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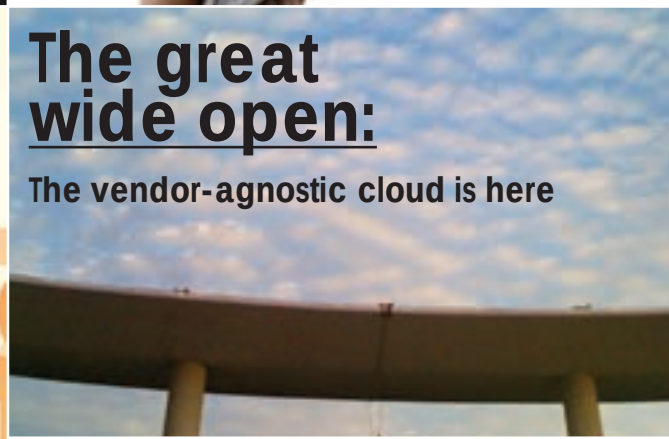

## Mind your own business:

Data Centre Infrastructure Management explained

INDUSTRY NEWS - USER STORIES - OPINIONS - INTERVIEWS - ANALYSIS

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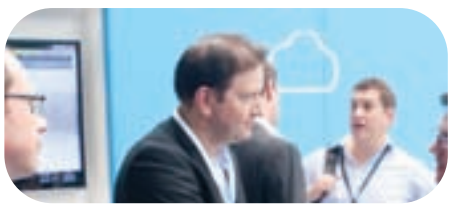





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# From the Editor

June saw London's Olympia hosting the Cloud World Forum event, and of course Cloud Hosting magazine was there to soak up the atmosphere, replenish our supply of pens and USB sticks, and speak to many of the movers and shakers of the industry. With its sponsored 'Hackathon' and the assortment of comfy chairs available in the Google zone, visitors could perhaps be forgiven for thinking CWF is something of an ethereal Silicon Valley style event more about marketing than business - but anyone attending the packed presentations soon knew better.

The event boasted an impressive line-up of the industry's technology giants including Intel, Oracle, HP, Dell and Microsoft, and it also featured an exclusive C-level keynote Future Cloud Theatre, with CIOs and CTOs from leading end-users, such as Coca Cola, UEFA, BBC, BMW, Marks & Spencer, UBS, CERN and Lufthansa. Onyeka Nchege, CIO at Coca Cola Bottling Co. Consolidated, gave a hugely entertaining keynote presentation called, 'Open Happiness in the Cloud: Taking a 100 year old traditional brick & mortar organisation to the Cloud' - discussing culture and the impact of high expectations, leveraging the workforce and managing the technology rush. Nchege also discussed how the company has started to move its non mission-critical systems to a private Cloud with plans to move everything off-premise within five years. See our full report starting on page 14 for more details.

Elsewhere in this issue we continue to feature management and business-related articles relating emerging Cloud topics to today's organisations. Phil Worms of iomart discusses the importance of customer focus to the way data centres operate: "The world is changing and consumers and businesses have to grasp the reality behind this remote-controlled way of living and working and adapt to its impact. Businesses need to produce strategies that factor in these complex new technologies and how they are being consumed and those of us who deliver the technologies need to build those strategies into our own approach to delivering them."

We also have feature articles looking at SSD storage in the enterprise, infrastructure management, identity and access control, and we also revisit last issue's G-Cloud focus with a bylined opinion from Databarracks' Peter Groucutt, who argues: "Local departments are able to take advantage of time and money saving services that have been previously very difficult to access - we just need to show them how. Massive strides have been made since the early days of G-Cloud but we need to keep pushing forward."

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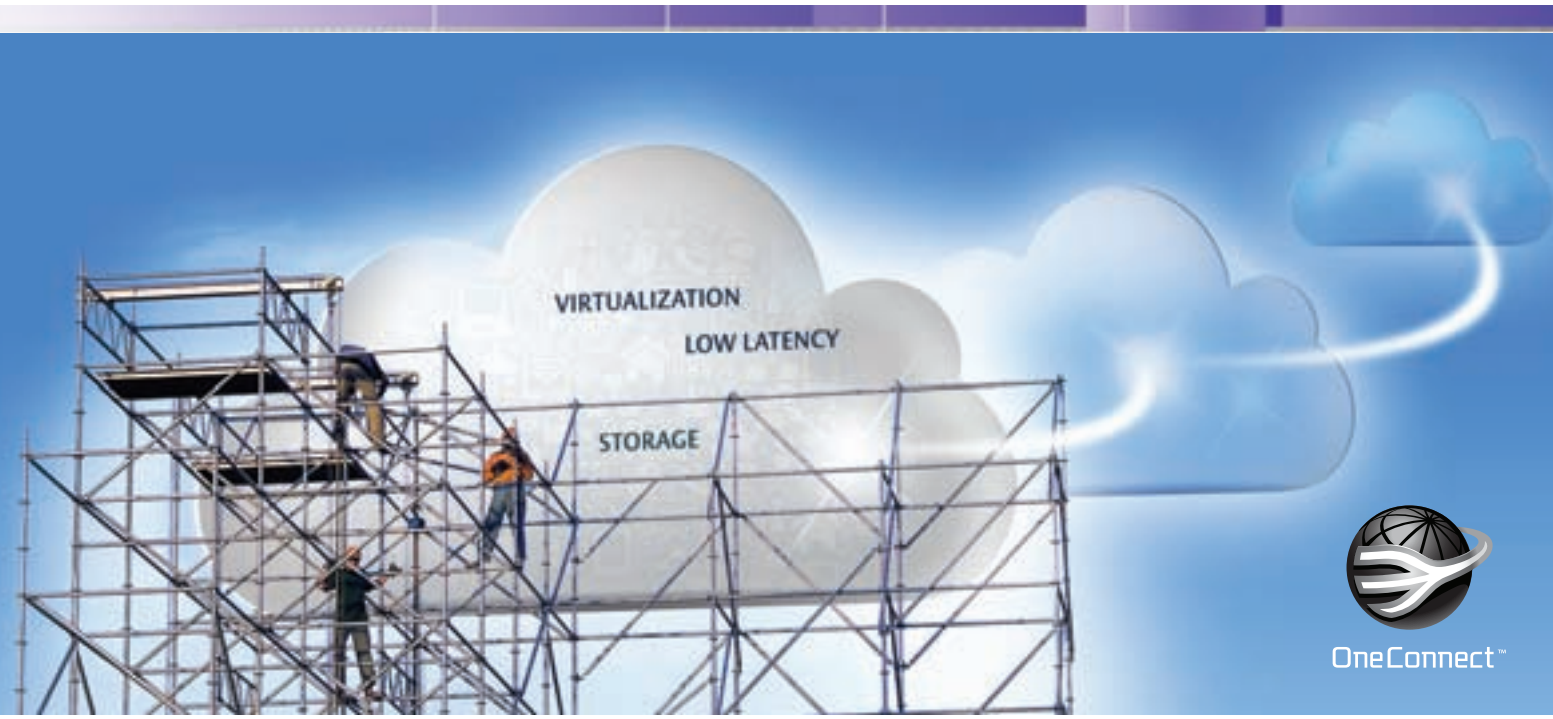


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## CLOUD CHAOS AHEAD

Capita IT Services is warning that a rush by both private and public sector companies to adopt cloud services is leading to cloud chaos, where applications and services are often ineffective, incompatible, and impacting business performance. In a new whitepaper, Solving the Cloud Chaos Conundrum, Capita IT Services suggests several key factors are driving businesses to adopt cloud services and applications which may not provide the best return on investment in the long run and may not meet their needs.

The whitepaper outlines three trends which may lead to cloud chaos, as firms seek to take advantage of the benefits of moving to cloud services:

1. The 'multiple choice' effect - cloud opens up the opportunity to purchase from multiple suppliers on multiple platforms, increasing complexity;
2. The 'benefit rush' effect - the promise of substantial savings has led to a rush to adopt cloud, often leading to a lack of strategic planning;
3. The 'entry point' effect - some parts of an organisation adopt Infrastructure as a Service (IaaS) while others have opted for Software as a Service (SaaS), leaving gaps in cloud adoption strategy without a platform from which to operate cloud services.

Paul Birkin, chief technology officer, Capita IT Services, said: "A robust cloud adoption strategy should already be at the heart of every IT policy for every organisation if they want to avoid falling into the cloud chaos trap. The potential for the cloud to offer increasing innovation and agility to businesses of all sizes is clear, but unless it is adopted in a coherent and planned way it is unlikely to bring the returns on investment that chief information officers expect."

www.capita-its.co.uk/NewsOpinion/Pages/Cloudchaos.aspx

## SIX DEGREES ADDED TO BESTIVAL SUPPORT

With live performances from OutKast and Basement Jaxx, Bestival, the four-day summer music festival set on the Isle of Wight, attracts over 55,000 attendees each year. This year Six Degrees Group (6DG) will be underpinning the event's 2014 website with a resilient and secure hosting infrastructure.

6DG's infrastructure will ensure Bestival's website is performing at optimised levels throughout the lead up to, and duration of, the festival. The site - www.bestival.net - is the festival's core marketing tool, providing the latest news and camping information, and acting as a referral site for ticket purchasing for the thousands of attendees.

Bestival chose 6DG to support their website based on its ability to deliver a resilient infrastructure that can underpin the environment throughout the event. 6DG has deployed a highly available hosting platform and a fully managed backup and disaster recovery solution that operates across geographically diverse locations. Crucially, the solution is fully scalable, which allows Bestival to add additional capacity, as and when required. When it anticipates an influx in traffic, for example when line-ups are announced, Bestival can simply expand its infrastructure to meet additional demand for the website. 6DG also provides an SLA for the Recovery Point Objective (RPO) and Recovery Time Objective (RTO) of 24 hours and 4 hours respectively. This is seen as integral for the business continuity of Bestival as the site is fundamental to its entire operation.

