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3rd Quarter 2013

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See Page 20-21

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Cloud-based or On-premise

by Doug Barney

The Cloud Issue No One Talks About

Cloud vendors no longer have to answer whether their services are secure and full-featured. In almost every case they are. That is enough to satisfy many customers who forget to ask what may be the most critical question – how will my new cloud app perform?

Fortune 100 companies with WANs that could handle the Library of Congress don't have much to worry about. But not all WANs are created equal, and those with creaky networks won't have a positive experience with bandwidth intensive cloud apps, just as they don't have a lot of fun downloading a PDF or video today.

In scoping out a cloud service, questions of security, price, and function are all important. And so is availability. But availability and the SLAs that speak to it don't fully address the end user experience – they don't guarantee the performance is as snappy as from your hard drive.

How can they? They don't completely control performance. After all, a cloud app is only as fast as the slowest part of the network.

Cloud providers' data centers, even with servers running many virtual machines, use state of the art hardware and connections and tend to be awfully fast internally. The slow parts are outside the provider network. The public network is full of more hops than a can of Heineken. This means the data slows before it even hits your WAN.

WANs were getting saturated before corporate computing began its move to the cloud. Video, rich Web sites, conferencing, surfing, and VoIP are putting networks to the test and those that haven't been upgraded are suffering the consequences.

Some of us understand this intuitively. Is Salesforce.com as fast as an on-premises tool? Are Microsoft Office Web apps as fast as what comes screaming off that Seagate hard drive of yours?

Slow Salesforce.com performance actually a software CEO friend of mine to slow down his company's effort to adapt products to the cloud – he knew many customers would balk at all the latency.

There are many things to contemplate here.

First, different apps perform differently when hosted in the cloud. Chatty apps such as a word processor, are going to feel way slower. Others, where the processing is handled in a server style and less frequently involve user interaction, likely feel just fine.

Your choice of app helps drive your network decisions and how much you need to spend upgrading or optimizing the WAN. Some WANs are ready for the cloud, and some clearly aren't.

It also drives whether to use public cloud and basic Internet connections, or shell out for dedicated connections.

When public companies want to control their own destiny they go private. The same makes sense for enterprises. When you have a private, on-premises cloud, you dictate the speed because the private cloud runs on servers and networks you hand selected.

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Cloud Computing is published quarterly by Technology Marketing Corp. Annual digital subscriptions; Free to qualifying U.S., Canada and foreign subscribers. Annual print subscriptions; Free to qualifying U.S. subscribers; $24 U.S. nonqualifying, $34 Canada, $48 foreign qualifying and nonqualifying. All orders are payable in advance U.S. dollars drawn against a U.S. bank. Connecticut residents add applicable sales tax.

Postmaster: Send address changes to Cloud Computing, Technology Marketing Corporation, River Park, 800 Connecticut Ave., 1st Fl., Norwalk, CT 06854-1628 USA

Canada Post: Publications Mail Agreement #40612608

Canada Returns to be sent to: Pitney Bowes International, P. O. Box 25542, London, ON N6C 6B2, CANADA

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by Rich Tehrani

How the Prism Leak Will Hurt U.S. Tech Companies

Now that the world is aware of NSA's Prism program, which seems to provide unfettered access to the servers of America's Web firms, we can expect a brave new world of communications and technology competition.

Although it isn't accurate to say there is free trade in the world – due to tariffs and fees imposed across the borders of various countries – for the most part, companies easily can sell their wares across the world without having to worry about excess nationalism.

Yes, there are exceptions but, over time, consumers worldwide are comfortable buying products from companies located virtually anywhere. Perhaps this is best exemplified by the popularity of American cars in China and the popularity of German, Japanese and, recently, Korean cars in the U.S.

This situation may change in the future as heads of state across the world are beginning to advise their citizens to stay clear of American tech companies if they don't want to be snooped on.

This, of course, reminds many in the U.S. of how difficult it has been for Huawei to do business with carriers in the U.S. because the government isn't particularly keen on having potential backdoors in their communications networks, which China could potentially use to eavesdrop.

In fact, German Interior Minister Hans-Peter Friedrich recently issued a blunt warning to avoid American websites while speaking with reporters in Berlin. "Whoever fears their communication is being intercepted in any way should use services that don't go through American servers," he said.

"The Googles and the Facebooks, I don't know how they cope with this issue," said Gary Hufbauer, senior fellow for trade and economics at the Peterson Institute for International Economics. "There will always be that suspicion."

This is not only a challenge for these consumer-facing companies, but also those courting businesses, such as Amazon, Rackspace, Salesforce, and their counterparts. The international threats to U.S. tech firms could grow quite rapidly if countries become more nationalistic in their purchasing decisions as a result of the Prism leak.

There is good and bad news for customers if this initial sentiment becomes a trend. On the plus side, companies with monopolistic strangleholds on the market, like Amazon, will see stronger competitors emerge. This is the case because as Amazon's cloud solutions have grown in size, it has been able to lower prices based on economies of scale. If it loses share to others, it won't be able to leverage predatory pricing models.

The downside is, these companies may lose share not because of better competitors, but because of something beyond their control. This hurts employees, investors and the U.S. economy.

It is too early to see if any serious market share will be lost and, in some cases, like Facebook, there is a critical mass that is so absolutely huge it will be difficult to compete effectively with the social networking leader. Still, there will be damage; if there isn't, it will be miraculous. This unforeseen leak will have repercussions in the tech market for years to come.

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Five9 Secures Additional $34.5 Million in Funding

Cloud contact center software provider Five9 has raised $34.5 million in private funding from SAP Ventures, an independent venture capital firm that invests in innovative and disruptive software and services companies globally.

SAP was joined by existing investors Adam Street Partners, Hummer Windbald Venture Partners, and Partech International. The $34.5 million in funding is comprised of $22 million in series D equity and $12.5 million in a bank revolver debt facility provided by City National Bank.

Why We Should Watch: Five9 is "transforming the contact center of the future," according to Jai Das, managing director at SAP Ventures commented. The company is committed to turning contact centers into "customer engagement centers of excellence," he said, noting the firm has experience in using the cloud delivery model in contact centers.

http://tmcnet.com/59237.1

Cloud Storage Startup SageCloud Secures $10M in Funding

Boston-based cloud storage company SageCloud has secured a $10 million Series B funding, which will be used to speed up deployment of the company's products and expand operations. The funding round is being led by Braemar Energy Ventures with participation from existing investor Matrix Partners.

The market for digital data storage is forecast to grow 60 percent annually in the coming decade, which is being driven by the rapid growth in archival and backup storage needs and the increasing importance of big data analytics. Industry analysts estimate that as much as 80 percent of that data growth qualifies as so-called cold data, which is data that is written once and infrequently accessed.

Why We Should Watch: SageCloud's storage systems are specifically engineered to address escalating data problems by lowering the cost of storage while offering reliability and energy efficiency, according to SageCloud Founder and CEO Jeff Flowers. The company has developed a powerful system software that leverages open-standards enclosures and economical commodity drives to optimize energy efficiency, drive sustainability and long-term data preservation for customers' data centers.

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Cloud Communications Startup Twilio Raises $70M

San Francisco-based startup Twilio fills some interesting gaps in the communications technology arena. The company's proprietary technology allows phone calling, VoIP and messaging to be literally embedded into web, desktop and mobile software. It essentially offers a globally available cloud API that developers can use to build more intelligent and complex communications systems, creating their own customized phone system to serve businesses and customers in any way they wish.

Twilio recently announced that it has attracted a $70 million Series D funding round and is moving steadily towards an IPO. The company, which was founded in 2008 by Jeff Lawson (formerly of Stubhub.com and Amazon), Evan Cooke and John Wolthius, was featured in Forbes in 2011 as one of "Eight Hot Startups that Aren't Household Names…Yet."

Why We Should Watch: CEO Lawson said he had originally envisioned raising somewhere between $35 million and $50 million, so the $70 million is an indication of how much interest there is in the company's technology.

http://tmcnet.com/59241.1

Cloud Trading Company Nipendo Closes $8M in Funding

Nipendo, which offers a cloud-based trading platform for businesses, closed its Series B round of funding, totaling $8 million. The funding round was led by Horizons Ventures, which has made other notable investments in the tech sector including Facebook, Spotify and Siri. Previous investor, Tel Aviv-based Magma Venture Partners, also participated in the new round of funding. The Israel-based company plans to use this latest injection of funds to scale its business operations, and expand to the U.S. with the opening of its new headquarters in Boston.

Why We Should Watch: The company's plug-and-play platform is designed to enable the rapid on-boarding of thousands of suppliers at a low entry cost, allowing businesses to expand the reach of electronic procure-to-pay processing across their supplier ecosystem, lowering the cost of doing business while increasing efficiency and profitability.

http://tmcnet.com/59240.1

SAP Plans to Acquire Hybris

SAP AG, a major player in enterprise application software, plans to acquire Hybris, a growing player in e-commerce technology. After the acquisition is completed, SAP will be able to deliver the next-generation e-commerce platform, with the choice of on-premises or cloud deployment, as enterprises around the world look to optimize the customer experience for businesses and consumers across an ever-growing number of delivery channels and devices.

Why We Should Watch: The combination of Hybris' commerce platform with the flagship in-memory platform SAP HANA, analytical and cloud applications, and the SAP Jam social software platform will give SAP a significant edge in delivering new levels of customer insight and engagement across all channels.

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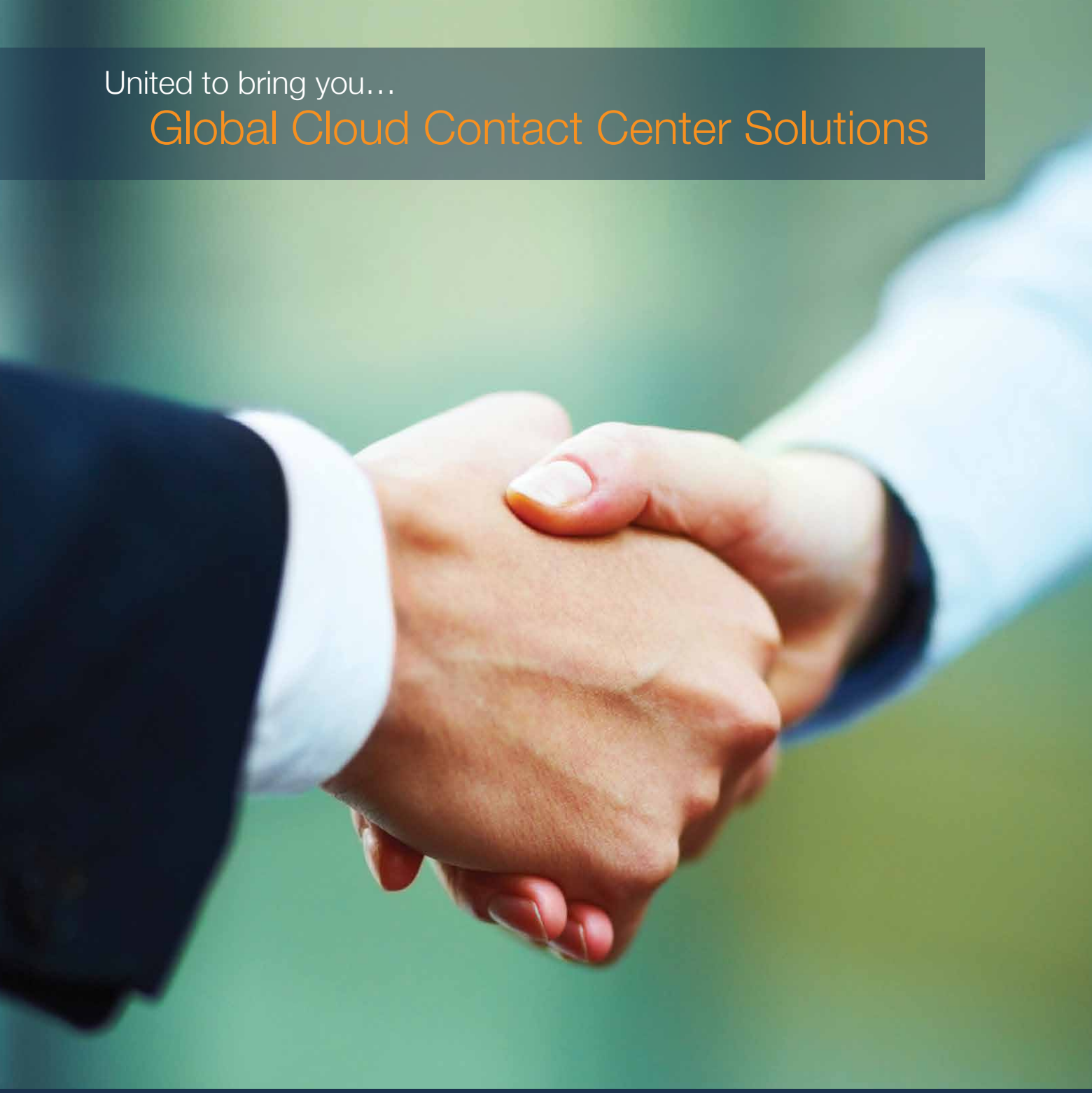

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by Jason Alley, Interactive Intelligence

Moving at the **Speed of Business:** IT says **'Yes' with Cloud**

It's not your father's IT shop anymore. IT organizations have become a critical extension of the business, tasked by the board room to deliver new tech-driven products and services to further differentiate the business – and do it faster than everyone else.

