



The Case for Cloud Communications: Unified Communications as a Service (UCaaS)

A Technical White Paper on UCaaS Solutions

Introduction

A major catalyst to Unified Communications as a Service (UCaaS) is on the horizon. What was once thought of being the preferred adoption model for small businesses is now catching on in large enterprises (over 1000+ employees). More and more large enterprises are moving their productivity apps to the cloud. This white paper talks about how UCaaS effectively resolves communications challenges faced by the business world.

An Overview of UCaaS

UCaaS is an enterprise-grade communications solution that is hosted in the cloud and integrates a range of communications including mobile phones augmented with application services to deliver business communications from a single centralized dashboard. This delivery model is generally outsourced to a third party and delivered over an IP network.

UCaaS solutions normally include:

- Voice and telephony
- Audio/video conferencing
- Instant messaging
- Email (text/voice)
- Desktop/thin clients
- Integrated applications such as CRM and ERP solutions

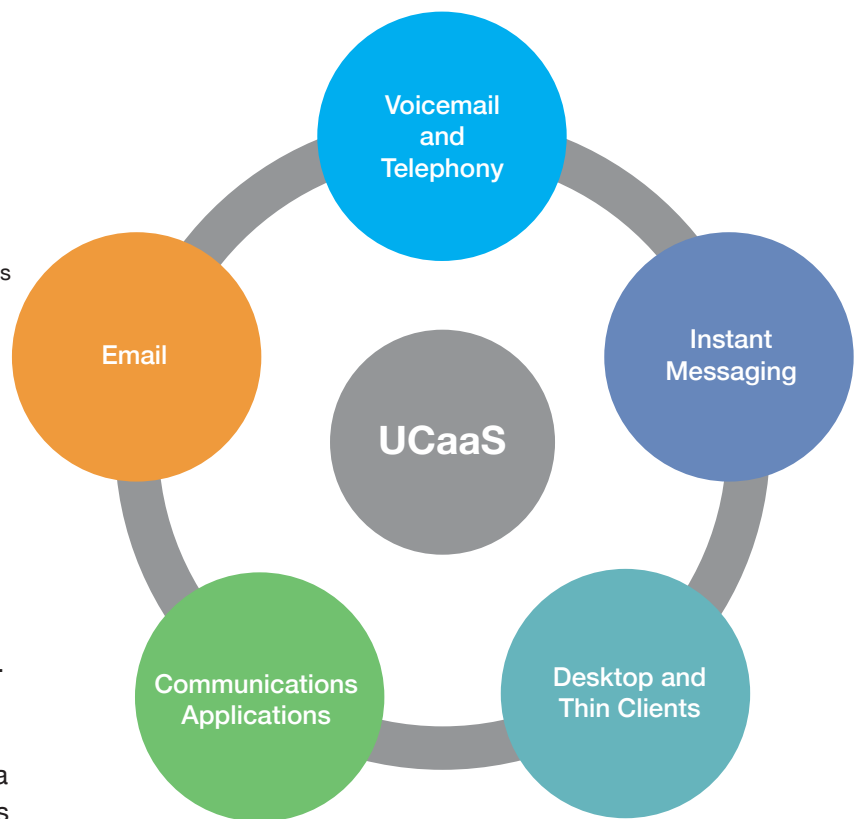
The Evolution of UCaaS

As with any other technology solution, UCaaS has evolved over time. Initially, business communications went through Private Branch Exchange (PBX) or Key Telephone System technology. In the late '90s, PBX was replaced with IP networks and IP Telephony technology. Voice over Internet Protocol (VoIP) transformed the telephone into a computer with an IP address. With the advent of VoIP, businesses quickly realized the benefit of integrating business communications with existing software to create a collaborative workspace. Unified Communications (UC) was the result. UCaaS takes UC services to a new horizon by delivering Unified Communications from the Cloud.

UCaaS solutions are delivered in two models: single-tenant and multi-tenant. In a multi-tenant environment, multiple customers share a single software platform. Alternatively, the single-tenant model delivers a customized software platform that allows users to enjoy a dedicated software platform that can be integrated with existing applications. Enterprises can get the best of both worlds by choosing a hybrid model where data-sensitive areas can be hosted in a single-tenant solution, while general applications can be inexpensively hosted in the multi-tenant cloud.

With the advent of smartphones, instant communication has never been so important. Businesses must provide quick access to corporate resources for users who are working on a range of devices from any location and at any time.

UCaaS solutions provide a consistent interface experience across multiple platforms so that employees are always contactable. These solutions can be easily integrated with existing CRM, ERP and virtualization solutions. Moreover, UCaaS solutions are highly secure.



