

KEY MESSAGES

The hosted IVR market is changing and there is an increasing demand for hosted speech

Hosting is becoming more accepted in general, and this model is gaining traction for IVR. Growth in hosted speech is increasing at a faster rate than for dual-tone multi frequency (DTMF): speech applications are often complex to develop and enterprises have limited internal expertise, which means that hosting is a more feasible option. Use of speech recognition is increasing because it can be personalized, is more intuitive for customers to use and costs for speech are decreasing. As well as moving from a CAPEX to OPEX model, hosting allows enterprises to better manage volatile traffic or high business growth. The key drivers for enterprises for investing in hosted speech and outbound services are providing better customer service while containing costs.

Outbound IVR solutions offer significant advantages over predictive dialers and direct mail

Outbound services are being offered in addition to hosted speech in order to maximize port usage and to generate additional revenues. Enterprises wishing to proactively reach out to customers and deflect inbound calls are able to use outbound services as part of a multichannel strategy. They also benefit from the ability to choose the channel most appropriate to the customer. Factors such as customer age or the relative urgency of the communication determine enterprises' choice of SMS, voice or email. There are a number of advantages to using hosted outbound IVR over predictive dialers or direct mail. A hosted solution can typically be deployed faster and outbound messages sent with a short notice period, such as in a situation where customers need to be alerted of a flight cancellation. In addition, outbound speech or DTMF can be used to automate simple transactions, thereby reducing the need and costs of agents.

Financial services, travel & tourism and healthcare are early adopters of outbound IVR

Hosted inbound IVR is being deployed by organizations with high call volumes into the contact center for enquiries, sales or order tracking. The hosted solution particularly suits businesses with fluctuating traffic volumes. The communications, financial services and travel & tourism industries have been early adopters of inbound IVR. Some of the key applications being deployed are purchase order status, balance checking, ticketing and flight confirmation. Hosted outbound solutions are also gaining traction in the financial services industry for billing and collections where costs are tight and the number of customers has increased. Other key customers using outbound services are healthcare organizations and travel & tourism companies. Reminders and alerts help to deflect inbound calls as well as providing customers with a better service and availability of information.

The competitive landscape is fragmented but vendors are broadening their offerings

The competitive landscape for hosted IVR is fragmented, with different vendor groups playing different roles in the market. Large telecommunications companies and traditional premise-based IVR vendors are competing for market share alongside pure play hosted speech vendors. Vendors specialize in particular verticals and as inbound or outbound providers. However, inbound IVR vendors, such as Angel.com, Convergys, Eckoh, EDS, Intervoice, RightNow, Tuvox and Voxify, are broadening their offerings to include outbound services as well. Specialist outbound providers include LiveVox, SoundBite and Varolii. West and Voxeo are unique as they have both a large presence in inbound and outbound hosted IVR solutions. The direct competition for hosted vendors is often the traditional, premise-based IVR vendors rather than other niche players.

The future will see an increased use of standards and better infrastructure integration

The hosted IVR market is still relatively immature, particularly for speech and outbound services, and growth in these areas will bring further changes. There will be an increased use of open standards, with more vendors utilizing SIP technologies as well as Voice-XML and CCXML for application development. This will allow better integration with IP telephony and back-end contact center solutions. Automating speech based transactions also provides an opportunity for speech analytics and voice biometrics for identification. These two technologies will become part of hosted speech systems as the technology matures and solutions are better integrated with the contact center.

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MARKET OPPORTUNITY

Defining the market

Hosted IVR

Both hosted and premise-based managed models are becoming more popular ways to deploy IVR. In a hosted environment all components of the solution are located on either a service provider's or a dedicated hosted IVR provider's network data center.

Premise-based managed IVR services

The use of Voice-XML provides enterprises with the ability to disaggregate the traditional IVR solution stack, enabling the speech application to be parked on the web server and the media processing, gateway and browser to be located on separate servers on the network. The separation of these components allows vendors to provide a new premise-based managed service deployment model for IVR. The DTMF or speech application is located on the client's premises, while the IVR and back-end routing is facilitated through the network out of the host vendors' data centers. Alternatively, the application is located in the host vendors' data centers while the IVR and back-end routing is located on the client's premises.

Outbound IVR

Outbound dialing is being used to further diversify hosted vendors' port usage and introduce new revenue streams. This method of proactive customer calling allows the enterprise to reach out to customers before they call with elements in common with a predictive dialer. However, outbound IVR is more flexible than a predictive dialer, using speech recognition and DTMF to verify customer details and route calls back to a live agent only when more information is required. Entire transactions can be carried out without the use of an agent, allowing agents' time to be better utilized with more complex interactions.

The changing IVR market

As enterprises battle to reduce costs and increase efficiency in the contact center, automation using IVR is gaining traction. Agents are costly but essential, and IVR is being used to create more effective communications and to allow agents to spend more time handling complex customer inquiries.

Avoiding commoditization and moving up the value stack

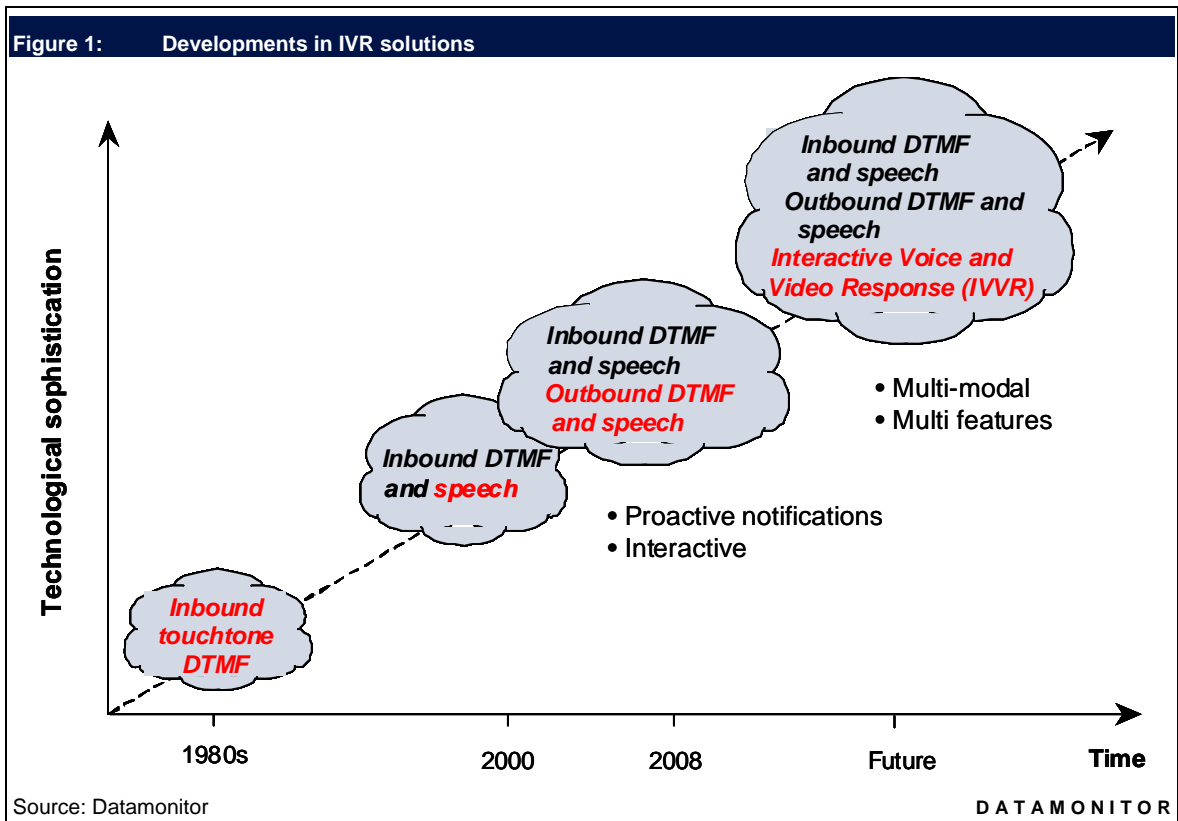
The relative high cost and uncertainty over the reliability of speech recognition has prevented enterprises from investing in speech-based IVR in the past. Inbound dual tone multi-frequency (DTMF) IVR applications have seen a higher uptake, but growth in these solutions is stagnant. Although DTMF-based applications are cost effective and have a valid use for simple transactions, DTMF cannot be used for complicated actions, due to long menu lists that can cause customer frustration. Enterprises and carriers are taking an interest in speech-based IVR and are investing more readily. Refined algorithms and improved CPU and memory have made speech recognition more accurate. In addition, open standards, such as Voice-XML, are now embraced by the market as they help bring down total cost of ownership (TCO) and provide for easier speech application development.