Campbell Williams, Group Strategy and Marketing Director, Six Degrees Group said: "The Bestival website is vital when it comes to drawing the crowds to the event. We have worked closely with Bestival to provide a solution that's aligned to their specific business needs and delivers an excellent customer experience."

www.6dg.co.uk

## PIE MAPPING MOVES TO DELL CLOUD ON DEMAND

Mapping, data and routing expert, PIE Mapping is moving its physical servers to a Dell Cloud on Demand platform, which delivers public cloud through trusted cloud partners. This move will improve performance across its business and support the company's ambitious plans to widen its customer base into new areas of the transport and freight industry.

Designed to help customers quickly respond to increasing demands on infrastructure and storage, the Dell Cloud on Demand platform will offer PIE Mapping a scalable and flexible IT infrastructure to underpin future growth plans and will allow the company to reduce the time to generate complex route calculations from nine seconds to two seconds.

Freddie Talberg, CEO, PIE Mapping, explained: "To be able to support a number of organisations at any one time, we need to deliver a fast, responsive service that can provide complex route calculations and offer live updates on information such as road closures and traffic jams. A cloud platform was the obvious solution and the transition to this environment has been made easier working with Dell."

www.dell.co.uk

## THERESA MAY OPENS IOMART DATA CENTRE EXTENSION

Home Secretary Theresa May MP has officially opened a multi-million pound extension to a data centre in her Maidenhead constituency, which is owned and operated by iomart Group.

Mrs May was given a guided tour of the new facility, which features the first major deployment of Cisco Dynamic Fabric Automation (DFA) and Bi Directional (BiDi) Transmission technology. The data centre will ultimately house up to 30,000 physical and as many as 500,000 virtual servers, and the technology underpinning it takes iomart into the new position of being able to dynamically configure its entire data centre estate with its customers' requirements at its heart. It was the first time the Home Secretary had been inside a data centre.

"Data centres are an important part of the global economy, so I'm delighted to be opening this new facility for iomart," said May. "The technology on show is impressive and will allow businesses to be better connected than ever. "Everybody relies on accessibility and use of the internet to access services and for marketing themselves, so this is important. It is interesting

to see that the cloud has a physicality to it and isn't just something up in the ether."

Angus MacSween, CEO of iomart, said: "We are delighted that The Home Secretary has officially opened our next generation data centre and seen first-hand the technology involved in creating the infrastructure needed to support the dynamic and ever-changing web hosting and data storage needs of SME and enterprise business.

**www.iomart.com**

## FLEXIBLE COMPUTING FOR GOVERNMENT LAUNCHES

Vodafone has launched its Flexible Computing for Government, a secure, multi-tenant (IaaS) cloud computing service designed specifically to enable the UK Public Sector to meet its (IL3) restricted data requirements. As a Public Services Network (PSN) provider, Vodafone is able to deliver a secure multi-tenant Infrastructure with end-to-end connectivity over the PSN.

Vodafone's fixed and mobile capabilities mean the hybrid cloud offering can be deployed with speed and agility, enabling public sector organisations to embrace cloud computing and meet the Government's 'Cloud First' ICT strategy. The service is scalable and able to support both long-term projects and short-term needs ensuring organisations can prevent unnecessary capital expenditure.

Flexible Computing for Government provides a practical way of accessing the benefits of the cloud. It allows organisations to embrace a mix of managed and co-location services, which are protected by the Government-grade security credentials that Vodafone's data centre network provides.

The service is based on a 'pay as you go model' where customers are billed by the hour for their services, enabling organisations to adapt data requirements according to changing circumstances and only ever pay for what is used. The service will be available from April 2014.

**www.vodafone.com**

## TACKLING TECH DEFICIT

A research report commissioned by Colt Technology Services has identified a tech deficit, which affects almost three quarters (72%) of European businesses. This tech deficit leads to a gap between what businesses need to achieve and what their infrastructure can support. When compared with their European counterparts, UK companies are amongst the most prepared with 64% citing they face a moderate or significant tech deficit. According to the findings, the best prepared country is Spain, with 62% of companies facing a tech deficit, compared with 81% of German companies.

The majority of European organisations highlight that their infrastructure foundations need to evolve over the next two years to meet future business needs - including voice and communications (88%), data centre infrastructure (90%) and network infrastructure (85%).

UK companies cite the need to deliver high levels of customer satisfaction (60%) whilst at the same time delivering profitability (65%) and revenue (56%) to the business as the top three measurements of business performance and success. These crucial business areas will suffer significantly if the tech deficit is not addressed.

Mark Leonard, Executive VP of Technology Services at Colt said: "In the digital economy, fundamental business strategies such as breaking into new markets, meeting customer requirements and increasing profitability are governed by the deployment of efficient and adaptable technology. The data shows that the tech deficit is an issue across Europe and impacts businesses of all sizes. The digital economy paradigm means businesses need to embrace new technologies and tools to fuel new business models and approaches - ranging from analytics to user driven apps and wearable technology. Failing to address the tech deficit will have visible consequences. Crucially, organisations will feel the impact of this deficit within the next 12 months."

**www.colt.net**

# Mind your own business

## Kate Baker of Custodian Data Centre offers 'a colocation perspective' on efficiencies and the role of Data Centre Infrastructure Management (DCIM)

In January 2014 a post written on Silicon Angle's blog site estimated that global data centre traffic will grow threefold (a 25 percent CAGR) from 2012 to 2017, whilst Uptime Institutes figures have noted that data centres consume up to 3% of all global electricity production. Cloud growth between 2011 and 2012 saw public cloud adoption increase from just 2 to 25% and other commentators such as The International Energy Agency has suggested that the world's energy needs could be 50% higher in 2030 than they are today.

With growth figures such as these and most industry commentators agreeing that trends show a shift from data stored in-house to either cloud providers or data centres, the onus is on data centres to deliver their services as adeptly as possible.

The importance of efficiencies in the data centre ecosystem are vastly important - from data centre design to which server to use, the amount of processing that can be achieved on a physical footprint can differ enormously. In the same way that housing developers vying for land in cities have capitalised on apartments - with the total cost for the construction of an apartment building being much less than the cost of a single property and the land footprint cost being shared by all - data centres need to maximise what they can achieve as efficiently as possible.

### POWER MAD?

At its most basic level, efficiency (%) = (useful output ÷ total input) x 100. Yet this formula has a myriad of complexities due to the variations required by data centre managers in order to calculate the final figures to use for useful output and total input. Therefore, in amongst all this flux, changing figures and moving criteria, what can act as our constant? Power.

At the heart of a data centre is its ability to maintain and sustain access to an energy source 100% of the time. Every adjustment, efficiency initiative needs to ensure resilience is built into the decision making process. It is now more important than ever that every organisational change is inextricably linked with this modus operandi of the data centre.

Yet it is not enough to simply say we must stay on. Power at all costs, is not a transaction that data centres can afford; there is not an infinite pool of money to pay for soaring energy bills and inefficient data centre solutions. Whilst 'the business of data centres' on one hand can be seen to be protecting mission critical infrastructure for many organisations, 'the business of data centres' for a colocation provider is one that looks after mission critical infrastructure whilst also turning a profit for its stakeholders and ensuring that cost savings are passed down to their customers.

Data centre infrastructure management (DCIM) has been heralded by many organisations as the solution that companies need in order to drive forward efficiencies, such as mapping power losses and providing a data centre operator with a universal set of metrics to enhance their strategic planning. It also can play a role ensuring that a data centre has the capacity to deliver what is required and the awareness to always remain on.

Data centre infrastructure management is seen as an effective way of delivering core infrastructure challenges on a smaller budget. This is something that most data centre operators would agree on. However, can the same be said of a DCIM product? Can out of the box DCIM solutions truly meld and seamlessly interlink effectively with a data centre if it is not developed by the data centre itself?

### ONE SIZE DOESN'T FIT ALL

Whilst the overreaching trends of data centre needs are similar, two data centres rarely have identical needs. The key to DCIM is the management of the data and information created, if developed off-site it is imperative that the engineers utilising the information can use it effectively for what they need it to do. Some data centres rather than operate DCIM products, design their systems in-house so that if there is a problem or a fault, they can find or adapt it.

*"Data centre infrastructure management (DCIM) has been heralded by many organisations as the solution that companies need in order to drive forward efficiencies, such as mapping power losses and providing a data centre operator with a universal set of metrics to enhance their strategic planning. It also can play a role ensuring that a data centre has the capacity to deliver what is required and the awareness to always remain on."*

They are writing a specific piece of bespoke code for their own infrastructure.

Some data centres have calculated that during the early few weeks of deployment of their own data centre information management systems they have recouped more than the cost of all the hardware via the energy savings they made. This is usually the justification for most DCIM systems, except that it can be made back faster, as in-house systems can cost less to deploy.

However, not all data centres have this level of in-house expertise and for those companies, data centres that choose to adopt DCIM products the benefits can enable them to streamline and manage their infrastructure. Yet with so many aspects of data centre infrastructure management to cover (as the term DCIM encapsulates so many different management values) can a total vendor DCIM product be the best solution for each system? That is not to say that DCIM products are good or bad, it is more a question of finding the right solution for each data centre, once again bearing in mind the myriad of variables between data centres and their design. As such one could suggest that data centres might be best to take a modular approach to their DCIM strategy rather than one complete solution and thus risk compromising on one part of their management system.

## COME TOGETHER

The counter-argument to that approach is the question of whether different vendor solutions can work compatibly with each other. Data centre operators naturally want the best for their facility and compromise is not a term that sits well within the day-to-day ethos and running of a facility. They demand the best. If one vendor supplies the best capacity DCIM planning solution for them and a competitor holds the key to the right network solution, they expect and will demand that they will work together.

