

IVR Consolidation

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Interactive Voice Response (IVR) technology has evolved dramatically over the last decade offering service providers new opportunities for cost savings and revenue generation.

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IVR Consolidation will allow network operators to pool their aging and expanding inventory of IVR applications into a contemporary, more easily managed operation.

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A Brief History of IVRs

An Interactive Voice Response (IVR) system provides automated access to information via the phone system. An IVR integrates computers and communication, allowing people to ask and answer questions and receive replies using Touch-Tone (DTMF) and/or voice. IVRs provide fast and accurate answers to caller inquiries 24 hours a day, seven days a week.

IVR systems began in the 1960s running on large IBM mainframes, initially being used for call routing and simple announcements. At first, they were standalone systems but over time were added to PBXs and central office switches.



In 1983, Intervoice introduced the first IVR on the newly released IBM PC. Their initial customer was The Southland Corporation, which owned the 7-Eleven chain of convenience stores at that time.

Southland had a problem with fraudulent checks. The Intervoice system allowed clerks to dial in, enter the driver's license number of a customer, and receive notice whether the check should be accepted or not based on data from a company database, which kept track of bad checks. Through the prevention of fraudulent checks, the system paid for itself in one month.

Soon, banks and stockbrokers became interested in IVRs, as the vast majority of their customers calling in wanted to know simple answers such as their balance or a stock quote.

The late 1980s saw the introduction of IVRs with speech recognition. At first, they were limited to recognizing only digits and yes/no responses, but over time, the vocabulary and recognition rate grew rapidly.

Why Use IVRs?

IVRs originally were used to help a company's bottom line by cutting costs.

It was less expensive for computers than humans to do easily automated tasks.

In the 21st century, companies began using IVRs to not only cut costs, but actually bring in additional revenue, such as with games and music downloads.

Today, IVRs are found in many areas:

- Customer service
- Account management
- Conferencing
- Bill payment
- Directory assistance
- Premium calls
- Televoting
- Appointment setting and status
- Problems with utilities
- Retail order status
- Flight information

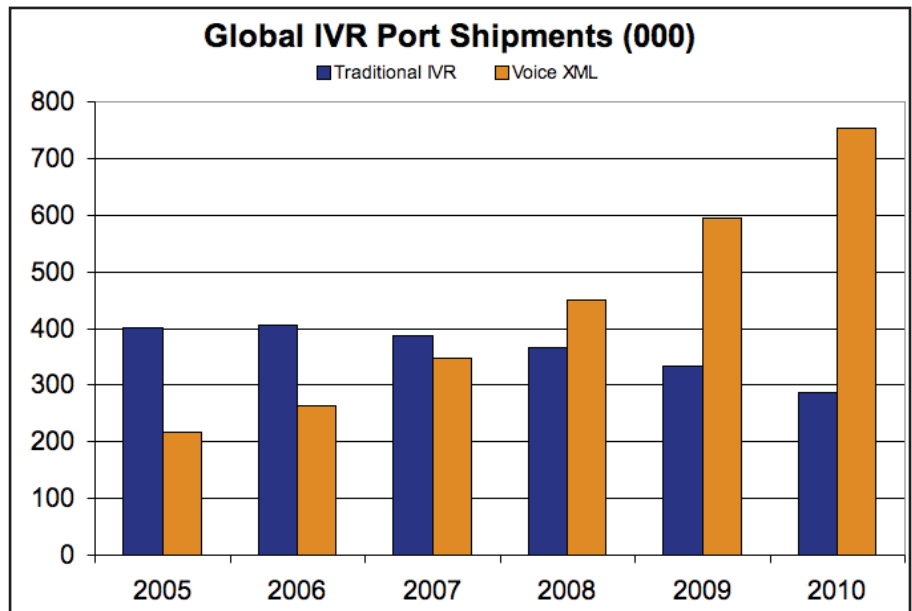
What Makes IVRs Work?

In the past, IVR vendors sold customers systems based on proprietary languages, which require the customer to rely on a single source for their maintenance, integration, and upgrades.