Hosted DTMF services have been in the market for a long time and revenue growth is stagnant because they have become commoditized. Therefore, vendors are offering hosted speech services in order to increase revenue by providing professional services for application development and consultation. Essentially, speech recognition provides vendors with the ability to move up the value stack and position speech as more of a strategic hosted offering than DTMF services.

The hosted model is becoming more acceptable

Technology vendors are increasingly providing hosted offerings and IVR vendors are no exception. IVR is suitable for hosting as the complex development of speech and DTMF applications requires expertise that may not be available in-house. There have been concerns about an economic recession in North America and Europe, and enterprises are thus looking for ways to reduce costs and internal pressure on IT staff. A number of specialist vendors are offering hosted IVR services, providing enterprises with a way to deploy IVR solutions faster and reduce CAPEX. Speech-enabled IVR is new for many enterprises and a hosted solution gives them a chance to test these technologies without making a significant investment upfront.

Hosted and packaged applications also allow vendors to reach a different type of customer. Small and medium sized enterprises are able to trial IVR solutions at a low cost using a hosted service, giving vendors a greater target audience and customers more flexibility. To date, the bulk of deployments in IVR have been in larger enterprises and carriers. There is a clear opportunity to sell into the mid-market in more specialized industries, such as hospitality or retail, where demand is seasonal or where there are not enough resources to develop speech applications internally.



Outbound IVR services help to maximize port usage and reduce pressure on agents

Outbound services are being offered in addition to hosted speech in order to maximize IVR port usage and generate an additional revenue stream for vendors when hosted IVR growth is sluggish. Outbound automated speech services can be used for identification and verification to identify the caller before other applications are introduced. Fixed phones are increasingly losing their place as a primary method of contact. Customers are more mobile and increasingly difficult to reach, and as a result agents are often faced with an answering machine. Outbound services can be used to help reduce pressure on agents. When an outbound call is picked up and the customer verified as the correct party, the call can then be routed through to an agent if necessary.

Outbound services enable proactive notification and information dissemination with the ability to do follow up calls and transactions. Simple transactions such as bill payments or travel queries can be carried out entirely by the IVR system, reserving agents' time for more complex interactions. Agents will be less frustrated as they are able to spend time on more complicated customer interactions. Outbound IVR can also be used to deflect calls. This gives enterprises a higher degree of control over communications and agent costs. One example of this call deflection is that of a bank placing an automated call to confirm that a payment has been received before a customer calls in to confirm the same.

The benefits of outbound IVR over predictive dialers

Predictive dialing was used initially for large scale outbound campaigns. Once the call connected, it would be routed back to a live agent. This was used mostly for telemarketing, which is now becoming extinct in many areas of the world. Vendors are positioning outbound IVR as a way to displace predictive dialers or to introduce new proactive calling capabilities. Outbound IVR offers a number of advantages over predictive dialers, including flexibility and a reduction in agent costs:

- **Cost of agents** – Outbound IVR can be used to provide a service that is not economically feasible for live agents to achieve. An example of this is when alerting customers of flight delays which are time sensitive and require many calls to be made in a short time period. Transactions can be carried out entirely via an IVR system which reduces the need for agents; this could include checking a bank balance, flight details or paying a bill. The call is routed back to an agent only when the customer needs further assistance.
- **More intelligent** – Outbound IVR has the ability to identify callers using speech recognition or DTMF and can be used to register personal details. Outbound IVR can make an intelligent decision regarding whether a caller is there and the call is only routed back to an agent when the customer requests to speak with them via a voice command or press of a key. Predictive dialers are not as sophisticated, and the call is always routed back to an agent. Outbound is more intuitive in this regard and offers real time interactions. The customer is more responsive if the call is personalized and IVR can be used to provide a service which existing customers are interested in, to make proactive communications rather than cold calls.
- **Flexibility** – Outbound services can be used to communicate with the customer during out of office hours or when agents are unavailable. It can be used to reach a customer at home, in the evening after work, to provide reminders about payments or appointments.
- **Time sensitivity** – Outbound services can be deployed with a short notice period, whereas live agents require scheduling and training. This is particularly useful when notifying customers of a flight cancellation which must be carried out immediately to be effective. Outbound solutions can be deployed faster when using a hosted service

and there are rarely capacity restraints. The IVR system can be programmed to call customers with short notice at specific times.

The benefits of outbound IVR over direct mailing

Direct mail is becoming increasingly expensive with rising postal charges and high repetition rates. Outbound IVR solutions can be deployed faster using a hosted solution and have further advantages over direct mail:

- **Immediacy** – A postcard reminder may sit idle for months before a customer responds, if at all, whereas a patient who is listening to an outbound inquiry such as ‘would you like to make an appointment for next week?’ is prompted to act immediately. Outbound IVR solutions also deliver feedback to the provider; they know immediately if the call has been received, and can take appropriate action. With direct mail, providers do not know if their message has been received.
- **Identification and verification** – Mail may be sent to an address that is no longer active and there is no way to verify or identify the recipient. With outbound IVR, a series of speech or DTMF prompts can be used to verify the customers’ address and date of birth to ensure the correct party is on the end of the telephone. Enterprises can therefore be more confident that their message has reached its intended recipient.
- **Low cost of repetition** – If a customer does not respond to a mailed notice, there may be additional costs, both administrative and postal, for mailing a second. With outbound IVR, the costs of a callback are negligible and the service is likely to be cheaper.

Vendors are offering multichannel solutions

The proliferation of web self-service and mobile phones mean that customers are shifting between communication channels. Whereas previously a phone call or letter would reach a customer, the increasing choice in communication preferences, including text messaging, office phone, mobile phone, and email, makes it more difficult for enterprises to reach their customers. In order to keep up with changing behavior, enterprises must also adapt their contact center strategy.

IVR vendors are beginning to offer both text messaging and email, in addition to speech and DTMF, for their hosted outbound solutions. Despite the new focus on the delivery of multichannel services, voice is still a valued communication channel. Speech recognition solutions do come at a higher cost than email and text messaging but offer a faster route of reaching customers when an immediate response is required. A simple text or email can be used to provide confirmation of a transaction or appointment but could also easily be ignored amongst a barrage of communications. A multichannel approach makes communications more effective: when a phone call is unsuccessful, a text message or email can be sent to alert the customer. The ability to choose the relevant channel depending on time sensitivity or customer preferences helps enterprises provide better customer experiences. In addition with a multichannel approach, communications can be made according to their time dependency: for example, a notification about a flight delay would need to be conveyed immediately and a response required as to whether the customer would like to change the flight. In this case, an outbound call would be most suitable.

