NOBLE SYSTEMS

IP Handbook

Contact Centers Without Boundaries

What Can **IP Contact Center Technologies** Do for You?

- Improve Efficiency
- Increase Management & Control
- Unify the Enterprise
- Grow Your Business

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1 Introduction

Contact Center Software is undergoing a vast change as solutions move from hardware-based technologies to a more flexible and less costly IP model. Internet Protocol is the data-networking standard which uses the internet to transmit voice and data. This new vision looks to a unified communications platform, and IP software is making it a reality.

This Handbook has been designed to help contact center professionals understand the issues of applying the right type of technology to their businesses, according to their individual requirements.

In this handbook, we explain the advantages of the IP Contact Center Software model, and what is right for your organization. As part of this, we investigate how an IP model allows you to manage several locations from one virtual contact center, and how home-based agents can benefit your organization. We also explore how an IP platform can support a variety of contact center technologies.

We hope that this IP Handbook will serve as a useful reference tool to help you identify the benefits and value of a 'Contact Center without Boundaries'.

James K. Noble, Jr.
President & CEO
Noble Systems

2 Contact Center Software Without Boundaries

Contact Center software is playing a key role in addressing the new business drivers facing the contact center industry today. Those drivers are determined by the fact that customer expectations for improved services are growing, including demand for a wider array of interaction choices such as email, web, and text, and a desire for better response times. However, economic pressures to keep costs down and improve productivity are equally strong, which creates a dilemma. Fortunately, a revolution taking place in the software arena can help meet this challenge, as contact center solutions move from hardware-based architectures to more flexible and less costly IP platforms.

The New Contact Center Vision

Contact center operators have long been looking for software that would allow them to operate without artificial boundaries. The IP model helps meet these expectations because it allows companies to deliver a superior customer experience while reducing costs and maximizing revenues. This is achieved with the added benefits of less dependency on expensive and rigid hardware and greater choice and flexibility for solutions.

Contact Center Software Without Boundaries

The new contact center vision looks to a unified communications platform. It eliminates reliance on costly and inflexible hardware. It blends all contact types – voice, email and web – into one solution. It applies a consistent set of business rules to all contacts and simplifies administration. It focuses on increasing revenues while lowering overhead costs and improving the customer relationship. In this Handbook, we will explore:

- The advantages of the IP contact center software model.
- Software delivery mechanisms and what is right for your operation.
- How the IP model facilitates distributed contact centers, locations and personnel as one virtual contact center.
- How home-based agents can be a benefit to your operation.
- The unified suite of contact center applications supported by the IP model.

Summary

The new contact center model makes it possible to meet and exceed both customer expectations and stringent business demands. This Handbook will explain the new IP Model and provide some detail into how you can break down your barriers to implement a 'contact center without boundaries'.

3 The Advantages of IP-based Customer Contact Systems

Successful contact centers recognize that change and adaptability are a fact of life. Customer requirements, expansions, compliance, production demands and cost constraints all require fast-paced responsiveness at almost every level of the contact center.

The ability to adapt systems and behaviors quickly has become a critical requirement of any contact center operation. IP contact center technology provides the distinct advantages of helping you meet the head-on challenges of increasing productivity and services while decreasing costs.

New IP standards, such as *Session Initiation Protocol (SIP)*, are making IP telephony systems more flexible so that they can easily support distributed sites and home-based agents with efficient contact routing and a path to IP communications. New IP solutions can additionally leverage your existing technology, extending its life while allowing for the introduction and integration of IP technologies.

IP-based contact center software helps you adapt to the endless changes that you face daily. Unlike hardware-oriented systems, IP systems are designed for adaptability and provide:

- Built-in software flexibility to adapt to changes that hard-wired, circuit-switched systems cannot readily support.
- Flexibility and control for managing resources and optimizing traffic.
- Call controls so that agents, both on-site and remote, can effectively manage interactions with customers.

Advantages of a Tightly-Knit Software Suite

Today, we are seeing a new generation of software applications that work together as elements of a tightly-knit IP software suite, providing many advantages. In addition to flexibility, the new IP systems excel in taking all types of interactions (such as voice, web and email) and bringing them together within a common communications platform, allowing you to better serve and understand your customers.

A New Generation of Contact Center Software

As the technology becomes more reliable and more widely available, we are finally seeing the capabilities in contact center software that we have all wanted for years. The IP model is designed to support single and multi-site operations, with local, distributed or home-based agents. Since connectivity is based on software IP connections and SIP-based applications, distance agents are accessible any place and any time, most often through the internet.