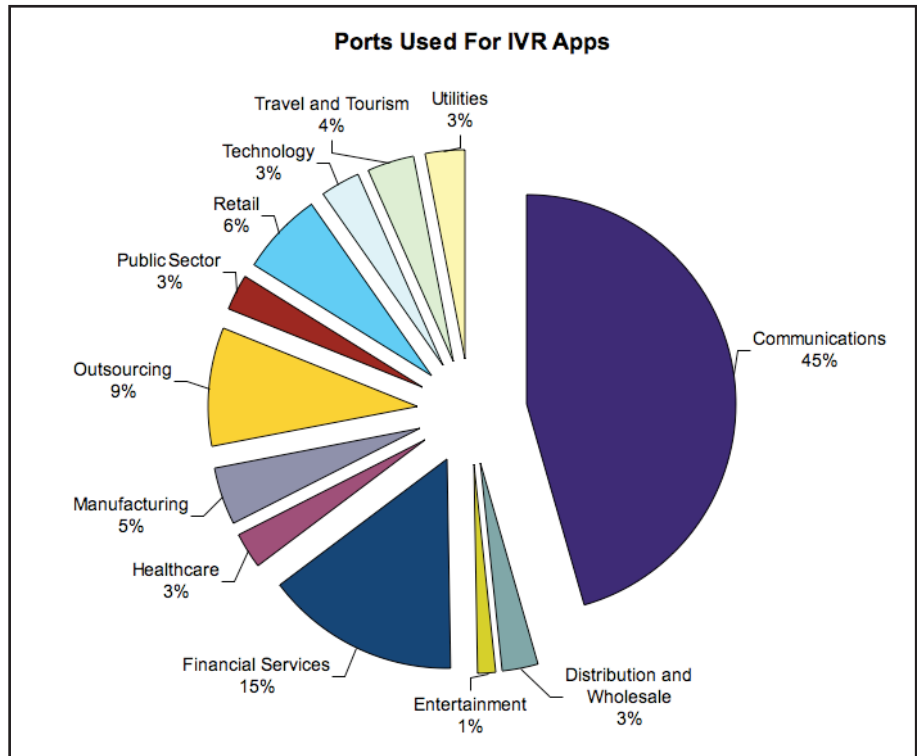
The last few years have seen the emergence of standards with the advent of web-derived languages, including Voice XML (VXML) and Call Control XML (CCXML). These languages enable operators to have increased confidence in the reliability of their operations and broaden their ability to integrate more than one vendors' work in their networks.



The World Wide Web Consortium (W3C) in 2004 approved VoiceXML (VXML) 2.0, a scripting language similar to HTML, which was designed for visual applications, whereas VXML is specified for voice applications. CCXML is designed for telephony call control support.



These numbers include both traditional, DTMF-based IVRs, as well as newer voice systems. Voice systems are expected to pass DTMF based IVRs in 2008. Source: Datamonitor



Communications and financial services lead the way in the number of ports being used for IVR applications. Source: Datamonitor

IVR Ports Shipped (thousands)							
	2005	2006	2007	2008	2009	2010	CAGR
N. America	326	338	353	377	412	452	6.8%
EMEA	156	173	188	206	221	240	8.9%
APAC	93	115	145	180	232	282	24.8%
CALA	43	43	48	55	63	69	6.8%
Totals	618	669	734	818	928	1043	11.0%

Source: Datamonitor

Total IVR Revenue							
	2005	2006	2007	2008	2009	2010	CAGR
N. America	633	655	667	679	702	732	3.0%
EMEA	303	334	361	393	420	449	8.2%
APAC	183	197	220	246	291	332	12.7%
CALA	46	47	52	59	66	70	8.9%
Totals	1165	1233	1300	1377	1479	1585	6.3%

Source: Datamonitor

Where Are IVRs Used Today?

The market for IVRs continues to grow steadily in all regions of the world, both in terms of revenue and ports shipped.

