The Rocky Road to Hybrid Cloud
It’s not just a stop along the way; hybrid cloud may be the final destination.

PLUS:
Social IT Makes Friends
Why Use DCIM?
Plankers: What to Expect at VMworld
That Old VMworld Magic

Every year around this time, I book a trip to VMworld, a ritual that has become as ingrained in my yearly routine as Christmas and the kids’ birthdays. This month’s event in San Francisco will be my eighth VMworld (not counting a couple of European affairs), and I can’t help but feel a little nostalgic.

The early events were marked by almost palpable excitement. I remember then-CTO Mendel Rosenblum’s morning-after-the-party keynote speech in 2007, live-blogged at the time by columnist Bob Plankers. Hung-over attendees packed the room, staring at Rosenblum with rapt attention like little kids at a magic show trying to figure out where the bunny came from. They seemed mildly surprised when he told them virtualization wasn’t just some “magic data center pixie dust,” and they erupted in raucous applause when he pulled the plug on a server to demonstrate what would eventually become VMware Fault Tolerance.

Even then, everyone knew that server virtualization was much more than was being marketed, which was as a way to get a handle on spiraling energy use and server sprawl. Faster than the blink of an eye, virtualization revolutionized the enterprise data center, enabling greater levels of consolidation, availability and agility—with greater ease—than anyone could have imagined.

Virtualization then went on to spawn the cloud, with service providers seizing upon the technology to build the first shared, elastic multi-tenant infrastructures that enterprises are flocking to in droves. Not bad for a decade’s work.

But even though virtualization got us to where we are today, it was just the beginning. Managing two pools of virtualization—one in your private data center and the other out in the cloud—in the form of a hybrid cloud is no walk in the park, writes Beth Pariseau in “The Rocky Road to Hybrid Cloud.”

Meanwhile, the social and collaborative technologies that have been percolating in the parallel universe of consumer technology are finding their way to IT, writes Jim Furbush in “Social Networking Helps IT Make Friends,” chipping away at the wall that’s existed between IT and end users since time immemorial.

Not content to let its star fade, VMware will try to recapture the limelight with a whole host of announcements at this month’s event, writes Bob Plankers in his “In the Mix” column. I’m hoping they knock our socks off. Virtualization may not be magic pixie dust, but perhaps VMware still has a few tricks up its sleeve.
ONE ON ONE

Mixing SaaS and Legacy Apps

Conventional wisdom says that legacy software and the cloud are mutually exclusive, but that’s not necessarily true. Four years ago, software company Planview Inc. of Austin, Texas, read the tea leaves and set out to make available its enterprise portfolio management as a Software as a Service (SaaS) offering. But it didn’t do so by rewriting it as true multi-tenant software. Not only would that have taken several years, it would have gutted much of the rich functionality that customers expect from enterprise software.

Patrick Tickle, Planview’s executive vice president in charge of products and hosting, talked with Modern Infrastructure about how the company made the SaaS transition.

What were your goals in developing a SaaS version of your software?

We’re a classic best-of-breed software company. We’ve been around 23 years, and for 21 of those years we had an on-premises, perpetual license model. About four years ago, customers started expressing interest in SaaS. We could see that this was a trend that wasn’t going to go away, so we started thinking about what we could do.

Our end goal was to create a like-for-like version [of our software] that happened to be multi-tenant. We wanted to keep innovating on feature/function, not reverse-engineering core software functionality. We also wanted customers to be able to configure anything that they want. Other SaaS products like Salesforce.com
and Workday are true multi-tenant, but giving individual customers configurability is where they’ve spent a lot of time on development.

In the end, my position was that unless we were willing to fund an almost equivalent-sized parallel development team, we couldn’t afford to do a multi-year rewrite of the product [as true multi-tenant].

If you didn’t rewrite the software to be multi-tenant, what did you do instead?
The guys in the hosting ops organization came to me and said, “You know, we can do this in VMware; we can make a SaaS business run on virtualization as opposed to this multi-tenant thing.” The back end is a fully packaged-up vApp that represents a full install of our product, and everybody has their own dedicated instance. But the front end is a complete, pure SaaS model, with per-user consumption that people negotiate for what time period they need.

What does your infrastructure look like?
We are co-located at Sungard’s Austin and London facilities. We historically ran HP blades, NetApp storage and Cisco on the networking side, but we recently went into production with a NetApp FlexPod. We’re also looking at the VMware vCloud Hybrid Service for DR and business continuity. Having a service offering where we can push VMs that are binary compatible and bring up customers very rapidly in a DR scenario is a compelling use case.

