

Alex Lewis
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Microsoft Lync Server 2013

UNLEASHED



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Microsoft® Lync® Server 2013

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800 East 96th Street, Indianapolis, Indiana 46240 USA

Microsoft® Lync® Server 2013 Unleashed

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Foreword

I once remarked, “Nothing sells itself, but Lync comes pretty darn close.” The statement resonates because Microsoft Lync is one of those products that come along every once in a while that infuse the user with superhuman power to take *action*. Where so many products *can* do something, Lync *does* do something—right out-of-the-box—and this something is as fundamental as human-to-human communication and collaboration.

If this sounds lofty and grand, it’s because it is. Businesses that adopt Lync measure their return on investment in months, not years. They also gain something entirely new: accessibility and fluidity in collaboration that didn’t previously exist and can’t easily be measured. Although user adoption is a critical component of any successful deployment, the challenge is easily surmountable because the Lync user interface is inviting and intuitive. Our contacts are identified by their photos, not phone numbers, and video calling lets us look each other in the eye when we’re having a conversation. Presence enables us to be telepathic about our peer’s availability, and the desktop sharing gives new meaning to the phrase “a picture is worth a thousand words.” The technology churning just below the surface is implemented in such a way that the user never thinks about it. It just works, especially when a user is outside of the office, when connectedness is most critical.

I predict that 2013 is the year that Lync will become the de facto communications platform for the Enterprise. If Lync 2010 answered the question about whether Lync could be a credible PBX replacement, then Lync 2013 goes a step further and changes the questions. Companies that are running separate projects to deploy voice and video should seriously consider revising their RFP process and take a hard look at Lync.

Video and mobility are the truly exciting new features in Lync 2013. Lync 2013 supports 1080p HD resolution for video conferencing so participants have a sharp, clear display. Lync 2013 also uses standard video codecs like H.264 SVC to provide compatibility across a broader range of platforms and devices, which provides greater flexibility in terms of how video is delivered. Microsoft is also developing Lync Mobile apps for Windows Phone, iOS, and Android, so these communications modalities are available almost universally, a feature that we’ve all been waiting for with bated breath.

This is all very exciting, but the technology doesn’t implement itself. Alex, Randy, Tom, Dave, and the other contributors involved in creating this book are all experts and educators in their field, drawing on years of experience designing, deploying, and supporting unified communications technologies. Organizations will need to make choices about how to design and deploy Lync 2013, and this book is an exceptional resource and reference for informing the individuals who need to make those choices.

John Lamb
Co-Founder, Modality Systems

About the Authors

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Alex Lewis, MCITP, CISSP, has a mixed background in telecommunications, IT, and consulting, with more than 15 years of experience. He has worked with the Lync family of products since the Exchange 2000 instant messaging service and a number of other solutions, including Cisco, Avaya, Nortel, ShoreTel, and NEC. He has worked with a wide range of environments from small organizations to large enterprises requiring complex or custom communications solutions, and he is responsible for architecting and implementing some of the largest Lync deployments in the world. Alex is a strong believer in the power of business and technology alignment using technological solutions to reduce costs and drive revenue and leveraging Communications Enabled Business Processes (CEBP) to accelerate business success. Including titles on Active Directory and Exchange, and two on Lync, Alex has participated in writing eight books from 2004 to present. He is currently principal consultant at Modality Systems, a boutique international consulting firm focused on Microsoft unified communications. He loves a challenge and brings a wealth of experience to each new engagement. In his spare time Alex enjoys scuba diving with sharks and beach volleyball.

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Dedications

Alex Lewis: *I couldn't have done it without you, Kate. You're the best, on so many levels! I know I promised you no more books, yet you still love me in spite of this book...and the inevitable next one.*

Tom Pacyk: *This book is dedicated to my daughter Madeline, who was born this past year. May this book forever serve as a bedtime story guaranteed to easily put you to sleep.*

David Ross: *I dedicate this book to Lisette, my soul mate, who continues to provide inspiration even after she is no longer with us. You always encouraged everyone around you to continue growing and reach their potential, and this project is another evidence of the positive effect this had on me. When the day arrives that we can see you again, how wonderful it will be to catch you up on all the memories that you missed, and then make new ones. The boys and I look forward to that day with great anticipation.*

Randy Wintle: *I dedicate this book to my father, Rod Wintle, who is both my personal and my professional mentor.*

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Tom Pacyk

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David Ross

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Randy Wintle

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Introduction

Lync 2013 is an evolutionary step forward for Unified Communications (UC). It takes the Gartner-rated leader in UC a step further and widens the gap between Microsoft and a number of other contenders.

The authors of this book have been working with Lync through many name changes and since the Live Communications Server 2003 days. I remember when it launched on December 29, 2003. Back then, Windows Messenger 5.0 was the main client used, and the terminology was completely different. Even then, however, TLS communication was supported, although most IT departments went with the more familiar TCP option instead. Needless to say, a lot has changed through the years. Most people I work with don't realize that Lync Server 2013 is a sixth-generation product! It is even older if you count the Exchange Instant Messenger Service that was included in Exchange Server 2000, which was pulled out to build the first version of Live Communications Server.

In the beginning, Live Communications Server 2003 was only an IM server. Lync Server 2010 brought the platform to a widely deployed PBX replacement, and Lync Server 2013 expands on this functionality with large strides in the emerging video conferencing space and a much more advanced client. Lync 2013 includes:

- ▶ Web and audio conferencing server with an advanced web client
- ▶ Unified Communications (UC) integration across many other platforms, such as Office, SharePoint, and Exchange
- ▶ Soft phone
- ▶ Video conferencing system
- ▶ PBX replacement and integration with numerous existing PBX platforms

Back in 2003, IM was perceived as a novelty. No one used it to conduct business or even imagined it as a gateway to multimodal communications. Starting with Office Communications Server 2007 R2 and continuing with Lync Server, Microsoft introduced the concept of Communications Enabled Business Processes (CEBP).

NOTE

It seems every vendor and analyst defines CEBP in a different way. For this book, however, we stick with a more generic definition. CEBP adds a communications medium to a business process with the intent of streamlining and automating the process, or with the intent of reducing human latency through real-time communications. This is discussed in more detail throughout the book starting in Chapter 4.

Chronology of Lync Server 2013

Let's go through some history and chronology to better understand why and how Lync Server 2013 came to be over the last 10 years.

- ▶ **Exchange Server 2000 Instant Messenger Service**—It's hard to believe so few people, even Exchange administrators, had heard of the Exchange 2000 IM service. However, it is not hard to believe that even fewer deployed it. It was a rudimentary service with little integration to Exchange or other Microsoft Server products. Later versions utilized special engines, whereas the Exchange 2000 IM service leveraged an in-house middleware platform called Exchange Interprocess Communication (EXIPC) to translate between IIS 5 and Exchange. The solution was essentially composed of two types of servers—home servers and routing servers.