In July 2013 the Data Centre Alliance raised concerns about skills shortages in the data centre industry, with a real focus on ensuring prospective data centre employees have the right critical thinking skills to work in the data centre industry. Crucially they need the ability to see the parts and the whole of the data centre, as well as the inter-relations simultaneously in order to prevent a major outage. DCIM is the software/programme buttress to those skills and whether developed in-house or by a vendor is a crucial tool in order to help manage the thousands of variables occurring daily within a data centre.

For some data centres, their role within a business is to support the day-to-day workings of the company's business operations, which in turn can have an impact on the company's bottom line. For a colocation provider, their whole business is being a data centre, their bottom line solely depends on the data centre performing at optimal levels, which is why data centre infrastructure management or DCIM vendor solutions are something that must be carefully evaluated and implemented.

More info: www.custodiandc.com

# The customer is King

Phil Worms, Director of Marketing for UK cloud company iomart, explains why the customer should be at the heart of how data centres deliver services

At iomart we were honoured recently to have a major expansion to our data centre in Maidenhead officially opened by the Home Secretary Theresa May. It turned out that it was the first time Mrs May had stepped foot inside a data centre.

Mrs May was guided around the new data halls which feature the first major deployment of Cisco Dynamic Fabric Automation (DFA) and Bi Directional (BiDi) Transmission technology and will ultimately house up to 30,000 physical and as many as 500,000 virtual servers. After viewing the technology she commented, "It is interesting to see that the cloud has a physicality to it and isn't just something up in the ether."

Her reaction is not uncommon among people who work outside our industry. Many have a problem understanding the concept. For some the cloud is an online storage silo for files and music while for others it is a platform to deliver mission critical business services and applications. For those in government it is often seen as more of a procurement issue than one of innovation and enablement. The cloud simply can't be defined without context.

## ELEPHANT IN THE ROOM

It reminds me of the ancient Indian parable about a group of blind men who touch an elephant to learn what it is like. Each one feels one part of its body, such as its flank or trunk. They then compare notes and learn that they are in complete disagreement as to what they are describing and experiencing. The men stop talking, start listening and finally collaborate to "see" the full elephant. It is a lesson that our industry needs to heed if we are to witness the sea change in technology procurement that the analysts predict.

For many of us at the consumer end of the IT food chain, we don't really care as long as we are connected and functioning. Do we really consider where our CRM system is hosted, as long as it 'works' when we log in? We give no thought to the mechanics,

processes or systems, we just type and send.

The cloud, whatever definition is used, resides in a data centre. And what is undeniable is that the need for data centres is growing apace. As the world continues to double its entire data output every two years, the pressures on storage facilities, bandwidth and computing power increase on a minute by minute basis. Unless we want to see a data centre on every street corner, the ones that already exist are going to have to work smarter to cope with demand. Because so few people get the chance to actually see inside a data centre, we need to illustrate how valuable they are to the economy by explaining what goes on inside them in much simpler terms.

## CONNECTING TO THE CONSUMER

The marketing speak currently is all about Software Defined Data Centres but perhaps we should move it a stage further and refer to Customer Defined Data Centres (CDDCs). This phrase connects us directly to the people who consume our services. It is clear and concise and makes us accountable. It puts customer requirement and need at the forefront of how we architect the physical infrastructure that makes up the backbone of the cloud.

The innovative Cisco and Corning fibre technology deployed in the data centre the Home Secretary visited gives the ability to provision automatically and dynamically through a control panel, whatever services the customers need, at any time and on any scale. The technology has been designed with the end-users, the customers, in mind. The challenge was to make sure each rack of servers was capable of catering for every network requirement, for all business groups, encompassing both initial and rapid future expansion as and when required.

The customer reaps the benefit because this new technology provides an innovative solution that simplifies, automates and optimises the data centre to scale and provision immediately against every requirement. So while it is the software and fibre that enables the provision of services, the end objective is defined by the customer requirement.

Home Secretary Theresa May is shown round her first data centre by iomart CEO Angus MacSween

According to research published by BT Business and the British Chambers of Commerce earlier this year, 60 per cent of UK small and medium-sized enterprises are already using cloud-based applications. The Economist's recently published report 'The Impact of Cloud,' describes the cloud as "a revolution in the way information is stored and shared" that could "prove as disruptive to business practices as the advent of computing itself."

## INTO THE FUTURE

We are now entering the era of the Internet of Things, where self-drive cars will take us to our 3D-printed houses with their remotely controlled heating and lighting systems and where we will watch the television on ultra HD screens. If Cisco is correct in its predictions, by 2020 the number of individual devices connected to the Internet will have passed 50 billion and global Internet Protocol traffic will increase three-fold to an annual run rate of 1.6 zettabytes (or more than one and a half trillion gigabytes per year) by 2018.

The world is changing and consumers and businesses have to grasp the reality behind this remote-controlled way of living and working and adapt to its impact. Businesses need to produce strategies that factor in these complex new technologies and how they are being consumed and those of us who deliver the technologies need to build those strategies into our own approach to delivering them. Automation in the network has to be scalable and cost-effective to deal with this growth without disruption.

Innovation in our data centres is mirroring this, leading to less human involvement in the actual provisioning of services within each server but more human involvement in the customer support side of the business. In fact we now have more people working in our customer support services team than most hosting companies have staff in total. It is increasingly important to put customer need at the heart of what we do. Delivering agile, customer-focused services should be at the core.

By starting to talk about Customer Defined Data Centres we can work towards this, and show that we are transforming our networks to deliver the highest levels of agility, performance and flexibility.

More info: www.iomart.com

# Legal firm wipes tape

## Oncore IT has signed a three year contract with leading international business law and litigation firm Fasken Martineau, to provide encrypted online backup based on Asigra's cloud backup and recovery technology

With over 770 lawyers in nine offices across Europe, Canada and Africa, Fasken Martineau has particular expertise in mining, life sciences, banking and finance, energy and infrastructure and public-private partnerships. As a SRA (Solicitors' Regulation Authority) regulated business, Fasken Martineau has to have a thorough approach to backing up all its client data, applications, operating systems and data base files to meet compliance guidance and requirements.

The business used to have a fully managed tape service in place with a third party firm who collected its DLT tapes each day, provided offsite storage and returned them as required. John Maclennan, Fasken Martineau's IT manager, says, "There weren't any problems with this in itself, but I always felt that we could handle the backup process much better to free up time and make the whole process much faster and more efficient."

Every morning a member of staff in the IT department would have to check the overnight backup had completed, eject the tape, put in a case, meet a driver, with the opportunity for scheduled collections to be missed - and the whole cycle then thrown out of sync - very likely if some-one was off sick or late because of transport hold ups.

Maclennan continues, "One of my first priorities when I took over leadership of the London IT function was to change this unnecessarily stressful manual process and embrace the cloud to automate backup, especially as the technology has matured and storage costs have come down such that it's actually comparable in price with our old tape approach."


### AGENTLESS CLOUD BACKUP MAKES MANAGING DATA EASY

Fasken Martineau reviewed various options and selected Oncore IT as its cloud backup partner due to its consultative and responsive approach to working with clients. Under the terms of the agreement, Oncore IT is providing up to 3 TB of data storage. Maclennan explains, "I liked what I saw with Asigra. It does what it says on the tin. It's easy to use and no bells and whistles to learn. Oncore IT has been responsive, open and forthright and the deployment straightforward."

A specific secure Fasken Martineau 'vault' has been created on Oncore IT's new Hitachi Data Systems storage platform with data then loaded into it. To establish the local, daily data updates, just one Asigra monitoring client - a DS Agent - was installed at Fasken Martineau's London office to collect data from its servers. This massively simplifies rollout and contrasts with other solutions which require monitoring agents on each and every server. Data is held in Oncore IT's London data centre and replicated to its offshore facility in Amsterdam for resilience.

### BUILDING CONFIDENCE

Fasken Martineau has found that it is now backing up more data than before as the whole procedure is so thorough such that it has complete confidence that all its crucial commercial information is fully available and easy to restore if necessary. In fact this already happened where one PC got infected with a virus and a network drive then corrupted. The business was able to quickly isolate the problem with a full recovery completed in a few hours.

Maclennan concludes, "What's interesting about this project is that it's our first taste of deploying a cloud solution. You hear lots of chatter about the benefits of the cloud: in our case it has been very much proven to work and it's a much better way of dealing with our inevitable backup requirements."

More info: www.oncoreIT.com

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# Best in show

## Delegates were quick to agree that Cloud World Forum 'continues to drive the agenda' in the cloud space - Cloud Hosting magazine was at June's event at the Olympia National in London

Rapidly gaining a reputation as EMEA's leading Cloud event, Cloud World Forum thrust cloud into the spotlight once again last week with thousands of visitors, over 300 speakers and the industry's top providers converging on London and driving the most comprehensive agenda in the cloud market.

This year's Cloud World Forum boasted numerous new features, including a dedicated Technical Cloud Theatre which welcomed a variety of world-class experts, such as the Open Data Centre Alliance, to explore fresh content on Software-Defined technologies, storage and more.

In conjunction with the event the Open Data Center Alliance published a suite of new enterprise papers on best practices and requirements for cloud computing. Covering a range of topics, these publications reveal how enterprises are working with the ODCA to develop strategy for cloud implementation and adopting ODCA usage models as the foundation for deploying enterprise cloud services. According to their 'Best Practice: Collaborating to Bring Clarity to Clouds' paper, "Only by collaborating across multiple industry demands will cloud solutions mature to cater to the widest breadth of usage requirements and thus become true utilities delivering commoditised resources."

Visitors also thronged the Future Cloud Theatre, where C level executives from major household brands, including Coca Cola, UEFA, BBC, Marks & Spencer, BMW, UBS and Lufthansa, were sharing their Cloud experiences. Also very popular with attendees were the Google Partner Zone and Theatre as well as the Salesforce.com Developer Theatre and Hackathon.

