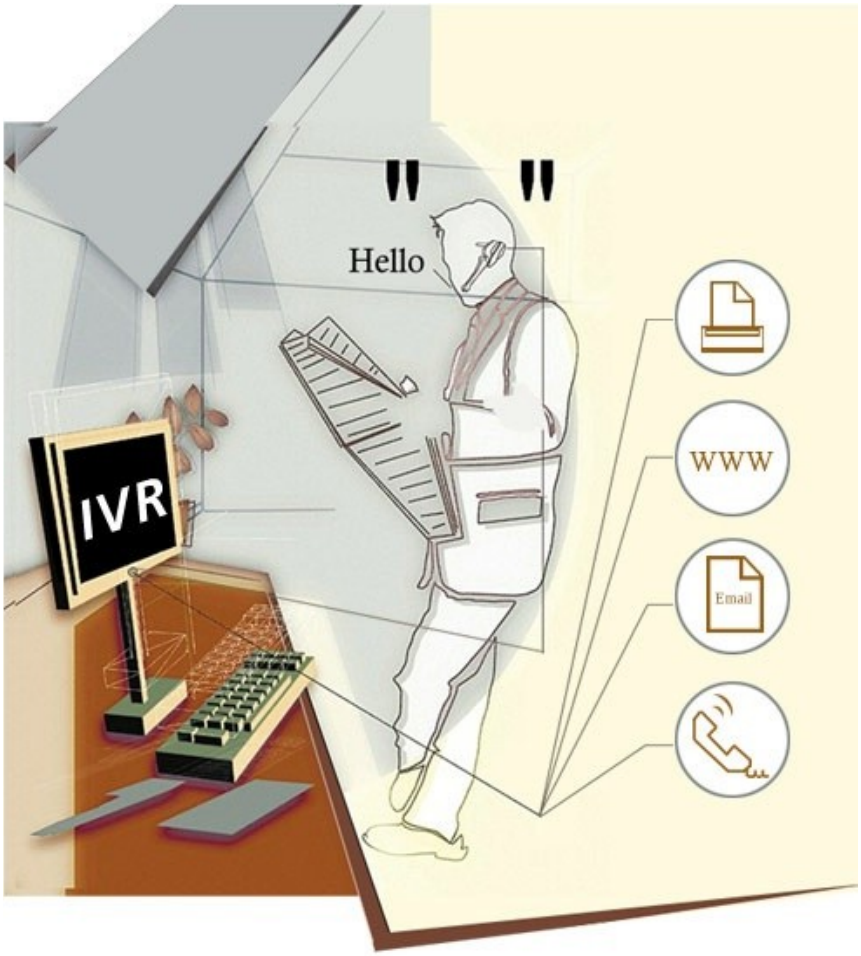
Sistel Call Center

IVR Module

Introduction

The need for a human operator to handle a high volume of simple repetitive phone calls is a thing of the past. Today, Computer Telephony Integration (CTI) leverages the power and versatility of computers to enhance phone systems with automated applications that answer and direct calls and even provide callers with the information they require – many times without having to speak to a call center agent.



Most customers have experienced automated call systems at one time or another. Have you ever called a business and been greeted by a voice prompting you to press a number to choose from a menu of options? You were interacting with either an Auto Attendant or an Interactive Voice Response (IVR) system.

An auto attendant is a system that is integrated into an existing phone system or an external server to answer incoming phone calls. The auto attendant provides callers with a menu of options for navigating the phone system to reach the department or phone number they desire. However, an auto attendant is unable to retrieve information from other systems, limiting

its ability to be truly interactive.