Home servers handled IM communications similarly to a front end in Lync Server 2010. However, there was little Active Directory integration. That's where routing servers came in. If two users were homed to different home servers, they would need to jump through a bunch of hoops to talk with each other. The routing server acted as a bridge connecting any two home servers. It was a basic solution, especially at a time when public IM providers such as Yahoo and AOL offered significantly more in terms of functionality.

- ▶ **Live Communications Server 2003**—Instant messaging functions were taken out of Exchange and given their own platforms with the 2003 wave of Microsoft Server products. It was code named Greenwich and initially called Office Real-Time Communications Server 2003 before being renamed Live Communications Server 2003 just prior to release. It wasn't long before it was better known by its three-letter acronym LCS 2003. LCS 2003 was the first version to support certificates and offer TLS-encrypted communications as the recommended method. LCS 2003 was also the first version to support enterprise archival of IM communications, though it was rarely implemented because the compliance regulations in effect today simply didn't exist or include IM conversations in 2003.
- ▶ **Live Communications Server 2005**—Live Communications Server 2005, or LCS 2005 as it's more commonly known, was the first widely deployed version of the Microsoft real-time communications platform. It was code named Vienna. Although one might argue that LCS 2005 was Microsoft's first attempt at a unified communications platform, few organizations deployed functions beyond IM and presence. LCS 2005 added new functions, including a more advanced presence engine that would change a user's presence status based on information from a user's Exchange calendar and remote access through the access proxy role. LCS 2005 SP1 added the capability to communicate with Office Communications Server 2007 users and a number of other features. In today's Microsoft nomenclature, it would likely be called Live Communications Server 2005 R2.
- ▶ **Office Communications Server 2007**—Code named RTC12, this is when the creative codenames went the way of the dodo bird. Commonly known as OCS 2007, the platform made a huge jump in terms of functionality and acceptance. OCS 2007 added the following functions:

- ▶ **On-Premise Web Conferencing**—The return on investment (ROI) from bringing web conferencing in-house almost always justified the cost of implementing OCS; thus, it became an important feature. However, voice conferencing was PC-only or needed to be hosted through a third-party provider.
- ▶ **Multi-party IM**—It might seem insignificant to add more than one person to an IM conversation, but it became an important market differentiator compared to products like IBM SameTime and Cisco CUPS.
- ▶ **Enhanced presence**—Also known as “rich presence,” it enabled users to expose additional information beyond the red, green, and yellow gumdrop that was standard at the time. This information included name, title, and detailed calendar information. It also included a multitiered access mechanism called levels of access to display different amounts of personal information to different tiers of users.
- ▶ **Improved federation**—Open federation and widespread adoption of OCS 2007 changed the landscape of intercompany communication. E-mail became secondary for partner communication as users could see real time availability data and collaborate immediately, removing the latency inherent to asynchronous methods of communication.
- ▶ **Enterprise Voice**—It’s simply not possible to call your solution a unified communications solution without the inclusion of a voice platform. Although it was basic, it was a proactive step in the right direction because almost every other UC vendor would also roll out a combined IM, meeting, and voice platform around the same time or soon after.
- ▶ **Office Communications Server 2007 R2**—When combined with Exchange Unified Messaging, this was the first version that could realistically be considered a PBX replacement, though it still lacked many traditional PBX features. Code named Wave 13 or W13, OCS 2007 R2 added a bunch of collaboration and voice features as noted in the following:
 - ▶ **Call Delegation**—Also known as the boss-secretary function, this enabled delegates to answer a call for another user. The primary user also notified the delegate answered the call. This function was designed to be used with the Communicator Attendant Console. Much like with delegates in Exchange, the assistant could be given the rights to do almost everything for the manager yet make it appear that the manager was doing the work. A full call delegation feature list follows:
 - ▶ Call screening for audio, video, or IM
 - ▶ Joining a voice conference on behalf of the manager
 - ▶ Checking voicemail for the manager
 - ▶ Initiating a person-to-person call on behalf of the manager
 - ▶ Initiating conference calls on behalf of the manager
 - ▶ Transferring calls to the manager

- ▶ **Team Call**—A simple workflow that enabled call forwarding to multiple people. The call could be forwarded to specific people in sequence or in parallel. This was often used for out-of-office or out-to-lunch functions.
- ▶ **Group Chat**—A separate server role that also required a separate client from Communicator. It allowed persistent chat similar to IRC.
- ▶ **Desktop sharing**—This included desktop sharing from the Communicator client and with anonymous users through the Communicator Web Access service.
- ▶ **Audio conferencing**—Much like web conferencing in OCS 2007, this is another great ROI story. Third-party audio conferencing services can be expensive; tens of thousands of dollars per month can be saved by bringing it in-house. Many companies deployed OCS 2007 R2 strictly for this functionality; everything else was just a bonus.
- ▶ **Response Group Service**—This is Microsoft's version of a simple IVR workflow. It's often used for small call centers or IT help desks.
- ▶ **SIP trunking**—SIP trunking is still new but seeing a growth in adoption. Essentially, it enabled OCS 2007 R2 to connect to a SIP trunking provider that handled all outbound call routing. Although the process can be a little complex to set up initially, it greatly eases call routing topology because everything goes to the cloud service provider.
- ▶ **Improved codecs**—Improved codecs for voice and video enable better voice quality and more tolerance for nonideal networks. They also enable HD-quality video between clients over reasonable network links.
- ▶ **Lync Server 2010**—Code named CS2010 and OCS W14, this was the first version that found widespread adoption as a PBX replacement. Lync 2010 added the following functions:
 - ▶ **Unified client**—Gone are the separate clients for IM and conferencing. With Lync 2010, everything could be done from a single client.
 - ▶ **Web Conferencing Web Client**—A web-based conferencing client for participants who did not have the Lync client.
 - ▶ **Photo Display**—The ability for users to display custom photos or a photo from Active Directory.
 - ▶ **Advanced Voice Routing**—This function is two-fold. Lync Server 2010 introduced advanced voice routing on the server side but also allowed users a number of complex voice routing options in the Lync client.
 - ▶ **Integration with Room-based Video Systems**—Through partnerships with Polycom and LifeSize, Lync is able to interoperate with traditional video conference room systems.

How This Book Is Organized

Everything you want to know about new features for Lync Server 2013 is included in Chapters 1–4. These chapters describe new features and benefits.

You will find that the improvements Microsoft has made to Lync Server 2013 are not only evolutionary, but they represent a major step forward for Unified Communications. Lync Server 2013 solidifies Microsoft’s role as market leader in the UC field.

