

Bringing the Cloud into Focus

*A Whitepaper by CMIT Solutions and
Cadence Management Advisors*



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INTRODUCTION - WHAT IS “THE CLOUD”

Even casual observers of the technology sphere know that “The Cloud” is everywhere. But with nearly every major player in the software and hardware sectors hastily beating a path skyward, it’s easy for the details to get lost in the hype. Fortunately, the cloud isn’t as complicated as one might imagine. In fact, you’ve probably already used the cloud, though perhaps without realizing it. Ever uploaded a video to YouTube or shared a Flickr album online? Then you’ve already experienced the power of the cloud.

What sets cloud computing apart from basic online sharing is that you’re using not only the cloud’s storage capacity, but also running applications and using the cloud’s processing abilities. When you uploaded that video to YouTube, you didn’t just stick it on a publically accessible server. You used YouTube’s servers to convert the video into a format that YouTube supports (in this case, Flash). This processing ability is one of the cloud’s “killer apps.” Since the video processing happens in the cloud, you don’t need to convert the video in your camera or copy it to your local computer for conversion before uploading it. You merely upload it to the cloud directly from a device that otherwise doesn’t possess the capabilities to convert a video. And you can do so from anywhere you have an Internet connection.

Cloud computing is not just a technology, IT methodology, or a science. It’s a new model for how people get work done and how they access information. Cloud Computing is on-demand, scalable, metered, multi-tenant, pay-per-use, cost-effective, and efficient. It provides access to data, software applications, and computer processing power through a ‘cloud,’ which is a group of online, on-demand resources. Tasks are assigned to a combination of connections, software, and services accessed over a network. This network of servers and connections is collectively known as “the cloud.”

Cloud computing represents an expected evolution in how computing gets done. As social tendencies, business requirements, and technology improvements (both in functionality and price) come together, moving computing to a centralized model with universal access makes sense. Phone companies did this many years ago by moving telecom intelligence to their version of the hosted data center, known as Colocation or “COLO”. Today’s smart phones and tablets are thin clients capable of accessing a myriad of applications, content and computing power. As technologies and business processes mature, they naturally move toward more efficient and effective models. This occurs across other industries outside of IT.



THE CLOUD'S BENEFITS:

Reduced Cost -

Cloud technology is paid incrementally, minimizing initial capital outlay

Increased Storage -

Organizations can store more data efficiently than on private computer systems since they only pay for what they use

Highly Automated -

No longer do IT personnel need to worry about keeping software up to date

Flexibility -

Cloud computing offers much more flexibility in configuration, access, and administration than past computing methods.

More Mobility -

Employees can access information wherever they are, rather than having to remain at their desks.

Allows IT to Shift Focus -

No longer having to worry about constant server updates and other computing issues, IT can now become a tool to help the business compete better.

