Cloud Computing

Steve Wozniack, the co-founder of Apple, Inc., breaks down the impact of the cloud on modern enterprise.

INSIDE
Three reasons why the cloud is critical to your small business.

ONLINE
Tips and tricks to keep your data secure in the cloud.

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Discover the five trends that are currently driving cloud computing in 2015.
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Big Data
In the age of e-commerce, learn what business analytics can do for your organization.

Cloud Levels the IT Playing Field

You're either in the cloud, on the cloud, or using the cloud frequently without realizing it.

Everyday examples of cloud computing abound; watching a movie or playing a game online, getting real-time driving directions from a mobile phone, collaborating with people—wherever they are—in the same virtual work space and more. Additionally, a new generation of startup companies are getting to market faster because they can rent computing capacity instead of owning and managing it themselves.

Cloud computing is a way of leveraging the Internet to consume software or other IT services on demand. It allows entrepreneurs and businesses to take advantage of the latest technologies and innovations without spending a fortune on expensive computer parts, software and IT specialists. By reducing IT infrastructure requirements and associated costs, a business can focus their attention on testing new ideas, delivering a better customer experience and adapting to shifting market dynamics ahead of their competition. For many young companies today, owning IT infrastructure and managing a data center is a hindrance to competing effectively.

Power and speed

Cloud computing is an evolution of the Internet. This time around we aren't just selling pet food online. Cloud computing allows any company to increase the scale and power of their IT and the speed at which it can be deployed across organizational and geographic boundaries. Simply put, you can do things more quickly, creatively and in most cases cheaper—while delivering product and services that are highly attuned to a consumer's needs. Moreover, these advantages are afforded to individuals, tech startups and established global companies alike. Cloud levels the playing field.

Randy Bias
Board of Directors,
OpenStack Foundation

Cloud computing is an evolution of the Internet.

At the heart of our current technology boom is a fundamental re-imagining of how we do business online, how we engage with consumers and the amount of data being generated as a result. In an increasingly interconnected world, the number of interactions among people, devices and systems is growing rapidly. Cloud computing provides a more dynamic infrastructure to meet these demands. The ability for a company to rapidly and cost-effectively process massive amounts of data and use that insight to respond to its environment is a key competitive advantage of cloud computing.

Tomorrow's strategy

How important is cloud computing? I would argue that it's a sea change—a deep and permanent shift in how computing power is generated and consumed. In a world of ever increasing connectedness, where scale and rapidly adapting to change are the new normal, cloud isn't a question, it's an answer. Businesses of all size and scope will need to leverage cloud technology as part of their strategy moving forward—otherwise they will perish. The full potential of cloud is just beginning to be fully explored, but there is no disputing that the cloud is transforming how we live, work and interact. ■

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INSIGHT

SPOTLIGHT

Jim McGinnis
Leader, Accountant and Advisor Group, Intuit

Small Businesses: Are Your Heads in the Cloud?

The benefits of cloud computing go beyond anytime, anywhere access.

Cloud computing has eliminated geographical borders, allowing accountants and small businesses to serve customers around the world. It has also broken down the technology silos that chained them to their desks and storefronts.

With cloud computing, a small business owner or their bookkeeper can run payroll or accept customer payments for goods and services using a tablet. With a smartphone, a small business owner can take a picture of a receipt, attach it to a transaction using accounting software and automatically share that information with their accountant.

This ability to leverage cloud computing to accomplish everyday business tasks will continue to grow and reshape how small businesses and accountants serve their customers and share financial information with each other. In fact, the percentage of U.S. small businesses using cloud computing is expected to more than double, from 37 percent in 2014 to 80 percent in 2020, according to the study, "Small Business Success in the Cloud," from consulting firm Emergent Research and Intuit.

With the help of cloud-based technologies, small businesses are more efficient, better able to meet their customers' needs and stay on top of the financial health of their business. These technologies also help accounting professionals stay better connected to their small business clients with the ability to gain insights into their real-time data that lead to consulting opportunities that help their clients achieve greater success.

Accounting firms and small businesses that do not embrace this technological shift risk stagnation and potential failure.

Next Level Connection

Nearly three out of five companies have integrated cloud services into their Information Technology (IT) strategy and are spending more than 10 percent of their total operating expenses on cloud services. This puts the cloud services market on track to surpass $250 billion in annual revenue by 2017. Let's take a closer look at five key trends driving this phenomenon.

By Marty Lafferty, CEO, Distributed Computing Industry Association

Social networking
There are 1.3 billion active users of the leading social media networks. In four years, global social media usage will nearly double. In the future, the Internet will operate more like electricity, as an unseen part of the infrastructure that we notice only when it's not present. The most dramatic change will not only be the amount of data available, but also the decision-making power the data.

Mobile cloud
Although the majority of applications today do most of the data storage and processing on mobile devices, that could change in a few years. We will see the entrance of a corporate back-end system as acceptance of the bring-your-own-device (BYOD) to work advances. The mobile cloud will enable increased flexibility with a greater degree of real-time data sharing. In addition, mobile cloud computing programs will be downloaded directly from the Internet.

