

Effectively Navigating the Cloud



A CloudABLE Series Whitepaper from Virtual RIA Services

Peter Giza – CTO
RedBlack Software
Spitbrook
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Introduction

This paper was initially designed to be a brief whitepaper to address the basic needs of financial firms looking to leverage the cloud. The document has grown into a little more than a brief, however it is our hope that it will provide some more detail to help assist decisions made in a basis of strong understanding. We hope you find it a useful addition to your decision making arsenal.

Effectively Navigating the Cloud

Sight is the aircraft pilots' most important physical sense. A cloud, defined as large floating mass of miniscule particles of ice, water and dust, can greatly inhibit the pilots' sight.

Clouds come in various types, vary in characteristics and can present dangers. However clouds are a highly valuable resource. The savvy pilot can use a cloud mass to his advantage. Clouds report weather conditions and in certain combat conditions, can be used as a tool for stealth or a place of respite from the enemy.

Like physical clouds, cloud computing has its' types, is varied in characteristics, can present certain dangers and can be an invaluable watershed for your business. As is true with piloting an aircraft, navigating in the "cloud" is important to the success.

Wikipedia defines [Cloud computing](#) as "[Internet](#)-based [computing](#), whereby shared resources, software and information are provided to computers and other devices on-demand, like a public utility."

The concept of cloud computing is not new. Recall the days of dumb terminals and timeshare computing provided by service bureaus such as AT&T, EDS, IBM Global Services, etc. These providers presented ala carte services within their own cloud of datacenters connected via a private network. What makes cloud computing so different today is the advanced worldwide communications network making seemingly innumerable resources available to anyone via the public Internet.

As the pilot of your firm, we hope to impart knowledge that will enable you to create a successful cloud computing navigation plan.

Types

As pilot, one of the first things you need is the ability to identify different types of clouds such as cumulus, stratus, etc. A next step is to understand what conditions come with each type, thereby enabling you to navigate in, around or through them as necessary.

Cloud computing has a variety of provider types; from Infrastructure as a Service (IaaS) to Software as a Service (SaaS) to fully Managed Service Providers (MSP).

IaaS. Service provider giants, Amazon, Google and Microsoft, are good

"with any utility, you are on your own to build your navigation plan"

"Virtual desktops are one of the hottest growing areas in cloud computing"

examples of infrastructure on-demand. If your need is raw CPU, disk and database storage, they will provide you the utility. However, like any utility, they only deliver the power; you are on your own to build the rest. Thus it is important to know what the needs are to build your navigation plan. With the utility approach there are no charts, no maps, and no real help to get you to your goal.

VDI. Virtual desktop infrastructure (VDI) providers pick up where the IaaS providers leave off. These experts will build a standardized operating environment tailored to your business needs. For example; suppose you wish to provide a standardized Windows 7 environment for 40 employees with Office 2007, CRM, portfolio management, rebalancing and trade order management applications.

The IT management overhead is potentially costly for 40 desktops as configured. You may require a high level of control, but you don't want to own the infrastructure. A virtual desktop provider could provide you with the control you want without the capital expense. Virtual desktops move CAP/EX into OP/EX (operational expense) with relative simplicity.

“key difference between a SaaS provider and a MSP is service level and control”

You still need to build the navigation plan, but this is as close to autopilot you get while still having some level of control and customization capability. Virtual desktops are one of the hottest growing areas in cloud computing. They provide near immediate ROI and competitive advantage. You are still in control to navigate as you wish using your own methods.

MSP. If application control is less of an issue, then perhaps a Managed Services Provider may be the right choice. The MSP controls most if not all parameters to meet your desired operational goals. This includes running the application(s) for which the service was chosen.

The MSP is bound tightly by a service level agreement (SLA) to insure delivery as prescribed. This SLA is usually quite limited in variability unless a significant uplift in fees is negotiated. This is due in part to the liability the MSP is assuming for the contracting client.

An MSP that supplies portfolio management services would execute every task from maintaining the application to providing portfolio reports to the contracting firm and publishing for the firm's clients. This is similar to the Total Asset Management Platforms (TAMP) so prevalent in the financial services industry.