UCaaS Trends

There have been significant improvements in the delivery of UCaaS in the past 18 months. More and more businesses are adopting UCaaS solutions to optimize costs and improve business continuity. According to Markets & Markets prediction, the UCaaS market is going to touch \$24.88 billion by 2020. A Nemertes survey also points out that at least 63% of organizations have at least one UC app in the cloud to take advantage of its cost-effectiveness and scalability. This speaks volumes about how UC services have resolved several challenges the business world is facing today with regard to communications.

UC Collaboration Tools

UC collaboration tools are a new innovation. These tools integrate email, instant messaging, audio, video and web conferencing into a single, comprehensive package with an intuitive interface. These tools allow you to easily monitor and manage the UC infrastructure from a centralized dashboard. For instance, when an employee answers an inbound call, he gets a pop-up window on the screen that displays the caller's account and contact information instead of having to search for the information manually. An outbound caller would expect an automatic log of the call.

An example of this type of collaboration is the joint venture between Unify and Cisco to deliver UC collaboration tools. Another example is the partnership between Google and Vidyo, which integrates Google Hangouts with cloud-based video conferencing products. UC vendors are also adding social features such as activity streams to bring completeness to such tools.

The Advent of WebRTC

WebRTC is an industry standard for real-time communications that enables users to run audio/video conferencing within the browser. With the advent of webRTC, browser makers are now bound to make their software webRTC-enabled so that H.246 and VP8 video codecs are supported. With its audio and video-calling app, Twilio is already implementing webRTC by replacing Flash. Other vendors are sure to follow this route.

UC and Mobile

Tablet and mobile integration is the latest trend in the UCaaS segment. Businesses are now exploring options to implement UC solutions on mobile devices, where users can open an app to call or terminate a call. Multiple vendors have already offered video conferencing on their clients for Android and iOS devices.

Impact of Mobile on Business

Living in the largest generation of mobile phones, it is not surprising that there are as many mobile subscriptions (6.8 billion) as there are people (7.1 billion) in the world, as reported by the International Telecommunication Union. Further, mobile penetration rate is 89% in developing countries.

This smartphone revolution has made it inevitable that every business will go mobile. Mobility solutions enable businesses to provide a greater collaboration between users, processes, and resources, making it easy for anyone to access resources from any location, at any time, and from any device. Regardless of the location, employees can quickly pull customer data and provider-customized offers to their customers to close a sale.

Virtual offices reduce the attrition rate while significantly improving business performance and revenues. Providing support to remote users has never been easier.

Mobile Integration in UCaaS

Mobile and tablet integration is the latest trend in UCaaS circles. UCaaS providers are exploring options to natively provide mobile integration with phone systems or applications such that end-users can easily open an app, make or terminate a call, and effectively communicate with users from their office as well as from a remote location.

Major UCaaS providers now offer full-featured Instant Messaging & Presence web-collaboration applications that are integrated with mobile solutions. These collaborative apps allow remote users to quickly share the screen with local users to take full advantage of conferencing features.

Challenges with On-Premise UC Solutions

While on-premise unified communications unify business operations, they pose certain challenges as well. One of the primary challenges is performance and outage issues. For small and medium-sized businesses, this can be even more challenging. Secondly, scaling the system to adjust for changing business requirements is a time-consuming and costly affair. Providing support to mobile workers is another area of concern. Other problematic areas include dropped calls and the increased expense of maintaining and managing the infrastructure.

According to a Spiceworks survey, 32% of organizations with on-premise UC solutions experienced performance or outage issues, 28% of users received poor support from vendors, 28% of users experienced difficulties in scaling resources, 27% of users had difficulties in providing support for mobile workers, 20% of users had issues with dropped calls, and 16% of users expressed cost issues.

UCaaS solutions effectively answers all these challenges while providing additional benefits in the form of lowered TCO, simplified IT management, disaster recovery and reliable business continuity.

Benefits of Moving On-Premise Systems to the Cloud

Lower Cost

With shrinking IT budgets, IT administrators face the tough challenge of delivering more with limited resources. At the same time, rapid implementation of BYOD networks have forced businesses to provide resources to a diversified audience. This, in turn, increases capital expenses (CAPEX) and operating expenses (OPEX).

The biggest benefit with UCaaS solutions is reduced CAPEX and OPEX. For a minimal PBX infrastructure, businesses need to invest \$30,000 for costly PBX hardware, building wiring, phones and data equipment. In addition, staffing and maintenance costs should be considered.

