

# The Return on Investment of a Customer Interaction Network with Speech Self-Service

## Introduction

The Customer Interaction Network integrates an e-business strategy with the contact center so that customers can employ your company in ways that were previously unimaginable. The net result is that customers do business with your organization using communications infrastructure and application software that connects them with your business and keeps them returning over and over again.

Imagine that airline customers are automatically notified of canceled flights and at the same time are presented with alternate flight schedules and selections, or that a customer is alerted regarding the delivery of an important package, or is notified when mortgage rates drop below a previously specified rate, or that the price of a luxury item has gone on sale. All this is available through the Customer Interaction Network, which enables your customers to contact you using the channel of their choice—Web browser, e-mail, chat, or phone—and get the same information regardless of the communications channel. That is not just e-business, it is good business, and that is the Customer Interaction Network from Cisco Systems®.

## What is the Customer Interaction Network?

Existing contact center infrastructure—computer telephony integration (CTI) servers, interactive voice response (IVR) systems, automatic call distributors (ACDs), and private branch exchange (PBX) systems—have been evolving on the circuit switched telephone network for more than 30 years. This time-division multiplexing (TDM) network uses dedicated circuits for voice traffic, but it is inefficient when compared with today's packet switching technology that can switch data, voice, and video over a single wire. A managed IP network supporting prioritization with guaranteed quality of service (QoS) offers significantly higher transmission speeds and greater bandwidth capacities to reliably carry significantly more traffic—data, voice, and video.

If today's circuit switched infrastructure is so inefficient, why has there not been a wholesale replacement with IP? The answer is simple. Where new offices are being constructed or where a "rip and replace" strategy is feasible, converged IP networks with compelling applications, such as IP telephony and IP Contact Centers, are being deployed and legacy TDM equipment is being turned off. Service providers are decommissioning their TDM plant and using IP at the core of their network to carry voice calls. The future is clear: IP offers such overwhelming benefits for carrying voice that it is simply a matter of time before IP systems fully replace traditional TDM systems.

What prevents mass migration to a converged IP network for enterprises and service providers is the need to support existing applications and services tied to the infrastructure that are core to business processes, without disrupting business operations.



For example, without the ability to support toll-free number routing, how can the large carrier-grade voice switches be replaced with IP? Although voice transmission can be sent over IP networks using voice gateways after the destination number is known, the major routing decision and logic are made by applications embedded in Service Control Points (SCPs). SCPs are integral to the circuit switched telephone network infrastructure and, for years, have defined how a phone call is placed on a global basis. Until it is possible to replace these SCPs, their functions, and their applications, the existing TDM infrastructure will remain. Similarly, in enterprises with circuit switched PBX technology as the switching fabric, the TDM PBX infrastructure will remain until contact center applications including CTI, IVR, ACD, and voice mail, which are core to business operations, can be smoothly migrated to IP.

Although most TDM PBXs can be retrofitted to support IP telephony, “IP-enabling” a PBX in this manner does not allow enterprises to realize the full benefits of a converged network. In an IP-enabled or hybrid scenario, both TDM and IP equipment must continue to be maintained and supported, operations personnel must be trained on two separate systems, and as the IP network becomes essential to data operations, running two networks and continuing to invest in a TDM infrastructure is wasting money.

The objective of reducing contact center costs and improving customer satisfaction remains intact. For example, when self-service automation using speech recognition technology produces significant cost savings, making the right investment decision in an IVR solution that is IP based is particularly important—even though the network may be TDM based. This decision avoids replacing a TDM-based IVR when the inevitable network convergence happens and an IP solution is required. Even if convergence is only in the planning stages, this decision avoids replacing the TDM IVR when the time comes—which in many cases is the near future.