This creates a rub. The business feels IT can't move fast enough. IT feels the business expects too much, and doesn't understand the pressures and constraints IT teams are under. Leadership recognizes this dilemma, but must break through these barriers if the company is to remain relevant and meet the increasing demands of today's empowered mobile, social consumer. All these parties are open to change and ultimately want what's best for the company – making business and service processes more expedient and flexible, all with less capital and strain on IT resources.

While lower TCO ranked as the top driver for companies moving business communications applications to the cloud (53 percent), IDG's global survey reveals that more strategic drivers are playing an increasing role in the decision-making process, including:

- Increased flexibility (50 percent),
- Faster deployment (46 percent), and
- Scalability (40 percent).

Companies are leveraging the cloud to gain access to the latest in communications technology — mobile, social, and big data – quickly and affordably. This allows new creative products,

> "Not only are businesses enjoying cost benefits, strategic deployments are affording new efficiencies including flexibility, scalability and automation as well as the ability to shift focus to core competencies without sacrificing functionality or capabilities."

Good news. Some forward-thinking businesses and their IT teams are doing just that by embracing the cloud. In this scenario, IT takes on a more consultative role, serving as cloud brokers for the business. Of course, IT is still on the hook for meeting requirements and keeping the lights on – that doesn't change. What does change is the technology, resources and guarantees that IT has in their arsenal to get the job done. Together, the business, IT, leadership, and cloud partners are meeting increasing, changing demands without the usual constraints and complexities.

An August 2012 "CIO Market Pulse" report on communications as a service (CaaS) discusses this IT evolution, based on the results of an IDG Research Services survey of IT leaders worldwide:

"Not only are businesses enjoying cost benefits, strategic deployments are affording new efficiencies including flexibility, scalability and automation as well as the ability to shift focus to core competencies without sacrificing functionality or capabilities."

services and functionality to be delivered rapidly, turning customer service into a competitive weapon.

One such example is an innovative healthcare provider of imaging devices looking to leverage cloud communications to deliver a global multichannel support service embedded directly within their product. A senior director at the company explains:

"Our market changes fast…Imaging technologists frequently communicate via web chat and email, so we're exploring the ability for a customer to open a chat window from within our devices and be directly connected to support. It's all possible now with the cloud…It reduces the stress on our infrastructure, and gives us the freedom to add services and expand our reach as needed."

Call it moving at the speed of business. Then thank the cloud… as well as your IT team for saying, "Yes."

Jason Alley is solutions marketing manager at Interactive Intelligence.

by Peter Radizeski, RAD-INFO, Inc.

Disasters and Cloud

Story-telling is a vital ingredient in selling. In a hyper-competitive market, good stories win. Disasters are riveting stories on the news. Katrina, Superstorm Sandy and, most recently, the tornadoes in Oklahoma, have riveted the nation. There has been an outpouring of love, money and support after each catastrophe.

The business story has been about cloud services. When I look at the devastation in Oklahoma, I wonder how many people had stored their photos and videos online somewhere. Those memories would be lost in this destruction if they weren't stored online. (And Flickr just overhauled their service.) How many people in Oklahoma worked from home? These folks are now homeless and office-less. I hope that at least their contacts were stored online.

In telecom, we talk about disaster recovery and business continuity, but we don't tell a really good story.

There are studies that demonstrate the loss of a customer database is the end of a small business – literally, the end. Without customer records, a small business is done. Think about how troublesome it is when you lose your cellphone or it gets wiped on a reset (and you lose your contacts)? Personally, you have LinkedIn, Facebook and Outlook to recover some of those files from. All of that recovery comes from cloud apps.

The 2013 Atlantic Hurricane Season started on June 1. In April, Weather Services released their predictions for 16 named storms, nine hurricanes and five intense hurricanes.

Business continuity planning can be a good side line for a channel partner. Data storage and backup make quite a few value-added resellers (VARs) a lot of money. After each disaster, it gets harder to tell yourself that it can't happen to me. The evidence is all to the contrary. It CAN happen to you. And if it does, what is your plan?

In California and Florida, the power companies' rolling black outs to ease afternoon constraints cause big problems for consumers and businesses. It isn't enough to have battery backups. Your data better be safeguarded and backed up off-site. Those power surges can destroy electronics.

Think about how upset you are when you didn't save a document or blog. Imagine that ten-fold when your database is gone or your file server or your email server. Help your customers by not just offering DR/BC, but painting the picture for them of what can happen before an event occurs.

Peter Radizeski is a telecom consultant and the owner of RAD-INFO, Inc.

by C. Enrique Ortiz, Shango

The Evolving Role of the Telephone Number in the Growth of Mobile

The telecommunications industry has been evolving and is most certainly moving ahead from circuit-switched technology to an all-IP packet-switched world. With this technological evolution, we have experienced tremendous benefits—from advanced communication devices, especially in mobile (such as Smartphones and Tablets), advanced networks (such as HSPA+ and LTE), and just as important, open mobile ecosystems and marketplaces. The result is a massive, exponential growth in all things mobile.

The explosive growth of mobile is threefold; truly accelerating the need to bridge or evolve the old world of circuit-switched networks with the new world of IP networks; driving the usage and need of telephone numbers; and enabling the growth of over-the-top (OTT) IP-based communication and content apps and services.

But this explosive growth also brings challenges in how to manage related communication assets, such as telephone numbers, and related communication apps and services.

The telephone number is what my colleagues and I at Shango believe is becoming a personal communication ID which essentially links apps to end users much the same way an IP address is an ID for devices and equipment on IP networks; linking apps to an end user and user-personas, and truly making the telephone number itself an extremely important asset. In fact, the telephone number is at the core of communication identity and related apps and services.

Even though the telephone number has been around for a while, until recently over-the-top (OTT) mobile apps didn't make use of the telephone number to identify their users and related services, essentially missing early opportunities to redefine the social aspects of communication, including the address book and related services and interactions; but this has changed. More recently, the telephone number has taken center stage, and mobile apps such as WhatsApp and TextPlus have taken advantage of the telephone number as the main end user ID (or handle), making these apps very flexible and now very popular OTT messaging apps. But, managing telephone numbers is not without its challenges.

The Lifecycle of Telephone Numbers and Related Apps and Services

Telephone numbers have a complex lifecycle—numbers can be priced, acquired from one- or many sourcing providers depending on network footprint; assigned, activated, and so on.

In order to most effectively utilize phone numbers and support and deploy new mobile applications, this complex lifecycle requires proper management tools. Given the growth in mobile, together with the requirement to support Local Number Portability (LNP), the ability to manage such lifecycle becomes even more challenging and important.

Now imagine this lifecycle expanded to include provisions for communication apps and services, including aggregation and integration into existing cloud-based services, and you can quickly see how complex the problem of managing, monetizing and measuring ROI on telephone numbers and related mobile apps and services really is; believe me, it is complex!

The Solution: Unified Communication (UC) Supply Chain Integration

The solution to the complex problem of managing the lifecycle of telephone numbers and related communication apps and services is Unified Communication Supply Chain Integration.

From the supply-and-demand perspective, UC supply chain integration can allow mobile service providers to integrate to- and manage the providers of telephone numbers and related apps and services, as well as quickly find the best pricing available, put in orders, and more effectively track related inventory.

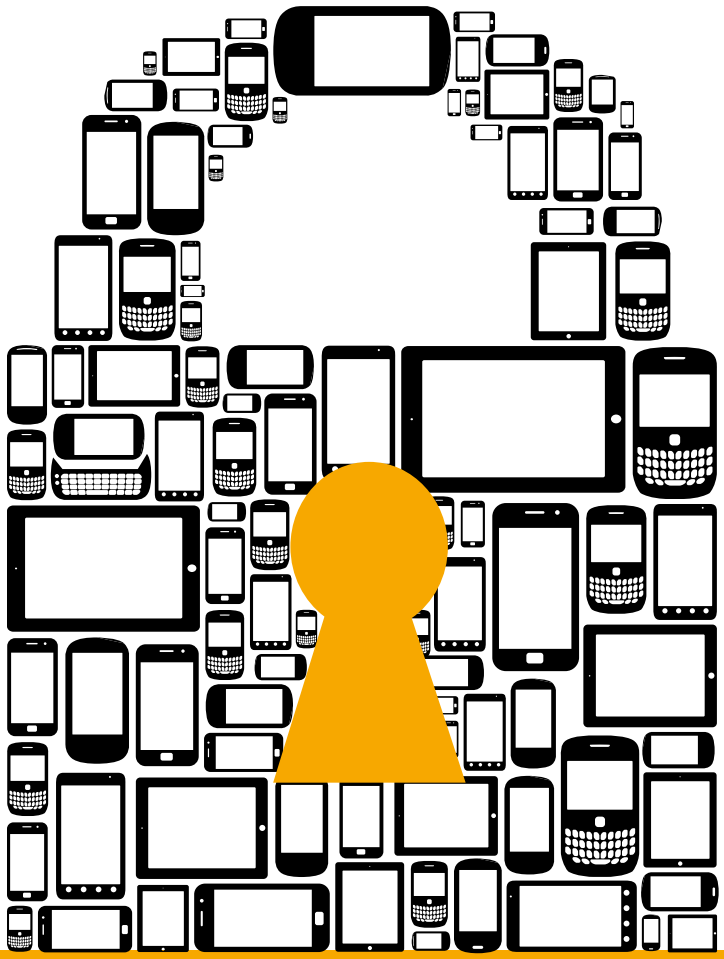
From the relationships perspective, UC supply chain integration can better enable pricing and relationship management between telephone number origination providers, downstream distribution channels, and even direct customers.

From the managerial perspective, the solution must provide business intelligence through strong reporting and analytics capabilities including business dashboards to view inventory levels, inventory distribution, and general usage activity.

From the technical perspective, solutions that live in the cloud can hide all the complexities of integrating around major communication apps and service providers including SIP Trunk and Hosted PBX providers and LNP Service Bureaus, allowing you to manage the complete telephone number lifecycle through UC supply chain integration automation, essentially helping unify the entire mobile app value chain via a common API.

The explosive growth of mobile will ensure that the use and role of the telephone number will continue to expand globally. What is also certain is that as the telephone number evolves, with its complex lifecycle and related apps and services, it will require effective lifecycle management to enable sustainable growth for mobile service providers.

C. Enrique Ortiz is head of products at Shango, a community marketplace enabling automated supply chain integration for buying and selling IP-enabled Unified Communication Services. To learn more about Shango visit www.shango.com.



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by Jim Potter, Hostway

Data Storage Boom
Comes Down to DR, Dollars

The rapid growth of data storage resides at the merger of two concepts: disaster recovery and cost effectiveness. The clear superiority of cloud solutions over in-house storage in the increasingly essential element of disaster recovery fuels the accelerating migration into the cloud. The low cost of off-site computing relative to the capital expenditure of building your own solution adds speed to the conversion rate.

Customer data safety is paramount, and disaster recovery has become the foundation of any service's claim to ultimate security. On top of all the measures data centers can provide – multiple redundant network providers, extensive physical security, redundant power and generator backup, fire suppression, automated backup systems, on-site spare parts, and 24/7 monitoring – DR techniques like remote replication offer peace of mind for a "when all else fails" scenario, like a natural catastrophe.