3 The Advantages of IP-based Customer Contact Systems

Some additional features and benefits of the IP model for contact center software include:

- IP systems provide visibility, control, and project resources for your agents, regardless of where they are located. You can effectively manage local and remote agents equally well.
- The IP contact center is based on integrated IP software and is made to manage multi-media communications, allowing you to provide customers with the contact method they prefer. IP contact center solutions are designed to handle all contact types (voice, email, text and web) through the same integrated IP software and communication channels.
- Integration with CRM and back-office systems is easy to accomplish. The new IP application suites are based on the latest software standards including SIP, .NET, and plug-in technology, facilitating application integration.
- IP contact center scalability is based on software, not physical telephony

connections
as in most traditional hardware systems. IP centers are easily scalable, and can range in size from a few agents to thousands of agents.

- The new IP systems provide a straight-forward migration path to IP. IP solutions are ideal for integration with existing technology infrastructures, providing extended life for current investments while providing a clear path to IP interaction management.

Summary

The ability to adapt quickly to changes is key to a contact center's success. Today's new contact center technologies provide the flexibility, power, and performance to help you improve service, increase efficiency, manage more effectively, and decrease costs. Noble Systems can help you discover the advantages of the new IP environment.

4 Software Delivery – Which Choice is Right for You?

Software as a Service (SaaS), Managed services, or a Premise-based solution … Which choice is the right fit for your operations? In this section, we will define the terms, and then discuss how you can evaluate the options to find the best solution for your organizational needs.

Software Delivery Models Definitions

- SaaS (Software as a Service) or Hosted:
  A software application delivery model wherein a software vendor develops a software application and then hosts and operates the application. Customers access the software over the internet. SaaS resources are often shared by multiple users.
- Managed Service:
  In this model, the customer can select the products and services to be delivered from a third-party managed service software provider using the SaaS methodology.
- Premise-based Software:
  The customer owns and operates the software.

Selecting the RIght Solution

When making a decision between SaaS, Managed, and Premise-based technology, you must understand the benefits of each based on your organization's requirements. There are a few things to consider:

1. Consider is the application's flexibility and scope. Flexibility is an issue since every business is different and invariably has unique and changing operational needs, as well as its own specific feature and configuration requirements. The features and flexibility offered by different SaaS providers vary. It is important to evaluate each vendor's offer to make sure that the service providers' capabilities extend past the generic and can meet your specific feature and customization requirements. Furthermore, to avoid frustration and delays, the provider needs to have the years of contact center experience and focus to understand how these requirements will affect your business.

2. Many of the currently-available SaaS solutions tend to be point solutions and have limited functionality. Premise-based solutions are typically more complete, with years of focused development for the contact center. One should to consider the operational capabilities (features, flexibility, management and customization) that are available with the product offerings. Many of the high-end vendors, such as Noble Systems, have used their proven premise-based solutions as the base for developing SaaS offerings that are designed specifically to meet these challenges.

4 Software Delivery – Which Choice is Right for You?

3. If you are a business that requires extensive integration with back office systems, or you are concerned with data security, then a premise-based solution is likely to give you more flexibility, legal compliance, and peace of mind. Choosing a premise-based solution that is easy to implement, operate and manage may also overcome in-house IT issues. A hybrid approach to SaaS is a 'managed service' whereby the IT aspects of your solution are managed externally by the technology service provider, but you still have operational control. This type of service is often provided on a longer-term contract, but the benefits include greater support in terms of data management and tailored professional services.

4. SaaS, or hosted services, may be ideal for some operations that require extremely fast setup, or that have seasonal expansions or contractions in their labor force, or even as a quick-fix for to unexpected or unplanned expansions. Many small centers are attracted to SaaS because of the quick startup and minimal capital outlay. It can also be appealing to smaller or new companies that want the simplicity of a SaaS environment, which eliminates the responsibility of in-house maintenance for IT systems, and limits the need for (and cost of) technical IT resources. We believe SaaS deployments will continue to grow and be a strong fit for many organizations.

Summary

How do you know which contact center model is the right choice? Your operational needs, business goals, company structure, and future vision all need to be considered in making your decision. Noble Systems can work with you to evaluate your technology requirements, and to help you identify the best-fit solution for your organization.

