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INSIGHT

Telcos in the Cloud: Claiming a Seat at the Table

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IDC OPINION

Given the myriad challenges telcos face to their core businesses, they cannot allow themselves to be left out of the emerging "cloud" revenue opportunity. They must get on the cloud bus or risk being thrown under it. In addition:

- Telcos are beginning to insert themselves into the cloud conversation by approaching the cloud in a way that highlights their current network assets and network-related capabilities.
- A more expansive notion of the cloud holds the key to telcos' ability to gain and maintain a place at the cloud table.
- Telcos have numerous avenues to attack the cloud opportunity: retail services for enterprises and consumers, wholesale/enablement services for software developers and other cloud service providers, and ecosystem-oriented services that have the potential to transform telcos' own business models and offer ways to play direct or indirect roles with various participants in the cloud services supply chain.

IN THIS INSIGHT

This IDC Insight presents IDC's current views on the role of telcos and telecom networks in the emerging (and still nebulous) world of cloud services and infrastructure.

SITUATION OVERVIEW

Everybody wants a piece of the cloud. Hardware manufacturers; packaged software vendors; independent software vendors (ISVs); IT outsourcers; systems integrators; and "cloud native" software-as-a-service (SaaS), infrastructure-as-a-service (IaaS), and platform-as-a-service (PaaS) providers are all jostling for position in the emerging cloud arena. Given the myriad challenges telcos face to their core businesses, they cannot allow themselves to be left out of the industry discussion or the emerging revenue opportunity. They must get on the cloud bus or risk being thrown under it. However, different players' stands on (and indeed, different definitions of) cloud depend entirely on where they sit. Industry debate rages fast and furious about which players possess the technology skills, business models, and culture to succeed in, and possibly dominate, the cloud. One wonders, though, if this is the right way to look at it. Is cloud a discrete thing (i.e., market segment, service, technology) that can be

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dominated and one that belongs exclusively to the cloud-native first movers? Is it merely a new paradigm for the delivery of old things (computing and storage, communications, software, applications, content, etc.)? Or, more interestingly (and disruptively), is it a new model for the creation, delivery, and consumption of infrastructure, applications, and business process functionality?

IDC believes that the answer to the latter two questions is yes. Therefore, telcos have as much stake in the cloud as anybody else. Telcos are beginning to insert themselves into the cloud conversation by approaching the cloud in a way that highlights their current network assets and network-related capabilities. A more expansive notion of the cloud — one that dispenses with doctrinaire restrictions around payment terms/methods and network access modalities — holds the key to telcos' ability to gain and maintain a place at the cloud table.

Built for Cloud: What Telcos Bring to the Party

Telcos' strategic approach to the opportunity positions cloud as a way to exploit "network adjacencies," and thus advance the (long-awaited) transformation of the network from a collection of pipes and ports into a global intelligent networking and service-enabling platform for performance-optimized delivery of distributed applications and business processes. Telcos, along with electric utilities, are arguably the original cloud providers. Telecom networks are essentially centralized shared-tenant architectures for the delivery of capabilities such as dial tone and network-embedded services like inter- and intranetwork switching and routing that enables point-to-multipoint connectivity, audio conferencing, security, and hosted TDM and IP telephony. Over time, some telcos also made moves into the converged network-IT services space by layering on hosted infrastructure and application management services delivered from datacenters that sit atop the network and are connected via the carriers' IP backbones.

The datacenters that house telcos' hosting operations can be likened to Internet central offices (COs) with service offerings instantiated in, sourced from, and delivered through the telco cloud in the same manner that traditional COs have always served up dial tone and a host of value-added call management features in a low-cost usage-based model. Telcos also bring other important areas of expertise and experience to the cloud party. One of these is their proven ability to support scale operations. A telecom network is at heart a multitenant environment that telcos leverage to offer multiple services to multiple customers through the use of capacity management techniques that ensure optimal resource allocation and quality-of-service levels. Telcos also have massive OSS/BSS infrastructures that tie together network layer (backbone, access, and customer premises equipment) and datacenter elements (servers, storage, and the applications that reside on them). This infrastructure also governs service availability and delivery; ensures SLA compliance; and provides billing, support, and sales linkages to telcos' large (and relatively stable) customer bases. Furthermore, this infrastructure, anchored by datacenters that centralize service and management functionality previously distributed across multiple COs or embedded in customer premise equipment, can serve as back-end infrastructure that end users access via the front-end service delivery method known as cloud.