“Many IVR systems purchased in the late 1990s and early 2000s are coming to the end of their product cycle anniversaries causing organizations to start evaluating and implementing new IVR platforms. Most of the IVR systems being replaced are traditional IVR (based on proprietary code) and over the next five years many of these systems will no longer be supported by the vendor.”
Datamonitor 2006

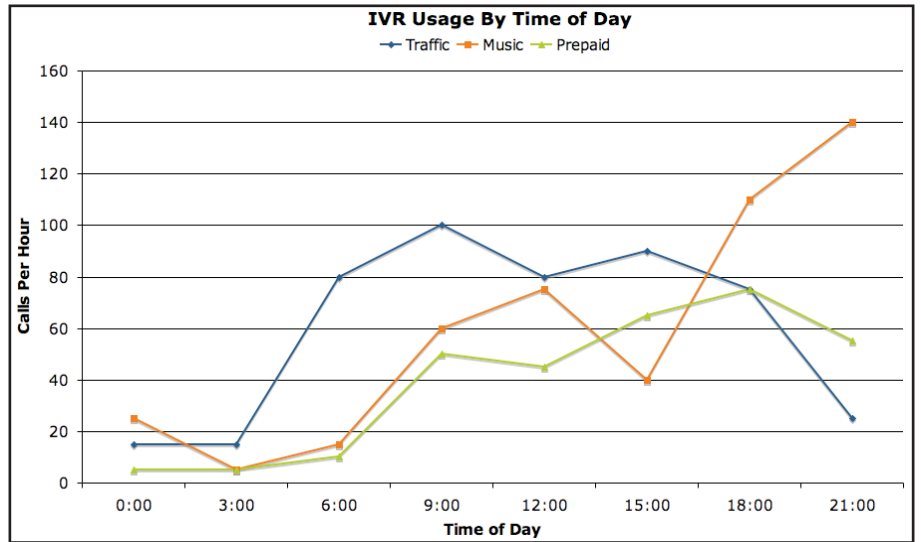
IVR usages varies by time of day.

Why the Need to Consolidate IVRs?

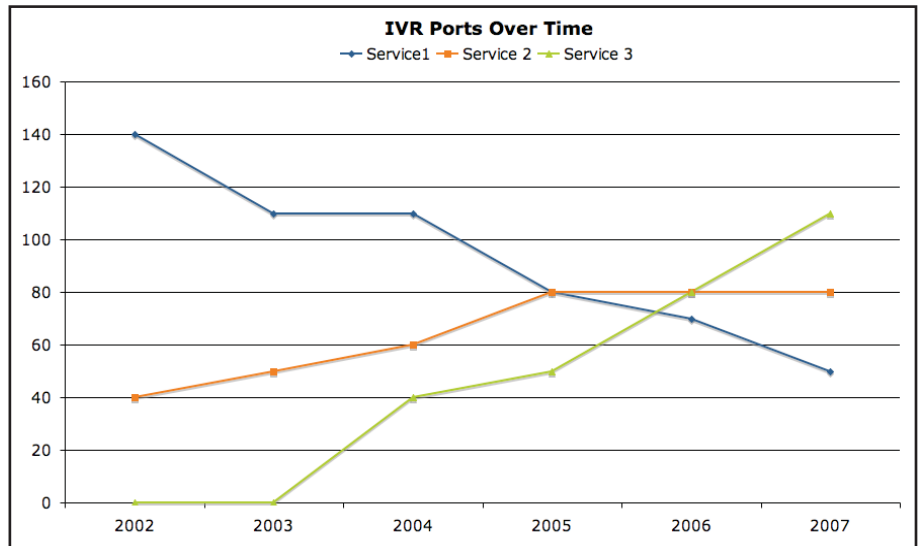
Network providers have purchased IVRs from a variety of vendors over a period of years. In many cases, these systems are running on dated operating systems, and on hardware and software that is many years old. In addition, these systems are often running at either higher capacity than designed, leading to a loss of revenue, or running underutilized, wasting resources.

Consolidating systems will lead to a reduction in ports needed. For example, an operator dedicating 1000 ports to each of three applications will find it only necessary for 2000-2500 ports rather than 3000 when running a converged system.

In addition, video IVR is forecast to be a growing industry in areas where 3G networks and all-IP infrastructures are capable of supporting it.



and over time...



The Opportunity

The opening is available now for operators to combine their IVR systems onto one platform. Some advantages of doing so include:

- *Open standards*, such as VXML, CCXML, and Linux have become part of the landscape. This provides operators with more vendor choices,

“As we move forward into a standards-based environment, the ability to distribute the different components of the IVR and to swap out various components as desired has lowered the barriers to entry for applications designers, and in turn led to a greater variety of applications being available at lower cost.” Datamonitor

enabling third party developers to compete for their business, and enabling service providers to focus on running the network.