CAUTION

This book covers all aspects of Lync Server 2013. However, the book does assume the reader has at least a cursory knowledge of the basics of Active Directory, DNS, and the associated infrastructure of each.

This book is organized into nine parts, each one made up of several chapters focusing on a different core area of Lync Server 2013.

- ▶ **Part I, “Lync Server 2013 Overview”**—This part provides an introduction to Lync Server not only from the perspective of a general technology overview, but also to note what’s new in Lync Server and what has compelled organizations we’ve worked with to implement it during the beta phase.
- ▶ **Part II, “Microsoft Lync Server 2013 Server Roles”**—This part provides an in-depth discussion of all the Lync Server 2013 roles including a general overview, the installation process, configuration, administration, troubleshooting, and best practices. Each role is examined in detail with step-by-step installation instructions and valuable screenshots. There have been some major changes since Lync Server 2010!
- ▶ **Part III, “External Dependencies”**—Lync Server 2013 leverages many other technologies including Active Directory, DNS, certificates, and SQL Server. It also has specific prerequisites and requirements around network latency, bandwidth, and firewall and reverse proxies for external access and federation. Lync Server 2013 relies heavily on Active Directory for integration to other Microsoft Server components such as Microsoft Exchange and Microsoft SharePoint.
- ▶ **Part IV, “Administration and Management”**—This part covers common administration tasks and the Lync Server Management Shell, which is the heart of all administration tasks. It moves on to discuss monitoring Lync Server 2013 through Microsoft Systems Center Operations Manager and high-availability processes for all the Lync Server roles.
- ▶ **Part V, “Migrating from Older Versions”**— A green field deployment is easy; migrating users, response groups, and dial plans from a previous versions of Lync Server can cause headaches. A solid, tested migration strategy is important for minimizing downtime and ensuring a successful migration. The bad news is there is only one way to do it. The good news is that it is explained in great detail in Part 5.

- ▶ **Part VI, “Lync Voice, Video, and Integration”**—Lync 2010 established the platform as a legitimate PBX replacement and video conferencing solution. Lync 2013 extends both of these functions and rewrites the interoperability story on both fronts. This section discusses Lync as a standalone telephony solution and integrated with other voice solutions, Lync integration with various video platforms and various 3rd party solutions such as voice gateways, video gateways and cloud services.
- ▶ **Part VII, “Integration with Other Applications”**—Lync Server 2013 has unique communications and collaboration features when integrated with other applications. Presence can be brought into a SharePoint page or Exchange Outlook Web Application. The Exchange Unified Messaging server completes the Microsoft UC solution. New in Lync Server 2013 are the Unified Contact Store and the ability to upload pictures to a dedicated server instead of bloating Active Directory.
- ▶ **Part VIII, “Office 365 and Lync Online”**—Cloud services ring loud from every CIO summit in the world. Regardless of their actual merit, many organizations are at least piloting cloud solutions. This section includes the Microsoft Office 365 story and hybrid integration with Lync Online.
- ▶ **Part IX, “Lync Server 2013 Clients”**—From a user’s perspective, the solution is the client. That’s all a user sees. Lync 2013 offers much improved clients over the already outstanding Lync 2010 versions. A fully featured web client with audio and video is offered along with a more robust mobile client. Lync 2013 rolls out a whole new list of UC-certified endpoints. Finally, VDI is now fully supported and provides a unique solution for deployment.
- ▶ **Part X, “Planning for Deployment”**—Every good deployment starts with a good plan. This part can help you build a plan for your organization. It covers the full gamut of Lync deployment options from a basic deployment to virtualization to complex voice deployments. Although Lync Server 2013 expertise is required, many other skill sets are also important to plan a successful deployment. Lync Server 2013 touches many other areas including PBX/telecommunications, Active Directory, Exchange, and the enterprise network. Although bringing in an expert is always a good strategy, this part educates you with the basics for planning your deployment.
- ▶ **Part XI, “Endpoints”**—UC adoption can be viral, but only if the right tools are in place and end users have a quality experience. To users, Lync is reflected in the quality of their experience. The best way to ensure a great experience is with certified quality UC endpoints. UC endpoints encompass a wide range of devices, which we cover. You’ll also learn best practices for choosing and deploying UC endpoints for various scenarios.

The real-world experience we have working with Lync Server 2013, our combined experience with the platform since its beginnings, and our field experience deploying Lync Server enable us to present this information to you. We made the mistakes, found the workarounds, and simply know what works and how to do it right. We know you will find this book valuable with the planning and deployment of your Lync Server 2013 infrastructure.

CHAPTER 4

Business Cases for Lync Server 2013

IN THIS CHAPTER

- ▶ Why Unified Communications
- ▶ Return on Investment (ROI)
- ▶ Why Lync 2013 for Unified Communications

In this chapter we will explore common business cases for Lync Server 2013. Before we understand the business cases for Lync Server 2013, it is important to understand some fundamentals about Unified Communications. The term “Unified Communications” has become quite a buzzword in the IT industry as of late. Unified Communications (UC) is defined as the integration of real-time communication services such as instant messaging, Presence, telephony, video conferencing, data sharing, call control, and Unified Messaging (integrated voice mail, email, and fax). The term is pretty self-explanatory. You are unifying your existing communication tools. A common approach to UC is to consolidate all communication tools into a single-vendor solution. This chapter outlines why many people believe that Microsoft Lync is the go-to product for Unified Communication, and it covers the following topics:

Why Unified Communications—Gives an overview of why UC is beneficial to all types of organizations.

Return on Investment—Describes how you define ROI, and how UC provides ROI.

Why Lync 2013 for Unified Communications—Explains why, based on what we know about UC, Lync 2013 is the ideal solution for UC.

Why Unified Communications

There are four key components to UC:

- ▶ Instant messaging and Presence
- ▶ Web, audio, and video conferencing

- ▶ Enterprise telephony (traditional PBX functionality)
- ▶ Unified Messaging

This section gives a brief description of each of the key UC components and explains why moving to a UC solution can be beneficial for organizations.

Instant Messaging and Presence

Instant messaging (IM) is the capability to communicate instantaneously between two or more people with text-based messages. Presence conveys the ability and willingness of a user to communicate. These two capabilities combine to be the most commonly used UC component in nearly every organization. Understanding how Enterprise IM and Presence evolved will help you understand why it is the core of any UC solution.

