Nextiva Special Edition

Cloud Phone Systems

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Learn:

- **What cloud phone systems are and how they can benefit your company**
- **About the many advantages a cloud phone system offers**
- **Features that can help both the small business and a call center**

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Andrew Moore

Cloud Phone Systems

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Nextiva Special Edition

by Andrew Moore

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Cloud Phone Systems For Dummies®, Nextiva Special Edition

Publisher's Acknowledgments

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Introduction

Cloud-based phone systems have revolutionized the way people and businesses communicate. A business's telephone system has transformed from a room full of switches and other types of hardware and wires to a service that is purchased and operates on computers located in some far-off data center.

Cloud phone systems (also referred to as cloud phone services) are the logical progression of the Voice over Internet Protocol (VoIP) technology that has drastically changed what is thought of as a telephone call. The same network you use to transmit movies and videos, social networking data, and email can also be used to transmit telephone calls.

About This Book

This book explains what the cloud is, how phone services are hosted on the cloud, and which features are important to small businesses, virtual workers, medium to large enterprises, and call centers. I explain how cloud phone services can enhance your business and which features you may require to meet your particular needs.

You don't have to read this book from cover-to-cover or even in order. If you need no introduction to the cloud, then you can feel free to dive right into the meat of the book that discusses features of cloud phone systems.

How This Book Is Organized

Each part of this book focuses on different aspects of cloud phone services and how they're used in business, as described in the following sections.

Chapter 1: Introducing Cloud Phone Services

This chapter introduces you to the basics of cloud phone systems and how they're used in business.

I discuss the cloud technology and VoIP technology that make cloud phone systems possible. You will also get a brief introduction to how cloud phone services can meet business needs.

Chapter 2: Examining the Advantages of Cloud Phone Services

This chapter discusses the advantages of cloud phone services over on-premise software phone systems that are hosted on a business's network. In particular, Chapter 2 addresses the scalability, reliability, and vast cost savings that cloud phone systems provide.

Chapter 3: Examining Cloud Phone Services for Today's Business Requirements

This chapter examines the features of cloud phone services that are essential to any type of business from a small business, a business with virtual workers, all the way up to large enterprises.

In this chapter you get a description of the various features of cloud phone services and how a business can use them to meet its needs.

Chapter 4: Examining Cloud Phone Services for the Call Center

This chapter discusses the features of cloud phone services that are available for the call center business. Call centers have very specific requirements such as quality control and customer service that are satisfied by cloud phone services.

Chapter 5: Top Ten Reasons to Use Cloud Phone Services

This chapter lists the top ten benefits of cloud phone services and why you should choose a cloud phone service for your business.

Icons Used in This Book

Throughout this book, you'll find a couple helpful little icons in the margins that alert you to interesting tidbits of information.

Tie a string around your finger. This information is important and bears remembering.

This signifies information that's particularly helpful to know.

Chapter 1

Introducing Cloud Phone Services

*P*urchasing a cloud phone system can affect your business for years to come. Careful evaluation of your requirements and vendors is always required. Prior to the widespread adoption of cloud technology, you were required to maintain a staff of IT personnel to install and administer the phone system software as well as maintain the computer networks on which the software runs. Over time, the telephone software becomes outdated as the provider adds new features to the product. In the past, upgrading to new versions of the software usually required another software purchase and installation and possible migration and administrative problems moving from one version to the next.

But today, the cloud has revolutionized telephony software. It's no longer simply a tool to be purchased, installed, and maintained until it no longer meets your needs and you must upgrade to a newer version. Instead, software is a service to which you can subscribe to meet a business needs. Software can now quickly be changed as the business changes.

The cloud has freed phone services from the constraints of space, hardware, and software limitations as well as being tied to a particular hardware and software vendor allowing businesses to sign up and immediately get down to business with their new phone system.

How Do Cloud Phone Services Work?

With cloud phones services, you eliminate the hassle and expense of operating your own telephone system software; and instead, someone else manages all the computers and networks on which this software runs. You still get to use the great features of your telephony software, but someone else maintains the infrastructure.

REMEMBER

Consumers of cloud phone services access their services with a web browser, thin client, or mobile device application that typically use the Hypertext Transport Protocol (HTTP); the same protocol that is used to transmit web browser data to and from a website. Most computer users are familiar with using web browsers so it is easy to write applications for accessing a cloud phone system in an environment on which users are already comfortable. Another advantage of the HTTP protocol is that you don't need to configure firewalls or set up a Virtual Private Network (VPN) to access your phone system because it has the same security as your secure web traffic. See Figure 1-1 for a visual.
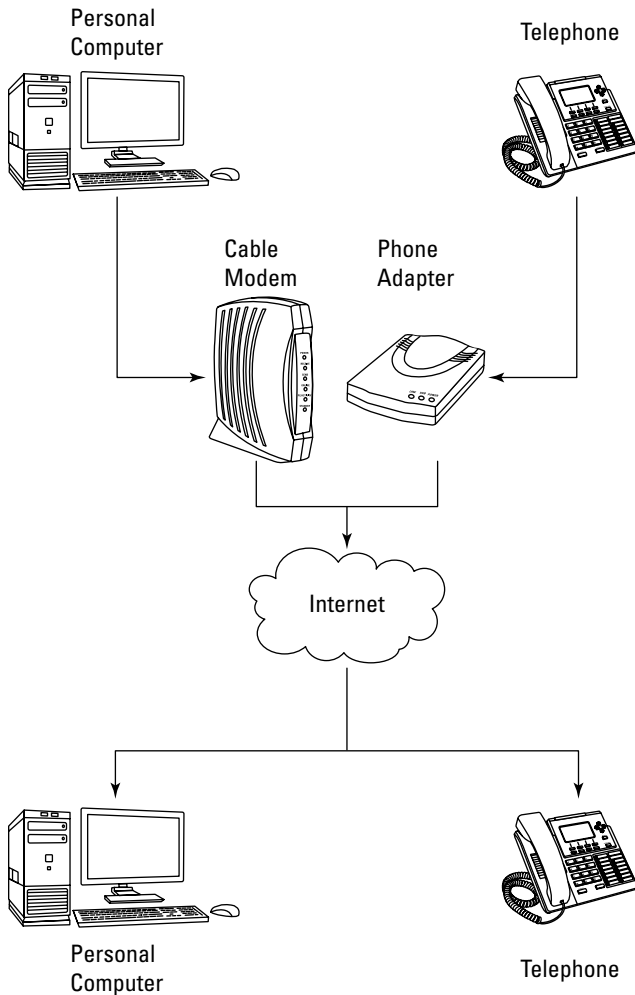
Figure 1-1: How cloud phone services look.