“The MSP... may not be as flexible or sensitive to your business goals”

Services could be extended to provide other services such as asset management in conjunction with a third party provider. The MSP becomes the “black box” delivery mechanism for the client's key business operations.

MSPs may use shared resources depending on the process and the contracting client. In some cases a clients' environment is segregated on dedicated hardware.

The MSP provides you with a detailed navigation plan, but it may not be as flexible or sensitive to your business goals.

SaaS. If a bit more control is required then using a Software as a Service (SaaS) provider may be the right choice. Generally speaking, SaaS provides access to a shared software resource whereby you maintain control over many of the application operating parameters to produce a desired result.

SaaS providers are also governed by a service level agreement (SLA) but are usually easier to negotiate with. SaaS providers typically leverage their hardware and software infrastructure in order to build economies of scale. This includes sharing of data storage resources such as databases. This multi-tenant environment may not be desirable for certain applications that require a Chinese wall for compliance considerations.

“Virtual desktops are one of the hottest growing areas in cloud computing”

SaaS provides you with a reasonably detailed navigation plan that may be more flexible but may still lack sensitivity to your business objectives

More about Multi-Tenancy

All cloud computing environments depend on certain levels of multi-tenancy. Such is the common rule for nearly all Internet services from banking to search engines. However there are things you should carefully consider

Shared Data and File Storage. Storing data such as files on a shared disk resource has its obvious issues. However, with today's storage technologies it is relatively easy to insure complete segregation of highly sensitive data from unscrupulous parties.

Brocade, EMC, HP, IBM and others have spent billions of dollars to create storage systems that meet stringent corporate, medical and military specifications for compliance and secrecy.

Shared Databases. Databases can and do make use of shared file storage, however this is where the similarity to data storage ends. A multi-tenant database engine means that many tenants (businesses) share a common database infrastructure and core application architecture.

For example in using our previous portfolio management environment consider this. In a local IT environment all of the portfolio data is located in a local database instance strictly viewable and owned by the firm. In an MSP that data will likely be on a separate database instance still completely separate from any other firm's data. However, in a

typical SaaS platform many client's data will be held in the same database instance. The only segregation may be as simple as custodian ID or as complex as record level encryption. Knowing which of these is the case is a very important factor. Most TAMPs use this paradigm to gain economies of scale.

Integration. Integration means many things to many people. For one integration may mean being able to use a single sign-on mechanism, for another access to multiple applications under one umbrella application and still to another data integration between several disparate yet best-of-breed applications.

SaaS providers many times use integration as leverage claiming to highly integrated with other applications and vendors. SaaS wouldn't be SaaS without a high level of integration between SaaS-local applications. What this means is that applications the SaaS uses must by definition be integrated. However, this does not guarantee that the integration is with the best chosen applications for your business.

“Integration is a major consideration if there impact to your workflows”

Integration is a major consideration if there is impact to your workflows. Using integration as the primary method of measuring any platform may lead to disappointment. How so? If the service provider cannot or will not integrate with existing partners or locally deployed software, this could lead to great expense and unnecessary project delays and cost.

Characteristics

Understanding the characteristics of various cloud types is of utmost importance as pilot. A mistake in identification could spell disaster.

Cloud computing is highly touted as a low-cost, highly secure and ubiquitous solution. Ubiquity is undeniable with new services and service providers appearing each day. The perceived costs may be cheap, but the reality will depend much on you, your needs and IT capabilities.

As mentioned earlier it is important to differentiate what type of service you need and what is right for your business. If you need utility computing and have adequate IT resources then an infrastructure provider may be the right choice for you. If it is your desire to turn over most or all of the IT management, then perhaps a SaaS or a MSP is a better choice for you.

The old saying is true, “a chain is only as strong as its' weakest link.” If you plan on using one or more cloud providers as part of your business process chain, know your weakest link. For example; if you engage three cloud providers that will be sharing data, you must characterize the data security between each provider.

