

Call Center Technology

Using state-of-the-art technology and fully automated equipments, the call centers have a considerable competitive advantage to offer to the organizations. The latest technological solutions are designed to provide the knowledge needed to develop effective customer strategies and maximize customer profitability.

- [CRM Solutions](#)
- [IVR Systems](#)
- [CTI Software](#)
- [ACD](#)
- [Windows over Web](#)
- [Call Recording Solutions & Call Monitoring Solutions](#)
- [Predictive Dialing](#)
- [Soft Phone](#)
- [Text to Speech Software](#)
- [Voice Recognition](#)
- [Programmable/Soft Switches](#)

CRM Solutions

Customer Relationship Management (CRM) solutions facilitate firms to create the customer relationship needed to uncover new business opportunities and enhance client service.

Core Competencies

The solutions are designed to provide the knowledge needed to develop **effective customer strategies** and **maximize customer profitability** . CRM solutions deliver the **robust functionality** needed to achieve maximum return on customer relationships. Giving accurate and **timely information** is of extreme significance to call center operations. CRM solutions are ideally suited for call centers. These solutions have increased the productivity of CSRs while providing a **reliable presentation** of their **critical product and customer information** .

The CRM software has the power and flexibility to manage virtually any call center operation, no matter how large or small. Starting with **database and development tools** , the software contains a CRM application including **telephony and web integration** and a complete call center phone system.

Advantages of CRM Solutions

- Customer Service and Care
- Screen pop with DNIS and ANI
- Predictive dialing/auto dialing
- Remote agent support

- Customization and integration
- Literature fulfillment
- Development toolkit
- Follow-up date call backs
- Multiple blended campaigns
- Online Surveys
- Call history
- Contact management
- System and agent monitoring
- Data import/export
- Appointment scheduling
- Help Desk Applications

IVR Systems

Interactive Voice Response (IVR) Systems are designed to provide easy to configure automated call handling systems that can be tailored to individual needs. This comprehensive system leads to distribution of routing information with the help of FAX or pre-recorded voice messages.

It includes services like:

- Speech recognition
- Self-service
- Fax management capabilities

It is also very handy in reducing fatigue, **increasing efficiency** and decreasing time spent by agents in imparting information.

The Working

Organizations who are looking at **reducing costs** and **improving customer service** can contract their inbound phone and outbound voice messaging programs at the IVR call center. The IVR outsourcing services provide a **competitive advantage** in the marketplace and making the inbound telemarketing services, affordable.

Voice broadcasting clients can **download voice recordings** and call lists and even manage the start and end of their **calling campaigns** that operate at the IVR call center. Users can view call campaign reports and the percentage of completion. To achieve the maximum results from IVR and voice broadcasting phone programs, it is advised to use **professional voice recording services. The voice recordings can be produced in minimal time at a professional recording studio.**

The IVR Systems offer the following:

- Click to Run Sample Reports
- IVR Service Bureau
- Voice Broadcasting Services
- IVR Outsourcing Services

- Campaign Development and Design
- Implementation
- Hosting
- Custom Reporting
- IVR Software and Database Integration
- Text To Speech Software Applications
- Professional Voice Recordings
- Quality Transcription Services
- Maintenance

Voice Broadcasting and IVR Applications

- Account Status
- Locator Services
- Shipment Tracking
- Employee Testing/Studies
- Customer Surveys & Loyalty Programs
- Market Research
- Payroll Services
- Voice Mail
- Claims Reporting
- Emergency Notification
- Credit Collections
- Mortgage Marketing
- Charitable Contributions
- Message and Recording Service
- Sweepstakes and Contests
- Invoice Payment
- Lead Generation
- Satisfaction Surveys
- Voice Mail and Call Back Systems
- Product Ordering and Fulfillment
- Inventory Services
- Calling Card Services
- Fund Raising Projects
- Political Advertising
- Appointment Reminders
- Severe Weather Warnings