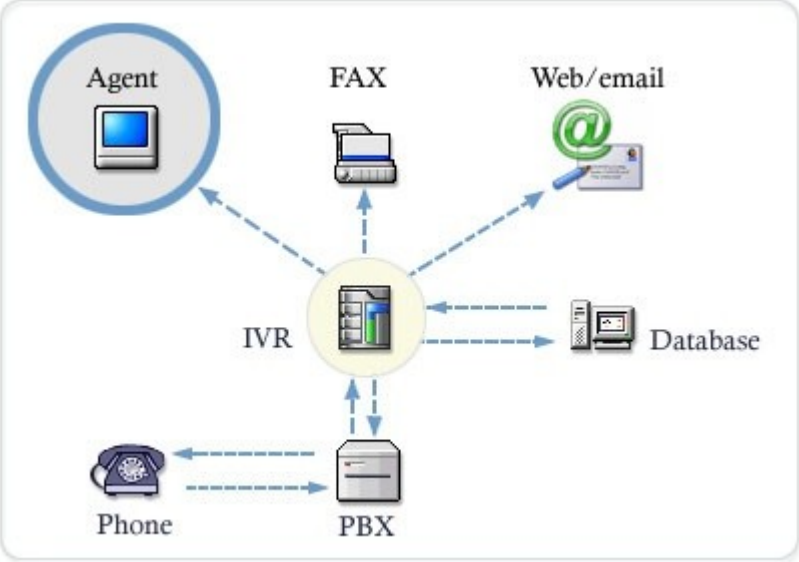
On the other hand, IVR provides all the features of an auto attendant plus the ability to use input from callers to interact with separate external systems. IVR systems can improve call center efficiency with recorded, frequently requested information or by routing callers to the most relevant agent based on their input. IVR systems retrieve information requested by callers and present it in a variety of ways, such as a recorded or synthesized voice, fax, web page or even an email, The advantage of an IVR system is that applications can be customized for almost any situation imaginable to accommodate callers' requests. For instance, IVR allows customers to call their credit card company, and by inputting their account number and password, get real- time information about their current account balance, amount of credit available, payoff information, etc. Or, someone might use the airline's IVR to check if his flight is on time before leaving for the airport. IVR systems are used to remove the burden from human representatives and get customers the information they need quickly. The examples listed are only a few of the numerous implementations that are possible.

IVR Elements

An IVR system is typically a separate server that contains Digital Signal Processing (DSP) hardware that analyzes and reproduces voice patterns. The IVR server interacts with a phone system through a dedicated connection. The way in which the IVR server is connected to the phone system depends on its capabilities and physical connections.

An IVR can be connected to a key system, PBX, or other type of phone switch through analog ports, digital ports, and even a LAN or WAN connection.

A unique quality of IVR is its ability to interact with many different systems to gather and present information back to a caller. IVR can access external databases, retrieve the information it needs, and present it back to the caller over the phone through a synthesized voice, or it can use a fax, web, or email systems. If the customer requests it his call can be put through to live agent as well.



A new trend in IVR technology is to allow access to the same information as a web browser using speech recognition technology to transmit the web site pages. A customer can access the web via the IVR, respond to voice prompts, ask questions, and if stuck or requiring additional information, default to a live agent from the IVR.

From inside a call center, IVR information can be passed to call agents through screen pop- ups, eliminating the need for a customer to constantly repeat information – and at the same time preparing the agent for the upcoming call. Also, an automatic call distributor (ACD) can use information gathered by the IVR application to route calls to the correct department, making it much easier for customers to get the service they require without being transferred from agent to agent.

IVR Benifits

IVR systems provide customers with many services such as fax on demand, secure access to confidential account information, general information such as phone numbers and working hours, and an easy way to navigate through a complex phone system. From a business perspective, IVR adds to customer satisfaction by giving customers what they want, and several options to get it. If the customer is satisfied, the IVR system will pay for itself through increased sales. IVR systems also reduce call center costs by fielding the bulk of routine calls, allowing live agents to handle only the calls that require specialized skills. Fewer agents perform the same amount of work and maintain the quality of the call center.

IVR systems also extend business hours, allowing customers to retrieve information or even place orders 24 hours a day, 7 days a week, whether agents are working or not. Businesses also benefit when the IVR system is used to inform callers about products and services during hold time.

Additionally, an IVR system provides detailed information about call center activity and services that customer access making it easy to tailor a call center to the specific needs of the customer and streamline operations to reduce waste.

Maximizing your IVR

Most customers have had pleasant – or frustrating – experiences with IVR systems. An IVR system is only as good as its design, and a poor design can do more harm than good for a business if customer satisfaction decreases due to an IVR implementation. Below are some guidelines for planning an effective IVR solution.

Scalability

IVR solution should be easy to modify to support company's changing needs. Lines should be easily added or removed, additional features should be easily installed, and the IVR system should interoperate with existing equipment to reduce the need for additional interfaces and equipment.