Internet of Things (IoT)
The IoT is transforming everyday objects into an ecosystem of information that will enrich our lives. It will help us optimize our wellness. Retail, public space and factory environments will see components produce, consume and process information to improve operations. Society will need new, scalable, compatible and secure solutions for the management of the IoT, and to support our new business models.

Big data
The next level of scale will come from the real-time use of big data to effectively make decisions. The big picture for faster big data is data processing and visualization allowing us to integrate technology, culture and strategy into a cohesive world.

DevOps
DevOps integrates two differing cultures—developers and operations—to help IT keep up with the increasing pace of change. DevOps supports certain "truths:" shipping code faster and more error-free is inherently good; automated testing at scale makes a better, more secure product; the real value of engineering talent is the insight and creativity to solve real-world problems.

One source of truth

See all your data. Boost performance. Drive accountability for everyone.

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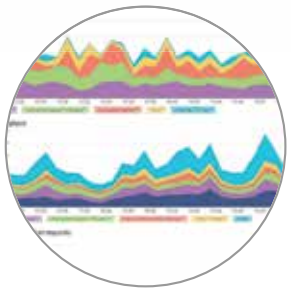
crash analysis.



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App Owners
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Find the truth with a single source of data from multiple views.
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FACTS & FIGURES

3 Reasons Why the Cloud Is Critical to Your Small Business

It's becoming increasingly clear that cloud solutions provide significant benefits, but for small businesses (SMBs) that need to do more with less, cloud is a game changer.

Cloud enables SMBs to innovate faster, engage better with clients and compete on a global scale. Increasingly companies are moving core elements of their business to the cloud via hybrid implementations, delivering on speed, flexibility and customer engagement, but also integrating securely and seamlessly with existing systems of record. Because of these factors, cloud is being embraced at record rates. According to The SMB Group, 92 percent of SMBs are now using at least one cloud solution. Here are three reasons why:

1 **Better insight and engagement**

In a world awash in data, 54 percent of leading organizations use analytics to derive insights from big data, helping them target customers and product opportunities more effectively. As the focus of business decision makers shifts from cost efficiencies in back-office systems to improvements in systems of engagement, cloud is increasingly seen as the most effective means of forging a tighter link with customers. It allows companies to bring together massive and varied sets of data to analyze for more actionable customer insight.

2 **Speed**

Fifty-two percent of leading organizations turn to cloud to drive innovation. No more waiting to make the cut on the IT department's long list of priorities. Fifty-two percent of leading organizations turn to cloud to drive innovation. No more waiting to make the cut on the IT department's long list of priorities. Companies that rely on cloud infrastructure are now able to streamline their product or service across an extraordinary geographical boundaries as to boost sales. For the first time, small as well as large organizations are given the tools in order to market and deliver their product: regionally, nationally, as well as overseas.

3 **It grows with you**

Cloud users can pace their investments, avoiding big up-front capital outlays, paying monthly as the business scales. Companies of all shapes and sizes are now able to offer their product across previously unprecedented boundaries as the size and revenue of their operations expand.

Whether you're a startup, a large corporation or anything in between, if you're looking for better insight, more engaged clients, faster innovation and global scale, consider exploring cloud solutions and get a step ahead of your competition.

By John Mason, General Manager Midmarket, DCIA Member Company

How Small Businesses Can Succeed in Brand New Markets

Migrating to the cloud can help small businesses add new capabilities, offer new services and compete against bigger competitors.

By I-Hsien Sherwood

Cloud services offer small businesses both power and convenience, leveling the playing field against larger competitors and helping them expand into new markets. "It allows completely new types of small businesses to exist," said William Webb, president of the Institution of Engineering and Technology and CEO of the machine communication standards group Weightless SIG. Traditionally, small businesses require expensive computing capabilities to develop and deliver new products. "Since you can now buy that from the cloud, you can provide services that historically small businesses just wouldn't be able to provide," he said.

Simple solutions

Anyone with a laptop and access to a network can take advantage of the cloud. For small businesses that means scalability and low overhead costs.

"There's almost nothing that you need to have an in-house system for these days," Webb said. Troubleshooting is easy, too. "All of the cloud-based systems are reliable, simple to use, and don't require any particular expertise," he added. "They really can offer a lot of services that are competitive without having to invest a lot."

Migration made easy

Small businesses considering a switch to the cloud should look for dependability and redundancy. Make sure the service stores information securely and backs it up regularly. Consider paying more for privacy capabilities. But the changeover should be simple and straightforward. "It does really allow you to just jump completely from one system to another, and you can do it immediately," Webb said. "You don't need a long, careful, slow transition process." ■

INSIGHT

Read more from Steve at futureofbusinessandtech.com

SPOTLIGHT

Tarkan Maner
Chairman and CEO, Nexenta

The Next Big Thing: Open Source-Based Software Defined Storage

In a recent report, 451 Research declared "software-defined storage will dominate the industry narrative in 2015."

That reflects a consensus shaping up in the industry: the next big thing to revolutionize the market and bring about the Software-Defined Enterprise (SDE) of the future is going to be software-defined storage (SDS) solutions—preferably open source-based.