5 Managing Resources & Traffic for Optimum Performance

As contact centers adopt the distributed contact centers model, staffed with home-based agents, dynamic agent groups, remote employees and locations, the old, inflexible technologies and architectures fail to meet the requirements. The clear goal of contact center management is to have consistent and comprehensive management and control of resources and contact traffic, for all types of agent resources – wherever they are located. The new priorities are:

- Visibility and control of all resources
- Ability to optimize contact traffic over the enterprise
- No loss of management capability for remote resources

Managing the Environment

Like a comprehensive nervous system, Noble's IP CTI architecture is aware of all resources, contact routing needs, and required data elements. Noble ties everything together; routing contacts to the appropriate resources with the appropriate data, wherever the resources are located. This allows users to view, queue and route contacts to any person, whether in the contact center or in the larger enterprise. The new IP contact center software model takes advantage of the emerging SIP communications standard, which offers a highly-scalable IP communication framework.

Worldwide Contact Routing

Worldwide contact routing and optimization is an important concept in the new IP model. An IP platform allows the system to be configured to meet the needs of almost any business operation. Using SIP-based software to control enterprise interactions eliminates artificial hardware boundaries or limitations that restrict the routing of contacts to distributed operations, remote sites, and home-agents. For example, an organization may want to place or take calls in several specific regions and have distributed groups of agents or home-agents supporting the interactions. This structure can easily be achieved via the IP model.

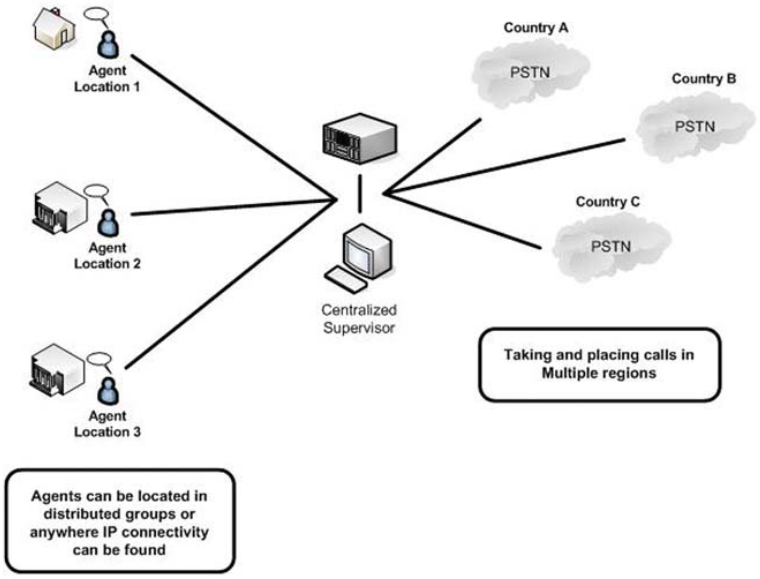
IP Model Supports Thousands of Agents

The IP model is configurable for scalable environments, and can easily support from a dozen agents to thousands. Agents do not require a physical hardware connection to be connected to the system, and PSTN connectivity can be achieved as necessary through Noble's IP architecture.

5 Managing Resources & Traffic for Optimum Performance

The IP model below shows several distributed agent groups making and taking calls from three diverse regions.

IP Model of a Distributed Contact Center



A Suite of Integrated Applications

A SIP architecture is provides a flexible platform that allows you to create a complete contact platform with advanced features and tools for the communications process, including: Intelligent contact routing and ACD; Proactive outbound contacts; IVR, self service and speech; Multi-media applications including email, web, text and web callback; Business insight including historical reports and real-time statistics; Call recording; and Quality assurance and monitoring. These applications can be shared across the distributed environment for use by agents and managers, regardless of where they are located. (See Chapter 7 for more discussion on integrated applications.)

Summary

The Noble IP architecture gives you the flexibility to integrate applications and widespread agent resources into a single, unified platform. No matter where your calls are coming from, or where your agents are located, you can ensure that your customers get the service they need to improve customer satisfaction.

6 Getting the Most From Remote Resources

Just a few years ago, the idea of home-based agents was not taken very seriously. Today, IP technology is making at-home agents a powerful force in the new economic contact center model. Impressive statistics show that home-based agents provide key advantages, and that the use of work-from-home agents is growing.

Typically, the biggest cost area in a contact center is the workforce. An employment trend comes along that shows promise for improving services while cutting costs, operational management is going to take notice. Several analyst reports state that home-agents will increase 15% to 20% annually through 2010.

Why have home-based agents become one of the hottest topics in the contact center industry? Statistics show that this fresh approach to sourcing skills can positively impact key performance areas, including:

- Employee stability
- Productivity and performance
- Agent focus & experience
- Cost

Greater Employee Stability

New evidence indicates that one of the biggest advantages that home-based agents provide is improved employee stability. According to the ICMI 2006 teleworking report, the most notable difference between home-based agents and in-house staff is seen in turnover and retention rates. Home-based agents are much more likely than traditional staff to remain at their jobs for longer periods. Six out of ten centers (59.1%) reported that teleworker turnover is lower than with in-house staff, with 33% of contact centers indicating a rating of substantially lower.

