

Intervoice Speech Solutions

a report by

Intervoice, Inc.

Increasingly important to promoting profitability and subscriber satisfaction in these challenging times are speech-activated applications that offer a compelling business case. In addition to enabling the cost-effective delivery of customer-interactive network services, speech solutions provide new opportunities for revenue enhancement.

Increasing the top line is always a critical concern for businesses, and this is especially true for today's network operators. Intervoice messaging, prepaid and portal applications are important sources of revenue for network operators, and studies prove that a speech interface significantly improves the appeal and usability of these enhanced network services.

For telecoms service providers and network operators seeking to differentiate themselves in a competitive marketplace while continuing to maintain and expand their existing customer base, speech-enabled applications represent a significant growth opportunity.

Omvia™ Platform and Applications

Intervoice again leads the industry with their development of Omvia™, a network-grade solutions platform for the creation, deployment and hosting of speech-enabled applications including Omvia Payment™, Omvia Messaging™ and Omvia Portal™.

Omvia applications allow network operators to deliver information to subscribers anytime, anywhere, using any device, including wireless phones and personal digital assistants. By offering Omvia speech solutions, network operators can differentiate themselves in the market, boost service number business, and motivate Web developers to produce content for mobile/voice portals.

Omvia employs the most advanced interface technologies, including Speech Application Language Tags (SALT) and Voice eXtensible Mark-up Language (VoiceXML), with solutions that include the following:

- speech-activated network interactive voice response (IVR) applications;

- multimedia portals for networks and enterprises;
- wireless application gateways;
- prepaid and post-paid transaction processing; and
- interactive alerts.

A truly distributed architecture enables third-party application development and management, making it the ideal tool for deployment of consumer-oriented services operating in 3G, 2.5G, 2G, voice over Internet Protocol (VoIP) and intelligent network environments.

The Omvia platform provides a scalable and flexible architecture that enables service providers to deploy their applications in an efficient and cost-effective manner. The distributed Omvia platform allows service providers to centralise their applications, serving a number of geographical nodes and clusters within a node. Whether it is a small-scale (24- or 30-port) system or large-scale (10,000+-port) deployment, the platform can scale up or down to meet evolving service provider or enterprise requirements.

Migration to an Open Systems Model

Intervoice offers an open systems model to better serve the evolving needs of carriers. Although we continue to support existing customers using our traditional proprietary systems, we are also working with our customers to help them migrate to a more flexible, economical and extensible solution based on open standards. By providing the most flexible and efficient technologies possible, we are helping our customers leverage their investment in existing information technology infrastructure.

In order to provide this flexibility and choice, Intervoice is developing a wide range of options, all designed to support carriers who may choose different migration paths to the open systems of the future. In the long-term, we believe that the Microsoft.NET speech platform will expand customers' deployment choices further, helping to make speech solutions a larger industry segment and our solutions more affordable.

Intervoice also continues to enhance its VoiceXML



capabilities. By also extending our Omvia solution suite to SALT-based speech deployments, Intervoice will maintain its leadership in converged voice and data solutions supporting both open standards.

Omvia VoiceXML Solutions

VoiceXML is a powerful technology for building telephony-based speech recognition applications faster and more cost-effectively, while also leveraging a company's existing investment in Web technology. VoiceXML provides the user interface to a telephone call, while leaving the business logic and back-office functionality to be processed elsewhere, typically on the server side. Employing VoiceXML, Omvia Creator™ solutions allow users to interact with a voice browser by listening to recorded or synthesised audio output, then responding by speaking or by using a telephone keypad or other device.

For telecoms companies seeking a sharper competitive edge, Omvia Creator applications provide a way to leverage existing Web-based infrastructure. The open Omvia Creator SCE supports the development of voice-enabled IVR services featuring VoiceXML capabilities. By uncoupling the application from the platform, Omvia Creator applications also maximise the operations, administration, maintenance and provisioning savings of the distributed environment.

Omvia Creator VoiceXML services allow users to interact with the Internet via voice-recognition technologies. These solutions take advantage of several key technology trends, including the growth of the World Wide Web and the spread of Internet communications beyond the desktop personal computer. Omvia Creator applications are also the result of significant recent improvements in computer-driven speech recognition and text-to-speech (TTS) synthesis technologies. The major goals of Omvia VoiceXML applications are to voice-enable existing Web-based resources, to spur the development of next-generation IVR applications, and to extend the advantages of a distributed application environment to this converging speech- and Web-enabled landscape.

Omvia SALT-based Solutions

Intervoice is also committed to the innovation and development of SALT-based solutions and has selected the SALT-based Microsoft.NET speech platform as its preferred telephony and multi-modal solution.

Using the InVision Studio application development environment, carriers or third-party developers can quickly prototype and deploy dynamic SALT-based multimedia applications, such as voice portals with automated speech

recognition (ASR) and TTS applications. InVision Studio allows application developers to manipulate XML-formatted data to retrieve information from the Web or enterprise applications to interact with callers in realtime using voice recognition, recorded voices and TTS technologies.