—ALEX BARRETT

“Try to encourage some degree of chaos and then govern that chaos to industrialize and scale those ideas in the enterprise. A hybrid environment that is hard to manage is OK, because it drives innovation, which is more important than the reasons not to do it.”
—JOHN ROESE, CTO, EMC, at the MIT Sloan CIO Symposium, on implementing a hybrid cloud

“The early phase of the [mobile application management] market will be defined by those that can bring the best experience at the first click.”
—MARK TEMPLETON, CEO, Citrix Systems, at Synergy

“BYOD is one of the biggest cybersecurity challenges we’ve had.”
—GIB SOREBO, chief cybersecurity technologist, SAIC, at Interop

“Consumerization is great. But we’re not only a heavily regulated company, we’re a data company. And we have to protect that at all costs.”
—ALAN PAWLAK, head of client services, Aetna, at Citrix Synergy
**Do you have a true private cloud?**

- 69% No
- 21% Network congestion
- 17% Licensing
- 5% Not sure

**What is your biggest virtualization challenge?**

- 29% VM sprawl
- 33% Application performance
- 21% Network congestion
- 17% Licensing

**Do traditional IT silos exist in your organization?**

- 67% Yes
- 33% No

**Has consumerization changed your IT job role?**

- 52% Not yet
- 31% Yes
- 17% No

**READER SNAPSHOT**

- 21% Network congestion
- 17% Licensing
- 5% Not sure

**SOURCE:** SEARCHSERVERVIRTUALIZATION.COM AND SEARCHCONSUMERIZATION.COM READER SURVEYS
EXPLAINED

The Internet of Things

The internet of things is an ambiguous term, but it is fast becoming a tangible technology that can be applied in data centers to collect information on just about anything that IT wants to control.

The Internet of Things (IoT) is essentially a system of machines or objects outfitted with data-collecting technologies so that those objects can communicate with one another. The machine-to-machine (M2M) data that is generated has a wide range of uses, but is commonly seen as a way to determine the health and status of things—inanimate or living.

IT administrators can use the IoT for anything in their physical environment for which they want information. In fact, they already do.

In one case, IoT is being used to stymie deforestation in the Amazon rainforest. A Brazilian location-services company called Cargo Tracck places M2M sensors from security company Gemalto in trees in protected areas. When a tree is cut or moved, law enforcement receives a message with its GPS location, allowing authorities to track down the illegally removed tree.

IoT began to take off with the iPhone, said Sam Lucero, senior principal analyst, M2M and Internet of Things, at IHS Electronics & Media in Tempe, Ariz. With the iPhone, disconnected third-party applications that are hosted in the cloud can be connected, and users can access all sorts of data from the device.

**How the IoT works**

While some consider IoT to be M2M communication over a closed network, that model is really just an intranet of things, Lucero said.

With an Intranet of Things, apps are deployed for a
specific purpose and don’t interact outside of that network. The true IoT is where different applications are deployed for specific reasons and the data collected from the monitored machines and objects are made available to third-party applications. The expectation is that a true IoT provides more value than what can be derived from secluded islands of information, Lucero said.

For the IoT to work in data centers, platforms from competing vendors need to be able to communicate with one another. This requires standard APIs that all vendors and equipment can plug into, for both the systems interfaces as well as various devices, said Mike Sapien, a principal analyst with Ovum.

IBM proposed in February that its IoT protocol, called Message Queueing Telemetry Transport (MQTT), be used as the open standard. This would help multiple vendors participate in the IoT.

“[System integrators] like HP, IBM and others are starting to open up their systems to be less restrictive, just as telecom operators are allowing different networks—not just their own—to be part of the IoT ecosystem,” Sapien said. “But this has taken many years to happen.”

Meanwhile, a number of platforms serve as the plumbing to connect systems from different vendors so that they can communicate and be managed. One such platform is Xively Cloud Services, which is LogMeIn Inc.’s public IoT Platform as a Service. It allows IT to design, prototype and put into production any Internet-connected device.

For example, companies that have to monitor energy use might use closed, vendor-specific systems. They can use something like Xively as a secondary system to monitor heating and cooling and control energy use across multiple locations.

Over the long term, one consequence of IoT for the enterprise data center could be a large volume of incoming data that requires significant infrastructure upgrades, particularly for data processing and storage, Lucero said.

—BRIDGET BOTELHO
What is your main reason for considering public cloud?

- Take advantage of greater flexibility (36%)
- Reduce infrastructure costs (31%)
- Reduce in-house IT staff costs (12%)
- Scale infrastructure without up-front costs (11%)
- Comply with business directives (5%)
- Other (4%)

What is your primary motivation for considering private cloud computing?

