



Enhancing the Business using Voice Automation

White Paper

Abstract


Despite the popularity of the Internet, over 70% of all customer interactions still happen over the phone. This, coupled with the ever increasing importance of customer service in retaining customers, has led to the need to provide quick, reliable telephony answering services. To meet these demands and to control the associated costs, many businesses are now investing in automating phone based solutions using voice automation technologies, including Automatic Speech Recognition (ASR) and Text to Speech (TTS). This white paper looks at the benefits of automating the standard services of a receptionist and discusses how Voice Activated Directories can provide an easy-to-deploy voice automated solution to deliver calls.

The Importance of Good Customer Service

Customer service is one of the most important ingredients of the marketing mix for all products and services today. High quality customer service helps to create customer loyalty. Poor customer service is very rapidly spread by word of mouth and today's numerous communications options – text, email and blogs.

Customers site long hold times, the inability to understand an agent and the inability to speak to a live person as key complaints they have with customer service departments. Ensuring the key calls are handled by a 'real' person while still running a cost efficient system means ensuring that general queries with standard answers are handled by the system, releasing time for more personalised call answering where needed. In spite of new technologies, such as web chat and email, the phone is still the number one method used by consumers to contact customer services. In one survey by Harris in 2007 on behalf of Nuance, 97 percent of consumers prefer this method for contacting a company.

The significance of good customer service can be shown in financial terms; it costs at least five times as much to win a new customer as it does to keep a current one. So much of the profits of businesses will rely on repeat custom.



It costs as much to gain
one new customer as it
does to keep five current
customers

Providing a high quality of service for both current and future customers is the key to success in a competitive market.

The Demand on Resources

Ensuring a high level of customer service for both existing and future customers is placing an increasing demand on the resources within an organisation, including those handling incoming calls. Stretched resources result in decreased levels of service with tensions increasing due to lengthy wait times before calls are answered and highly stressed staff resulting in natural human errors occurring. Increasing the current resources through new staff can be costly in terms of both ongoing employment costs and the training and knowledge acquisition.

Most businesses will have calls that include repetitive elements. Handling simple queries that have standard answers is an inefficient and costly use of personnel time. An alternative solution is now available through the use of voice automation.

Voice Automation

Voice automation has had many false dawns, but today the technology is being used widely in many organisations.

Voice automation improves customer service through reduced wait times for callers, who don't have to wait for staff to become available, and shorter call durations.

This drives increased customer satisfaction as their issues and queries are dealt with quickly and efficiently through a friendly, natural, interface avoiding callers' frustrations with touch-tone only auto attendant systems.

Research by Cahners In-Stat¹ and Giga² shows that voice automation reduces costs by reducing call durations and staffing requirements, along with their associated costs such as hardware and office space.

Speech recognition applications can reduce costs and improve effectiveness. Over 90% of all customer interaction is still via the telephone. Reducing the cost of handling these calls can provide a return on investment (RoI) measured in months rather than years.

Deploying speech solutions has a positive impact on customer service and proven RoI.

According to Cahners In-Stat¹ and Giga² call cost can reduce from \$2.00-\$15.00 for an agent to 20 cents for a voice automation system

Automated Speech Recognition (ASR)

Automated speech recognition (ASR) is a technology that allows users of information systems to speak entries rather than punching numbers on a keypad. ASR can be used for key repeat action activities such as to provide standard information and to forward telephone calls to defined extensions / departments.

In recent years, ASR has become popular in the customer service departments of large corporations. It is also used by some government agencies and other service organisations such as cinemas and theatres. Basic ASR systems recognise single-word entries such as yes-or-no responses and spoken numerals. This makes it possible for people to work their way through automated menus without having to enter dozens of numerals manually, with no tolerance for error. In a manual-entry situation, a customer might hit the wrong key after having already entered 20 or 30 numerals at intervals in the menu, and give up rather than call again and start over. ASR virtually eliminates this problem. Good dialogue design in ASR systems can ensure the correct information is collected and the callers are directed appropriately.

Sophisticated ASR systems allow the user to enter direct queries or responses, such as a request for driving directions or the telephone number of a hotel in a particular town. This shortens the menu navigation process by reducing the number of decision points. It also reduces the number of instructions that the user must receive and comprehend.

For institutions that rely heavily on customer service, such as airlines and insurance companies, ASR makes it possible to reduce the number of human call-centre employees. Those people can then be trained for other jobs that are more profitable, such as complaint resolution, customer retention, or sales.

¹ A leading analyst firm.

² A leading analyst firm.

Put simply, you talk to the system and your words are recognised. The aim is to recognise in real-time, with maximum accuracy, all words that are intelligibly spoken by any person, independent of vocabulary size, speaker characteristics and accent. The quality and ability to recognise speech has improved considerably from early installations of ASR. An ASR system still cannot always correctly recognise the input from a person who speaks with a heavy accent or dialect. However, ASR systems today can be designed to confirm responses to alleviate the problem of misunderstanding and can request confirmation of correct or incorrect understanding of entries. Current ASR engines implement continuous speech recognition, which can recognise phrases and sentences rather than single command words. Language resources can also be tuned to the task in hand, resulting in highly accurate, large scale, speaker independent recognition. Development of a regular review procedure is instrumental in the creation of an effective recognition database and should be included as part of any ASR project. Recovery levels when misunderstandings occur should be built into the design based on user tolerance levels.

ASR lets telephone users provide information or conduct transactions instantly and can complement or replace touch-tone phone interfaces that can confuse and frustrate callers.