Market drivers

Cost pressures are driving investments in hosted speech solutions

As the economy weakens, enterprises are struggling to reduce costs. The credit crunch could mean uncertainty about funding or slow growth in business. Enterprises are looking for numerous ways to cut costs or maximize investments, and hosted and outbound IVR can be utilized in this regard:

- One way of reducing internal expenditure is to change from a CAPEX to OPEX model, which is more economically palatable. The initial outlay is minimal and spending is spread over a longer period of time. It also allows reduced pressure on the in-house IT team.
- The cost of outsourced agents and offshore contact centers is increasing. However, bringing a contact center back in house could be a time consuming and complicated process. One solution may be for enterprises to swap agents for hosted speech services. Automated speech can be used instead of agents to provide customers with basic information and a means to carry out simple transactions, therefore saving the enterprise money. Hosted IVR solutions can be deployed quickly with minimal change to business processes.
- Outbound services are being driven by enterprises wanting to raise the level of interaction with customers without raising costs. Enterprises are able to contact customers and bring the brand to front of mind at a more manageable cost than when using live agents or direct mail. Hosting uses a pay per minute or transaction model which also makes for reduced spending during quiet periods.

While the economy is struggling, customer retention is vital

The struggle for business growth in an unstable economy means that customer retention becomes an even greater focus among enterprises. In order to keep relationships active, enterprises are focusing on maintaining ongoing relationships by providing additional services and reminders. They are able to use outbound IVR to put their brand to top-of-mind of customers at a lower cost than by using agents. As enterprises change their strategic focus from hard sales to providing better customer service, the adoption of outbound services is growing. Customers expect a more personalized service as they begin to receive more personalized communications through web channels. As a result, they will respond better to calls that are relevant to them and are more likely to welcome an automated call if it provides a useful service, such as updates on flight information. Speech-based IVR solutions are ideal in that they can offer a more personal experience than DTMF while still minimizing agent costs.

Outbound calls can help enterprises with managing repeated communications such as appointment scheduling, bill payments and call activation. The Telemarketing Sales Rule, which includes the do-not-call list, has forced companies to change their outbound strategies to provide customer service rather than cold sales calls. Enterprises are beginning to view customer services as a competitive advantage and are using proactive automated calling to provide a high level of service at a reduced cost.

High call volumes and scalability

Another driver for hosted speech solutions is high call volumes through which agents are not able to answer all incoming calls. Using an IVR solution, enterprises can better manage large numbers of incoming calls. Customers interact with the speech or DTMF application which reduces hold times and drop off rates. Two examples of how hosted speech is being

used to deal with high numbers of calls are for ticketing, which can be carried out entirely by an IVR system, or in retail, where there is seasonal demand for products. Outbound calls can also be used to automate routine tasks. It can decrease morale if an agent has to handle large numbers of repetitive calls.

Market challenges

Driving awareness for hosted speech and IVR applications

Many customers are not yet aware of the advances that have occurred in speech recognition technology. Speech recognition is often still perceived as difficult to use, difficult to develop applications for and inaccurate when faced with diverse accents and languages. Outside of large financial institutions and telecommunications companies that have invested heavily in their contact center solutions, the number of deployments has been comparatively small. Although this is starting to change, vendors face a significant challenge in marketing their solutions effectively.

The cost of speech recognition outside the US

In North America the IVR market is consolidated and both enterprises and customers are familiar with using speech recognition. However, outside of this region, the development of speech recognition engines in new languages and dialects has been slower. Beyond North America, speech recognition is often more expensive because there are many different languages. The cost of speech recognition is gradually coming down and this will bring opportunities for enterprises to add speech to their contact centers.

Investments in contact center staff and legacy infrastructure

Even with advancements in IVR and the availability of cheaper, packaged and hosted speech solutions, enterprises will still continue to invest heavily in contact center staff. Enterprises will not abandon previous investments in contact center applications and infrastructure. Fully automated solutions are unlikely, and IVR is being used to complement live agents rather than replace them. Outbound IVR has not been on enterprises' radars previously, and they will need to adjust their way of thinking before accepting it. Existing legacy infrastructure and proprietary IVR have meant that adoption of Voice-XML is slow among conservative organizations. This will also prevent these companies from switching over to a hosted solution rapidly.

Market size and trends

Growth in DTMF is stagnant but there has been an increasing demand for hosted speech solutions

Although both hosted DTMF and speech solutions are growing, the use of speech is increasing at a faster rate. Enterprises have invested in DTMF over the last few years and are now looking to achieve greater levels of interactivity and complexity in their IVR solutions with speech recognition. Hosted speech is more viable than for DTMF as internal expertise in application development is limited and enterprises will look for services to help deploy new solutions. Figure 2 shows how the market for hosted DTMF and speech will grow through to 2013. Uptake of DTMF services is increasing, albeit slowly, and revenue will increase from \$2.5 billion in 2007 to reach \$2.7 billion by 2013. Hosted speech is growing at a faster rate, however, with a CAGR of 11.4% between 2008 and 2013, as indicated in Table 1. Speech services will represent almost 40% of hosted IVR revenue in 2013, compared to just 22% in 2007.