Understanding VoIP

At the core of cloud phone services is VoIP (which stands for Voice over Internet Protocol) technology. This technology allows voice and telephone switch data to travel across the same IP networks that transmit basic Internet traffic such as email, chats, videos, social networking data, and so much more

(see Figure 1-2). Now, phone calls can be placed using an IP phone or a *soft* phone software application and the audio and phone signaling data will transmit over an existing network. No dedicated hardware or infrastructure are required to use these phone services.
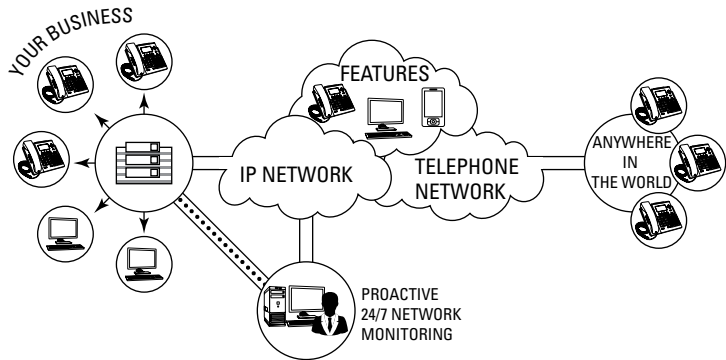
Figure 1-2: What VoIP looks like.

The big win for VoIP technology is that it eliminates the need for businesses to acquire infrastructure for storing vast amounts of telephony hardware and wiring, which require substantial investment and maintenance. With VoIP, a business need only acquire computers and software, and connect them to its existing IP network and it's off and running.

REMEMBER

Software applications use the Session Initiation Protocol (SIP) to transmit voice and video calls over IP networks. SIP is used for creating, modifying, and terminating two-party or multi-party sessions that can contain one or more media steams.

What is the cloud, anyway?

The *cloud* is the latest advance in computer technology where software is no longer just hosted on a single computer, but is hosted in a large array of computers located in a single or many data centers around the world. Hosting software in a large array of computers allows for software to scale larger without added investment in computer hardware. It also provides redundancy — in case of failure of one computer, another computer can pick up the work without interruption.

The cloud has also transformed the concept of computer software from a product to a service. Traditionally, businesses bought the software packages they needed and hosted those software packages on their own computers and networks. If a company wanted upgrades to more-recent versions it had to purchase and install them on its own computers while ensuring that there were no interruptions to business at the same time upgrades were being performed.

REMEMBER

With the cloud, software is now sold as a service where costs vary by the number of users and which features are required. Because the software is hosted in distant data centers, there is no hardware to purchase and maintain and software to download and install. If your business grows, you can simply purchase more licenses from the provider and get back to business without worrying about more hardware and software investments.

Cloud computing is made possible because of heavy investments in bandwidth capacity made in the 1990s and early 2000s. By that point in time, many large enterprises had data centers that were utilizing a very small percentage of their bandwidth and computing capacity. Some companies began to use their excess bandwidth and computing capacity to host other companies' software applications — and charging fees for bandwidth use and CPU time. After the advent of the cloud, companies began hosting on the cloud at great cost savings.

Uses of Cloud Phone Services

This section dives into some practical uses of cloud phone services and some of the features available to different types of users. In Chapters 3 and 4, I take a more in-depth look at the features of cloud phone services.

REMEMBER

Because cloud phone systems are hosted in remote data centers, any size business — from a one-person start-up to a large enterprise with thousands of employees around the world — can use a cloud phone service.

Working with small businesses

In the past, a small start-up business needed to contact the phone company and set up a new line for its business. If such a business wanted fax capability, it would purchase a second dedicated line. If that start-up business grew to add new employees and eventually moved into new office space, it again contacted the phone company to transfer to the new space and get new lines for the added users and fax machines.

But using a cloud phone service, this small start-up can simply sign up and pay a small monthly fee. The phone service provides the company with a phone number or numbers that can send and receive calls from a software application on the customer's computer or mobile device, or forward calls to the customer's mobile number so employees can be reached anywhere.

If a start-up wants to establish a local presence in different markets like Seattle, San Francisco, and Dallas, but is located in Indianapolis, the phone service provider can simply provide that business with local phone numbers in those markets and the customer can configure them to forward incoming calls to its location. With little investment, a business can be up and running with a local presence in new markets.

Working with faxes

Because cloud phone systems are implemented entirely in software, you don't need to purchase extra hardware and phone lines if you want faxing capabilities. The phone service can simply convert incoming faxes to image files attached to an email delivered to your inbox.

Working with virtual workers

The Internet has ushered in the age of the *virtual* worker. Unlike traditional workers, virtual workers aren't part of a business, but are hired to work on projects or parts of projects. They work remotely from their homes or from offices scattered around the world. How do you communicate with these workers who are dispersed across time zones? Using cloud phone systems, you can easily add these virtual

workers to your account and they can make calls using their computers and mobile phones. Many cloud phone services have presence settings so workers can communicate their current status and all other workers and managers can see who is available at any given time. Features such as chat, audio and video conferencing, and email make communicating and managing a virtual workforce very smooth. As virtual workers enter and leave projects, you can simply administer their account access to your phone service though your browser or mobile device

Working with PBX systems

Many medium and large businesses already have existing phone systems that have been in place for many years.

Before VoIP technology and software-based phone systems arrived on the scene, most businesses used traditional Private Branch Exchange (PBX) systems. PBX systems are automated replacements for old-time operators and patch panels where live operators would switch calls manually to the desired line. A PBX system is a private telephone switch that is installed in a business location to facilitate communication with the organization and allow access to external lines. Incoming calls are routed through private telephone lines inside the business. Outgoing calls are routed through the private network — calls going outside the organization usually required a numeric code to access an outside line. You may still need to dial 9 to access an outside line when dialing from an office phone.

