Acquiring Powerful Inbound Call Center ACD Software

The Essential Features of a Contact Center Technology Platform Defined

The functionality and features available within your contact center technology platform have a direct impact on the efficiency and productivity of your call center. Vendors are touting multi-tenant, Internet driven IP (Internet Protocol) platforms with unified communications and remote distributed architecture as a strong alternative to the legacy hardware with TDM (Time Division Multiplexing). Ultimately it is the sophistication of the features like Automatic Call Distribution (ACD), Interactive Voice Response (IVR), feature-rich IP PBX functionality, call recording, predictive dialing, Agent Scripting and a host of other features and reporting that will determine if your next-generation Voice over IP (VoIP) contact center can provide the competitive advantage that you are seeking.

In this white paper we will examine the key call center software features and discuss their impacts on agent and call center efficiency as we review some of the important productivity-enhancing tools available within Q-Suite 5.5. We will present different administrative user-interfaces, which provide intuitive controls and monitoring of the center's interactions along with the management of call flow and reporting activities. We will look at the different options of Agent Interface and identify a rich set of flexible, easy-to-use features within Q-Suite 5.5 that minimize response time and ensure effective problem resolution.

A New Generation Platform for a Mature Industry

The underlying technology platform of the call center powers the functionality of the call center. Indosoft's Q-Suite 5.5 utilizes Asterisk, the leading hybrid VoIP/TDM telephony platform, to deliver the power, innovation and flexibility needed for your ever increasing customer interactions. Like any high-end call center platform, it is geared towards providing superior performance to the call center software, allowing you to build strong customer relationships while dramatically reducing the costs of owning and operating a powerful platform for communicating with your customers. Available as a multi-tenant software for both on-premise and hosted deployment, Call Center Software Q-Suite 5.5 leverages the advantages of Asterisk, Linux, Apache and MySQL to provide an open architecture with unsurpassed functionality required in any next-generation contact center solution.

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Productivity Enhancing Feature-Sets

Put quite simply, call center software has one primary objective: to increase productivity within the call center. For example, calls must be routed efficiently and intelligently in order to service each customer as quickly and effectively as possible. The ability to connect each call to the most appropriate agent is a crucial step in creating a favorable customer experience. Once the call has been efficiently connected, the call center software must then provide the tools for an agent to continue the process of exceptional service. While interacting, the agent should be able to access all the relevant CRM and data sources to create an efficient customer-agent interaction. However, not all customer interactions need be with a live agent. Therefore, the call center software must deliver manageable tools that allow full control over creating complex, automated customer interactions.

These are only a few examples of what is required in a complete call center software solution. We discuss these, as well as other, features in greater detail below.

Automatic Call Distribution (ACD)

Automatic Call Distribution (ACD) within the call center software delivers an efficient solution to call handling and routing, with or without interaction. The calls are eventually routed to a live agent or an automated agent, as defined by business process. In most call center solutions, ACD is setup through a combination of tools within the call center software like an IVR Builder (also referred to as Dialplan Builder) and Queues and Skills setup. These tools allow you to easily define the rules for handling, routing and managing customer interactions, and enable each organization the greatest degree of flexibility and efficiency in meeting their business needs. The different requirements and functions of ACD are discussed below.

Inbound Call Routing

When calls from the outside world hit your telephone switch based on the number dialed by the caller, the call center software must then define the best process to follow when handling and distributing the call. This process is referred to as call routing. Calls are quickly identified by the number dialed, often referred to as DID (Direct Inward Dial) or DDI (Direct Dial Inward). Your telecom provider might identify the call with a DNIS (Dialed Number Identification Service) number, which could be part of the number dialed (like the last 4-5 digits). This is the starting point for your ACD to take over and manage the call.

DID/DDI/DNIS Management

Most call centers have a pool of numbers acquired from their service providers and will use one, or many, DID numbers for each inbound service. The contact center platform should have some management scheme to handle the bank of numbers.

Multiple DID/DDI/DNIS per Inbound Service

An import aspect of your call center software is its ability to associate multiple DID/DDI/DNIS to a single inbound servive, as well as the ability to use text title identification with incoming calls into the DID/DDI/DNIS during the screen-pop for the agent. This will provide better customer association and service. This information can also be used to segment and identify incoming calls based upon various business rules, such as media advertising and source identification.