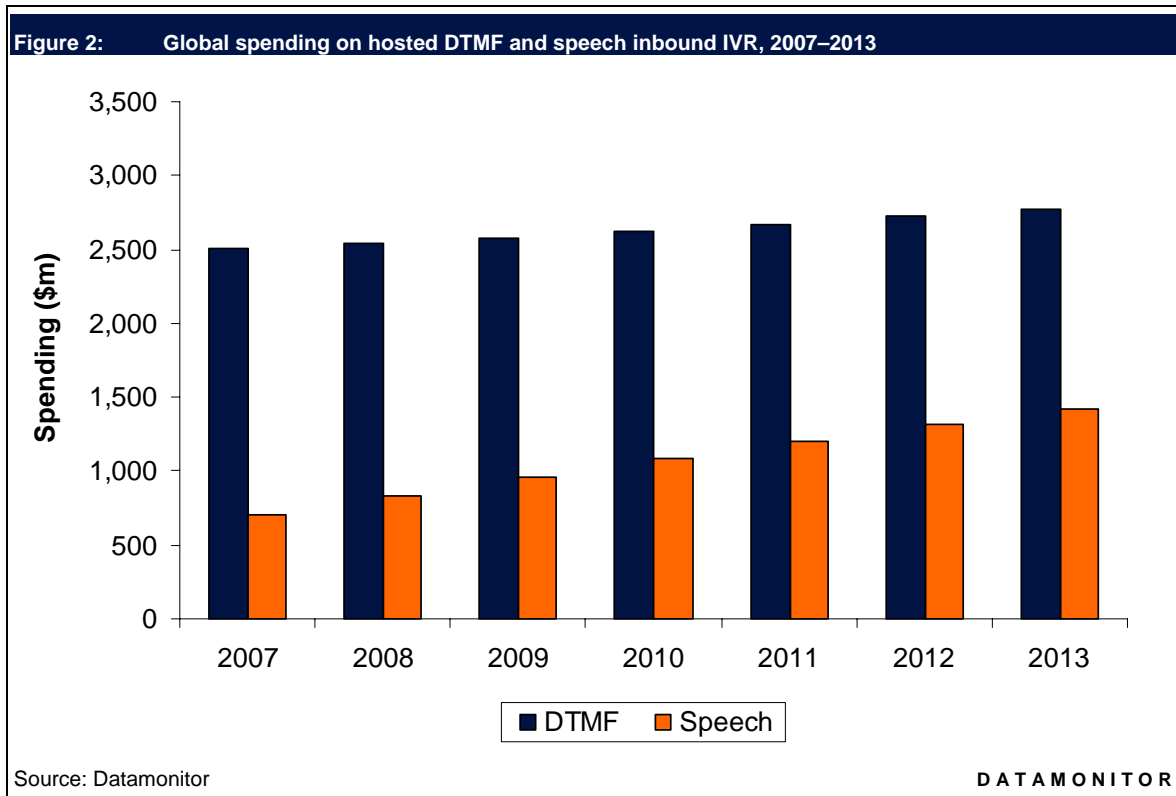


Table 1: Global spending on hosted DTMF and speech inbound IVR, 2007–2013

	2007	2008	2009	2010	2011	2012	2013	CAGR 2008 - 2013
DTMF	2,503	2,541	2,581	2,627	2,674	2,725	2,778	1.8%
Speech	703	828	957	1,083	1,203	1,314	1,419	11.4%
Total	3,206	3,369	3,538	3,710	3,876	4,039	4,196	4.5%

Source: Datamonitor DATAMONITOR

Premise-based managed services are becoming more popular

Premise-based managed services are gradually becoming more widely available and are of interest to those customers which have already invested heavily in their IVR platform or have concerns over data security. The hosting of applications enables greater flexibility to expand globally for large enterprises. As the enterprise and hosted network provider adds data centers around the world, there are more places for the Voice-XML platform and speech applications to reside. This will provide support for calls across the globe and provide greater business continuity to enterprises. Data is typically secured because the customer information stored in the Voice-XML stack remains inside the enterprises’ firewall.

Figure 3 indicates how premise-based managed solutions will grow compared with more traditional hosted services. Premise-based managed services are growing at a faster rate than the market at 16.8% CAGR between 2008 and 2013, to reach \$1 billion by 2013. Traditional hosting currently makes up the majority of sales but is growing slower at 1.8% CAGR between 2008 and 2013, to reach \$3.1 billion in 2013.

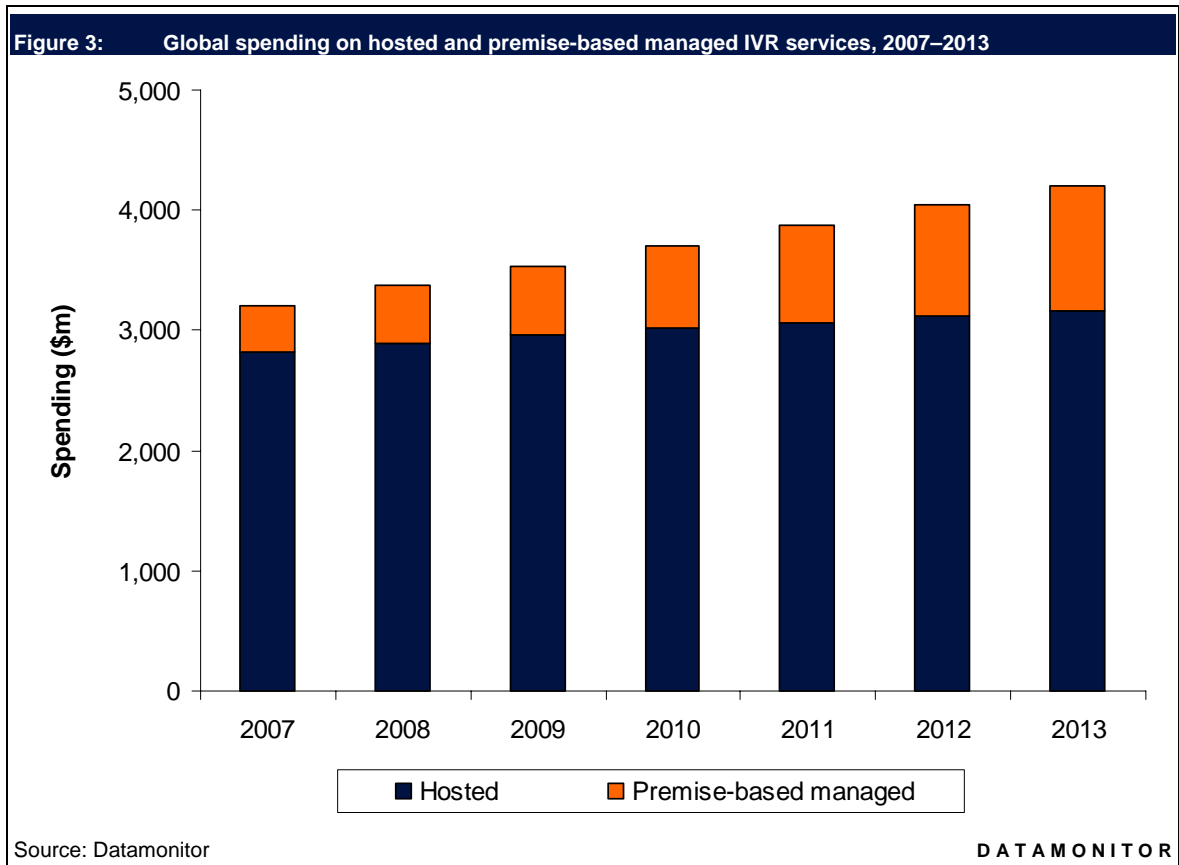


Table 2: Global spending on hosted and premise-based managed IVR services, 2007–2013

	2007	2008	2009	2010	2011	2012	2013	CAGR (2008 – 2013)
Hosted (\$m)	2,820	2,894	2,964	3,024	3,069	3,118	3,166	1.8%
Premise-based managed (\$m)	386	475	575	686	807	921	1,030	16.8%
Total (\$m)	3,206	3,369	3,539	3,710	3,876	4,039	4,196	4.5%

Source: Datamonitor DATAMONITOR

North America represents the largest market for hosted IVR through 2013

The uptake of hosted IVR has been most noted in North America. There are a larger number of vendors in this region, from specialist hosted providers to more traditional premise-based IVR vendors, such as Avaya, Envoy, Nortel, Cisco and Interservice. North America represents a substantial opportunity because there are a large number of contact centers and agent labor is expensive. In North America, enterprises are several iterations down the line for IVR and, when replacing old systems, can choose to migrate to a hosted solution. Conversely, in Europe, there has been a slower uptake of hosted speech solutions because of language barriers and investments in proprietary systems which mean enterprises are slower to change to the hosted model. However, by 2013 there will be a greater uptake of IVR outside of North America. Currently, high discounts are needed in Asia Pacific (APAC) and Central and Latin American (CALA) as there is high price sensitivity. Figure 4 shows the revenue split by region in 2007 compared with 2013. North America currently accounts for 63% of spending on hosted IVR and, although this will remain a majority, APAC and CALA will begin to adopt the hosted model as the IVR market matures in these regions.