- Leverage our investment in existing infrastructure (26%)
- Leverage disaster recovery and business continuity benefits (19%)
- Provide users with self-service and automation of computing resources (14%)
- Keep IT in-house where we can control it and prevent outsourcing (11%)
- Achieve benefits of public cloud with increased security (9%)
- Improve quality/speed of product development (8%)
- Achieve better insight about resource use and cost recovery (8%)
- Ensure job security for our IT department (1%)
- We are not considering implementing a private cloud (1%)
- Other (3%)

TOP CHART: N=1,140, TECHTARGET’S “DATA CENTER AND READERS’ CHOICE 2013 SURVEY.” BOTTOM CHART: N=523, TECHTARGET’S “DATA CENTER AND READERS’ CHOICE 2013 SURVEY.”
What are your greatest virtualization-related challenges?

- Server performance: 38%
- Application performance: 32%
- I/O bottlenecks: 32%
- Network performance: 30%
- Backup: 24%
- Application compatibility with virtualization platform: 17%
- Problems with legacy storage systems: 12%
- Lack of in-house virtualization knowledge: 12%

What class or type of servers do you primarily deploy in your data center(s)?

- 2U rack servers: 31%
- Conventional blade servers: 14%
- Standalone tower or commodity computers: 14%
- Microservers: 1%
- Other: 3%
- Mainframes: 3%
- Larger than 2U rack servers: 10%
- 1U rack servers: 13%
- Converged infrastructure: 11%
I am often asked about green efficiency programs and my answer is always the same: pursuing efficiency is both environmentally friendly and provides a good return on investment.

Today, most companies’ infrastructure is highly virtualized and organizations are benefiting from higher efficiencies achieved from an optimized IT infrastructure. Another trend taking hold is the optimization of critical infrastructure, like power distribution and cooling. The average data center now consumes as much power on that critical infrastructure load as on the IT load, with UPS losses and cooling accounting for much of the cost. This translates to a data center power usage effectiveness (PUE) score of 2.0 or higher.

On the colocation provider front, high efficiency designs with PUEs as low as 1.4 are becoming common in many new data centers, while providers with existing facilities are responding to the competition with redesigns, retrofits and upgrades to electrical, cooling and humidification systems. Many colocation providers now showcase their higher efficiency designs, which translate into lower operating costs for both the providers and customers.

Striving for the ultra-high efficiencies (extremely low PUEs of 1.1 or 1.2) found in the well-publicized data centers of large Web-based companies is usually not technically or economically feasible for private data centers in enterprises. But, in most instances, there are short-term, tactical actions that can provide immediate benefit, yielding up to 25% to 40% savings in electric utility costs. For most data center operators, those utility cost savings involve the least expensive projects and are the simplest to implement, with paybacks in six to 12 months.

The Data Center To-Do List
The efficiency gains from simple data center enhancements like installing collars on CRAC/CRAH units, aisle containment doors and rack blanking panels can drop electrical consumption by 25% or more in the average data center. Operations teams will appreciate the reduced stress on equipment from more consistent server
inlet temperatures, and the resulting reductions in power consumption can often be used to increase the total power and cooling capacity in an existing data center facility. In some geographies, the local utilities even provide incentives such as rebates to help pay for the cost of the efficiency upgrades.

Modest increases in server inlet temperatures from 72 to 74 degrees have also proved to provide substantial reductions in cooling costs without added data center operations risk.

Additional longer-term actions such as engineering reviews of critical infrastructure or computational fluid dynamics analysis of cooling usually require expert help but often can further improve data center efficiency. Many companies use the savings from initial efficiency gains to fund such an expert analysis, or even the strategy, project planning and implementation of holistic data center optimization programs.

These trends have taken longer than expected to gain traction, but the momentum seems to have accelerated over the past 24 months.

Optimizing your existing footprint with a consistent pursuit of efficiency will not only reduce your data center’s impact on the environment, but reduce your operating costs as well. That’s a win-win.

STEVE GUNDERSON is a principal at Transitional Data Services.
THE ROCKY ROAD TO HYBRID CLOUD

It turns out that the hybrid cloud model may not be disposable after all.

Just a few years ago, hybrid clouds were seen as mere stepping stones for enterprises on a journey that would ultimately end in the public cloud. But as enterprises put cloud computing to real-world use, some industry observers are beginning to see the hybrid cloud model as the way forward.

But just because hybrid cloud is in IT’s future doesn’t mean it’s a perfect solution. The hybrid model fixes some problematic aspects of cloud computing, but also comes with a set of challenges, some new and some already familiar, for IT operations professionals to contend with.

Hybrid clouds—defined as a composition of at least one private cloud and at least one public cloud, ideally connected with software that allows a single point of management—are one answer to enterprises’ objections to pure public cloud deployments. They allow for security- or performance-sensitive systems to live behind the corporate firewall while also allowing organizations to take advantage of public cloud’s elasticity and quick
provisioning.