IM and Presence has been around since the 1990s. You might remember ICQ and AOL Instant Messenger (AIM). A lot of companies followed suit, and soon there was an explosion of consumer IM providers, all with different protocols and clients. Consumers started to use these consumer IM services for business communications, which was very risky for organizations. Business users were now using third-party tools that often were not secured in any form. Usage could not be tracked or controlled, and these tools were being used for day-to-day business on company PCs. When users were communicating through public networks, the exposure to malware increased, as well as the possibility of valuable company information leaving company PCs. Because of those risks, there was a need to develop an enterprise-grade solution that would allow business users to securely communicate the way they were used to communicating outside of work.

In 1998, IBM launched Lotus Sametime, the first enterprise instant messaging product. Shortly after that, Microsoft released Exchange Instant Messaging, which would later evolve into Live Communications Server, and would finally become what we know as Microsoft Lync. IM has evolved into a business-critical communications tool for most organizations. In fact, many organizations consider IM more critical than email, and some even more critical than dial tone.

Benefits of Instant Messaging and Presence

IM and Presence is the core of all UC solutions. These two features are often packaged together, and sometimes are simply referenced as only “instant messaging.” IM is a feature most organizations will deploy on day one of a UC deployment. Presence is one of the major drivers for UC, because it is at the core of providing an increase in productivity to end users. Presence introduces the real-time availability of users, which allows organizations to see greatly increased productivity through more efficient communications. This benefit is best described in the scenario that follows.

Assume that Randy and Alex both work for CompanyABC. The company does not have a UC solution deployed today. Randy works in the Manhattan office and Alex works in the San Francisco office. If Randy wants to get in touch with Alex, he has two options: send Alex an email or call him on the telephone. The problem starts here: Randy does not

know when Alex will respond to that email or whether Alex will be around to answer the phone when he calls. Most likely, time will be wasted with missed calls and emails while Randy is attempting to reach Alex. This type of inefficient communication impacts their overall business productivity.

Now, introduce a UC solution that leverages IM and Presence into this scenario. When Randy wants to communicate with Alex, he simply needs to look at his Presence indicator. If Alex shows as available, Randy can send an IM to Alex and ask whether he is available to talk. In some cases, an IM might be all that is needed to cover what Randy originally needed to talk to Alex about. If they need to communicate through voice, this is often a quick escalation in the same UI. If Alex is showing as not available, Randy will know what the most efficient way to communicate with him is. Randy could tag Alex's contact for status alerts, which would alert Randy when Alex becomes available. Randy could also communicate either through an email, or a phone call to voice mail, or Randy could simply wait until Alex is available to start an IM conversation.

The scenario just described clearly outlines why IM and Presence is a critical component for UC, and a major driver for organizations to introduce a UC solution to their environment.

Web, Audio, and Video Conferencing

Conferencing is not new to most organizations; however, a unified conferencing experience is new. Many organizations have web, audio, and video conferencing through three separate third-party providers. For web and audio conferencing, organizations are typically charged a monthly fee per user in addition to a per-minute fee for using these services. For video conferencing, some organizations have large deployments of video conferencing equipment on their network, whereas others might be using a third-party hosted solution.

The services available in each of these areas can vary greatly. Some audio conferencing solutions are simply PSTN dial-in bridges, in which all users in a conference will dial a PSTN phone number and be placed into a conference hosted by the provider. Some web conferencing solutions will provide a web browser application for conferencing functionality, whereas others require a desktop application to be installed. Which service options are available to organizations is not entirely important for this section; however, it is important that these services are usually not interoperable with each other. This leads to a disjointed conferencing experience, and organizations are not able to realize the true benefits of conferencing.

Benefits of Web, Audio, and Video Conferencing

When an organization deploys a Unified Communications solution that supplies all conferencing workloads as part of the solution, the most recognized benefit is a single vendor for your conferencing solutions. This often leads to a consistent user experience, and reduced costs to operate.

Providing users with a unified conferencing solution that is easy to use and that provides benefits to their productivity means that they are more likely to use it. Because end users

are actually using this solution more often, the ROI is realized faster, and the organization benefits from increased productivity. In the ROI section we will explore these benefits in greater detail.

Enterprise Telephony

Enterprise telephony has evolved greatly over time. Most commonly this functionality is referenced using the term Private Branch Exchange (PBX). The term PBX was first used when switchboard operators were manually operating company switchboards, but it now is used to describe complex telephony switching systems of all types.

Enterprise telephony not only is the capability to make and receive audio calls between users, but also relates to complex features that many organizations demand of a PBX system. These can include the following:

- ▶ Auto Attendants
- ▶ Automatic Call Distribution (ACD)
- ▶ Call Accounting
- ▶ Call Forwarding
- ▶ Call Park
- ▶ Call Pickup
- ▶ Call Transfer
- ▶ Call Waiting
- ▶ Music on Hold
- ▶ Voice Mail
- ▶ Emergency Call Handling (911 and E911)

The features listed are commonly used to determine whether a modern telephony system is capable of performing PBX features. Many new systems are not marketed as PBXs. They are called PBX replacements with UC functionality instead (think Microsoft Lync [Enterprise Voice] or Cisco Call Manager [IPT]).

Understanding the Benefits of Enterprise Telephony as part of a UC Solution

Many UC solutions are designed to replace PBXs. Because of this, the benefits of introducing enterprise telephony as part of a UC solution is just that, to remove your PBXs. Many organizations have a PBX deployment with the following characteristics:

- ▶ There are many vendors across many locations.
- ▶ If the same vendor, there are many software versions.
- ▶ Each system has a separate maintenance contract.

- ▶ Each system has a local PSTN Ingress/Egress.
- ▶ Systems typically require specialized engineers to perform basic tasks.

When you introduce a UC solution like Microsoft Lync, you introduce the opportunity to remove such complexities. This results in hard cost savings in the organization. We will discuss how organizations can realize these benefits in the ROI section.

Unified Messaging

Unified Messaging (UM) is a term used to describe the integration of different messaging systems. This can include email, fax, SMS, and voice mail. This integration typically means that you can access all of these messages from the same interface and on different devices. The most common use of Unified Messaging is to combine voice mail and fax into an organization's email system.

Many organizations choose to use Microsoft Exchange Server as their UM solution. UM functionality was introduced in Exchange 2007 SP1. With Exchange UM you can connect your PBX and fax systems to Exchange Server and have voice mail, SMS, and fax delivered to the user's inbox. Many other solutions typically deliver voice mail and fax messages to a user's exchange email inbox as an email attachment, or through the use of an add-in. Modern UM systems offer functionality such as this:

- ▶ **Interactive Voice Response (IVR)**—The capability for the caller to interact with the UM system through voice commands.
- ▶ **Find Me, Follow Me**—The capability to ring other telephone numbers before leaving a voice mail.
- ▶ **Voice Mail Transcription**—The capability for the UM system to transcribe voice messages and present the text transcription in an email to the end user.
- ▶ **Secure Voice Messaging**—The ability for the UM system to encrypt voice messages and restrict the users who are able to listen to them.
- ▶ **Auto Attendants**—Often leveraging IVR, UM systems are able to act as a receptionist, receiving calls coming into the organization and directing callers to end users.