For companies taking their first steps in the software-defined revolution, open source-based software-defined storage (OpenSDS) solutions help solve this by integrating software-only open source collaboration with standard x86 hardware-centric SDS innovation. OpenSDS enables companies to restructure storage using software, virtually eliminating the vast silos of distributed stored data behind traditional arrays and provide commodity based solutions. This dramatically increases ease of management, agility and scalability, which enables organizations to get more from storage while cutting CAPEX and OPEX. At the same time, organizations can slash hardware costs by deploying their new storage solutions on existing and standard hardware, selecting the hardware that best serves the needs of the business.

What makes OpenSDS such a critical first step? "Storage is at a breaking point," says Simon Robinson Storage VP, 451 Research. "Most organizations have an 'accidental architecture' of storage solutions that were put in place to meet specific needs, but the result is a costly, complex and unsalable hodgepodge of systems that consumes management time and can't support changes in the business environment. IT organizations are looking to streamline their data storage infrastructure so that it can respond to emerging business requirements."

Now that's the ultimate "next big thing" the ability for organizations to freely choose—and change— their storage infrastructure.

Primary Data chief science officer and Apple, Inc. co-founder speaks on how your business can benefit from the cloud.

Steve Wozniak: Weathering the Cloud

How have you most effectively utilized cloud software in your personal and business life?

I use cloud file sharing software more than enterprise cloud storage today. I speak at a lot of events around the world, so cloud software helps me access and share files no matter where I am. While you still can't get online over an ocean, it's definitely a lot easier to use the cloud than to carry lots of hard drives around the globe in my backpack.

How have cloud solutions allowed large companies to operate differently?

It is usually faster and easier to add cloud storage than another hardware system in a company's datacenter, so enterprise cloud storage can help engineering teams get new ideas developed faster. This can be a big advantage for an innovative company. The cloud also goes beyond storage. Cloud computing is growing, especially as we are all used to having our mobile devices link us to data wherever we are. Cloud computing puts lots of unused CPU power to work, and the end user gets a great experience.

As companies move toward cloud platforms, what advice would you give to ensure a smooth transition?

No matter which cloud file sharing or enterprise cloud storage you choose, make sure it can still deliver data seamlessly for users. People expect technology to be transparent today, and as engineers, it's our job to deliver a great, easy experience. One thing that some companies overlook when adopting enterprise cloud storage is how much it will cost them to move data off that cloud when the time comes. Sometimes this can be very expensive, so doing your homework at the start can save you from surprises later.

Cloudy With a Chance of Big Data Steve and Primary Data CEO, Lance Smith, enjoy a morning discussion at the Los Altos headquarters.
PHOTO: SCOT HAMPTON

Over time, companies have spent a vast amount of money on infrastructure maintenance alone. How is cloud computing assisting in cutting cost while allowing for IT innovations?

Cloud capacity is great for cost savings, but the even better thing about the cloud is that it's easy for both IT and engineers to deploy and use. I love that it can help engineers get the resources they need to keep working on development of their ideas as fast as possible without having to wait for more local systems.

To support fast development and testing for engineers, you can add more cloud storage more quickly than buying more hardware when developers need to clone a database for testing. The clone doesn't have to be on high performance storage, so the cloud is a good option to use when you need to test something quickly and inexpensively.

Where do you see the big data and cloud storage industry going? What should readers be looking out for in 2015?

Ease of use and automation will be big trends for enterprise technology. Flash made applications fast, and the cloud makes it easier to scale, but nothing ties these two tiers together yet. The missing link is the ability to manage an application's evolving needs for more performance or capacity. ■

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ADVOCACY

Building, Exploring and Teaching in the Cloud

The explosion of "data science" in the last few years has certainly been fueled by advances in cloud computing.

A Data Scientist has a large number of tools and services available which enable the analysis of immense sets of data in a shared environment. This new era of collaborative analytics is available to everyone. From a simple Web-based spreadsheet to a large cluster of computing machines, storage of data in the cloud enables users to quickly share their data and simultaneously utilize superior resources that were impossible to attain only a few years prior. This paradigm is quickly becoming the new tool in every field, from medicine to finance and in less obvious disciplines like sociology. Where we once wondered, now we seek our answers from data-driven analyses.