“IT’s absolutely a trend,” said Carl Brooks, analyst with Boston, Mass.-based 451 Research, predicting that hybrid cloud will be “the dominant way in which enterprises will do infrastructure.”

Save Money, Regain Control

Chief among the justifications for the hybrid model is the matter of cost.

First, as enterprises gain more experience running applications in the public cloud, it becomes clear that running relatively static workloads there doesn’t actually yield cost savings over on-premises deployments.

For example, a piece of software that costs $120,000 for a perpetual license with 20% maintenance rep-resents a $240,000 expense after five years. An initial deployment on a public cloud that costs half that amount initially—$60,000 for one year—will cost a total of $300,000 over a five-year period.

At the same time, not having to pay for infrastructure for temporary or highly variable workloads is a boon for IT pros.

“The public cloud gives you flexibility to not have to purchase hardware when you run into peaks and have it just sit there when the workload hits a valley,” said Luca Ranieri, technical architect for Innovapost, which provides IT services to Canada Post and affiliated companies. “Peaks for most companies are very limited, so you can do burst usage and save on cost. It’s mostly a cost game.”

Cost is the driver for hybrid cloud at Monsoon Commerce, an e-commerce firm based in Portland, Ore.

“A lot of times when there are projects that come from above, they require a lot of infrastructure that we don’t have readily available,” said Michael Warchut, senior network engineer. “Developers can also prototype something out in [Amazon’s Elastic Compute Cloud (EC2)] and if it turns out their idea is not going to work, they can come to that decision before we spend the money internally and build the infrastructure.”

Corporate governance also plays a strong role in the shift toward the hybrid cloud model. Despite the fact that public cloud vendors advertise advanced security credentials and compliance certifications, many enterprises are still reluctant to host sensitive workloads outside the data center.

This reluctance has led in some cases to what’s known as “shadow IT,” in which business units circumvent IT and deploy workloads in the public cloud anyway. IT pros have a choice: get those existing public cloud deployments under IT control, or risk security vulnerabilities
they’re not even aware of. A hybrid cloud approach leaves the business with a kind of middle option where workloads suited to public cloud can remain where they’re deployed, but come under IT’s purview.

“I think that’s where more businesses want to be, saying, ‘Let me think about the business risk and rewards of having my workload on a public cloud, and have both public and private cloud available for me to make a decision with,’” said Rod Smith, VP of emerging technologies for IBM.

Other IT organizations opt to go with targeted public cloud deployments of specific applications, while leaving most of their workloads in-house where there is already adequate infrastructure to support them.

Novitas Data, a litigation support vendor based in Portland, Ore., uses SunGard Data Systems Inc.’s SunGard Availability Services to host an e-discovery application by kCura Corp. called Relativity.

“It needs to be able to process and show lots and lots of small files, and it needs to have good performance for our clients,” said Alex Wall, director of client services and general counsel for the firm. “That’s why we like SunGard…because they sit on the Internet backbone in Philadelphia, and we can serve Boston, New York, Atlanta and Chicago with very low latency and good performance throughout the rest of the country.”

Not every application needs that kind of geographic distribution, however. “We’re talking about a premium solution for an outsourced infrastructure and Internet,” said Wall. “Basically, we don’t want to be using that unless we’re billing for the space that we’re using, which is what we do with Relativity.”

BMW AG, headquartered in Munich, Germany, plans to move some high-performance computing (HPC) workloads to a cloud service provider in Iceland whose data center runs on geothermal energy in an effort to cut down the car maker’s overall carbon usage.

The HPC app is also suited to public cloud because “often we need additional capacity for special jobs, which we would like to buy instead of getting more capacity installed in our own site,” said Mario Mueller, VP of IT infrastructure for the company.

In the meantime, most of BMW’s applications run in a custom-built private cloud for security and compliance reasons—as well as to avoid the threat of public cloud outages.

“A production system running for a plant is not an easy job, and if you have any outage there it’s a great big impact to the company,” Mueller said.
New Concept, Same Old IT Problems

A move to hybrid cloud may not be as radical as moving entirely out of the corporate data center, but it can still mean significant changes for the IT team and end users.

“IT’s dominance of a specific knowledge area (IT) has been eroding, and now that dominance is limited to highly specialized skills and expertise that often get outsourced to third-party suppliers and [are] easily accessible to the enterprise’s business practitioners, as well as IT practitioners,” according to a 2012 Gartner report on Hybrid IT. “The role of IT, once ‘Dr. No,’ has changed to one of enabler, collaborator and orchestrator, particularly in the innovation arena.”