These metrics are vital tool in the overall efficiency of the contact center operations. It may also be advantageous to display specific script pages associated with the DID/DDI/DNIS.

Scheduling Call Handling (Time, Day, Week, month)

This feature is often referred to as the 'Time of the Day Call Routing'. Every contact center operation requires the ability to change the way they handle calls based on the time of the day, day of the week, week of the month, after hours, holidays and breaks. Scheduling of call handling allows for proper management of agent resources, as well as efficient call handling based upon scheduling requirements.

Interactive Voice Response (IVR)

Interactive Voice Response (IVR) automates the interaction with the caller. The level of sophistication available with an IVR setup is dictated by the sophistication of the ACD. In its simplest form, IVR is an auto-attendant. However, when it is deployed properly an IVR can provide considerable automation and reduce the time that the caller has to spend to get information.

Any IVR building tool provided by the call center software has to be functionally rich while delivering a powerful, easy-to-use and flexible interface to setup and manage call handling rules. Contact center telephony platforms tend to provide IVR setup as a value added service because of the complexity of their tool-sets. But telephony platforms like Asterisk have made IVR setup easy and functionally rich. In a typical setup, you play voice files, provide the caller with options, collect DTMF key input, make decisions, branch or route calls to different destinations or Queues, send calls to voicemail etc. More sophisticated IVR, such as those available for telephony platforms like Asterisk, will involve Database interactions and Voice recognition as well.

Database Integration

Database integrations are becoming an extremely important function of IVR. Generally, interaction between the ACD and database should be through web services calls, which allow the ACD to perform operations like query, update, modify and delete data within the database. This allows the database interaction to be abstracted to some degree. Customization may be required, depending on the needs of the specific call center operations.

Voice Recognition

Voice recognition is a way to speech-enable the ACD and delivers hands-free phone interactions, or simply an automated interface for customer service. An external Speech Recognition library is generally involved in providing the voice recognition feature.

Voice Mail and Queue Overflow

Queue Overflow and call re-routing are essential features of any ACD. The ACD will re-route the calls, to voice mail or elsewhere, based on certain conditions. Generally, such conditions are imposed based on Queue volume, time of the day, or other business rules.

Dialplan Builder (IVR Builder)

Dialplans are lists of instructions or steps that Asterisk will follow while handling incoming calls. Unlike traditional phone systems, Asterisk Dialplans are fully customizable and incredibly versatile, allowing full control over the handling and processing of calls. For every incoming call, the Asterisk Telephony Server parses the list of instructions to manage the call flow. The flexibility and power of Dialplans come from its unique and powerful structure based on contexts, extensions, priorities, applications and a powerful syntax to construct instructions. As you can clearly see from this description, a Dialplan utilizes a programming language of its own, letting the user unleash the combined power of software and telecommunications to easily control and manage calls. Dialplans can go even further when you develop custom applications for call flow processing in well known and conventional programming languages like Java, C, PHP, PERL etc.

What is a Dialplan Builder?

The Dialplan Builder within Q-Suite 5.5 is a Graphical User Interface (GUI) tool utilizing a What You See Is What You Get (WYSIWYG) editor, which allows easy-to-use drag and drop features to develop Dialplans for IVR and call routing in Asterisk. This sophisticated Dialplan Builder allows contact centers to accommodate new and diverse client requirements and increase productivity.

Queues

Calls arrive into Queues to be handled by a pool of agents. From an ACD perspective, Queues are abstractions that hold call information while the ACD connects the caller to the most appropriate agent. A typical contact center ACD should have the capability to route calls into the appropriate queue based on the setup. In a high-end ACD, individual Queues are disjointed (separate) from each other but can be setup to overflow based on conditions. Typically there should be no restriction on the number of queues that can be setup.

MOH (Music On Hold)

Every Queue could have its own unique Music on Hold (MOH).

Periodic Announcements

The periodic announcements are an important tool in managing the caller while on hold.

Queue Skills

The set of skills required to handle calls from a queue dictates how the ACD distributes calls to the available agents.

Queue priority

Prioritization of queues will provide the ability to distinguish calls, especially if skills associated with the queues are identical.

Queue Overflow

It is possible that you may want to route calls to alternate locations or alternate overflow queues if the number of callers or the average wait-time exceeds a defined threshold, which queue overflow enables.

