

WELCOME TO THE CLOUD

Thursday, May 27, 2010. BT Centre, London



The latest in ITP's seminars, Cloud computing was earmarked as a hot topic for debate. Pie in the Sky or a Cloud on the horizon? *The Journal's* Caroline Scouler reports.

“Cloud has been one of the most over-hyped topics in recent years. One of our objectives today is to understand whether that hype is justified,” said chairperson Matt Yardley.

Yardley set the scene for the seminar, starting with John McCarthy.

“Back in 1960, a very famous US computer scientist who did a lot of work in artificial intelligence, John McCarthy said: ‘Computation may someday be organised as a public utility’. That was 50 years ago,” he said. “Looking at more recent times, say 1996, fourteen years ago, I think this is where you can start to say cloud applications in its broadest sense became familiar to the general populous. Hotmail was launched in ‘96, and followed much later by gmail, Facebook and Twitter...I think over this last 10 year period, users have got used to data being stored somewhere else.”

Before all of those, though, he

pointed out, Citrix was launched in the late 80's. Come 1993, it had developed WinView, a business-focused product giving remote access to DOS and Windows applications. “So while the Cloud concept may be delivered in a slightly different way, this kind of idea is not new,” he said. “Hence the concern that this has been hyped again.”

Probably one of the best success stories in delivering software services over the internet is Salesforce.com, said Yardley: “Launched in 2000, over 10 years ago now, it has shown 60% compound growth. A phenomenal story in terms of uptake. It now claims to be the first cloud computing company to have an annual revenue run-rate in excess of \$1.5bn”

So the question he posed was, ‘is there something different now that’s making cloud more realizable and more accessible to a general market more than specialist issues’.

“We know BT has big plans to roll out fibre to two thirds of the country

now. It may be that in a 10 year time period it goes further with support from the government. It might be that

“A recent study has 22 different definitions of Cloud Computing. According to Reuven Cohen (founder and CTO, anomaly), ‘Cloud is a metaphor for the Internet; Cloud computing is an analogy for Internet computing’.”

Matt Yardley, partner, analysis mason.



we have high speed wireless almost ubiquitously as well... Does that give the ability to provide Cloud services every where? If we assume that network is going to be there – and that’s a big assumption – what are the other things that need to be in place to make sure Cloud takes off? ”

CLOUD IN CONTEXT

Ruth Pickering, managing director, Portfolio & Strategy, BT Wholesale followed Yardley’s opening further putting the Cloud concept into context.

“As a concept we can see it’s been around quite some time. So why’s it different today? And why do we expect it to really take off?”

Pickering re-enforced that Cloud is not a new technology, but a new business model with far reaching effects. “A huge number of people have already implemented Cloud computing, “she pointed out, either for their own use or for selling onto customers.

So why the change?

“The difference between today’s consumer and those of ten years ago is that they’re now more comfortable with the concept of data being held remotely and applications being stored on someone else’s infrastructure,” she said.

Research from IDC, Forrester, Gartner and Analysys Mason has provided a consistency of forecasting which reinforces BT’s own experiences: “It’s not just something we’re seeing on charts, or reading about in the press; we’re seeing it in our own business.”

Charts showed a growth of two and a half times over a four year window: “Clearly it’s a very very interesting model.”

Nor has it happened overnight. BT has been working on the Virtual Data Centre service for over two years.

As Pickering explained, with simple server virtualisation there are a

fair amount of manual elements in deploying, managing and changing the environment. Automated Server Virtualisation, however, has a higher level of automisation, can realise savings of up to 40% and is more user friendly. BT’s Virtual Data Centre provides the network and data storage. Set up and configuration may take up to two days, but after that, updates take between 15 and 90 minutes.

The advantage of rolling upgrades was picked up on as a benefit by Ashley Unitt, CTO of NewVoiceMedia, a provider of Cloud based contact centre solutions Unitt. “Cloud is very agile. You can have a lot of small enhancements rather than, for example, having to pay for an upgrade. Customers will always get the latest version; there’s no need to pay for upgrade.”

FLEXIBILITY TO THE FORE

Flexibility is at the heart of Cloud, a facet which all presenters demonstrated.

“A new market opportunity for the major telcos to offer white-label solutions which ease market entry for telcos with limited resources, to build their own infrastructure based cloud computing offerings.”