Home Agent Performance

Probably the greatest area of concern with home-based agents lies in measuring performance. According to the ICMI report, home-agents perform either at the same level or higher (i.e., fewer errors, better monitoring scores/customer feedback, and higher first call resolution rates) than in-house agents. According to those centers involved in the study:

- 60% said there was no notable difference in quality between teleworkers and traditional staff.
- 18.5% said that teleworkers perform with "somewhat" higher quality than traditional staff.
- Another 15.4% report substantially higher quality than traditional in-house peers.
- Very few respondents, 6.1% reported that home-agents had lower quality.

6 Getting the Most From Remote Resources

A report by Jupiter Media Metrix found that call center managers who currently use home-agents report a 12% increase in productivity over in-house agents. Such increases in productivity are often attributed to fewer interruptions, better working environments, and improved job satisfaction.

Agent Focus & Experience

Companies who are experimenting with home-agents have found that they can break out of their regional limitations and expand their labor pools significantly. The pool is also greatly expanded due to the types of people who are attracted to home work. These include highly educated, older or retired and disabled individuals – all of whom can make excellent agents, but are often unwilling or unable to commute. Teleworking brings these people into the marketplace. They are characterized as highly motivated, mature and stable workers, who are looking for opportunities to work both full and part-time.

Reduced Costs

Utilizing home-based resources also helps to reduce costs for labor and overhead. This is attributed to several areas, including:

- Reduced facilities expenditures
- Access to larger, more competitive workforce pools
- Reduced employee turnover

In the ICMI teleworking report, nearly 1 in 3 centers reported that teleworking has helped to reduce facility and operating costs. Estimates show that it costs about $10,000 to support each premise-based agent. Home-based agents reduce this amount, as they do not need space on a call center floor, and only require an investment in technology to support. Over time, it will be easier to substantiate savings in the stability and turnover area. If claims and trends in this area hold true, it may yield the largest area for cost savings.

Summary

It appears that home-based agents are here to stay and will continue to expand in numbers. The IP contact center model is a primary driver for this trend, making it inexpensive and easy to connect an individual wherever they are located, and to monitor performance just as if the employee were on-site. With adequate training, motivation and processes, the IP platform is making teleworkers a key part of the industry's future. Noble Systems offers solutions that can help you manage your entire contact center enterprise for maximum results.

7

The IP Model Supports a Suite of Unified Contact Center Applications

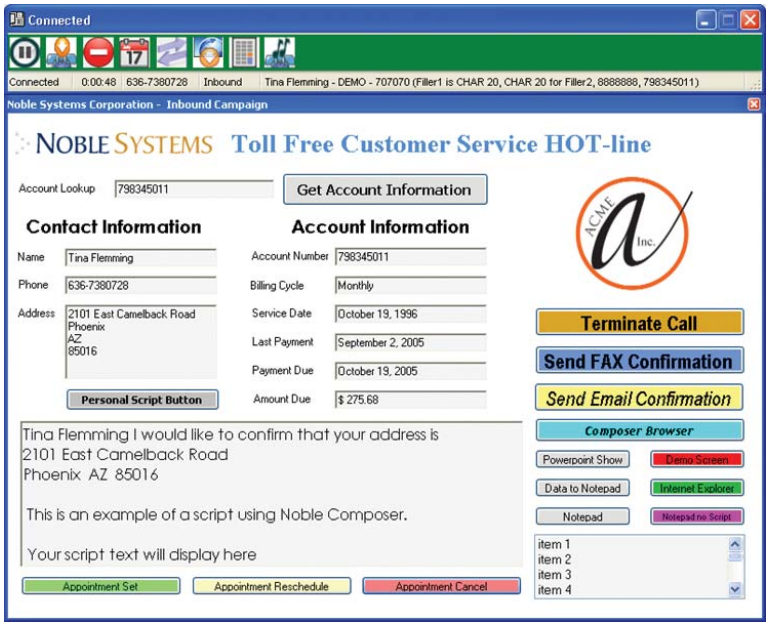
The IP contact center software model supports a tightly knit suite of software applications that perform all the functions to meet your customer interaction needs. These include:

