Sunny Days with Cloud Computing

By Dan Kusnetzky, Principal Analyst
Sponsored by Stoneware, Inc.

INTRODUCTION

We're all hearing quite a bit of media chatter about "cloud computing." Sometimes suppliers may use other terms such as "Mesh computing" or "Elastic Cloud Computing." All of these terms really boil down to an old idea being implemented using new technology — advanced networking technology combined with sophisticated virtualization technology. In the past, suppliers used terms such as "service bureaus" or "application service providers" to put forward the idea that applications be rewritten using new tools and then have them hosted somewhere on the Internet or in the organization's own datacenter. Other times, the real story is just making all of an organization's new applications Web-based so that it no long matters where the application is running or what type of client system is being used to access it.

Some of the strongest and loudest proponents of this approach are suppliers of hosting services and software for development and deployment that are hoping to sell products and services to organizations worldwide. Their throw-everything-away-and-start-over-with-our-products approach promises lower costs, higher levels of reliability and availability and often doesn't mention that this idea has been tried again and again in the history of computing only to have organizations take back some or all of their processing due to concerns about security, privacy, performance or cost.

Organizations are clearly moving in this direction one application at a time on their own as new applications are developed. They're choosing to support Web-based user interfaces rather than using custom or proprietary client software. They're just looking for ways to integrate the concept of cloud computing into their IT infrastructure, when and where it fits, not allow some supplier to insist that they change what they're doing to fit into their infrastructure. In the end, organizations are going to "own" their own cloud even of portions or, perhaps, all of it are hosted on external systems.

While "Cloud Computing" is the newest catch phrase, it's important to remember that organizations are deliberately adopting more general, lower cost, highly interoperable technologies that make it possible for them to choose to use external services or systems.

This paper is presents the following topics:

- The different roles suppliers and customers play
- The "Golden Rules" customer's IT organizations typically follow
- A review of what "cloud computing" is and how some suppliers are expecting organizations to ignore the golden rules
- Highlight an approach to take advantage of the best that "Cloud", "Mesh", or "Elastic Cloud" computing offers while still not abandoning the investment in other approaches and technology.

DIFFERENT ROLES

Suppliers of IT technology and the consumers of that technology play different roles and are driven by different needs. This often results in the announcement of new technological approaches long before some organizations are ready to adopt that technology. After all, that new technology may not meet the current needs of an organization.

THE ROLE PLAYED BY SUPPLIERS

Suppliers develop new technology (systems and software) and methods while they maintain current technology and methods. Their goal is to keep customers satisfied with how the technology supports the needs of the organization up until it is time to convince them that the technology that's supporting their business is now obsolete and could not possibly do what's needed to take them into the future.

Suppliers hope to find a way to keep the customer paying for upgrades, hosting services, consulting and technical support. They also hope to convince the IT decision-makers that only ***their*** products can solve today's problems when the truth is more along the lines that many products can do what is needed.

Accomplishing these goals are, of course, quite difficult when the current technology is "good enough" and may be working quite well. The suppliers do their best to cast established systems as "legacy systems" and speak about them as if they were a problem rather than today's solution to today's problems.

THE ROLE A CUSTOMER'S IT ORGANIZATION PLAYS

IT organizations are typically focused on maintaining and extending the status quo. IT executives always face a great deal of pressure from customers, staff, partners, and now, regulatory organizations to keep their applications available at all times. The imperative they face is that their systems must always perform.

These executives know that if their application systems become unavailable, the organization is likely to lose revenues, customers and, in some cases, face penalties and fines. This causes them to adopt the "guarding the henhouse" state of mind rather than the "let's try something new for the fun of it" state of mind.

They know that customers often won't wait. If customers can't order the desired products or services, they'll just hop down the 'net searching for other suppliers. They also know that staff members and partners face tremendous pressure to be highly productive, highly efficient and highly effective. IT executives view application failure as simply unacceptable. Furthermore, IT executives know that regulatory organizations have no patience for late or inaccurate reports. Telling them that "the dog ate that report" just doesn't cut it.

IT decision-makers have historically faced the challenge of making what the IT organization does match the ever changing list of requirements presented by end users and customers.

They know that it often takes 18 months to design and implement IT-based solutions and bring them into production. During that time, the competitive market, what's available in terms of system technology and government regulations have changed. This can make the solution they're just putting into production obsolete before it is even deployed. This means that IT systems must be developed, tested and deployed with a level of efficiency that has not previously been seen. So, IT executives respond by adopting an "incremental approach" rather than routinely rebuilding application systems.

The focus on "incremental improvement" has typically resulted in a complex computing environment that is made up of a number of application systems, that include both desktop and datacenter components. The datacenter components may be running on a Mainframe, a midrange system or an industry standard system running Windows, Linux or UNIX.