Ruth Pickering, managing director, Portfolio & Strategy, BT Wholesale.

“What the cloud model does - either for a new start up or an existing business – is it enables the business to grow without having to make that huge upfront investment,” explained Pickering, using the Post Office as a good example . “Eighty per cent of its computing resources for its post code look-up service are needed at Christmas. It’s also a service that they provide which doesn’t generate any extra revenue for them. Using a Cloud model, they can scale up for that period without capital expenditure and then scale back down again.”

Another example was a new company, Animoto. Within three days of launching its services on Facebook, it had to scale up from 50 servers to 3,500. That wouldn’t have been possible outside the Cloud environment. Users would either have got an error message and never come back, or – had Animoto predicted its launch success and invested in the 3,500 servers - it would have found it had a lot of redundant servers once demand had levelled off.

Unitt, used academia to illustrate Cloud’s usage: “A couple of our clients are universities. They need to handle hundreds of thousands of calls when it gets to results time. For that period it’s a huge commitment.”

Cloud lowers their barriers to entry, said Unitt, a point universally made. “As they grow, so can their use of these services. Equally, if a company is contracting they can contract the use of the service, reducing their risk.”

Traditionally companies have had to invest a lot of capital and a lot of knowledge in running IT. “A lot of that hassle can be moved to someone else with Cloud. Suddenly it becomes someone else’s problem if a server goes down at 2AM,” said Unitt.

This, he pointed out, is a real business benefit: “You can then

“Change is coming, you need to be prepared. The Cloud is a big opportunity.”

Ashley Unitt, CTO,
NewVoiceMedia

concentrate on running your business, getting rid of the grunge that you have to do just to run the business.”

RELIABILITY, SERVICE AND DEPLOYMENT

“People need access 24/7 three hundred and sixty five days a year. Traditionally this has been available at the top end, but not for everybody. Cloud is very different,” said BT’s Pickering, going onto describe the broad types of cloud service as:

- Software as a Service (SaaS) – a wide range of applications through a simple web browser with no responsibility for any kind of in-line maintenance and no upfront set up costs.
- Platform as a Service (PaaS) – having your own applications on someone else’s infrastructure. High degree of flexibility but still benefit from someone else’s infrastructure.
- Infrastructure as a Service (IaaS) – underlying layers providing all the computing power; you don’t have to invest upfront. Provisioned remotely but benefitting from economies of scale.

Pickering identified three types of cloud: Private (for your own use); Public (where all your computing can be on somebody else’s cloud) or a hybrid. For example, companies which have already invested in infrastructure are unlikely to want to throw that away, yet to grow could require investment. A Hybrid cloud would allow you to keep what you’ve got without further capital investment. A new organisation, on the other hand, might choose to go straight to a pure cloud without having to invest capital in their own infrastructure.

Reliability and availability with the

underlying network and agility of the system will be key drivers said Pickering: “For example, the New York Times wanted to digitise all their back editions – a process they estimated would take up to a year. Using Amazon web services it only took them a few days.”

SECURITY IN THE SPOTLIGHT

Always an issue, Cloud security came under scrutiny. For Unitt, ‘strong encryption is normally used for data in transit and at rest’, and that’s where Cloud providers/vendors come into their own he believed:

My view is that there’s a lot of hype and fear of the unknown. If you look at credit cards you don’t tend to lose funds over the internet. You’re more likely to lose it if you’ve used it at a restaurant or petrol station. Cloud uses the bigger Cloud Vendors to sort out security, which smaller companies can’t do.”

Vendors need to implement multiple levels of access control with fail safes, customer data should be encrypted, and ‘vendors need to clearly state where data is stored’, said Unitt.

Alcatel-Lucent’s Simon Loe agreed that the issue is an important one. “Our research showed that the issue is probably more addressable through the service provider community, but there are some interesting issues. For example, data suggests that as people get more control over their own data, they’re happier to share it.” Like Unitt, he believes that service providers are



much better placed to be data guardians in the value chain’.

Another question raised by Loe was the issue of ownership: “In Cloud you could have a piece of third party software operating on a virtual machine in a virtual data centre, and if something goes wrong and you’ve got a serious SLA associated with those services, who do you go to to solve that problem?”

FINANCIAL BENEFITS

The economic climate and cut backs in IT spending have heightened the appeal of Cloud.