Features of Comprehensive Voice Message Broadcast

- Broadcast messages to either individuals, answering machines or both with different messages.
- Do Not Call checks for bulk message blast campaigns
- Voice blast messages to millions of households
- Computer generated phone calls for alerts and automatic
- Event notifications such as systems failures

- Single Message broadcast using XML Push
- Customized touchphone responses
- ACD systems (Call Routing) features
- Database access and update
- Text To Speech Data Conversions
- Email notification of call results or voicemail
- Remote database access with XML Pull
- Call transfer to live agents with intelligent call routing
- Remote call transfer through dial out
- Timeout features and call control options
- Touchphone response control for both parties
- Bulk message blast with low flat rates
- Comprehensive online reporting and call management
- Professional voice over talent for on hold message voice overs

CTI Software

Computer Telephony Integration (CTI) is the advanced technology that serves as the focal point of the working of modern call centers. It integrates the organization's computer and telephone systems and the facilitates effective applications to make every phone call, inbound and outbound.

The

Concept

Although the most widely-known CTI application is screen population or screen pop, CTI is also used by other call center applications including:

- Quality Monitoring
- E-mail Management
- Predictive Dialing
- CRM

The CTI software is a rich set of **phone software library routines** that enable the application programs to control the phone system. It helps increase **employee productivity**, enhance customer service and **reduce costs** by combining the capabilities of phone system with the **custom functionality** of Windows, Unix or Web applications. Data collected by the phone ACD (Automatic Call Distribution) or IVR (Interactive Voice Response) systems can be passed to the PC, Unix or Web applications through the phone software.

Features of CTI Software

- Launch PC/WEB applications - Specific PC, Unix or Web applications can be automatically launched using the telephony software based upon data provided by your phone system.
- Caller Identification (Caller ID or ANI) - Information from the existing caller database appears on-screen when the telephone rings and remains on the screen during the call.

- Called Number Identification (DNIS) - With each call, special campaign information can be displayed from the application based upon the number dialed by the caller.
- Vital information collected by the phone system from the caller can be passed to the application. The computer telephony integration software manages this process and free agents to be more productive.
- Any phone number can be pointed or clicked in the computer database or Softphone. The telephone then dials the call - a must for maximizing the productivity of outbound telemarketing or call center service desks.
- CTI software system allows to generate real time reports and graphs. This important measuring system helps you observe and control the performance of call center and phone system with clear and meaningful displays. Graphs and charts of operational statistics let you measure the effectiveness of each user and campaign. Reports and graphs include both inbound and outbound statistics.

Products of CTI Software

- The CTI software products include Universal Phone System (UPS) that links various industrial phone systems with applications programs using computer telephony integration software. The phone system is one of several PBX systems supported by the UPS. The DSC Universal Softphone is just one application that works with this system.
- Embedded Phone Software Functions CTI software includes a rich set of phone functions that can be used within any existing PC or Web application:
 - Phone System Login and Logout
 - Remote Agent Login
 - Receive incoming calls
 - Transfer calls
 - Monitor calls
 - Place Calls ON/OFF hold
 - Voice Mail Retrieval
 - Phone Software Records Calls
 - Record Call History
 - Direct calls to phone system IVR
 - Place outside call and transfer call

ACD (Automated Call Distribution)

The

Approach

ACD facilitates controlling the distribution of telephone calls coming into the department. ACD systems are **call routing utilities** for incoming calls and can be even used to route calls originated by the predictive dialer to the **next available agent**. The staff log in/out of the ACD system as they are available, and the **system answers the calls** and distributes them. When staff are unavailable, the ACD systems holds a **call in queue** and then forwards it to the first available staff member.

Automatic call distribution is ideal for areas where multiple staff answers a high volume of calls e.g.