Properly protecting data on your own requires not only a significant outlay in capital expenditure, but also requires an organization to have a strong competency in business continuity and disaster recovery (BC/DR), the latter of which many organizations lack. With cloud storage, the service provider spreads the cost of their robust infrastructure across many customers, and their level of BC/DR expertise will in all likelihood exceed that of your own IT staff – who have plenty of other tasks to monitor and complete.

On top of having BC/DR strategies in place, there's also the matter of staying online as much as possible in the first place. The worst thing that can happen – whether you are hosting on-premises or off-premises – is to have your servers go down. You risk losing valuable customer data, revenue, and your reputation. Service providers prevent downtime via redundant components, clustering, auxiliary power, appropriate spares, backup data stores, and hot restart facilities.

Small- to medium-sized businesses (SMBs) will find that replicating such an environment is cost-prohibitive. Even large companies will find it more economical to utilize a third party.

Cloud storage provider TwinStrata's 2012 survey of Cloud Computing Expo attendees showed that 72 percent of cloud storage users estimate they could recover their data within 24 hours, while 12 percent of those which do not use cloud storage say it would take more than a week to recover data in the event of a disaster.

72 percent of cloud storage users estimate they could recover their data within 24 hours, while 12 percent of those which do not use cloud storage say it would take more than a week to recover data in the event of a disaster.

The compliance requirements on many industries influence the growth of data storage figures, as saving data for extended periods of time becomes essential to avoiding legal liability issues. It's not simply the case that companies that fail to protect their data face legal issues; companies that don't save enough data for enough time can face serious fines.

State laws govern how long medical records should be kept, and vary somewhat. The standard recommended by The Doctors Company, a malpractice insurance firm, is that adult records be kept 10 years from the date the patient was last seen, and deceased patients' information be stored five years from the date of death.

So, despite the amount and cost of data storage both soaring, the price of destroying data to save space may be higher than continuing to store it. Original records are crucial for proving or defending your argument in legal trials; if the record of the interaction in question is gone, a company's case can be undercut.

The cost-saving arguments for moving to service providers go beyond issues of compliance and BC/DR. Capacity and scalability are a great example.

One of the major issues with traditional storage networks is that IT admins must either under- or overestimate the organization's needs; this leaves the chance of either storage shortages or a glut of unused shortage.

At least this was the traditional way of storing data. The entrance of cloud storage has changed the game a bit. Unlike hardware you've purchased yourself, cloud storage space can be increased or decreased without a major hassle or expense.

Meeting additional storage needs is virtually instantaneous in that the storage capacity in the cloud is unlimited and immediately available. This is a tremendous advantage for those organizations whose business has seasonality to it as cloud storage allows for "bursting" during those peak times. Similarly, excess space that you no longer wish to pay for can be surrendered in a similar timeframe.

When juxtaposed with traditional models – where companies spend significant CAPEX outlays for storage that initially has excess capacity, fill that space, then required another major purchase – the advantage of cloud storage is clear: pay as you go, and only pay for the storage you consume.

Jim Potter is vice president of product at Hostway.

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by Randy Bias, Cloudscaling

The State of **OpenStack**

Everyone knows about Linux. It's arguably the most successful open source project ever.

In open source cloud software, OpenStack is following a similar trajectory. Since its launch three years ago, it has attracted a community of corporate, developer and user support so rapidly that it can be called the fastest growing project in the history of open source.

But let's take a step back and look at the state of OpenStack including the factors that have driven its rapid ascent.

What is OpenStack?

In simplest terms, OpenStack is open source cloud software with which you can build an Infrastructure-as-a-Service (IaaS) cloud. It has components for compute, block storage, object storage, networking, dashboard, metering, authentication, VM image management and orchestration. Maturity and feature functionality of each component range from fully baked to fully green.

OpenStack follows a six-month release cycle, and the current release is codenamed Grizzly.

Who Built It?

No single person started OpenStack. In the summer of 2009, NASA contributed the code that became OpenStack Compute and Rackspace contributed OpenStack Object Storage. Rackspace managed the project until the OpenStack Foundation was launched in September 2012.

Today, there are more than 9,000 individual foundation members and 189 corporate supporters from 100 countries. More than 500 developers contributed to the current release, adding 230 new features.

Momentum & Production-Readiness

According to ohloh, OpenStack's primary open source competitors have topped out at 100 contributors, combined. That's about one-fifth of OpenStack's total contributors. This means that in the last six-month release cycle, OpenStack added more new contributors than its major competitors did combined in more than three years.

Users are lining up, too. They include next-generation web app companies like Living Social, Ubisoft, PayPal and WebEx, and HPC users like Argonne National Laboratory and CERN in Switzerland. These are in addition to service providers such as Rackspace, Comcast and AT&T.

OpenStack's maturity of software development life-cycle has increased as well. The OpenStack community also created a sophisticated continuous integration (CI) and testing framework that auto-deploys and tests a complete deployment of OpenStack over 700 times a day. Every time a developer checks in new code they are "gated" by a full test of their code before that code is allowed to be contributed back to mainline.

These "gated tests" have increased code quality dramatically, reduced or eliminated regressions and increased velocity, maintaining OpenStack's six-month release cycle while increasing the number of projects and developers. No other open source rival comes close to the scope of continuous integration and testing that OpenStack has achieved.

Momentum makes it clear that the open source cloud race is over and the maturity of the project is now without question. Simply put, OpenStack has won.

Challenges Ahead for OpenStack

Although the project has come a long way in three years, some big challenges must be addressed for OpenStack to continue its march toward Linux-dom.

Some say that the lack of a Linus Torvalds in the OpenStack community is a weakness. Let's be honest: there's only one Linus. OpenStack must succeed with a technical meritocracy driving the development roadmap. I think of it like the early days of the Internet and IETF. What will help shape the future is simple: Rough consensus and running code.

Customers will tell us what they need by what they adopt. OpenStack can leverage the fact that it's the de-facto winner in open source cloud software. There's immense velocity and corporate support, and the user base is growing rapidly. Increased public cloud compatibility is in the roadmap.

The state of OpenStack is strong, but there's much work left to be done.

Randy Bias is co-founder and chief technology officer of Cloudscaling.

No other open source rival comes close to the scope of continuous integration and testing that OpenStack has achieved.

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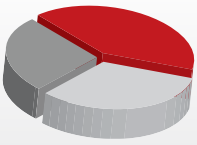

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by Jack Sepple, Accenture

Leading Enterprises **Think Beyond the Cloud**

Decisions today made by leading organizations no longer focus on "should we use the cloud?" but rather "how can we use it?"

Cloud is not a single concept any more. Instead, high performers consider the value of the various as-a-service technologies – from Infrastructure-as-Service (IaaS) to Software-as-a-Service (SaaS) to Platform-as-a-Service (PaaS), as well as public and private cloud – to maximize cloud's transformational impact across their business. They use them as part of their IT toolbox to help them get to market faster and respond with greater flexibility to opportunities and obstacles. It's no longer about cloud, but how you leverage cloud for your digital business that differentiates you.

A Changing Landscape

Accenture estimates that by 2016, enterprises will devote 14 percent of their overall IT products and services spending to cloud (from just five percent in 2011), and 46 percent of new spending will be on cloud-enabled technologies. The "cloud-first" mentality has taken hold, with leading organizations looking at what can be achieved with the different flavors of cloud, rather than reflexively considering in-house development or off-the-shelf solutions.

While SaaS leads cloud adoption, Accenture experts believe that PaaS will eventually become the primary application development and re-platforming approach. After all, it's hard to ignore the cost savings, flexibility and faster time to market that PaaS provides.

Take the case of a European telecommunications company that used PaaS as the basis for its new travel portal, connecting consumers with partners, offering social recommendations and other high-quality content. Just 18 weeks after the project began, the company had a fully deployed, flexible and real-time system that offered users a new type of online travel-booking experience.

Cloud services have become drivers for many other technology changes as well – for social media, as an example, and for at least part of the rising popularity of data analytics activities.

Tough Decisions Lay Ahead

How can enterprises deploy different forms of cloud at the same time? What's the potential for integrating cloud with legacy systems and traditional software to create hybrid capabilities that combine the best of the cloud's elements? These are the kinds of questions that enterprises must answer.

The hybrid cloud means different things to different people. Whether it involves mixing different forms of cloud or integrating cloud with existing IT, the real challenge is a new flavor of the perennial one: how will you handle the complexities of service and data integration across systems?

At one time, many cloud systems were siloed applications. Today, even in a private cloud environment, it's less about simple SaaS configuration and more about the complex integration required to weave new SaaS systems into the existing IT environment, including ERP systems or legacy mainframe applications. A hybrid world demands hybrid skills, and the most sought after talent will be the architect who understands the functions and roles of all the pieces and how they work together.

Governance of these solutions will become increasingly critical. The need will be to leverage new tool and skill sets to design and operate a mosaic of best-in-class capabilities that allow the business to take advantage of new opportunities.

The architecture of tomorrow – data, integration, monitoring, security – will look very different from just a few years ago, and enterprises will need to fundamentally revise their thoughts of enterprise architecture.

Choosing the Right Cloud

Private or public? In the near term, most large enterprises will host some IT systems in the public cloud but they'll maintain control of their mission-critical systems and core applications through private cloud solutions.

As an example, a global copper company, inhibited by its existing infrastructure and ERP environment, launched an extensive ERP transformation initiative using a private cloud architecture. The new cloud-based solution, which it launched in just nine months, simplified operations, accelerated applications and reduced risk.

Eventually, however, in light of the economies of scale that public cloud provides, this will begin to change. Leading organizations will figure out how to take customer data – without personally identifiable information – and partition, protect and integrate it as appropriate, on the basis of technology capability, security standards and their users own level of comfort.

Proof that an enterprise is headed in the right direction is that the term "cloud" will soon fade from the conversation. Instead, its use will be described in ways that relate to its business value.

Cloud can help organizations achieve much of what they need to achieve today. More importantly, it offers the promise of delivering far more in the years to come.

Jack Sepple is global senior managing director of cloud at Accenture.

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by Rajiv Gupta, Skyhigh Networks

Six Best Practices for **Safe Cloud Adoption**

Cloud software-as-a-service (SaaS) applications are being adopted at an unprecedented rate. While enterprises leverage traditional cloud services such as Salesforce.com and Microsoft Office 365, employees subscribe to less popular services, including Evernote and Prezi – with or without their IT department's permission or knowledge.

CIOs across the board agree that they have no idea how many services are in use on their networks, and have no way to secure their networks against risky services or manage the safe cloud service use by employees.

Below are some best practices for enterprises to follow to ensure that their organizations benefit from the wave of cloud adoption, all in a safe and secure manner. These steps revolve around discovering unknown services in use called "shadow IT," gaining insight into risks these services pose and risky usage by employees, and managing and controlling which SaaS services are permitted and how they are allowed to be used. By following these steps, enterprises can proactively enable employees with the cloud services that will best meet their needs, while ensuring an overall safe enterprise network.

1) Start with Visibility: Your employees are already using cloud services; get a handle on your current cloud exposure and extent of shadow IT. This discovery of cloud exposure is a continuous activity because the velocity of new cloud service introduction and use is only increasing; a one-time snapshot will rapidly get stale.

2) Gain Service Insight: All cloud services aren't risky. Get an objective understanding of the risk for all the cloud services in use by your employees. Bucket the services in broad categories so that you can compare like services, for example, you may find that your employee pool is using Box and 4Shared. Both are data sharing cloud services, but Box is low risk while 4Shared is high risk. Find the service with the lowest risk in a category, consider establishing a commercial relationship with the provider, and promoting that service across your employee pool while discouraging or blocking the use of higher risk services in the same category. Similar to visibility, the risk assessment of services is a continuous activity.

3) Gain Usage Insight: All uses of cloud services aren't risky, conversely and more importantly, the use of even a low risk cloud service may be high risk, for example, if someone tries to download all the contacts from your Salesforce.com before joining a competitor. Detect anomalous use that may indicate a security breach or data loss. This comes in two flavors: a) your confidential data stored in a cloud service may be at risk, as in the example above, and; b) your confidential data from within the enterprise may be exfiltrated using a cloud service. For example, confidential data such as product plans may be exported 140 characters at a time through Twitter which your firewalls and proxies today cannot block (even if configured to block Twitter.com there are newer ways to get to Twitter that today are unclassified by existing egress infrastructure). Usage insight may also help identify which services and which categories are most useful and therefore most used by your employees and therefore can help inform IT investment decisions. Furthermore it may help determine the optimal number of licenses needed for a particular service based on actual use.