With a stellar speaker line-up, the agenda included some of the industry's top visionaries, innovators and operators. Bernard Golden, Vice President, Strategy for ActiveState Software, who spoke at the conference, commented: "I have consistently found that Cloud World Forum is one of the highest quality cloud events anywhere in the world. The real-world end user perspective and value-focused program makes it a must-attend event. I look forward to it every year."

This year the event was co-located with Big Data World Congress and Enterprise Apps World. Big Data World Congress saw Watson supercomputer demos, courtesy of IBM, insights into the use of Big Data in weather and climate forecasting from the Met Office, data analytics in the gaming industry, care of Mediatonic and a case study on data infrastructure at Spotify, delivered by Wouter de Bie, the company's Team Lead Data Infrastructure.

Telstra used the event to announce availability of its new cloud infrastructure services in the USA, expanding on its offering already available in the UK, Hong Kong, Singapore and Australia and strengthening its global virtual private cloud solution for

*"Cloud Computing continues to dominate the enterprise IT debate - for good reason. But capitalising on the long-term strategic impact requires detailed analysis. Events like Cloud World Forum are useful to meet others wrestling with similar issues - and to learn from their analysis."*

multinational customers. Martin Bishop, Telstra Global Head of Network Applications and Services, said the US extension, which will be located on the East Coast, was an important milestone in Telstra's ongoing strategy to provide cloud infrastructure services to support business growth initiatives.

"The new US node brings our total cloud presence up to seven distinct locations throughout the United States, Europe and Asia Pacific and will enable customers operating across multiple geographic locations, including the US, to quickly and efficiently realise the benefits of enterprise cloud services on their global operations," he said. "When it comes to IT projects, we are finding that customers are increasingly opting for cloud-based services and with this expansion we are even better equipped to serve organisations with operations in the US - be it their long-term head-quarters or a new market they are expanding into."

Digital Realty, following the recent announcement of their Global Cloud Marketplace (GCM), were featuring the new Cloud Platform on their exhibition stand. This cloud marketplace is designed to offer clients of all sizes easy access from Digital Realty's global portfolio of networked data centres to a cloud brokerage, enabling instant provisioning of on-demand, burstable cloud services from cloud service providers, such as cloud servers, cloud storage, and cloud software. In addition the company's VP Engineering, EMEA, Rob Bath, had a well-attended speaking slot on day one of the show with the enticingly-titled 'Rise of the machines' - sadly, time-travelling Terminators were not much in evidence!

## IMPRESSIVE SPEAKERS

The evolving role of the CIO came into focus on Day One of the Cloud World Forum conference, with a panel discussion titled 'Redefining the role of the CIO in the era of the cloud', which examined the increasingly hot topic of how cloud is effecting the role and responsibilities of CIOs as companies fight to stay ahead of their competitors and maintain the pace of innovation.

The event boasted an impressive line-up of the industry's technology giants including: Intel, Oracle, HP, Dell, Google and Microsoft and it also featured an exclusive C-level keynote Future Cloud Theatre, with CIOs and CTOs from leading end-users, such as: Coca Cola, UEFA, BBC, BMW, Marks & Spencer, UBS, CERN and Lufthansa.

Onyeka Nchege, CIO at Coca Cola Bottling Co. Consolidated, gave a keynote presentation called, 'Open Happiness in the Cloud: Taking a 100 year old traditional brick & mortar organisation to the Cloud' - discussing culture and the impact of high expectations, leveraging the workforce and managing the technology rush. Nchege also discussed how the company has started to move its non mission-critical systems to a private cloud with plans to move everything off-premise within five years.

Telecoms provider, NTT Communications were both speaking and exhibiting at the event and Neil Curtis, Marketing Manager Northern Europe, said: "The Cloud World Forum fits very well with NTT Communications' Global Cloud vision. The agenda is very relevant, attracting a very high calibre of delegates. Being co-located with Enterprise Apps World also works really well and it's a great opportunity to build brand awareness and generate engagement. It's a great couple of days." NTT's recent research 'NSA Aftershocks', looks at how businesses have changed their behaviour following the revelations by Edward Snowden, including moving corporate data, changing procurement policies and wanting more legislative training.

Hightail's Senior Vice President Eric van Miltenburg presented on what the future holds for the cloud. Hightail's vision is about working towards a 'cloudnostic' future, which refers to the idea that there is more than one cloud where multiple services work in harmony with each other - partnering and integrating, as opposed to the 'rip and replace' culture businesses face if services aren't compatible.

Elsewhere, Martin Porter, Vice President, UK Engineering at Solarflare Communications was one of the panel discussing "Solid Cloud But Not from Scratch: Optimising Your Infrastructure for the Cloud". Martin emphasised the optimisation of firms' infrastructure performance in a cloud computing environment, and the importance of security and end-to-end quality of services (QoS) for network performance.

SolarFlare also used the event to highlight emerging cases in which applications achieve near-native performance by leveraging the latest virtualisation technologies, such as "SR-IOV, multiple PFs and VFs, PCI passthrough, and a preview of Linux containerisation that clears a path toward more elegant integration of 10/40 Gigabit Ethernet, Linux and KVM into OpenStack Clouds".

GTT's Managing Director, Andy Johnson, gave the opening day keynote address in the Transforming Cloud Theatre. "The CIO Challenge: How to future-proof the cloud and the network", covered how the role of the CIO has changed dramatically with the advent of major game changers, namely big data, virtualisation, collaboration and cloud computing destinations. Johnson explained "the top five key factors CIOs need to consider to future-proof the network and the cloud for tomorrow".

Dr Will Venters, Assistant Professor, Department of Management, London School of Economics, who spoke at the show said: "Cloud Computing continues to dominate the enterprise IT debate - for good reason. But capitalising on the long-term strategic impact requires detailed analysis. Events like Cloud World Forum are useful to meet others wrestling with similar issues - and to learn from their analysis."

Susan Doniz, Global CIO, Aimia, looked at how Cloud, Big Data and next generation IT technology can help companies build relationships with their best customers on Day Two of the Future Cloud track. "Cloud computing technology and SaaS models are allowing us to simplify and commoditise the technology that our employees use daily, where we want it and how we want it, making us more flexible, responsive and effective," Doniz said. "But more importantly, they are enabling us to offer similar benefits to our customers - including a drive to standardisation, flexible pricing models, and scalability to manage periods of surging data or the sheer volume and variety of data generated from the relationships with their own customers."

## GLITTERING PRIZES

This year's Cloud World Series Awards winners were also crowned as part of the event. The Awards, which consist of six categories encompassing services from across the cloud ecosystem, acknowledge and celebrate drive and innovation in the global Cloud Computing industry.

Ewa Campbell, Head of Marketing, Cloud World Series, said: "Rewarding the excellence of our winners by acknowledging their hard work and what it brings to the cloud industry is hugely important. These companies are laying the groundwork for the future of cloud, which is becoming an increasingly significant part of business today. The calibre of our shortlist this year was impressive and our winners deserve the recognition they receive."

The Awards were judged by world class experts in Cloud Computing, including: Professor Mark Skilton, Professor of Practice in Information Systems & Management, Warwick Business School; Chris Wray, Partner, Kemp Little Consulting; Kerem Arsal, Manager, Africa & Middle East, Pyramid Research; and Camille Mendler, Principal Analyst and Head of Enterprise Verticals, Informa Telecoms & Media. The full list of winners was as follows:

- Best Cloud Service - WINNER - AWS
- Best Cloud Application - WINNER - PEPPERMINT
- Best Cloud Platform - WINNER - Microsoft Azure
- Best Cloud Security Solution - WINNER - Cohesive FT
- Best Cloud Data Centre & Storage Solution - WINNER - Egnyte
- Best Big Data Analytics Solution - WINNER - Sales-I

Ewa Campbell concluded: "2014 was a real success for the Cloud World Forum. We had a strong and diverse conference agenda and there was a fantastic buzz on the show floor throughout the event. We've received some really positive feedback since from visitors, speakers and participating companies and are already looking forward to making 2015's event even better than this one."

Following the success of this year's event, Informa Telecoms & Media can confirm that Cloud World Forum will take place at the Olympia Grand in London for 2015. The dates for next year are 24-25 June 2015.
More info: cloudwf.com


# Not all data centers are created equal

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# Don´t confuse price with value

When it comes to cloud-based infrastructure services, some potential buyers seem to know the price of everything but the value of nothing, argues Flaviu Radulescu, CEO of bare metal cloud provider Bigstep

If any massive brand in any other market slashed its prices in half as a kneejerk reaction to a competitor, it would indicate a major crisis - or desperation for market share at any cost. But this is what has come to pass recently in the Infrastructure as a Service (IaaS) market. First Google slashed its prices, and by day two AWS had responded in kind. But how could a multi-billion-dollar business afford to halve its revenues like that, without extensive prior planning? Speculation is rife among independent experts and the media, though not everyone agrees that customers have been deliberately exploited.

## DECOUPLING HARDWARE FROM PROCESSING DOESN'T ELIMINATE COST

Whatever the motivation, in the ensuing race to the bottom, the value of respective IaaS offerings is becoming more transparent, giving customers a clearer idea of what they're paying for. Ever-decreasing IaaS costs will expose inflated margins and a lack of investment in robust business-class capabilities - because, if service providers really were investing in improving the consistency of performance, for example, this would have to show in their costs.

In a virtualised cloud scenario, how much a service should or could cost is like asking how long a piece of string is, because the physical capabilities are shared. In order to keep costs low and drive pricing down, cloud providers will often add more and more clients on to the same physical machines, resulting in degraded performance for all concerned.

The irrelevance of hardware to pricing is even more pronounced if individual data episodes across those facilities are charged for separately. Indeed companies have been burnt by this, finding that low-cost services they assumed would be consistent and predictable have rapidly escalated in price if they have suddenly been responsible for a lot of activity - whether that's customers uploading lots of video to their media-sharing site, or some other mass-scale use of cloud-based facilities.