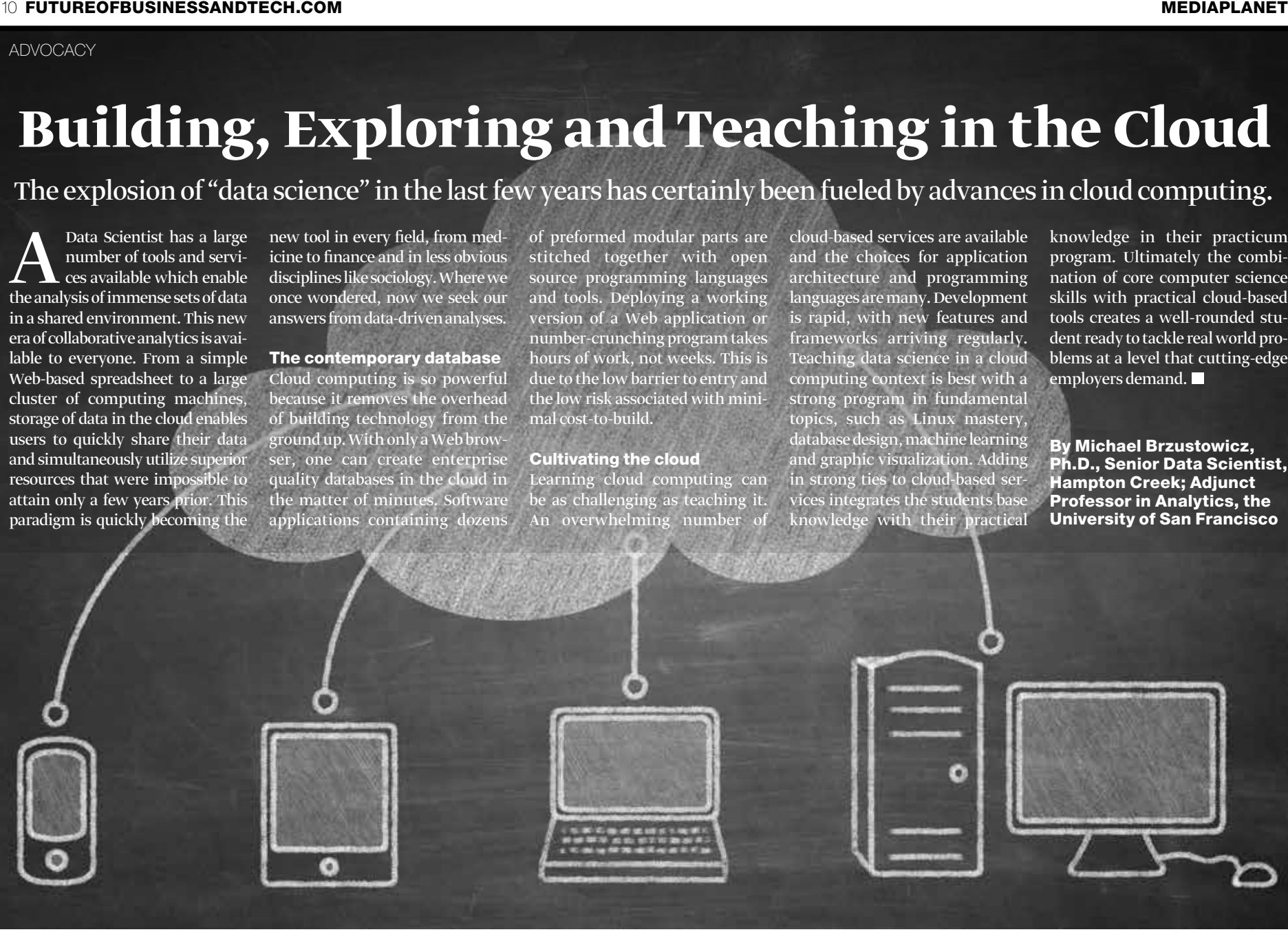
The contemporary database

Cloud computing is so powerful because it removes the overhead of building technology from the ground up. With only a Web browser, one can create enterprise quality databases in the cloud in the matter of minutes. Software applications containing dozens of preformed modular parts are stitched together with open source programming languages and tools. Deploying a working version of a Web application or number-crunching program takes hours of work, not weeks. This is due to the low barrier to entry and the low risk associated with minimal cost-to-build.

Cultivating the cloud

Learning cloud computing can be as challenging as teaching it. An overwhelming number of cloud-based services are available and the choices for application architecture and programming languages are many. Development is rapid, with new features and frameworks arriving regularly. Teaching data science in a cloud computing context is best with a strong program in fundamental topics, such as Linux mastery, database design, machine learning and graphic visualization. Adding in strong ties to cloud-based services integrates the students base knowledge with their practical knowledge in their practicum program. Ultimately the combination of core computer science skills with practical cloud-based tools creates a well-rounded student ready to tackle real world problems at a level that cutting-edge employers demand. ■

By Michael Brzustowicz, Ph.D., Senior Data Scientist, Hampton Creek; Adjunct Professor in Analytics, the University of San Francisco



Disaster Recovery Planning

Walter Angerer, the executive chairman and board of directors at Quorum, speaks candidly with us about data recovery.

Can you speak to what cloud technology has done for the data recovery?

Years ago the data recovery market underwent a major change. Tape based backup was replaced with disk to disk backup, minimizing backup windows, but more importantly crushing restore times. The introduction of disk into the system greatly improved restore times and concurrency.

The introduction of cloud has even more significant impact than disk had. Using cloud technology we not only can provide fast or near instant restore on premises but also for the first time ever, businesses can now perform an instant recovery to an off-site location. The recovery time has gone down from weeks to minutes. That change in technology completely changed how we think about off-site data recovery.

What are some interesting initiatives currently going on in the data recovery industry?

Providing fast access to off-site data is just a starting point. Today's vendors must take data protection to the next level. The most significant trend in the industry is to find ways to utilize the recovery infrastructure in the absence of a restore or DR scenario.