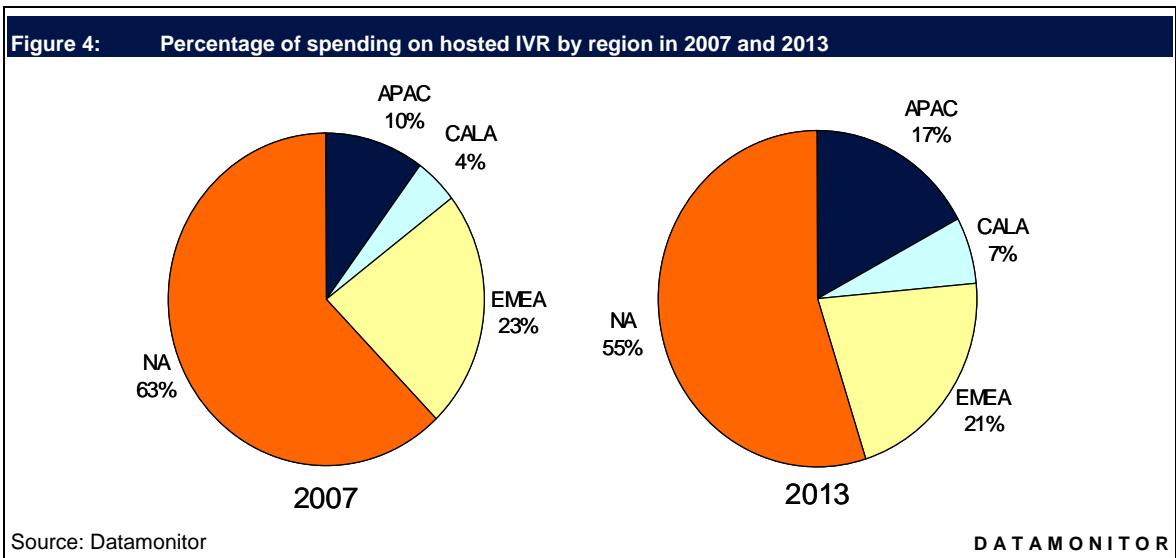


Table 3: Percentage of spending on hosted IVR by region in 2007 and 2013

Region	2007		2013	
	\$m	%	\$m	%
APAC	328	10%	718	17%
CALA	144	4%	273	7%
EMEA	736	23%	897	21%
NA	1,997	62%	2,308	55%
Total	3,206	100%	4,196	100%

Source: Datamonitor DATAMONITOR

Outbound services are currently a very small proportion of IVR but there are growth opportunities

Hosted outbound services are a high growth area for vendors, especially compared with inbound solutions which are seeing a decline in sales from DTMF. Datamonitor estimates that the hosted outbound IVR market was \$174 million in 2007. Although outbound speech applications are being developed, the leading deployments in outbound have been using simple DTMF applications such as identity confirmation, prescription reminders and overdraft notifications. Growth in hosted DTMF is slowing for inbound services, but the outbound IVR market is rapidly increasing at almost 20% CAGR between 2008 and 2013 in North America, as shown in Figure 5. The figure compares spending on usage and services, outside of application development, for hosted inbound and outbound IVR. Spending for speech and DTMF services has been split out in Table 4. Both inbound and outbound speech is growing rapidly as enterprises demand greater sophistication from their IVR, with more intuitive interactions. Some key speech applications include directory assistance, call routing, purchasing and payment, locator and order requests.

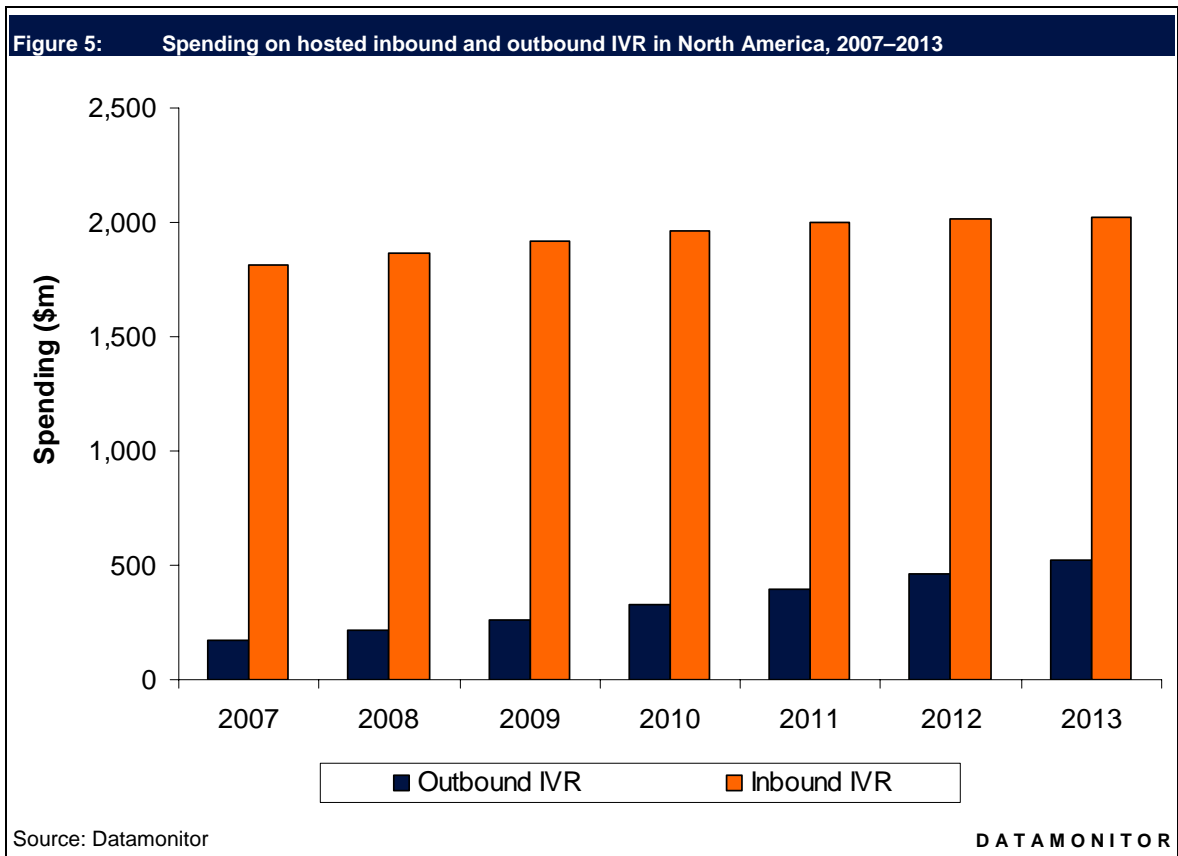


Table 4: Spending on hosted inbound and outbound IVR in North America, 2007–2013 (\$ millions)								
	2007	2008	2009	2010	2011	2012	2013	CAGR 2008 - 2013
Outbound								
DTMF	173	211	260	320	385	451	506	19.2%
Speech	1	3	3	6	9	13	18	48.3%
Total	174	213	264	325	394	464	524	19.7%
Inbound								
DTMF	1,368	1,342	1,311	1,276	1,243	1,210	1,176	-2.6%
Speech	446	525	609	687	753	805	849	10.1%
Total	1,814	1,867	1,920	1,963	1,997	2,015	2,025	1.6%
Total	1,988	2,080	2,184	2,289	2,390	2,479	2,549	4.1%
Source: Datamonitor								
								DATAMONITOR

CUSTOMER IMPACT

Hosted speech and outbound IVR services are used in a number of different business scenarios, mainly for those customers with large contact centers. The key drivers for growth are improving customer service and cost containment. Unlike traditional premise-based IVR, hosted solutions are attractive to smaller enterprises that have not made investments in premise-based equipment and wish to trial speech recognition or host DTMF IVR solutions. The scenarios where inbound and outbound IVR are used are different, and, for this reason, Datamonitor has assessed the customer impact and vendor opportunities for these technologies separately.