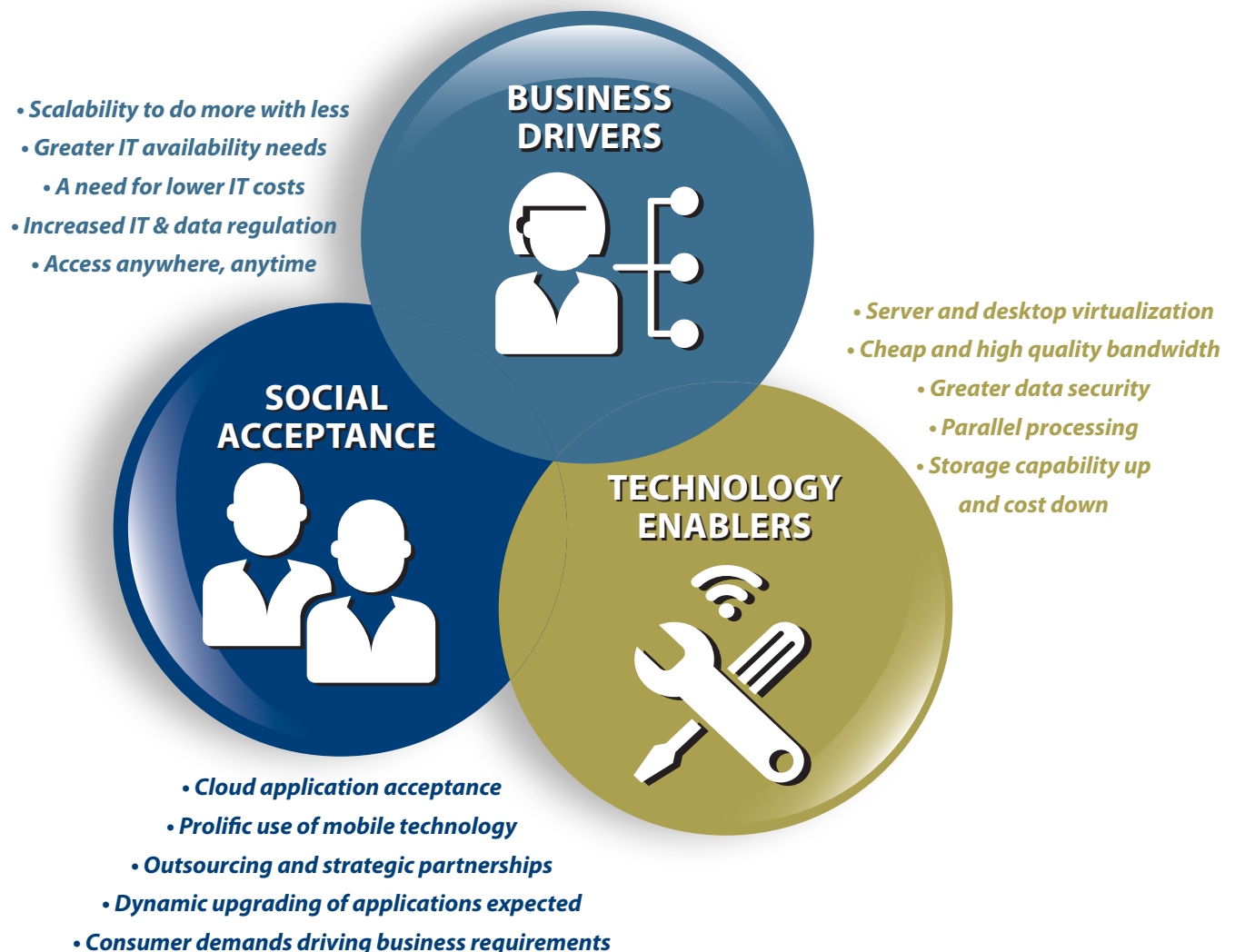


THE PERFECT STORM

If we assume that cloud computing is disruptive in that it dramatically alters how computing gets done, then it's important to consider what characteristics must be in place for disruptive technology to take hold. All 3 of these characteristics are in place today.