If the way to win market share is to keep lowering the entry point so that IaaS becomes a no-brainer for any business, service providers must redress the balance somewhere - for example by charging more for different classes of service, or springing big bills on heavy users.

## COMPARING APPLES WITH ORANGES

It can be unwise to directly compare one IaaS offering with another, because of the numerous variances in the way services are provisioned and packaged. Of course market dynamics are at work, but it is important that serious business users understand the elements that make up the price they pay and how variable the totals could be over time. They then need to weigh this up against the type of performance guarantees they might need, and find a balance that meets their needs and budget.

Other considerations include the sorts of tasks they are relying on the infrastructure service for. This too could have a bearing not only on how much a company is eventually charged, but also on how effectively it can process a certain workload or how quickly it can serve a number of users. An example of initiatives with special needs is 'big data analytics' - for example around customer behaviour and associated marketing on social media. Such tasks may not work well in a virtualised IaaS environment, whether the price seems attractive or not.

As ever, the best advice is for organisations to do a thorough analysis of their business needs, and to find an IaaS proposition and business model that is fit for purpose - and where derived value, not price, becomes the deal-maker. In this world you get what you pay for, and it is better to realise and plan for this up front than be seduced by initial low pricing, only to end up with a service that only does half the job and costs twice the price.

More info: www.bigstep.com

# The scary truth about ´portable´ enterprise data

## What's to stop employees from leaving your company with vital corporate data, asks Tony Craythorne, VP of Worldwide Business Development at Quorum

I don't want to scare you, but are you using the cloud to share information and resources among employees? Are they accessing that data on personal devices? Recent research says that 82% of companies allow BYOD devices, with many of them encouraging or even demanding the practice. Yet 40 per cent of companies admit they do a poor job of managing identities and access to cloud information. That's a scary situation for a company - sharing your data while being powerless to protect it.

### RISKS VS REWARDS

Companies implement BYOD policies because they save money on buying devices and training employees to use them. However, these savings can come at a cost. Companies often have no process set up for removing data from an employee device should it be stolen or the employee leaves. Here are more scary statistics:

- 51% of companies detected ex-employees trying to access company data
- 81% suspect employees share passwords to access cloud information.

### STEPS TO MITIGATE THE RISK

A security breach or loss of data is inevitable with all these activities - unless you take action to mitigate the risks. We recommend the following simple steps to adhere to when protecting your company from BYOD threats:

- Security Policy: Always provide a hardcopy for employees to sign - don't forget to include mobile devices
- Data Control: Use mobile device management software to control the information on these devices. If an employee leaves you can delete all the data on the device, including passwords
- Encompass the risk: Software wrappers can be used to control the data by detaching your company's applications from other software on the device
- Third party software: Prevent your employees from skipping your applications for a perhaps more user-friendly outside application
- Training: Training employees on existing security threats ensures the safety of company and employees' data.

Use the cost savings from BYOD to invest in strategies to make the devices safer. While you're at it, take time to look at the legal issues. Letting employees use their own devices can create many legal challenges.

Another key consideration is the cloud itself. A truly public cloud may not be the most secure, simply because you can't extend your organisation's policies into it. A hybrid cloud configuration, where some resources are internal and some external, allows a balance. Hybrid cloud can take advantage of the scalability and cost advantages of public cloud and combine it with the protection against third-party vulnerabilities that a private cloud offers.

Consider a BYOD security solution that automatically syncs data from employee devices to a hybrid cloud for backup.

### BACKUP PORTABLE DATA IN THE CLOUD

I recommend incorporating hybrid cloud into your backup plans. Sensitive information should be included in tier-1 backups, making it easily accessible in case you have to terminate an employee. Whatever happens, data will be available.

Cloud backups can be accomplished at a low cost and with minimal labour investment. A DR as a Service offering can protect tier-1 data, combined with other backup and recovery options for other data tiers to maximise cost savings, whilst keeping the business up and running.

More info: www.quorum.net

# Reaching for the skies

## Europe's 'gateway to space' has teamed up with Interoute to deploy its SuperSites Exploitation Platform in the cloud and help Earth Science tackle geohazards

The European Space Agency (ESA) is an international organisation with 20 member states. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to Europe and the wider world. ESA's space programmes are designed to find out more about the earth, its immediate space environment, the solar system and the universe, as well as to develop satellite-based technologies and services and promote European industries. ESA also works closely with space organisations outside Europe. There are around 2000 staff working for ESA, from all the Member States and include scientists, engineers, information technology specialists and administrative personnel.

Photo: ESA

Earth Observation data helps ESA to monitor climates, detect changes, attribute causes, understand the processes and support climate modelling and prediction. To do this, it uses satellites to monitor the natural world and gains valuable insight into the impact of melting ice, wild fires, and deforestation among other natural phenomena.

As part of its mission to support the scientific community and encourage better use of satellite data to monitor and track the planet, ESA needed to be able to analyse and interpret large volumes of data on demand. Making a larger pool of data available to scientific data users would help them to gain a better understanding of the process causing geohazards such as earthquakes and volcanic activity. To host this pool of data, ESA worked with a number of worldwide research institutes to develop a SuperSites Exploitation Platform (SSEP).

### THE RIGHT PARTNER

ESA was looking for a European partner to host its SSEP in the cloud. The organisation had previously worked with Interoute to deploy an IP Wide Area Network and connect 13 Earth Observation Payload Data Systems sites across Europe

and Canada, which helped ESA rationalise and enhance its existing connection capabilities and connect its various Earth Observation Data Centres and main IT platforms. Impressed with Interoute's network capacity and availability, ESA selected the owner-operator of Europe's largest cloud services platform for a second time.

Jordi Farres, EOP Service Support & Ground Segment Technology Office at ESA explains, "We needed a European partner that could assist us with an expert and dedicated team, delivering a fast response to address all of our IT challenges and host this brand new platform in a highly secure environment."

Farres continues, "It was also important for us to work with a partner that had the scale and infrastructure to support us across our entire organisation, with a network footprint that mapped our own operations."

## TRANSFORMING THE PLATFORM

The SuperSites Exploitation Platform (SSEP) enables scientists to estimate land motion from radar data interferometry. This not only provides insight into Solid Earth science (volcanoes and earthquakes for instance), but also quantifiable risks to ESA. For example, combining land subsidence with sea level rise observations gives an idea of the flood risk in coastal mega-cities.

ESA used ICT technology to develop the SSEP, transform the way its satellite data was being used, processed and distributed, and encourage collaboration on cloud based e-Infrastructures.

e-Infrastructures provide the ICT infrastructures and services needed to empower the scientific community with easy and controlled online access to facilities, resources and collaboration tools. They enable instant access to data and remote instruments, the setup of virtual research communities and foster the emergence of e-Science; new working methods based on the shared use of ICT tools and resources across different disciplines and technology domains.

Farres continues, "Data volumes are increasing exponentially: every two days, the world creates the same amount of information as it did from the very beginning of time up until 2003. That's an incredible amount of data which all has to be collated, stored and processed. At the European Space Agency, we are required to analyse terabytes of data across thousands of radar scenes to better understand geohazards, and it was therefore imperative that we brought a partner on board that had the infrastructure to support our demands."

Farres continues, "We needed the capability to procure, provision and deploy highly secure cloud-based ICT infrastructure, making on-demand scalable processing and storage of large data volumes faster for our scientific data users, who are distributed around the world."

## THE VIRTUAL DATA CENTRE

The SSEP was developed in collaboration with Interoute Virtual Data Centre (VDC) to enhance the SSEPs access and usability and process ESA's on-demand satellite data. Interoute VDC is built into the fabric of Interoute's pan-European MPLS/IP network, enabling organisations to deploy virtual computing and storage infrastructure for their enterprise applications in a matter of minutes. It can be scaled much faster than traditional physical platforms and has the flexibility to be provisioned as either a private or public cloud. This gives enterprises the ability to provision and control computing and storage infrastructure on demand.

Matthew Finnie, CTO of Interoute, explains: "By using the Interoute Virtual Data Centre, the European Space Agency's e-Infrastructure gets all the advantages of cloud, huge scalability and unparalleled connectivity, to the innovative ESA SuperSites Exploitation Platform. Interoute VDC is essentially bringing ESA the simplicity, self-service and flexibility of the public cloud alongside the established security and performance of the private cloud. This is cloud computing without any of the compromises."

## COLLABORATION IN THE CLOUD

Initially providing access to 13TB of data encompassing 50,000 radar scenes from ESA, SSEP users are able to choose from a number of algorithms to process the data. The platform also includes a cloud toolbox, which offers virtual desktop resources configured with appropriate software and licenses to analyse and process the data.

The platform provides users with simple access tools to view to retrieve data from multiple archives, to place their tasking requests, fetch data and to report results back to data providers; which will make a larger pool of data available to scientific data users. The SSEP model complements the legacy model where data was shipped out and processed at a user's premises.

"Interoute VDC is a great platform for delivering satellite data from the cloud. It helps us extend our international reach on a reliable, scalable and highly-available platform," concludes Farres. "Because of our collaboration with Interoute today, we are able to confidently track tomorrow."

More info: www.interoute.com

# Seeding the government cloud

The key to driving making G-Cloud work - especially at the local government level - is 'education, education, education', says Peter Groucutt, managing director of Databarracks

"Public sector organisations have so far spent more than £175m procuring IT services through the government's G-Cloud portal, resulting in savings and more contracts for small and medium sized businesses." These were the comments made last month by Cabinet Office minister Frances Maude, discussing the latest uptake of G-Cloud services. Now into its fifth iteration, it's clear that despite a slow start, the framework is starting to see real traction.

The motives behind G-Cloud have always been simple: to make it easier for the public sector to embrace the more flexible services available outside of the oligopoly of big SIs that traditionally dominated the IT market.