Understanding the Benefits of Unified Messaging as Part of a UC Solution

Deploying Unified Messaging as part of a UC solution has similar benefits to deploying enterprise telephony. Many organizations today have a separate voice mail system deployed with each PBX. Introducing a single UM solution can reduce costs, as well as increase user productivity by providing enhanced features in a single interface.

Unified Messaging is a key part of deploying UC in any organization. For many organizations, UM is considered “low hanging fruit.” Exchange UM can often be deployed rather quickly and replace legacy voice mail systems, resulting in a quick ROI.

Return on Investment (ROI)

When organizations choose to deploy a new technology, there is always an investment that must be made. This investment is commonly referred to as a capital investment or capital expense.

Return on Investment is the performance measurement of how an organization will see a benefit on the investment made. When a UC solution is deployed, there are various types of cost savings, and these savings make up the ROI. This next section outlines what investments an organization must make when deploying a full UC solution, and the factors for realizing ROI.

UC Investments

Some organizations will have invested in UC prior to making the decision to move to a UC solution; however, it is still important to understand what these investments are, and ultimately how they can be paid for (ROI).

Consider the Capital Investments

The term *capital investment* in terms of UC is described as the cost to deploy the solution. When UC is being deployed, there are many components that can contribute to a capital investment. Some organizations will categorize certain purchases. For example, some organizations will spread purchases out over five or more years, resulting in a distributed capital investment, or amortization. Regardless of how an organization chooses to categorize its purchases, the following expenses are most commonly referred to as “capital expense” or “capex”:

- ▶ Licensing
- ▶ Data center hardware (servers, storage, etc.)
- ▶ Media gateways (PSTN gateways, SBCS, etc.)
- ▶ End-user hardware (headsets, IP phones, cameras)
- ▶ Implementation costs (staff and professional consulting services)
- ▶ Network upgrade investments (hardware and other “setup” fees for network upgrades)

The capital investments will vary depending on the organization. Regardless of the size of the company, these investments will be significant.

Consider the Operating Expenses

In addition to capital expenses, organizations also have to consider an increase in certain operational expenses. Although UC solutions reduce operating expenses overall, it is common for organizations deploying UC to increase IT operating expenses.

When organizations consider capital and operating expenses for UC, there will be a common theme: an increase in network costs. Network investments tend to make up the

most significant capital and operating investment for organizations that are deploying UC. In a worst-case scenario, existing enterprise telephony is not IP based, and because of this, organizations will not have any real-time voice running over their IP network. This results in a major investment in network expansion.

In an optimal scenario, the organization is already using an IP-based telephony system, and the new network investment must now account for increased usage like conferencing and video.

The first scenario often requires a complete network overhaul. MPLS circuits and Internet connections must be increased, and that often comes with upgraded hardware. The second scenario involves network optimization. This is a combination of increasing bandwidth and optimizing connections to provide priority to UC traffic (Quality of Service).

Consider the Committed or “Dual-Run” Costs

One factor in UC ROI that is often overlooked is committed costs. These costs can also be referred to as dual-running costs. In most scenarios, an organization cannot simply turn off a legacy system and immediately stop paying for it. Not only is there a transition period between systems, but there are often committed costs that are associated with a contract or lease. These committed costs can be attributed to hardware leases, as well as support and service contracts. Many organizations will also choose to amortize capital investments over any number of years. Hardware investments must be depreciated before they can leave the books. Organizations typically have the following committed costs when deploying a new UC solution:

- ▶ **Investment Depreciation**—Many organizations depreciate hardware over five years in order to spread out that capital investment.
- ▶ **Hardware Lease Costs**—Some organizations lease PBX hardware and PBX endpoints instead of purchasing them. These can have committed lease periods.
- ▶ **Dual-Running Solutions**—Costs to run legacy equipment, for example, if migrating off one UC solution to another.
- ▶ **Support Contracts**—Support contracts typically include a multiyear agreement between the organization and the support provider.

Before realizing return on investment, these costs must be accounted for.

In summary, a UC solution is not purely cost savings. There will always be a significant investment to successfully deploy UC. However, the benefits of a true UC solution lead to a rapid ROI, which ultimately makes UC worth the investment.

Realizing ROI with Audio Conferencing

It is common for many large organizations to spend millions of dollars a year on audio conferencing from a third-party provider. When deploying a UC solution that includes audio conferencing functionality, these organizations tend to see a significant cost savings. This cost savings is typically the largest UC ROI factor for businesses.

When deploying a UC solution like Lync, organizations can bring all of their audio conferencing to the internal UC system. Previously, organizations would pay per-minute audio conferencing charges for services that provided a dial-in conferencing bridge and audio conferencing. When this is brought in-house, those costs are reduced. The costs for audio conferencing are replaced by the costs to maintain the UC system and the inbound PSTN trunks for dial-in conferencing users. Many organizations are leveraging SIP Trunking for this functionality to even greater reduce costs. On average, organizations will reduce their dial-in conferencing usage by 85%. That 85% reduction accounts for users who are now leveraging a UC client to join a conference using IP Audio. The remaining 15% accounts for users who are still dialing in to the audio conference through the PSTN.

When the RIO of a UC solution is being evaluated, it is important to not completely remove audio conferencing costs from the total cost of ownership (TCO). A small portion of the costs that are removed are replaced by new costs. This can include PSTN trunks, PSTN gateways, bandwidth, and additional server hardware if needed. Additionally, many organizations require the use of a third-party audio bridge for advanced conferencing scenarios. This functionality is often referred to as managed conferencing. These scenarios include operator-assisted meetings, or very large audio conferences with more than 1,000 participants.

Realizing ROI with Centralized Telephony

As mentioned in earlier sections, most organizations have a distributed PBX system. When an organization is considering UC, one option is to replace the distributed PBX systems with a centralized UC Telephony platform. The centralization of the telephony platform can have many benefits.

Reduced Hardware Footprint

When an organization chooses to centralize its telephony platform, the hardware footprint is greatly reduced. This can provide ROI by reducing hardware purchase costs, hardware maintenance costs, and facility run costs.

Reduced Support Costs

Often when organizations move to a centralized telephony environment, the costs to support the environment are much smaller than the costs of a distributed system. UC telephony systems, although they are modern IP-based systems, are much less complex to manage than legacy systems. If support of the legacy telephony solution was outsourced before, the outsourcing contract might be reduced. If this was completely supported by internal staff, staffing can often be reduced, or allocated to other tasks.