Today's best of breed solutions enable companies to turn their data recovery system into a live clone of their production environment and use it as a development and test platform without impacting production. Moving this workload completely into the cloud eliminates the need for cumbersome and expensive maintenance of development/test environments.

The concept of "backup once, use many" will reshape the industry and architecture of data centers in the future. ■

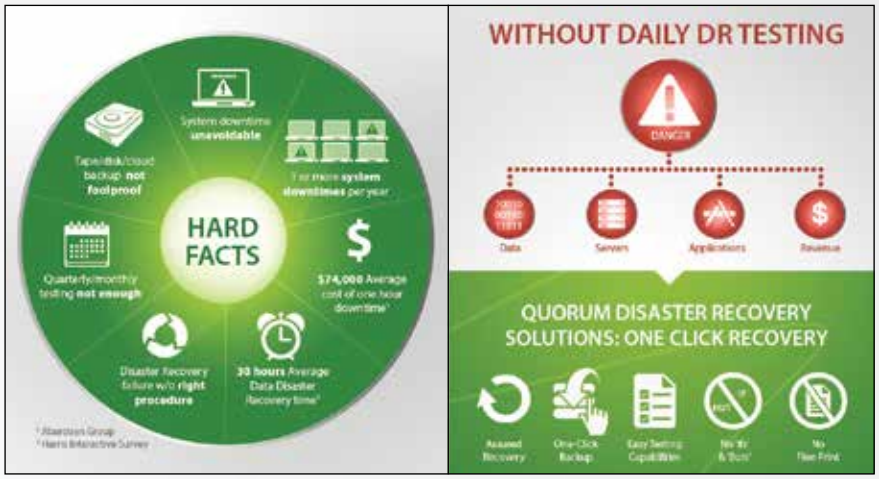
Disaster Recovery Planning:

Making the case for "Always Be Testing" (ABT)

Statistics show that most small to mid-sized businesses will experience a system downtime at least once a year. One hour of downtime costs a mid-sized business $74,000 on average and it takes 30 hours on average for data disaster recovery. Yet, most organizations believe that Disaster Recovery (DR) Testing is more trouble than it's worth. The primary reason is that most small to mid-sized businesses have never run their Disaster Recovery system through regular real world tests. As a result, it is never certain whether their data, servers and applications will recover using an existing solution. Reports also points out that testing quarterly or even monthly is not enough. And tape, disk or cloud backup alone is not foolproof. Quorum's report makes a strong case for "Always Be Testing" on a daily basis. It categorically states that, contrary to popular belief, if a business chooses its Disaster Recovery Solution correctly, even daily real-world tests are not time-consuming, costly, complex or a drain on resources.

The results of the report point out that hardware, software and systems are constantly changing for any business. The organization's data backup/data recovery must take all changes into account and the recovery solution has to be updated to-the-minute. Shortcuts, or traditional testing methods, don't work. Without Disaster Recovery Testing, a system is vulnerable and likely to be hit by backup corruption (especially for tape-based backups), backups executed incorrectly and human errors. Only systematic daily Disaster Recovery Testing covers everything. In short, The report emphasizes that a business must be able to test every day. So it must have the correct Disaster Recovery Solution, with one click recovery and daily testing. Quorum solutions provide assured, one click backup, recovery and continuity through simple and cost-effective solutions that safeguard a company's revenue, customers and reputation. *To get a copy of the report you can visit Quorum.net.*

"... if a business chooses its Disaster Recovery Solution correctly, even daily real-world tests are not time-consuming, costly, complex or a drain on resources."



Quorum's hybrid cloud data recovery platform virtually eliminates business downtime while drastically reducing data protection cost and complexity.

Quorum's hybrid cloud data recovery platform virtually eliminates business downtime while drastically reducing data protection cost and complexity. Ideal for businesses that rely on constant uptime, Quorum's industry-leading Disaster Recovery as-a-Service (DRaaS) technology makes it possible for businesses to resume operations within minutes of a server failure—with a single click. Effortless to deploy, Quorum enables businesses to achieve instant data protection while flexible recovery options empower businesses to easily and cost-effectively protect data over time. Headquartered in San Jose, California, Quorum is trusted by thousands of business around the world to secure and protect their data. (102)

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INSPIRATION

Starting a Career in Data: How to be Future-Proof

There is a lot of confusion around careers in data; to be convinced, one only needs to look at how much of the mindshare is occupied by buzzwords such as "big data."

Add to that the fact the industry is ever-changing, with roles and tools being constantly redefined, and it can be difficult for outsiders considering entering the field to find their mark. A good example is the "data scientist" title, which has come to designate anything from a technical business analyst to machine learning researchers. Data science encompasses many different roles, each requiring different skill sets.

Bridging the gap

I anticipate the exact roles and qualification requirements to shift significantly over the next few years. A big driver of this evolution is the development of tools that abstract out some of the technical aspects of the work of data practitioners. This evolution produces two contradictory tendencies. On the one hand, better tools flatten technical barriers, and promotes interdisciplinarity. It is now easier for data scientists coming from academia to write production code; easy-to-use libraries make machine learning increasingly accessible; and BI software helps business analysts perform most of their analyses by themselves. On the other hand, as the field matures clear specializations emerge on the more technical end of the spectrum, deep learning being the latest example.