A good navigation plan outlines the cost of taking certain actions based upon a deep knowledge base. Creating a viable cloud computing navigation plan requires that you clearly understand the characteristics associated with each type of service model and apply them to your plan.

Dangers

For the new pilot, his first experience navigating in heavy cloud cover can be physically nauseating. Hidden dangers such as ice, birds, wind shear, lightning and other aircraft can have a devastating effect on the pilot. Armed with knowledge about cloud variety and characteristics, the pilot can now assess the potential likely dangers.

The same is true with cloud computing. A great deal of danger can be avoided by using your knowledge about cloud computing types and characteristics.

“multiple vendors can mean multiple headaches when things go wrong”

Hidden costs can be tremendously destructive in any IT project. Many of these costs can be avoided through use of knowledge and proper questioning during evaluation of a solution. Working with several providers requires that you understand all the touch points. You may be injecting a significant amount of unperceived complexity into your business process without even knowing it. Multiple providers can mean multiple headaches when things go wrong.

Security and complexity go hand-in-hand. Security by obscurity is as good as no security. If your relationship with your providers is significantly complex, then the margin for security management issues increases significantly. It is worth restating that understanding data flows and the way each provider manages security is of utmost importance. Going with the assumption that a service provider has better security than you, while likely true, will provide no consolation when proved wrong.

Additionally “cooptation” amongst providers can turn into a virtual finger pointing match. Gone is the one-throat-to-choke service model. Now you must deal with multiple vendors, each with their own service and support models. Alongside security issues, inadequate or poor support can ruin the best of technology deployments.

Finally, the belief that the cloud is a panacea for all that ails IT is a dangerous concept. While the cloud can reduce internal overhead and complexity, it can easily do the opposite if not deployed with understanding of what fits where. Cloud computing is not a “one size fits all” solution.

The main purpose of building a sound navigation plan is to insure your success. Understanding the potential dangers of navigating in and amongst the clouds and having a good plan will help insure your success.

Value

By now you have come to realize the value of a solid navigation plan. Ok, so we have a plan, now what? What is the value of cloud computing to my business? What can it do for me? And what can it not do?

Looking back on what you have learned it is plain to see that cloud computing is not a “one size fits all” product. The types of services used will depend much on you and your business model and capabilities. Knowledge and understanding are key to creating value when using cloud computing resources.

Value is measured in results. At a minimum you are responsible for managing the basic hardware and the operating system for each computer desktop in your firm. Regardless of the cloud computing and/or outsourcing services you deploy, it is unlikely your minimal desktop management will diminish. So what are you really buying? What is the value? Where is the savings?

“differentiate reality from buzz, true value from perceived value”

Where’s the potential value in the cloud?

1. Geographically diverse disaster recovery
 - a. Geographical diversity greatly reduces the chance of a non-recoverable event
2. Greater security
 - a. Commercial data centers will under most circumstances have a better chance of surviving a breach than your servers
 - b. Better operating system and application patch and update management
3. Customized virtual application services (virtual desktop and servers)
 - a. A virtual service provider who understands your vertical market can provide a highly valuable, highly flexible service at a reasonable cost and at a reduced complexity
 - b. Virtual desktops will always be available and up to date. Disaster recovery is typically 15 minutes for a standard Windows and Office environment
4. On-demand services
 - a. Commodity services such as CRM can be turned up in short order
 - b. Access to an innumerable amount of services

Analyze

It is important to sit back and analyze whether or not you and your firm are the right candidates for a cloud solution. Ask yourself important questions like; Am I willing to give up control? If yes, how much am I willing to give up? What will it cost me to deploy a cloud solution? How committed am I to it? Do I have the knowledge and

understanding to be successful? If not am I willing to hire the consulting resources required to do so? And how will I measure ROI?

It is easy for us to get caught up in the buzz, but it is important to differentiate reality from buzz, and true value from perceived value.

Navigate

The weather report states “cloudy with a chance of computing” so arm yourself with education. Investigate, question and challenge prospective providers. Talk to other firms, consult with IT professionals. Analyze if and where cloud computing fits in your business model. Then build a solid navigation plan that will insure your success.

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