- Help desk
- Appointment scheduling
- Message taking

Properly managing calls can be key in providing excellent customer service, and the ACD systems provides the tools needed to **optimally manage incoming calls**. Some of the tools an ACD systems offers are:

• **Call Type Priority-**

The organization can customize the way its staff answers calls using several variables, including the caller's location (on-campus or off-campus, local or long distance) or the purpose of the call (help assistance, appointment scheduling).

• **Customizable Queue-**

The organization can record Custom Announcements that callers hear when their call is answered or while they are waiting in the queue. It can also add the Music on Hold feature.

• **Training Supervision-**

Supervisors can monitor calls to support employees and evaluate performance.

• **Call Metrics-**

The system can capture call statistics (e.g., call volume, length of calls, time in queue, etc.) on a scheduled or an ad hoc basis, allowing to further manage the staffing and call flow.

Almost any business can benefit from an ACD systems but they are particularly useful to customer service centers, inbound service bureaus (that may be handling infomercials or direct marketing campaigns) and government agencies.

Features of Automatic Call Distribution

- Unlimited number of agent groups
- Toll Free phone service
- Intelligent skill based call routing
- Route calls to remote agents
- Prioritized call routing
- DNIS assignment of agent groups
- Custom messages for each DNIS
- Call queuing and call routing
- Web call backs
- Multimedia support (email, chat, inbound, outbound calls)
- Alarms for callers in queue
- Call-back message support
- Customizable agent screens
- Reporting
- Graphical, numerical , and historical reports
- Daily Summary by Hour by Agent
- Campaign ACD system statistics

- Agent Calls Taken
- Automatic Call Distributor calls in queue
- Real-time agent status, including current call state, number of calls taken
- Time and skills-based call routing
- Abandoned caller ID information available
- Ad hoc available for complex reporting
- Export data to report writers (e.g. Crystal Reports)
- Export data to spread sheets (e.g. Excel)
- Route calls to remote agents with management and reporting
- Phone Activity Monitor (PAM)

Windows over Web

Windows Over Web (WOW) or the thin client technology brings to the front, a new approach to program and application development. The technology is known as "thin client" technology as it reduces the software resources and computer hardware needed at each individual desktop.

The

Understanding

Thin clients **use centralized software** provided over internal networks to serve a combination of PCs, Windows-based terminals and other network computing resources. **Cost savings** also result from less frequent **desktop servicing requirements** caused by software and hardware conflicts or installation problems.

WOW technology greatly helps **remote agents** and **home based support centers**. With secure applications, employees can work from **remote offices** and from the convenience of their homes using the same applications that are running in the office. Thin client technology helps enterprises:

- Reduce costs
- Increase security
- Achieve quick deployment
- Improve manageability

It offers a **viable alternative** to the desktop PC for many, making **access to business data** and applications easy, secure and affordable. With a thin client system, the client **sends keystrokes** and **mouse movements** to the server over the network or dial-up connection, and the **server sends back changes** in the display. Any PC can be a client, but because very little processing is performed at the desktop, businesses can also use **low-cost terminals** that have no moving parts (no hard drive) and a generally small amount of memory (RAM). Since each client is just a **terminal**, all data and settings-and even the applications-are on the server. To back up everything for all the users, the organization only needs to **back up the server**. And for **disaster recovery**, backups are easier and more centralized, making it easier to take the backups off-site.

Features of WOW/Thin Client Technology

- Web applications can be developed without a browser

- Traditional programming techniques can be used with thin client software
- Server based computing toolkit for defining PC Windows
- Server applications written in C, Cobol, or other compile language
- WOW Software can communicate with one or more server applications
- Separate windows client running on each user PC.
- Thin client software does not need to be updated when server application changes
- Server based computing API set of functions to control the display of Windows
- Thin client software functions with Linux windows software
- Thin client software functions with Unix windows software
- Full graphics and multi-media support

Call Recording & Call Monitoring Solutions

Call recording and monitoring solutions help to train the agents and improve customer service. They are designed to be a complete call center solution including Predictive Dialing, ACD, IVR, and Digital Voice Recording.

