totaltelecom

Jan 2012

cloud special

Mobile operators can differentiate in the 'cloud' by leveraging their network assets and partnership appeal
By Ken Wieland

The market for cloud computing and cloud-based services is set to boom. As more and more enterprises seek to avoid paying money upfront for IT infrastructure and services, opting instead for pay-as-you-go business models, the cloud opportunity is poised for rapid growth. According to some analyst projections, annual revenue from cloud services will exceed US$150 billion in 2020, up from an estimated US$28 billion in 2011 (see Figure 1: Global Cloud Addressable Market Opportunity).

The question for telcos, both fixed and mobile, is how big a role they can play in this expanding market. Providing only a 'dumb pipe' will not, for many, be an appealing prospect. Meanwhile, the likes of Amazon, Google, Microsoft and Salesforce.com – companies with little or no network assets – have made most of the front running. Between them they have become established players in each of the three main cloud formations: IaaS (Infrastructure-as-a-Service), PaaS (Platform-as-a-Service) and SaaS (Software-as-a-Service). A number of companies with system integrator backgrounds, such as Accenture, Capgemini, IBM and Infosys, are also acquiring cloud infrastructure and muscling into the market. Where do telcos fit?

According to Camille Mendler, a principal analyst at Informa Telecoms and Media, the majority of telcos have yet to make their stamp on the cloud. "Most operators are still focused on just getting in the game rather than differentiating," she says.

Informa tracks the cloud activities of over 90 operators around the world and calculates they spent about US$8 billion on cloud-related pursuits in the first six months of 2011. "Most of that money has been spent on buying fixed assets and replicating storage services rather than on service innovation," adds Mendler. "For many, it's all about playing catch-up with the established players and offering commodity-like services. And when that happens, price is the only way to differentiate."

But it need not be like that. "Mobile network operators are underplaying the fact they can allow anyone to access a cloud service from any device – a device-independent desktop virtualisation service – in a secure fashion," continues Mendler. Although third parties could offer this service to the enterprise, Mendler argues that operators are better placed to provide it because they own the network, which allows tighter integration between the device and cloud-based applications. And without third parties in the way, enterprises can receive traffic usage reporting directly from the mobile network operator, another source of comfort for IT managers who need to be alerted immediately when anything out of the ordinary occurs.

Not surprisingly, perhaps, the mobile operators that Total Telecom spoke to for this special ZTE-sponsored supplement (Orange and Vodafone) agreed that they could indeed play a prominent role in helping IT departments cope with the rapid adoption of smartphones and tablets within the enterprise. Importantly, mobile device management vendors also see the value in partnering with operators. When HP announced last year its DMaaS (Device Management-as-a-Service) product, it was through partnership with telcos – as trusted providers – that the technology firm envisaged getting the product to market. And by offering a secure and customisable web portal for IT administrators to track and manage devices, mobile operators can add another service to their cloud portfolios.

"There are three main things that telcos can bring to the cloud," says Adrian Drury, who heads up the media, broadcasting and telecoms consulting practice at Ovum. "First, they have extensive enterprise customer relationships, so they can be ideal partners for cloud vendors to distribute their services. Second, they have strong cash flow [enabling the purchase of cloud assets, as well as boosting customer confidence about their longevity]. And third, they have the network assets to offer private cloud services, such as secure tunnel access into data centre infrastructure."

Pure IaaS plays with no network assets, such as Rackspace, could also offer private cloud services by striking up deals with network providers. They could

then offer a bundled package of cloud and cloud-access services to enterprise customers. But leaving aside the matter of how uncomfortable IT departments of multinational corporations might be in not having a direct and accountable relationship with network providers, Drury questions the willingness of global network operators to enter such deals anyway. "Many of them are building out their data centre infrastructure, so how incentivised would they be [to play a subcontractor role]?"

FIXED CLOUD FIRST, MOBILE LATER?

The most eye-catching telco moves in the cloud to date have been arguably led by fixed-line businesses. "That is usually where the cloud expertise resides, which perhaps explains why mobile cloud propositions have been relatively unsophisticated, or why, in most cases, the cloud is not being sold in a unified way by hybrid operators across their fixed and mobile divisions," says Informa's Mendler.