- **CTI (Computer Telephony Integration) to** integrate all applications and data
- **Contact Routing** to direct calls to the appropriate resource using a PBX and ACD
- **Self-Service Automation** using IVR + Text-to-Speech, plus Web Self-Service callbacks
- **Proactive Outbound Contacts** with a Predictive dialer and other dialing modes
- **Multi-media Communications** handling voice, email, web, text, and fax channels
- **Real time Statistics and Reporting** for instant access to current and historical reports
- **Digital Recording** of voice and screen for quality, training, and compliance purposes
- **Live Monitoring** with Listen, Coach and Barge modes for local and remote agents
- **Work Force Management** tools to manage the center's most costly resources

CTI

Noble Systems' SIP-based CTI architecture acts as a central nervous system for the enterprise, tying together all interactions, routing, and data events, and unifying all of the associated applications so that they work together. The result is a comprehensive, unified system that is aware of its resources and can properly optimize and route interactions to available agents, as well as track, monitor and report on interactions and personnel across the enterprise.

On a more specific level, CTI provides a screen pop to the agent that integrates customer information with the call script and agent tools, so that all of the necessary elements are coordinated during the interaction.



Example of an Integrated Agent Screen

7 The IP Model Supports a Suite of Unified Contact Center Applications

Contact Routing

A Software-based PBX and ACD (automatic call distributor) provides more than call routing. Together, these components – when married with the power of CTI – deliver a complete unified inbound communications platform. ACD functionality supports unlimited agent groups along with skill-based routing to ensure that the customer is connected with the most appropriate, most highly-skilled resource available, enhancing the first call resolution capability.

Self-Service Automation

Self-service continues to grow in importance as consumers demand information and services 24x7. When these systems are part of a unified approach, self-service can provide the satisfaction and immediate access that consumers desire, and along with the efficiencies required by contact centers.

Noble's software approach to self-service tightly integrates IVR and speech technologies into its suite of applications. This means information can be accessed and processed in an 'agent-less' transaction, with the safeguard of live assistance when required. The result is self-service that is easy to manage and modify, that is completely in synch with the contact applications (including the PBX and ACD), and that incorporates an easy-to-use graphical interface for configuration and changes.

Proactive Outbound Contacts

Proactive outbound contacts are is growing in importance as companies recognize the power of initiating communication with customers at key points in the customer life cycle. Outbound grows in its significance and capability when it is integrated as an element of a unified customer communications system – along with ACD, PBX and multi-media applications. As part of an integrated system, Outbound allows organizations to access the customer database to determine which contacts should be called for various purposes, including, loyalty, renewals, service, reminders, up-sell/cross-sell, surveys, order updates, customer reacquisition, etc.

Outbound systems filter out all unproductive results, including disconnected numbers, no answers, busy signals, answering machines, and other system messages. Only live connections with called parties are connected to agents. Predictive dialers have precise controls and features that allow them to strictly adhere to Do Not Call and outbound contact regulations. All results, for both completed calls and uncompleted attempts, can be documented to the central database for follow-up.

Noble's dynamic solutions dial directly from our integrated database, increasing the flexibility and precision of dial/don't dial decisions. For example, if you are contacting a customer about an unpaid bill and a check is received that day, the Noble Solution can adjust the customer

record and remove it from the call list, based on real-time input from backoffice systems. Automated outbound contact programs can be run simultaneously, each with its own calling list and management parameters. When predictive dialing is not the right fit, other outbound dialing modes – including power, preview, unattended, and manual – can achieve specific business objectives, while providing the full CTI capabilities of the unified contact center system.

Multi-Media Communications

As consumers increasingly embrace new contact channels such as email and web, more and more organizations are recognizing that it is time to take multi-media contact center applications more seriously. They are seeking to include email, web call back, chat and text messaging into their interaction mix. It is best to consider this from a unified application perspective because introducing new modes of contact that are 'data islands' can do more harm than good to customer relationships. Noble's perspective can be seen in its unified multi-channel software platform that manages all contacts and data elements including voice, email, and web in a consistent manner on a single platform with a universal contact queue.

Real-Time Statistics and Reporting

Real-time information and reporting is the life blood of any contact center, especially as centers become more distributed with remote resources and home agents. A unified IP application environment provides distinct advantages, allowing all resources and contacts to be managed and utilized consistently.

Whether agents are on-premise, at a remote site, or home-based, statistics and data for the agents and for the interactions they manage should be handled and recorded consistently and uniformly. This makes it easy to understand and compare statistics between different groups, between premise and remote agents, and between locations and projects. Real-time statistics capture performance data on agents and projects as they occur. Historical reports then aggregate this data into carefully formatted reports that illustrate a particular area and can highlight trends, successes, and areas for improvement.

