The Key Components of a Cloud-Based Unified Communications Offering

Organizations must enhance their communications and collaboration capabilities to remain competitive. Get up to speed with this tech primer and find new ways to add value to your organization.

In today's increasingly hyperconnected and hypercompetitive world, businesses need to excel at communications and collaboration — otherwise they risk missing out on potential growth opportunities and fall behind their competition. Unified communications (UC) solutions can enable organizations to not only improve collaboration, but enhance worker productivity and customer service. These solutions provide effective ways for people to constantly keep in touch — regardless of location or communications device. One of the most efficient delivery models for UC is cloud computing, which is fast becoming the IT delivery mechanism of choice for enterprises today. Some organizations are farther along with their use of cloud services than others, however for many companies, migration to the cloud will take an evolutionary path, rather than happening overnight. In fact, over the next decade organizations will likely have a mix of cloud and on-premises solutions for their applications and infrastructure components. This technology primer describes the key components of unified communications and the different types of cloud services companies can use to deliver UC capabilities to users. It will help business and IT decision makers who are considering a deployment of cloud-based UC to get up to speed on the underlying technologies. By having a better understanding, decision makers will be better equipped to make the right choices for their organizations.

6 Key Components of Unified Communications

The term "unified communications" can mean different things to different people, and various definitions exist in the market. This can create confusion for IT and business decision makers, particularly because of the multiple approaches and solutions available. In general, UC solutions encompass the following key elements and capabilities.

6 Key Components of Unified Communications

- Collaboration
- Presence
- Unified Messaging
- Mobility
- Contact Center
- Integration with Other Business Applications

1. Collaboration

Collaboration has become increasingly important — and challenging — for organizations as workers become more widespread geographically. UC systems should enable users to collaborate with one another in a variety of ways.

2. Presence

Presence enables individuals to manage their availability and make better communication decisions. Users can see who is available and choose the most appropriate communication medium. This saves time, especially within highly distributed businesses. For example, users who see that the person they are trying to reach is on the phone can send an instant message.

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3. Unified Messaging

UC solutions also include unified messaging, which is the integration of voicemail, fax, email, instant messaging and other electronic media used for messaging users. Messages can be retrieved from the interface of their choice, whether it be the email client, UC client or over the phone, and users can see their messages to prioritize which ones they will listen to first.

4. Mobility

For today's mobile workers, an important feature of UC is support for mobility, so that users can access features on any device, and from any location. Given the rapid increase in the mobile workforce and the "bring-your-own-device" trend, support for mobile technology is especially critical for today's UC platforms.

Another key consideration for UC with regard to mobility is Fixed Mobile Convergence, which allows users to access data, voice or video services and information without concern for how the services are delivered by telecommunications carriers. With fixed mobile convergence (FMC), communications can be delivered to users over fixed, wireless (Wi-Fi) or mobile/cellular networks, automatically switching to the most cost-effective and highest quality network available as users change location.

5. Contact Center

UC solutions can significantly improve contact center environments to enhance service and deliver operational efficiency. They enable companies to serve their customers in the medium of their choice (for example, voice, email, Web chat or SMS); monitor and respond to social media; keep customers well-informed, providing estimated wait-time messages and continuous position-in-queue updates; and provide self-service options with interactive voice response.

UC also allows contact center agents to be located anywhere and to leverage presence to find other available resources in the organization that they can collaborate with to resolve customer issues on first contact.

Glossary of Terms

Cloud computing—A computing delivery model that enables users to access applications, data, servers and other IT resources as services. Cloud services are offered through public, private and hybrid models.

Fixed Mobile Convergence—A transition point in the telecommunications industry that removes the distinctions between fixed and mobile networks, providing a superior experience to customers by creating seamless services using a combination of fixed broadband and local access wireless technologies to meet their needs.

Hybrid cloud—Cloud computing model in which an organization can combine a traditional on-premises product with cloud-based services, allowing organizations to protect their investment in existing communication systems while migrating to the cloud. It can also refer to the use of private and public clouds in one organization.

Infrastructure as a service—Cloud-based service in which providers offer access to IT resources such as virtualized servers in the cloud.