Many medium and large enterprises already have significant investments in PBX systems and are reluctant to eliminate systems that have worked well for many years to switch entirely to a software-based phone service. The good news is that many cloud phone service providers have a feature called *SIP trunks* that allows you to connect your PBX system to a VoIP network. Calls can now skip the public switched telephone network (PTSN) and be routed directly through the Internet, saving businesses the cost of toll calls and providing them call quality that meets or exceeds that of the traditional PTSN. Customers can also sign up for a hosted plan with a provider to take advantage of additional features such as call forwarding, call parking, busy light indicator, automated receptionist for dialing by name and/or extension, as well as

a browser and mobile portal for administration. You will discover more features in Chapter 3.

Call centers

VoIP and cloud phone services have been a big success with the call center industry. *Call centers* are businesses that provide customer support for products and services. Many businesses operate their own call centers, but the growing trend is outsourced call centers where a vendor may provide call center support for many different businesses. VoIP has made it possible for businesses to locate call centers anywhere in the world without the added cost of long-distance and international tolls on calls.

REMEMBER

What's really cool is that call centers can provide local numbers to callers, say in the United States, that actually route to a call center in far-away Malaysia. Cloud phone services typically offer many features that are essential to a successful call center such as Automated Call Distribution (ACD), call recording and monitoring, agent scoring and performance appraisal, priority queuing of calls, automated attendants (also known as interactive voice response or IVR), and much more. In Chapter 4, I discuss many of the features of cloud phone services for call centers.

Chapter 2

Examining the Advantages of Cloud Phone Services

*C*loud computing is a paradigm shift from software as a product to software as a service (SaaS). With the SaaS model, software is no longer purchased and installed by the consumer, it is a service that another entity provides and for which you pay a recurring fee on a monthly or yearly basis. For a business, the SaaS model offers much less risk. A company's costs are fixed, and there is no need to staff an IT department to ensure that the phone system is up and running as well as secure from possible threats of intrusion and compromise of sensitive company data.

With cloud phone services, you buy a service, not a product. Someone else manages all the details of how the system works while you simply reap the benefits. This chapter discusses some of those benefits.

Automatic Updates and Added Features

The big win for the SaaS model is that software can be updated and new features made available without any intervention by the consumer. Software developers are continuously working on fixing bugs. These fixes eventually get released in Service Packs (SPs). If you have legacy phone systems you have to download the updates and restart your system; usually incurring some interruption. And you probably schedule these updates in the middle of the night so that some IT staff members have to stay up late to update the software and ensure that your phone system is back up and running smoothly.

REMEMBER

Using cloud phone services, you don't have any maintenance to worry about. Now, new features and bug fixes are added to the software hosted on the provider's data center and are rolled out to customers as they're released — with no customer intervention required. Now you can spend your time and money doing what you do best instead of employing technical personnel to handle maintenance and upgrades to your telephone system.

Reliability with High Uptime Guarantees

When you're running a business, reliable and efficient communications are necessary. If you have communications downtime you lose time and money as well as potentially damaging the reputation of your business. If you choose an on-premise telephone system, you have to make sure that your system is up and running flawlessly at all times. If you run into problems, you have to find the technical talent to diagnose and fix these problems. During this time your business is probably missing important customer contacts — and missing out on opportunities. Imagine if you didn't have to worry about these details and instead, were able to concentrate on keeping your customers and employees happy while your business runs efficiently.

In the cloud, software can be hosted on an array of machines spread across data centers throughout the world. If one computer experiences hardware problems, there are plenty of others out there to pick up the work without the customer noticing a thing. Entire data centers could experience outages while another data center picks up the slack, and the customer's phone system remains up and running.

REMEMBER

Cloud phone services typically have an uptime track record on the order of 99.999 percent. Very few on-premise installations can meet these types of uptime guarantees so cloud phone services offer peace of mind: You know that your telephone services will be available when you need them.

Scalability (Your Phone System Grows with Your Business)

Many businesses start out small and as they become more successful they grow to employ dozens, hundreds, or even thousands of people. A small company that starts out with five employees probably just needs a simple phone system with voicemail, call forwarding, fax-to-email, audio conferencing, and so on.

Before cloud phone services became available a small business had few choices when purchasing a software phone system, because most were expensive and targeted at larger businesses. With cloud phone services, you buy a service so you need only pay for the users you have and the features you want. All customers of the service, whether large or small, use the same resources provided by the cloud phone service provider. A very small business can now have high-quality phone services comparable to larger businesses without the high costs of acquiring computer and networking infrastructure. With cloud phone services, as your company grows you simply pay a larger fee for more users and maybe some more features. It doesn't get any easier than that.

Integration with Other Software Packages

Most businesses use an array of software packages, including Customer Relationship Management (CRM) software. CRM software packages allow businesses to manage relationships with current and potential customers. Maintaining a healthy customer relationship system gives your business insight into your customers, their needs, and the overall experience with that customer. A healthy customer relationship is vital to your business success. (Two popular CRM packages are Salesforce and SAP.)

Modern software packages tend to integrate well with other software packages. A cloud phone system is really just a large software package that implements your business communications. It can be integrated easily with any other software package that exposes an Application Programming Interface (API). And integrating well with CRM is a good wish list item for a cloud phone system.

Why would you want your phone system to integrate with a CRM application? The following sections go over some of the reasons.

Metadata

Because your phone system is really just software that moves voice and data traffic around the network, it also contains valuable metadata. This metadata can tell you the time the call took place, the sending party, the receiving party, as well as the Automatic Number Identification (ANI), which lists the number of the calling party. It also identifies the Dialed Number Identification Service (DNIS) number, which gives the number of the called party.

With all of this metadata, you can glean some very useful information about your business's interaction with customers, vendors, and others. The phone system itself contains all this information, but isn't really equipped to do anything useful with it. Here's where integrations with CRM applications can be useful. For instance, a sales person might want to keep a

database of all the interactions with existing and potential clients. That salesperson may have a database in a CRM application that lists contact numbers and other useful information about each contact.

You want your salespeople doing what they do best: selling products and services. If your phone system can integrate with the CRM application, it can automatically take the metadata from each interaction and update that contact information with that information and automatically keep it up to data. Now you have a complete history of all interactions with a client so you can automatically track when it's time to follow up about a future order. Or it can tell you when to ping a prospective client.