4) Use the Visibility and Insight to Control: Control may take the form of blocking certain services, for example, blocking the use of high risk services in a category in which low risk services are promoted. Some control can be enforced at the existing edge of the enterprise such as through a service that delivers configurations for existing egress devices. Remember that these configurations will change over time as new high risk services need to be blocked. In general visibility and insight shine light and expose the shadow IT problem, and the control functionality then converts that shadow IT into IT that meets the corporation's operations, security, governance, risk and compliance practices.

5) Identify and Manage Enterprise Cloud Services: Opt-in select services that are enterprise-critical, blessed, and procured, such as Salesforce, Box, Office365, Google, etc., such that access to those services requires the employee to use their corporate identity and then access to your enterprise's account at the service, which can be controlled both in terms of who can access the account but also what happens to your data sitting at that service. Also, make sure that your control can be consistently enforced on-premises to cloud accesses, as well as those from corporate-issued mobile devices and from personally-owned mobile devices without requiring the traffic from those devices to be back-hauled (through a VPN) into your enterprise edge first and also without introducing any friction (such as agents or other footprint on the mobile devices) to the end user because friction engenders shadow IT.

6) Get Ahead of the Game: Find services that you should proactively introduce to your employees and businesses by getting access to the cloud adoption best practices pertinent to your industry. This way the IT organization moves from a "just say no" entity to be avoided and bypassed (leading to shadow IT), to an organization that is considered to be an enabler to the business and the employees who are now incented to work with the IT organization which helps the employees get the best of cloud services without compromising on the enterprise needs for operational efficiency, security, governance, risk and compliance.

Rajiv Gupta is co-founder and CEO Skyhigh Networks.

by Jay Desai, XtremeData, Inc.

Cybersecurity Emerges as a Big Data Problem

In a connected world there are no boundaries. Desk-bound activities such as email are now performed on mobile devices. What once required a personal visit is now be done online (e.g. banking, shopping) – from anywhere, anytime. Access, convenience and speed have created remarkable change in the way we consume and interact. The march to connected-digital is accelerating with our growing dependence. But digital interconnectedness is not for free. Risks of security breaches, data loss, espionage, denial of service, malware, and even more through cyber attacks are both numerous and growing.

Over the past few years, businesses have deployed various kinds of security appliances in their data centers to protect against pointed threats, such as intrusions, denials of service, viruses, spam, data loss, compliance and so forth. Appliances provide real-time, in-stream filtering, detection and prevention capabilities, and have proven to be very useful and cost effective protection against isolated threats.

Security appliances are a growing market with many choices, and vendors are rapidly adding new functionality to strengthen in-stream capabilities. It is not unusual for a typical company to have dozens of these appliances in their data center. However, there are some limitations. As security appliances mature so do cyber criminals. Cyberattacks are becoming more sophisticated with more coordination, deft and reach to circumvent security appliances. One of the vulnerabilities is that appliances are "point solutions" - meaning each appliance is only aware of what it sees and has no visibility to traffic elsewhere. Cybercriminals can quite easily exploit these limitations to wreak havoc.

Comprehensive Approach

To address many of the vulnerabilities we need to start with data. Each security appliance generates a significant amount of incident and log level data every day. There is valuable information about who, what, when, how, and so forth in these logs. The data is used for operational reporting and then typically discarded.

Collecting and storing granular data from every appliance into a central repository can provide a more comprehensive view of the security threats. Maintaining granular, real-time data with historical data in a central repository can provide an integrated view of threats that can be analyzed over time to enable reporting, detection, forensics, prevention, and prediction.

> The combination of security appliances, SQL data warehouses and a Hadoop-based deep storage layer provides companies with a more complete solution to address cyber security and protect their digital franchises.

Building such a repository has been a monumental task because of the quantity, speed and diversity of data. A typical enterprise can generate 1-10 terabytes of cybersecurity data per day with peak ingest rates of 1-10 million records per second, coming from tens of hundreds of different appliances. For most enterprises, a centralized cyber security data repository would be the largest data environment. Lack of cost-effective hardware, storage and software solutions have discouraged companies from building a cyber security database – that is until now. Big data and cloud technology are rapidly changing this trend, and it is now possible to build and operate petabyte scale data systems without big investments. As a result, savvy companies are beginning to invest in cyber security.

The emerging landscape for cyber security comprises two complementary solutions. Each of these solutions serve defined requirements with different users, service levels and costs of ownership. Let us briefly examine each:

Scalable SQL Data warehouse – This is ideal for an integrated cyber security repository supporting interactive reporting and analytics and real-time data ingest. Such a repository will typically house real-time and historical data for a defined period of time (e.g. 12 months). Supporting complex data relationships with granular and aggregate level data can enable security analysts to perform rapid interactive reporting and analysis using industry standard visualization and analytics tools. In addition to native functionality, as the industry matures, users can leverage off-the-shelf SQL based cyber security analytics.

Hadoop – This is ideal for maintaining a permanent repository of data to support batch-mode cyber security analysis over longer time frames. Hadoop inherently offers scalable and resilient storage at a low cost. The Hadoop ecosystem also supports a variety of open source tools that can be leveraged by developers for pattern detection algorithms, machine learning, predictive analytics and more.

The combination of security appliances, SQL data warehouses and a Hadoop-based deep storage layer provides companies with a more complete solution to address cyber security and protect their digital franchises. A side benefit of building such a solution would be the insights gained about user behavior and the ability to spot anomalous patterns, even unrelated to security. Cybersecurity is both a threat and an opportunity.

Jay Desai is co-founder of XtremeData, Inc.

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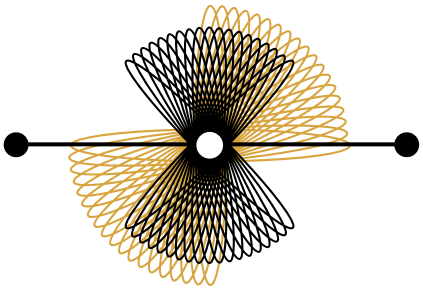

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Cloud-based or On-premises

by Nigel Turner, Trillium Software

The **Intersection of Data** and the **Cloud:** Journey from A to E

In today's data driven world high quality data is a prerequisite of success and survival. The exponential amount of data generated by big data and cloud computing, coupled with the advent of the 24/7 online, any time global business, means it is no longer feasible to tackle data quality problems as point applications within tactical business and IT silos such as CRM, and billing. Instead organizations need to develop approaches that ensure high quality data across all parts of the enterprise.

But moving data quality improvement from application to enterprise level – from A2E – is a daunting task requiring cross-organizational collaboration between business and IT to make it happen. Its potential complexity means it is all too easy to lose your way; a roadmap is needed to help reach the desired destination.

It is estimated that by 2015 an average organization will hold 700 times the volume of data it held in 2000. By 2020 this will increase tenfold so that it will store 7,000 times the volume of data it held at the turn of the century. This has led organizations to seek new ways of managing and storing data, which has fueled demand for cloud computing. As such, in the areas of data quality and data governance, there is a growing awareness that continually expanding data demands mean that traditional approaches are no longer sufficient.

Historically, the dominant approach to data quality improvement and data governance tended to focus on point solutions. For example, organizations used data quality to "clean up" customer marketing lists or reconciling financial records for compliance purposes. However, this approach left the root causes of poor data only partially addressed and at times, not at all. Without knowing it, organizations were putting themselves at risk for lost profits and more as the majority of their data was untouched and uncontrolled.

Fortunately, many have realized that permanent and enduring data quality improvement and management requires a new approach, one that requires the entire organization to be involved and leverages a close partnership between business and IT functions. This is radically different as it not only requires business involvement, but requires that it is business-driven and managed, and not the primary preserve of the IT department.

Five Steps from A to E

Here are five steps to enable data quality champions in an organization to successfully sell and implement a true enterprise wide approach to data quality:

Step 1 – Prepare the Ground

Ensure that the benefits of data quality improvements already made in point applications are fully documented. Develop a wider engagement strategy that doesn't just rely on IT. To make it work, business and IT need to be not only involved, but totally bought in so be sure to identify the key people who can be supportive and help drive the strategy for the long term.

Step 2 – Identify the Opportunity

You will uncover data quality issues and problems in areas you never considered. Don't shy away from it! Use those challenges to produce a vision of what enterprise data quality could (and will) deliver.

Step 3 – Secure Support

Rally the troops at all levels to gain endorsement and active support of the project. Be sure to develop a high-level business case for funding and resourcing. When things go wrong or momentum slows, refer back to that business case to remind your key sponsors why this initiative is so important to the business.

Step 4 – Get Organized

Create an enterprise wide data quality steering group to oversee activities and a User Forum to ensure stakeholder representation. Consider creating a physical or virtual enterprise wide Center of Excellence that uses a designated to team to provide data quality services in a standard process across the organization. Implement a common data quality improvement methodology and toolset.

Step 5 – Deliver the Improvements

Produce a data quality improvement roadmap to share the end goal of your journey and highlight your progress along the way. Deliver early data quality projects to prove the approach, toolset and projected benefits.

Harnessing the power of big data and cloud computing requires a major shift in how organizations approach data quality. Moving from application-centric data quality to one where data quality is tackled as a strategic, enterprise wide initiative can be a transformative initiative. But to be successful, the business must play a leading role. By creating a strategic program delivered through cross-organizational collaboration organizations will quickly realize the benefits of sustainable data quality improvements.

Nigel Turner is vice president, Information Management Strategy, at Trillium Software.

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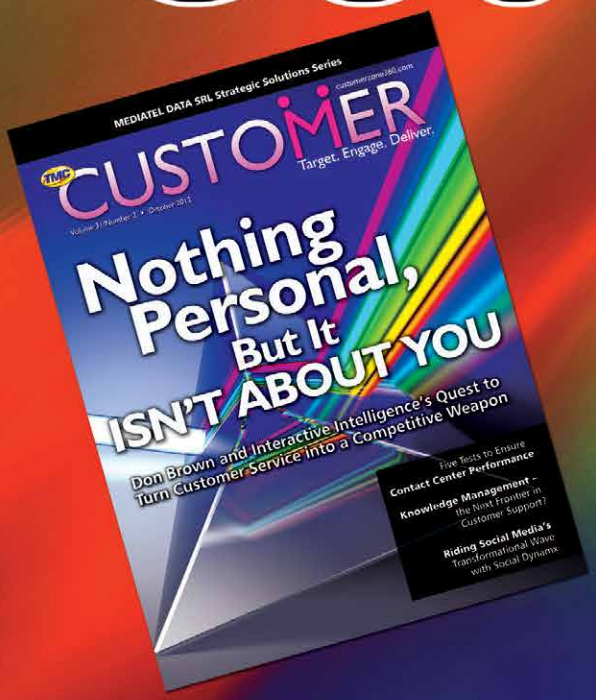

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by Erin E. Harrison

The Right Vision at the Right Time

Interactive Intelligence Leads the Migration to Cloud Communications

Over the past few years, much has been written and said about cloud computing. One thing is certain: The segment of cloud known as Communications as a Service (CaaS) will have staying power in the market thanks to Interactive Intelligence. From smartphones, to social media, to the cloud, there are epic forces coming together to propel an industry that has been slow to change over the past decade.

Although Interactive Intelligence had been selling hosted contact center services since 2005, Interactive Founder, President and CEO Dr. Don Brown had the vision to notice a shift in the market, which drove the company to re-architect and re-launch its cloud offering in early 2009. Today, the Indianapolis, Ind.-based company serves three markets with its core all-in-one IP communications software suite.

- Contact Center: Cloud-based or on-premises, a single-platform architecture that provides a wide range of multichannel contact center functionality.

- Unified Communications: A single-platform, all-software IP PBX application suite that easily integrates with existing business applications.

- Business Process Automation: A process automation application that applies contact center technologies to capture, prioritize, route, escalate, track and manage work throughout the entire business process lifecycle.