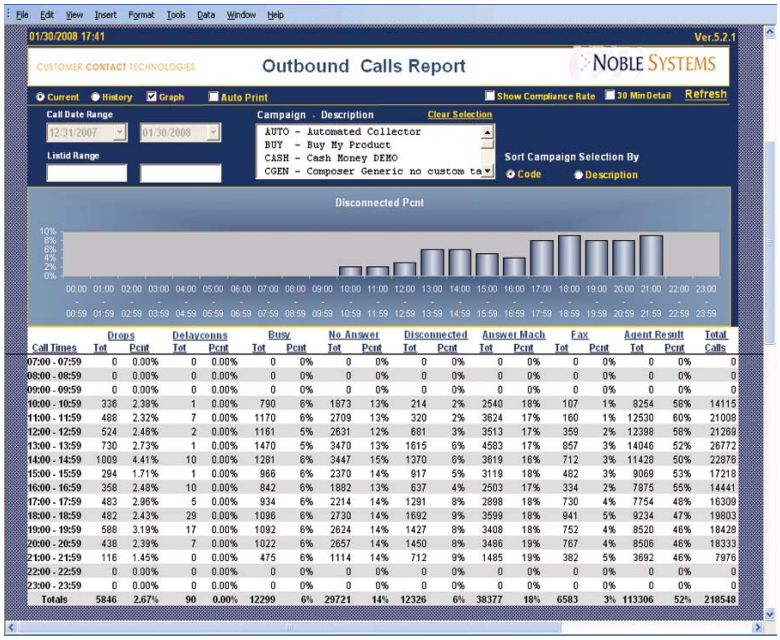
Reporting in the new unified IP systems is accomplished via a web-based application, so that the contact center manager or client can be located anywhere and still have access to reports via the internet. Some of the baseline reports required to manage agents and programs effectively include:

- Activity History by Agent
- Agent Performance Trends
- Call Logs
- Call Outcome Activity
- List Progress Activity
- Hourly Productivity
- Activity History by Queue
- Call Volume by Time of Day
- Talk, Wait, Ready Times by Agent
- Service Level Activity
- Outbound Dialing Activity
- Summary Productivity

The IP Model Supports a Suite of Unified Contact Center Applications

Example of Real-time Stats Report

Example of Historical Stats Report



The IP Model Supports a Suite of Unified Contact Center Applications

Digital Recording

For quality assurance and legal requirements, many contact centers digitally record critical portions of customer transactions. In particular, outsourced call centers are often required to submit conversation samples to their contracting clients. Such recordings can be invaluable in validating sales, commitments, instructions or other key parts of a conversation as part of a quality control program or for resolving legal disputes. This is especially important in heavily regulated segments, such as financial service, collection, and healthcare environments, where there is an emphasis on consumer rights and privacy.

Unified contact center solutions include transaction recording capability as a standard feature. Many of them can also work with third-party solutions. Recordings can be initiated by either the agent or by 'triggers' from script events. Recorded transactions are labeled and stored for easy identification and retrieval.

Quality Monitoring

As contact centers grow and establish distributed sites, quality monitoring becomes of increasing importance. The essential goal is that all resources, whether on-premise or remote, should be managed effectively with common tools. Quality monitoring systems in a unified environment should allow supervisors to have several options for participating in a contact. These include: Listen (the agent does not know he/she is being monitored), Coach (the manager can assist the agent, transparently to the customer), or Barge, (the manager can speak to both the agent and the customer simultaneously), as well as being able to see the agent's screen from a manager station. Many systems also allow the supervisor to chat with the agent or agent groups via text messages. Some systems provide agents with a dashboard view that allows them to see where they are in terms of performance and objectives, so that they can identify their own areas for improvement.

Summary

Noble Systems believes that contact center software is in the midst of a significant revolution. Some call this revolution 'Call Center 2.0', signifying the next generation of software and services. Noble Systems' view is that emerging technologies and standards, such as SIP, are enabling innovative IP-based contact center software capabilities. These capabilities are delivering gains in productivity, efficiency and customer service throughout the industry, and are worth investigating to see how your contact center operations can benefit from the advantages which they offer.

Glossary

Agent Group | A group of contact center agents who share common sets of skills, which enables them to handle questions or issues of similar nature.

AMD (Answering Machine Detection) | Automatic identification of calls that are answered by an answering machine, rather than by a live person. AMD is most commonly deployed by an automated outbound calling systems, which can determine network tones such as ringing, engaged, unobtainable, fax phones, and answering machines. These calls can be filtered out so that only live people are sent through to an agent.

API (Applications Programming Interface) | The piece of software which connects the telephone system to the host computer system and allows them to communicate with each other.