The use of ASR simplifies complex menu choices, removing the need for the caller to listen to a long list of options. A well-structured call flow with conversational search procedures can result in a natural interface for the caller, resulting in a quick and efficient task completion.

To provide these benefits, ASR solutions need to provide a highly accurate speech recognition capability and be scalable to meet the needs of any size of organisation.

Text-to-Speech (TTS)

Text-to-speech is a speech synthesis application; the system creates a spoken word of the text in a computer document. TTS can be used, for example, to provide information that would be provided in a help file or a web page. TTS can enable the reading of computer display information for the visually impaired person, or to augment the reading of a text message.

Current TTS applications include voice-enabled email, allowing users to access their email from any telephone, and spoken prompts in voice response systems. TTS is often used with voice recognition programs to produce a fully automated voice solution.

TTS lets telephone users hear dynamic or static information quickly and easily. TTS services can complement or replace pre-recorded information that can sometimes be difficult and expensive to keep up-to-date. TTS technology can be useful whenever a computerised application needs to communicate with a customer or user.

Some typical uses for TTS include:

- Listening to spoken information from a database, e.g. a bank balance
- Listening to unified messaging emails
- Customer support systems, e.g. help desk bulletins
- Providing dynamic data such as names or routing options

TTS is ideal for providing voice automation where the data is unknown at design time. It can be used with an IVR solution to reduce the costs of maintaining the system where information is dynamic.

Automated Services

Some services may not be suitable for voice automation because of their complexity, although the ability to deal with more complex systems is becoming possible as the capabilities of the speech technology increase. Voice automation applications that have been deployed successfully include voice dialing (e.g. Call home), information retrieval (e.g. When is flight BA1234 due to arrive) and data entry (e.g. entering a credit card number) applications.

All of these applications have something in common. The call flows are limited in nature and each call follows a pattern of collecting information and performing an action on the response to the original request. If an application can be seen as repetitive in nature it will be suitable for voice automation.

Voice automation of repetitive, standard services can improve customer service by shortening wait times and freeing costly human resources to handle more complex inquiries. Staffing requirements are reduced, as the majority of calls will be processed automatically. Increasing call centre automation and transaction completion rates ultimately improves operational efficiencies and reduces operating costs.

Voice Activated Directories (VAD)

Voice Activated Directories are speech-recognition based directories that give telephone callers the freedom of using natural speech commands to gain access to people or route calls to the most appropriate source for information, without operator intervention.

Example call flow as provided by TeleWare iVAD

The TeleWare iVAD dialog is configurable to the customer's requirements and the data they have available, such as names and departments.

The general dialog includes a confirmation after a name has been recognised.

IN a high quality design the iVAD only uses confirmations when it is not confident and, therefore, its dialog is normally:

Voice Activated Directory	Caller
Welcome to <i>TeleWare</i> Who do you wish to speak to?	
	Kevin Johnson
Thank You. I'm transferring you to "Kevin Johnson" press any key to abort.	

A VAD can be used to enable an auto attendant solution. The telephone caller simply states a request - a name, a place, a service or a department - and the system listens to, answers and routes the call quickly and correctly. There is no need for the caller to remember extension numbers, use touch-tones or wait for availability of an operator.

A VAD increases the ability to contact the correct person and can be designed to provide a single point of entry for every contact point (individual, group, department) within a business. Having a single point of entry provides essential telephony support for location independent working, removing the need to remember multiple contact numbers.

The use of advanced speech technologies allows interaction between system and caller, freeing costly human resources to

handle more complex inquiries. A VAD offers customers reliable 24/7/365 access.

A VAD includes all of the benefits described earlier in this paper that are associated with voice automation applications. Customer service is improved by shorter wait times and quick and efficient

responses through a friendly, natural interface without the need for touch-tone data entry. Complex requests can be dealt with by the highly trained staff that are freed by the VAD processing the standard directory access calls. Costs are reduced as call durations and staffing requirements will be reduced, resulting in less resource requirements and reduced training costs.

The benefits provided by a VAD include:

- **Increased Customer Satisfaction**
Provides a quick and efficient service through a friendly, natural, interface and frees agents to handle more complex inquiries. Enables employees to get their work done more quickly and efficiently.
- **Natural Interaction**
Provides a natural experience for callers, using conversational search procedures to obtain the required routing destination.

Additional high value features to look for include:

- Configurable call flows.
- Multiple call flows.
- Integration with customer specific data.

Summary

With greater emphasis on providing better customer service, companies worry about the extra expense needed to provide the service that customers are demanding. A conversational style, speech-enabled search solution is a large factor in achieving increased productivity, cost savings and increased customer service.

Voice automation has a recognised positive impact on customer service and proven return on investment (RoI) and is now ready to be deployed successfully within any business. Voice automation of repetitive standard services is possible and can improve customer service, reduce staffing requirements and free costly human resources to handle more complex inquiries.

A Voice Activated Directory access application can perform the directory access service of any organisation and, in doing so, increase customer service and dramatically reduce the cost of handling calls, delivering a return on the investment in less than a year.

For more information on the TeleWare iVAD product or use of Voice Automation in the TeleWare IVR and wide area Call Centre solutions, visit www.teleware.com.

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Key Benefits

Increases contactability

- Single point of entry.
- 24/7 system availability.
- Calls are always answered.

Increased customer satisfaction

- Reduced response times.
- Reduced call durations.

Reduced costs and quick ROI

- Reduced staffing requirements.
- Releases staff to deal with complex tasks.
- Increased availability (24/7), no extra cost

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