes to the Roles & Responsibilities of IT in the New Paradigm

As an organization shifts to utilizing more cloud computing so do the roles and responsibilities of the IT department. Most skills while not new to the realm of IT will increase in demand with increasing in cloud computing utilization. With cloud computing as a new paradigm, there are many viewpoints that IT will transform in a dramatic way with entirely new skills, titles and job functions being created. Our perspective is that while there will be the enhancement of existing skills such as vendor service management, contract and SLA negotiation specific to the cloud model, that many skills will stay the same within IT, while a few will diminish in importance. Probably this biggest change will result from cloud computing bringing the business and IT to work more closely together. IT resources will need to better engage with the business, understand their objectives and articulate their joint path forward.

What IT skills are still needed in the long run?

Many of the skills within IT will stay the same as they always have. Depending on your organizations use of the cloud, the makeup of which skills are needed to run your department will change. This makeup of skills will depend on the deployment (public, private, hybrid, or community) and service (IaaS, PaaS, or SaaS) modes used.

Under a scenario where the deployment mode for cloud usage is one of the non-public scenarios (private, community, or hybrid), there will be more emphasis on an organization that is service management focused, which if ITIL v3 or another IT Service Management framework is used may already be present within the organization. Using one of these deployment modes results in an organization that does not change the skill make up as much for any of the service mode scenarios.

Using SaaS

If using SaaS under a Public cloud scenario the most important skill is vendor service management and ability to administer a new application. In this case, the organization is buying a complete service that requires

training to customize aspects of the service such as administering permissions, customizing the user interface and workflows.

Using PaaS

Under a public cloud scenario vendor service management is important, but requires more technically savvy resources familiar with programming fundamentals. When utilizing PaaS for development needs, the business still needs development personnel that are familiar with the programming languages supported by the PaaS vendor. If the applications being developed will be consumed outside of the departments in which they are developed, the business will still need a proper service management structure to support the services built on the PaaS vendor's service.

Using IaaS

IaaS as a service provides the organization with the most control over their IT needs. In the public cloud deployment mode scenario managing the SLAs are important, but doing so requires a technically savvy sourcing manager that has strong IT administration skills. Technical skills required will involve:

- OS and remote administration skills – System administrators will still exist to upkeep the virtual infrastructure (OS build, database schemas, etc.) and application health.
- Service architecture specialists – Individuals that understand cloud computing design best practices will be needed. These individuals will need to know how to build highly available services using the IaaS vendor's full service suite. These specialists will also need to help document the architecture of the services developed.
- Development personnel – Developers familiar with the IaaS vendor's APIs will be needed to help augment new and existing services correctly using guidance from the service architecture specialists.

The services built by the organization's IT groups built on top of the IaaS vendor's infrastructure, will still require the traditional service management structures to support end users when they encounter issues.

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What skill sets are needed during a transition to cloud computing?

The transition to cloud computing requires some skills that the organization may not have internally, and thus might require help with when planning for a transition to cloud based computing. These include the following areas:

- **Governance Strategy & Planning** – As part of the initial process, the organization will need to plan its strategy for ensuring sensitive data is protected, and provisioning request procedures are established. In addition if choosing a community based deployment mode, the organization will require help facilitating discussions with potential communities of interest to assess fit with the business objectives of the organization. Some data may not be allowed in a public cloud by law or regulation, and some data might be allowed but only with appropriate security structure to ensure sufficient protections for the data. Organizations will want to implement new policies for the requisition of cloud based services that originate outside the firewall and make all parties within the organization clear about the rules and use of company data. The goal should be to develop agile processes that provide the organization with basic protection where needed without encumbering the IT provisioning process.
- **Business Process Outsourcing Evaluation and Selection** – The organization will need to assess which areas make sense for outsourcing to a cloud and while this will need to be a regular function that is performed from time to time, the scale of an initial transformation to using cloud computing will require special support in this area. Organizations will also need help locating and evaluating vendors for selection.
- **Organizational Skills Gap Assessment & Strategy** – Based on the governance strategy and outsourcing plan the organization will require help assessing whether sufficient skills exist organically to operate under the new paradigm. For any gaps located the organization will also need to fully understand which areas they should train staff, recruit new staff, and what the new size should be of each IT area.
- **Recruitment and Training Support** – The organization may require help recruiting or training staff in the new areas.