Hosted inbound IVR: early adopters

Inbound IVR solutions thrive in high call volume environments for inquiries, sales or order tracking. The hosted solution particularly suits businesses with fluctuating traffic volumes and those with a need for assistance with complex speech application development and management. Figure 6 shows the industries where there has been a high level of interest and deployments of hosted IVR solutions. As the market matures, and vendors begin to understand their customers' needs, packaged speech applications for specific verticals are becoming more widely available. Through these applications, vendors are promising reductions in cost and deployment times. However, the first available packaged applications were not flexible enough to meet the specific needs of the early adopters, particularly financial services, communications and travel & tourism organizations. The market is warming up to this type of solution and the packaged applications available are actually configurable, with some degree of customization and integration required.

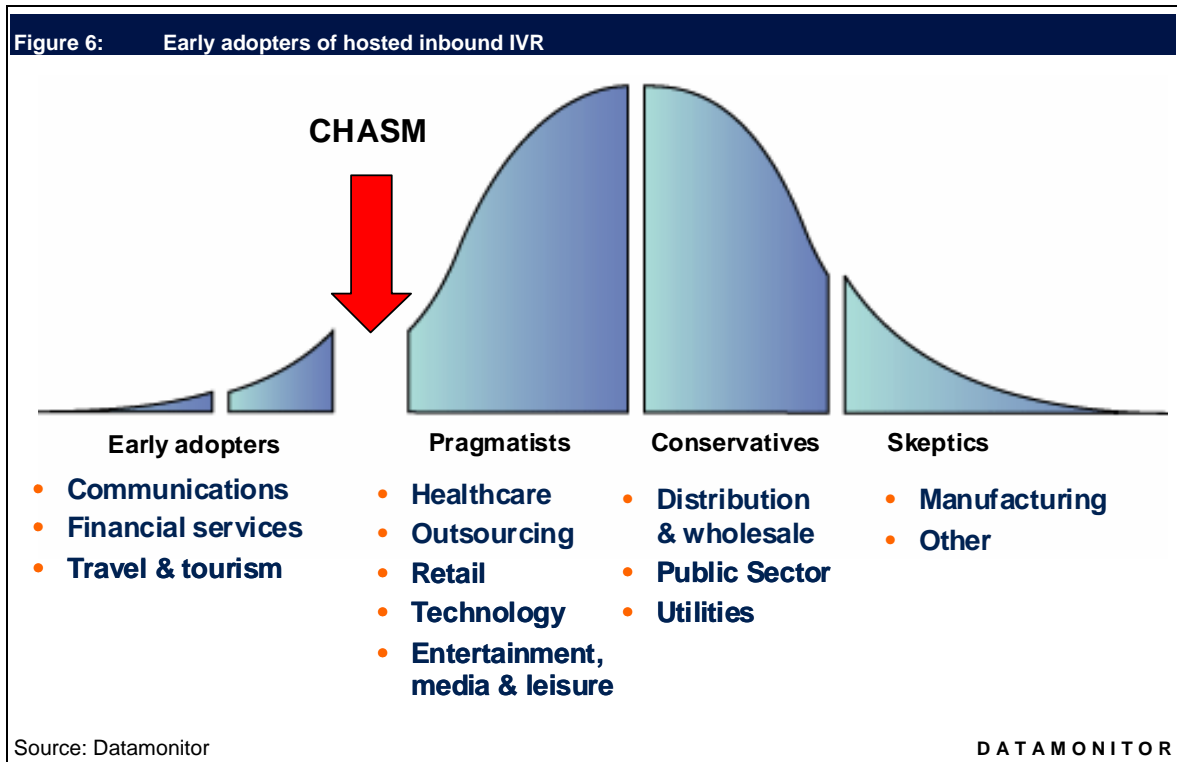


Figure 7 lists some of the most common applications for hosted IVR being deployed by the early adopters. The drivers and business case scenarios are explained in more detail below.

Figure 7: Early adopters, drivers and applications for hosted inbound IVR services		
Customer	Drivers	Typical hosted inbound applications
Communications	<ul style="list-style-type: none"> Better customer care Automating basic communications and streamlining processes Reducing agent costs 	<ul style="list-style-type: none"> Directory assistance Contact center customer service Pre-paid calling activation
Financial Services	<ul style="list-style-type: none"> Slowing economy meaning tightening of costs Improved customer relations by reducing hold time Managements of contact center costs 	<ul style="list-style-type: none"> Banking services such as balance checking, account management, fund transfer Loan Application Branch Locator Credit card payments Insurance claims status
Travel & Tourism	<ul style="list-style-type: none"> Reducing administrative costs Improving customer services Using IVR as a competitive advantage 	<ul style="list-style-type: none"> Travel fare finder and booking Flight confirmation or cancellation Hotel information Flight status information

Source: Datamonitor DATAMONITOR

Communications

The leading drivers for using hosted IVR in the communications industry are improving efficiency and responsiveness to customers while containing costs. Mobile phone companies are using hosted inbound IVR applications to manage enquiries. Some mobile virtual network operators (MVNOs) are using speech for value add services for their subscribers. DTMF can be used to support basic balance and service enquiries, but speech recognition is also being deployed to provide customers with technical support and billing information.

Directory assistance or business finder services, where users call a free telephone number and speak the name or type of business they would like, use hosted speech. Tellme (now owned by Microsoft) and VoltDelta are the leading providers of this service. Using a hosted speech solution for this service allows carriers to reduce staff costs and call waiting times for customers.

Financial services organizations have large contact centers to address customer queries

The financial services industry represents a host of customers that have large contact centers as well as a need to maintain highly secure data storage and transfer. Hosted IVR is used in banking, insurance and for loans companies to offer customers support when calling in to request information about their accounts or find out claim status. Using a hosted speech solution ensures that high demands of incoming calls are answered. Often premise-based managed services are of interest to financial organizations in order that they can adhere to security regulations for data to be kept in house, while still providing the same level of service.

Travel & tourism firms need to provide high levels of customer service around the clock

The travel & tourism industry is changing, with technology being used as a source of competitive advantage. IP telephony has been deployed readily in the hospitality industry in an attempt to provide high levels of customer service. Both travel companies and hotels operate 24 hours a day to communicate with customers in different time zones and deal with last minute cancellations and bookings. By using a hosted automated self service solution, they are able to provide the same continuous service day and night without incurring staffing costs. Other travel companies, such as train ticket enquiries and booking, are also adopting automated speech services.

Retail, entertainment, media & leisure and technology are also beginning to use hosted IVR

The market for hosted inbound IVR is rapidly crossing Moore's chasm, and pragmatist and conservative customers are taking an interest. Some of the other verticals where inbound IVR is being adopted are:

- **Entertainment, media & leisure** – Hosted IVR is being deployed for ticketing, in particular for film and concert bookings. Hosted speech solutions are ideal as enquiries are not a constant volume: there is often high demand when a new film or new concert tickets are released. Telephonetics has a large market share in the UK for speech applications in cinema ticketing.
- **Retail** – Retail enterprises with fluctuating call volumes are well suited to hosted speech. There are often high levels of calls during certain periods in the year, such as the holiday season or after media campaigns. Deploying a hosted IVR solution reduces pressure on contact center agents to handle peak volumes of calls. The enterprise is able to reduce staff and costs during quiet times by having a pay per minute pricing plan. The IVR system is able to handle simple order tracking and information requests: hold time for customers is reduced, which helps to improve customer satisfaction. IVR is also used to improve call routing by gleaning more information from the customer before forwarding the call to the agent.
- **Technology** – The use of speech recognition for FAQ, troubleshooting, call routing and order placement is increasing within the technology industry.