Before cloud became such an integral part of its business, the company's leaders had to establish key market drivers to determine its worth. As Dr. Brown and Interactive's Chief Marketing Officer, Joe Staples, explained in a recent interview with *Cloud Computing* the company's decisive vision more than five years ago has resulted in historic growth.

CC: When did you begin your shift to the cloud?

DB: We had a small spin-off in the early 2000's that offered some communications services called Interaction Portal, which was our precursor to the cloud. We did that for a few years, but it wasn't taking off, so we brought it back in house. That constituted a small unit within Interactive Intelligence that provided hosted services, such as hosted IVR and call center services. We were limping along. It wasn't making much money. In 2008, we sat down and asked ourselves: "Should we kill this or do something with it?" We looked at the market as it was developing, and we decided we were going to double-down on it by totally re-architecting our hosted offering. Upon completion in 2009, we re-launched it as Interactive Intelligence Communications as a Service℠, or Interactive Intelligence CaaS. We initially expected to serve small organizations, so it was a surprise that one of our first CaaS customers was Philips Healthcare. From there, it really started to take off for us.

JS: As Don mentions, we really dug into the hosted market with plans for our re-launch starting in 2008. As part of our market analysis, we talked to customers about their perceived risks associated with migrating to the cloud. When we revamped our offering, we made sure to address these issues by making three main changes. First, we increased scalability; second, we improved security and reliability; third, we developed additional deployment options. At the time, we also looked at our sales model, which led to a new compensation plan that supported selling the right solution based on customer requirements regardless of the delivery model.

CC: What results have you seen following this shift in strategy?

DB: We've seen a dramatic increase in the percentage of business that comes from the cloud. Following our re-launch in 2009, 5 percent of our total order dollar volume was cloud-based. Five percent may not sound like a lot, but it was to us. So we decided to expand on this by building our second data center in the U.S. The next year, that figure increased to 11 percent and that really got our attention, so we decided we were going to expand internationally. We set up data centers in London and Frankfurt. By 2011, cloud made up 23 percent of our orders, so we decided to expand even more – opening up data centers in Tokyo and Sydney. In 2012, cloud made up 35 percent of our business, so we opened additional data centers in Japan and Australia to provide geographic redundancy. Last year, we opened a data center in Brazil – and we are now readying two data centers in Canada. We estimate that half our orders will come from the cloud in 2013, and so far, we're on target.

JS: Back in 2009, that 5 percent stat did mean a lot to us, and I think that growth was fueled, in part, by the economic downturn. It was the spark for customers who were saying, "I need advanced contact center technology, but I'm uncomfortable writing the big check." The cloud enabled them to pay on an ongoing basis, thus avoiding that major initial capital expenditure. Since then, going from 5 percent to potentially crossing the half-way point in 2013 points to the growth and success of our CaaS offering. Customers are now seeing benefits of the cloud that go beyond cost, such as faster deployment times and more flexible scalability.

CC: What was the motivation for your shift in strategy?

JS: When we began looking at the cloud, there was no market leader for the space. That left a vacancy that we saw as an opportunity. Instead of waiting to unseat another vendor to take that leadership role, we anticipated the market shift and went aggressively after it.

DB: In addition to what we saw as a market gap among contact center providers, we were also encouraged by the success of complimentary cloud vendors, such as Salesforce.com. Seeing the success of these cloud vendors within the broader enterprise software arena – along with our gut feel that consumption-based services would spread – left us feeling very confident that our shift in strategy was the right one.

CC: How dramatic is the market shift to the cloud?

DB: It's clearly illustrated by our numbers – going from less than 1 percent to 50 percent – and by the market being ready. A lot of companies just want to get out of the IT business. It's become so expensive and so complicated: the software, the servers, the patches, the systems, the crashes. By moving to the cloud, a customer is able to concentrate on its core business. The beauty of our offering is that we can provide all the reliability, security and functionality traditionally associated with premises-based software, but delivered via the cloud.

JS: The value of offloading IT requirements is a definite trend. At the same time, we recognize the cloud is not going to be a fit for everyone. Unlike the shift from TDM to VoIP, with the latter today comprising about 90 percent of IT deployments, the shift to the cloud won't be quite so dramatic. We do think that eventually the cloud will make up the majority of how businesses consume communications services – and our goal is to help companies get there.

CC: Is the cloud here to stay or is it a passing fad that has received too much hype?

DB: The cloud is here to stay. I'll share an analogy. In the beginning of the 20th century when electricity rolled out, every company had its own generator and was supplying its own electricity. There was no common utility, and it became more and more strategic to companies. Eventually it became clear to everybody that centralized utilities could operate much more efficiently. So today, we have common outlets that we plug into for our electricity needs and nobody questions that. This is what has happened with software and the Internet. It's more and more reliable, so it becomes more and more plausible to use the Internet. The economies of scale that a service provider can offer result in far greater efficiencies than what single companies could realize by operating their own IT departments.

JS: Nice, applicable analogy. Agreed that the cloud is absolutely here to stay. Interestingly though, I think a lot of vendors are hoping it's a passing fad. Part of the reason for that is that they simply have not been able to make the transition financially or technically. Many are sitting there hoping that this shift was fueled by the economic downturn and everyone will go back to premises-based software. That's not going to happen given that, today, the cloud's momentum is driven by far more than cost savings.

CC: What are the main benefits customers get from your cloud offering?

JS: The cloud market has seen a lot of new entrants from vendors saying, "Here's a hot market, let's get in on this." Conversely, we offer

Interactive Intelligence founder and CEO Dr. Don Brown (left) and CMO Joe Staples inside the company's Network Operations Center, which monitors the health, security and stability of the cloud, network and systems across its eight global data centers.

the benefit of experience. Customers get from us 19 years of experience backed by more than 5,000 customers. This experience includes extensive investment in cloud security and infrastructure. The larger the customer, the more in-depth our conversations are about security. We offer industry-certified security at the corporate, cloud services, and data center levels. We also offer a deployment option that enables customers to keep all their data within their firewall, plus we have a state-of-the-art Network Operations Center (NOC), that provides 24x7 CaaS support and services. Finally, we offer easy migration to a premises-based deployment should business needs change, which is not something cloud-only vendors can do.

DB: Definitely, our experience has been a key benefit. That has really resonated with customers. The whole idea of trust – that they know we're a stable company with a reliable track-record, that we understand their security needs, and that we give them flexible deployment options to best meet their unique business requirements. This trust has not only helped fuel the rapid growth of new cloud customers, it's also led to some of our large premises-based customers moving to the cloud. Kohl's department stores is one example, and to-date, it represents the largest cloud migration deal in our company's history.

CC: What have customer's reactions been to your cloud value proposition?

JS: Our value proposition has been an evolution. If you rewind to four years ago, we were the ones bringing up the cloud and talking to customers about it. In many cases, they hadn't really even considered a cloud option. Now, many customers are coming to us already convinced that the benefits of the cloud warrant a shift. The conversation is more, "I'm moving to the cloud. Now tell me why your cloud offering is better than that of your competitors." The ongoing growth of our cloud order volume demonstrates that we've continued to offer a value proposition that fulfills customer requirements, regardless of where we meet them in their selection process.

DB: Absolutely, the landscape has changed and many customers now come to us further along in their decision-making process. I would say our role today extends even beyond effectively comparing and contrasting our cloud solution with competitors. Our value proposition now is to move beyond the role of technology provider to one of expert advisor. So this would encompass an assessment of a customer's people, processes, and technology, and then provide guidance for best practices across all three elements.

JS: Great point, Don. Our value model is so much more than just technology. We can help companies do all the things required to deliver those great customer experiences that will differentiate their business.

CC: Is the cloud a good fit for all customers?

DB: As Joe mentioned earlier, the cloud isn't right for all customers. Some want to own that piece of their IT infrastructure and have the staff to manage it. However, such cases become less frequent with each passing year. I really think people underestimate how far cloud solutions have come – when, in fact, the right one can alleviate so many IT headaches without sacrificing anything.

JS: As Don says, the fit is going to depend on the customer. I would say while the cloud might not be the best choice for everyone, it should at least be considered in every case. We encourage all customers to conduct a thorough assessment with us of both premises-based and cloud deployments, including an ROI evaluation. That's the best way to make an informed decision that considers long-term factors.

"We encourage all customers to conduct a thorough assessment with us of both premises-based and cloud deployments, including an ROI evaluation. That's the best way to make an informed decision that considers long-term factors."

–Joe Staples, Chief Marketing Officer

CC: Competition is heating up in the cloud space. What are your differentiators?

DB: Today, customers want the same functionality from a cloud solution that they've come to enjoy from a premises-based solution. And they demand this sophisticated functionality from a cloud vendor with secure and reliable data centers. We meet both these critical requirements. To further accelerate our differentiation, we'll aggressively build out more global data centers, expand on our partnerships with complimentary cloud providers, and as mentioned earlier, become the expert advisor to ensure the value of our technology is maximized across the business.

JS: Agreed that our uniqueness comes from our ability to offer the same reliability and functionality via the cloud that customers have come to expect from premises-based solutions. Our ability to differentiate has been made a little easier by the fact that the household names associated with contact center software have been very slow to bring to market cloud solutions. We, on the other hand, got into the cloud market aggressively with a disruptive solution backed by 19 years of experience, global reach, and stability – nearly $240 million in total revenues, consistent ownership, and no debt. We'll continue to establish competitive differentiation by making available via the cloud the latest features, such as real-time speech analytics and mobile customer service. And as Don emphasizes, we'll add our expertise as not just a technology innovator, but that of a trusted advisor – one who helps businesses create and manage the kind of customer service environment that makes it a competitive differentiator.

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Feature STORY

by Erin E. Harrison

Leveraging Cloud to **Meet Compliance Challenges**

There are many common misperceptions surrounding cloud computing – one of which is that regulatory compliance requirements preclude many organizations from being able to leverage outsourced, managed cloud services. However, working with a reputable cloud service provider can help businesses leverage expertise and processes while mitigating risks.

While risk managers, security professionals and auditors are educated on cloud computing, its capabilities and its limitations, there are a number of false impressions when it comes to compliance issues, according to Jesse Lipson, GM/VP of Data Sharing at Citrix.

"A lot of people assume that cloud computing comes in one shade of gray when in fact cloud computing comes in many different shades of gray," he says. "In other words, there are a number of different ways to architect a particular cloud offering whether it be completely private or public."

While security is often cited as the primary inhibitor of cloud adoption, Lipson says compliance is actually a bigger obstacle toward widespread adoption today.

"In terms of security, you can manage it and there's a threshold at which an individual or a company is willing to accept a certain risk level," says Lipson. "On the other hand compliance is usually driven by law, legislation or regulation so there is no choice – if your offering is unable to meet the requirements of the law, chances are you're not going to be able to provide a useful service."

Often, the comfort level with cloud services can be as much of an obstacle as the actual compliance requirements themselves, adds Ipswitch File Transfer's Jeff Whitney, vice president of global marketing.

"It's just that some requirements are under the cloud services vendors control. This makes some organizations uneasy," Whitney explains. "Organizations with large, robust IT infrastructures may be far more uncomfortable with relying on others than smaller organizations. We have numerous small and medium size customers who tell us they can't get the levels of security, up time and disaster recovery that they can through our cloud services."

The reality is that cloud platforms cannot only be as secure and capable of meeting regulatory compliance requirements, but in many cases, a cloud solution can help accelerate an organization's ability to achieve compliance requirements and ease the process of maintaining compliance as well, according to Mark Clayman, chief operating officer of TriCore Solutions.

"Cloud providers that are focused on providing a platform to support enterprise applications have made security and compliance a core component of their culture and operations," Clayman explains. "Because of the potential exposure and the need to support compliance requirements from FERPA to PII to PCI to HIPAA, etc. to help organizations move enterprise applications and sensitive data to the cloud, some providers have become extremely sophisticated at adding additional security services, controls and processes, over and above the basic security and data protection controls, including physical security, logical security, backups, data encryption, two-factor authentication, etc. – all backed by service level agreements that help companies achieve their compliance and regulatory requirements."

Controls and Shared Responsibility

Having clear accountability of how cloud providers are addressing an organization's requirements is also critical in achieving and maintaining compliance.

"Service providers need to clearly communicate shared responsibility – where the responsibility of the service provider, as well as the responsibility of the customer, begin and end," says Lipson. "Customer configurable controls is an example of this, IT admins are able to configure security controls (password control, length complexity, session time-outs, single sign on identity management, mobile device security, etc.) on their end. Organizational and technical compliance responsibilities must be clearly defined and agreed upon. In order to stay compliant, both the service provider and customer need to comply with their own responsibilities."