I think it's necessary to take a step back and understand why data science is important in a business setting. I see three main ways data is bringing value to the industry, each requiring different skills, from common sense to machine learning Ph.D.s.

Impact of information

The first one is solving old problems with new tools: in the context of business analytics, what big data really means is that companies now have the ability to leverage previously unused information: they now have more data available—they also have better tools to process or interpret it. Analysts can use software (or, increasingly, run their own queries and analyses) to make sense of data at a glance and better inform business decisions; customer churn prediction is a great example of an old business need that has become more powerful in the data era.

The second is building products that solve new problems. Machine learning in particular enables companies to build products or provide services that were difficult to scale cheaply before by automating human decision processes. And finally, the third is building the new tools and inventing new techniques that will be used for the above purposes.

Looking ahead

Depending on which category you fit into, you may work more closely with senior management (providing insights), customers (building products), or engineers (building tools). For those who plan on entering the field, my advice would be to answer this question: what are you bringing to the table? What kind of problems are you solving? More than just knowing the tools and techniques, knowing how to apply them in a way that creates value is critical.

The world is barely getting used to what data can and cannot do, and as a practitioner you are the one leading that education. ■

By Paul Duan, President, Bayes Impact

Cracking the Code:

Minimizing Risk and Reaping Benefits

By Melinda Carstensen

Storing sensitive data on the cloud can be beneficial yet risky. Follow these steps to make the system work for you or your business.

Whether you're a business with sensitive data that requires organization or an individual with an affinity for personal programs, avoiding "the cloud" seems nearly impossible these days. But using cloud security—a remote, Web-based data storage system—comes with just as many risks as it does benefits.

"You see it on the news every day: constant attacks on people's networks and information systems," said Lonny Anderson, chief information officer of the National Security Agency (NSA). After all, the No. 1 question their team gets about the system centers on whether the cloud is even safe.

Thus, taking an additional few simple steps can help minimize potential hacking, phishing and the like within the model.

Mesh your needs with your cloud provider's

Neal Ziring, technical director of information assurance for the NSA, pointed out that making one's security needs clear at the onset of a cloud computing contract is essential. Knowing who's responsible for what, especially in the event of a hack, is equally important.

Breaking things down into two buckets—what you expect the cloud provider to do and what you still expect to do for yourself, and putting that in writing—may be the simplest way to go about dividing responsibility.

> For individual cloud users, most critical is practicing good security hygiene on the systems under your control and the cloud services you employ.

Being organized

In a cloud environment, being explicit about the rules of data can also help ensure safety, said David Hurry, a cloud strategist for the NSA. Tagging data that places it in a certain rack offers one way to keep information organized.

Adopting a cloud security model can change the way businesses operate. Namely, recognizing that in a cloud system, organizing items not only based on their physical nature but also on their function is crucial.

Review your contract closely

What information gets logged and what doesn't? How long is information retained? Who gets to share and see what data, including passwords? What protection is in place, and how is the person controlling those data being monitored? That's just a handful of questions that should be answered in a cloud security contract. Having a crisis control plan of sorts for when a data breach may occur, and ensuring that notifications are made in a preset manner, is another area to consider, Anderson said.

Hands-on protection

"For individual cloud users, most critical is practicing good security hygiene on the systems under your control and the cloud services you employ," Ziring said. Using cloud service for storing data for what it's intended is an easy way to do so.

Hurry added that encryption is only part of the larger security model that individuals and companies can use. "IT (encryption) alone won't be sufficient," he said. "It offers strength, but it's how you use it and where you put it and manage it that matters." ■

NEWS

The Growing Trend of High Performance Data Storage

The experience of powering more than two-thirds of the top 100 most powerful supercomputers in the world has provided learning to fuel the provision of industry-leading innovative solutions in the emerging arena of high performance data storage.

Today the requirements of the world's largest and most demanding high-performance computing (HPC), financial, life sciences, manufacturing, Web/cloud/telco, media/entertainment and academic environments drive a host of various high performance storage challenges that must be met with flexible and robust service offerings.

Separate and distinct block, file and object storage products and solutions are each necessary to address the unprecedented requirements of big data and Web 2.0 applications today.

Using the most current outsource technology, however, organizations can accommodate the entire big data lifecycle to achieve the fastest runtimes; architect for petascale and even exascale implementations with 90 percent less hardware, space and power than with legacy in-house approaches; and they can even collaborate and distribute data globally with cloud storage infrastructure, tightly integrated with file storage for distributed workflows.

The future of exascale computing will be challenged by input/output (I/O) and architectural hurdles. Organizations adopting HPC technologies need to prepare for this exponential increase in data by adapting technology solutions today that will enable high performance and real-time collaboration for the future, while driving down the cost of computing.