Easily adding features

Unlike traditional hardware phone systems, software systems can always be expanded with new features requiring no new investment in computer hardware. As time goes on, software developers are adding better features to phone system software to make it more intelligent and integrate with more software packages, adding immense value for the customer. When it comes to integrating your phone system with other software applications, your options are nearly limitless!

Chapter 3

Examining Cloud Phone Systems for Today's Business Requirements

Cloud phone services have brought business communications to the 21st century. Feature-rich communications aren't only for big organizations with the resources to build a large computer infrastructure and staff an IT department. With the cloud, smaller businesses can get the same high-quality phone service without a large communications budget.

In this chapter, I show you some of the features that a cloud phone system can offer businesses from the small start-up to the large enterprise with thousands of employees and locations scattered around the world.

SIP Trunking

Many businesses have made substantial investments in PBX equipment for their phone systems and aren't willing to scrap that investment for an entirely software-based phone system. Remember, VoIP technology transmits telephone calls across IP networks including the Internet so there aren't the tolls that come with the traditional PTSN networks.

Session Initiation Protocol (SIP) is the standard protocol used for transmitting telephone calls across IP networks (for more on the topic, flip back to Chapter 1). Much like the Hypertext Transport Protocol (HTTP) sends and receives data from websites, SIP takes care of the signaling and transmission of phone calls between two computers, a computer and an IP phone, or two IP phones.

REMEMBER

The good news is that cloud phone services offer SIP trunking, which ties your existing PBX system into your IP network. This allows your PBX to use the SIP protocol to send telephone calls over IP networks instead of PTSN — giving you unlimited local and long distance calling for a fixed price.

With SIP trunking, your old phone system can get a modern make-over and offer you features such as rich high-definition (HD) voice quality, and the scalability and reliability that come with cloud phone services. SIP trunking with a cloud phone service is a simple and inexpensive way for your company to improve its phone system quality while using the existing IP networks already in place for other parts of your business.

Phone Number Routing

Successful businesses are always seeking new markets to serve to expand and increase their profits. Often it is quite desirable to establish a local presence in those markets because it gives potential clients the feeling that yours is a local business to the area. This can make them more likely to do business with you. In the age of the virtual and short-term office space leasing solutions, establishing a local presence in another city has never been easier.

TIP

For instance, if you have a small company that has built up a successful clientele in Dallas but you see some rich opportunities to grasp in Austin, you may not be ready or willing to set up a branch office there. But you can establish a local presence in that city for a very low cost by setting up a local phone number for Austin that you can then use in your business marketing and advertising campaigns. You can get local phone numbers for a given city and then route calls made to those numbers to your existing phone system wherever you are. With minimal investment you can expand your

business into a new market without purchasing and installing new phone lines and acquiring any new office space!

If you'd like to allow your customers toll-free calling, you can also secure toll-free numbers for a very low cost.

Advanced Voicemail

Voicemail technology is one of the most useful and desired features of phone systems. Back in the old days, if a call came in and you weren't around or didn't have anyone to take the call, it was lost forever. The only hope you had was that the caller would call back and there would be someone available to take the call and convey the caller's message to you.

The arrival of voicemail technology freed everyone from the burden of constantly monitoring the phones. Voicemail technology allowed the caller to leave a recorded message and usually triggered an illuminated indicator on the phone alerting you when you had a message waiting for you.

Although voicemail technology is still pretty cool and very useful, one of its most annoying traits is that you generally need to access your voicemail in the order received. You often have to sift through unimportant calls to get to the client that is ready to sign a hefty contract with you and wants to finalize the deal. Here's where modern cloud phone services can help.

REMEMBER

Cloud phone services offer enhanced features that make your voicemail much easier to use. Gone are the days where you had to enter a special code on your phone to access your messages and more digits on your keypad to skip, save, and delete your messages. Now you can view your voicemail in the inbox of your favorite email program. You can see your voicemail at a glance with details about who called and the length of the message so you can seek out important messages quickly.

Conferences

I would argue that one of the most useful features of phone systems is the ability to have a single call with multiple parties for one big, happy meeting. Frequent collaboration is one of the hallmarks of successful businesses, so conference calls for things such as status meetings and project planning are essential to get your people moving in the same direction.

In the old days of hardware phone systems, one of the most confusing features was the process of adding new parties to the conference. To me it always seemed like some magic combination of the flash hook button and some cryptic code you had to conjure up to be able to put your call to the conference on hold, make another call to the new person to add, and then add this new call to the ongoing conference. Inevitably I would mess it up and end up disconnecting my call to the ongoing conference, ending up with frustration and wasted time.

Because cloud phone services offer desktop and mobile applications, you can create conferences with a few simple keystrokes or mouse moves. With your graphical interface, you can see all parties in the conference; when you want to add a new party you simply call that person and add that new call into the ongoing conference. Depending on the provider, many cloud phone services can be used to include 10 or 15 calls in a single conference, which suits the needs of most businesses.

If you want more than 15 callers in a conference, a conference bridge can allow callers to call in and enter a code to connect to the conference.

Multimedia Interaction

When most people think of phone systems they think of the traditional phone features such as calls, caller ID, conferences, voicemail, and so on. These are definitely features common to phone systems, but they don't accurately reflect how people communicate today.

Just the fax, ma'am

In the age of email and electronic file transfer, the fax has become less important than it once was, but can still be useful, especially for electronic copies of contracts. The fax works by initiating a call and then detecting a fax tone from the receiving end. If a fax tone is received, the caller then begins sending the electronic image of the fax to the recipient until transmission completes. The standalone fax machine has become a thing of the past. Phone system software now can turn every user's computer or mobile device into its own fax machine. The phone system software can automatically detect a fax tone from the caller and begin receiving and processing the image of the incoming document. The phone system can then generate an image file or a Portable Document File (PDF) document and place the incoming fax into the user's email inbox. If you want to send an outgoing fax, simply create an image file of your document by scanning it using an office scanner or by taking a picture of it with your mobile device. After you have an image file, you can upload it to your phone system software, and it can dial a fax number and electronically transmit the fax to the recipient.

In the past, interacting with a business was almost exclusively done through a phone call, but in this age of computers and the Internet, many people are more comfortable with email, chat, and text message than with a traditional phone call. Many people in their teens and twenties use their mobile phones almost exclusively for text and instant messages. Savvy businesses must meet this group where they are. With a cloud phone service, you can chat with other people in your office on their mobile phones or desktops.