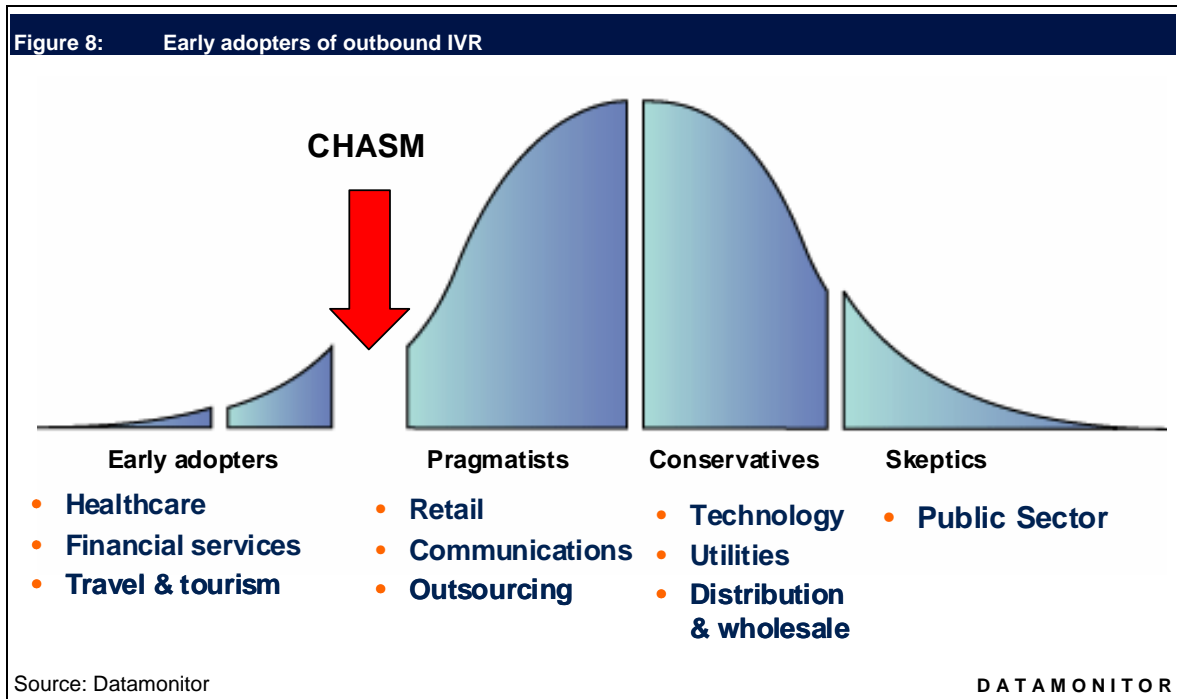
Early adopters of outbound IVR

Figure 8 shows three industries that have seen significant uptake of hosted outbound IVR services. These industries are early adopters of the technology and alongside emergency notifications have seen a number of deployments. Figure 9 lists the key applications and drivers for these industries.

Increasing debt is creating a market for outbound applications in debt collections and billing

The current economic climate is helping to drive IVR investment among businesses for in the purpose of debt collections. The UK and the US have a large population of customers in debt and financial services institutions are looking for cheaper alternatives to reach out to these customers. Agencies are also being put under pressure from credit grantors. In addition, high agent turnover and staffing costs have further justified investment in outbound IVR solutions. Outbound speech applications allow debt collections agencies to send customers personalized and sensitive messages. Both DTMF and speech are used for caller identification and notifications. Vendors competing in this space will need to provide outbound applications that can be routed back to a live agent in order to create the blend of proactive calling and responsive support.

Direct mailings could also be used for loans companies to communicate with customers instead of live agents, but they are easily ignored and it is difficult to check that they have been received. There are a number of vendors focused entirely on providing outbound solutions for collections and billing and in this early stage in the outbound IVR market it represents a significant proportion of revenues.



Outbound IVR is increasingly part of emergency notification solutions

Emergency notifications can be in the form of text messages, email and even pre-recorded messages. Outbound IVR is just one part of an emergency notification solution, but there has been growth in its use for this type of communication. In an emergency it is necessary to keep all available channels of communication open: this enables enterprises to reach out to the maximum number of people. Outbound applications can be preprogrammed to deliver automated information about an event as well as being used to locate staff and ensure they are safe. The key advantages of using outbound IVR as part of an emergency strategy are:

- information is delivered rapidly without relying on agents or staff calling chains;
- integration with GIS (geographical information system) to pinpoint recipients in a specific area;
- telephone is a more direct way of reaching people than text or email;
- outbound IVR allows the receiver to respond and confirm message delivery;
- the enterprise is immediately made aware of notification delivery and a response.

Enterprises are deploying emergency notification systems in order to meet compliance and safety regulations. This is particularly the case for educational institutions as well as in the public sector and military. Outbound IVR is used for alerting medical teams and sending notifications to citizens. Emergency notifications are also suited to the hosted model as communications are likely to be infrequent and a high capacity is needed to send a large volume of messages at once.

Figure 9: Drivers and applications for outbound IVR

Customer	Drivers	Typical outbound applications
Healthcare	<ul style="list-style-type: none"> • Cost containment • Valuable staff time for doctors and nurses • Quality of care and patient safety • Time sensitivity to reach patients • Over certain age do not respond to text or emails 	<ul style="list-style-type: none"> • Patient registration and welcome calls for admin staff • Appointment scheduling and reminders • Prescription refill • Reminders for medicine doses and vaccination • Disease outbreak alerts • Patient satisfaction surveys
Financial Services	<ul style="list-style-type: none"> • Economy and sub-prime lending crisis • Improving customer relations • Managements of contact center costs • Incidents of fraud on the rise • Collections agencies under cost pressure from creditors • Outbound technology viewed as competitive advantage 	<ul style="list-style-type: none"> • Fraud services • Debt collections and customer reminders • Overdraft notifications • Credit card payments
Travel & Tourism	<ul style="list-style-type: none"> • Improving customer experience • Need to send time dependent information • Automating processes 	<ul style="list-style-type: none"> • Flight cancelations • Confirmation of bookings • Check in and upgrade requests • Reminders of flight times
Emergency Notification	<ul style="list-style-type: none"> • Increased awareness of natural disasters • Terrorist threats • Business continuity • Standardization of processes • Competitive advantage • Legal liabilities and compliance 	<ul style="list-style-type: none"> • Alerts of issues • Interactive messages to track staff location • IT failure notifications • Parent contact for schools and universities

Source: Datamonitor DATAMONITOR

Reducing administrative costs and providing better patient care is driving growth in healthcare

The need to contain rising administrative costs in the healthcare industry is forcing providers to automate processes. A number of new systems are gradually coming into place, including electronic health records (EHRs) and the outsourcing of medical transcription. Using outbound communications allows healthcare organizations to better manage their patients and frees up the time of valuable staff members such as doctors and nurses. Outbound services are not time dependent and this is an advantage for hospitals and clinics that prefer to contact patients in the evening when they are more likely to be at home. Outbound IVR is able to reach out to customers who need

prescription refill, medication dose or appointment reminders. By using outbound IVR, healthcare providers are able to reduce administrative costs as the number of missed appointments is lowered through proactive communications.