Performance

IVR systems come in all shapes and sizes. An underpowered IVR can cause customers to become impatient, and it may even drop calls because it cannot handle the volume of incoming traffic. It's important that an IVR system is able to handle the current number of incoming lines at maximum capacity.

Customer Satisfaction

IVR solutions should be designed with the customer in mind. Menus should be logically designed, and the options should be explained in a way that anyone can understand. Because it's difficult for callers to remember a long list of menu items, it's important to keep the number of options to a minimum and include the ability to repeat the choices. While it is possible to record your own IVR menus, it is often preferable to have an agency record the voice of the IVR to make it as clear and professional as

possible.

An effective way to ensure that your IVR is effective is to monitor the IVR logs to see how many calls are dropped, as dropped calls are an indication of customer frustration with the phone system.

Sistel IVR

While IVR can operate in a separate, including it withen the Sistel Call Center system allows it to benefite from integerating with other Sistel's modules – specially the CMS module -, this integeration provides the IVR with information that outside the IVR's area, and affects the IVR speed and effeciency.

The building bolck of Sistel IVR is called Incoming Call Service (ICS). Each ICS represents a unit of work that can be combined with other ICS's to construct an advanced and integrated map to handle the incoming calls from customers.

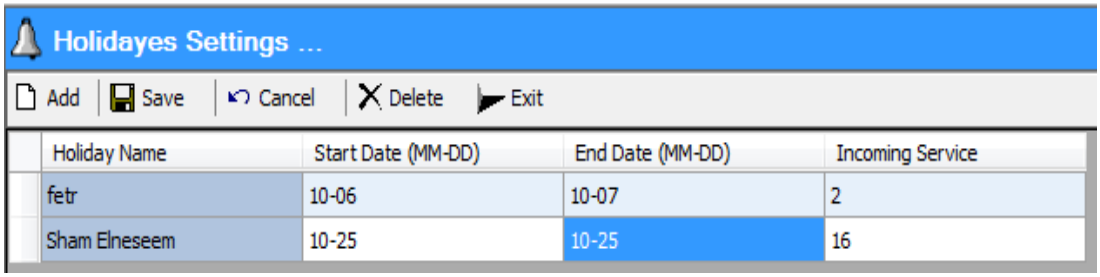
Many ICS maps can be prepared to work in the same time, and the incoming call can be directed to any one of them accourding to many controlled factors, which makes the Sistel's IVR very flexible in handling as many situations as desired by the customer's needs.

ICS selection factors

The factors that determins which ICS is required to handl the incoming call are (ordered by the periority):

Holiday

There are anual and temporary holidays where the company is out of work for one or more days, and the incoming calls need to be handled in special manner during this holiday.



Holiday Name	Start Date (MM-DD)	End Date (MM-DD)	Incoming Service
fetr	10-06	10-07	2
Sham Elneseem	10-25	10-25	16

All these holidays can be set with each has the starting and ending date and also the working ICS. This factor has the top periority over all other factors.

Time Shift of the day

Time Table Settings ...

Save | Cancel | Exit

Day of Week	Day Mode	Day Start	Lunch Mode	Lunch Start	Lunch End	Night Mode	Night Start
Sunday	☑	08:00	☑	17:00	22:00	☑	22:00
Monday	☑	08:05	☑	17:00	22:00	☑	22:00
Tuesday	☑	08:05	☑	17:00	22:00	☑	22:00
Wednesday	☑	08:05	☑	20:00	22:00	☐	22:00
Thuresday	☑	08:05	☑	17:00	22:00	☑	22:00
Friday	☐	08:05	☐	17:00	22:00	☑	22:00
Saturday	☐	08:05	☑	10:00	18:00	☑	18:00

Every day of the week can be devided into three shifts, day, lunch and night shift mode. And for every day of the week each shift can be enabled or disabled and the starting and ending (if required) time for the shift can be determined.

Caller ID

Sistel has a built in CRM module, in which users can add customers and create a transactions on them. For each customer, system's admin can assigne a specific ICS that will handles this customr's calls in each time shift of the day.

So when the call arrive and the Caller ID (CID) is detected, Sistel check if this number is belonged to customer in the system's database, if so, it check if this customer has a specific ICS for the current time shift, then apply it.