Until the formation of the G-Cloud framework, selling services to the public sector was never something smaller providers were able to do, with SIs taking advantage of the imbalance of power that existed within the market. But despite the big strides that we're taking to regain balance, key barriers still exist when it comes to uptake.

## FRUSTRATING SEARCH

The overly complicated nature of the CloudStore has been a huge deterrent to adoption so far. Recently, the Cabinet Office has sought to address this with a complete overhaul of the search functionality. Previously, to get accurate results buyers looking for a service would search via a search engine, and then go back in to the CloudStore to find the supplier by name. This was not a practical approach and

understandably caused much frustration.

The new search functionality actually prioritises titles and descriptions, so users now get the most relevant results straight away, making the whole process much more and the Cabinet Office should be applauded for taking action. But equally important is going to be addressing the even bigger barrier that still exists: the considerable lack of awareness of G-Cloud.

## GETTING THE MESSAGE ACROSS

While the latest figures are promising, with the messaging of cost savings, transparency and flexibility being well championed, not all public sector departments are embracing G-Cloud. Recent research has revealed that less than one per cent of local councils in England procured IT services through the CloudStore between 2012 and 2013.

In light of this, central government must work with suppliers and industry bodies to provide local government departments with a better understanding of the G-Cloud framework and the services available within it.

Recent research carried out by the Cloud Industry Forum (CIF) indicates that cloud adoption rates in the public sector match that of the private sector, both standing at 69 per cent. But adoption is very unbalanced within the public sector; with the vast majority coming from central government. The next challenge must be to spread that enthusiasm to local councils.

It's imperative that central government works with industry bodies like CIF, as well as with suppliers, to ensure the benefits of G-Cloud are being realised and communicated effectively to local counterparts.

A great deal of time and effort has gone into successfully creating a network of secure and reliable cloud service providers, with the purpose of opening up the market to all departments across the public sector. Local departments are able to take advantage of time and money saving services that have been previously very difficult to access - we just need to show them how. Massive strides have been made since the early days of G-Cloud but we need to keep pushing forward.

At less than one per cent uptake amongst local councils, the message that needs to be communicated as we move towards G-Cloud 6 is that of continual improvement and education. Taking G-Cloud into other government departments and public sector services allows the framework to evolve and ultimately provide the public sector with greater transparency and flexibility when it comes to their ICT needs.

More info: www.databarracks.com


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# Opportunity knocks for SSD

John Scaramuzzo, Senior Vice President, Enterprise Storage Solutions at SanDisk, argues that Cloud and Hyperscale environments offer a variety of applications that are highly suitable for SSD technologies

Everyone in IT knows that big data is a force to be reckoned with. The market is exploding with massive quantities of structured and unstructured data, which must be collected, sorted and stored safely. Trying to process all this data in real time, so it adds value to the organisation, is like drinking from a fire hose. Then there's the challenge of mastering the complex tools and technologies used to collect and analyse big data and turn it into workable information and reports. Getting a handle on it all requires efficient storage systems-and that means solid state storage technology.

Compared with traditional hard-disk drives (HDDs), solid state storage systems greatly alleviate I/O bottlenecks and latency. Driven by non-volatile memory technology, advanced solid state drives (SSDs) can deliver faster response times and greater capacity without sacrificing reliability or accuracy.

Across an array of application workloads, solid state storage (or a hybrid solution) provides the efficiency and uptime that businesses need to:

- Ensure that service level agreements (SLAs) are met for Tier-1 business-critical applications and increase application performance across the board.
- Scale applications up and out without compromising end-user response times - while using less hardware, power, cooling and data centre space.
- Improve response time and throughput by caching the "hot," most frequently requested data.

## THE ENTERPRISE SSD OPPORTUNITY AT A GLANCE

Businesses that deliver Cloud and Hyperscale solutions are particularly reliant on efficiency and performance in their data centres. When your bottom line depends on dynamic information provided in real time, a split-second delay can be very costly. As more and more business functions move into virtualised environments or cloud-delivery platforms, any bottleneck in storage becomes a mission-critical concern.

When performance and microseconds count, the I/O improvements of solid state storage technology are especially valuable.

## TOP APPLICATIONS FOR ENTERPRISE SSDS

The following real-world examples illustrate how solid state storage technology solves key customer challenges across Cloud and

Hyperscale data centre environments.

### 1. Web Databases/Business Intelligence (BI)

Businesses are turning to cloud services for access to data and analytics that help them make smarter business decisions. Because users don't want to wait for anything, solid state storage technology can improve their experience by accelerating web application response times. It allows BI SaaS companies to deliver complex, real-time analytics and data visualisations without slowing page load time. Best of all, it allows SaaS providers to scale to meet demand quickly and cost-effectively without sacrificing performance.

### 2. Data Mining and Analytics

Like SaaS providers, online data-mining services need to be responsive. Solid state storage technology helps increase application performance so providers can process more jobs and more complex queries in less time. I/O-intensive log files and frequently accessed tables can bog down an analytics engine. But PCIe-based flash storage puts that data closer to the processor, ensuring a fast response time. It also allows for complex queries at massive scale, while remaining cost-effective and easy to install.

### 3. Social Media

Social media creates a growing data challenge because of the vast amount of unstructured and structured data sets. Social media sites have to provide access to videos, photos, audio files, status updates, tweets and other online transactions that people want, quickly and accurately. Solid state storage technology provides the low latency, scalable, high-performance storage platform that allows social media companies to deliver the experience their users demand. At the same time, it reduces infrastructure capital expenditures (Capex)-including hardware, data centre footprint, and power and cooling-while shrinking operational expenses (Opex) year after year.

### 4. Server Virtualisation

Organisations have turned to virtualisation to maximise server utilisation, reduce hardware expenses, and improve the responsiveness and resiliency of application delivery. Solid state storage technology can improve the performance of virtualised environments by combining hardware with software caching to reduce latency. This allows more data to quickly get to the CPU, increasing overall throughput and utilisation. The result? IT can run more virtual machines (VMs), while improving the performance across all VMs.

### 5. The Cloud

The next logical step for virtualisation is the cloud, which extends the virtual environment online to provide organisations and consumers with self-service access to managed solutions. But in order to do so effectively, IT needs to ensure persistent performance, high availability, high capacity and low latency. Solid state storage technology can help by delivering predictable, sustained response times, even on data-intensive workloads. And because SSDs can work with existing hot-swappable storage system designs, no "forklift" upgrades are required. With solid state storage technology, IT can deliver higher performance with less SAN infrastructure-reducing power consumption and cooling costs, as well as Capex and Opex.

### 6. Software as a Service (SaaS)

For many businesses, the ultimate expression of the "cloudification" of service delivery is to provide SaaS. Delivering this model effectively can be difficult, as organisations must find ways to deploy hardware that ensures an optimal user experience without sacrificing profitability - not easy if their system is bogged down by I/O constraints driven by simultaneous queries by multiple users. Solid state storage technology can help by lowering latency so that requests can be quickly fulfilled, providing an improved customer experience. It also allows SaaS providers to support a greater number of databases while allowing them to run more VMs on each server.

More info: www.sandisk.com/enterprise

| | Cloud and Hyperscale |
|---|---|
| **Applications** | Virtualization<br>Cloud Computing<br>Software as a Service (SaaS)<br>Web Databases/Business Intelligence<br>Data Mining & Analytics<br>Social Networking |
| **Pain Points** | Elastic scaling of capacity/performance means more nodes are required and valuable compute resources are needlessly wasted.<br><br>Multiple I/O requests are interspersed together, all demanding attention from storage almost simultaneously. This drives down performance, frustrating users and costing businesses time and money. |

# Power to the people

## A highly scalable virtual desktop service on an integrated IaaS platform 'underpins service transformation' for a joint venture formed by London Borough of Hammersmith & Fulham and IT service provider Agilisys

For many people in the UK the concepts of 'innovation' and 'local government' don't immediately go together. But with rising citizen expectations and ever-tightening budgets, UK local authorities are rapidly finding themselves at the forefront of using technology in smarter ways to deliver services more effectively and efficiently. Assisting them is specialist IT and business process service provider, Agilisys.

Agilisys describes itself as 'one of the UK's most innovative IT and business process service providers, helping our clients transform their businesses.' Working for both the public and private sector, the company has earned a strong reputation and hold deep domain expertise within local and central government, healthcare, and financial services. They design, build and operate an integrated suite of IT and business process services from end-to-end, meeting the needs of public and private sector clients through cost-effective shared service platforms. Agilisys supports its clients through a network of offices and 'centres of excellence' throughout the UK, employing over 1,900 staff.

Through the Hammersmith & Fulham Bridge Partnership (HFBP), a joint venture established by London Borough of Hammersmith & Fulham and Agilisys in 2006, the company has saved £38 million while delivering better IT service levels, contributing to the council's ability to reduce council tax for residents by at least 3% for four years in a row.

The challenges faced by HFBP could be summarised in a few points:

- To cut costs and improve flexibility and security for local government
- To focus on solving business problems rather than managing virtual desktop infrastructure
- To roll out a future-proof infrastructure-as-a-service platform

### AWARD-WINNING DESKTOP VIRTUALISATION

One of HFBP's programmes, the SmartWorking programme, lets staff easily work from different locations - and potentially with any device - by establishing a secure connection to centrally hosted applications, documents and data. It also improves security because data no longer resides on staff computers.

This ability to support secure, flexible working frees the council to move ahead confidently with an innovative shared services scheme with neighbouring Westminster City Council and Royal Borough of Kensington and Chelsea, as Jackie Hudson, the council's director for procurement and ICT strategy, explains:

"People are having to work flexibly - across borough boundaries and out in the field - even more than they did previously. This solution helps us deliver this capability to almost all of our employees: it's ground-breaking in the number of users and range of applications we're deploying. It also gives us the opportunity to release significant savings by reducing our office estate."