The

Concept

Call recording plays a significant role in the call centers and help monitor agent performance while performing quality assurance tasks. Order entry verification and confirmation can be easily accomplished when the calls are recorded. Call centers can thus, record and retrieve phone conversations in real time. The recording can be customized to meet virtually any set of business rules.

The call recording and monitoring systems are very scalable and flexible Windows-based voice recorders, live monitoring and archiving systems. Besides being fully prepared for all current and future needs, they offer superior voice recording quality and huge recording capacity. By effectively using this software system the organizations can manage:

- Complete contact management
- Call history
- Order entry
- Literature fulfillment

Telemation campaigns can be developed with call recording enabled on a campaign wide basis as well as per individual agent. This system software may also include Voice Broadcasting System, through which the contacted party can be prompted to leave a recorded message after listening to a message left by the IVR phone system. This message recording feature greatly improves the productivity of call center agents while adding flexibility to the calling campaigns.

The features of call recording and call monitoring can also be added to the Computer Telephony (CTI) Softphone and API library, allowing application programmers to embed call recording and retrieval features in existing PC, Linux/Unix, or Web applications. Call recording can thus, be a standard feature within any existing application that requires a phone interface.

Features of Call Recording and Monitoring Solutions

- Call Center recording, logging and monitoring
- Quality and service assurance
- Verbal transaction recording:
 - agent training and efficiency improvements
 - follow up information
- Financial and stock dealing
- Telephone order applications
- Analogue or digital (BRI/PRI-ISDN) multi-channel voice recording and logging
- From 2 up to 64 ports per system
- Unlimited multi-system expansion
- Superior voice recording quality
- Storage at 64, 36, 25, 18, 13 and 9 kbits/s
- Encrypted and access secured voice file storage and playback
- Fully configurable recording parameters
- Built in phone book with import facility for your relational database
- Local and/or LAN/WAN call playback and monitoring
- Advanced user, application and security / access management
- Automatic multiple hard disk content and capacity management
- Extensive search, filter and storage marking capabilities
- Call archiving option for warehousing, archive management & retrieval
- Call Recording Features
- Call center monitoring features
- Optimal recording quality and size for fast, easy retrieval
- Exceptionally large configurable storage
- Remote supervisor monitoring capability
- Complex search capabilities for call recording retrieval
 - by agent
 - by date
 - by time
 - by date range
 - by time range
 - DNIS
 - phone number(s)
 - by combinations of above
 - by others

Call Recording & Call Monitoring Solutions

Call recording and monitoring solutions help to train the agents and improve customer service. They are designed to be a complete call center solution including Predictive Dialing, ACD, IVR, and Digital Voice Recording.

The Concept

Call recording plays a significant role in the call centers and help monitor agent performance while performing quality assurance tasks. Order entry verification and confirmation can be easily accomplished when the calls are recorded. Call centers can thus, record and retrieve phone conversations in real time. The recording can be customized to meet virtually any set of business rules.

The call recording and monitoring systems are very scalable and flexible Windows-based voice recorders, live monitoring and archiving systems. Besides being fully prepared for all current and future needs, they offer superior voice recording quality and huge recording capacity. By effectively using this software system the organizations can manage:

- Complete contact management
- Call history
- Order entry
- Literature fulfillment

Telemation campaigns can be developed with call recording enabled on a campaign wide basis as well as per individual agent. This system software may also include Voice Broadcasting System, through which the contacted party can be prompted to leave a recorded message after listening to a message left by the IVR phone system. This message recording feature greatly improves the productivity of call center agents while adding flexibility to the calling campaigns.

The features of call recording and call monitoring can also be added to the Computer Telephony (CTI) Softphone and API library, allowing application programmers to embed call recording and retrieval features in existing PC, Linux/Unix, or Web applications. Call recording can thus, be a standard feature within any existing application that requires a phone interface.