- *Reducing overhead* by combining multiple systems onto one platform. This leads to space savings and reduced electrical requirements.
- *Development time reduced*. With all operations running on a single platform and single development language, it's easier to train staff to quickly develop and modify services.
- *Enhanced customer experience*. With a common interface, fewer access numbers, and applications that can refer to one another (“Thank you for topping up your prepaid account. Would you like to hear the top ring tones available?”), customers will be able to more easily manage their IVR experience and stay on the phone longer, leading to additional revenue.
- *Beginning the transition from TDM to an IP network*. IMS, and all-IP networks, are the future of telecommunications. If a company is far-sighted and ready to begin the inevitable transformation, IVR consolidation is a good place to begin.

- *Eliminate redundancy*. If an operator has three IVR applications, they likely have three platforms and three backup systems. Consolidation leads to one platform and one backup. In addition to the application systems, reductions in ASR and TTS equipment are found.
- *Improved reporting*. With a single platform, it's easier to get useful

reports on the number of callers, time of day of calls, revenue received per service, etc.

- *Reduced operational expenses*. Lower costs can also be seen in training, spares, upgrades and maintenance.

When Is It Time for You to Consolidate your IVRs?

Datamonitor, a global analyst, writes that “traditional, proprietary IVRs often have an approximate lifespan of five to six years.” If the providers’ IVR systems are running capably and depreciation is still available, there’s no need to merge systems. However, if a provider finds itself:

- *Needing additional capacity*: If additional ports are needed on a regular basis or it’s time for a large addition, it’s worth looking into consolidation.
- *Market ready for new applications*: If the market is ready for new games, music downloads, or any of a myriad of new possibilities, consolidation could make these available in a very timely manner.
- *Ready to begin transitioning to an IP network*.

What Is Needed?

To effectively manage IVR applications, a service provider needs to have an IVR platform that is scalable, to ensure easy growth; supports both TDM and IP calls; can handle both DTMF and voice input; can handle a wide range of business logic; and, runs on open standard software, to avoid being tied to any one company’s software.

How Should You Consolidate Your IVRs?

Intervoice, a leader and visionary in Gartner’s Magic Quadrant for 2005 and 2006 in the field of IVR systems, has Intervoice Network IVR for Media Exchange, an excellent choice for IVR consolidation. Network IVR provides the most extensive set of telephony protocol, CTI integration, and legacy data host integration options in the marketplace today.

Network IVR:

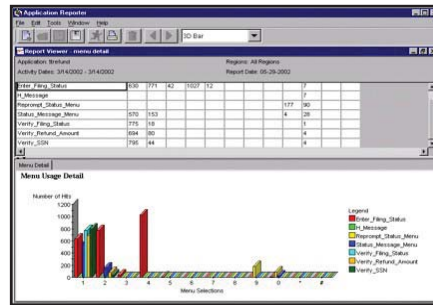
- can dynamically route each incoming call based on customer data, business rules, or any other programmable business logic
- comes in a variety of sizes and is easily scalable
- supports DTMF detection, reporting, and generation
- is VoiceXML 2.1 certified by the W3C
- is the first company to be certified with Nuance MRCP
- is fully programmable with industry standard CCXML
- has the ability to move a caller around to multiple endpoints or media resources during a single call while maintaining the context of the call
- can transfer between any combination of PSTN and VoIP calls
- supports fax servers
- supports a wide range of Enterprise and Network Signaling Protocols (e.g. SS7 (ISUP, WIN – IS 826), ISDN, CAS, VoIP)

“...Your prepaid balance is €12.45....Press 1 to hear about an exciting new offer from OmviaTel...”

