Realizing Healthy Call Center ROI:

Taking Advantage of New Technologies To Significantly Reduce Costs.

Executive Summary

Recent technological changes have dramatically impacted the cost of doing business in the call center industry. The World Wide Web (WWW) and Internet Protocol (IP), as well as advances in hardware and open source development, have unleashed unparalleled change that has significantly altered the industry. As importance and demand for the contact center industry grew with the growth in global e-commerce, the sophistication and capabilities of the contact center technology platform increased exponentially, while the cost per seat has gone down annually due to tremendous technological advancement.

Forward-thinking, innovative organizations have been quick to capitalize on these new technologies. The contact center industry, mature as it may be, is presented with an opportunity to use changes in technology as a prime driver for healthy ROI. Some of the factors driving this opportunity include paradigm shifts in telecommunications, cloud computing data centers, the availability of robust computing hardware at reasonable price, as well as open source and open architecture systems. Meanwhile, the sheer capabilities of the contact center technology platform have been substantially improved by the emergence of Session Initiation Protocol (SIP) as a credible Voice over IP (VoIP) telecommunication protocol, as well as the availability of Asterisk, a mature, feature-rich and robust open source telephony platform. As a result, call center deployments have become distributed, taking advantage of cost efficiencies in infrastructure, labor and telecom. We already see innovative call centers utilizing new, advanced technology to support such distributed operations; operations where the call center infrastructure is consolidated in an easy to manage location and the agents are capable of working from multiple geographic locations and from home.

"The emergence of Session Initiation Protocol (SIP) and the availability of Asterisk, a mature, feature-rich and robust open source telephone switch, have elevated the bar for all contact center technology platforms."

This white paper will examine this game-changing shift in technology as it relates to the contact center technology platform. We will review all aspects of the technology that present opportunity to bring about greater efficiency, better productivity and lowered costs for organizations utilizing these advanced technology solutions. We will discuss the benefits inherent to superior call center technology architecture, and we will introduce Indosoft's Q-

Suite 5.5, leading call center software for Asterisk. Finally, we will discuss the business case for selecting such a contact center technology platform capable of delivering substantial ROI.

Emergence of VoIP and its impact on Contact Centers

With the rise and dominance of the Internet as the main communication pipeline, telecommunications have undergone rapid transformation. With Internet Protocol (IP) forming the basis for all forms of communication, voice, data and wireless are simultaneously converting to IP. In traditional telephony, we have reliable Time Division Multiplexing (TDM) based PRI (E1/T1) slowing giving way to SIP. TDM has served the industry well, but the emerging convergence is slowly driving all investments towards VoIP.

Legacy Telephony

ISDN PRI (T1/E1) has been used for telecommunication voice for the last two decades and is the backbone of traditional telephony. With the emergence of VoIP, there is now a steady shift in voice communications; voice, data and all other media are converging into IP. As such, VoIP will eventually replace ISDN PRI (E1/T1) in the long run. Even now, the costs for acquiring legacy telecom circuits are higher and require lead-time unlike VoIP, which is on demand. Although the voice quality of legacy systems is very good, primarily because of the dedicated infrastructure, VoIP can easily match this voice quality when IP bandwidth and connectivity are good. Since the convergence of voice, data and other media has tremendous advantages in terms of being able to use the common information pipeline, long-term investment in the upkeep of legacy telephony is diminishing fast.

IP Telephony

From a contact center infrastructure perspective, IP telephony comes into play for both interconnecting to the outside world as well as having an internal infrastructure which uses IP phones. It is extremely important for a call center to have the capability to interconnect to both VoIP and ISDN PRI (E1/T1). This will allow the contact center to pick the most economical telecommunication option based on the geographic location, as well as telephone long distance and toll-free rates. The open source hybrid Asterisk telephony platform has intrinsic capability to handle TDM and VoIP. Within the call center LAN, where you have complete control over the infrastructure, it makes a lot more sense to go with IP phones and Softphones to avoid the legacy wiring clutter, as well as to take advantage of the convergence by keeping everything IP. Some Softphones are available at no cost and may be a viable option for agent machines. The important thing to remember about Softphones is that they use the Desktop's processing power and if the desktop is overloaded, the call quality will be impacted.