At the same time, however, the more things change, the more they stay the same. Managing hybrid clouds comes with challenges already all too familiar to IT people, namely data classification and capacity planning. Both are necessary to gauge the long-term cost-effectiveness of either public or private cloud for each application.

If organizations want to use hybrid cloud for cloud bursting, for example, it’s important to know where the internal data center’s capacity ends, how much is needed from an external cloud, and for how long. If certain applications are to be housed internally and others externally, it’s also important to monitor capacity demands to gauge whether applications are actually appropriate for one scenario or the other.

“People fail to understand that the provisioning of capacity is not simple,” said David Eichorn, global practice head for Zensar Inc., an IT consulting firm. “You have to look at the operational impacts—companies can’t afford to fail from a capacity management perspective.”

It’s also key to appropriately classify data within the organization, so that sensitive data doesn’t end up on an external cloud.

“The challenge with data classification is making sure that you clearly understand the classification before you start choosing a platform. I just don’t think that goes away,” said Lisa Larson, VP of enterprise cloud solutions for Rackspace Hosting. “Cloud is an amazing platform but you have to use it the right way. It all goes back to, ‘What does the data look like, where does it need to reside?’”

Hybrid Cloud Stumbling Blocks

The issue of workload migration between clouds is also one that can’t be ignored—much of the technology in this area remains in its infancy, or has reached only an awkward adolescence.

One often-overlooked issue with workload migration between clouds is architectural compatibility, said Randy Bias, co-founder and CTO of CloudScaling, Inc., provider of OpenStack-based on-premises cloud management software and services.

A focus of discussion in the industry right now is application programming interface (API) interoperability, but the underlying architecture can still throw a monkey wrench into managing two API-compatible clouds, Bias said.
For example, when a user deploys a workload on cloud A for development, there might be one network interface. When it comes time for deployment on cloud B, and there are two network interfaces, which network interface should the user bind the Web server to?

FEDERATED IDENTITY MANAGEMENT TOOLS ACROSS HETEROGENEOUS CLOUDS MAY HELP, BUT IMPLEMENTING THEM IS NO PICNIC.

“You don’t know,” said Bias. “It gets worse when you get into a VMware cloud where you can have arbitrary numbers [of network interfaces]. So if people really want to talk about interoperability and compatibility, it’s got to start at the architectural and behavioral compatibility levels, and APIs have little or nothing to do with it.”

Managing security and identity in a hybrid cloud environment can also be quite complex.

“Part of the advantage of building in a cloud environment is being able to turn up and down resources on demand,” said Jonathan Bryce, executive director of the OpenStack Foundation. “If you have to manage an infinite number of authentication scenarios, that limits the ability of the application to auto-scale.”

Federated identity management tools that work across heterogeneous clouds may help, but implementing them is no picnic, either.

“The big issue is that a lot of these clouds on the authentication side sort of act like separate identity pools right now,” said Bryce. “That’s what some of the work is being done on—creating ways to share identities between different applications.”

The Endgame Debate
While movement toward the hybrid cloud is a clear trend in the market right now, whether it will be the dominant paradigm for cloud computing into the future is still a matter of conjecture and opinion at this point.

“The interim solution is hybrid, and I think people just want to hedge their bets,” said CloudScaling’s Bias. “They want choice, and they want to make sure that if something goes wrong with public cloud adoption, they’ve got someplace to go.”

“I believe the hybrid cloud is the ultimate state of cloud computing,” countered Rackspace’s Larson. “If you’re an IT organization, I think you have to look at it from a lifecycle standpoint—you just don’t put an application onto a cloud technology and platform and just set it and forget it. That application will continue to change, the workload may change, and so the platform may change.”

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Alure Home Improvements has used old-school technology for many years to shuffle renovation crews and supplies between job sites. For a long time, it was phone calls and, more recently, email, that kept a running record of who was going where and when.

The problem with email is that sometimes employees were inadvertently excluded, or there were lags in communication between messages, leading to employees or crews showing up to the wrong job sites.

Now the company uses Yammer Inc., a social networking platform that acts as an enterprise version of Twitter. It has “broken down those invisible walls” among employees and allowed real-time communication, said John Doyle, director of technology and communications for Alure Home Improvements, a contracting company based in Plainview, N.Y.

“You can tap into information streams that interest
you or get messages in front of the right people at the exact moment you need to,” Doyle said. Those communication gaps translated into a clear business need for social technology, and Yammer turned out to be the right tool to fix Alure’s problem.

The dirty secret when it comes to enterprise social is that plenty of organizations feel pressured to jump on the bandwagon without a clear idea of how social networking tools will actually help them.