Although seldom written down, most IT executives have learned the “Golden Rules of IT” while working their way up the ranks in the IT world. They live by them in spite of pressures from suppliers to “throw everything out and start over using our newest, most wonderful technology.” Some suppliers seem to ignore these rules and expect organizations to fit into the supplier’s world rather than fitting into the customer’s world. It would be very wise of suppliers to come to understand these rules and the fact that they really must integrate into their customers’ environment rather than insisting that their customers drop what they’re doing now to integrate into the supplier’s environment

GOLDEN RULES OF IT

Because IT executives are responsible for maintaining and enhancing the organization's IT infrastructure they tend to be very conservative and resist change. They often live by the following, tongue-in-cheek, Golden Rules:

1) **If it's not broken, don't fix it.** Most organizations simply don't have the time, the resources or the funds to re-implement things that are currently working.

2) **Don't touch it, you'll break it.** Most organizations of any size are using a complex mix of systems that were developed over several decades. Changing working systems that are based upon older technologies, older architectures and older methodologies has to be done very carefully if the intended results and only the intended results are to be achieved.

3) **If you touched it and it broke, it will take longer to fix and, in all likelihood, cost more than you think to fix.** Most of today's systems are a complex mix of technology. If your organization is going to be updating part of that tower of software, be prepared for unexpected consequences and see Rule #2.

4) **Good enough is good enough.** Although it would be nice to have the luxury of unlimited amounts of time, resources and funding and be able to develop every conceivable feature, most IT executives know that they are only going to be allowed the time, the resources and the funding to satisfy roughly 80% of requests for new capabilities.

5) **Don't make major changes unless people are screaming!** If they're not screaming, see Rule #4, good enough is good enough. If they are merely asking for changes, see Rule #2, don't touch it, you'll break it, and Rule #3, if you touched it and broke it, it will take longer to fix than you think. If they begin screaming, you'll have to do something to respond, just touch things as lightly as possible.

6) **Embrace your "Jerk-dom."** We all know that we have to move forward and help our organization be as efficient and successful as possible. In short we must do the best we can with the resources, the time and the funding available and accept the fact that years from now someone will look at what was done and come to the conclusion (based upon what they know then) that what was done was insufficient in some way or didn't properly forecast future events and requirements.

Adopting “cloud computing” is really no different. It's important to know where the organization is (from a technology standpoint) and where it wants to go before taking on major changes. In the end, it's far better to take the time to envision a comprehensive architecture that includes the capabilities of today's technology and makes allowances for the appearance of new technology before leaping headlong into an implementation process. What's interesting is that organizations have been moving towards a Web-based application environment for quite some time hoping to realize savings in areas such as development, operations, administration, training and cost of client-side systems.

CLOUD/MESH COMPUTING

Cloud computing is a new catch phrase or buzzword for an approach to simplifying an organization's IT environment through the use of virtualization and web technologies. This concept sometime includes moving from a complex array of different hardware and software systems to industry standard systems. Other times, it simply means treating local and remote systems like a "cloud" of computing resources that can be allocated when needed.

The suppliers of products and tools to create these "clouds" are working to convince IT decision makers that they really should be concerned only with the services the "cloud" performs, how reliable and cost effective the "cloud" is. Furthermore, they tell these IT decision makers that it really isn't important to know where the computing is happening, what type of systems are hosting the computing, who else has access to these systems and who is actually operating and administrating these systems.

IT executives, on the other hand, are always concerned with performance, security, privacy, meeting service level objectives and responding to an ever-changing regulatory environment. They like the concepts represented by cloud computing and are already making strides down the path towards platform independence.

WHERE IS THE CLOUD?

When "the cloud" is mentioned it usually means some unidentifiable place on the Internet rather than any specific datacenter. While similar to the idea of "utility computing" or "software as a service," there are some differences. An organization might be expected to purchase access to entire systems or even entire datacenters on a "pay as you go" basis.

The cloud may also be housed in the organization's own datacenter but, made up of systems operated and administered either by their own staff or the staff of another organization. This is the place most organizations have started.

The transition to using only this approach may take decades or may not happen at all depending on the organization's own needs. "Cloud computing" will incrementally be adopted as needed.

WHAT TYPES OF APPLICATIONS ARE LIKELY TO MOVE TO THE CLOUD FIRST?

Application systems that are independent of business and mission critical applications are likely to move "into the cloud" first. A list would include applications such as personal productivity (word processing, spreadsheets and presentation systems), group collaboration (calendar management, electronic mail, task or project management, shared electronic files, etc.).

WHO IS OFFERING THIS?

Since this idea is getting so much of the media's attention at the moment, the supplier list is growing all of the time and reads like the who's who of IT suppliers. At this point, the following products have been launched.