Voicemail and other Call Re-routing

The ability to leave voicemail will allow the caller to leave a queue if the wait time is too long. This has to be a DTMF option, i.e. triggered by a customer input on the telephone keypad.

SLA (Service Level Agreement) and Call Abandonment

SLA is expressed as a percentage of calls answered within a given duration. Call abandonment is expressed in terms of wait time for reporting purposes.

Agents

Employees handling calls within a contact center are referred to as Agents or Contact Center representatives. An agent has two established connections to the call center platform, one for voice and the other for data.

Free seating

In a free seating call center, agents will be allowed to sit in any available agent seat and use the computer and phone in the desk to login. Sometimes it might be a mix of designated seating and free-seating.

Remote and Home Agents

Remote and Home Agents connect to the contact center platform from outside. In many hosted call center deployments, all agents are remote agents.

Hot Desking

Hot Desking allows free-seated agents to give out specific DID numbers or extensions so that callers can reach them directly. This is meaningful only if the business process of the call center requires such agent behavior.

Alert before Call Hand-off

This is a screen-up which requires the agent to acknowledge within a set time (2 or 3 seconds) before handing out the call (connecting the voice path). This is useful to ensure that Agents are alert before the call is handed over. At home and remote agent setups use this arrangement quite often.

On-Hook Agent

On-hook refers to the Agent phone being on-hook, meaning that for every incoming call, the phone will ring for the agent to pickup the call. This is suitable for low volume call centers where the agent is multi-tasking between answering calls. Since each ring is 8 seconds, this method may not be the most efficient way of distributing high volumes of calls.

Off-Hook Agent

Off-hook agents stay connected to the phone system and are handed calls with an audible tone. Typically, high volume call center have off-hook agents.

Agent Phone

Agent Phones can be an extension within the PBX (phone system) of the call center ACD or they can belong to an external phone system. Internal phones could be IP phone, softphone or regular POTs phone. Most new generation phone systems like Asterisk offer VoIP capability and seamless integration of VoIP and older telephone technologies. Within the LAN (Local Area

Network), IP phones and softphones offer greater flexibility and do away with telephone wiring and clutter.

Soft-phones

Softphones operating on good Desktops remove the need for separate telephones. They work well with USB head-sets.

IP phones

IP phone may be necessary if the processing power of the Desktop cannot handle both voice and data connections simultaneously.

VoIP setup

VoIP setup offers a direct path from the external network into the Call Center ACD without the need for the call to travel through telecom networks. Here the infrastructure becomes important for call quality.

Agent phones behind other PBX

Agent phones behind external PBX will require trunk connections. Setting up trunks within an office is straight forward if the PBX is VoIP enabled.

Agent Computer

In most Contact Center platforms, agent screens are based on Web browsers. Good desktops can also be used to run Softphones with USB head-sets.

Queues, Agents and Skills

Every queue within an inbound call center requires a set of skills so that competent agents can handle calls. Call center business rules dictate the number of different queues and their skill association. Within large call centers there are tools within the HR (Human Resources) to identify and rate (prioritize) the skills of agents in an ongoing basis. "Spanish, Customer Service" can be an example of a queue requiring adequate skill level in Spanish and also in Customer Service to answer calls in this inbound queue.

Skills based Routing

Skills based Routing is an efficient way of ACD and increases the overall performance of a call center. Agent skills with levels and Queue skills determine how a call is answered. An incoming call will be delivered to the agent with the highest skill level among available agents. If there are multiple agents available to take calls, the longest waiting agent gets to handle the next incoming call. When there are calls waiting on multiple queues and an agent becomes free, the agent will get the call from the queue with the highest skill level. When the skill levels are equal, the longest waiting call from those queues will be handled out. If all agents are assigned the same priority on all queues, it will result in a balanced queue system. This will result in the longest waiting call getting the first available agent. If multiple agents are waiting for a call, the longest waiting agent will receive the call.

CRM integration and Script Builder

Mature and established call centers follow well laid out processes for the interaction between an agent and the caller. This is often referred to as the "Script". A flexible Script Builder is invaluable for developing custom scripts for your inbound services or outbound campaigns.