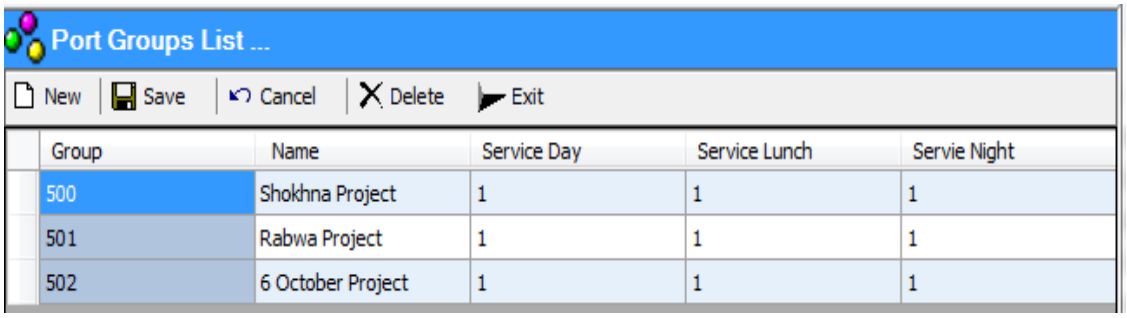
CID Pattern

If the CID is detected but not belonged to any customer, or if it belonged to a customer which has no specific ICS assigned for the current time shift, then Sistel check the CID starts with specific digits, which is called CID Pattern, if so then the ICS assigned to the detected CID Pattern is applyed.

IVR Port Setting

The number of IVR ports used should be depends on the expected number of concurrent phone calls and the number of the dedicated agents and their expected answering time.

The whole number of IVR ports can be used to server the same buisness logic (company or service of this company), or it may be used to serve multi buisness logic, in this case every related IVR ports can be combined in a collection called IVR PORT GROUP.



Group	Name	Service Day	Service Lunch	Servie Night
500	Shokhna Project	1	1	1
501	Rabwa Project	1	1	1
502	6 October Project	1	1	1

For each IVR Port Group, the starting ICS can be assigned for each time shift. This is the default ICS that will be active for every call handled by the IVR group ports' during the current time shift if there is no other detected factors affect the calculation.

Sistel IVR Services

The Sistel's IVR module provids the customer with 4 services that combined together to present a complete and advanced call handling capabilities, these services are Automated Attendant (AA), Queue Handling (Queue), Voice Mail (VM) and Database Query (Query).

The activated service is selected according to the configuration of the selected ICS map and to the caller's selections of the ICS's offered options, e.g. the ICS map may decide to transfer the caller to agent/agents to manually handle his request, send him to specific mailbox to leave a message or logging him to the automated IVR Query service to handle his request automatically.

Automated Attendant Service (AA)

The Automated Attendant Service, AA as a short name, is the service responsible of transfering the incoming call to desired/suitable destination to manually deal with the calling customer and give him the proper handling according to the company's buisess logic.

After dealing with the call by the selected ICS map, see the previous section for more details, the destination of the call is determined, and this destination may be an agent or a group of agents according to the pre-assigned configuration, at this point the AA take the control.

- The AA starts its job by generating the ordered agents list as follow:
- if the destination is an agent, then the generated list contains only this agent.
- If the destination is a group of agents , then the AA do the following steps to generate the ordered agents list:
    - collect all the group's members.
    - exclude the out of service, log out and not ready agents.
    - orders the remaining agent according to the group's hunt type as:
        - Normal Hunt: the normal agents orders.
        - UCD Hunt: according to the most idle duration.

After generating the ordered agets list, then the next step is the call transfer itself, which is done as follow:

1. the first agent is selected as the current destination
2. if agent's status is busy (currently on another call), then a busy trial is added to the database and jumb to step 7.
3. the call is transfered to the selected agent, then the transfer result is checked.
4. if the agent answer the call, then the transfer is completed and the IVR port hands the call off and becomes idle to be able to handle a new incoming call and the coming steps are ignored.
5. If the agent not answer the call, then a not-answer trial is added to the database.
6. If the list contains another agent(s), then go back to step 1, and repeat the cycle.
7. If the list becom empty, then the group is overlowed and if all agents are busy, then the group's busy mode applied,but if at least one agent not answer, then the group's not answer mode applied.