SIP Trunking Opportunity

SIP Trunking is a relatively new trend in telephony. It is the capability to purchase PSTN services and have them delivered over IP connections rather than traditional T1/E1 PRI connections. Although SIP Trunking does not require a centralized deployment model, a centralized telephony deployment does introduce the opportunity to deploy SIP Trunking more easily. The combination of centralized telephony and SIP Trunking is ideal for realizing cost savings in PSTN Trunking.

Many organizations have a vast number of PRI connections delivering PSTN services. The problem with PRIs is that they come in only one size (23 voice channels per trunk in the U.S.). SIP Trunking allows organizations to have more control over how many channels are purchased. In simple terms, if you were a mid-size organization that needed 25 voice channels to support your call load, this would result in two PRIs. Those two PRIs would require two T1 connections. The end result is double the cost for a very small capacity increase.

These are the two ways in which SIP Trunking allows you to reduce your PSTN costs:

- ▶ **Reduction in the Number of Voice Channels**—Organizations that deploy SIP Trunking typically see a 40% reduction in the number of actual voice channels, because the capacity is much easier to predict and control. This reduction in voice channels also comes with a cheaper, more flexible delivery method: IP. Many times this is delivered through an MPLS connection from the provider directly to the organization's data center, but there are services that target small to mid-market customers that will also deliver these services over the Internet.
- ▶ **Shared Usage**—Organizations can reduce their voice channels even more in a centralized telephony model. When the PSTN trunks are centralized, they can be shared across all of your sites. This works very well in organizations spread across multiple time zones. In fact, SIP Trunking services can be tweaked based on time zones to provide capacity where it is needed, resulting in a large amount of cost savings.
- ▶ **Flexibility**—SIP Trunking introduces the ability to increase or decrease capacity as needs change. TDM connections would often require additional physical line configurations to accommodate capacity changes. With SIP Trunking, this simply becomes a matter of provisioning by the provider in many cases. SIP Trunking providers are also able to offer advanced functionality including failover routing, and multiple area codes and international numbers on the same connection, something that TDM trunks are simply not able to do.

The areas previously described are the most common areas in which organizations can realize cost savings and ROI from deploying a UC Telephony Solution. The level at which ROI is realized will depend on how willing the organization is to adopt the centralized and shared model for the telephony infrastructure.

Realizing ROI with Productivity Increases

When any UC solution is being introduced, an increase in productivity is one major selling point. How this increase in productivity influences ROI can be more difficult to calculate. Productivity increases are often referred to as soft costs, meaning that you cannot put a definitive dollar amount next to them. However, it is practical to make educated estimates based off of common scenarios that result in productivity increases. After the solution is deployed and used, it is possible to monitor usage and identify hard productivity cost savings.

A key scenario in which productivity increases can translate directly to dollar amounts is the task of checking voice mail. When you consider the process for listening to voice mail on a legacy voice mail system, it becomes clear how tedious this process is. Assume that you have a billable resource. This resource makes the company money at \$300 per hour. If it takes that person three minutes per day to listen to his voice mail, it seems to be a small cost (under \$2 per day). However, you must now multiply that number by all resources in your organization, say 10,000 users. That quickly turns into \$20,000 dollars per day, or \$100,000 per week.

When evaluating UC ROI, organizations should also consider time that is wasted for travel. Many organizations have resources that must travel to and from the office, as well as to and from clients. If you were to use similar logic as that used previously with a resource that can make the company \$300 per hour, removing that travel time and replacing it with billable work will save the company money. Many organizations will charge customers travel time for such resources; however, if a business no longer has to charge for travel because moneymaking resources can work remotely with UC, that organization is now more attractive to do business with.

NOTE

Although I have referenced billable-type resources in my examples, in my experience organizations of all types typically associate a per-hour value with their workers; these same numbers can be used to predict productivity cost savings.

UC Presence makes it possible for users to spend less time on common tasks and allows users to increase productivity in many other areas. When users have the real-time availability for their peers, their communications are more efficient, less time is lost, and similar logic to that used previously can be applied to calculate soft cost savings.

Realizing ROI with Reduced Travel Costs

The preceding section mentions cost savings due to travel reduction. That section outlines the increased productivity and potential “billability” of users based on less travel. This next section explains how organizations can reduce their overall travel costs.

Many organizations with a global footprint spend millions of dollars per year on travel between their sites. Today, even completely U.S.-based organizations require their employees to travel between sites. In recent years, Telepresence video was introduced as a way to reduce those travel costs. However, the complexity and cost of Telepresence systems has resulted in many organizations not realizing travel cost savings. A new and more reliable trend for travel cost reduction is to deploy a common UC solution across the organization that targets each and every end user.

Not all in-person meetings can be replaced with a conference, even if HD video is involved, but the industry is realizing that the majority of these trips can be removed and replaced with a highly intuitive collaboration experience. When an organization empowers its end users with a tool that allows them to seamlessly collaborate with peers across the world, money is saved.

The process to calculate this savings varies across the different types of organizations. This is another cost that is hard to place a solid number on before the product is deployed and used for some time. However, as with the productivity increase, you can take estimates for common situations. Consider the travel expenses and the lost time associated with traveling for meetings, and estimate the savings when moved to a UC conference.

There are also many tools in the industry that allow organizations to monitor the usage of their UC system, and use that data to calculate estimated cost savings. Look for these tools to help you back up your original cost-saving estimates and show true contribution to the UC ROI.

Realizing ROI with Reduced Real Estate Costs

Another interesting trend in the industry is a cost reduction related to real estate. Many organizations are exploring the idea of a “modern work space.” These modern work spaces typically contain less formal work spaces and more of a shared environment. The idea is that fewer users will actually be in the office, and therefore you can reduce the size of your offices, or remove some offices altogether. It is absolutely critical to have a true UC solution deployed to allow for this workspace transformation. Many organizations can save millions by moving to modern work spaces and reducing the real estate footprint.

This approach is not typically started with UC, but is driven by UC. In my experience, organizations that are exploring the benefits of this solution have already been working on this for quite some time. The amount of money that can be saved varies greatly across regions and business verticals.

Why Lync 2013 for Unified Communications

Now that we know what makes up a UC solution, and how UC can drive cost savings in an organization, let’s talk about why you should choose Lync Server 2013 for a UC solution.

As you will read in this book, Lync Server 2013 enhances what was already a very powerful UC system in Lync Server 2010. With Lync 2013, organizations are given more deployment options, greater resiliency options, and enhanced voice, video, and web conferencing features. Lync 2013 introduces advanced UC features into a single platform, with a single piece of client software. This section outlines why Lync 2013 is the superior UC solution in the market.