On premise—IT systems deployed on a "site-by-site" basis serving the needs of users on the same site.

Platform as a service—Cloud-based service in which providers deliver a computing platform, usually including an operating system, programming language, database and Web server.

Presence—A component of unified communications that provides users with a status indicator that lets them know whether someone they're trying to reach is available and willing to communicate at any given time.

Private Cloud—Co-located IT systems, typically located in a data center with flexible capacity and Web-based administration. Private clouds can be managed by the organization that is using the services, or managed by a third party and hosted internally or externally.

Public cloud—Public cloud services are based on a standard model in which service providers provide IT resources such as servers, storage systems and applications, to companies or individual users via the Internet. Many public cloud services are offered on a pay-per-usage model.

6. Integration with Other Business Applications

Most UC solutions can integrate with third-party business applications to deliver business process improvement. For example, integration with customer relationship management (CRM) solutions will provide a pop-up of customers' information when they call, so that they can be provided with the best, personalized service. The cloud provides particularly innovative opportunities on this front, with mash-ups that include UC, because applications are more easily accessed in the cloud than when they are located on an enterprise's premises.

The Cloud — What's It All About?

One of the IT megatrends now under way is the move to cloud computing environments. Many organizations have already moved to the cloud or are considering such a migration. The reasons are many, including:

- The need to reduce IT infrastructure costs.
- The ability to increase business agility by scaling their IT infrastructure and provisioning resources as needed.
- The desire to provide employees with the ability to access systems regardless of location or type of device they're using.
- Multitenancy, which allows for the sharing of resources and costs across a large pool of customers.
- Disaster Recovery: Multiple redundant sites are used, making the environment well-suited for business continuity and disaster recovery.

Cloud services are available in several different flavors: public, private and hybrid clouds.

PUBLIC CLOUDS

Public cloud services are based on a standard model in which service providers make available IT resources such as servers, storage systems and applications, to companies or individual users.

Server virtualization—The partitioning of physical servers into smaller "virtual servers" to help companies optimize their server resources. With server virtualization, server resources are masked from users, and software is used to partition the physical server into multiple virtual machines.

Software as a service—Cloud-based offering in which software and data are hosted on the cloud and accessed by users via the Internet.

Unified communications—The integration of real-time communication services, for example, telephony, video, instant messaging and collaboration (application and desktop sharing) with non-real-time communication such as unified messaging (e-mail, voicemail, fax, SMS). Increasingly, UC solutions operate across fixed, wireless and mobile environments to support flexible working practices.

Unified messaging—A component of unified communications that includes the integration of voicemail, fax, email, instant messaging and other electronic media used for messaging users.

Many public cloud services are offered on a pay-per-usage model or monthly subscription basis. Among the advantages of using public cloud services are ease of use and relatively low set-up costs because hardware, bandwidth and other costs are covered by the service provider.Cost savings and efficiency gains also stem from the fact that customers pay for resources only when they're using them. These services, like other types of cloud offerings, are scalable so customers can adjust the services up or down as their needs change.

Among the various types of public cloud services are software as a service (SaaS) or "on-demand" software, in which software and data are hosted in the cloud and accessed by users via the Internet; infrastructure as a service (IaaS), whereby service providers offer access to IT resources, such as virtualized servers, in the cloud; platform as a service (PaaS), in which cloud providers deliver a computing platform that usually includes an operating system, programming language, database and Web server; and business process as a service (BPaaS), whereby business processes are sourced from the cloud.

PRIVATE CLOUDS

Another type of cloud model is the private cloud, which is operated for a single organization. This model involves the use of a proprietary network or data center that uses cloud computing technologies such as server virtualization. Typically, private clouds are managed by the organization that is using the services, although in some cases they are managed by a third party. They can be hosted internally or externally.

Private clouds are designed to offer many of the same benefits and features as the public cloud, but provide certain other advantages, such as greater control over applications and data.

HYBRID CLOUDS

A third type of cloud model is the hybrid cloud, whereby an organization uses both private cloud and public cloud services. Hybrid clouds can be delivered by service providers that offer a private cloud and partner with a public cloud provider, or by public cloud providers that work directly with an enterprise that manages its own private cloud.