Telecom Connectivity:

VoIP

SIP, IAX, H323

On Demand

Cost Effective

Convergence Voice/Data

IP Phones, Soft-phones

ISDN PRI (E1/T1)

VoIP Terminations (SIP) and ISDN PRI (E1/T1)

Every call center needs interconnection to the telecom network. ISDN PRI (E1/T1) has been providing this digital interconnection reliably for the last two decades. In many parts of the world, SIP peering (sometimes referred to as SIP trunks) is also available. The main considerations are cost, reliability of service and availability.

The ISDN PRI (E1/T1) circuits take time to install and are tied to a fixed location. They do offer excellent voice quality and are extremely reliable. SIP peering is available on demand and comes over the IP network without being tied to a fixed location. The selection of a quality provider is vital. The infrastructure requirements, like bandwidth and response time between the provider, and the contact center hardware are the responsibility of the contact center. Therefore it is important to plan infrastructure before signing up for SIP termination. With good infrastructure, SIP offers great advantages and flexibility. A good hybrid PBX like Asterisk provides contact centers the option of using both SIP and TDM ISDN PRI trunks concurrently. This will give call centers complete control over their telecom expenditure.

Hybrid PBX:

Seamless connectivity with SIP and ISDN PRI

Reduce Telecom cost

Bandwidth and Latency

Voice traffic needs to travel between the contact center infrastructure and the telecom provider using some form of IP connectivity. Therefore, adequate bandwidth is essential for the traffic to travel back and forth with quality. Along with the bandwidth, the network delay should be minimal and consistent with what humans are accustomed to handling in the course of a conversation. Latency is the measure of this network delay. Setting up network connectivity with good bandwidth with minimal latency is possible at reasonable cost. If the contact center hardware is co-located in a data center, it may be preferable to locate a SIP provider who is in the same backbone within the data center. In some geographic locations, bandwidth is a premium commodity and contact centers resort to voice compression for bandwidth reduction.

Use of Compression to Reduce Bandwidth

Voice compression reduces bandwidth requirements but requires more processing power for compressing and de-compressing the voice packets. CODECS like G729 are licensed on a per channel basis. It is important to make sure that the contact center technology platform has the capability to handle voice compression and allows use of compression CODECS.

Phone system within the Contact Center Local Area Network (LAN)

Within a LAN, going VoIP is a good option as you have complete control over the infrastructure. VoIP phones and IP-PBX offer unprecedented features with enormous flexibility. Call centers can be a mix of IP-phones and Softphones depending upon the need.

Remote Agents

With VoIP, remote agents are in essence an extension of your LAN but you may not have the same control over the infrastructure especially if the agent is working from home using a home

internet connection. DSL and Cable modems generally provide sufficient bandwidth but may have more latency depending on the quality of the provider.

Considering Asterisk for your Call Center Telephony Switch

We are witnessing a critical change in the history of telecommunications, with a move away from one mature and reliable protocol (TDM) to a new one (VoIP), primarily due to the unification of data, voice and all other media over an IP (Internet Protocol) infrastructure. Most of us understand the importance of acquiring a new generation contact center technology platform for improving productivity and this begins with the selection of the right telephony platform. Let us start with a closer look at Asterisk.

Why is Asterisk as a telephone switch important? For starters, the underlying telephony switch is usually a large portion of the initial cost when buying a packaged proprietary contact center technology solution. If you are able to find a proven, next generation switch then all that remains is searching for a feature-rich ACD to go with it. In Asterisk, you have the most powerful open source hybrid telephone switch tested by millions of users worldwide. Therefore, by selecting Asterisk, you have an immediate cost saving and technology advantage.

Most proprietary contact center switch providers quite often have their internal teams playing "catch up" to keep their legacy CTI up to date, whether it is adding features for the switch or enabling cutting edge VoIP migration. Asterisk, on the other hand, provides all the PBX functionality independent of the underlying telecommunications connectivity, be it TDM (PRI E1/T1) or VoIP (SIP/IAX). It also provides seamless integration of the underlying VoIP and TDM connectivity. This important feature provides two distinct benefits. First, Asterisk allows working with existing TDM, and second, companies significantly reduce risk as they gradually migrate to VoIP based on company timetables rather than having to "flip a switch" when go-time is at hand.