More than 1,000 companies are already benefiting from a 21st century approach to HPC storage solutions; achieving easier management, increased system reliability and speed, as well as greater computing efficiency and power usage—ensuring their organizations are setup for success long into the future. ■

By Molly Rector, CMO, DCIA Member Company


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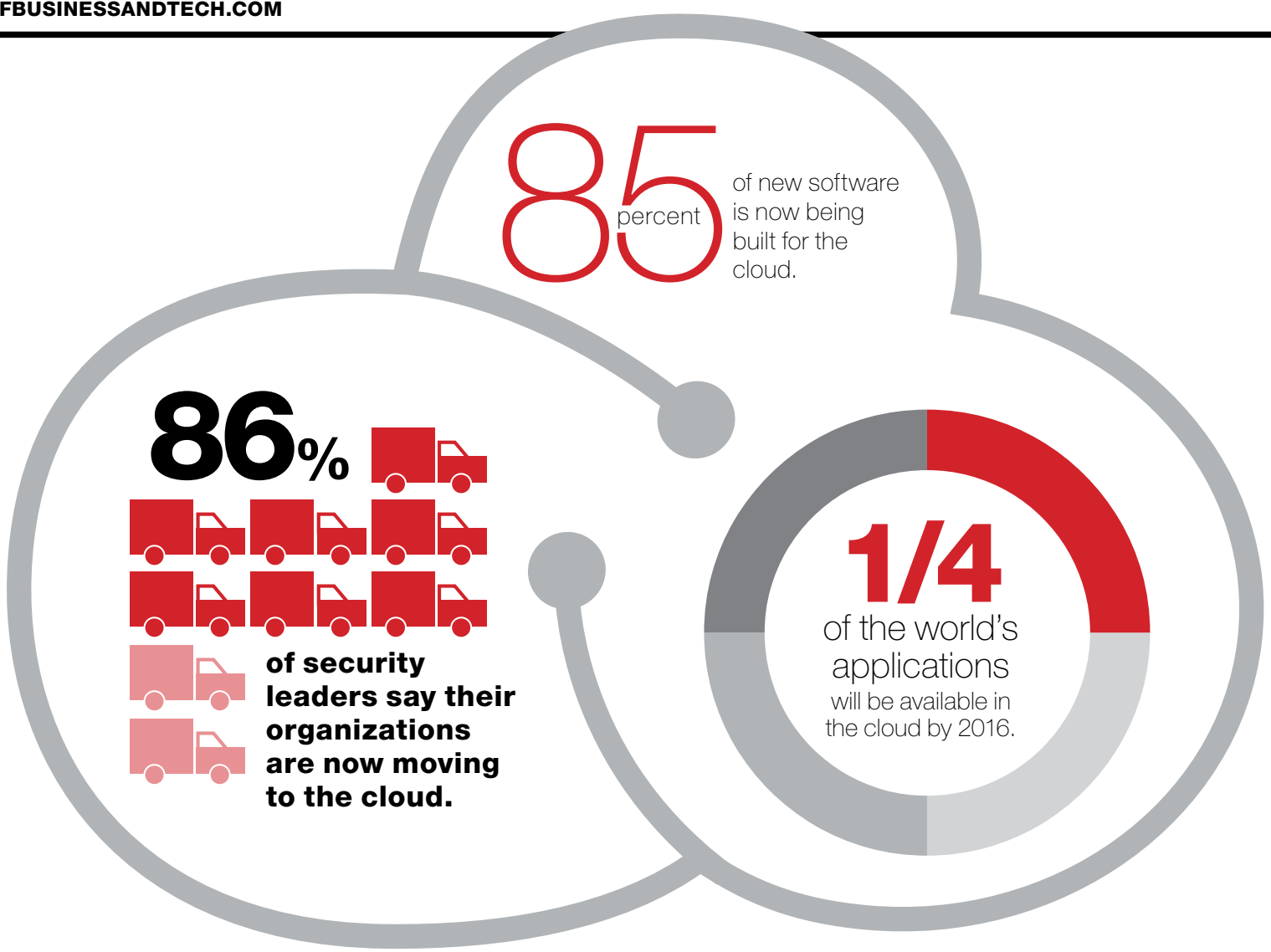
INSIGHT



SOURCE: IBM

2015: Year of the Public Cloud

Pity your private cloud, if you have one. If cloud analysts are to be believed private cloud is losing ground, public cloud providers keep adding features and functions.

Gartner analyst Thomas Bittman blogged that 95 percent of enterprise IT types he surveyed found something lacking in their own private clouds. Of course Bittman loaded the gun for them, distilling the reasons "your enterprise public cloud is failing" into six key categories and then polling an audience about them at an event.

Defining the problem

Part of the problem may be in definitions. Private cloud is not merely a highly virtualized data center. It needs to deliver on-demand services easily and offer the sort of scale-up-and-down-as-needed elasticity that is the hallmark of public clouds. In a response to one comment on his post Bittman defined private cloud as the cloud computing style delivered with isolation.

"Fully private would be fully isolated. It doesn't need to be owned and managed on-premises, but today it often is (I'd say, 90-95 percent of the time)."

The results

Of the 140 companies Bittman surveyed, the most common reason for dissatisfaction (noted by 31 percent of respondents) is that too much emphasis was placed on cost-cutting, not on providing agility in creating, spinning up and down capabilities as needed. The second most-cited complaint, for 19 percent of respondents, was that their private cloud doesn't do enough. But check out the whole post, along with the comments.