Lipson offered the example of a bike helmet company. When the customer makes the helmet purchase, the helmet comes with specific instructions on how to properly wear it. If the user doesn't follow these specific instructions (their responsibilities), the helmet won't protect them properly.

"Ultimately it's about understanding the shared responsibility between the organization and the customer," he says.

As such, Clayman says it is extremely important for organizations to partner with their service provider to:

Tech Support in a 'Bring-Your-Own' World

Today's workforce has evolved beyond bring your own device (BYOD) to a bring your own (BYO) world, where mobile and distributed employees are choosing their preferred devices, software, applications and programs to stay connected and productive.

This has created a new set of challenges for IT departments, and for many companies, a time to rethink support strategies to respond effectively.

Integrated cloud technology provides IT scalability & efficiency

IT's role is now more critical than ever to ensure uptime for people and technology. Yet, support teams are often still working with the same, or fewer resources, and using single point tools that require duplicate work. All the while, IT is still tasked with ensuring security, compliance, issue resolution and high customer satisfaction levels.

In this new era of support, delivering on-demand services in the cloud offers several advantages. Cloud technology is easy to adopt, scale, and secure and compliant with existing company policies. When applied to support delivery, cloud tools can enable IT to access and provide the data and insights to further drive overall team efficiency and allow for support of end-users in a secure way, regardless of location or device.

Working from an integrated toolset that combines critical support functions can simplify IT, providing an efficient platform for managing social and mobile support, analytics and mitigating security risk and meeting compliance standards.

Global audio messaging provider gains visibility, reduces ticketing time

Interalia, a leading provider of music on-hold and message announcement systems to global resellers, is one company realizing benefits from moving to a single cloud-based system for support. With 250,000 installations worldwide, the company switched from its outdated ERP ticketing system to a cloud-based tool that integrates both remote support and service desk functionality.

Using the Citrix GoToAssist integrated solution, the company now has a new perspective on managing support incidents and delivering live support. The team can quickly access key incident information such as whom the ticket is assigned to, when it was opened, the end user, the urgency and status. They can track each ticket and have even given regional sales managers direct access so managers can track customer incidents in regions. With the added integration of live remote support, Interalia IT can launch instant remote support sessions from help desk tickets and vice versa.

Interalia end users also gained new advantages. From knowledge base to self-ticketing options and chat, end users can easily resolve or request support as they prefer. This has resulted in time savings for IT, as the team can quickly communicate with end users and exchange files via chat, without taking the time to start a new email or dial the phone. Interalia has reduced ticketing time with greater visibility across its entire support operations.

"BYO" is continuing to push companies to rethink the support delivery model. Companies who innovate and strategize, taking the best of the cloud, social engagement, mobile technology, and analytics for integrated support delivery, will emerge winners in this new BYO support world.

Elizabeth Cholawsky is vice president and general manager of IT Support Line of Business at Citrix.

- Ensure that both parties completely understand the compliance requirements for a particular environment, determine what technologies, controls and processes need to be put in place to meet these requirements;

- Make sure that the associated logging and reporting is established so that the environment can be properly audited and both an organization and service provider can attest to meeting compliance requirements;

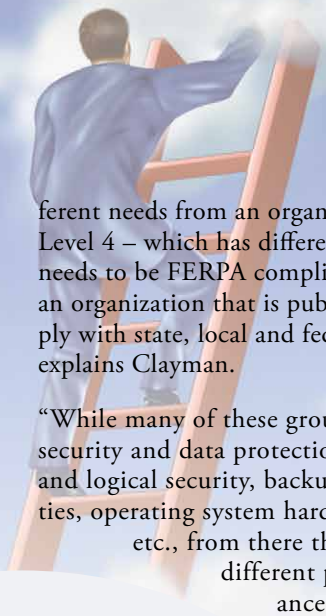
- Clearly define roles and responsibilities between and within the organization and the customer for all elements of the application environment; and

- Create SLAs for the service provider for compliance controls.

Keeping Up with the Times

Staying on top of evolving regulations is part of doing business for cloud providers just as it is for organizations hosting on premise, according to Whitney.

"Service providers have an advantage in that the cost of keeping up with compliance regulations is a part of their core business that they can share across many customers," he says. "Organizations hosting on-premises often have dedicated resources devoted to staying compliant."



Keeping compliance professionals, legal counsel and advisors close is a good way to stay on top of the compliance regulation evolution, Lipson says.

"Approach it in a collaborative fashion by asking questions like -where are we right now, where do we need to go, and what do we need to do to meet compliance? In other words, the tough questions need to be asked in order to meet compliance," advises Lipson. "While this may slow the process, it ensures that service providers meet compliance. Another option is to get risk assessment. This will help service providers understand things like how they're currently managing risk and what is the most prevalent threat to their business model."

Perhaps even more important for service providers that target customers for their cloud, they should make it a priority to take action and evolve with the regulatory requirements, according to Clayman.

"The approach that service providers take towards service development and the implementation of operational controls should always be managed with a slant towards how will these services be able to help their customers achieve and maintain regulatory requirements," he says. "In order to achieve this, service providers need to have a function within their organization that is solely focused on security and compliance and then ensure that there is an internal process where the implementation or changes to controls or the development or changes to services being provided are properly vetted by this function."

"Service providers have an advantage in that the cost of keeping up with compliance regulations is a part of their core business that they can share across many customers."

Achieving Compliance in the Cloud

Achieving compliance in the cloud depends on many factors – an organization required to achieve PCI Level 1 has different needs from an organization that needs to achieve PCI Level 4 – which has different needs from an organization that needs to be FERPA compliant and has different needs from an organization that is publicly traded, which must comply with state, local and federal government requirements, explains Clayman.

"While many of these groups will require the same basic security and data protection controls in regards to physical and logical security, backups, encryption, separation of duties, operating system hardening, password policy controls, etc., from there the services required will take different paths to achieving various compliance requirements by implementing combinations of more advanced security services, such as application firewalls, intrusion detection systems, log monitoring, vulnerability assessments, reporting, etc.," he says.

The challenge of achieving compliance in the cloud is largely the same as achieving compliance on-premises, but with dedicated experts supporting compliance efforts in the cloud, according to Whitney.

"Also unique in the cloud is that individual organizations' service environments must be adequately isolated from one another to comply," he says.

Technical compliance is another key element – such as apps that enable workflow automation without the user having to do anything, adds Lipson.

"When an app is compliant, the end user doesn't have to even worry about whether or not their actions are meeting those requirements, it's simply baked into the workflow," he says. "Another element is that the whole stack needs to be accredited, achieving the same certification – not just the organization, but the data centers as well."

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Feature STORY

by Rory J. Thompson

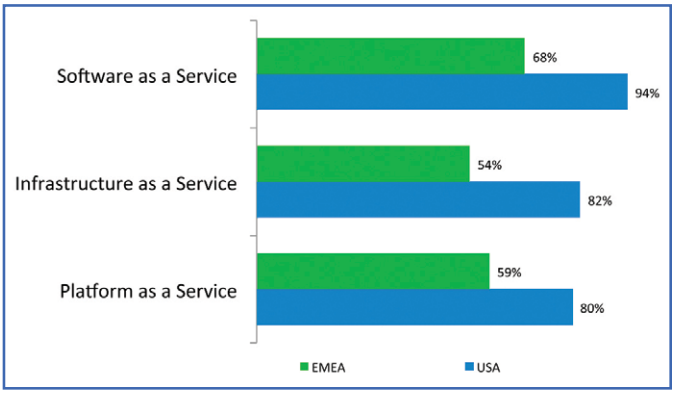
Cloud Adoption Exceeding Expectations, New Global Study Finds

Adoption of the cloud by both U.S. and European businesses is smashing all preconceived notions that indicated companies were moving warily into the technology, or holding off entirely, according to new research recently released and obtained by *Cloud Computing*.

The study, commissioned by CA Technologies and conducted jointly by Luth Research and Vanson Bourne, found that not only are businesses large and small embracing the cloud, but they're enjoying the savings that initially seemed to have been overhyped by cloud providers, and finding that their security concerns are being addressed and allayed.

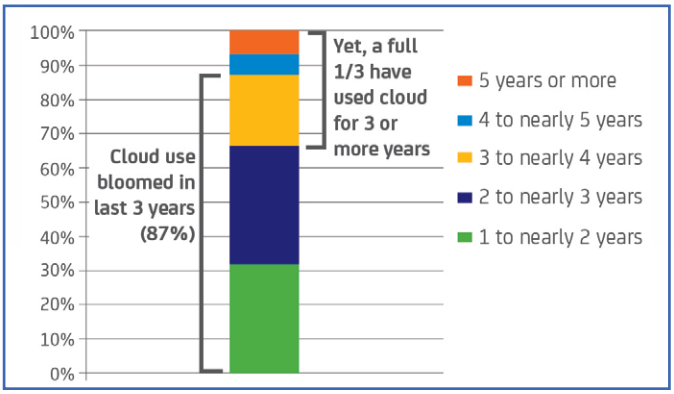
Those surveyed – 542 organizations in the U.S. and Europe using various types of cloud for at least one year or more – confirm that cloud computing is delivering on all of the major promises vendors have made for it, most notably that it can save money and speed time-to-market. Experienced cloud users surveyed also shed light on the evolving nature of cloud and how, as use matures, the need for sophisticated IT management and security tools to guarantee the cloud continues to deliver in the long term is becoming much greater.

The study also found that companies most experienced with cloud computing – four or more years or three or more types of cloud services consumed (Infrastructure as a Service, or IaaS; Platform as a Service, or PaaS; and Software as a Service, or SaaS) – are now demanding IT management tools such as end-to-end service automation, service-level management across both cloud and non-cloud environments and the ability to switch between cloud service providers.



Among the findings of the research:

- Use of cloud computing has exploded in the past three years, with 87 percent of the respondents starting their use of cloud in that time frame.
- SaaS leads the way as the most widely implemented type of cloud service (94 percent of the U.S. and 68 percent of the Europe companies in the survey had implemented SaaS). IaaS and PaaS follow closely, only 10 to 15 percentage points behind SaaS.
- The U.S. is leading Europe in current cloud use. Fifty-five percent of the companies in the US have been in the cloud for three or more years, compared with 20 percent of Europe respondents. But Europe is catching up fast, with 38 percent of the Europe respondents using cloud for two to three years.

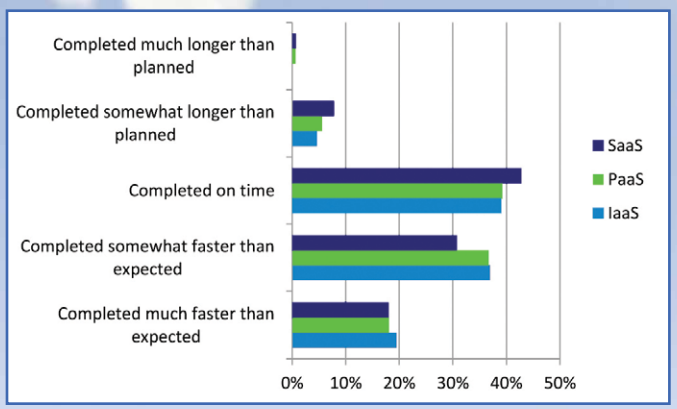


More Surprises

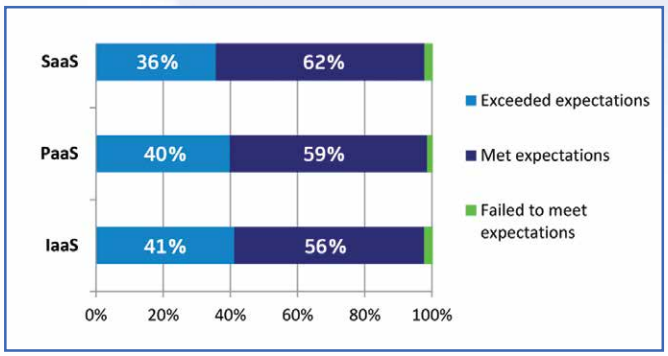
For some respondents of this survey, the cloud is helping to dispel the perception of IT as slow-moving, and is exceeding expectations with nearly half (or more) of all respondents indicating their cloud deployment was completed ahead of schedule. Deployment expectations may have been lower from fear of the unknown, or the touted complexity of the cloud – questions not raised in the study. However, the study also confirms that the speed of cloud deployment was a pleasant surprise for most respondents.