Follow-Me and Call Forwarding

If you're away from your offices and don't have access to your office phone, but still want to receive incoming calls, you can use cloud phone services to have calls forwarded to different numbers. You can establish a list of phone numbers in your forwarding list so that when someone dials your office number and forwarding is enabled, the system will automatically try each one of the numbers in the list until the call is picked up by one of them. If there is no answer, the caller is directed to

voicemail. Typically when call forwarding is enabled, the caller will hear a prompt indicating that calls are being forwarded while the system attempts to locate the party.

Follow-Me is a useful feature for forwarding calls to your mobile phone if you're away. Even if you're traveling abroad, you can have the system forward calls from your office number to your remote location without the incurring the toll charges for a direct-dialed international call.

Call Parking

One not-so-common but useful feature of cloud phone services is the ability to *park* a call. This means that the call is put on hold and the call itself is placed on a special queue or extension that anyone can access from anywhere. In a sense, the call isn't really on anyone's line but is floating out there on a virtual queue or phone line waiting for someone to pick it up. Because this call really isn't on anyone's line, nobody's line is tied up while this call is waiting for someone to answer it.

For instance, call parking can be useful is in a car dealership where a caller calls and requests the parts department to make an inquiry about a new part for her car. In this case, the caller doesn't really care which person from the parts department picks up the call. The workers in the parts department are always floating around from the parts desk to the stock room so it's great if they can pick up the call from any available phone. If the receptionist takes a call for the parts department, she can park the call and then go on the intercom system and mention that there is a call for parts that is waiting for pickup by anyone who becomes available. During the time the call is parked, the caller likely hears hold music until someone in the parts department picks it up. In the meantime, the staff doesn't show up as busy so they can still get calls that are directed to them specifically.

Sharing Lines

There are two features that do similar things that involve sharing lines: busy lamp field (BLF) and shared line appearance (SLA). I discuss them in the following sections.

In the BLF setup, you will not see a missed call on your phone and you may not be concerned if you missed a particular call — you just need to make sure someone picks up the calls. In the SLA setup, getting calls to a particular person is important — you might be an administrative assistant responsible for your boss's line being answered and will be able to see missed calls.

Busy lamp field or line in use indicator

If you want to see when an incoming call is coming into someone else's line and maybe answer it, then BLF is the way to go.

Busy lamp field (BLF) gives you a display of which lines in your system are in use by callers. For example, at a glance, a receptionist can see if someone is available to take a call or not.

Another use for BLF is seeing who's doing what. Before calling a colleague, it is helpful to see if they're on the phone so you know instantly that they aren't available for your call. With a BLF or line-in-use indicator on your phone service, you can see at a glance if the colleagues you're calling are available.

Shared line appearances

If you need to be able to make outbound calls with someone else's direct line, then a shared line is the better solution. This feature is important to have for calls that must be answered. You can also easily check voicemail for that user, which you can't with BLF.

A common use for shared line appearance is an executive/administrative assistant situation where an administrative assistant can establish a shared line appearance for the executive's extension.

Calls arriving to the executive's extension ring both the executive's extension as well as the assistant's extension allowing the assistant to pick up the call on the executive's behalf. Assistants can use shared line appearances when the executives are away and possibly forward calls to that executive's forwarding number if the call is urgent.

TIP

Shared line appearances are also useful for users that want to share lines, for example, when working together on a project. These users can take calls for one another's extension in cases where one or the other might not be available at any given time.

Automated Attendant

An automated attendant (interactive voice response, or IVR) is a useful feature for businesses to help their customers reach them easily without the added cost of paying someone to answer phones during business hours. (For information about how an automated attendant works in a call center, turn to Chapter 4.)

As in the past, business phone systems are assigned a main phone number, then individual workers are assigned extensions (usually four digits) that allow for calls to be routed directly to them. In the old days, a business had to have someone answer the phone and transfer the caller to the appropriate person. Not only is it expensive to pay someone just to answer phones, but it can be error-prone if the person answering the phone accidentally disconnects the caller. A repetitive task like answering the phone and directing a caller to the appropriate party is a perfect job for software.

REMEMBER

Most automated attendant software applications pick up the incoming call and play a welcome prompt and present a menu to the caller. This menu generally invites the caller to dial the extension of their party if they know it. Other menu options include the ability to search the company directory by name and play back the match(es) for that search. For example, if the caller wants to be directed to Al Smith the automated attendant might prompt the user to "enter the first three letters of the party's first or last name." The caller would enter 864 on the phone keypad, the first three letter in Smith. All matching names are played back to the caller and the caller can directly connect to Al Smith.

An automated attendant can also provide useful menu options to callers such as playing the office hours, company office location, or any other messages that the company wants to convey to callers.

Line Hunting

You may want to create numbers or extensions for specific departments so that callers can dial each department directly. If you have a sales department, for instance, you can create a simple extension to give to callers so that they can contact your sales department easily by selecting an option on your automated attendant. In many cases you aren't concerned with which person answers the call, just so long as someone picks it up.

Many phone system software packages come with a feature called *line hunting*. Setting up these groups allows you to map many user extensions to a single group extension. If in your sales department you have users with extensions 123, 124, and 125, you can map these extensions to option 5 on your automated attendant or even to an extension such as 100. When a caller enters 5 to dial the sales department, extensions 123, 124, and 125 will all ring simultaneously until someone at one of those extensions takes the call. Line hunting features are useful for easily grouping workers into departments and broadcasting incoming calls to that department to all extensions of that department's staff.

Automatic Call Screening

Automatic call screening is a useful feature for busy people to automatically screen and separate their calls into the ones that require immediate action and the ones that are less important, or not important at all.

Before the days of voicemail, there was no way to know any details about an incoming call and whether it was important and needed to be taken immediately. For that reason, people always answered every incoming call for fear of missing that one important call. The arrival of voicemail brought with it the habit of call screening. When screening calls, people will let the call go to voicemail and then check their voicemail to listen to the message and determine whether an immediate response is required.