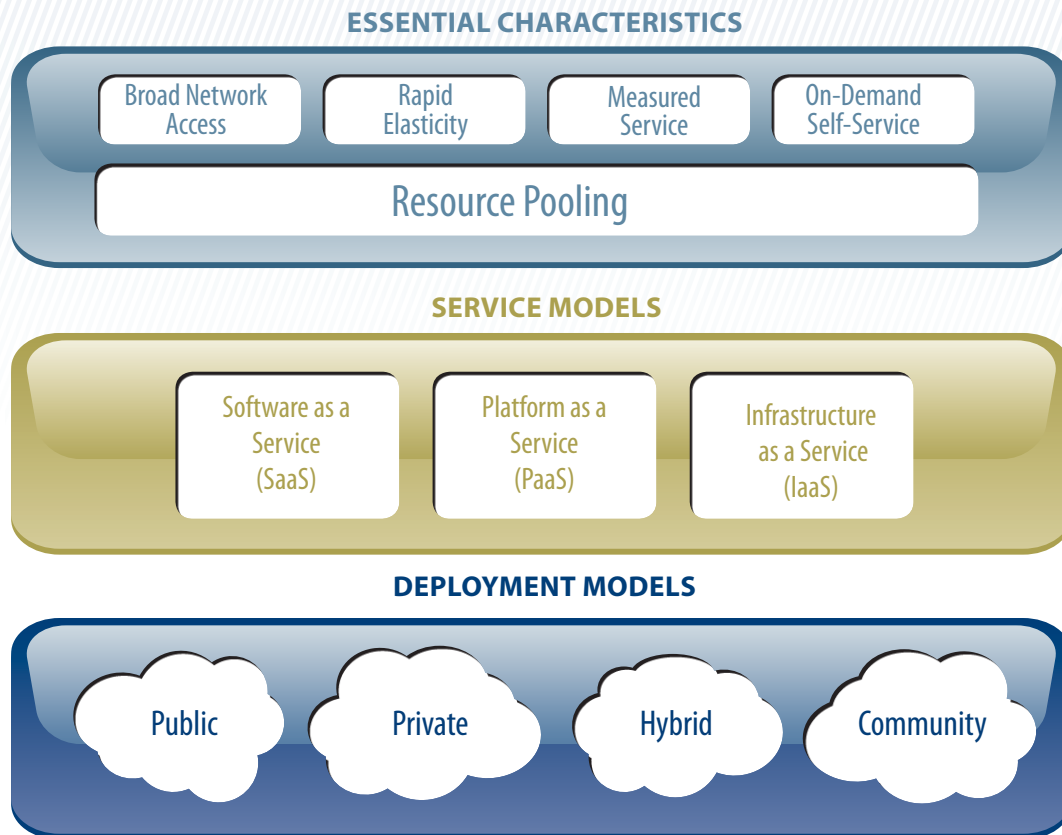
1. A business need that drives the use of the technology.
2. Availability of supporting or enabling technologies that are proven individually and cost effective.
3. Social acceptance, which drives mainstream acceptance.

While each factor on its own is interesting, putting them together drives mass acceptance.



Cloud service delivery is divided among three fundamental classifications referred as the “SPI Model,”

- SaaS – Software as a Service - Examples include Google Docs, Zoho Docs
- PaaS – Platform as a Service – Example – Google App Engine
- IaaS – Infrastructure as a Service – Examples include Amazon EC2, S3



There are four deployment models for cloud services regardless of the service model utilized (SPI).

Public clouds refer to shared cloud services that are made available to a broad base of users. Although many organizations use public clouds for private business benefit, they don't control how those cloud services are operated, accessed or secured.

Popular examples of public clouds include Amazon EC2, Google Apps and Salesforce.com.

Private cloud describes an IT infrastructure in which a shared pool of computing resources—servers, networks, storage, applications and software services—can be rapidly provisioned, dynamically allocated and operated for the benefit of a single organization.

Hybrid Cloud represents composition of two or more cloud deployment models (private, community, or public) that remain unique but are bound together by uniform or proprietary technology that enables data and application portability.

Community Cloud represents infrastructure as shared by several organizations and supports a specific community that has shared concerns. E.g. FDA compliance needs specific controls where audit requirements can't be met by other deployment models.

Cloud computing brings efficiencies and savings. The diverse benefits of cloud computing are undoubtedly worth pursuing. Cost-cutting is at the top of most companies' lists of priorities in these challenging economic times. By only paying for the resources used, operating costs can be reduced. After all, in-house data centers typically leave 75%-80% of available capacity idle. Cloud computing can lead to energy savings for individual companies too by removing the costly burden of running a data center plus generator back-up and uninterruptible power supplies, thereby resulting in reduction of CAPEX & OPEX.

