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White Paper:  
Contact Center Services

Expand Your Voice



## When is the right time to expand your Voice Response System?

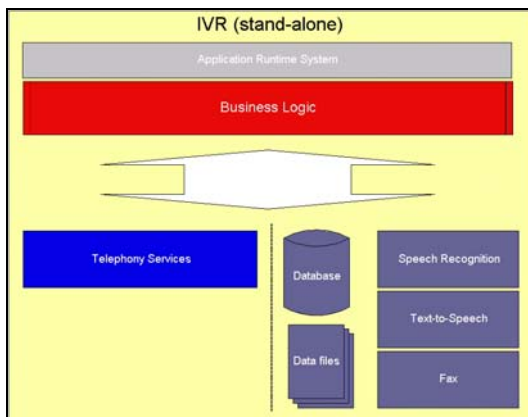
"By 2005, voice interfaces to Web content management systems will be found in more than half of WCM implementations"

Gartner, Jan 2002

VoiceXML is a standards-based markup language used to develop voice-user interfaces. The VoiceXML specification has been submitted to W3C for acceptance as an official standard and has already been adopted by most industry leaders in voice response. This specification was designed around current Web architectures.

To address the timing of implementing a VoiceXML solution, one has to recognize the benefits it provides to their organization.

Fig. 1



First, and most importantly, VoiceXML was designed with Web architecture at its core. This concept alone translates to multiple benefits to an organization. Voice response services can be deployed with significant reuse of existing Web infrastructure, hardware and software modules, reducing costs and development efforts. VoiceXML operates as other Web technologies and immediately inherits complete interoperability with existing Web infrastructure, which makes deployment practical and efficient. Moving from a disjointed stand-alone phone architecture (Fig. 1) to a single multi-tiered Web infrastructure decreases maintenance costs and eases

management. Although simplifying investment decisions, organizations will waste time and money when attempting to implement stand-alone solutions in silos. Using VoiceXML and a Web architecture will allow components to become utilities exploited by applications across the company (Fig. 2).

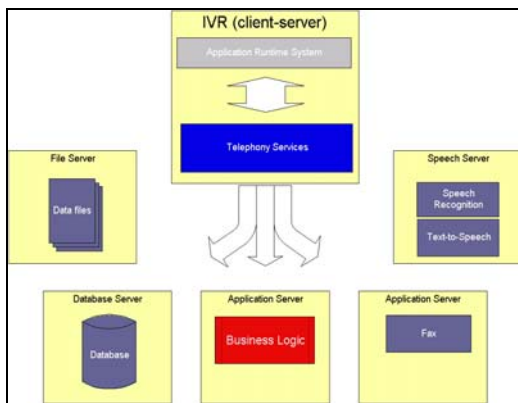
"By 2005, 50 percent of speech applications will be written using standards-based languages and Web architectures"

Gartner Nov 2003

Open standards promote adoption of new technology as shown by the acceptance of HTTP, SSL, and XML. Until recently, voice response systems were provided as solutions in a box. All hardware and software was tightly integrated and packaged neatly together onto a single system. These proprietary systems made for simple implementations, however they provided no choice for complementary components such as speech engines and resulted in costly solutions when deploying multiple IVRs. VoiceXML stimulates portability across vendor implementations. As IVR vendors follow and adhere to open standards, more third party vendors will integrate with the IVRs, which results in more choices for the organization. This then allows enterprises to choose best of breed components such as IVR platforms, application servers, and speech engines (Fig. 2).

As a Web based architecture, VoiceXML allows for simple distribution of applications. Enterprises can manage traffic fluctuations by augmenting on-premises capacity with externally hosted services. Applications, speech, and data can all reside in different locations each only requiring network accessibility. The voice browser, used as the engine for rendering pages, fetches VoiceXML pages and speech in the very same manner a desktop Web browser fetches HTML pages and images, using HTTP.

Fig. 2



Almost any tool that's able to produce XML data can be used to develop VoiceXML scripts. Since the voice browser is analogous to the desktop browser, VoiceXML applications can be developed using existing Web application development tools and security standards. This then provides organizations the flexibility of using a broader set of development resources.

The VoiceXML specification was developed with natural language speech recognition and text-to-speech in mind as input and presentation mechanisms. While supporting DTMF input, this specification allows for a straightforward means of implementing speech recognition and TTS solutions.

When is the optimal time to consider implementing a VoiceXML solution?

Today most enterprises are striving to provide a variety of channels as customer interfaces. Channels including Web, chat, fax, and voice should serve clients in an accurate and very consistent fashion. These channels can harness existing Web infrastructure and software modules. To take advantage of these similar components, implementation of VoiceXML should be performed if an IVR is used to complement a Web channel or vice versa.

As legacy IVR systems approach end-of-life, the benefits of VoiceXML should be revisited so complementary client channels can be a consideration for the future. Typically end-of-life for these proprietary systems requires a forklift approach; all hardware is replaced by

upgraded versions and applications are ported to the new platform. This approach can be very costly. In the interest of potential cost savings an open standard multi-tiered approach should be considered prior to reverting to a proprietary system.

A multi-tiered architecture can be the best approach for large installations requiring multiple IVRs, scalability, interdependent systems, and integration with databases, speech engines, and other data sources. Reuse of application modules and software licenses reduce implementation costs and decrease maintenance. Applications can easily be distributed across multiple platforms from a variety of vendors.

An alternative to procuring an IVR is outsourcing voice applications through VoiceXML hosting services. As a Web architected solution, VoiceXML allows organizations the ability to serve their applications over the Internet to the IVR farms provided by hosting companies.

Simply stated, VoiceXML is the Web browser for telephones. Its use in the enterprise is ever increasing and the benefits are realized by the return on investment. Portability and best-of-breed components are direct benefits, but reuse of existing Web infrastructure reigns. New applications and systems deemed end-of-life are perfect times to review the benefits of VoiceXML, while large applications requiring multiple IVRs or possibly hosted environments are targets for their distributed needs.

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