“People were looking to cut back or stop spending with no investment in IT,” pointed out Pickering. “Now, people are looking forward. They can see the growth potential...Its ability to cope with peaks in business without the associated capital investments make it an attractive proposition.”

BT itself has benefitted from using this model. “We’ve seen a thirty to fifty percent cost reduction in the operational costs to support www.bt.com,” said Pickering, explaining that the other business benefits have included ‘reduced complexity from





having standardized services, a pay-as-you-grow model with capacity on demand, reduced cycle time and right first time delivery’.

Low maintenance was also highlighted as a cost-saver by Unitt: “It doesn’t require internal IT to get involved, and doesn’t require internal resources to maintain the hardware.”

It’s precisely for this reason that Unitt believes a sell-in should bypass the IT department and go straight to those holding the purse strings, again reflecting that Cloud is a new business model, rather than new technology. It also means less time with the bank manager.

There’s no capital expenditure, low initial costs, low risk and no minimum size when you need to upgrade. It’s great for us too. We no longer have to get that bank loan! We can just click on a button and say ‘tomorrow we need a new server. Tomorrow it’s back to one’.”

PRICING AND REVENUES

Echoing John McCarthy’s ‘60s concept that ‘Computation may someday be organised as a public utility’, Pickering is seeing the market following utility pricing: “The fact that you can pay for your processing, storage, your network and requirements on a per hour or per week basis...you don’t have to commit to a huge period of time or huge upfront installation costs...is a massive change.”

Unitt agreed, supported by the experience of his own company’s billing and pricing: “A lot of Cloud providers

offer initial monthly contracts or free trials as a way to attract people in.”

REVENUES AND NEW DIRECTIONS

While the low costs for users were clearly a big selling point, how to monetize Cloud from a vendor’s perspective was seen as a challenge, and a focus for Alcatel-Lucent’s Simon Loe’s presentation.

“Facebook has two million viewers a day; it’s an amazing change in the internet,” he said. “But in stark contrast, while network traffic is going through the roof, revenue is going through the floor. There’s a big challenge for the industry.

“Deregulation brought in the situation where we had to have a standard product... We only had one lever to push and it was always going in the wrong way. How do we change those revenue curves so they’re much higher in the future?”

Looking at how other industries are addressing this problem was considered key, with differentiated products, products which focus on different sectors (a sentiment echoed and explored in this issue’s ‘Evolving Carrier Ethernet towards managed services and cloud computing’; see page 47).

“Porsche, Audi, VW and Seat are all in the same group but targeting very different consumers. They are all service differentiating. We now have the opportunity to do that in telecoms... Cloud will enable us to offer much more diversity of service and differentiation of products and services,” he said.

Loe believes that end users are willing to pay for value, citing a recent survey as evidence of this. “The

issue of quality is one where we can create additional revenues. A report on the Which? web site about the public preferences for retail companies showed that price was the main reason for choosing a particular retailer. But actually if you look at the top ranked retailers, the discounted retailers weren’t anywhere near there.”

Simultaneously, how end users pay has a huge impact on how much they’ll pay, he said: “The monthly service bill turns into a treasure chest.” The treasure chest, he explained, is where the company can provide groups of assets into a collection of data or information that can then be used by higher application platforms which enable richer services to be delivered.

Loe used a Multi Media example to illustrate his point. “For example, if I’m using an IPTV service at home, and my wife calls me to pick her up from the station, I can continue watching it from my mobile handset while I wait outside the station.”

Applications and games, music and e-books - subscribers discover content and enjoy personalized recommendations. They preview, share, purchase and easily get their media to their TV, PC and mobile devices. “Operators,” said Loe, “define new digital media services to capture subscribers and market.”

The opportunity for both content providers and network providers means you have a greater opportunity to cross sell: “If I’m watching Iron Man on TV, my service provider can then automatically suggest that I buy the sound track or the ring tone. There are enormous opportunities to cross promote media and also applications in this type of environment.”

AUTHORS’ CONCLUSIONS

“There has to be a scale gain – we’ve already seen that,” said Pickering. “The underlying virtualisation provides a really exciting opportunity. It’s changing the way to do business and can change the way businesses scale to meet demand. It can address opportunities that they couldn’t have met previously – whether to meet seasonal peaks, or a specific sales and marketing campaign.”