Features of Call Recording and Monitoring Solutions

- Call Center recording, logging and monitoring
- Quality and service assurance
- Verbal transaction recording:
 - agent training and efficiency improvements
 - follow up information
- Financial and stock dealing
- Telephone order applications
- Analogue or digital (BRI/PRI-ISDN) multi-channel voice recording and logging
- From 2 up to 64 ports per system
- Unlimited multi-system expansion
- Superior voice recording quality
- Storage at 64, 36, 25, 18, 13 and 9 kbits/s
- Encrypted and access secured voice file storage and playback
- Fully configurable recording parameters
- Built in phone book with import facility for your relational database
- Local and/or LAN/WAN call playback and monitoring
- Advanced user, application and security / access management

- Automatic multiple hard disk content and capacity management
- Extensive search, filter and storage marking capabilities
- Call archiving option for warehousing, archive management & retrieval
- Call Recording Features
- Call center monitoring features
- Optimal recording quality and size for fast, easy retrieval
- Exceptionally large configurable storage
- Remote supervisor monitoring capability
- Complex search capabilities for call recording retrieval
 - by agent
 - by date
 - by time
 - by date range
 - by time range
 - DNIS
 - phone number(s)
 - by combinations of above
 - by others

Predictive Dialing

Predictive-dialer is a computer based dialogic predictive dialing system that handles inbound and outbound phone calls for small to large call centers. It brings about cost savings, improved control, maximized productivity and efficient use of resources.

The Understanding

The system **automatically dials** the telephone for telemarketers and connects only the live voice contacts. It does this by **listening and filtering out** the answering machines, busy signals, operator intercepts and other types of non-functional calls. Telemarketers no longer waste time dialing numbers or listening to no answers - all they do is talk to prospects. A **complex mathematical formula (predictive algorithm)** is used that predicts when each telemarketer becomes available, allowing the telemarketers to flow seamlessly from one call to the next. Calls are either initiated by the phone system or accepted from the outside and **distributed in an intelligent fashion** to service agents using ACD systems. The process thus, **improves the telemarketing production** as it doubles the amount of contacts telemarketers make per day.

Functioning

A predictive-dialer performs all **telephone line switching, dialing and call progress** function inside electronic hardware designed specifically for predictive dialing. This allows **custom tailor functions for maximum performance** to increase call center productivity. It is a feature where outbound calls from a user selected list are **automatically initiated** and answered calls are passed to

available service agents. The predictive dialing algorithm determines the average time taken to get a **live answer** and the average length of each conversation.

The Predictive Dialer are extensively used for:

- Outbound telemarketing
- Debt collection
- Market research
- Customer service
- Follow-ups

Features of Predictive Dialing

- Preview, Progressive, Predictive Dialer Software
- Comprehensive List Manager with Data Import
- Automatic Call Distribution (ACD systems) with ANI and DNIS recognition
- Interactive Voice Response (IVR systems)
- Voice Recording System
- Comprehensive Supervisor Command and Control System
- Agent Monitoring and Control
- Remote Agent (work at home employees)
- Fully integrated with our CRM application TELEMATION
- Softphone integration to CTI enable your existing applications
- Report and graphical presentation of historical phone data

Soft phone

Soft Phone is an ideal solution for employees who are out of the office frequently traveling on business, workers that work both at home and in the office as well as those who require the interaction of data with their work such as a remote ACD agents.

Soft Phone includes features like:

- Caller-ID
- Call-waiting
- Transfer
- Hold
- Conferencing
- Voice mail capability

Functioning

The soft phone functions on the **Local Area Network (LAN)** over the **Internet**, enabling the employees to work either in corporate offices, satellite remote offices or from the convenience of

home.

The soft phone system can be used to **generate real time reports and graphs** is important measuring system helps **erve and control the performance** call center and phone system with **clear and meaningful displays** apha and charts of operational statistics help to measure the **effectiveness of each user** campaign. Reports and graphs include both inbound and outbound statistics.