The solution in question is a Colt virtual Desktop Service that meets multiple requirements specified by Agilisys for local governments: a highly flexible, reliable and scalable multi-tenant virtual desktop infrastructure compliant with government Code of Connection (CoCo) requirements. Soon after launch the solution delivered by Colt to Agilisys won the Best Desktop Virtualisation Project at VMworld Europe 2012.

*"People want it as quickly as we can get it out to them. Early adopters like the new service, because booting up, logging in and launching applications is much faster. Hearing this from colleagues rather than IT makes others ask if they can have it too."*

## A GIANT LEAP FORWARD IN RELIABILITY AND COST-EFFECTIVENESS

"The increased flexibility and reduced cost offered by Colt's virtual desktop infrastructure platform are making it a key instrument in our range of solutions," says David Abensour, Agilisys Group CTO. For Hammersmith & Fulham, high reliability and streamlined management of infrastructure and middleware under the managed Colt service has reduced the total cost of ownership for the desktop environment by one third thanks to:

- A 20-25% reduction in per-user seat cost.
- 80% reduction in power consumption of the thin clients replacing the council's aging PC estate, together with an expected doubling of device lifespan.


## COMMERCIAL FLEXIBILITY COMPLETES THE FUTURE-PROOF PACKAGE

Through this service Colt is enabling Agilisys to deliver integrated next-generation work environments to its customers. From a technology standpoint the service is much more than a virtual desktop infrastructure; it's a complete infrastructure-as-a- service (IaaS) platform that can equally support cloud-based telephony, video and collaboration services.

The supporting commercial model is equally flexible, with 'pay as you grow' options and licensing that supports on-demand upward and downward scalability. "We're doing this with Colt because they share our vision of a more responsive and agile IT consumption model that allows us to focus on transforming IT operations and increase focus on business benefit," says John Henderson, Agilisys Director of IT services.

## SELLING CLOUD SERVICES IN A RISK-AVERSE SECTOR

"Delivering change quickly is key to our competitiveness," Henderson continues. "Colt has enabled us to do so in an often risk-averse sector." To ease the transition for Hammersmith & Fulham, Colt first stood up a proof-of-concept environment for Agilisys to use and demonstrate to the council. With the concept proved, the council's service was designed and rolled out in stages. Taking stock at the 1,300 user mark (out of 2,700), the council confirms that rollout has been smooth for end users, who have had only minor issues getting used to some interface changes.

"People want it as quickly as we can get it out to them," says Howell Huws, the council's head of business technology. "Early adopters like the new service because booting up, logging in and launching applications is much faster. Hearing this from colleagues rather than IT makes others ask if they can have it too."

For Agilisys, confidence in the service also comes from the end-to-end SLA Colt offers covering both infrastructure and connectivity. This is possible because the service is run from two Colt data centres (for resilience) and over the Colt network, giving Colt direct control of the whole thing.

"We can confidently rely on Colt for access to and management of the most up-to-date technology for this platform," says Henderson. "We can then complement this with our strong experience of IT delivery in the public sector to help our customers make and implement the best strategic decisions and manage the cultural change that often goes with technology-enabled business transformation."

**More info: www.colt.net**

# The truly open Cloud

## Boris Renski, co-founder of OpenStack vendor Mirantis, explains what is needed to secure the vendor-agnostic cloud - and a level playing field for everyone

As the cloud infrastructure and software market evolves, open-source initiatives are competing toe-to-toe with proprietary solutions. Amazon's AWS was seen as the Apple of the cloud and OpenStack is the equivalent of Android, helping organisations to escape the disadvantage of being locked into a single vendor's cloud solutions by a commoditised infrastructure.

But even within open-source, the old habits of software vendors die hard. As with long-established communities like Linux (where partners certify their software solutions against the predominant enterprise Linux flavour) the tasks of testing and certifying cloud infrastructure such as OpenStack have, in some cases, been proprietary to the vendor running the certification programme.

These programmes are usually opaque from the customer's point of view. Some vendors actually do subject third-party software to rigorous compatibility testing; while for others testing programmes is little more than a tick-box exercise with a certificate. But the customer will not know the difference or understand what the true value of that particular flavour of certified compatibility is.

### CUSTOMER LOCK-IN

This model is flawed. Having vendors manage their own certification programmes may have been relevant 15 years ago when the Internet was evolving into the mainstream. Enterprises didn't understand the open-source model and everyone wanted guarantees on interoperability. But with the open-source community model mature and thriving, there's little reason to run a proprietary certification programme, other than to lock customers in to a particular vendor.

The lock-in works like this. A larger vendor may not want a smaller, disruptive company's product to run on its platform because it may affect sales of some other product in its solution portfolio. So the larger vendor can choose not to certify or support the product on its platform, which means the customer may not be able to realise advantages from the innovations of upcoming vendors. This way, the larger vendor builds a competitive barrier, which I believe goes against the ethos of an open-source community.

### OPENING THE BOX

This is why a new OpenStack initiative - open compatibility testing - is hugely significant for the cloud. Starting as a grassroots movement from a number of the technical leads in the OpenStack community, the project is building a standard, open set of tools that software vendors use to self-certify compatibility of their solutions with the OpenStack codebase.

Vendors will set up a testing lab in-house according to guidelines developed by the community, link these labs to the community-driven OpenStack continuous integration system, and dynamically expose the results of certification tests via a public dashboard.

When this is done, any organisation looking to adopt OpenStack will have access to accurate, objective information via the dashboard exposing how well a given vendor's solution works with OpenStack infrastructure, with no involvement by software companies with vested interests. Everybody will be able to see what tests were conducted and what processes followed to arrive at the compatibility test results - so organisations can judge for themselves which solutions will best suit their current and future requirements.

### COMMUNITY SUPPORT

The real benefit of an open-source community is that it is self-policing. If a proprietary solution from a vendor adds only questionable value, the community will simply develop its own variant and make that available for free. This accelerates innovation, and stops marketing muscle winning over technology. The move to open-sourcing certifications for OpenStack software is a big step towards breaking down one of the final competitive barriers that larger vendors have traditionally used to extract margins from customers and limit innovation. It will help to level the cloud playing field, giving newer software developers the same opportunities to contribute to the community as established players. It also helps move the vision of a vendor-agnostic cloud a step closer.

More info: www.mirantis.com


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# Your flexible friend?

## A new breed of flexible data centre must emerge to put the CIO "back in the driving seat", argues Andrew Roughan, Commercial Director at Infinity SDC

For something that started in the 1950s, cloud computing might seem to be late to the buzzword party. In fact, that pervasive, omnipresent trend of today is technically more than 60 years old. In those days, time sharing allowed multiple terminals to share the physical access and CPU time on mainframes. But the vision for cloud was already there: in the 1950s, scientist Herb Grosch predicted that the world would operate on dumb terminals powered by about 15 large data centres.

Commercialised in the 1960s, cloud computing evolved through the early VPNs of the 1990s, virtualisation and the dotcom bubble that fuelled Amazon's rise to success, until the point in 2008 when Gartner remarked that cloud computing could "shape the relationship among consumers of IT services, those who use IT services and those who sell them." It later observed that businesses were "switching from company-owned hardware and software assets to per-use service-based models" so that the "projected shift to computing ... will result in dramatic growth in IT products in some areas and significant reductions in other areas."

More recently, in October 2013, Gartner predicted that Cloud Computing would account for the bulk of new IT spend by 2016. Cloud is reaching its apex.

### CLOUD CONFUSION

The length of time that cloud has taken to reach this point perhaps accounts for the confusion that continues to surround it. There's confusion about cloud technology, confusion over IT infrastructure development and now, with the illusion of unbounded capacity in the cloud, confusion about data centre options and their place in the IT strategy.

Public, private, hybrid, on premise, co-located: with so many options and approaches, many mid-sized enterprises are finding it difficult to understand the myriad data centre solutions on the market. Many companies have commenced their IT transformation journey, but the data centre typically continues to be viewed simply as real estate. No longer can there be a single procurement approach. Multi-sourcing is here to stay.

The data centre must become more than that. At the heart of the transformation to the cloud, it needs to become more relevant to the enterprise in supporting the transition from basic virtualisation to its latest stage of evolution: software-defined data centres (SDDC). This means understanding both the enterprise IT revolution and the individual needs of each business.

The goals for businesses moving to the cloud tend to be similar: whether private, public, or hybrid cloud, users seek to increase agility, boost flexibility, reduce time to implement, enable efficient international operations and reduce costs. This does not mean that all companies can be herded in the same direction; they won't take the same journey in the IT transformation and will have different needs.

*"This leaves the CIO with a specific issue to contend with - how to manage the data centre capacity to provide the right-sized private cloud environment at each stage of the IT journey. It is vital that CIOs consider the attributes they need from a data centre as they continue along their IT journey. For example, space flexibility with no minimum commitment; the ability to only pay for power used rather than the maximum power capacity; or predictability of the cost of change."*

## A CLOUD BY ANY OTHER NAME

Some industries are more accepting of cloud than others. At one end of the scale, the retail industry tends to be very comfortable with the concept and adoption of cloud and can articulate how it works and its benefits.

At the other, those driven by strict regulatory standards - charity-funded research organisations and legal in particular - are extremely cautious about cloud. A huge disconnect between the business and IT sides of these industries means that to them, cloud is public, out of their control and a security risk. That being the case, the mere use of the cloud word causes ripples even when looking to deploy private clouds. More palatable to the lawyers, partners and research leaders is terminology such as "utilising the benefits of automation and orchestration in an on-premises environment".

## WILL YOUR DATA CENTRE FLEX LIKE YOUR I.T.?

Whichever path feels best suited to each business, it needs to be agile, able to burst and ultimately dynamic. As part of the journey to the cloud, CIOs have typically deployed virtualisation to increase the utilisation rates of their owned IT assets, while also outsourcing to "as-a-service" providers to reduce the overall size of the owned IT estate.