A lot of companies are running their own infrastructure but according to Unitt, they don’t need to. Cloud will become that 5th utility. “You’re not the experts, so move it to someone who is and who has the economies of scale. Stick to what you need to do to run your company.”

Welcome to The Cloud. Questions from the floor, answered by Matt Yardley (MY); Ruth Pickering (RP); Ashley Unitt (AU); Simon Low (SL)

Q: What kind of services does the BT virtual data centre provide to customers in terms of how it incorporates cloud computing into providing useful services for their businesses?

Andy Macfarlane : The Virtual Data Centre allows the customer to drive their data centre from their desk top so they can configure servers, they can load them with the operating systems and deploy what applications they need into a virtualised environment run by BT, achieving significant cost of ownership savings.

Q: What is BT's ability to support Cloud computing and data centres? How will BT be able to support it in terms of capacity and infrastructure?

RP: I think that being such a large organization and the fact that we've actually used Cloud and implemented it internally before putting services in front of customers has been a key part of our learning. One of the things I mentioned earlier from a wholesaler angle is scale gain. One reason we can present it to our customer is that we have the economies of scale of a much larger organization, especially if they're a smaller business. From our perspective we're taking that upfront investment and risk away from the customer.

Q: What is your [BT's] strategy for mobility?

RP: We're working with our major mobile companies at the moment, and yes I do think Cloud services are applicable to the mobile sector, but I don't have a case study I can talk about publically at the moment.

MY: There are lots of examples overseas – Coca-Cola Enterprises is a classic example I think - and there's no reason why the UK's going to be any different.

Q: This is a question about designing for Cloud and load balancing. What do you have to do differently Ashley - or is it all BTs problem?

AU: We have to work in partnership with companies like BT. We do have to do a lot to ensure it is scalable and it is resilient. People just expect it to work. For example, take Google - 99.9% of the time it's there. You need to work with people who are providing the infrastructure. You need to design, and you need to design for scale.

Q: In the split between business and consumer, which one is going to fuel the growth to start off with, and how's that going to change over time?

RP: Some of that Cloud growth is coming from when a company's infrastructure ages and they swap it out. Some of it is new growth.

I do think people are prepared to pay for things that have elements like SLAs, guarantees and resilience.

A real important thing to think about is the agility point – addressing opportunities that they simply wouldn't have been able to before. People will also start to innovate themselves because they won't have to plan every single thing. They can apply those ideas much more quickly; and then they'll iterate on those in a way which won't cost them very much at all. I think that's one of the things which will drive the growth

SL: On the one hand you've got Cloud as a trend, introducing people to the idea of pay as you go in more applications in more areas. Historically two or three years ago everyone was buying a computer and a broadband connection. Now, they're buying a dongle for £20 a month and getting a free computer. That's a very different model.

The area where pay as you go will come in more is where you get an additional quality of service above and beyond a flat rate of broadband connection. For example, If I could push a button at home when I want to watch iPlayer and I can watch it in the time it takes to broadcast that programme - rather than having buffering and other issues - ,I'd probably pay a bit more. I think that proposition will become more and more acceptable.

Q: How will Cloud change how we support our customers and how we work with them?

SL: I think it'll have some very

profound impacts. The service provisioning aspect will be very challenging but also presents interesting opportunities. We're doing a proof of concept with one operator in Europe whereby we are exposing data on the access line to content providers, so the content provider can see where the subscriber is and then adapt what they deliver to the end user based on the access that they've got.

AU: We need to be doing as much automation as possible. I heard an interesting anecdote that in the whole of Europe, for the whole of Amazon's web services, they've driven automation so much that they have one person sitting on the network operations centre for the whole of Europe.

Q: What we saw last year when mobile data really picked up was congestion in O2's network. How are you going to plan for sudden congestion?

RP: We've always worked very closely with customers to forecast this. To counterbalance we have two areas of research. We look at technology trends, and we also have a view of how things will evolve. We have our own perspectives on end users, from our own research. We take information from our customers, then add to that our knowledge from a technical perspective and our knowledge from an end user perspective. That's why I think we'll be able to scale up appropriately

SL: You could look at other examples like smart metering which- will be coming on next year, the year after. The way people are trying to address the business case for that is by offering dynamic pricing and basing it on what capacity is available. You could have dynamic pricing for data centres.

Missed out on the Seminar? Members can download a podcast from the event by visiting www.theitp.org/ ITP-Podcast