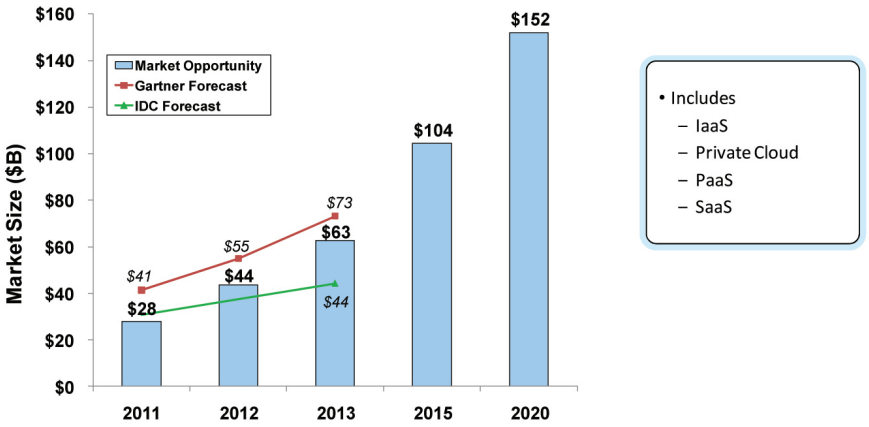
The biggest deals over the last couple of years in recent months have come from Verizon in the US and Japan's NTT Group. In January 2011, Verizon splashed out US$1.4 billion on Terremark, giving access to some 50 data centres in the US, Latin America and Europe. In July 2010 NTT acquired South African-based Dimension Data for US$3.2 billion. Dimension Data specialises in helping companies migrate to managed infrastructure services and cloud computing, a key requirement in stimulating cloud adoption. Verizon also announced in August 2011 it had purchased CloudSwitch, a start-up that has developed software to help enterprises move applications and workloads more easily between company data centres and the cloud.

Buying in system integration expertise, or partnering with specialists as a trusted intermediary – combined with their network and cloud infrastructure assets – give telcos a promising route to differentiation. Enterprises, particularly large ones, are unlikely to rush headlong into the cloud and will generally prefer to keep mission-critical applications and data in-house. Other applications – such as email, CRM (customer relationship management) and unified communications – are more likely to be farmed out to the cloud and bought on a usage basis: the so-called hybrid approach. The big challenge in a hybrid environment is to integrate the likes of SaaS and UCaaS (Unified Communications-as-a-Service) with on-premise IT infrastructure. If fixed telcos can prove themselves worthy in this space, it would give them a stronger position to promote the cloud-based offerings of their mobile divisions.

The experience of running mobile networks can also help develop a hybrid operator's cloud proposition overall. That is the view of Alex Rigaldo, cloud computing director at Orange Business Services (OBS), owned by France Telecom, which has both fixed and mobile network assets. "Cloud computing is about investing in very large infrastructure, sharing it with many users and charging for how much is used," he says. "This is exactly the same as the mobile-phone operator model and we already have usage-based billing systems in place. We also know about end-user behaviour and can leverage our experience in end-user portals to differentiate our cloud services."

The combination of network and portal know-how is something Rigaldo believes is a potent one, enabling OBS to offer a more sophisticated IaaS than the likes of Amazon. "We have developed a holistic service where the IT and network components can be managed from a single pane of glass," he says. "We also believe our portal is superior to the competition in many

Global Cloud Addressable Market Opportunity, 2011-2020



Source: Gartner 2009, IDC 2010, CSMG analysis
Note: Includes Global Enterprise for North America, Europe, and Asia, but only US SMB

aspects. It has the ability to group virtual machines into virtual appliances, which gives a functional view. It is not just a pile of virtual machines. The interface is also more user-friendly, which is helpful when it comes to the management of usage rights."

The OBS cloud strategy is not only to differentiate in the MNC market by offering what it calls "enterprise grade" cloud services, such as IaaS and UCaaS, but to make life easier for IT departments to purchase and adopt those services through its end-user portal. And like a growing number of telcos, OBS is acting as an aggregator of cloud services by partnering with various SaaS vendors to create application stores – with a single portal – where enterprises can pick and choose what is suitable for them.

MOBILE TELEPHONY IN THE CLOUDS

While the likes of NTT, OBS and Verizon are extending their cloud portfolios from fixed to mobile, Vodafone is doing it the other way around. One of the biggest mobile operators in the world, Vodafone is either leasing or acquiring fixed-line assets in Europe to enhance its cloud-based portfolio for SME customers.

"When we looked at cloud services a few years ago and started to formulate our strategy, we asked ourselves whether we could really differentiate from OTT [over-the-top] Internet players, and, if so, where could we do it?" says Scott Petty, director of business products and services at Vodafone.

The answer that Vodafone came up with was cloud telephony, initially targeted at the European SME market. "We took the concept of an on-premise IP PBX, built that into our cloud, and then integrated the mobile environment very tightly into that," says Petty.