- Internet companies
  - Google Cloud Computing
  - Amazon Elastic Compute Cloud (ECC)
- Hosting companies
- Software suppliers
  - Microsoft Mesh
  - Oracle

- System suppliers
  - HP
  - IBM

These suppliers present Cloud Computing as a panacea but is it really? Is it really new or is it just part of the progression from proprietary client agents to Web-based access mechanisms?

CONCERNS STILL EXIST

Business and mission critical applications are unlikely to be moved into an external cloud for quite some time. They may, on the other hand, move into an internal cloud so that business units can access them using any Web-based client system. Before organizations would move things into an external cloud IT executives must be convinced that the idea has proven itself. It is clear that the following issues have to be resolved before organizations will move forward towards hosting everything in an external cloud:

- **Security** — who is allowed to see the organization's proprietary data
- **Performance** — will the application systems really perform up to expectations during peak processing times? It is possible to tell one's own IT people to push everything aside to make sure one critical function completes on time. It's not at all clear the organization could do the same thing when a "cloud" is being utilized.
- **Ownership of the data** — does the owner of the "cloud" own the data on the systems?
- **Reliability** — an organization can deploy as many datacenters and redundant systems as necessary to achieve up times needed. Will the "cloud" company do the same thing?
- **Compliance** — increasingly public companies and companies in both financial services and health care face stringent regulations that require that they be able to prove who had access to data, where and when it was processed and what software and hardware was in place when that data was processed. It is difficult enough to do this in one's own datacenters, doing it in the cloud may be impossible for quite a while.

What's far more likely is that organizations will use tools to present a Web-based access mechanism to these important applications, leave established applications where they are and create an internal cloud-like view of their own resources. They might consider moving some workloads out into an external cloud once there is a critical need to take that step. These organizations are doing their best to finding the proper tools to create their own internal clouds before going further down that path.

STONEWARE'S APPROACH

There are approaches that can make it possible to support today's desktop and server applications while making future cloud-based applications supportable as well. The key is access.

Stoneware's webOS is just such an approach. webOS is a web desktop virtualization solution that understands the growing role of web technologies, such as cloud computing, in an organization's IT strategy. Stoneware's webOS goes beyond delivering just another virtualized Windows desktop. It is designed to integrate the rapidly growing number of Web, Windows, and hosted (Software as a Service, cloud computing and the like) applications that are being deployed each day

This is different from an access virtualization solution, such as those offered by Microsoft (terminal services) or Citrix (XenApp, formally known as presentation

services). webOS is based upon Web protocols and asynchronous JavaScript and XML, known as AJAX technology. It is designed to give an organization's remote and mobile workforce access to a virtual web desktop whether they are in the office, working from home, out on the road, or in an offsite location.

Combined with webNetwork technology, Stoneware's webOS is a powerful tool that could make the adoption of cloud computing easier and more productive.

When one considers that organizations of all sizes are purchasing and developing applications designed for Web-based access, it is clear that the Web is the future. The concept of the desktop being “in the cloud” fits this new paradigm without violating any of the golden rules of IT. It is also clear that this technology would make it possible for organizations to address the key challenges to cloud computing by hosting some applications in house and some externally. The uses of Stoneware webOS wouldn’t have to know the difference or care.

ANALYSIS

No organization would abandon decades of investment in hardware, software, training, processes and the like to take up this approach. It directly violates many of the golden rules of IT. Most of today’s applications are working so why rewrite them. Why touch them at all?

What’s far more likely is that organizations will touch established applications only to the extent necessary - to add Web-based access. They know that approach will give them many of the important benefits of Cloud Computing without requiring any type of disruption. Then they'll experiment with hosting non-critical applications in an external cloud when it seems best to them. They may also try using external clouds when new systems are being developed.

Approaches such as those being offered by Stoneware are playing by the golden rules and assuring IT decision makers that things hosted in their own datacenters or on their own desktop systems can be used as long as the organization needs them. External services or clouds can be deployed as they are needed but, not until they’re needed.

Organizations are looking for ways to deploy new technology. They’re looking for ways to simplify their IT environment. They’re not looking for a way to give their key IT assets to another company or for a way to be locked in to a specific vendor’s technology.

SUMMARY

Today’s applications are very likely to stay where they are as long as they “pull their weight” and continue to provide cost-effective, reliable solutions. Organizations are building their own internal “Clouds” through the use of Web-based access mechanisms now to incrementally move to a more generalized, more flexible, more agile environment.

External Clouds or mesh computing certainly looks appealing for some applications, such as personal productivity or group collaborative applications. Organizations will experiment with them and determine for themselves when and if to deploy them for their own application portfolio.

Since the use of external services and clouds need to prove itself before business or mission critical solutions will be hosted in the cloud, it is almost a certainty that organizations are going to move into a hybrid environment that uses the best of both worlds.

IT Decision makers that believe that the Web is the future, would be well advised to ask for a demonstration of Stoneware’s webOS. More information can be found here http://www.stone-ware.com/webos/solutions/CloudComputing.html.