InVision Studio provides a framework that complements Microsoft's Visual Studio .NET integrated development environment (IDE) and the .NET Speech software developer kit for implementing SALT-based speech-enabled applications. The InVision Studio toolkit includes voice-user interface design and specification components as well as tuning and transcription elements. When combined with Visual Studio IDE, these elements provide an environment for managing the creation of speech-enabled applications.

At the heart of the Omvia platform is InterSoft® Media Telephony Core (MTC), the runtime media services engine. Surpassing the functionality of typical SALT-based 'call managers', InterSoft MTC enables vendor-independent access to speech recognition engines, media interfaces and browsers along with connectivity to a wide array of standards-based and legacy computer-telephone integration (CTI) solutions, host interfaces and data sources. InterSoft enables the customer to select either a classic configuration, where all IVR functionality resides within one processor platform, or a distributed configuration that leverages the existing Web infrastructure within a customer's network.

InVision® Studio

The InVision Studio framework provides a comprehensive set of standard speech components, called 'Omlets', that enable complex speech-related routines including credit cards, dates, social security numbers and goal logging. Omvia Omlets are available as Web services that can be integrated into most standards-based development environments. In addition, the InVision Studio framework contains plug-in components that support mixed initiative applications, along with standard components including 'menu' and 'record', among others.

In addition to design and development, a total application life-cycle must address deployment, management and reporting. Intervoice provides a complete suite of products for solution management throughout its life-cycle.

Omvia Systems Manager

Omvia Systems Manager provides call details, application usage data, configuration management and surveillance of large distributed systems. The

solution supports centralised licence and resource management along with remote configuration of all gateways, application servers and resource servers. The simple network management protocol-compliant system manager enables realtime, dynamic monitoring of system health, alarms, port and span status and traffic snapshots on speech-enabled systems.

Diagnostic tools include call tracing, port monitoring (audio) and recording, centralised software updates (immediate and scheduled) and control. System-level reports summarise activity, traffic and problem areas. Data is available from either a single entity, one node, multiple nodes or the entire system. Via access-level control, security features and audit trails track access, system activity and changes to the system, thereby protecting against unauthorised entry and modifications.

Omvia Application View

Omvia Application View includes patented reporting processes and sophisticated tracking of the business uses of speech-enabled applications. This includes tracking of user goals, events, dual-tone multi-frequency and ASR statistics, number of callers, call duration and other factors.

Supporting connectivity to any open database connectivity compliant database, Omvia Application View enables both automated and manual distribution of standard reports. Via a published, public schema, custom reports also can be generated using customer-supplied reporting packages. Application View employs a client-server architecture that can be deployed in either an 'in the skins' or distributed solution. The client software can be loaded on any remote computer for access to the database. Web access to reports in Hypertext Markup Language format is also supported using standard browsers via the Internet or an intranet.

Managed Service Options

Network operators can obtain Omvia applications via a traditional system sale or as applications hosted by Intervoice. The open, scalable and highly reliable Omvia product suite also provides enhanced opportunities for network operators or virtual service providers to act as ASPs or hosting facilities. Omvia speech solutions are ideally suited for service providers who wish to offer Internet content from content providers through a voice-portal service, or IVR telephony applications as part of a telecommunication hosting service.

By choosing a managed service, carriers obtain faster time-to-market and extended reach for their speech-enabled services. Omvia applications are built on a

truly distributed architecture and, as a result, network operators have the freedom to outsource some or all of their development, deployment, change management and application maintenance to a third-party vendor of their choice.

Intervoice-managed solutions enable seamless, speech-enabled access to information and enhanced network services. As these services are built on a scalable Omvia infrastructure, call-processing capacity can expand rapidly as service demand grows. Omvia managed solutions also supply an ideal platform for integration of the latest enabling technologies, including the following:

- speech and natural language recognition;
- TTS conversion;
- speaker authentication;
- VoiceXML and SALT;
- Internet access;
- VoIP-enabled access to Internet Protocol (IP) networks; and
- push technologies and alert-related short message service messaging.

Benefits of Open System Solutions

Whether a network operator chooses to migrate to a SALT or VoiceXML solution via a traditional system purchase or a managed service option, Omvia speech solutions based on open standards provide many similar benefits. These benefits include the following:

- a common language for speech applications that is simple, easy-to-use and ideally suited to both carriers and developers;
- support for applications that enrich the user experience and promote customer satisfaction;
- an environment that supports strong market differentiation;.
- the ability to leverage existing Web-based infrastructure, providing telephone access to the universe of Web-based information;
- a flexible solution that allows carriers to create customised implementations and new speech solutions that are not feasible to deliver to computer users;.
- reduced time-to-market, enhanced customer relationship management and expanded reach for e-commerce services;
- faster evolution of services to keep pace with market changes and competitive offerings; and

- An opportunity to reduce the operational burden of creating, modifying and managing interactive telephony applications. ■

For more information about Omvia Speech Solutions, visit <http://www.intervoice.com> or contact the Intervoice office nearest you. Intervoice is headquartered in Dallas, Texas with offices in Europe, the Middle East, South America and Asia-Pacific.

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