ASP (Application Service Provider) | A company that offers access to software and/or network applications, typically via an Internet connection. ASP services can provide an attractive option to companies wishing to minimize up front costs and reduce internal support requirements.

Auto Attendant | A type of 'virtual operator' that answers inbound calls and uses traditional touch-tone options and more advanced speech recognition technologies to be let callers choose from a menu of options for call routing. This can be integrated with ACDs, other call handling systems, and databases (see also IVR).

ACD (Automatic Call Distributor) | A call center system resource that processes, distributes, tracks and reports incoming call activity. Depending on the available features and defined business rules, ACD systems can perform a wide variety of tasks in the contact center, including queuing of calls, routing of calls, tracking and reporting of call statistics, and other key management functions.

Available State | The time when an agent is logged-in and ready to receive calls.

Call Blending | Allowing agents to receive both inbound and outbound calls simultaneously, rather than limiting them to only inbound or only outbound contacts. In a blended center, the call center software dynamically adjusts outbound dialing levels as inbound call volumes fluctuate, to keep call load at a consistent level and to meet inbound service level goals.

CLI (Calling Line Identity) | A feature which enables the caller's own telephone number to be forwarded at the same time as their call, enabling identification. Also Automatic Number Identification (ANI).

Glossary

CODEC | In the modern, software sense, an encoded stream or signal for transmission, storage or encryption that is decoded for viewing or editing. Codecs are often used in video conferencing and streaming media applications. A "codec" is also a generic name for a video conferencing unit.

CTI (Computer Telephony Integration) | The software, interfaces, and processes used to integrate telephone and computer networks in order to provide a more efficient and seamless customer interaction and reporting mechanism.

CRM (Customer Relationship Management) | The strategies, processes, people and technologies used by companies to successfully attract and retain customers for maximum corporate growth and profit. CRM initiatives are designed with the goal of meeting customer expectations and needs in order to achieve maximum customer lifetime value and return to the enterprise. As a primary sales, service and retention touch-point for many companies, the contact center is a critical component of a successful CRM strategy.

DTMF (Dual Tone Multi Frequency) | A signaling system that sends pairs of audio frequencies to represent digits on a telephone keypad.

Gateway | In telecommunications, the term 'gateway' has the following meanings:

- The combination of devices, such as protocol translators, impedance matching devices, rate converters, fault isolators, or signal translators, as necessary to provide system interoperability. The gateway also requires the establishment of mutually acceptable administrative procedures between the two networks.
- A protocol translation/mapping gateway interconnects networks with different network protocol technologies by performing the required protocol conversions.

GUI (Graphical User Interface) | A generic term for presentation on screen of computer information in a graphical form, often using icons, buttons and menus for easy access to functions. (Pronounced Goo-ey.)

HMP (Host Media Processing) | The software, or protocol driver functionality, that enables VoIP, making it possible to make voice calls without specialized telco hardware, only with PC-based software. Called Host Media Processing (HMP) since it uses the processor in the host PC to do all the telecom work.

Glossary

In the age of Voice over IP (VoIP), we connect everything via Ethernet or broadband links and use TCP/IP as the transport for voice as well as for data. In the past, when you wanted to connect a computer to a telco network, it was always necessary to have a physical interface, a telco socket. This could mean an analog phone line (see PSTN), or in the case of digital networks an ISDN or T1/E1 line. In each case special electronic interfaces and cables were necessary.

HMP can be just software that you load into a PC. In some situations, HMP products work in conjunction with hardware (such as a board equipped with DSP processors) in order to off-load computationally expansion operations, such as echo cancellation and transcoding. This allows speech applications to scale to large numbers of concurrent calls, without bogging down the host CPU.

There are a significant number of voice, speech, conferencing and fax applications that have been written over the last decade, using various kinds of legacy telco hardware. This often means that backward-compatibility is a potential issue, if possible users want the applications to migrate seamlessly to the VoIP environment. This usually means that HMP products expose one or more standard APIs that historically have been used to write telecom apps in the past.

Hunt Group | Used with ordinary PBX systems to distribute calls and to look for (or hunt) available agents. There are two methods. The first method distributes calls in the same order each time, so that the first extension will always receive the next call unless it is busy, at which point it will look for the second extension. The second method ('Round Robin') automatically sends the call to the second extension (then to the third extension, etc), for a more even distribution of calls.

IVR (Interactive Voice Response) | Any system that allows a caller to make a selection or submit information, via Dual- Tone Multi-Frequency (touchtone) and/or voice recognition technologies, using a set of pre-recorded and/or artificial voice menus or prompts.

IP (Internet Protocol) | A data-networking protocol developed throughout the 1980s. It is the established standard protocol for transmitting and receiving data in packets over the Internet.