Asterisk as Telephone Switch

Hybrid (VoIP and TDM)

Industry leading and Feature rich

Standard Hardware

Open Source, used by around the Globe

There are other benefits inherent to Asterisk. In the past, achieving voice recording capabilities has required additional expenditure and time consuming CTI developments. However, voice recording is intrinsic to Asterisk, meaning there are no additional costs.

Open Architecture and Hardware

It is also important to note that Asterisk is designed to work in commodity hardware, including Dell and HP. Again; there are multiple benefits to this feature. The most direct benefit is that you can easily avoid proprietary equipment lock-in by utilizing a proven Asterisk based contact center technology platform. Another benefit is ease of scale. When an Asterisk server reaches its processing limit, additional Asterisk servers can be added to scale with the growth of the call center. With this in mind, the platform can also be architected to be redundant.

Call Center ACD software and Dialer for Asterisk PBX

Indosoft offers Q-Suite, a very high-end call center ACD software solution for Asterisk telephony. It is a feature-rich, scalable, out-of-the-box software that comes with a powerful ACD and predictive dialer. It has detailed reporting capabilities and is bound to satisfy the functional requirements of most advanced call centers. With Q-Suite, you can switch to Asterisk with the right contact center technology solution and migrate seamlessly to IP telephony.

Q-Suite 5.5 Product Features Matrix	
Inbound Features	**Q-Suite 5.5**
ACD with Skills Based Routing & Queue Prioritization	√
GUI IVR Setup	√
GUI Dialplan Builder	√
GUI Script Builder	√
Hot-Desking, On/Off Hook Agents	√
Outbound Features	**Q-Suite 5.5**
Predictive Dialing	√
GUI Script Builder	√
Campaign & List Management	√
Do-Not-Call Compliance	√
General Features	**Q-Suite 5.5**
TDM & VoIP Connectivity	√
Multi-tenant	√
Real-time Reporting	√
Historical Reporting	√
Voice Recording	√
Quality Monitoring	√
Web Agent Interface and Native Client	√
API for CTI Interface (.NET and Socket)	√
Asterisk PBX with Voicemail	√
Hosted & Premise Based Installs	√
High Availability for Redundancy	√
Mid-call Recovery for Fail-over	√
Open Access and Full Knowledge Transfer	√
Unique Support	√

In Q-Suite you have the right call center software on top of the right telephony platform delivering the competitive edge you require. It is a great time to evaluate Q-Suite for your cost effective, sophisticated, next-generation call center technology platform.

Centralized Infrastructure – Data Centers and Cloud Computing

For all practical purposes, a call center can be defined as a grouping of agents with desktops and phones. With managed infrastructure and connectivity, the Agents can be anywhere without restrictions on their locations. In a distributed architecture, you achieve maximum control over resources and the ability to easily manage all agent groups across various geographic locations. The location of most of the servers can be in a data center with good infrastructure. The telephony servers can be located at the nearest point to the service provider to take advantage of the cost benefits from local termination and access time.

Distributed Architecture

Hosted or Co-located or Centralized

Remote and At-Home Agents

Geographically separated Agent groups

External Links with Command Line Parameters

Keeping Ahead of the Competition

A common benefit outlined above is how recent technology advances have significantly improved an organization's ability to achieve an unprecedented level of flexibility in a cost effective manner. This flexibility has enabled forward thinking organizations to out-pace the competition because they can quickly and efficiently adapt to changing business trends. The resulting agility has enabled such organizations to not only achieve a competitive edge, but to maintain it in the face of change. Once the proper groundwork has been laid, such changes can be implemented without overhauling the existing system.

For example, the ability to incorporate the call center software and its feature sets into an evolved business application enables users of Q-Suite to adapt their call center businesses to the demands of the client. This enables these call centers to more effectively target a larger range of businesses opportunities and provides a promising prospect to improve ROI.

Ultimately, the capabilities that you will be able to deploy in the future will be built on the architecture of the solution you purchase today. Enabling your contact center platform to be as dynamic as possible, by providing it with the inherent ability to change with the times, as defined by you, ensures that in the near future you will remain at the head of the pack in terms of services offered. Be sure that you are getting the platforms you need now to support your vision for your customer interaction strategy of the future.

Managing Costs

Although many organizations are challenged by the economy and are looking for cost-effective solutions to managing their technology costs, it has never been easier to successfully manage these costs while building value for your business.