INFORMATION SECURITY

For all the benefits of Cloud Computing the nature of the fundamental technology raises issues for consideration in the areas of data and information security. Some things to consider:

1. Privileged user access. Sensitive data processed outside the enterprise brings with it an inherent level of risk, because outsourced services bypass the “physical, logical and personnel controls” IT shops exert over in-house programs
2. Regulatory compliance. Customers are ultimately responsible for the security and integrity of their own data, even when it is held by a service provider. Traditional service providers are subjected to external audits and security certifications.
3. Data location. When you use the cloud, you probably won’t know exactly where your data is hosted. What’s important is to understand how secure your data really is and the steps your provider is using to assure it remains secure.
4. Data segregation. Data in the cloud is typically in a shared environment alongside data from other customers. Encryption is effective but isn’t a cure-all.
5. Recovery. Even if you don’t know where your data is, a cloud provider should tell you what will happen to your data and service in case of a disaster. “Any offering that does not replicate the data and application infrastructure across multiple sites is vulnerable to a total failure.”
6. Long-term viability. Partner with a service provider for whom cloud computing is a core competency and an aspect of a more complete managed service offering. Effective Managed Service Providers (MSP) realize that cloud computing is just a piece of an overall IT strategy. This IT strategy should be co-developed with your MSP and align to your business goals which highlight the security requirements you have for your data, customer’s data, access, and availability. Only when this occurs will you be more certain that the cloud technology recommendations are the right ones that benefit your overall business plans as well as your IT security needs.



COSTS CAN BE DECEIVING!

Cloud computing offers fundamental financial advantages—some obvious, others not. The cost of mass-centralized computing and storage has advantages over smaller, less-efficient data centers. Add this to an environment where you move towards a model where you only pay for the processing you use, the storage you need, and the applications you utilize, and the cost advantages rise significantly. Keep in mind that there are other aspects you need to consider that factor into the overall price. Increased requirements around security, network connectivity, redundancy, and remote secure access and can add costs in areas that are insignificant today. Thus, it's important to look at all the factors and costs in addition to understanding the educational and productivity impacts on employees. Smart companies consider direct and indirect costs in deciding how to implement cloud computing over a reasonable (1 to 3) year period of time.

WHAT BENEFITS DOES CLOUD COMPUTING OFFER TO SMALL BUSINESSES?

- Allows more focus on core business
- Cloud computing is particularly valuable to small and medium businesses where effective and affordable IT tools are critical to helping them become more productive without spending lots of money on in-house resources and technical equipment.
- Overall IT cost savings
- Remote access
- Ease of availability
- Real-time collaboration capabilities
- Gain access to latest technologies and models previously out of the range of most SMB's IT budgets
- Leverage significantly more processing power to do things that traditional productivity applications cannot do. For instance, users can instantly search over 25 GB worth of e-mail online, which is nearly impossible to do on a desktop.
- To take another example from Google each document created through Google Apps is easily turned into a living information source, capable of pulling the latest data from external applications, databases and the Web. This revolutionizes processes as simple as creating a Google spreadsheet to compare stock prices from vendors over time, because the cells can be populated and updated as the prices change in real time.
- With mass adoption Cloud computing will dramatically lower the average cost of computing for both processing and storage.

Cloud computing helps small businesses avoid capital expenditures on hardware, software and other services because you only pay the provider for what you use. Billing is typically based on consumption similar to utility services or on a subscription basis. Sharing infrastructure costs across the cloud with other users further minimizes expenditures.



TRUSTED ADVISOR

The question is not about whether cloud computing is right or wrong for you. We already access many cloud based applications, services, and data today, both as businesses and consumers. The real question is, how does cloud computing give your business the competitive edge your business needs to achieve success today and tomorrow? A trusted IT advisor will help you develop a strategy that encompasses current and future requirements tied to business goals with a keen eye on what technologies are available today and expected tomorrow.

You have options for getting expert advice and support. One is to attempt to figure this all out on your own. While this was a viable option when your IT was within your four walls, the added complexity and risk associated with cloud computing takes your requirements to a new level. You can reach out and partner with hosting companies and cloud providers directly. While this might make sense for larger enterprises that carry more clout, for small businesses this can be tough.

Ideally you should find a Managed Service Provider that can assist you in not only determining what your cloud computing strategy should be, but who also understands your business and how you can leverage IT to boost your competitive edge. This results in a plan that is both strategic and tactical while looking at both today's needs and tomorrow's challenges. Look for MSPs that treat cloud computing as an element of a larger IT strategy and, as a result, will partner with the best providers by category of service and deliver the integration and oversight that can only be provided by a service provider with your business objectives in mind.