It’s easy enough to license any number of products labeled as “Facebook for the enterprise,” dump it on employees, check social networking off the to-do list and call it a day. It’s entirely different to approach social collaboration as a business-process change, as a tool to make employees more efficient or to create lasting value.

Checking In on Business Needs
Organizations need to take a common-sense approach to collaboration by first understanding what the business needs. Once an organization has determined the right tool for the job, then training, executive support and change management become instrumental, said Steve Weissman, founder of Holly Group, a Waltham, Mass.-based collaboration consulting firm.

“Sometimes the psychology matters more than the technology,” Weissman said. “If you want to change the way people work, you have to educate employees and get them to understand that change. You can’t just give them a fancy new tool and say, ‘Here, go use it.’”

Otherwise, organizations will just be setting themselves up for failure, he argued, which is actually easy to do now that most departments can just sign up for whatever service they want, thanks to attractive “freemium” offerings from vendors.

IT’S EASY ENOUGH TO LICENSE ANY NUMBER OF PRODUCTS LABELED AS “FACEBOOK FOR THE ENTERPRISE,” DUMP IT ON EMPLOYEES AND CALL IT A DAY.

That freemium model is intended to give many social networking or collaboration products a viral lift within large enterprises with the notion that once a critical mass is reached, organizations will be forced to buy an enterprise service-level agreement. That’s great for the vendor, but not so great for employees. Departments tend to sign up for services without really evaluating whether the product will even be a good fit.

That happened to Griffin Technology, a consumer electronics company in Nashville, Tenn., when it began using Asana for collaborative task management, said Rachel Valosik, Griffin’s director of e-commerce.

Griffin Technology used Asana for about six months before it sunk in with management that the product didn’t suit the organization’s needs.
“It was missing a couple of features that we needed, like creating a team task through an email,” Valosik said. After deciding that Asana wasn’t a good fit, the company shifted to Teambox.

It wasn’t too much of a pain to switch apps, but Valosik said she wished her department had taken more time to figure out what it needed and how the social task management tool could potentially help the business, instead of just signing up for a well-known vendor.

Unfriending the Old Silos
There’s plenty of anecdotal evidence of freemium tools being deployed and cast aside like cheap footwear. But the statistics on social collaboration in large organizations are a conundrum.

Recent Forrester research found widespread underutilization of the social tools that organizations have invested in, with 64% of companies reporting they realized few, if any, benefits from the investment. Worse, only 8% of employees actually use enterprise-sponsored social collaboration software more than once a week.

On the other hand, a July 2012 survey by McKinsey & Co., a global enterprise consulting firm based in New York, insists that social networks can save organizations billions of dollars per year in time spent managing email, communicating internally and searching for information. Employees spend roughly one-third of their workweek simply dealing with email, and social collaboration tools can help reduce that time by 20% to 25%, according to the analysis of 4,200 companies.

Both surveys demonstrate that while modern social and collaboration tools can be a huge benefit to productivity, most organizations don’t really know how to encourage consistent adoption of those tools.

“We’re getting there, but we still have a long way to go to build more work processes into [our platform],” said Jeff Ross, community manager at Humana Inc., a Louisville, Ky.-based health care company. “We’re light years ahead of where we started, and I’m working with IT to grease the wheels, but they have plenty of other stuff to worry about, so it’s understandable.”

Humana, which has 40,000 employees working across all 50 states, has used VMware’s Socialcast for about two years. In that time, its Socialcast implementation has grown to 20,000 registered users, with about half of them active in any given month.

To expand the health care company’s social adoption even further, Ross said its community management team is working closely with the IT team to more tightly integrate with existing systems and applications and provide access on mobile devices.

Social at Humana, then, isn’t about replacing Microsoft’s SharePoint or Outlook, but rather integrating the two as a value-added service. Putting social networking tools into existing employee workflows has been the one tried-and-true path for driving adoption, Ross said.

“Why is Salesforce’s Chatter so popular and used so much by employees?” asked Tony Byrne, an analyst at Real Story Group. “Because it’s right there in the same tab as the CRM product that every sales employee uses
every minute of every day. It’s not because it’s more secure or better or easier to use than other products.”

While social has mainly been the province of internal employee collaboration or, in the case of the sales and marketing departments, for external use, IT staffers could one day also benefit from the organizational shift.

Enterprise social networking could easily benefit the help desk, but the ability to create structured data out of unstructured data that can be tracked, saved and audited when the need arises would also help IT, said Brad Shimmin, a social collaboration analyst at Current Analysis Inc.

**All Systems Going Social**

That’s just the beginning. As a result of adoption challenges presented by customers, many social platform vendors are taking a new approach to the technology beyond using it as an activity stream and communications platform.