Live Chat/Text Chat | A method of responding to customer's questions and needs in real-time through the use of internet 'chat' technology. Agents respond directly to customers through the use of online computer chat software, which enables customers to type in a question over a live connection and then receive an instant typed response from an agent. Provisions can be made for automated responses for frequently asked questions. Agents can also push web pages to support live demonstrations.

Glossary

.NET Framework | A software component that can be added to, or is included with, the Microsoft Windows operating system. It provides a large body of pre-coded solutions to common program requirements, and manages the execution of programs written specifically for the framework. The.NET Framework is a key Microsoft offering, and is intended to be used by most new applications created for the Windows platform. The framework is composed of a class library of tools and a Common Language Runtime. The framework is intended to make it easier to develop computer applications and to reduce the vulnerability of applications and computers to security threats.

PBX/IP-PBX (Private Branch Exchange) | An internal telephone system within a company that switches calls between internal lines while allowing all users to share a certain number of external phone lines. The primary role of the PBX is to save the cost of requiring a separate telephone line for each user.

Power Dialing | A system that dials as many calls as it has lines available and, using answer detect, puts through live calls to agents. If no agent is available when a call is answered, it will simply drop the call, causing 'nuisance calls'. Power Dialing is sometimes used as a generic term for all dialers.

Predictive Dialer | Any technology that has the capacity to store and automatically call a list of pre-defined telephone numbers and that has the capability of screening out no-answers, busy signals, answering machines and disconnected numbers while at the same time predicting at what point an agent will be available to handle the next call to be dialed. Unlike Power Dialers, Predictive Dialers use advanced algorithms to manage calls based on expected agent availability, reducing 'nuisance calls'.

Reader Boards/Display Board/Electronic Wall Display | A visual information board that displays the exact status of queue conditions, agent status and performance measures of the call center. These are often hung within the call center to allow supervisors and managers to easily see current statistics and activities.

Screen-Pop | The pushing of caller information to the agent's computer screen, along with the call. This enables the agent to have precise data about that particular caller to answer questions and handle calls more efficiently. This increases the efficiency of the call center agents.

Glossary

Script/Call Guide | In either inbound or outbound teleservices, this is the written presentation or outline of the verbiage an agent uses in conversation with a customer or prospect. Scripts may be designed in such a way as to be delivered verbatim, semi-verbatim, bulleted, or free form, depending on a company's business philosophy or program requirements. A contact center software system with an advanced scripting tools allows you to present the script on the agent desktop, and to incorporate other tools to help the agent work more effectively.

SIP (Session Initiation Protocol) | An application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants. These sessions include Internet telephone calls, multi-media distribution, and multi-media conferences.

Transcoder | A piece of software that converts files from one format to another, particularly audio and video.

Thin Client | A client computer or client software in client-server architecture networks which depends primarily on the central server for processing activities, and mainly focuses on conveying input and output between the user and the remote server. (Sometimes also called a 'lean client'.) In contrast, a thick or fat client does as much processing as possible and passes only data for communications and storage to the server. Many thin client devices run only web browsers or remote desktop software, meaning that all significant processing occurs on the server.

Thick Client or Smart Client | A client that performs the bulk of any data processing operations itself, and does not necessarily rely on the server. The fat client is most common in the form of a personal computer, as personal computer or laptop can operate independently. (Also known as a 'fat client' or 'rich client'.)

Virtual Call Center | A call center composed of agents who use the internet to work from their own homes or decentralized locations. Virtual centers are made possible by telecommunication and Internet technology.

VoIP (Voice Over Internet Protocol) | A term used for a set of facilities designed to manage the delivery of voice information using Internet Protocol. In general, this means sending voice information in inconspicuous digital form rather than in the traditional circuit-committed protocols of the public switched telephone network (PSTN). A major advantage of VoIP and Internet telephony is that it eliminates ordinary toll charges.

Web Callback | A feature that enables a visitor to a company's website to schedule a time at which a company sales or service representative can call back. The consumer also leaves a phone number and, sometimes, the reason for the appointment. The representative then calls at the scheduled time.

Workforce Scheduling/Management Software | A management software program designed to track resources and respond to changes in order to create work schedules to best serve the needs of the company, its clients, and its agents. The software effectively balances several factors, some of which include optimal staff levels, anticipated workloads, campaign timetables, resource availability and technological capability, all while considering elements such as agent preferences and unexpected absences.

* The ATA's (American Teleservice Association) *2007 Glossary of Contact Center and Telecommunications Terms* was used as a reference resource for this section.

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