UCaaS solutions offer a per-seat subscription price that is significantly lower. With a minimal initial investment, businesses can get world-class technologies right at their desk. This will reduce PBX maintenance staff. At the same time, employees are not tied to their desks. The Yankee Group reports that hosted UC solutions have lowered the TCO to 65% when compared to its on-premise counterpart. Shelfware is reduced, too.

Reliability and Flexibility

In today's highly competitive world, there is little time to convert a lead into a sale. You cannot blame the failure of your hardware infrastructure for losing a sale. With on-premise communications, expanding your infrastructure or realigning the VoIP network requires time and effort. Cloud communications does this at the blink of the eye. To add additional staff, you only need to connect the phone jack to the Ethernet port and make small changes to the monitoring dashboard.

Cloud communications provides you with the flexibility to dynamically change your infrastructure along with the growth of the business. At the same time, UCaaS delivers a higher level of redundancy and resiliency for assured business continuity.

Hosted Vs On-On-Premises UC Solutions

	On-Premises UC	UCaaS
Capital Expenditure	It depends on the size of the enterprise. Large enterprises require more investment for phone hardware, racks, power, cooling etc. Equipment needs to be installed and configured, which requires more investment and labor.	Enterprises have low capital expenditures since they only have to purchase phone equipment, in addition to low installation costs.
Infrastructure	This includes analog telephony boards housed in proprietary control units, servers, UC functions and other administration functions.	Everything resides in the data center of the service provider.
Provisioning	A T1 circuit is needed for analog telephone lines.	Landline setup is delivered from the cloud.
OPEX/Licensing	OPEX include infrastructure maintenance, hardware and software maintenance, and upgrades.	Cost is based on a per-user subscription basis.
Updates	Regular maintenance and updates are required.	Updates are delivered in real time.
Disaster Recovery	Reliable redundancy is expensive.	Recovery is normally provided by the service provider.

Disaster Recovery

UCaaS solutions cost-effectively provide a higher level of resilience and redundancy. This is especially important in times when data regulations from governing authorities are becoming more stringent. Using UCaaS, you can instantly back up and replicate data across multiple data centers. Most cloud providers offer disaster recovery tools that enable you to back up the entire communications platform with ease. For business-critical procedures, you can choose the highest level of redundancy – 100% redundancy at a fraction of the cost of an on-premise solution.

During a disaster, an organization needs a rapid communications system. With a UCaaS solution, you have the ability to stay in touch with staff to assess the situation and act accordingly. By properly assessing the impact of a disaster, management can quickly make informed decisions. Even if your infrastructure is wiped out, you can still be in contact with your important clients using core communications services from a temporary location. By keeping your business up and running until it is fully recovered, you can reduce the financial, as well as, reputational impact of a disaster.

Security in the Cloud

Data security and integrity are major concerns for businesses when choosing a UCaaS delivery model. Since data resides in the cloud, organizations are reluctant to hand over business procedures to a third party. In addition, changing data regulations from governing authorities provide another hurdle. With mirrored data centers located in multiple countries, businesses have to answer to governing authorities about data management outside the country. Mobile devices in the infrastructure further add to this concern, as provisioning and deprovisioning of employees must be carefully handled.

Contrary to common belief, UCaaS solutions are typically more secure than on-premise solutions. Every organization cannot afford to deploy and manage world-class security solutions in an on-premise setup. However, cloud providers have this capability. Major UCaaS providers have the operational infrastructure in place to deliver high-end security for each client. A security event targeted to a specific client is unlikely, as obtaining a packet capture on a media gateway where hundreds of RTP streams are running is not easy.

Secondly, UCaaS providers provide their staff with limited access to networks. Fewer staff members have physical access to network infrastructure. Often, system-access capabilities are isolated at different locations and even limited to a specific workstation for extended security.

Thirdly, major UCaaS providers adhere to stringent government regulations, including the Sarbanes-Oxley Act (SOX), which prohibits fraudulent practices and prevents accounting errors. As they go through rigorous audits, such as SAS-70/SSAE-16, which can continue through an extended period of time, businesses can expect a higher level of security. In addition, they must adhere to PCI DSS and HIPAA regulations. Vendor-based audits and certifications are mandatory as well.

Furthermore, telecommunications service providers are regulated by the US government. According to Federal Communications Commission (FCC) requirements, service providers must report any service-impacting outage within hours to the FCC. Moreover, UCaaS providers are accountable to the Cybersecurity and Communications Reliability Division (CCR) of the FCC.