Software-Based UC

The key to a true UC solution is software. Without intuitive, user-friendly software, a UC solution cannot be successfully deployed. When compared on paper, the UC solutions from companies such as Microsoft, Cisco, Avaya, and ShorTel have the same features. These solutions can perform the functionality that any organization needs for UC. The key difference between Microsoft and the competition is the software. If you look at the list of companies, which one is a software company and not a hardware company? Microsoft.

Hardware vendors are getting better at creating software, either through acquisition or through experience with development. However, these companies are playing catch-up with Microsoft. Since Microsoft Lync 2010, all UC functionality has been available in a single client UI. Even in the latest versions of Cisco's UC suite, functionality is spread across multiple applications. The complexity that this introduces to end users is a major deterrent to the successful deployment of UC.

For organizations to realize the full benefits of UC, there must be a high rate of adoption. Users are less likely to take advantage of a UC solution that is not user-friendly. Microsoft is the only company that can provide a truly unified communications experience and allow organizations to reach their full potential with UC.

Cisco is typically the biggest competitor of Microsoft Lync. The basic scenario that follows outlines the differences between Microsoft and other vendors' UC solutions, including Cisco. These differences can have a major impact on user productivity and overall user satisfaction. User satisfaction is critical to the success of UC deployments.

When you are using Microsoft Lync 2013, not only are all modalities (IM, Audio, Video, and Sharing) provided in a single application, but the conferencing experience for these modalities is in the same application. When you want to hold a conference, that conference is held in Lync. If you are in a peer-to-peer session and want to escalate to a conference, it will simply turn that call into a conference in Lync. Cisco, on the other hand, leverages two applications: Jabber for peer-to-peer functionality and WebEx for conferencing. This leads to two separate applications for end users to learn, and a disjointed experience when escalating between peer-to-peer and conference. When you want to turn a peer-to-peer session into a conference, a web page to the WebEx site must be opened. This is where the problem starts for end-user productivity.

In addition to the more intuitive user experience provided in Lync, the integration with Microsoft Office applications cannot be overlooked. Microsoft Office is the primary business application for many end users across the world. Having communication capabilities integrated into your business applications is a major factor for driving usage and enhancing productivity. Microsoft Lync integrates UC capabilities into Office applications, reducing the amount of effort required for end users to collaborate with their peers. Although other vendors can leverage APIs to show Presence and allow click-to-call capabilities from Outlook, they cannot integrate at a deeper level. Examples of this include the following:

- ▶ **SharePoint Skill Search**—The capability to search the SharePoint directory and view results based on skills and other user information, without leaving the Lync client.
- ▶ **Exchange Distribution List Expansion**—The capability to add Exchange Server distribution lists directly to the Lync client contact list as contact groups. These lists will query information directly from Exchange Server, so users do not have to worry about adding new contacts manually.
- ▶ **Exchange Integration**—The Lync client has the capability to display Out of Office messages that are configured by the user in the Outlook client, and stored in Exchange Server.

- ▶ **Conversation History Search in Outlook**—The Lync client has the capability to store conversation history in the user's Exchange mailbox. Users can also search this conversation history in the Lync client, and in Outlook or Outlook Web App with their mail.

The preceding examples show certain areas that competitors simply do not provide for integration. Office, SharePoint, and Exchange are deployed in nearly every organization, and that is why these features are important.

In addition to integrating with other Microsoft applications, Lync also allows for easy integration with other line-of-business applications. One major benefit to Lync is the development platform it is built on. The software API for the client and server are available to developers, and are currently heavily utilized for many custom solutions. The simplest form of this development is integrating functionality, such as Presence and click to call, to line-of-business applications. Many organizations have also taken advantage of the Lync Server APIs to build custom solutions that enhance business processes. This concept is known as Communications Enabled Business Processes (CEBP) and this is a major differentiator in the market. This ecosystem, which is open and partner-driven, has led many organizations to be more successful with UC than they ever could have imagined.

In summary, a UC deployment relies heavily on the software experience that is provided to users. Although UC includes telephony and IP phones are important to telephony, the true value of UC is seen through the software application providing anywhere access and collaboration. Microsoft Lync is a superior choice for UC because it is a software-based UC platform.

Lower Total Cost of Ownership (TCO)

The term TCO refers to total cost of ownership. Various solutions have components that are cheaper than others, but what is really important is TCO. Just because one software license is cheaper doesn't mean that the overall cost to purchase and run a solution is cheaper. For some time, Microsoft has claimed a lower TCO than the competition. At VoiceCon in 2010, Microsoft was able to provide some truth to this statement. VoiceCon held an RFP competition titled "Who Delivers the Goods?" This competition requested that all major UC vendors provide an RFP response. In the end, the responses were used to provide a TCO comparison between vendors. The results showed Microsoft being nearly 50% cheaper than all other vendors in the competition. Additionally, the Microsoft solution included the full UC stack, whereas other vendors' solutions were IP Telephony only.

As was mentioned before, TCO is the entire picture. In some of these cases and in my experience, Microsoft and the competition can be similar in costs when it comes to licensing. Microsoft licensing can even be more expensive depending on discount levels to the customer. However, Microsoft offers key advantages that contribute to a lower TCO:

- ▶ **Hardware Flexibility**—Lync allows organizations to choose the server platform as well as the endpoints to be used. This allows organizations to deploy whatever server hardware is right for them, at the right price. This includes the capability to virtualize across the different platforms available to organizations. Traditional "UC"

systems will leverage IP phones as the primary endpoint. Not only does Microsoft offer an IP phone solution that is cheaper than the competition, but there are high-quality headsets available at low prices. Many Lync Optimized wired headsets are under \$50, and that does not include a bulk purchase discount.

- ▶ **Leveraging Microsoft Investments**—In the RFP competition and in most organizations, Active Directory and Exchange Server are deployed. Lync leverages Exchange for Unified Messaging features, which helps drive a lower cost. In addition to Exchange Server, many organizations are under enterprise agreements with Microsoft that include Lync core functionality (IM/Presence, Peer-to-Peer A/V and Sharing, and Conferencing Join). Because the Lync client also comes with Microsoft Office, organizations that have deployed Office benefit from their investment. This results in clients only needing to purchase conferencing and enterprise voice client access licenses, which is much cheaper than the total licensing cost from the competition.
- ▶ **Reduced Complexity**—Lync is based on other Microsoft technologies that IT Professionals are used to. This often results in a smaller learning curve for existing staff to ramp up on the solution. Additionally, the deployment and management of Lync is greatly simplified compared to other UC solutions in the industry. With this reduced complexity comes reduced maintenance and support costs when compared to other UC solutions.
- ▶ **Conferencing Cost Savings**—In my experience, no other UC solution in the industry is able to provide as great a level of cost savings on audio conferencing as Lync. When directly compared, the architecture and, sometimes, the additional licensing required will make Microsoft up to 50% cheaper than the competition in this area.
- ▶ **Rapid ROI**—Based on what was described earlier in this section, the Microsoft solution delivers a much more rapid ROI. The fact that Lync is a single system as opposed to multiple systems, providing all functionality to users, allows organizations to realize ROI much faster than when deploying a competing UC solution.