However, the virtualisation journey can be unpredictable. At the start, companies expect an overall reduction in their owned IT assets but find it difficult to accurately predict by how much.

Whether in-house or outsourced there are data centre costs that require a level of capacity that is almost impossible to foresee and plan for. In addition to the planning, there are times when capacity needs to increase so that new IT can be deployed before older assets are retired. Often, and despite growth in data, the net IT assets shrink as a result of these changes. This can strand power and space capacity and create unrecoverable costs.

Seasonal or campaign-based peaks, such as retail holiday sales, midnight on New Year's Day for mobile operators and major charity events such as Children in Need create demand peaks. The data centre needs to have the provision to cope but should be flexible enough that the user isn't paying for that full capacity all the time unnecessarily.

## THE NEXT STAGE: SOFTWARE-DEFINED DATA CENTRES

As businesses continue along the IT journey, milestones they reach include converged infrastructure, private cloud and software-defined data centres (SDDC). The owned IT assets will range from non-virtualised legacy IT, to virtualised private cloud IT and the management and support applications that provide the augmentation, management and security of the SDDC. However, unable to predict the power densities and resiliencies required for those IT assets, planners face having to over-cater for an unknown future.

This leaves the CIO with a specific issue to contend with - how to manage the data centre capacity to provide the right-sized private cloud environment at each stage of the IT journey. It is vital that CIOs consider the attributes they need from a data centre as they continue along their IT journey. For example, space flexibility with no minimum commitment; the ability to only pay for power used rather than the maximum power capacity; or predictability of the cost of change.

One thing is clear - a new breed of flexible data centre must emerge to put the CIO back in the driving seat of the outsourced data centre. Ultimately, what these changes all provide the CIO with is high levels of flexibility and agility.

More info: www.infinitysdc.net

# Aiming high with IAM

Poorly controlled identity & access management (IAM) processes can lead to a myriad of problems, such as regulatory non-compliance where an organisation is audited and company data found to be at risk of being misused. Brian Wall reports

Identity & Access Management (IAM) is regarded as essential for any organisation intent on ensuring optimum management of electronic identities. Why? Because IAM technology can be used to initiate, capture, record and manage user identities - and their related access permissions - in an automated fashion. This ensures that access privileges are granted according to one interpretation of policy alone, and that all individuals and services are properly authenticated, authorised and audited.

"Like any technology, problems arise when an organisation becomes overly dependent on it or when it is not used properly. There is no such thing as automated automation; in other words, no matter what you automate, someone or some group has to manage the process. IAM is too often seen as a process within an organisation, similar to ERP. The challenge today is to ensure that people only have access to what they need and under the conditions that are appropriate. Most IAM solutions were not designed with mobility in mind and, as a result, focus primarily on the 'Who' and exclude the 'What' and the 'Where'."

So says Calum McLeod, VP of EMEA at Lieberman Software, who goes on to point out that the changing IT environment, where Cloud is becoming ubiquitous in many organisations, also requires a different approach, particularly when it comes to those individuals with higher privileges. "Simply allowing a user to have access to systems based on group memberships in an IAM system is no longer sufficient."

An IAM solution today has to be seen as part of an architecture that is designed to reduce attacks. As a result, the access privileges granted to a user by the IAM system should merely be the first step in providing access to information or applications.

"Organisations need to tightly control what applications, both in-house and in the cloud, that a user can access, and the same access credentials should not be used to give access to the infrastructure and to applications. In fact, the credentials used for application or data access should not be known to the user," states McLeod. "The concept is to introduce a second choke point. Once a user has been approved access to an infrastructure, the next step is to allow access to applications. By separating user authentication from application access, an organisation has the means to control and monitor what a user is doing, and to reduce the risk that a compromise of the user's system can result in a compromise of corporate data."

He says there is also a need to separate the user credentials from the application credentials. "By taking this approach, you reduce the risk of compromise, since getting access to a user's identity does not then imply that an application has been compromised. Privileged Management is a good example of how this works."

## BEST PRACTICE ONLY!

Ian Lowe, senior product marketing manager, Identity Assurance HID Global, argues that, to date, much of the security discussion has focused on securing the cloud platform. "But, as enterprises continue to move applications into the cloud, it is increasingly important that enterprises resolve the challenges around provisioning and revoking user identities across their cloud-based applications. Enterprises subsequently need an adaptive authentication solution in place that not only serves to manage users - based on their behaviour and risk profile - but also crucially addresses where sensitive data lives and considers the way in which users access information," he explains.

## TWO-FACTOR AUTHENTICATION

"As a first step, enterprises should start by extending two-factor authentication measures beyond the brick and mortar locations of 'the office'. Best practice already requires using strong authentication to secure remote access to corporate networks - therefore, enterprises must extend two-factor authentication to also cover cloud-hosted data and apps," comments Lowe. "Two-factor authentication measures have typically been confined to physical devices like one-time password (OTP) tokens and display cards, but, thanks to technological

Darran Rolls, SailPoint: critical IAM factors for defining, securing and managing identity across the enterprise

advancements, these are being replaced by 'soft tokens' that can be held directly on a mobile device or alternatively as browser-based tokens. These contactless OTPs operate in the same way as physical tokens, generating random passwords that cannot be re-used - and thus guessed.

"A multi-factor authentication solution works by first identifying the device in use when the user accesses the enterprise cloud application from a web browser or application on a mobile device. It does this

## ´PRIVILEGES´ THAT ARE OFTEN TAKEN FOR GRANTED

While IAM systems play an important part of the majority of organisations' security strategies, says Matt Middleton-Leal, regional director, UK & I at CyberArk, in his experience privileged accounts still frequently outnumber a company's headcount and are all too often left unmonitored or are poorly secured with default or shared passwords.

"This is despite the host of regulatory requirements that organisations are required to adhere to. Ultimately, privileged accounts must be at the heart of an organisation's security efforts and ensuring that they are identified, managed and monitored - both on-premise and in the cloud - is a step that needs to be taken to stop targeted attacks.

Enforcement and accurate policy settings are also an essential part of any effective security strategy, yet this often presents a challenge for organisations due to a lack of automated controls, he says. Processes must be simplified with one unified 'master' policy across the whole enterprise, to give control back to the security, risk and audit teams; ultimately, allowing them to mitigate the risks posed by insider and outsider threats and to ensure compliance.

Matt Middleton-Leal, CyberArk: key steps need to be taken to stop targeted attacks.

Colin Miles, Pirean: IAM planning starts out with the definition of a strategic roadmap.

by consulting the configurable device criteria that is pre-set by the organisation, and then assigning a risk score to the specific transaction.

"Providing the device or transaction is verified as secure, the cloud application is enabled. However, should the transaction not pass, the authentication solution prompts users to further validate who they are by sending a text message, asking additional security questions or continuing authentication using a software token that is installed on the device. This leap forward in technology provides greater security and better control of the cloud-based tools in use by employees, enabling organisations to take advantage of the substantial cost savings often associated with cloud technologies, without a bump in security costs to support it," Lowe concludes.

## CRITICAL TENETS OF IAM

The IAM market is experiencing a renaissance, with the emergence of new options for how and where to deploy IAM technology, both on-premises and as a service, says Darran Rolls, CTO of SailPoint. "At the same time, most organisations are struggling with how to best utilise the IAM solutions they have to manage their changing world of IT infrastructure. New technologies, like cloud and mobile, are being mixed with established mainstays, like SAP, Oracle and RACF, and all must be managed with a increasing focus on governance, compliance and automation. However, regardless of the delivery model selected, and whatever the mix of applications being managed, many best practices of IAM remain unchanged."

There are, he argues, some very simple patterns (or tenets) of IAM that can help guide a solution and a deployment today - and ten years from now. And he offers five critical IAM factors necessary for defining, securing and managing identity across the enterprise:

### 1. Think identity - not account

Understanding the relationship between the identity and the account, between the account and the entitlement, and between the entitlement and the data/information that it protects is key. By centralising data around an identity, enterprises have a single place to model roles, policies and risk to support compliance, provisioning and access management processes across the organisation.

### 2. Visibility is King! - silos are bad!

While new technologies like cloud and mobile are being mixed with established mainstays like SAP, Oracle and RACF, all enterprise applications that contains 'valuable' or sensitive data, or perform mission-critical operations within the organisation must be managed with an increasing focus on governance, compliance and automation - in one single place.

### 3. Full lifecycle governance is required

It is critical to always manage the lifecycle of an identity by tying it to the business policies and business owners that are responsible for it.

### 4. Consistency throughout the lifecycle

It's more important than ever to apply centralised, automated controls and policy to key identity business processes safe, secure and compliant.

### 5. User experience is everything

IAM tools and technology must continue to evolve to more closely mirror the user experience that consumer-focused technologies provide, Rolls adds.

## STRATEGIC ROADMAP

Colin Miles, chief technology officer for Pirean, stresses that the first step for IAM planning starts with the definition of a strategic roadmap for what can, should and could be achieved in the desired timescales. "Starting with tactical IAM projects would see delivery of password management and self-care functionality to users quickly and at relatively low cost," he says. "Using this foundation to build consolidated directory services and extend Single Sign-On (SSO) across on-premise infrastructure to web-enabled and cloud delivered services soon leads to options for integrating federated access models with third party service and identity providers.

"Exploiting the increasingly widely adopted standards in this space brings more quick wins, as options such as SAML, OpenID and OAuth offer paths for the organisation to offload much of the hard work that would have previously been required to integrate with these external services," adds Miles. "Further options now open up, too, as stronger authentication methods can be introduced to improve levels of assurance, and the user administration and provisioning landscape becomes consolidated. The end goal here may be to achieve full Identity and Access Governance. Organisations should be realistic, however, in seeing this as a solid strategic target built on the foundation that has been laid down on the journey."

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