What is required is a fresh approach to a contact center that is harmonious with e-business strategy and does not involve replacing the installed systems. This strategy lets you migrate your infrastructure at your own pace and is not tied to expensive proprietary equipment and software. Today’s communications network infrastructure should be open standards based to support ‘best of breed’ choices and should support the same core objectives of a real-time enterprise, including:

- Standardized business processes
- Pure Internet architecture
- High scalability
- Internationalization
- Interoperability between vendors
- Embedded business analytics
- Change management

A Customer Interaction Network solution from Cisco® allows you to migrate existing circuit switched infrastructure, leaving in place the existing IVRs, PBXs, CTI servers, and ACDs while migrating to a converged network with integrated IVR capabilities, without disrupting business operations.

### Speech Self-Service Return on Investment

When effectively deployed, speech self-service applications significantly improve automation rates and have a significant impact on staffing costs. In addition, customers prefer speech recognition applications rather than touch tone, and speech can be used to automate applications that were previously impossible. For example, applications that required entering



name and address information, travel destination, and stock names were not effective with only a 12-button keypad. Speech recognition changes this, and the application possibilities are endless.

Challenges to providing effective customer service in the contact center include:

- Annual agent turnover of between 20 to 100 percent
- Average cost to hire an agent of US\$6200
- Agents require training, knowledge, and patience
- An agent-handled call can cost five times that of an automated call
- Staffing requirements depend on call volumes

These factors significantly affect the operations cost of using live agents, particularly when customer service is required 24 hours a day, year round. Call automation helps solve these problems and leads to higher productivity and cost savings by freeing up agents to handle complex inquiries that have potential “upsell” opportunities.

Calculate the return on investment (ROI) for speech recognition solutions by answering several straightforward questions (figure 1). The results can be surprising with ROIs that are under 12 months and in some cases can be measured in weeks or even days.

In airline reservations, for example, a system that automates checking arrival and departure times for customers, which represent a large percentage of calls, frees up enough agent time that the system pays for itself in a few weeks because of the volume of calls that no longer require agent assistance. Additional benefits include lower telecom charges, because customers get the information they need without having to wait on hold to talk with an agent, and agents focus on revenue generating tasks such as outbound sales and marketing campaigns instead of answering simple questions that are now automated.

Figure 1: Calculating the ROI of Speech

	Before Speech Recognition	After Speech Recognition
Call volume		
Percentage of automated calls		
Percentage of agent calls		
Hold times		
Call length		
Training costs		
Average cost per call		
Telecom charges		
Abandoned calls		
Menu levels		
“Zero-outs”		



Self-service applications are readily available through the Web, because organizations have integrated their IT infrastructure, CRM systems, mainframes, databases, and order-fulfillment and billing systems, to support it. This has driven the demand for self-service and quick response to customer needs and has created expectations that cannot be fulfilled when customers have to wait on hold because they do not have access to a PC and Internet service. With speech, the Web is simply a phone call away—creating the need for an organization to be always available to its customers.

Extending the capabilities and services available using the Web to the telephone provides enhanced customer service, which leads to improved customer satisfaction. This translates to repeat business and loyal customers—the foundation for business success.

A leading financial services firm encountered the limits of touch-tone systems for providing account holders access to their 401(k) accounts. Caller satisfaction was low and call abandonment was high. After deploying speech, the company was able to process numerous transactions without agent intervention. Abandonment rates dropped by 66 percent and costs per call were reduced from \$4 per agent-assisted call to less than \$0.40 per call with speech—a 90 percent saving.

Having collected data from numerous deployments, analyst studies, and industry benchmarks, in all the major industry verticals, Cisco helps develop the business case for speech applications in your contact center.

### Converged Network ROI for Contact Centers

An IP contact center uses IP telephony to support contact center applications on a converged voice and data network with guaranteed QoS that allows infrastructure and agents to be optionally distributed across multiple locations.