The factors just described contribute to Lync having a lower TCO when compared to the competition.

NOTE

You can read more information on the VoiceCon 2010 RFP Competition at <http://blogs.technet.com/b/uc/archive/2010/03/29/update-from-voicecon-orlando-2010.aspx>.

Deployment Flexibility

I once had a customer make the following statement: “Give us speed where we need it.” This proves to be a common theme among many organizations evaluating Lync and other UC solutions. Deployment flexibility is a key area in which Microsoft provides greater value than the competition through Lync:

- ▶ **Integration with Existing Systems**—Microsoft believes in integrating with existing systems and augmenting functionality, not ripping and replacing. This allows organizations to utilize their existing investments to their full potential, and then replace when necessary.
- ▶ **Hybrid Solutions**—Microsoft also allows organizations to leverage cloud solutions for hybrid deployments. Organizations can choose which deployment suits their needs best. For most conferencing scenarios, the cloud may be all that is needed for many organizations. When introducing true enterprise telephony, many organizations will look to move on-premises. With Lync 2013, the deployment and migration between on-premises and cloud is seamless for end users.
- ▶ **“Speed Where You Need It”**—Following up on the two previous statements, Microsoft allows organizations to choose at which speed they deploy their solution. If an organization has a desire to rapidly deploy the solution, it can easily be done. However, Microsoft does not force organizations to rip and replace, or upgrade scenarios. Many organizations will treat the core capabilities of UC as a more immediate need (IM, Peer-to-Peer A/V, Conferencing), and then choose opportunistic deployments for enterprise telephony. With the features and flexibility of the on-premises and Microsoft cloud solutions, organizations can truly move at whatever speed they need to, and can be successful with their UC deployment.

Remote Access and Federation

To provide the best UC ROI, organizations must be able to provide UC solutions to end users anywhere, on any connection, at any time. Some organizations have adopted the “living on the net” motto, meaning that their users must be able to do their job seamlessly from any Internet connection. Microsoft Lync is without a doubt the superior solution for remote access in the UC industry. Microsoft Lync was built with the Internet in mind. Not only does it provide users with all functionality over the Internet, securely, without a VPN, but the media codecs used by Lync Server 2013 were built for use on the Internet.

Many organizations can mistakenly discount the importance of choosing a UC solution that was developed for the Internet. Traditional IP telephony relied only on the LAN/WAN networks that were controlled by the organization. However, UC cannot be restricted to the same network conditions as traditional IP telephony. For UC to be successful in an organization, it must provide access to all functionality, from any connection, on any device. This is how organizations will see increased usage of the solution and, ultimately, rapid ROI.

Following on the remote access story, UC federation is a trend in UC technology. Microsoft Lync offers organizations the capability to “federate” and communicate seamlessly with other organizations that are running other versions of Microsoft LCS, OCS, or Lync, and public networks such as MSN, AOL, and Skype. Although competitors can provide IM and Presence federation to other organizations, no other solution allows for full audio, video, and conferencing federation like Microsoft Lync. The capability to

seamlessly collaborate with business partners, customers, and now with Skype makes many organizations treat federation as a critical requirement. I have seen customers choose Microsoft Lync over the competition based on the federation capabilities alone.

CAUTION

When deciding between UC products, organizations should dig deeper than the “check box” for functionality. Federation is a good example: Cisco allows XMPP federation to other XMPP systems, with just IM and Presence available. An XMPP gateway is required on both ends to provide this federation. In Lync, XMPP and SIP federation is native to the Lync Edge Server, allowing organizations to federate with enhanced functionality to any other customer with an Edge Server deployed.

With the introduction of Skype federation in Lync 2013, these capabilities can now be expanded to the millions of current Skype users around the world. This includes both businesses and consumers. The flexibility this provides organizations for establishing communications with partners and customers is a feature that many users cannot live without. Some critics will discount the importance of UC federation over Internet connections. We are definitely not at the point where federation is going to replace the PSTN; however, many people do believe that this is the path the industry is going down. As of the writing of this book, a private, community-driven project called the “Lync Federation Directory” has verified that more than 11,000 organizations are using LCS, OCS, or Lync federation to communicate either openly or privately with other business partners. I am not alone in believing that the future is moving toward an Internet-centric communications platform.

Summary

This chapter covered in detail an overview of all UC functionality, and discussed why organizations would choose to deploy Unified Communications.

IM and Presence provides organizations with increased user productivity, and is the core to providing more efficient communications across organizations.

Web, audio, and video conferencing allows organizations to increase productivity, reduce costs, and provide users with a more immersive collaboration experience, no matter where they are in the world.

Enterprise telephony allows organizations to break the molds of traditional, distributed telephony systems. Organizations can realize major cost savings by centralizing enterprise telephony.

Unified Messaging allows organizations to enhance the traditional messaging capabilities that users are stuck with. By introducing UM, organizations can reduce costs and increase user productivity.

Organizations that choose to invest in Unified Communications are able to achieve return on investment in five key areas:

Audio Conferencing—Many organizations are paying millions in audio conferencing fees per year. UC allows organizations to change their Audio Conferencing model and see significant cost savings.

Centralized Telephony—Organizations are able to reduce their telephony hardware footprint, reduce their support costs, and introduce the opportunity to deploy centralized SIP Trunking.

Productivity—UC introduces productivity increases that can be translated to real dollar amounts.

Travel Costs—UC functionality and UC conferencing allow organizations to reduce travel costs and become a more attractive business partner.

Real Estate—UC allows organizations to explore reducing real estate footprint through the use of modern workspaces.

Last, Microsoft Lync Server 2013 is considered by many to be the preferred UC solution for organizations large and small.

Software-Based UC—Microsoft is a software company that develops software targeted at end-user experience. End-user experience is absolutely critical for UC, and requires a truly software-based UC approach, which Microsoft Lync follows.

Lower TCO—Microsoft has proven to have a lower total cost of ownership than the major competitors in the industry.

Deployment Flexibility—Not only does Microsoft Lync integrate with an existing solution by adding value instead of replacing the system, but the combination of cloud and on-premises services allows organizations to choose at which pace they want to deploy UC.

Remote Access and Federation—The capability to communicate from anywhere, on any device, to nearly anyone in the world is thought by many to be one of the most important features of UC. Microsoft is the leading UC provider when it comes to remote access and federation.

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