The resulting product was Vodafone One Net, a cloud telephony platform integrating fixed and mobile PBX functionality. One Net allows SMEs to transfer unanswered fixed calls to mobiles automatically, as well as offering a range of call management functions. Through the use of a Web browser, either on a PC or a smartphone, mobile users can access various advanced call control features, such as blacklisting unwanted calls or SMS, convert voicemail to email, and even setting up different voicemail greetings for different callers. By securely opening up their core networks to the Internet, mobile operators can arguably provide more innovative and compelling cloud-based services than OTT providers.

There are clear strategic advantages in doing so. Petty reports that One Net customers, on average, purchase between 20% and 25% more handsets than those who don't use the service, which drives mobile penetration; One Net customers also generate around 20% incremental usage; and, last but not least, there is lower churn among customers opting for cloud-based telephony. Since Vodafone launched One Net in October 2009 the service has attracted 1.5 million subscribers across Spain, Italy, Portugal, UK, Germany and the Czech Republic, each paying monthly bills on a usage basis.

The One Net service was extended in June when Vodafone announced a partnership with Microsoft to offer Office 365, giving businesses cloud access to the latest productivity tools from the software giant. These include email and calendar, Microsoft Office Web Apps, collaboration tools, instant messaging and online meetings. But Vodafone is not acting as a mere reseller of Office 365. It adds value by integrating the One Net cloud telephony platform with Microsoft's software. Office 365 is offered as a bundle with One Net, charged on a SaaS basis. And while the Office 365 margins are not as great as with One Net – Vodafone shares the SaaS revenue with Microsoft – the likelihood of churn is decreased by offering a wider range of services.

"Many SaaS offers provided by operators are effectively loss leaders to lock in customers," says Informa's Mendler. The SaaS providers also benefit, of course, through telco partnerships. They gain access to large swathes of telcos' SME customers that otherwise would be out of their marketing reach.

The cloud architecture Vodafone has adopted is PaaS. Being open and extensible, the PaaS approach, according to Petty, makes integration between the mobile network and other applications that much easier, although still not simple. It took 18 months of integration work between Vodafone and Microsoft before the Office 365 announcement could be made. The benefit for Vodafone, though, is it hasn't just created a bespoke environment for Microsoft. It can bring in other application partners, as well as offer the PaaS platform to larger enterprise customers for mobile

application development.

But success in the cloud will not be all about technology. "While PaaS puts us in good stead," argues Petty, "you have to transform your sales and go-to-market channels, as well as your business models, if you want to deliver higher-value services successfully."

MARKET IMMATURITY

The benefits of the cloud, says OBS' Rigaldo, are well understood: cost reduction, flexibility and elasticity. "But cloud computing is not yet a mature market," he adds, "even though many people talk about it. Technologies are maturing but the market is still very fragmented. It's difficult for enterprises to decide who is the right service provider for them."

Informa's Mendler goes further. "The telecom cloud is fairly immature," she says. "[Many operators] are still learning what IaaS and SaaS is, and still learning what the real differentiators are."

But the opportunity for growth is there, she believes, particularly for mobile operators that can flex their security and network muscles. "Securing cloud access on any device and location is critical, but that shouldn't include only people. It should include M2M and embedded services. M2M services are being increasingly managed by the cloud."

The prize for operators that get the cloud right could be huge, generating incremental revenue and driving down churn. "A company that has bought a cloud service has a much higher ten.

NAVIGATING THROUGH THE CLOUDS: A QUICK GUIDE

Cloud computing enables users to avoid the upfront expense of building their own IT infrastructure. They can take advantage of advanced computing services that are available in remote data centres, paid for on a utility-like basis. As with electricity, users pay for what they use. Usage can be also increased easily and quickly – again, just like electricity.

The cloud has three distinct layers. On the bottom layer is Infrastructure-as-a-Service (IaaS), which includes computing and data storage. Mobile network operators (MNOs) are not prevalent in this space, although SFR (a French mobile operator) chose IaaS – in partnership with HP – as its first cloud foray with service launch in June 2010. Market leaders are GoGrid, Rackspace and Amazon Web Services (the computing arm of the online retailer), but fixed-line telcos are also beginning to acquire cloud infrastructure. Big moves include Verizon's US$1.4 billion acquisition of Terremark in January 2011, giving the US telco access to some 50 data centre around the world. Orange Business Services (OBS), which targets multinational corporations, signed a deal last summer with SITA – an organisation that provides IT and telecom services to the airline industry – to build out six data centres around the world.

The next layer up is Platform-as-a-Service (PaaS), which enables developers (including enterprises) to write Web applications quickly without the complexity of buying and maintaining the software and infrastructure underneath it. Google, Salesforce.com and Microsoft are some of the big name companies that offer PaaS. Telcos of both stripes – fixed and mobile – have not made a big impact on the PaaS market, although Vodafone has adopted PaaS as part of its cloud architecture.

