Vision Voice Vantage, Inc.

THINKING OUTSIDE THE BOX IN CUSTOMER SERVICE

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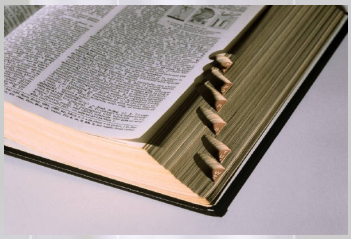
Do You Know the Vocabulary?

So you are thinking of adding a self-service telephony application to handle some customer service function but you are finding like so many computer technologies….there are a whole host of vocabulary terms, acronyms, abbreviations and language usage associated this technology. This is nothing new in the any IT field but, do you know the vocabulary? This month's newsletter will give some general meaning to those terms, acronyms and vocabulary.

It all started on March 10, 1876 when Bell spoke the first words, "Mr. Watson, ...come here...I want to see you." Initially all telephones were connected directly together in pairs. Soon it became apparent that users would want to talk to other parties so the concept of telephone exchanges was invented. This allowed caller to connect to other phones within the local loop. Soon the local loop lines were connected to trunk lines that allow long distance calling through the public switched telephone network (PSTN) and you could access any phone by simply supplying a phone number.



Most likely you have hear the term "POTS" lines. Phone lines were originally known as Post Office Telephone Service/Systems as the post offices in many countries monitored and controlled these lines. This acronym changed as post offices no longer control these lines and the meaning now represents "Plain old telephone service." You may refer to this as standard analog lines such as those you have in your house or extensions in your business PBX. Analog lines are still used to support standard analog telephone, fax machines, VRUs or other telephony devices.

Then came a host of new digital type phone lines that broke the signal into binary code (a series of 1s and 0s where at the other end, the equipment converts it back to voice. The very nature of digital technology allows for more capacity and is found in most business phone systems to accommodate greater traffic than analog lines could carry. Another type of phone line service now becoming popular is Voice over Internet Protocol (Voice over IP, VoIP) that allows the user to make voice calls using a broadband Internet connection instead of the regular analog or digital phone lines. In general, there are various reasons for having each different type of line interface but one must determine their actual phone environment in the selection of the proper telephony device.

VRU vs. IVR

I always see a lot of confusion about the difference between a VRU (Voice Response Unit) and the IVR (Interactive Voice Response). It is actually easy to distinguish between the two. An IVR is the application solution that allows a computer to interact with a human user using a telephone. Think of it as the application that interfaces with the data allowing the telephone to become a terminal to that data or self-service application on your computer. The VRU is the actual software and hardware that provides the ability to have an IVR solution. In this VRU you will see:

- ⇒ the actual interface to the existing phone lines or network
- ⇒ the connection to the data
- ⇒ code that controls the operation of the VRU to form the IVR application and control the logic flow of the call

The telephony IVR application allows the customer to interact with the company's database via a telephone keypad or by speech recognition. This is an interactive exchange between the caller and the machine. Most IVR applications either use a pre-recorded voice banner or that voice banner is dynamically generated to further direct the user about how to proceed.

I want to back up a little here as I just introduced two terms that I want to further explain. If you don't want to use pre-recorded voice banners but would rather they be machine generated, this is commonly referred to as Text To Speech (TTS). This is sometimes referred to as speech synthesis and is an artificial production of human speech. What actually happens in TTS is that a variable string value is converted to human voice based on recorded speech that is stored in a database. If the rules to speak this variable string are not found, the TTS generator will phonically speak the word. Most likely, the quality of the speech synthesizer may not match the pre-recorded speech banners but TTS is useful to speak variables such as product descriptions or medical procedure terminology where the values may not be constant. Most of the time, the VRU's Operating System will have a protocol that defines how TTS is done. The ODTVision VRU is compliant with Microsoft Speech Application Interface 5.1 (SAPI 5.1). If you add the TTS option with our interface, you can use any third party TTS dictionary as long as the vendor is SAPI 5.1 compatible.

Speech Recognition (SR - also known as automatic speech recognition, computer speech recognition or voice recognition) converts spoken words to text. To improve the recognition accuracy of SR, you may use a grammar file to provide matching with the anticipated responses to a prompt. In some specialized applications speech recognition may allow your software to be trained to recognize a unique user so that the validity of the input will increase with use. Since an IVR application will have hundred if not thousands of different users, we turn this learning feature off.

