

What's an Antonym for Amorphous?

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Communications service providers beat expectations last year by communicating to their Enterprise customers that they would be players in cloud computing, beyond the dumb-pipe role that had been carved out for them by others in the supply chain. Many successfully navigated the hype by, in part, articulating the value of their investments in network infrastructure and service creation environments. Some sent the message to the market that cloud would become a core piece of their overall strategy and roadmaps. But by its very nature, cloud is a volume play as much as it is a value play. The economies of scale demand high volumes of transactions, which require lots and lots of customers to move some, or all, of their computing to the cloud,



especially large consumers of IT services. That means that the fading hype must quickly give way to the practical realities of implementing cloud services, before the momentum behind cloud scatters into the winds.

We might start with the term “cloud” itself. It doesn’t inspire confidence – certainly not the confidence that an Enterprise customer needs. Clouds are still reminiscent of the early Clip Art days where the PSTN vaguely occupied an amorphous engineering diagram. In its new iteration, the name cloud hides the fact that these services are hosted or virtual offers. The big difference from traditional hosted services is the nature in which consumers interact

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with them. In the past, a hosted billing service would take call records and churn out bills in a large warehouse, mail them out to customers, and that was that. Today, the interaction with the hosted service is via the Internet, and therefore the major factor going forward is the link between the hosted environment and the network connection. Where these two are tightly coupled places some of the traditional communication service providers in the ideal place to capitalize on the mobile data access trend.

To begin to understand this shift we need to more concretely define the inner workings of the virtualization happening inside the new cloud services.

Availability

Availability is a major challenge, as today a company can touch the hardware they use to run the company; it's in the building. Moving that hardware to an unseen location creates a formidable burden of proof and assurance on the cloud service provider. Today's typical cloud offers 99.9% availability, which translates to about 10 minutes of downtime per week. Telecommunications providers routinely offer 99.999% (or "five-9's") availability, or the equivalent of 6 seconds of downtime per week. Where cloud consumers fit on that curve depends on who they

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are (residential customers backing up family photos versus a financial institution managing billions in assets). For many corporate customers, ten minutes might be acceptable at the right price point, but cloud outages make for great headlines, which, in turn, raise the bar on establishing trust and increase the skills needed to run a stable service.

Security

Similarly, nobody wants to be in the news as the next big company to lose credit card or personal data to online attacks. So, some may argue that security trumps availability when it comes to cloud services. Be that as it may, security represents some very real and considerable concerns on the road to mass corporate adoption. The whole point of the cloud is to share physical resources, and the technology provided today allows virtual separation that is equivalent to the physical segmentation in the past. Cloud consumers will expect these networks to detect and eliminate configuration errors before they are

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exploited by cyber attacks or cause a mission-critical application to fail. Fortunately, tools are available that can be adapted to the cloud. Large enterprises are already becoming increasingly dependent on IP networks, or more specifically are operating multiple IP networks managed by geographically dispersed groups, and have already been tackling security issues. Providing a cloud-ready tool set will be critical to preventing security from becoming a cloud showstopper.

Access

The real unique factor for cloud services is anytime-anywhere access. Existing, underutilized (but often vast) data center networks could put content closer to customers, thereby improving their view of cloud services. Content Delivery Networks are the first look at this problem for media services; however, this could extend into all cloud content. Making your data replicated closer to you to ensure better reaction times may be the factor that nets one CSP a contract

over a competitor, as users demand fast responses from networks and service. To make that happen, they will need to continue their behind-the-scenes effort to expose their network assets and processes to consumers as well as collaborators in the value chain. BSS/OSS will play an ever-important role in removing the complexity of this distributed process and management by providing a comprehensive support system encompassing all aspects of the service control and management including policy and monitoring.

Aggregation

While most of the cost savings from cloud will come from economies of scale, there are savings to be had from economies of scope by managing additional services or features. Communications service providers already provide these features for traditional services with high reliability, and can add value to the cloud by applying competencies on behalf of the supply chain in areas such as:

- User authentication
- Parental controls (and the like)
- Subscriber preferences (delivery, advertisement)



- Cross-screen user experience (consistency across a mobile phone, a television set, or a laptop)
- Catalogs (particularly for smaller content vendors)
- Billing on behalf of others

Aggregation would help to minimize costs (time and/or resources) that would have been borne by or passed on to the individual consumers of cloud services above and beyond software and platform agreements.

Complex Billing and Charging

Current charging models may not be flexible enough to drive down the cost for cloud services sufficiently. A quasi-prepaid model whereby a customer subscribes to a set amount of access to a platform seems to be geared more toward a standard outsourcing agreement than driving utilization. In addition, complex services, like bandwidth on demand, require complex service level agreements and a complex charging/rating capability. Instead, look for service providers to adopt more real-time measurement, tracking, and policies for resources consumed to support their business—on usage—as they would for interactive communications services.

And what “new things” will need to be developed to operationalize the cloud?

We know we will need greater flexibility. A similar foray a decade ago into on-demand software as Application Service Providers (or ASP) did not take off initially because of the rigidity of the environment. We cannot afford this lack of flexibility in a cloud services environment.

For the cloud, we believe a “Service Factory” approach to creating, fulfilling and delivering new services must be fool proof and efficient to ensure the service delivers and drives mass adoption that will make it profitable. A service factory approach exposes assets and service components to the supply chain and promotes collaboration. This enables not only third party sales, but a wholesale-retail model whereby the cloud provider is not in the traditional business of anticipating customer service needs, and creating bespoke process flows for each cloud service, one on top of another on top of another. This approach would provide for a flexible allocation of resources (as in fulfillment and order processing), and expose wholesale components (for the cloud provider as well as third parties) to retailers most likely through service catalogs and a provisioning controller functional layer. This will then provide the flexibility to support the complex interactions between the numerous players seeking to efficiently and effectively add value through readily-adopted cloud-based offerings.

Behind the so-called hype, cloud services combine traditional hosted services with easy access and connectivity that, in turn, presents IT consumers with a different set of options to meet their business objectives. Giving cloud customers the insight they need to make that decision requires chiseling away some of the haze on availability, security, and billing. What else do we need to invent to support the mass adoption of cloud services? Maybe we should change the name, cloud, to something more descriptive and less passive-sounding, or maybe ask our friends at Microsoft® to give us some really sharp looking Clip Art for our clouds to use in our sales presentations.