



## **Breaking the Cost Barrier to Implementing Automated Speech Response in Call Centers**

### **Coming From Touch Tone IVR**

Touch tone interactive voice response (IVR) has had a major impact on the way business is done at call centers. It has significantly reduced call center costs and is automatically completing service calls at an average rate of 50% according to The Kelsey Group. However, the caller experience of wading through multiple levels of menus and frustration of not getting to where the caller wants to go, has made this type of service the least favorite among consumers. Also, using the phone keypad is only useful for limited types of caller inputs.

### **Automated Speech Response (ASR) Comes of Age**

After many years in development, a newer type of automation using speech recognition is finally ready for prime time at call centers. The business case for implementing automated speech response (ASR) has already been proved for call centers at such companies as United Airlines, FedEx, Thrifty Car Rental, Amtrak and Sprint PCS. These and many other companies are saving 30-50% of their total call center costs every year as compared to using all live service agents. The return on investment (ROI) for these cases is in the range of about 6-12 months, and the companies that are upgrading from touch tone IVR to ASR are getting an average rate of call completion of 80%, according to the Kelsey Group, and savings of an additional 20-50% of the total costs over IVR.

Not only do these economics justify call centers to start adopting automated speech response, but there are other major benefits to using ASR that increase the quality of the service to consumers. These include zero hold times, reduction of frustrated callers, a homogeneous pleasant presentation to callers, quick accommodation to spikes in call volume, shorter call durations, much wider range of caller inputs over IVR, identity verification using voice and the ability to provide callers with additional optional purchases. In general ASR allows callers to get what they want easier and faster than touch tone IVR. An example reaction by a recent caller to a Metaphor speech application sums it all up when she said, "It's amazing how human-like the automation is!"

### **Deployment Costs for ASR**

However, when technology buyers at call centers understand all the benefits and ROI of ASR and then try to implement an ASR solution themselves, they are often faced with sticker shock at the cost of developing and deploying a solution. By itemizing the costs you can see why.

There are two methods of deploying an ASR solution. The first is to purchase the hardware and software for an on-premise solution and the second is to have the solution hosted at some supplier's data center. A minimal on-premise hardware and software

configuration, with built-in redundancy for continuous up-time, starts at about \$70,000 and goes up from there. On-going maintenance is extra. By contrast, a one time setup fee for hosting the solution is under \$10,000 and service fees are charged on the basis that you only pay what you use.

The hosting solution is the clear choice for call centers that need to first get comfortable with ASR for their business or who want to avoid large capital expenses or who do not want to manage the solution themselves. The on-premise solution is best for companies who are committed to ASR for the long term and not affected by the large initial capital expense and want to manage the solution internally or who are concerned about allowing sensitive customer data to be sent outside their internet firewalls.

But the real large costs are in developing and deploying the actual software that automates the service script itself. Depending on the complexity of the script, dialog and back-end integration, costs can run anywhere from \$60,000 to \$1,500,000. At these prices, the only economic justification for deploying ASR solutions and getting a ROI in less than a year is for call centers that use from several hundred to several thousand live agents for each application. Examples of these applications include phone directory services and TV shopping network stations.

But what about the vast majority of the 80,000 call centers in the U.S. that are mid-sized and use 50-200 live agents per application? At these integration costs, the economic justification, for mid-sized call centers, falls apart.

### **Metaphor Solutions Breaks the Cost Barrier for ASR Integration**

Metaphor Solutions provides a new approach for integrating speech applications that specifically addresses the needs of the mid-sized call center, but also apply to large call centers. We offer the least expensive speech application integration to call centers of anyone in the industry and thereby pave the way to wide spread use of ASR. There are three aspects to delivering these low cost solutions:

First, allow Metaphor to host the solution at its data centers. This is an obvious choice to reduce costs as compared with an on-premise solution. This choice also eliminates any internal management costs associated with the solution.