Several factors reduce the value of using SR in an IVR solution as your method of input for the caller vs. the touchtone input from the phone:

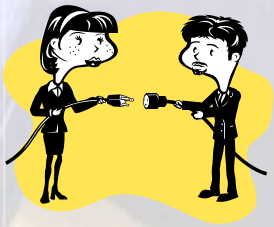
- ⇒ Low grade carbon microphone in telephones
- ⇒ Phone microphones are not directional so the background noise is picked up
- ⇒ Since there is no screen display for the user, they don't know if the system interpreted their audio string correctly unless we speak the value back
- ⇒ Has issues interpreting strings that are too long or complex
- ⇒ Has issues recognizing speech if the user has a speech impediment or foreign accent
- ⇒ Has issues if the user speaks too fast, not loud enough or blends words together

Vision Voice Vantage, Inc. is a certified ISV for IBM. Visit our web site on IBM.com at
http://www-304.ibm.com/partnerworld/gsd/solutiondetails.do?&solution=25001&lc=en

Methods of Connectivity

Modern IVR applications do two primary functions. The first is to perform ACD (Automatic Call Distribution) where the user will respond to a number of questions or prompts to determine what the user needs and who they should be transferred to. This is sometimes referred to as using the IVR application as an Automated Attendant. The second function and most likely the reason you are implementing a VRU to do a variety of IVR applications is to allow the user to interact with data. Some possible applications are:

- Order Entry
- Password resets
- Transaction Confirmation
- Shipping Information
- Pricing Information
- Stock Availability
- Customer Inquiry
- Available Credit
- Information Hotline
- Offsite Payroll Input
- Employee Benefit Hotline
- Customer Response
- Automated System Operator
- Automated Paging & Email Delivery
- Fax Back Systems
- Query Reports On Demand
- Human Resource Support
- Warehouse & Logistics Support
- Automated notification to personnel in field
- Audit and Log trails of all activities



Any IVR application using data requires connectivity to that data. In general, you need to determine if you need live data or if batch will suffice. Live connectivity is as it sounds, the IVR application is working with current data records while batch requires an import of the data records to a database within the VRU or connected to the VRU. The disadvantage of batch connectivity is that your IVR application's data is only as current as the last time the data was imported. Most modern IVR applications require live data access where you can either connect the IVR application via ODBC or if going to an IBM host, through HALAPI Screen Scraping.

ODBC (Open Database Connectivity) is a standard software interface for accessing database management systems (DBMS). The designers of ODBC aim to make it independent of programming languages, database systems, and operational systems. Through the use of this protocol the ODTVision database is linked to the database tables required by the IVR application no matter what platform those data records are located on. The ODTVision container is currently a Microsoft Access compatible database.

How will you Connect

In general, you need to determine if your users need access to live data or if less timely batch access will suffice.

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THINKING OUTSIDE THE BOX

Get Your Own Demo Today

Contact us to get your own demonstration of the ODTVision Voice Response Unit. This demo application is a simplistic order entry and shipment status system which is running off a Microsoft Access database. The demo is in the test mode and you will be using the "Test Phone" feature of the ODT VISION VRU to simulate a phone call to the data. Manuals and case studies are also available on the web site.

Improving Customer Service Affordability

Get free project analysis regarding your telephony application or submit technical questions at:
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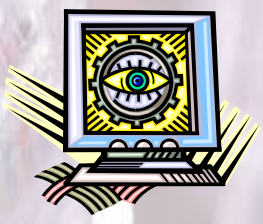

Many of our accounts are on IBM mid-range host systems. Built within the ODTVision VRU is the ability to use EHLLAPI to host display screen applications. E**HLLAPI** (Extended High Level Language Application Programming Interface) allows the IVR application to make use of standard IBM legacy (green screen) applications. The EHILAPI interface allows the IVR application to move in and out of screens while either gathering information from fields on the screen or writing information to fields on the screen. If you already have these screens, an IVR application based on the existing screens can be customized easily and quickly.

Physically Defining The User

There are two main ways to define the caller during the ringing signal. Depending on your environment, you may need multiple rings to obtain these values. The first element to discuss is Caller ID (caller identification, CID, and sometimes referred to as calling line identification (CLID)). If your telephone environment can provide the Caller ID value, the IVR could look up a record within your database by that Caller ID so that just by answering the call the IVR application could immediately make the caller's customer record available.

Most of the time, our VRU is connected to a bank of phone extensions grouped together referred to as a "Hunt Group". Hunt Group is a telephony concept that refers to the methodology of distributing phone calls from a single phone number. This feature is generally done by a PBX but can also be performed by some phone line suppliers.

The IVR can assign individual ports to hunt groups, allowing the application to serve the specific needs of different types of callers. Sometimes we may have multiple phone numbers going to the same hunt group and we need the IVR session to know how the phone call entered the hunt group. To do this, we use a function called DNIS (Dialed Number Identifications Services). Through DNIS, we can determine which script or service should be used based on the number that the caller dialed.

I hope knowing the basics of telephony vocabulary will help you as you begin the design and implementation of your IVR self-service applications. Please feel free to call us if you have questions.