Philip Bertolini, CIO of Oakland County, Michigan, said to term private clouds as failures because there is not 100 percent satisfaction is unrealistic and unfair. In the Gartner blog post, he noted, Bittman discusses how 95 percent of the users have had problems but that doesn't mean their efforts failed.

"Moving to the cloud is difficult and has to be planned out carefully. Any IT project requires good planning or the results can be less than desirable. I do believe that the is not the magic wand for everything that troubles us. Using the cloud wisely with good planning can be very successful," Bertolini noted by email. There is some merit to the private-cloud-doesn't-meet-expectations argument. Vendors have fed into that by overselling the technology, for one thing. But, the notion that a small number of public cloud vendors (even vendors as huge as Amazon, Google and Microsoft) can fill every need is a stretch.

Tackling the truth

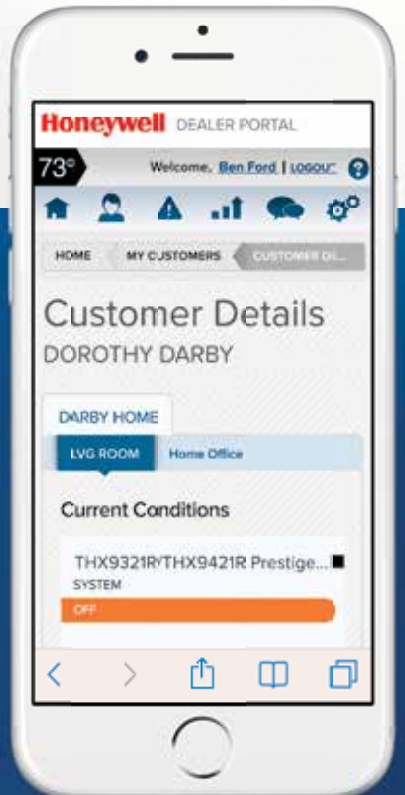
As more than a dozen vendors, many of them pitching OpenStack-based private clouds, duke it out, they need to counter this perception that public cloud is becoming the inevitable destination for many, many workloads going forward. ■

By Barb Darrow, Senior Writer, Gigaom

"We want to connect everything. The Customer Success Platform is making that a reality."

BETH WOZNIAK
PRESIDENT ECC

Honeywell



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INDUSTRY PERSPECTIVE

A Storm of Excellence

Yannet Interian
Assistant Professor, M.S. in Analytics, University of San Francisco

In your experience, when has the ability to access the cloud been most beneficial?

We use the cloud on a daily basis for personal or professional reasons. We check our emails, share documents, photos and videos. It is part of our most basic daily activities.

What is the number one policy or trait that readers should be looking for in a potential cloud provider?

The most important thing to look for is security. Make sure that the company has a good reputation and solid security policies. Ensure that your data is encrypted whenever stored, uploaded to the cloud, or downloaded from the cloud.

What is one exciting industry innovation or breakthrough you are excited for in 2015?

"Internet of Things." The phrase means a world of objects connected through cloud systems. The objects deliver sensor information, learn behaviors and adjust themselves. They are usually controlled by smartphone apps.

Mitch Bishop
CMO, Cloud Passage

The most exciting technology happening in cloud computing today is container technology that allows developers to sub-divide virtual machines even further. With containers, virtual infrastructure can be spun up and down in minutes, on demand, as needed by the business or IT teams. This will have a tremendous impact on business agility.

Cloud providers supply basic security in a shared responsibility model. It must turn on instantly; delivering as an SaaS service. There must be a comprehensive set of security functions. The platform must work in any cloud environment and at any scale. Finally, the platform must integrate with existing security and orchestration tools.

The most exciting technology happening in cloud computing today is open platform for distributed applications. (open platform) Is revolutionizing the way developers are thinking about and using virtual infrastructure.

Mark Nunnikhoven
Vice President, Cloud & Emerging Technologies, Trend Micro

It's the constant access that makes the cloud beneficial. Having devices that are constantly connected provides benefits that fit seamlessly into everyday life. A key indicator that a technology is truly useful is when you stop thinking about using it and it simply "is."

For business, knowing roughly where your data is stored geographically can be critical as different locations fall under different jurisdictions. For both business and personal, you want to make sure that your data isn't going to be used for purposes that you don't agree with.

2015 is going to bring more unique uses of ubiquitous connectivity and near unlimited computing power. We've just scratched the surface of what's possible. This year, I think we're going to see a lot of innovative work done based on a high number of really cheap sensors.

Matt Keil
Product Marketing Director, Palo Alto Networks

The primary benefit of cloud computing for the typical user is ubiquitous access to applications from any device, anywhere, assuming you have connectivity to the web. The most significant cloud computing benefit for businesses today is the ability to become more agile.

Businesses considering the cloud should evaluate the project with the same processes they would use for any other network project. Within that process, security and how you can protect the data in your cloud should be the number one trait readers should look for.

The difference now as opposed to a few years ago is it that you no longer have to hope (cloud) security can keep up. In 2015, you no longer need to choose between securing your infrastructure or realizing cost savings and efficiency that the cloud provides.

How do businesses choose the right cloud provider? Read their answers at **futureofbusinessandtech.com**

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