But searching through voicemail can be a cumbersome task. Wouldn't it be much easier to have the software do this task for you? With many phone systems, you can establish automatic call screening rules much like you do with email routing rules in

Microsoft Outlook. You can set up personal rules based on metadata from incoming calls. You can have your rules perform actions like automatically transferring the caller to voicemail, playing a special ring tone to identify the caller, or simply ending the call without sending to voicemail. A simple example might be to create a rule using the ANI of an incoming call to determine how to treat that call. If you get lots of automated calls originating from callers with toll-free area codes like 800 or 877 or with their caller information listed as "private," you can set up a rule to send all calls with this matching ANI information directly to a separate voicemail that you can listen to at a convenient time.

> **TIP** You can even have different profiles so that when you're in the office and available, calls will route differently then when you're busy or out of the office.

Desktop, Web, and Mobile Client Applications

Cloud phone services come with many amazing features, but in the end, you need an easy way for people to use all of them in their daily tasks. In early phone systems, the main user interface to the system was the phone's keypad. Phone users had to master a litany of arcane key combinations (likely devised by engineers) to perform various tasks like call transfers, call forwarding, sending to voicemail, creating conferences, and so on. Engineers may have a solid grasp on arcane key combinations, but the majority of phone system users don't, aside from the one or two power users in the office!

Fortunately, after two or more decades of experience in user interface design and human factors studies, software developers have come up with creative ways to present complex features in a user interface that are simple and even enjoyable to use.

> **REMEMBER** Software user interfaces have transitioned from the computer desktop to the web and mobile devices. Just like you can interact with Facebook on your desktop computer while you're at home, and your mobile device when you're out, the same is true for your cloud phone system. No longer are you shackled to the desk in your office if you need to do business.

Chapter 4

Examining Cloud Phone Services for the Call Center

In This Chapter

▶ How call centers can succeed with cloud phone services

▶ Features of cloud phone services for the call center

*I*n today's highly competitive business environment, outstanding customer service is paramount. Companies are hungry for any feedback from their customers so they can tailor their products to their customer's needs and quickly respond to and remedy customer complaints. This drive for the best customer service has made the call center a vital piece of a company's success. At the same time, call centers aren't typically a source of profits for companies, so controlling costs while maintaining a high caliber of customer service is the ultimate goal.

In this chapter, I discuss many of the features of cloud phone services that make them a compelling choice for call centers of various sizes and missions. Cloud phone services offer features such as automated attendant (also known as interactive voice response, or IVR), automated call distribution (ACD), agent performance monitoring and recording, advanced reporting capabilities, and integration with third-party applications wrapped in a single cost-effective package that scale upward as your company grows.

Automated Attendant

The entry point for most customer interactions with a call center is the automated attendant. Here's where interactions enter the system to be directed to an available agent in an efficient manner. You can also allow customers to serve themselves without ever being routed to a live agent. A well-designed automated attendant can make or break your customer service experience at the call center. See Figure 4-1 for a visual.
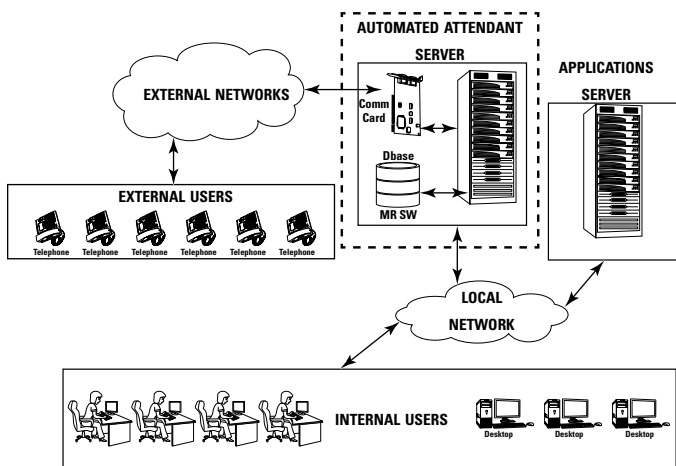
Figure 4-1: What an automated attendant can look like.

The goal of the automated attendant is to allow customers to navigate easily though the options until questions are answered or they're routed to an agent who already knows the reason for their call. Agents also have the customer's information at their disposal so they can begin assisting right away. An automated attendant is really a system containing many features such as automated call distribution (ACD), scheduling options, and many more.

A brief history of call centers

In the past, call centers typically were located near the company's headquarters or in a region near the company due to constraints that went along with traditional telephone systems. Companies had to pay for many toll-free numbers so the customers could call without incurring toll charges. Call centers had to be located in the same country as their customers because it was prohibitively expensive to use telephone lines to make calls overseas, and toll-free numbers typically didn't cross international boundaries.

The arrival of VoIP technology and cloud phone services have lifted the constraints of traditional telephone lines, national telephone company monopolies, and international borders. Because the Internet is international and mostly unregulated, binary information can move freely around the world without toll charges and tariffs. Companies now can locate their call centers in places that have a good broadband Internet infrastructure and lower labor costs. A trend over the last decade or so is to move call centers to places in the United States with lower labor costs, or even more likely, abroad to countries like India that have a large English-speaking population and even lower labor costs. With VoIP, those toll-free 1-800 numbers can now route anywhere in the world. Even more exciting is the fact that call centers can be created without a physical location by creating teams of customer service agents that are dispersed around the world that connect to the cloud phone service and handle customer interactions. Agents around the world can handle interactions 24/7 and companies can increase or decrease their call center staff without changing any physical infrastructure.

Automated Call Distribution (ACD)

The goal of automated routing is to quickly get customers to an available agent with the right set of skills to serve their needs. Entry to the ACD system is generally from the automated attendant after a customer has made some menu selections that lead to a transfer to the ACD. ACD systems are generally composed of groups of agents that are aligned by expertise in areas of a company's product line or types of services that that company performs. In addition, agents can be grouped by skills such as language skills — the ACD system

can route calls to an agent, for example, who has Spanish-speaking skills that other agents don't have. ACD agents generally share a queue where calls are placed when routed there. While a call is in an ACD queue, a caller likely hears hold music that may be interrupted by promotional messages or messages telling them their estimated wait time or position in the queue (for example, "There are five callers ahead of you").

REMEMBER

After the call is queued, the ACD system searches for an available agent with the right skills to handle that call. For example, the caller may be looking for technical support for his wireless router and needs a French-speaking agent. The ACD system will keep the call in queue until an available agent in the wireless router group that speaks French becomes available. Call centers can generally configure the ACD systems to determine the rules for an agent's availability. When an available agent is located, the call is transferred to the agent — who already knows the reason for the call.