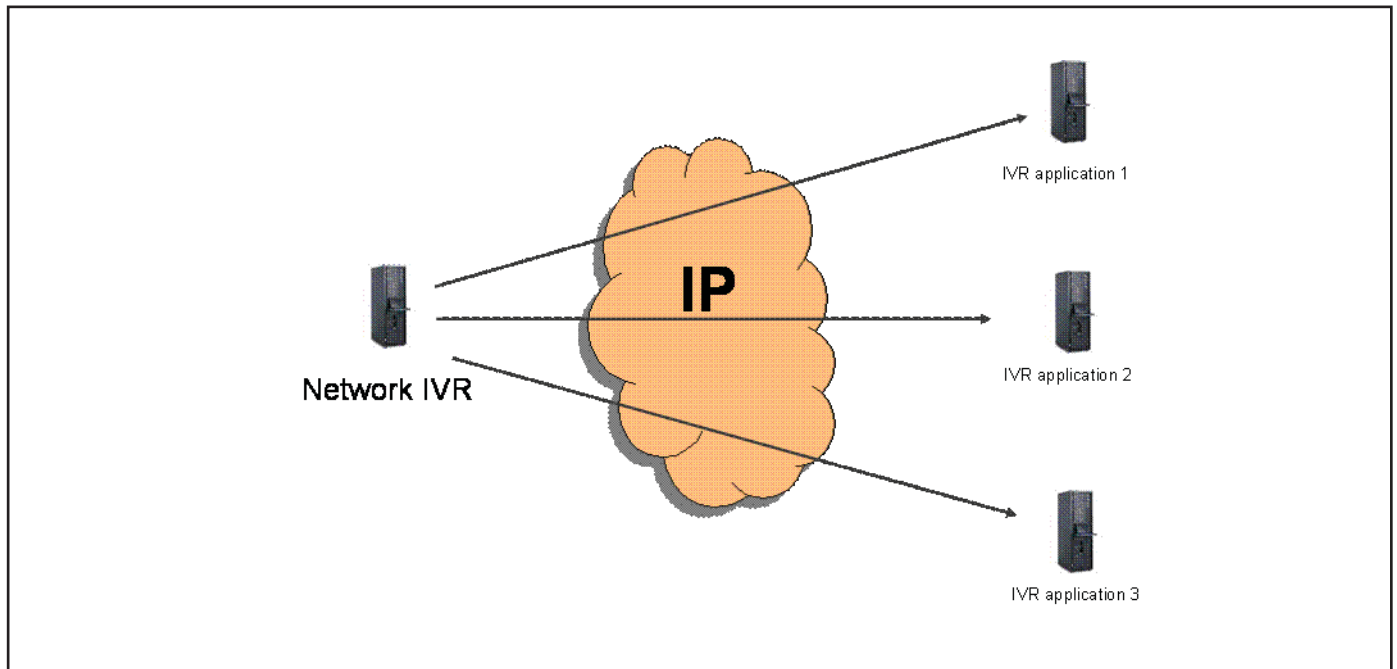
- supports all major T1, E1, ISDN, CAS protocols
- supports industry standards: Companies can select off the shelf hardware, either from Intervoice or from their vendors.

Network IVR also has available:

- Application View: a reporting tool with pre-build reports for speech tuning, billing, performance, usability, and telephony usage as well as a report wizard for creating custom reports



- Control Center that provides:
 - system status
 - port activity
 - system performance
 - SNMP alarms
 - real-time statistics
- Media Hub: a server-side solution to store, retrieve, and manage media in a distributed environment, and librarian tools for customers needing to control their media management process.



If moving all the IVR applications onto one system isn't an option, there is an alternative. Position Network IVR as a gateway to the existing IVR applications. This will enable IVR activity to be more closely monitored, present a simplified access point to subscribers, and have a ready-made system to host new applications.

Case Study

A large telecommunications company with more than six million subscribers and a very low customer service call completion rate needed to improve that rate and add a platform for prepaid recharging and balance inquiry. They were also concerned with future-proofing their investment.

Intervoice installed the highly scalable Network IVR with both SIP and SS7 support, satisfying both their present and future concerns. Short codes for prepaid and balance inquiry were established, and today their call center smoothly handles 180 million calls per month.

Bottom Line

Consolidation of IVR platforms will be necessary for most network providers in the near future. Consolidating allows service providers to:

1. Reduce costs through eliminating redundancy and lowering operational expenses.
2. Increase revenue with new features and a better customer interface.
3. Prepare for the future with the first step towards an all-IP network.

Intervoice's Network IVR for Media Exchange, with its extensive set of telephony and data capabilities, coupled with Intervoice's leadership in IVR technology, can help service providers reduce costs and generate extra revenue.

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