Custom Variables

Call Center operations require the ability to create, display and store values in custom variables like TEXT, NUMBER, LOV (List of Values) etc.

Creating Text blocks with Embedded Variables

The Scripts should be able to display Embedded variables like Agent name, Date or other custom variables whose values have been pre-loaded.

Post to URL

The Script should have the capability to upload or post information real-time from the Script to a website or an application that would be able to receive it.

External URL Link with command line parameters

Using this, you can link to a website through a clickable link with embedded parameters.

URL within an I-frame or on a Separate Window (CRM Integration)

You can integrate Web applications and CRMs capable of accepting command line parameters. Within a script, the CRM Web application can be displayed through an I-frame or through a new window.

Computer Telephony Integration (CTI) Integration into a CRM

If you have an evolved business application and require all the call center features to be embedded into it, you should look for a complete API (Application Program Interface).

API for CTI Telephony

This should provide session management and telephony session control.

XML API for Database

Every CTI engine has a database which is essential for reporting agent performance, queue performance and overall performance associated with the call center.

Call Recording and Quality Monitoring

New generation telephony platforms like Asterisk offer built-in call recording and monitoring features.

Listen to Agents

Supervisors can listen to, or snoop, agent calls to ensure quality.

Whisper

Whisper allows supervisors to listen to the conversation, but only speak to and be heard by the agent, not the caller. Whisper becomes a very powerful coaching tool.

Barge

This allows supervisors to join an established call between an agent and a customer. The supervisor can speak to and be heard by both the agent and the customer.

Reporting

Detailed, Cradle to Grave reporting is essential to gaining full visibility into daily operations. Commonly utilized reports include:

Agent Performance

During every session, the time spent by an agent on all agent states, including custom DND states, is compiled and presented as a time profile. Call dispositions provide an indication of the conversion rate for an agent. Wrap-up definitions are compiled by the hour for all call dispositions.

ACD Performance

As an indicator of how well the queues and calls are being handled by the call center collectively as well as individually by the agents, ACD performance reporting provides data on abandons, wait-time, SLA and related real and historical information for all calls.

Queue Performance

This provides metrics on calls grouped by queues. Service level represents a measurable value for the speed at which calls are handled by the call center. Abandoned calls and average wait time before abandon are important measures of queue performance. Agent information is combined with Queue data to provide insight on how well the calls are handled. Other useful information within the Agent Queue data can reveal the number of times a call was put on-hold or transferred.

Supervisor Dashboard and Wallboard

Call center supervisors require screens and reports that deliver a view of the call center performance broken down by agent, queue and campaign performances. Wallboards allow supervisors to keep an eye on SLA for each queue.

Periodic and Historical Reporting

Most contact center managements require periodic historical reporting, which should be scheduled and e-mailed automatically to a defined distribution list.

Summary of Benefits

Few call center software solutions provide the full breadbasket of features outlined above. Q-Suite 5.5 is able to deliver all the above-mentioned features in an incredibly flexible, versatile software bundle. Due to its utilization of Asterisk as its underlying telephony platform, Q-Suite 5.5 delivers further benefits inherent to its infrastructure. Capabilities include stable remote agent support, distributed architecture, utilizing multiple trunks, and multi-trunking are just a few benefits inherent to Asterisk and Q-Suite 5.5.

This unique combination of powerful software and telecommunications technology positions Q-Suite 5.5 to meet the most demanding of call center requirements.

A Final Word

The paradigm shift in technology has opened an unprecedented opportunity to enhance your call center platform, lower your costs and provide much more functionality. There has been never such an opportunity to compete and grow with industry leaders. In order to take full advantage of what cutting edge technology can deliver, a close analysis of Asterisk and Q-Suite 5.5 should remain central to your search for a next-generation contact center technology platform.

There are a number of resources to help you learn about the benefits of Asterisk. In addition to the reference materials available at www.indosoft.com, you can find valuable information here:

Asterisk Website
www.asterisk.org

Commercial Asterisk Support
www.digium.com

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About Indosoft

Indosoft is a global provider of call center software for Asterisk. It has been providing call center solutions to medium and large contact centers around the world for over nine years. It also licenses its ACD for Asterisk with .NET and socket library to enterprises utilizing Asterisk in their product line. Indosoft has been making available Q-Suite ACD for private label contact center technology solutions.
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