Agent Virtualization

Agent virtualization allows ACD queues that span the globe — agents from anywhere can log in and take interactions at any time. No longer are call centers limited to the time zones in which their call centers are located. 24/7 customer service no longer means you have to run three shifts of agents with agents working the graveyard shift up at 3 a.m. and groggy.

TIP

For example, with agent virtualization, you could employ agents in both the United States and Australia where the time difference between the Eastern United States and Sydney, Australia, is roughly 15 hours depending on the time of year. In this case, the time difference and availability of English-speaking agents is a perfect setup. Because the phone system is hosted in the cloud, there is no difference in handling interactions from Australia or the United States. Therefore, agents from Australia could come online and take over handling customer interactions when it is evening in the United States and vice versa.

Agent virtualization also allows call centers to ramp up their staff during busy times of year by creating a larger pool of virtual workers who can log into the cloud phone service to meet customer demand. In the United States, for example,

December is typically the busiest shopping season of the year so during this time, retailers are handling considerably more customer interactions for order inquiries, product support, and other types of queries than during the rest of the year. It isn't efficient to set up and maintain a call center to staff agents to meet peak demand that exists for only a short time during the year. Instead, call centers can add "virtual" agents who are hired temporarily to log in and handle interactions from their homes during this busy time without any added costs in telephones, computer equipment, or other office infrastructure.

Priority Queuing

A priority queuing scheme allows some customers to get a higher priority in the ACD queue to get routed more quickly to an available agent and/or be routed to an agent that is shown to provider a higher level of customer service. Consider a company that provides a subscription video service that offers several tiers of subscriptions including a gold subscription — with one of the perks being shorter wait times when contacting customer service. When a gold subscriber enters the ACD queue, the system can recognize that caller's number as belonging to a gold subscriber so she's placed in a priority queue that ensures her calls get routed to available agents before those customers who are in a lower-tier subscription. Priority queuing allows companies to enhance customer service.

Weekday, Weekend, Holiday, and After-Hours Scheduling

Schedules are another vital feature for a call center because they allow you to automatically customize your call center experience for weekends, holidays, and after business hours.

Many call centers only operate during certain business hours and are closed or operate with reduced staff in the evenings or on holidays and weekends. But companies don't want callers to receive dead air or calls to go completely unacknowledged. Instead, you can set up operations so that the customer can still interact with the call center even when no agents are available.

You can set up a schedule that contains appropriate menu items and self-service options. You can even customize the greetings that it presents to callers such as "good morning" or "good afternoon" to give the customer a more personal feeling.

TIP Because no agents are available you simply don't present the customer with options to transfer calls to a live person. Instead, you create a schedule that greets the customer and presents them with the business hours of the customer support center as well as self-service options. If you have a well-defined automated attendant, customers can often serve themselves and come away with a good customer support experience even outside of business hours.

ANI/DNIS Routing

You can customize based on ANI/DNIS information from the incoming call. *ANI* stands for Automatic Number Identification that gives the caller's phone number, and *DNIS* (Dialed Number Identification Service) is the phone number that is dialed by the caller. A common example of DNIS routing is used by call centers that are outsourcers, which means they handle customer support operations for multiple companies. In these cases, the company will create a unique automated attendant experience for each of the companies for which they provide call center operations. The different companies likely provide their customers with a toll-free number for customer support. The outsourcer can use this number to map to the dedicated automated attendant experience for that single customer.

Whisper Messages

Whisper messages are automated messages played to the agent as a call is being routed to them from the automated attendant. A whisper message may be used with DNIS routing to indicate to the agent from which automated attendant the call is coming, or the fact that the caller is a gold customer so the agent can greet the caller with a greeting like "Thank you for being a gold customer . . ."

Call Recording

Quality control is one of the most vital areas of a call center. And one of the best tools to help increase quality control is the ability to record calls from customers. Everyone has heard that automated voice when calling a call center "Your call may be monitored for quality control purposes." In most cases today, it is likely that all calls are being recorded because massive data storage capacity and super high bandwidth capabilities exist in the cloud.

REMEMBER

Call recording benefits both the customer and the call center. Customers benefit from call recording because that recording can be used to settle possible disputes that may arise from a misunderstanding. Call recording for call centers is used to allow call center supervisors to perform post processing on calls for tasks such as agent scoring and evaluation as well as for training purposes. Agents can use recorded calls to learn what makes a good customer interaction and how to avoid bad customer interactions. In some cases, call recording may be required to meet certain regulatory requirements.

Agent Monitoring and Coaching

To achieve quality custom support, call center supervisors must have the ability to monitor and coach inexperienced agents while they're on calls with customers. Agent monitoring allows supervisors to listen in on the call and offer feedback to agents after the call to help them become proficient in their tasks. Alternatively, supervisors can listen in on an agent's call and coach throughout. When an agent is being coached, the supervisor joins with the customer, but the customer can hear only the agent. For example, agent coaching can be used by a supervisor to remind an agent to offer a service upgrade before ending the call.

Disposition Codes

Call center supervisors want to know what happens to calls when they're completed by agents. Disposition codes are used by call centers to keep track of the results of customer

interactions to ascertain and analyze the results of the many calls they receive. Agents generally enter disposition codes after a customer call is complete. After completing a call, agents get a certain amount of time in which they enter a disposition code before they're considered available for another customer call. Disposition codes can be added to the metadata for a call and stored in a database for post processing by supervisors and managers. Disposition codes can answer questions like "What percentage of calls to technical support result in sales of maintenance agreements?"

Integrations to Unified Messaging Systems

Cloud phone systems can integrate easily with unified messaging systems. These facilities allow an agent to interact with peers and supervisors whether they're on a call or not. In the age of virtual workers and remote agents, it is essential that agents can communicate with others in their organization quickly and effectively while feeling part of the team.

In many cases, agents may have questions that they need to ask a supervisor while they're on a call with a customer — but it may be inconvenient to interrupt the customer call and waste the customer's time while the agent talks to their supervisor. Here's where integration with a chat system can help. While an agent is on a call with a customer, he can send a quick message to the supervisor with a question like "May I offer the customer discount XYZ?" The supervisor can quickly answer the question without the caller being part of the discussion. Chats are useful as well for one agent to ask a more experienced agent how they handled a particular customer situation.