One component of managing costs is Risk Management. Ensuring that the contact center technology platform has built-in risk management tools is essential for organizations today. Q-

Suite has a popular fail-safe call recovery feature that provides remarkable fault tolerance. This built-in design ensures that a single failure does not result in any loss of calls or conversation. Should there be any single point of failure, including software failure within the components of the system, Q-Suite's unique fail-safe call recovery does not drop ongoing calls and allows new calls to continue coming. As a result, the two end point phone devices during a conversation will be able to continue the voice conversation after the said failure, without having to re-initiate a fresh connection.

Another component of managing costs is Standardization. Purchasing a standards-based contact center technology platform allows companies to realize a number of important benefits. Greater control over costs is a major benefit, and is realized by being able to choose from a variety of setup options ranging from remote-agents to distributed architecture. Increased choice when selecting hardware delivers the immediate benefit of eliminating proprietary vendor lock-in, ultimately delivering real cost savings and greater efficiency. Scalability is another benefit of standardization. As mentioned before, when it comes time to scale your call center, simply add additional Asterisk servers and ramp up with Q-Suite. Finally, interoperability ensures better cost management, as you will need to do less customization in the long run to support various business processes.

Building Value for Your Business

There is a steady debate concerning the value of utilizing all-in-one communication platforms, where all the applications available are from a single vendor on a single platform, versus utilizing best-of-breed solutions, where individual applications from various vendors are integrated into their contact center technology platform. While recognizing that advantages are to be had from both approaches, recent trends indicate a strong shift toward utilizing best-of-breed solutions.

The applications needed to support your business activity evolve and become more comprehensive with time. Best-in-breed contact center platforms provide users with the option to utilize the most advanced, highly functional applications available for a targeted purpose. For example, consider your desktop computer. You use many different applications from many vendors, each of which serves specific duties. This nice feature allows you to select the highest performing application for use, at the lowest cost. The ability of your desktop to integrate all these different functions into a simple, easy to use system is precisely what builds the value of your desktop machine.

Indosoft Q-Suite is a best-of-breed solution. It delivers the unique ability to utilize custom applications with a functionally rich call center software feature set, all of which runs on the leading and most advanced telephony platform available. Ultimately, this provides a single administrative interface and a substantial increase in functionality when compared to many all-in-one solutions, equating to a noticeable reduction in long term operating costs.

Functionally rich APIs now enable users to embed all the call center features directly into an evolved business application, an option not available to all-in-one platforms. This is a key distinguishing feature between best-of-breed and all-in-one platforms.

As mentioned earlier, there is long-term value to be obtained from the unique open architecture and hardware requirements of Asterisk and Q-Suite. The open architecture of Q-Suite leverages the advantages of Asterisk, Linux, Apache and MySQL to provide unsurpassed functionality. Furthermore, since Q-Suite is designed to work in commodity hardware, you can easily avoid proprietary equipment lock-in. The benefit of this subtle difference cannot be understated. Simply put, substantial improvements to your ROI can be achieved from this inherent benefit of Asterisk and Q-Suite.

All said and done, Q-Suite provides an unprecedented ability to realize a healthy ROI. With a high-end call center ACD software paired with a high performing telephony platform, superior contact center performance is achieved at a fraction of the cost of what leading providers offer. Scaling for future growth is another important ROI builder present in Q-Suite. When it is time to scale, simply add additional commodity Asterisk servers and ramp up as needed.

Achieving Your Ideal Return on Investment

In summation, the numerous advances in technology for the contact center platform have delivered an unprecedented opportunity to maximize call center ROI. As investments in TDM are rapidly replaced with investments in VoIP, new generation call center platforms are emerging, delivering substantial agility and flexibility to their owners in multiple ways. Contact centers can now pick the most economical telecommunication options based on key cost factors including geographic location, telephone long distance rates and toll free rates. The hybridization of legacy functionality with VoIP capabilities has provided small and medium sized businesses with the unique opportunity to substantially upgrade their functional capabilities without breaking the bank. The resulting ability to utilize remote resources, without sacrificing security, has enabled such organizations with the ability to compete at new levels. Finally, the built-in flexibility of these new generation contact center technology platforms provides a solution powerful enough to compete today and grow for tomorrow.

A Final Word

The paradigm shift in technology has opened an unprecedented opportunity to enhance your call center platform, lower your cost 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 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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