Features of Soft phone

- Supports a number of PBX and PC based phone systems
- Add computer telephony integration software to Unix and Linux applications
- Ability to make and receive phone calls manually
- Standard features such as call on hold, transfer and redirect are available
- Direct link to individual voice mail
- IVR interface with text to speech software
- Screen pops appear on the employee desktop when the soft phone is configured with an inbound call campaign
- Internet enabled, allowing employees to work from home
- Complete administrative control of each soft phone user
- System administration including reports, graphs, user grouping, and call campaign control

Text to Speech Software

Text-to-Speech software is used to convert words from a computer document (e.g. word processor document, web page) into audible speech spoken through the computer speaker.

The Understanding

The text to speech software reads **text words** with **different voices** that can be chosen. The text words may be on the screen, in the clipboard, from a text file or other source. The technology synthesizes **natural sounding speech** from ordinary text. The text can just be copied to the clipboard or imported from text files. The software then reads the text to the user or converts the text to mp3 or wav file. It also allows the **conversion of text** into a MP3/WAV audio file that can be listened later.

The text to speech converter has the capability to **extract variable information** from a database (or from the Web) that is later converted into **audible speech**. The applications of the software include:

- Providing callers with account information
- Weather updates
- Sports scores
- Stored text messages

Call centers in particular can become instantly more productive by letting the phone system provide the caller with information and by determining the best service representative to handle other requests.

Applications of Text to Speech Software:

- Customer Satisfaction Surveys
- Market Research Surveys
- Message and Recording Services
- Literature Fulfillment
- Employee Testing and Evaluation
- Order Entry
- Credit Card Processing
- Voice Mail
- Inventory Confirmation
- Account Status
- Lead Generation & Capture
- Professional Voice Recording

Voice Recognition

Voice recognition software allows the system to recognize keywords or phrases from a caller. Voice recognition is an excellent application to aid callers who do not have access to the touchtone keypad or are using rotary phones.

The Concept

Enhanced voice-recognition functionality promises lower call-center costs facilitates the call-center agents to handle only those calls that require human intervention. There are multiple types of voice recognition such as:

- Discrete numeric
- Continuous numeric
- Alphanumeric
- Speaker dependent
- Custom

It makes a **voiceprint of customers' voices** and enables the call center to **automatically recognize** customers each time they call. This is done once the call center has **programmed the voices** into the system. Instead of pressing prompts on a telephone keypad, the customer can speak requests and the system can automate them, **lessening the burden** on call-center representatives. An administrator sets **tolerance thresholds** that will alert a call-center agent should a person fall

below the **threshold of probability**, adding another layer of security to customer accounts.

Voice recognition systems help machines **understand a caller's voice** and extract meaning from the words. Callers do not have to say specific words such as '**collect**' or '**refund**' for the technology to understand the meaning of the **caller's request**. The machine gets a **transcription of the text** of the customer's request and attempts to classify the request. Depending on the caller's need, help could be provided by a human agent or an interactive voice response system.

Programmable/Soft Switches

Programmable switches are becoming increasingly important weapons used by Internet telephony providers to bridge the gap between IP and circuit-switched protocols.

The Concept

Programmable switches operate seamlessly within **traditional network infrastructure** and provide a **path for transmission** between two communication devices and the **routing of information** between them.

Programmable switches serve as **flexible solutions** for network operators. They are the **Multi-Protocol-Application** for intelligent networks and are applicable as gateway and for **conversion of protocols**. With these switches, **customization** can be done on an application-by-application basis, thereby giving service providers the **ability to differentiate** their service from the competition quickly and cost effectively.

Through **openness and configurability**, programmable switches have the versatility to provide a platform for **multi-service applications**. They offer a superior **return on investment** owing to their **excellent price performance** and enable more capacity. Thus, a service provider can support **larger subscriber population**-and consequently, receive **greater revenue per configuration**. These soft switches are flexible and adaptable and thus deliver a greater versatility of function per system.