The concept is to embed social DNA into the code of applications. It’s the approach SAP, IBM, Tibco and VMware are all taking with their respective offerings, with the goal of eventually turning applications and systems into trusted and participating actors within an enterprise social network. Microsoft is also beginning to make headway with this approach by more closely integrating SharePoint, Yammer and Office 365.

For example, salespeople could follow a CRM system on Socialcast to receive updates about closing deals or other actionable events when they occur. Other possible applications could include email, calendars and news alerts for system updates or other relevant processes that look like they came from the system and not IT, Shimmin said.

This is probably a ways away from being reality, but the benefit would be enormous for IT departments. Instead of having to send out an alert when a system goes down, the system would be able to trigger an action on the social platform letting employees know that something is wrong, Shimmin said.

“The possibilities are endless,” he said.

**THE ABILITY TO CREATE STRUCTURED DATA OUT OF UNSTRUCTURED DATA WOULD ALSO HELP IT.**

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If your organization maintains its own data center, you’ve probably heard of data center infrastructure management, or DCIM. But many IT professionals don’t fully understand how DCIM can help with day-to-day operations and capacity planning.

DCIM can help IT and facilities teams work together better. An organization's technical environment can be seen as two distinct parts: IT infrastructure components such as servers, storage and networking; and the facility or facilities required to house those components. Historically, these two areas have fallen under the ownership and management of the IT department and the facilities management groups, respectively.

This leads to problems as facilities management teams tend to see the data center as just another building to be managed, whereas IT tends to see the data center as the be-all and end-all of their purpose in life. One group’s priorities may not match the other group’s—and the
language that each group speaks can be subtly (or not so subtly) different.

This dynamic is exacerbated by cloud computing. In the past, data centers have generally grown as the business has grown. The availability of the public cloud could rapidly shrink the amount of IT equipment in the data center as workloads are pushed off-premises. Yet, facilities equipment such as uninterruptible power supply (UPS), computer room air conditioning (CRAC) units and power distribution systems are often monolithic items that cannot easily be dispensed with.

Where Did DCIM Come From?
Over the past couple of years, DCIM has emerged as a single point of design, maintenance and management that pulls facility and IT information together, enabling “what-if” scenarios and effective capacity planning.

DCIM systems started off as a part of the facilities management team’s building information modeling (BIM) tool. BIM software enables a building to be mapped so that major equipment can be placed within a physical representation, or schematic, of the facility. DCIM made this specific to the needs of a data center, storing information about power distribution, UPS and cooling systems, along with power cabling, environmental-monitoring sensors and so on. The diagrams could be printed out when maintenance was required, or given to the IT team to then draw in IT equipment with an understanding of the facilities equipment.

It soon became apparent that allowing the IT equipment to be placed directly in the schematic was useful for both the IT and facilities teams. This led to a need for DCIM systems to bring in asset-discovery systems alongside databases of the physical appearance and the technical description of the IT equipment. That way, existing data center layouts could be more easily created in the system.

DCIM IS A SINGLE POINT OF DESIGN, MAINTENANCE AND MANAGEMENT THAT PULLS FACILITY AND IT INFORMATION TOGETHER.

Eventually, this brought DCIM systems into competition with the asset discovery and management systems that are part of an organization’s IT systems management software. Interoperability between the two systems is not always available, yet a common database across DCIM, BIM and other systems management tools, along the lines of a configuration management database (CMDB), makes sense to provide a single true view of what is in a data center.

Shopping for a DCIM System
A key consideration when choosing a DCIM system is how it populates the equipment database. Some do not
update new equipment details on a regular basis; others use “plate values” for metrics such as power usage. The difference between using a plate value (the rated power usage) and actual energy usage measured in real time can be almost an order of magnitude, which can lead to over-engineering of power, backup and cooling systems.

Two-dimensional schematics have given way to 3D in many DCIM systems, so that rack-based systems can be engineered in situ and viewed from multiple directions. These 3D schematics allow users to easily see if new equipment will fit into a given data center location or if there might be existing objects blocking the path.

Some DCIM tools also have the ability to run “what-if?” scenarios. For example, will placing a server in a given rack overload a power distribution block? Will placing these power transformers here cause a hot spot that cannot be cooled with existing systems? Again, such capabilities help facilities and IT work together to ensure that the data center is optimally designed and gives the best support to the business.

The combination of 3D visual representations plus real-time data from environmental sensors lays the foundation for the use of computational fluid dynamics to view and optimize cooling flows. Using empirical data from the DCIM system to see what happens to cooling flows as systems are changed and new equipment is added ensures that hot spots are avoided.