Overflow Mode

The overflow mode for each destination (agent/group) can be the default mode (default busy mode or default no answer mode) or can be assigned to specific acction.

Default Busy Overflow Mode

the caller will hears the line(s)-busy prompt, and asked to choose one of the following options:

Hold:

Go to the Queue of the destination.

Call another line:

Go back to the last corner ICS to select another destination.

Leave message:

Directed to the destination's mailbox to leave a message.

End call:

To terminate the current call.

Any part of these options can be enable or disabled by the administrator.

Default No Answer Overfolw Mode

The caller with hear the line(s)-not-answer prompt, and asked to choose one of the following options:

Call another line:

Go back to the last corner ICS to select another destination.

Leave message:

Directed to the destination's mailbox to leave a message.

End call:

To terminate the current call.

Any part of these options can be enable or disabled by the administrator.

Specific Overflow Mode

As we said, the busy and/or no answer overflow mode can be assigned to specific action to be applied automatically without caller's selection. The available specific actions are:

Hold:

Go to the Queue of the destination.

Previous:

Go to the previous corner ICS to select another destination

Service:

Go to specific ICS to follow its selections

Agent:

Transfered to specific agent.

Group:

Transfered to specific group.

Mailbox:

Directed to specific mailbox to leave a message.

End:

Terminate the call.

Queue Handing Service (Queue)

If the destination is busy, and the call is to be directed to the destination's queue – either by caller's selection or by destination overflow mode -, then the Queue gets the control of the call, and the queue process starts for this call.

Each destination has its own queue, which is defferent and separated from other destinations' queue. Each queue has the following parameters:

Length:

The maximum number of calls to be in the queue.

Time:

The maximum duration (in seconds) for call to stay in queue before the queue overflow mode start.

Music:

The media that is played to the caller while being in the queue.

Overflow:

The action that is applied to the call if the queue time expired and the call still not answered. The available options are the same as the options available for the destination busy-overflow mode.

So the call enters the queue, listning to the queue media file and be waiting for any destination member be idle to get it. If the destination become idle, then the call is picked out from the queue and pushed back to the AA to transfer it.

If the queue time out expire without answering the call, then the call is picked up from the queue and the queue overflow is applied to it.

Voice Mail Service (VM)

The voice mail service is an optional part of the IVR module, and it allows the caller to leave a voice message in a specific mailbox to be listend to later by the mailbox owner.

The first step is creating the mailboxes. Unlimited number of mailboxes can be created for each mailbox has an Id (101, 102, 500, 600,...) and some parameters, and can be assigned to single or multi destination (agent/group), or even can be left without be assigned to any one to be public usage.

There are many points in the IVR process that can direct the call to specific mailbox to allow the caller to leave message. These points are:

ICS Transfer Mode:

The ICS transfer mode can be set to (Mailbox), in that case each call transfered to any destination will be automatically directed to the destination's private mailbox instead.

ICS Shortcut:

ICS shortcut (0, 1, ..., *, #) can be assigned to specific mailbox.

Destination Overflow:

Either busy/no answer overflow mode can be assigned to specific mailbox.

Queue Overflow:

Queue overflow can be assigned to specific mailbox.

COS FWD Mode:

The destination's class of service (COS) can be assigned to automatically direct all destination's transfered call to his own mailbox.

Agent FWD Mode:

Agent can forward the call transferd to him to his own mailbox. The forward can be applied to all calls, calls on busy, calls not answerd or busy/not answerd.

The mailbox owner is the agent that assigned to this mailbox, and mailbox can be accessed throw the agent software terminal or throw phone call (internal or external) to the IVR as follow:

Call -> IVR answer -> Press (#) -> Press (mailbox Id) -> Press (password)*

then, agent can walking throw the mailbox, play messages, repeat it, delete, or forward it to other mailboxes as he wish.

Database Query Service (Query)

The database query service, referred as "Query" in short, is the service responsible for connecting to external database of customers to fetch result and/or excute database commands according to the callers selections and to the ICS's configurations.

So, there are two types of incoming call service (ICS) blocks, first is the Automated Attendant (AA), and second is the Database Query (Query), and each the call handling tree configuration can be assigned to merg both types in the plan, and to determin the points in the plan that can move the caller from service to service to be properly handled either manually (by agent throw the AA transfer) or automatically (by Query).