IP contact centers offer many benefits, including:

- Reduce network equipment and operating costs by maximizing the investment in the data network infrastructure by converging voice and data over a single wire with unified management. Replacing the legacy telecom network has the additional benefits of requiring only a single jack, equipment infrastructure, and management systems.
- Use of the same IP infrastructure by employees outside of the contact center provides the same cost savings benefits.
- Decrease network operations costs by reducing the personnel costs associated with hiring, training, and staffing support technicians for a single network infrastructure, as well as enabling remote management capabilities.
- Realize significant cost savings with IP telephony due to reduced telecom charges for inbound toll free and international access when bypassing the regular telecom network. Internet access typically is a flat charge per month, which translates to predictable charges instead of variable per minute rates, enabling better cost management and financial planning.
- Reduce capital expenses, because the total cost of ownership for IP is less than TDM. This includes the cost of the switching infrastructure, phones, and use of PC headsets, which reduces the cost per agent seat.
- Reduce real estate, equipment, and personnel costs by locating agents anywhere and integrating operations as a virtual contact center. IP telephony enables agents to work from home—reducing building and facilities costs as well as agent absenteeism and turnover, while boosting agent productivity, and enabling multi-site virtual contact centers, which may include sites staffed by outsourced agents in less expensive locales.
- Provide 24-hour, year round support service by handling contacts across multiple locations because IP telephony provides a smooth customer experience regardless of where the agent is located. With home-based agents, staffing for unexpected traffic and peak hours is easy because agents working from home typically can be available on short notice, even during out of office hours.



- Manage and administer your contact center remotely from any location with Internet access using Web browser-based management and reporting capabilities.
- Support fluctuating contact center traffic levels by easily scaling staffing levels up or down through the use of home-based agents. Minimal investments in hardware for these agents provide contact center management with the flexibility to quickly staff to meet customer contact demands.
- Provide a resilient network as e-commerce Websites become critical to corporate operations and the reliability of the IP switching infrastructure has improved significantly to offer carrier-grade reliability at enterprise price points. Cisco switches and routers support Cisco Global Resilient IP (GRIP) that provides nonstop packet forwarding with stateful switchover. The result? If a hardware or software problem takes down the primary processor, the backup processor picks up where it left off, without requiring a reboot of the system or line cards and without losing a single data packet. In addition, Cisco IOS® Software runs from the enterprise backbone to the outermost reaches of the WAN; and these capabilities can increase the availability of every segment of your network and increase the productivity of every branch of your company.
- Support multiple channels with a converged voice and data network that must support multi-channel customer access so that customers can communicate using their preferred method—voice, e-mail, chat, fax, and co-browsing. The corporate Website should support a “push to talk” button that connects the customer with an agent who can then push Web pages to provide the information that the customer needs. With a voice and data network this capability requires synchronization across the two networks, but with a converged network the agent or customer can use a PC for voice and data access.
- Future-proofed infrastructure that supports the next generation of services that can include communicating with service representatives on PC or mobile browsers (for instance, Sprint PCS Customer Agent Care), and streaming video on demand for product demonstrations or informational broadcasts. The legacy circuit switched telephone network cannot provide the bandwidth required to support media rich and multimodal customer interaction, making its replacement with an end-to-end IP network inevitable.

Cisco helps develop the business case for IP telephony through a network readiness review to determine the infrastructure requirements to support a converged data and voice network for next generation of contact center solutions.

## Summary

Cisco is the fastest growing company in the voice communications market and leads in the IP telephony segment, according to Synergy Research Group and Dell'Oro Group. Cisco has more than 10,000 IP telephony customers worldwide and has shipped in excess of two million IP phones to customers—more than all competitor IP phone shipments combined. Today, Cisco IP phones displace approximately 5000 circuit-based traditional phones each business day.

The business case and technical advantages for an IP Contact Center with a speech self-service solution are self-evident. Cisco performs an application discovery investigation and develops the business case for speech as well as completes an IP infrastructure analysis and designs an IP telephony solution to meet your requirements. From this analysis, an ROI model is developed for both the speech and IP telephony solution, providing an option to phase the implementation with investment protection using a solution designed to work with today's TDM network while migrating to an all IP converged network for multimedia services.

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