Finally, there is the network — an element often left out of industry discussions about cloud on the assumption that end-user access to the cloud is BYOB (bring your own broadband) and, therefore, not the cloud service providers' problem. Similar thinking prevails about the back-end connection from the core cloud infrastructure out to the public Internet: This is procured as a commodity component from third-party suppliers. However, it is difficult to guarantee end-to-end service delivery and offer "business grade" SLAs when key elements of the value chain are commodity products controlled by third-party providers.

Telco Cloud Approaches: Retail, Wholesale, Enablement, and Transformation

The most obvious role for telcos in the emerging cloudscape lies in selling wholesale capacity (IP transit, lit/dark fiber, and paid peering) to cloud service and infrastructure providers. While this may be attractive from a unit-volume perspective (but less so from a revenue perspective), there is limited opportunity for substantial value-added monetization of the network. However, the telcos are not necessarily straitjacketed into the role of wholesale network services suppliers.

Large full-service telcos are in a position to use their global networks and datacenter footprints as service delivery platforms (SDPs) for the creation, distribution, and management of infrastructure- and application-oriented capabilities for enterprises, SMBs, consumers/prosumers, and partners. On the retail front, telcos are anchoring their cloud effort in the enterprise/SMB space with infrastructure-as-a-service offerings that pay homage to the popular usage-based pricing paradigm of bare-metal "pure cloud." Telcos are also leveraging cloud infrastructures as on-demand extensions to traditional dedicated infrastructure services and promoting the notion of private enterprise clouds. The retail cloud play is also applicable to the consumer space for capabilities such as IP telephony, online backup/storage, and online security.

Platform as a service, which builds on IaaS, is a key element in telcos' efforts to fully leverage the potential of the cloud. PaaS offerings, targeted at application developers and independent software vendors, are positioned as next-generation application development environments from which the end users source shared-tenant compute/storage infrastructure and toolkit components to create their own services/solutions. Infrastructure and application components, exposed as APIs, include compute and storage resources and control mechanisms for resource scaling. Telcos can also develop APIs to expose the inner workings of large-scale telecom operations as consumable, SOA-based components that can be mashed up into other solutions. This type of network monetization could encompass wireline and wireless networking capabilities (e.g., presence/location, security, mobile device identification) and back-end functionality (e.g., billing, speech-to-text translation, compression).

Telcos can also leverage the PaaS as a way to streamline and expedite their own service creation efforts. The service creation angle is a key element of telco transformation. To some extent, cloud has picked up where the big SDP efforts of the past four to five years left off before eventually finally fizzling out. Cloud infrastructure, the ability to expose network-embedded functionality as a software-based service,

and the ability to orchestrate these elements in a kind of vertically integrated "network-IT industrialization complex" enables telcos to develop and deliver their own offerings via the software-as-a-service model. Existing communications-oriented applications like unified communications, hosted voice over IP, messaging, and collaboration are obvious initial SaaS candidates, along with infrastructure-oriented functions like storage as a service.

Telcos will naturally focus on developing homegrown cloud-delivered merchandise, but they should also consider positioning themselves as retail outlets for third-party-developed application/process functionality. In addition to networks, datacenters, and scale operations expertise, telcos have billing relationships with businesses and consumers and indirect channel partners. The ability to aggregate these assets into a centralized, automated back-end engine accessed via a cloud front end could develop into a one-stop-shopping model for ISVs and over-the-top players unable or unwilling to build out their own infrastructures. By enabling both third-party application/service development and sales/distribution, telcos get to participate more fully in the over-the-top revenue stream — a potential solution to the telcos' disintermediation dilemma. Telcos as commercial landlords may be an apt metaphor to characterize potential telecom cloud ecosystems: The telcos attract tenants, charge rent, broker transactions among the tenants, and could possibly take a piece of the action from the sellers à la eBay.