With hybrid clouds, organizations can manage some IT resources in-house while others are provided externally. For instance, a company might have a private cloud or premises-based UC solution, but use a public cloud solution for resiliency to ensure business continuity. This type of model can provide additional flexibility for organizations, because they can enjoy the cost efficiencies of public services and keep some applications and other resources in-house if they wish. A hybrid cloud architecture uses both on-premises resources and a cloud-based infrastructure. This varied use of the cloud is creating a need for hybrid solutions, where portions of an application are deployed on-premises and other portions in the cloud.

Virtualization

One of the key technologies that enables cloud computing is virtualization. Server virtualization is the partitioning of physical servers into smaller "virtual servers" to help companies optimize their server resources. With server virtualization, server resources are masked from users, and software is used to partition the physical server into multiple virtual machines.

Server virtualization can help both businesses and service providers reduce expenditures, since less hardware is needed. It also conserves space — and energy consumption — through the consolidation of servers in data centers.

One of the biggest benefits virtualization offers is its management capabilities. In many organizations, voice and data networks are managed as separate entities. Virtualization software gives organizations the ability to deploy and manage voice like any other application in their data center, instead of maintaining a separate set of processes, tools and staff for voice communications. Virtualization also delivers greater control over IT resources. It delivers capacity management and optimization, ensuring that capacity consumption is not overprovisioned or underprovisioned, and allowing for the most efficient use of computing resources.

Benefits of UC in the Cloud

The use of cloud services is expected to increase, according to industry research. For example, Gartner Inc. forecast that the public cloud services market would grow 20 percent in 2012 to total $109 billion worldwide. BPaaS offerings represent the largest segment, accounting for about 77 percent of the total market, the firm says. The total public cloud services market in 2011 was $91.4 billion, Gartner says, and it will grow to $206.6 billion by 2016. But for many organizations, the move to the cloud will be gradual. In a lot of cases, companies are looking to move commodity applications such as email to the cloud first, before committing to a larger-scale cloud services deployment. For example, a business might leverage the cloud for new offices, but continue to use premises-based solutions for its existing offices. These solutions will need to interoperate and appear as one unified solution. Or, a business might have a premises-based IP-PBX that it hasn't fully depreciated, and it might look to add new UC services such as collaboration or mobility in the cloud. In that case, the IP-PBX will need to work with the cloud-based UC components. Regardless of the scenario, managing UC in the cloud makes sense for many organizations, through leveraging a management infrastructure that allows companies to handle UC functionality just like any other application in the cloud. The benefits of running UC in the cloud are similar to those of other cloud-based applications. These include business continuity/failover among geographically distinct data centers; the ability to scale services up and down as needed; and cost efficiencies that are inherent with cloud computing services. In addition, the cloud makes mobility better and simpler. Among the biggest benefits of mobility is that it provides "anywhere, anytime" access to corporate data and collaboration tools.

At a Glance: Session Initiation Protocol

Most UC systems support open interfaces such as Session Initiation Protocol (SIP), to enable integration with other devices and applications. SIP, an Internet Engineering Task Force standard, is an open protocol for establishing and managing multiparty, mixed media sessions over converged networks. SIP enables the creation and deployment of services that go far beyond simple IP telephony phone calls, including multimedia / video, instant messaging, Web integration, and more. In a SIP environment, all devices operate as part of one system. SIP is the enabling technology for converging voice onto a business's data connection to its service provider. This eliminates much of the cost and complexity of using Primary Rate Interface (PRI)/T1 to connect to the public switched telephone network (PSTN)

By adding cloud-based delivery of applications to devices such as tablets and smartphones, companies can realize even greater functionality and value. Organizations must enhance their communications and collaboration capabilities to remain competitive and excel in the market, and UC offers an opportunity to do that. The multiple features and capabilities of UC enable workers to collaborate and share information and ideas as never before. The cloud in its various forms offers a compelling delivery mechanism for many different types of applications, including UC in the enterprise. IT and business decision makers should explore how their organizations can leverage UC in the cloud — so they don't miss out on what could be an excellent opportunity to add value to their organizations through these technologies.