Sitting on top of the cloud computing stack is Software-as-Service (SaaS), where applications such as email, CRM, ERP, unified communications and device management are sold on a pay-as-you go basis. Mobile operators wishing to offer these services will usually need to partner and share the SaaS revenue. Although margins will typically be small, bundling in services with voice and data packages is a good way for MNOs to increase network usage and reduce churn.

SECURING THE POST-PC ERA

IT access is moving from fixed to wireless devices, spurred on by cloud computing. Mobile operators can play a key role by making the transition a secure one. ***By Ken Wieland***

Smartphone shipments started to exceed PC shipments as far as back as 2010. ZTE, a China-headquartered supplier of telecoms equipment and mobile phones, says more than 85% of consumers will eventually access IT through wireless technologies, whether over cellular networks or short-range Wi-Fi. Cloud computing and the growing number of cloud-based applications, says ZTE, are providing the necessary conditions to usher in a post-PC era. "Cloud computing technologies lower the computing requirements on the device client," says Mr Tian Feng, Senior Director of ZTE Wireless Architecture Department. "And if you can run popular applications with fewer computing and power requirements from the local device, smartphones and tablets will boom."

Consumers have driven smartphone sales, and this in turn is having a dramatic impact in the workplace. For many smartphone and tablet users, these 'lifestyle' devices are not just for personal use but ideal for work tasks as well. They want access to email and other corporate resources, whether based in the cloud or on-premise. And many, particularly the 'millennials' – employees born in the 1980s – see mobile access to social networking sites as a great way to do business.

BYOD HEADACHES

This surge in so-called IT consumerisation, however, is causing headaches for IT managers. Since enterprises are generally reluctant to dictate to employees what devices they should or should not use, preferring to adopt a BYOD (bring your own device) policy, IT departments are struggling to keep control. "Enterprise support for these types of devices is typically pretty weak, particularly those running on Android, which has a number of security flaws," says Adrian Drury, an analyst at Ovum.

Juniper Networks, a software and network equipment supplier – which also runs a dedicated research centre in the US to monitor network security threats – reports a 400% increase in Android malware since last summer. And it is smartphones running on the Google-backed operating system that claim the biggest market share worldwide. According to Gartner, Android had grabbed a 53% chunk of the smartphone market during Q3 2011. Another worrying statistic for enterprises is that one out of every twenty smartphones sold are either lost or stolen.

The good news for mobile operators, according to Ovum's Drury, is that they are typically seen by enterprises as natural points of contact to help them with mobile device management. This gives them an opportunity to bundle in another service, most likely in partnership with cloud-based vendors, to their voice and data packages. The prospect of continuing high rates of smartphone and tablet adoption means that enterprises are more likely to favour a cloud-based or SaaS mobile device management solution as it scales more easily than one based on physical appliances.

Yet Drury says mobile operators are not rushing into this space. "There are lots of companies offering services around mobile device management," he says. "The market is commoditizing pretty quickly and nobody is sure where it's going."

Mark Kenealy, UK and Ireland country manager at Orange Business Services (OBS), nevertheless believes mobile operators are best positioned to reassure enterprises on mobile device security. "If enterprises are looking to control and manage their security, as well as get solid reporting in apps and mobile device usage, we can provide that," he says. "What enterprises are looking to do is partition devices, so that the workspace on them is secure on one side and personal usage is not restricted on the other."

IT managers also want to locate lost or stolen devices, usually to lock or wipe them through an easy-to-use

interface. It is a basic service that mobile operators could add relatively easily to their portal of cloud-based offerings. Yet IT departments need not necessarily turn to the mobile operator to ease their worries about BYOD policies. As Drury points out, the market for mobile device management solutions is becoming increasingly competitive, a fact underlined by the September announcement from heavyweights Capgemini and Sybase (a SAP company). In response to the rising tide of enterprise mobility, the two companies said they were going to offer SaaS-based mobile device management, as well as a platform – or PaaS – for mobile enterprise application development. No mention was made of mobile operators in the announcement.

REMOTELY SECURE

Aside from scalable mobile device management solutions, enterprises need to manage and secure their corporate IT resources when accessed remotely. Better still, IT administrators would like to make sure that smartphone and tablet users can access only what they are allowed to access, according to end-user profiles that can be easily managed from a Web-based interface. If that could be done on a SaaS basis to lower upfront costs – and with security guaranteed – then enterprises might find such a service attractive.