FUTURE OUTLOOK

The cloud holds opportunities as well as challenges for telcos. Grafting a new approach onto an existing (and challenged) business paradigm is hard, and telecom carriers lack an impressive track record of aggressively seizing opportunities in fast-moving emerging markets. Furthermore, the cloud consumption models are still emerging, and we are still in the early innings of business model development. The telcos must be aware that cloud dynamics may not respect traditional telecom sales/marketing segmentation categories and will require more granular use case–oriented positioning. Cloud services are multidimensional, extremely fast moving, and mostly uncharted — attributes that may not mesh well with telcos' traditionally plodding product development cycles (not that this is any less true for IBM, EDS, and other precloud service providers).

Telcos have to tread carefully and make technology decisions that will endure, pick the right partners, devise profitable product development road maps, and be lucky with timing. They can't risk undermining the core strength of secure, high-quality network performance and service delivery. So telcos' cloud offers — whether these are online/hosted versions of existing communications-oriented services or third-party applications hosted on telco PaaS/SDP platforms — have to be well-constructed and bulletproof. Since telcos have to be very careful about what they (or third parties) run on their multitenant networks, telcos are likely to have a more disciplined operations approach to PaaS by providing consistent, reliable configuration and change management processes — service elements that are less evolved in the environments of start-up/cloud-native PaaS providers.

Telcos would be wise to avoid being drawn into religious battles about which providers and which types of services get to don the cloud mantle. They can do this by expanding the scope of the concept. One approach in the enterprise market is to focus on providing business-grade offerings with quality of service and SLAs and consigning the cloud-native providers' activities to a lesser category of service provision. Another way is to focus on the end result of cloud rather than the details of how you get there. A good way to position the telco-centric cloud involves the idea of integrated functionality as a service provisioned by the telco from "out there" in the network and delivered over public or private, wireline or wireless networks.

The cloud world is a gamble for telcos, but doing nothing is even riskier because this means even more complete disintermediation by the business-disruptive initiatives of start-ups and established IT/network/application players. The big global telcos (as well as smaller national/regional ones) need to jump into the cloud feet first and put a stake in the ground to influence the evolution of the cloud ecosystem. What telcos must not do is get on the cloud bus only to replicate the business models of the cloud natives.

Telcos have numerous avenues to attack the cloud opportunity. On the enterprise side, a key differentiator will be the ability to support hybrid private/multitenant cloud infrastructures with a range of self-service and managed services options. In consumer markets, opportunities include virtual desktop services bundled with netbooks, cloud backup/storage, optimized content delivery/distribution, and other services federated by a common back-end engine and consumed in an access-agnostic manner. On the SaaS front, PaaS offers telcos the opportunity to create developer communities/ecosystems and share in the wealth through service aggregation and channel plays. If SaaS lives up to its potential, there will be an enormous volume of applications out there, and it is unlikely that these will be developed, hosted, and distributed by only a handful of companies. The telcos can also use the architecture of cloud as an agent of their own transformation, speeding up traditionally plodding telecom product development cycles to enable an agile assembly line of homegrown and third-party services delivered with cloud style and telco reliability.

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Related Research

- *Telcos in the Cloud: Verizon's CaaS Delivers Business-Grade Performance* (IDC #218926, June 2009)
- *Telcos in the Cloud: AT&T Goes Cloud with Storage* (IDC #lcUS21874209, June 2009)
- *Telecom Clouds: AT&T's Cloud Vision Clarified* (IDC #218432, May 2009)
- *AT&T Launches Mobile Enterprise Applications Powered by Antenna Software's Mobility Platform* (IDC #214473, October 2008)
- *AT&T's Cloud Strategy: From Hosting to Utility Computing* (IDC #lcUS21390108, August 2008)

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