**Serving Two Masters**

The main problem with most DCIM tools lies in trying to provide a single tool that caters to two different groups. The facilities team will often have its own BIM systems in place, and sees the data center as just another building with a few specialized needs. To the IT team, the data center is a load of interesting bits surrounded by a building.

The need for the two teams to not only talk, but work from common data sources, is not always a priority. Even where DCIM is seen as a suitable way forward, there will be a need to integrate it into existing systems so as not to replicate too much and create a whole new set of data silos.

Vendors, too, have been part of the problem. The main IT vendors prefer to stick with archetypal systems management tools that look only at the IT equipment. It has been left to the vendors of the UPSs and other facilities equipment, along with smaller new-to-market vendors, to come up with full-service DCIM tools and jump-start a market.

Those who have experimented with DCIM seem to
like it. Ticketmaster in Europe uses Nlyte’s DCIM tools to track data center assets to a granular level, thereby gaining better insights into energy efficiency and asset utilization down to an individual customer level. The Lawrence Livermore National Laboratory in the U.S. has used Romonet, a system for carrying out data center “what-if?” scenarios and cost estimating.

Other vendors in the DCIM market include Siemens, Emerson Network Power, Raritan and Cormant. CA has moved into the DCIM arena, and Digital Realty Trust brought out its own offering, EnVision, earlier this year.

Should you take the DCIM plunge? If you have just carried out significant change, predict that the data center will be in a stable state for a while or already have full asset management, systems management and BIM tooling in place, DCIM may be overkill. However, if you are looking at change within your data center, growing or shrinking the amount of IT equipment in it to an appreciable level, then you should definitely consider DCIM. If you need a full view of exactly what is happening in the data center and a plan for the future, a DCIM tool will be hard to beat.

**CLIVE LONGBOTTOM** is the founder of Quocirca, an IT research and analysis company based in the UK. Originally trained as a chemical engineer, Clive found that many IT teams failed to match their “solution” to the real business need. Since working in IT and as an analyst, Clive has strived to put this right in taking a process view of how an organization works—and how technology needs to be put in place to support these processes.
What to Expect at VMworld

With virtualization having turned IT on its side over the past 10 years, it’s hard to think about the future of the data center without thinking about VMware, and especially its annual VMworld conferences. Given acquisitions, buzz about cloud and increasing competition, this year is shaping up to be the show’s biggest yet. What might we see this year at VMworld? I have five main predictions.

1. Nearly every vendor that has supported VMware vSphere will announce support for Hyper-V and state that KVM is on the roadmap, too. The virtualization ecosystem is really getting competitive. Microsoft’s Hyper-V has shaped up into a good-enough competitor at the infrastructure level, and with its licensing terms, Microsoft is really taking aim at VMware. KVM, which powers much of the open-source virtual world under software suites like OpenStack, has also come along nicely. We’ll also start to see more options to manage these different hypervisors together. VMware has its own vCenter Multi-Hypervisor Manager, and there are other competitors. In general, look for an emphasis on cross-platform, cross-cloud orchestration and deployment.

2. We’ll see more products, techniques and a general focus on business processes as a whole. A lot of new product announcements have focused on improving business processes and helping companies bridge the gap between where they are and where their CEOs want them to be. Whether VMworld is the right audience for that sort of thing, though, is a big question. The technical community doesn’t often see the bigger business picture.

3. By the end of the week, the entire industry will be officially tired of the descriptor “software-defined.” We’ll hear announcements of companies doing interesting things in the software-defined space, including VMware itself. We’ll also see companies trying to piggyback on the hype by calling their products “software-defined” when they really aren’t. Software configuration isn’t software-defined, folks.
4. **Like all other years, this will continue to not be the year of VDI.** Perhaps with the new focus on more holistic end-user computing management, there will be renewed interest, but VDI continues to be slow on the uptake.

5. **VMware may up its networking and storage games.** VMware has been pretty quiet lately, like the calm before a storm. There was the announcement of the vCloud Hybrid Service in May, which will certainly get air time at VMworld. The company’s schedule would normally make this a major release year for its flagship vSphere product, but there haven’t been many indications of that. However, there are a few big items that VMware needs to address: The massive acquisition of Nicira in August 2012 and the acquisition of storage-virtualization-heavy Virsto in February. The last few VMworlds have featured talk about new storage concepts. We may see something very interesting, perhaps in combination with Virsto. Storage performance and management is a serious weakness right now for VMware, especially in the face of open-source clustered storage projects like Ceph and Gluster, and competition with companies like Nutanix and Simplivity. It’s time for VMware to fire back.

Overall, I’m always excited about VMworld. Between the community and the technology, I leave the conference exhausted and full of new ideas. I’ll see you there!

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