In fact, around 40 percent of the respondents reported that cloud is exceeding their expectations. Respondents attributed their success to it being "easier to implement than anticipated."

And while "security" often appears at the top of the list of concerns related to cloud computing, the respondents in this study – those experienced with cloud computing – somewhat surprisingly reported turning to the cloud in an effort to improve



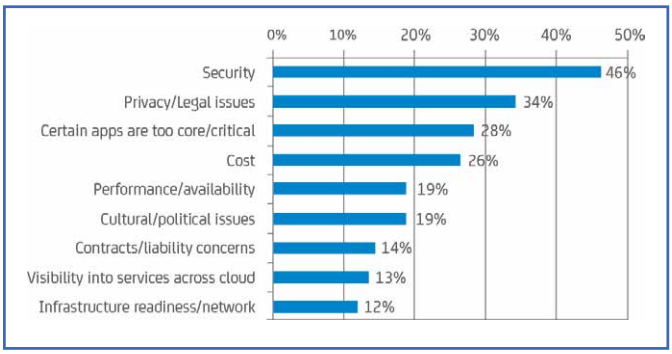
security. Ninety-eight percent of enterprises surveyed reported that the cloud met or exceeded their expectations for security. This was true across users of IaaS, PaaS or SaaS. Furthermore, almost one third indicated "security has been less of an issue than originally thought" when asked to share their primary reasons for success with cloud computing.



On the Other Hand…

Yet the primary reason given by survey respondents that an app isn't moved to the cloud suggests that companies understand the limitations of cloud and are taking a conscious and selective path in choosing which apps are moved to the cloud. Security (46 percent), privacy/legal (34 percent) and "certain apps are too core/critical to our business" (28 percent) rank as the top three reasons for keeping an app out of the cloud.

A recent Ponemon Institute study sponsored by CA Technologies found that when compared to a similar 2010 study, more cloud computing



applications are checked for security risks before use. Still the Ponemon study, which surveyed 748 IT and IT security practitioners located in the US, also noted that recommended security practices are still used by just 50 percent or less of those polled. Some of these include:

- Assessing the effect of cloud computing on the ability to protect confidential information;
- Being proactive in assessing information that is too sensitive to be stored in the cloud; and
- Auditing or assessing cloud computing resources before deployment.

The Needs of Management

Despite the increased benefit that those with more experience were gaining by using cloud computing, they were also more likely to express frustration with their inability to manage it.

One key part of the survey asked respondents to choose which capabilities they needed to ensure future cloud success.

The graph shows that in four specific areas, the longer a respondent used the cloud, the more likely they were to identify that capability as critical to cloud success.

The results were even more distinctive when comparing those who used all three types of cloud in their organizations against those who only used one (See Table 2, below). Across the board, experienced respondents were between 1.5 and 2 times as likely to say that a particular IT management capability was critical to their future cloud success.

The recognition that management's needs mature as cloud deployments mature could be due in part to cloud implementations becoming stable, constant environments to which IT teams now need to apply the management principals of their primary environments.

Advice and Next Steps

Perhaps the key takeaway from this survey is that if you are not in the cloud yet, you need to get moving; there are substantial business and technology benefits to be gained. While it is possible there are still a lot of pilot projects in which companies are just testing cloud services, the number of companies that plan to spend greater than 30 percent more on cloud services this year shows that a substantial portion of the business world is moving beyond the pilot phase into more widespread use.

Any company still on the sidelines about adopting cloud technologies should really consider moving quickly, as leading companies have already done. Maybe that's one of the reasons they are leaders.

The full research whitepaper including a number of charts and graphs showing use and implementation numbers, along with a summary slide deck and executive summary infographic, is available as free download later at http://www.ca.com/cloud-success-factors

by David Peto, Aframe

Taming Video Archives
With the Cloud

The explosion in video use today – on the web, in corporate marketing and training and of course in professional content creation – presents a conundrum for CIOs charged with managing it all. Videos are high-value assets that the organization paid dearly to create – assets that can affect the organization's brand reputation and revenue. Videos usually impose significant storage and bandwidth demands from the IT infrastructure as organization insiders and advertising or production agencies and freelancers move the content back and forth through the production's workflow.

But do you even know what video you have? Let alone, how much of the IT budget they consume?

The response from IT executives when asked this question is frankly astounding. Often they'll state that they really don't make a lot of video, until asked about marketing presentations, CEO speeches, training sessions and video blogs and all iterations made in the process of creating the final deliverable. Next there's often an anecdote about some urgent need that forced IT into spending unplanned budget to support video and about what a nightmare it is to support all this video. Finally there's an "Aha!" moment where, like most IT departments, the executive realizes they don't know what organizational video assets they have, can't find video they've paid huge sums to create, across all global operations can't quantify the IT resources they consume to create video, and, don't know whether the IT resources used on videos are being used efficiently or squandered.

Some enterprises have on-premise media asset management (MAM) solutions to address the issue, so they are more ahead of their peers (they've at least considered video as part of their company's assets). However, legacy MAMs often cannot support easy access from outside the network. Most, realizing they were becoming outdated, have implemented some degree of "Web-ification" for browser access from outside of the company's walled garden. While this seemingly bridges a gap in their requirements, it doesn't maximize the full potential of the cloud infrastructure they're trying to replicate. For this, the resource, its maintenance and its management is moved fully off-premises.

Cloud computing provides a ready answer to the enormous issue of controlling video access and archiving. Placing an entire MAM in the cloud, in a secure, managed and controllable way is basically a riff on a "website" architecture, with pleasing UIs and the ability to support "bring your own device" (BYOD) access and viewing on tablets and mobile phones.

Increasingly, corporate video departments, as well as major production companies, are cloud-enabling their video archives and finding new ways to offload the onerous storage and bandwidth requirements necessary to deal with modern video production techniques. This helps to empower users to be as creative as their talent allows – unfettered by the restrictions of the IT infrastructure.

Imagine the possibilities from a CIO's perspective. Below are just a few examples of cloud-enabled video archive initiatives that are allowing more flexibility, leading to lower costs, faster networks, and scalable storage.

An upscale beverage company has its agencies and teams shoot video of extreme sports events, then upload and store the video in a cloud-enabled MAM. By using the cloud as a central repository, the entire extended team can pull down broadcast-resolution content for Webcast video series and event promos no matter where in the world they live and work.

One of the U.K.'s largest media agencies is using a cloud-enabled MAM to store video and photographs for anywhere, anytime access by reporters as they file stories from around the globe.

Veria Living, a global broadcaster with operations in New York, London, Singapore and Mumbai, placed its entire MAM in the cloud, instead of allowing video assets to exist on various individual hard drives, loose tapes and SANs throughout its diverse operations. It also enables its ad sales and marketing teams to make use of the MAM as an asset library when they need to create sizzle reels or establish licensing rights for showcasing content to prospective buyers.

A Northeastern University film professor used a cloud-based video production platform so students could share projects, comment and collaborate on each other's work without requiring the school's IT department to buy hardware or install software.

Cloud-enabled video archives make a whole lot of sense for end users as well as IT executives. Expect to see more of them in the coming months.

David Peto is CEO and co-founder of Aframe, which owns cloud infrastructure in the U.K. and across the U.S.

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by Tom Keating

Product REVIEW

CertainSafe, the Virtual Safety Deposit Box, Drives Secure Collaboration

TMC Labs learned about a new product launching by TransCertain called CertainSafe that could be a game changer when it comes to cloud-based collaboration. Fortune 1000 companies and indeed even smaller companies are reluctant to put their most sensitive and confidential data in the cloud to be shared with their partners and customers. But what if you could encrypt the data in the cloud using AES256 encryption or any encryption algorithm of your choice, and combine that with "tokenization"? Further, what if you could share certain folders and files with specific people using just a browser and, with no plugins required, what if you could set an expiration date of how long a folder is shared and maintain an extensive audit trail?

TMC Labs spoke with TransCertain's CIO David Schoenberger about CertainSafe, along with it current product, CertainStore, which is the engine that drives the security behind CertainSafe.

TMC Labs: Please give us a bit of history on TransCertain, along with a technical description of CertainStore.

Schoenberger: My partner Tim Reynolds and I both came out of payment processing background, and we worked with a couple of payment processors before.

While we were in this payment processing business, our clients kept coming to us and saying: 'We understand you have fantastic security, you've got great speeds, but we're also concerned about some other pieces of our data. What do you guys do for social security numbers or what about this documents that go along with the payment transaction? Can you secure that stuff too?' And we couldn't. The growing concern in the marketplace was that we're not just concerned about payment data. In fact we might be more concerned about these other pieces of data than we are around the payment data.

So that's what we did. Tim Reynolds and I left the company we were with and founded TransCertain with the idea that we can take any data from any platform and secure it. But not just secure it – make it available. This availability is very revolutionary for us. We've bridged the gap between data security and data integration and availability, and we have created a technology that secures data at very high speeds and very securely, and at the same time makes it available.

Unlike bulk database encryption solutions, which encrypt everything, CertainStore helps companies identify which items in their database would give the company heartburn if there was a breach. What CertainStore does is take those elements from their database and provide the customer a 'token' just as a reference or placeholder.

TMC Labs: What if a rogue employee attempts to contact TransCertain with all of the tokens and asks for the data back?

Schoenberger: Typically, when we have the data, we're doing something with the stored data. We can hand it to a vendor, to a bank, to the other doctor, the other insurance company. Typically speaking, we never hand the data back to the merchant. When they tell us to do something with the data they'll hand us the token with the rule that's already built into our platform called process on time that says 'here's what needs to happen to the data when it needs to happen.' So if a hacker says hand the data back to me, our system will deny it.

TMC Labs: This essentially eliminates social engineering hacking.

Schoenberger: Agreed. Let's say the hacker figured everything out and broke through all the rules and understood every nuance of our technology, which I'm telling you is impossible, and he took the token and hacked in and unencrypted this data represented by the token and the hacker found in the thousands of different hard drives where that piece of data lives, MicroEncrypted on that hard drive and took the data out. The best thing – which is still impossible – that they can ever do and if they are able to hack through the encryption algorithm, which standard ships with AES256, instead of unlocking an entire encrypted database, they'll only be able to unlock one single element of that data.

Opening CertainSafe

Schoenberg added that they can use whatever encryption algorithm a client wishes, including proprietary encryption algorithms.

TransAct is the final step, an adapter system they've built that unencrypts, transforms the data into a format the receiving side is expecting and then a Just in Time sort of method. It unencrypts the data using the token and uses the receiving side's proprietary method of transmitting that data to them. The receiving side can use standards such as SSL for the transmitting of the data.

The solution completely relieves clients of the burden of securing the data, and prevents any fines or penalties or

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Product
REVIEW

media embarrassment if a client's systems were hacked since no sensitive data was stolen. The platform gives them complete control and freedom over what happens to that data and because CertainStore does not ever hand back that data to the client, it usually eliminates the liability of "holding" that secret data locally. CertainStore acts as the go-between, pushing the data where the client needs it to go without the client ever having to store sensitive data in its own IT infrastructure.

Under certain circumstances, if the client wants the data back, CertainStore will give it back to them. In fact, there are cases where fields need to be updated or compared. CertainStore offers APIs to expose the data and allow the client to update records and re-encrypt and re-tokenize that data without clients having to do anything on the front-end.

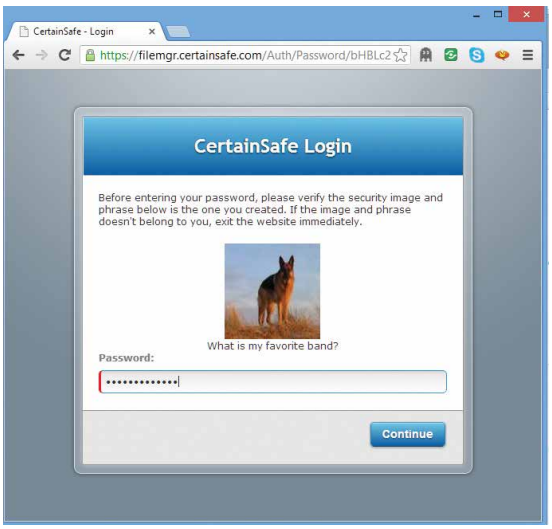
CertainStore leverages server-to-server communication using standard web services so that its database communicates with TransCertain's servers to provide the field-level encryption and what TransCertain calls "MicroTokenization". These connections are completed utilizing technology that can connect any platform to any other platform quickly, efficiently, and cost effectively.