UCaaS providers frequently have strategic partnerships with equipment vendors such as NEC, Cisco, Microsoft and Avaya. Since these vendors provide dedicated staff to expedite service and support, businesses can enjoy secure and continuous delivery of services. Choosing the right UCaaS provider is the key here.

How Cloud is Addressing the Needs of the Changing Business Landscape

One of the major challenges businesses face is managing data. The rapid explosion of big data can be effectively managed by the cloud. Accommodating new IT capabilities and services in the Cloud reduces expensive IT costs. Moreover, it resolves growth capacity limitations and effectively manages new data the growth brings. Cloud reduces mobility restrictions, which means that end users can access business resources from any location, at any time, and from any device. Cloud unifies business procedures across the infrastructure, making it easy for businesses to collaborate within and outside the organization. Most importantly, it reduces hardware and software investment costs and streamlines operational expenses for a better ROI.

Conclusion

The cloud-computing technology that came with a bang has changed the face of business. By removing limitations on computing power and scalability, the cloud enables businesses to create new products and services that were not possible before. In addition, the cloud provides improved, and real-time, partnerships for a better business ecosystem.

In the communications segment, UCaaS solutions are the need of the hour. Organizations that have already embraced this technology have shown improved performance and increased revenues. Businesses that ignore this change can be left behind by the competition. The key is to choose the right UCaaS provider.

References

www.marketsandmarkets.com/PressReleases/ucaas.asp

blog.360cloudsolutions.com/blog/bid/94024/Cloud-Solutions-Solve-the-Challenges-of-Growing-Enterprise-Companies

westipc.com/blog/2015/06/03/ucaas-security-the-7-reasons-its-more-secure-than-you-think/

www.thinkingphones.com/uc-technology/security-reliability-essential-effective-ucaas/

www.arkadin.com/sites/default/files/UCaaS_White_Paper_June_2013.pdf

www.salesforce.com/blog/2014/05/what-is-ucaas-gp.html

www.nectoday.com/top-business-benefits-from-unified-communications-as-a-service/

en.wikipedia.org/wiki/Cloud_communications

www.nemertes.com/reports/2014-2015-nemertes-enterprise-technology-benchmark

www.searchunifiedcommunications.techtarget.com/feature/Top-10-UCC-news-highlights-reveal-2015-trends

www.gartner.com/doc/2637718/market-trends-key-trends-ucaas

www.shoretel.in/files/ucaas-market-trends-and-business-benefits

www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf

cdn2.hubspot.net/hub/125840/file-671914210-pdf/docs/Spiceworks_UCaaS_Whitepaper.pdf

www.searchunifiedcommunications.techtarget.com/feature/On-premises-vs-hosted-cloud-UC-Comparison-chart

en.wikipedia.org/wiki/Unified_communications

www.t-systems.com/umn/uti/838012_2/blobBinary/Yankee-Group-2010_UC-adoption.pdf?ts_layoutId=765972

www.nectoday.com/top-business-benefits-from-unified-communications-as-a-service/

it.toolbox.com/blogs/VoIP-news/3-disaster-recovery-benefits-you-can-leverage-with-ucaas-66470



UNIVERGE BLUE
www.univergeblue.com

**Corporate Headquarters
(Japan)**
NEC Corporation
www.nec.com

North America (USA)
NEC Corporation of America
www.necam.com

APAC
NEC Asia Pacific Pte Ltd
nec.com.sg

NEC Enterprise Solutions
NEC Europe Ltd
nec-enterprise.com

Canada
NEC Canada, Inc.
www.neccanada.com

About NEC Corporation of America Headquartered in Irving, Texas, NEC Corporation of America is a leading provider of innovative IT, network and communications products and solutions for service carriers, Fortune 1000 and SMB businesses across multiple vertical industries, including Healthcare, Government, Education and Hospitality. NEC Corporation of America delivers one of the industry's broadest portfolios of technology solutions and professional services, including unified communications, wireless, voice and data, managed services, server and storage infrastructure, optical network systems, microwave radiocommunications and biometric security. NEC Corporation of America is a wholly-owned subsidiary of NEC Corporation, a global technology leader with operations in 44 countries and more than \$32.6 billion in revenues. For more information, please visit necam.com.

© 2015 NEC Corporation. All rights reserved. NEC, NEC logo, and UNIVERGE are trademarks or registered trademarks of NEC Corporation that may be registered in Japan and other jurisdictions. All trademarks identified with ® or ™ are registered trademarks or trademarks respectively. Models may vary for each country. Please refer to your local NEC representatives for further details.