OBS certainly hopes so. The operator expanded its cloud portfolio in October when it launched what it claimed to be the world's first remote and secure access service based on a SaaS model. Working in partnership with Juniper Networks Junos Pulse, which provides SSL-based VPN clients, OBS says it can provide secure access to a company's internal IT system regardless of device (laptop, tablet and smartphone) and connection (WiFi, 3G and DSL).

But this is not purely a mobile or wireless cloud-based offering from OBS. The operator requires that the data centres of its multinational customers – whether in the cloud or on-premise – are connected to its fixed MPLS network before they qualify for its remote access service. OBS can then manage the fixed-line network performance and offer SLAs, as well as giving more bandwidth when required – via a Web-based portal – on demand. OBS says the remote access service can, via a few clicks on the administration interface, go from managing a handful of concurrent users to thousands.

SLAs are of course difficult to deliver over mobile and WiFi connections, especially when employees are visiting customers' sites. The best-effort public Internet is usually the only option. "We don't think this will be a barrier to take-up, as there is usually lighter usage from mobile devices," says Nicolas Furgé, head of security at OBS. "For example, only a low amount of bandwidth is needed to check orders from the internal SAP system. The main concern for enterprises surrounding mobility is not lack of bandwidth but security, and this where we bring the value. We can encrypt all the traffic between the device and the data centre."

OBS and Juniper already have a remote access service in the market, based on physical appliances, which has 300,000 users. By moving to an SaaS-based model, however, enterprises can take advantage of the cloud's economies of scale or 'elasticity'. OBS can also widen its service portfolio.

Partnerships between operators and security specialists look to benefit both parties, but they will have to work hard at getting their message across to enterprise customers. In a nascent market with high-growth potential , IT managers will be confronted with a variety of cloud-based options, from different players, to ease their BYOD concerns. Reassuringly for operators, particularly those with a strong fixed-line heritage, they are generally held in high regard for network security. They have a head start over rivals..

MOBILE OPERATORS AS CLOUD CONSUMERS: FIRST STEPS

Cloud computing offers mobile network operators a route to greater operational efficiencies, but they are still cautious
By Ken Wieland

The volume of mobile data traffic has rocketed in most developed markets, fuelled by the smartphone boom. According to AT&T Wireless, data traffic volumes have increased an enormous 8,000% over its cellular network since 2007, the time when it signed a deal with Apple to be an exclusive distributor of the iPhone in the US.

The problem for mobile network operators (MNOs) is that overall revenue growth is slow at best, despite the growth in data traffic. Not only are competitive and regulatory pressures forcing down the price of data packages, but those twin pressures are also being exerted on the price of voice calls, texting and roaming. Meanwhile, more investment is required to increase capacity if a decline in network performance is to be avoided.

To ease the business model strain, MNOs will increasingly turn to the cloud to manage and distribute content and applications. That is the view of Kirk Odegaard, vice president of cloud delivery services at TMNG Global. "By using cloud infrastructure, through global and national data centres, the unit cost of distributing content and applications can be much lower than when operators use their own storage farms," says Odegaard. "And by getting content and applications closer to the customer, bandwidth bottlenecks can be avoided and performance improved."

Like many enterprises, however, Odegaard says operators are wary about moving all of their IT resources into the cloud. Yes to e-mail and other basic productivity tools, but a wait-and-see attitude when it comes to more business-critical and strategic IT infrastructure, such as billing and service delivery platforms. "There are still a lot concerns surrounding security, cost and performance, as well as around the capability and experience of cloud providers," he says. "A lot of cloud providers do offer levels of security that would meet or exceed the standards required, but there are perception issues."

Mr Tian Feng, Senior Director of ZTE's Wireless Architecture Department sees a business imperative for MNOs to move to the cloud, generating as it does cost savings in two main ways. First, MNOs can use the greater efficiency of cloud computing to handle traditional applications. And second, applications "which comply with the true spirit of cloud computing" will provide much higher output based on the same resource requirement. "MNOs have no choice but to adopt cloud architecture step by step," continues Feng. "The major obstacle is that the new business model is not emerging clearly, which make investors reluctant to give the go signal."

Odegaard adds that many cloud providers do not have the skill sets for managing the application layer, focused as they are on managing the infrastructure, such as computer and storage capability. This may well slow down the adoption of the cloud by operators, both mobile and fixed.

One option for operators would be to build up their own experience of cloud transitioning and application management, aided perhaps by partnerships with specialists, and then offer that as a service to their own enterprise customers. "Several wireline providers we are working with are starting to build clouds for internal consumption first, to lower their own operational costs, before offering it as an external service," says Odegaard. "If they can make the transition and have the experience of it, then it should make it easier to help their enterprise customers to do the same."