- **Private Cloud Architecture & Design** – If the organization is planning to make use of any non-public cloud based deployment modes, they may require special one-time support to establish a proper technical architecture for their cloud based platforms.

What skill sets will decrease with adoption of cloud computing?

Use of cloud computing will reduce staffing requirements in many areas that support physical infrastructure. While those using non-public deployment modes will not see as significant of a change there should be adjustments regardless of deployment mode. Some of the areas that see reductions in demand are:

- Physical equipment maintenance (replacing failed drives, upgrades to infrastructure, etc.)
- Server & Datacenter layout/design
- Facilities planning (Power design, HVAC design, etc.)

Conclusion

Cloud computing has great potential for organizations if employed correctly. After reading this education piece you may be asking yourself:

- Which cloud offerings provide the most business value given my current business strategy and IT investments?
- How do I know if my organization is ready a transition to the cloud and far down the path do I go based on our readiness and needs?
- What are the changes to the roles & responsibilities in my organization?
- Should I use public cloud services, construct my own cloud, join a community cloud or a hybrid cloud environment?
- How should I deal with security of my assets and data? Will I need new policies to protect them?

Our next paper will address how to answer these questions and provides additional perspective to our approach for navigating an organization through the process and identify the optimal path for a business moving into the cloud. Kenny & Company strongly believes that not every service needs to migrate to the cloud and not every business needs to focus making every dimension of their cloud strategy best in class. Our primary focus is to help organizations gain business value through the cloud and gain incremental value as they mature to the next level of cloud sophistication in the areas of strategy, operations and technology.

About the Author



Brent Weigel is a Manager with Kenny & Company. He leads and supports the defining, analysis, planning, implementation and overall execution of client engagements. In addition, Brent provides thought leadership and leads the development of the Cloud Computing Strategy & Consulting Services offering for Kenny & Company. Brent has more than 13 years experience in IT Consulting, software, startups and manufacturing with Booz Allen Hamilton, Standard Register and Stage Logic. He has a BS in Electrical Engineering with Computer Science Minor and a MS in Engineering Management from Rose-Hulman Institute of Technology along with a variety of certifications in areas such as Six Sigma, ITIL v3, and Microsoft technologies.

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Notes:

- Software & Information Industry Association. "Software as a Service: Strategic Backgrounder". Feb 2001, Page 4.
- Kundra, Vivek. "Federal Cloud Computing Strategy". February 8, 2011, Page 5.
- IBM. "Capturing the Potential of Cloud". September 16, 2010. Page 1.
- AWS: Anderson, Jake. "The Economics of the AWS Cloud vs. Owned IT Infrastructure". December 8, 2009.
- CA. "Cloud Solutions for the Enterprise White Paper". May 13, 2010.
- CA. "Opportunities for the Cloud in the Enterprise". January 14, 2010.
- CA. "With a Push from Cloud Computing, IT Shifts toward Supply Chain Model". January 19, 2011.
- Cloud Connect. "Charting the Course of On-Demand Computing". November 2009.
- Cisco. "Cloud Enablement Services" White Paper. June 25, 2010.
- Cisco. "Cloud Enablement Services, Service Provider" White Paper. May 20, 2010.
- Encyclopedia of Information Technology. Atlantic Publishers & Distributors.
- Factor, Alexander. "Analyzing Application Service Providers". Prentice Hall, October 01, 2001.
- IBM. "Business Strategy for Cloud Providers". September 29, 2009. Page 4.
- IDC. "ASPs Are for Real... But What's Right for You" White Paper. 1999.
- Software & Information Industry Association. "Software as a Service: Strategic Backgrounder". Feb 2001.
- Wikipedia: Cloud Computing, SaaS, Application Service Provider, John McCarthy.

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