Second, Metaphor has already built a variety of popular and customizable application templates such as phone shopping, pin reset, account funds transfer, portfolio management, change of address and catalog ordering. These applications feature a number of common elements in speech applications used by almost any solution. They include the capture of information on phone number, name, address, credit card, dollar amount and email; product or choice selection; capture of dynamic web content, audio recording; personal identification; problem identification and use of personalized customer and status information.

The cost-reduction benefit of starting with application templates, is that the remaining customizations required to fit the final business requirements at any particular call center,

are only a small fraction of the cost of developing the solution from scratch.

Third, Metaphor has its own internal speech application development and knowledge database tools based on its patent pending technology called Intelligent Conversational Response (ICR). ICR was invented at Metaphor to extend the flexibility of the dialog between the caller and the virtual agent so that the caller experience can be more productive and enjoyable. Speech application development with ICR is 10 times faster than writing the application in the core interface language like Voice XML and 5 times faster than using any other speech application development, GUI tool. This allows a very fast and inexpensive process for final customization of Metaphor's application templates for deployment at specific call centers.

As a result of combining the cost cutting features of all three processes, the **total cost reduction of speech application integration can be in the range of 80%-90% less than standard industry costs**. Now even mid-sized call centers can get over the cost hump of ASR deployment and enjoy its huge labor savings and high quality of service.

### **Metaphor Speech Application Process**

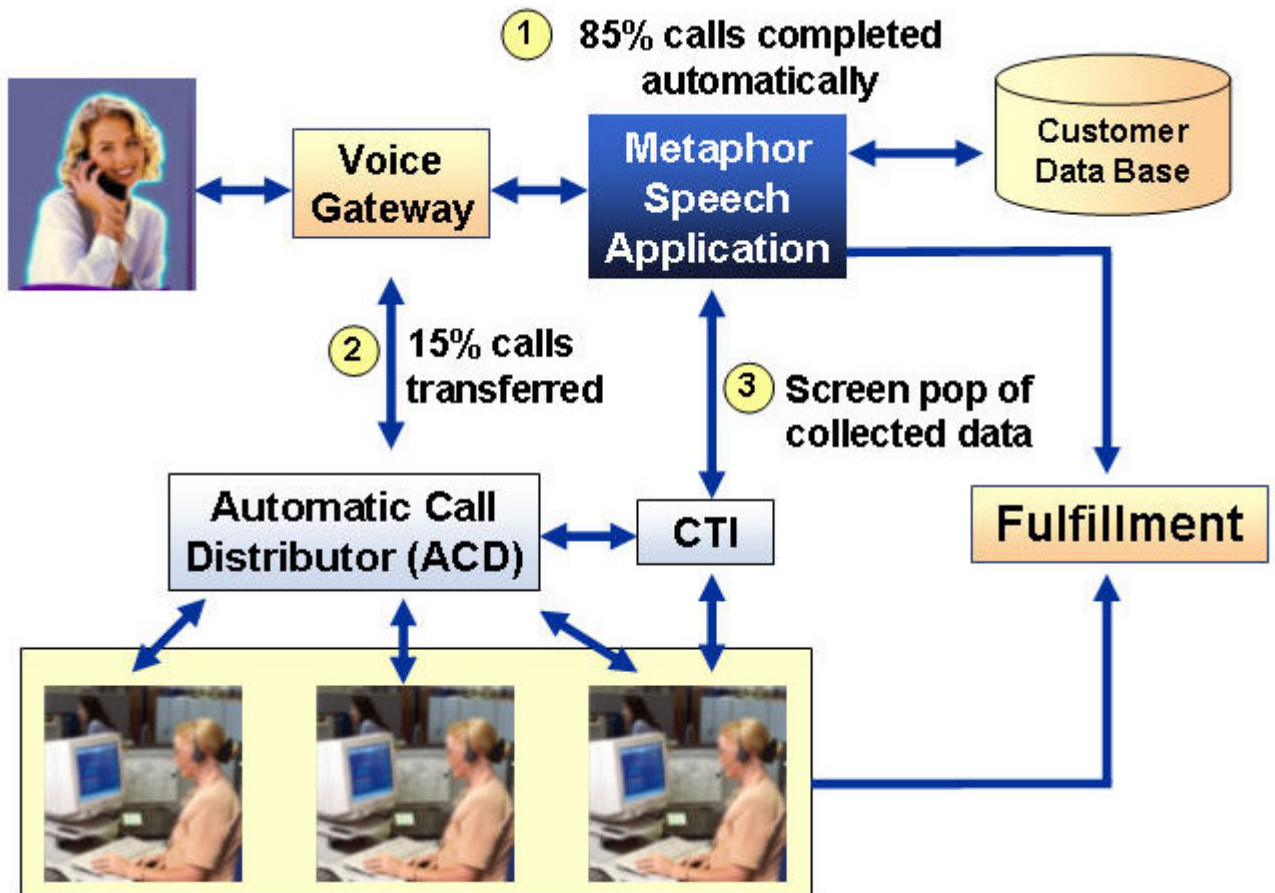
As shown in Figure 1, when a customer dials the service phone number, the call is first picked up and routed through a voice gateway. This gateway includes the following key processes:

- It uses audio playback to prompt the caller in a recorded human voice.
- It uses text-to-speech to say dynamic content like a dollar amount.
- It uses speech recognition to recognize what the caller says.

The gateway then interacts with Metaphor's speech application which provides the following key processes:

- It interfaces what the caller says with the service script.
- It delivers all the audio prompts, data for text-to-speech and recognition files to the voice gateway as the service script is expressed.
- It interfaces with customer databases such as verifying a customer account.
- It interfaces with dynamic content from web sites such as getting a current stock price.
- It transfers a call to a live agent when needed with a screen pop of the collected data.
- It logs the calls to analyze service statistics.

There are times that an automated speech application needs to transfer a call to a live service agent. This could either be a standard part of a service script or result from the inability of the automation to recognize something that the caller says - for example, because the caller has a heavy accent. For these events, Metaphor not only transfers the call but also can transfer all the data collected thus far in the conversation to the screen that the customer service representative (CSR) sees.



**Figure 1.** Metaphor Speech Application Process

Metaphor achieves this computer telephony integration (CTI) by tagging the specific collected data in the call with the transfer phone number. As the call is transferred to an available CSR through an automatic call distributor (ACD), the ACD links the CSR's screen to the collected data via an Internet link. Then, when the CSR picks up the call, the collected data pops up on the agent's screen.

Most speech application solutions require interaction with databases and/or Web sites that contain data on customers, products, services, pricing, orders, and/or shipping. Metaphor's solutions have ready-made interfaces between service scripts and data storage using interfaces for ODBC, XML, ASP, JSP, J2EE, .NET, COM+, HTML, Web Services or MicroSoft Exchange. The Metaphor speech applications reside on application Web servers and can communicate with all popular databases and/or Web sites that operate in Windows, Unix, or Linux environments.

### **Bringing It All Together for Reliable, Scalable and Portable Solutions**

For all the price cutting of the integration costs, are there any compromises to service quality, reliability, scalability and portability? "No" to all four issues. Metaphor's solutions run on industry standard telephony platforms or voice gateways servicing thousands of existing customers both for on-premise and hosting deployments. Metaphor

and these platforms use industry standard speech application interfaces including VoiceXML, SALT and X+V.

The speech applications run on servers with automatic fail-over to assure continuity of service in the event of hardware or software failure. If there is a need to switch or upgrade platforms, the speech application does not have to be re-written. Only Metaphor's interface needs to be upgraded, at no charge.

Because Metaphor's solutions are modularized into the components of telephone communication lines, voice gateways, application servers and databases, they can be easily scaled. So whether the call center needs 4 simultaneous phone lines or 40,000 lines, each of the modules can be scaled accordingly without loss, disruption or delays.

Now that Metaphor Solutions is providing its unique deployment process for speech applications through its application hosting, speech application templates and innovative Intelligent Conversational Response technology, the cost barrier for call center integration can finally be broken. And with this substantial cost reduction in deployment, all mid-sized to large call centers can finally enjoy the substantial savings and service benefits of automated computer conversations.

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