All TransCertain services – CertainStore, Process on Time, and TransAct – are wrapped with APIs, both XML and JSON APIs, so any organization regardless of its front-end platform or database can send and receive tokens from TransCertain. They also can send and receive the data that they need, and can make the requests that they need programmatically at the server level. That means integration is a piece of cake, said Schoenberger. They don't have to change their front-end software, or change their database, or change their legacy system, etc. All they have to do is make an XML or JSON call into our platform, he said.

With a background on TransCertain and CertainStore complete, Schoenberger proceeded to demonstrate the CertainSafe security-as-a-service solution. TMC Labs was also granted a trial account to test it ourselves. CertainSafe is a web-based front-end built by TransCertain designed to be completely browser-based with no installation, leveraging HTML5, and built on TransCertain's core foundation, of which CertainStore that we discussed previously is a core component. While CertainStore was designed for server-to-server communication with no human interaction, TransCertain built CertainSafe for human-to-server communications.

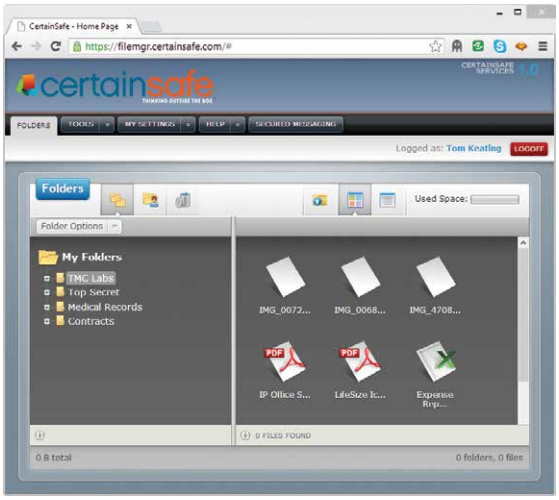
What does CertainSafe do? Essentially, you can think of it as similar to a Dropbox or Box, but with an added layer of security and compliance – and when we say compliance we're talking PCI DSS Level 1, plus AES256-level encryption, with support up to 1024-bit or any other custom algorithm that may be required. CertainSafe enables organizations to share mission-critical information across multiple platforms at a high level of security you just don't see unless you work for a government entity.

The popularity of Dropbox is due to its ability to easily share photos and documents with others as well as hosted backup. Schoenberger explained, "We designed CertainSafe very specifically to say 'we don't want the bulk.' We're not the neighborhood storage unit. We're in essence the virtual safety deposit box. This is for your files where you need compliancy and/or high levels of security. You want stuff to have a PCI-certified rubberstamp on it, or you want to pull in your X-ray files. We don't envision people using our service just for backup or storing vacation photos. This is for the real secret, sensitive stuff."



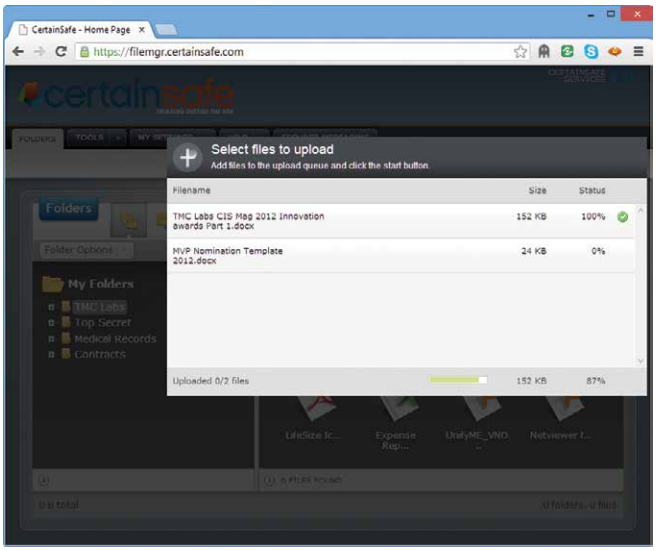
When we first logged into CertainSafe as a new user, we were prompted to pick out own security questions and then we could set how often after we login that we're challenged. You can choose how often to be challenged, i.e. once per week, once a month, randomly, etc. Here's an example:

In CertainSafe you can create folders and then share the folder with other people, including people who are not currently CertainSafe users. CertainSafe users can share their folders and files with anyone, with the only caveat being that non-CertainSafe users only have "read" access and not "write/edit" access. The main folder and file management UI looks like this:



CertainSafe stores files in two different formats – the original file format and converted preview view if it's a viewable item, such as an Excel, Word, PDF, or other formats CertainSafe supports. It's a non-editable secure view of the file and cannot be downloaded or printed, though technically you could take a screenshot and print that. The system can store financial data or other confidential data because as previously mentioned, it is PCI DSS Level 1 certified with third-party auditing of this compliance.

Dragging and dropping files from your file manager (i.e. Windows Explorer, Apple Finder) into CertainSafe is a snap. In fact, you can drop-and-drop multiple files at once and through the magic of HTML5 you don't even need a browser plugin to upload your files. Here's a screenshot of the browser where you would simply drag-and-drop your files:



What happens on the back-end is the file is MicroEncrypted and has a token created. It is then stored in multiple locations, and converted into a viewable only document. It's actually stored twice times four, because they have a data center in Denver (primary) and Salt Lake (hot site) with each data center having a 2nd redundant database. If any disaster happens it's already running simultaneously at the hot site and essentially backed up an additional two times.

Importantly, when you share a folder you can set a data range, including the ability to share a folder in the future. Unlike Dropbox and other cloud-based sharing apps, which require you to remember to "unshare" a folder at a later data, CertainSafe lets you set a sharing expiration data. This is important for reporting, HIPAA compliance, and other compliancy issues. Other sharing options allow you to set whether users can download the file, view the "preview" rendered document only, and even enable users to upload back into this folder. When viewing files you can view in icon view or in list view, which lets you sort by date. A couple other handy file management capabilities include auto email notifications upon changes and auto email notifications for new items added.

TMC Labs mentioned how fax is considered a strong legal document because there are no stops in the middle, unlike email which travels across multiple hops, and can be spoofed, etc. And we asked Schoenberger what sort of legal standing CertainSafe has. He responded, "It's similar to fax in that regard. This means that if you upload something it's not going anyplace except into this compliant, certified, cloud-based application."

Audit logs built into the system add further legal standing and enable clients to track who changed what and when. You can see when someone looked at a file, and more. The web interface doesn't display every bit of detail. For instance, CertainSafe tracks how long each user has been signed into a session but doesn't display that information by default. CertainSafe records just about everything imaginable into the database, and TransCertain can customize what audit information is displayed for its clients.

One useful feature is that users can attach comments to a document. This is useful, for example, for signing contacts – simply upload the contract and request the other person sign it with a comment. TransCertain told TMC Labs the company is working on a digital signature feature for a more formalized signature process. Another useful feature for the enterprise is that administrators can set roles and permissions for users.

Secure Shred Option

When a file is deleted it is truly "shredded". It is overwritten by binary data at minimum seven times. Forensically, four is enough to make the file unrecoverable, but TransCertain mentioned that the Department of Defense requires a minimum of seven times.

TransCertain demonstrated how an X-Ray can be shared in the cloud without delivering the X-ray to the doctor's hard drive. This is not only important for HIPAA compliance, but it also solves the bandwidth issue of waiting for a 2GB or larger file to download. The X-ray image can be viewed from your browser with the image residing securely in the CertainSafe cloud.

Conclusion

TMC Labs inquired about future features in CertainSafe, and the company told us that Secure Chat is in the R&D stage. We also asked about WebRTC (VoIP, video), and the company said that's something it's looking at as well.

Sharing and security are like matter and anti-matter – if they get close they destroy each other. How can you have high-level security and at the same time share the information without killing usability and making users jump through hoops to gain access? CertainSafe takes this sharing/security/usability paradox and turns it on its head, making information secure, PCI and HIPAA compliant, and very usable/user-friendly for the end user. TMC Labs was very impressed with CertainSafe and would not hesitate to recommend its solution to organizations looking for a highly secure method of sharing information with high usability and at a cost that doesn't break the bank.

Pricing	Ratings (0-5)
Basic Individual - $9.99/mo each Professional - $7.99/mo each Enterprise - varies	Installation: 5 Features: 5 Usability: 5 Security: 5 Overall: A+

Tom Keating is vice president, CTO and executive technology editor/SEO director of TMC.

by Erik Linask

NSA's PRISM not Distorting the Future of Cloud Computing

In his Publisher's Outlook (see page 4), Rich discusses the potential impact of the recent revelations surrounding the NSA's PRISM program or tech companies. While he may be right, and there may be some impact, it will not likely be far reaching on long-lasting. The fact is we have become too accustomed to having access to data, resources, and information at our fingertips and are hardly willing to engage a technological regression for the sake of a protecting a few bytes of data.

Think about it… when did you last pick up a physical map or phone book? If you don't have young kids, how long has it been since you played a board game (but I bet you've played Candy Crush or Angry Birds)? Do you get still have a physical newspaper or TV Guide delivered to your home (yes, there are many who do, but that number is significantly smaller than it was pre-iPhone).

The point, simply, is we have become slaves to technology.

The same holds for business, especially at a time when our personal and business lives have become so intertwined it's sometimes hard to separate them. We work on weekends and while away on vacation, and likewise, we often manage our personal affairs from the office. It's the new normal.

Knowing that, I took the opportunity to ask some members of the cloud computing industry what they felt the impact of the PRISM leaks might be on their market. I received several interesting responses, but most, in some capacity, acknowledged the revelations may cause concern, but there is little we can do about it and the ultimate impact will be negligible.

Whether for business of personal use, most of us use multiple devices and many different applications and services to be efficient in our various capacities. Many of these services leverage the cloud. We know it, and we will continue to use them because they enrich our lives.

"People kind of assume anything you put on the Internet can be found; as soon as you turn on your computer, your data is available to anybody," says Cloudant's Sam Bisbee. "That's the price we pay for the cool functionality we want and this connected world."

Does it mean we become ignorant to the fact our data may be exposed? Certainly not. In fact, as BIA's Alon Israely notes, it may result in an added level of due diligence when selecting cloud providers and vetting their security measures.

The consensus seems to revolve around the fact that we've always believed Big Brother is out there – now it's merely been confirmed, which isn't really going to change our behavior much.

"We are all tracking what people do on our websites – Google is tracking everything we're doing and profiting from it. We also know security demands are being driven by the same government that is doing similar tracking," notes Hostway's Aaron Hollobaugh. "I don't think what's been revealed recently by the NSA will have a dramatic impact on the type of trusted relationships we can create with partners and customers."

Sandy Steier from 1010 Data and Chris Smith from Cloud Technology Partners agree. While the confirmation that our government has access to some of our data may be disconcerting, we shouldn't be surprised. Nor should that realization be cause for undue concern, as the NSA's reach will extend into the cloud or into your own data centers, and we may as well become comfortable with that knowledge and the governance and regulatory controls that come with it.

Wiretapping has always been a reality, so the fact that federal agencies are now looking at our data should come as no surprise – it was only a matter of time after our communications began moving from circuit- to packet-switched networks. That time is here.

"As much as we may be scared of Big Brother, at the same time, we leverage technology and there are a number of great tools you can add onto to your Inbox or data stores that deliver a lot of great analytics," notes Israely. "That's a third party potentially watching your data – is that worse than the NSA?"

So while this has become a topic of conversation, this isn't likely to have a significant business impact – though it may have an impact on people's view of the Federal government, painting the NSA and other entities as the new bogeyman. Nobody is running to Verizon stores to turn in their phones; people aren't shuttering their Facebook accounts; and Android phones are outselling Apple at last count.

To see what all the folks I spoke to had to say about cloud computing and the NSA, check out the Cloud Expo NY 2013 videos on the TMCnet videos page: http://tmcnet.com/59242.1

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