Enhanced Reporting Capabilities

Busy call centers can receive thousands of calls in a day, each one with tens of kilobytes of metadata attached to it. But how can you take all this metadata and gain insight into such things as call center performance, customer satisfaction levels, and overall success of the call center? Because cloud phone services are simply large software applications, it is quite

simple to add as much metadata to each call as you need. This metadata can be used for capabilities such as automated attendant routing, but the real beauty of it is that it can be stored in databases and used in post-processing applications and report generation.

TIP

Cloud phone systems offer advanced reporting features that allow customers to analyze data collected from incoming calls and keep detailed performance metrics about operations. Cloud phone systems can also work with third-party data visualization software to create complex data visualizations that can give great insight into operations and pinpoint areas that need improvement.

Desktop, Web, and Mobile Client Software at the Call Center

With cloud phone services, the possibilities for client applications are nearly limitless, and new ideas for applications are coming out all the time. The fusion of web, mobile application technology, and cloud phone system software transformed the call center into an integral part of a company's success.

Call centers have unique requirements for agents, supervisors, and management. Agents need software that allows them to do their tasks quickly and correctly to ensure they meet their customer service goals. Supervisors need applications that allow them to monitor agent performance and give them real-time insights into call center operation and agent performance. Management requires applications that allow them to run reports and visualize the massive amounts of data they collect so they can make macro-level decisions to maintain and improve their call center's operation.

Besides the basic call control features such as pickup, hold, transfer, and disconnect, many cloud phone services offer software that allows supervisors to perform supervisory tasks such as recording, monitoring, and coaching. Supervisors also need a to have a glimpse into the real-time operation of the call center to quickly correct problems as they occur before the performance of the call center degrades and customer service suffers.

Many cloud phone services offer statistics collection abilities that allow supervisors to monitor statistics such as caller wait times, number of available agents, and so on. These statistics can alert a supervisor to a condition that needs a quick remedy. For example, call center may decide that an acceptable wait time in an ACD queue is no more than ten minutes. At a glance the supervisor can check a statistic for wait times in the queue and if they exceed this maximum they can take immediate corrective action such as assigning more agents to that queue to reduce those wait times and avoid angry callers.

Chapter 5

The Top Ten Reasons to Use Cloud Phone Services

There are countless reasons to use a cloud phone service. Here are ten of the best reasons to move your phone service to the cloud.

Be on the Cutting Edge

These days, downloading software and installing it on your own computers is becoming old fashioned. Things are moving toward services that you pay for that someone else hosts. The cloud paradigm drastically reduces costs of software phone systems, allowing smaller businesses access to the same technology as companies with huge IT budgets.

Access the Amazing Features of Phone System Software

If you have an existing PBX phone system, you're missing out on many of the great features that come with a software-based cloud phone service. These include client-side applications that make your phone system simple to use. You can even integrate your existing PBX phone system into the cloud phone service.

Reduce Costs

You can eliminate the need for additional computer hardware and software and network infrastructure to host your own phone system. With a cloud phone service, someone else does all of that work for you so you can get down to the business of using your phone system to make money for your business.

REMEMBER There is no cost of ownership with a cloud phone system because you don't have computer hardware to maintain, repair, and upgrade.

Outstanding Reliability

You can't afford for your phone system to have any downtime. Downtime means missed opportunities and lost money. Because cloud phone services run on distributed computer systems, you're immune from a failure of a computer, network switch, or some other piece of hardware that could bring down your phone system. Cloud phone services generally perform with greater than 99 percent uptime.

Scalability

Here's where cloud phone services shine. As your business grows, you can scale your phone service up without adding a single piece of hardware or software, or adding new space. All you have to do is increase your monthly subscription payment and you are off and running.

Virtual Workers

In today's business environment, teams can be composed of virtual workers who are often remote and involved with a business solely to complete one project. With a cloud phone service, you can configure and remove these workers from your desktop or mobile device. Call centers can add and reduce agents without any investments in hardware.

Integration with CRM Software

Because a cloud phone service is another software application, it can easily integrate with CRM packages like Salesforce and SAP. Cloud phone systems can share call metadata with your CRM application so you never lose track of the relationships with customers. Integration with CRM applications is integral to the success of your business.

One Phone Service for the Business and Call Center

With cloud phone services, you need only one phone system for your business users and your call center. Cloud phone services features span the enterprise and the call center. Now all of your business calls and call center calls can be integrated into the same database for use in reporting and data visualization to gain the necessary business intelligence across the entire business.

Desktop and Mobile Applications

Interacting with a cloud phone system is as easy as using your computer or mobile device. Desktop and mobile applications make using your phone service easy and intuitive. Cloud phone services expose their interfaces via the Secure Hypertext Transport Protocol (HTTPS) that is commonly used for secure web browser traffic, so you don't need to configure firewalls and create Virtual Private Networks (VPN) to allow for remote access to your phone service.

Ability to Add New Features

Software designers are always coming up with new features for cloud phone service software. Features like workforce optimization and enhanced speech technology are coming down the road and will make your phone service a greater asset to your business. The good news is that you don't need to add hardware or software to use these new features. That's the beauty of the cloud.

Get your NAS storage connected to the cloud!

Today, organizations have huge investments in their existing NAS storage infrastructures. The increasing pressure to do more with less and the rise of cloud storage as an alternative to traditional NAS is forcing many IT departments to reinvent the wheel. This book explores another approach — cloud on demand — by offering a combined solution of cloud storage and NAS called Cloud NAS.

- *Protect your investment* — *keep your Core NAS filers online and offload processing and data to the Edge*

- *Redistribute your data* — *move your data to where it works smarter on your current infrastructure without migration downtime*

- *Jump to the cloud* — *make private and public cloud solutions work for you without reinventing the wheel*

- *Change without disruption* — *enable scalable performance and cloud accessibility to your applications without rewriting code and retraining users and staff*

Alex Nikitin is the Director of Storage Architecture for Home Box Office in New York City and a co-author of *Storage Area Networks For Dummies*. He resides in Milltown, New Jersey.

Open the book and find:

- **How to optimize your existing NAS environments**

- **An explanation of cloud storage concepts and benefits**

- **How to easily connect your storage silos to the cloud**

- **Ways to build Big Data and cloud-based archiving solutions**

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