Outbound services are used within the travel & tourism industry to gain a competitive advantage

Travel & tourism companies are using outbound solutions to provide better customer service and deliver information rapidly. In the increasingly competitive travel & tourism industry where price pressures are increasing, customer service is a differentiator. A growing number of airlines are using outbound IVR solutions to call customers regarding flight check-in, delays, cancellations and seat upgrades. In addition to providing a better level of service to customers through the use of outbound solutions, travel & tourism companies are able to deflect incoming calls and save on staffing and administration costs for contact centers. In many instances outbound IVR services are able to create a level of communication that would be unfeasible with live agents due to time scales and costs. Continental Airlines recently deployed outbound services with Voxify to help decrease the burden of high call volumes. The airline is using outbound speech applications to provide customers with a voice check-in service.

Customer pain points and technology limitations

Control and security

The need to keep customer information in-house prevents many enterprises from deploying IVR as a hosted solution. Enterprises will need to assess the benefits of using this deployment method against a traditional premise-based solution. The main driver for using hosted solutions is scalability, and, where capacity restraints are not an issue, enterprises are likely to keep their systems on premise. 'Hybrid' or premise-based managed IVR services are likely to appeal to these customers, particularly those in the financial and governmental industries where tight data security is necessary.

Total cost of ownership is high

Although using a hosted IVR model enables an enterprise to reduce CAPEX, it is not necessarily less expensive over a five year timeframe as OPEX can run high. There are many factors that an organization must consider, such as complexity of application, internal resources, call volume, call handling rates and internal service level agreements (SLAs). Depending on these factors, the TCO for a hosted solution may be higher over a five year timeframe than a traditional premise-based solution. Moreover, there is still a need to employ agents to deal with additional queries from customers; in some instances, customers may prefer to speak with an agent merely because they are accustomed to this way of solving a problem. With outbound IVR, the technology is still limited, and although it is gaining in functionality and sophistication, many of the current applications being deployed are used for identity verification and basic responses only. This means that a high number of calls are routed back to agents and therefore cost savings for staff will be minimal. Development costs for more complex speech applications are likely to be higher balancing out any savings. However the cost savings from using hosted IVR systems are apparent when traffic is volatile or a business has high growth. External expertise for developing speech applications may be necessary for sophisticated projects and using IVR may help alleviate pressure instead of increasing agent head count.

Customer acceptance

Customers are often wary of automated services and may prefer to speak to a live agent. In addition, do-not-call lists mean that outbound cannot be used for telemarketing and is limited to providing customers with information. Enterprises will need

to put careful thought into the types of applications they deploy to ensure they are easy to use and appropriate to their business. Long menus for DTMF can be replaced with a well designed speech application to become more intuitive and encourage customer usage. Changing from a premise-based model to a hosted model is often an issue for enterprises that need high data security. Customers also need their hosted IVR solution to easily integrate with their existing contact center and reporting systems.

When to invest: ROI model

When evaluating hosted IVR, there are a number of metrics that businesses will need to consider to justify investment. Vendors' sales strategies should mirror customers' ROI metrics.

- **Cost savings** – Aside from the cost (CAPEX vs. OPEX) benefits of lease over buy, hosted IVR solutions enable companies to reduce the cost per call quickly as they are able to implement a solution that can deflect calls from live agents. Agent efficiency and productivity increases and in some cases agent headcounts can be reduced.
- **Faster response** – Using an outbound IVR solution, instead of direct mailing, provides organizations with real-time data gathered through responses from the campaigns. This data can then be analyzed by organizations for business intelligence.
- **Pressure on agents is reduced** – Agents' workload is reduced by using an outbound campaign to make calls that they would otherwise carry out. It reduces the amount of mundane, low level tasks that agents must complete and in doing so can potentially reduce agent attrition.
- **Hold time is reduced** – Customer hold time is reduced by having an automated system in place.
- **Speed of deployment** – Deploying an IVR solution in a hosted environment is typically faster than implementing in an in-house IVR solution. Accelerating time-to-market can have a strong impact on cost savings, especially in large scale deployments.
- **Customer experience** – Outbound IVR applications can be tailored to customers needs. Proactive calling can also be used to help bring the company to front of mind and increase brand awareness.

COMPETITIVE LANDSCAPE

The competitive landscape for hosted IVR is highly fragmented, with different vendor groups providing a range of solutions. Some vendors providing inbound services are beginning to provide outbound solutions and vice versa. This is a gradual migration and the majority of vendors currently have strength in either inbound or outbound. Many of the vendors in the hosted IVR market are smaller, niche players focused on one or two key verticals. The direct competition for hosted vendors is often the traditional IVR vendors that provide on-premise solutions as enterprises are keen to use a familiar deployment model.

Figure 10 provides a snapshot of the vendor landscape in the hosted IVR market. The vendors are rated for their inbound and outbound services, as well as installed base and growth. A full circle indicates that the vendor is strong in this area and a half circle indicates that they provide a hosted inbound or outbound solution but have not yet gained many customers in the area. Similarly, a full circle represents a large installed base and rapid growth in the number of customers, whereas a half circle represents fewer customers and slower growth.

Hosted inbound and outbound IVR services vendors (in alphabetical order)

Adepra

Adepra provides both inbound and outbound automated voice services for companies in collections and fraud. It is strong in the UK but also has customers in the US and elsewhere in Europe, and is expanding into other geographic regions. The applications it provides use rules-based interactions to change the speech application as the customer responds. All of its solutions are hosted. It works closely with customers using high-touch account managers and has in-house developers to build custom applications. Incidents of fraud and the current credit crunch mean that businesses are reaching out to their customers more often: this is driving rapid growth for Adepra. It partners with Genesys as well as other financial businesses such as Experian.

Angel.com

Angel.com provides hosted IVR solutions alongside contact center and CRM applications. It does not develop applications in-house but provides a web-based toolkit for enterprises to create their own inbound and outbound speech applications without complicated code. It has seen strong growth, particularly in the high tech and retail industries.

Convergys

Convergys is one of the largest contact center outsourcers. It offers inbound and outbound speech applications, together with email and text notifications. It has expertise in speech application development and provides hosted speech applications for the financial services, healthcare, travel & tourism, retail and public sector markets. It is developing its multichannel strategy after having seen an increased demand for web services. It also offers premise-based managed services.

EDS

EDS provides IVR technology as a hosted service through its Customer Self-Services (CSS) offering. It provides a single point of accountability while offering multi-vendor integration and program management competencies. It differentiates itself in the following areas: systems integration heritage, robust infrastructure, security, IT experience and vertical market depth.

Eckoh

Eckoh is a specialized UK-based player offering both hosted inbound and outbound services using speech and DTMF. While specializing in bespoke solutions, Eckoh also offers packaged components and uses a combination of direct and indirect sales to target opportunities in the UK as well as Europe. Eckoh has had success in its go to market strategies with partners like BT but it can benefit from increasing the number of its channel partners to expand more aggressively.

Eliza Corporation

Eliza Corporation develops and hosts speech applications for the healthcare market and its customers include large pharmaceutical companies and healthcare providers. It has developed its own speech recognition technology and provides customized applications for its customers.

First Data

First Data was initially a joint venture between AT&T and American Express. First Data is involved in many parts of payments processing and has now expanded to provide hosted inbound IVR, outbound notifications and multimodal communications. Although the majority of First Data's customers are in the financial services market, it also supports customers in travel & tourism, healthcare and insurance.

Intervoice

Intervoice is a contact center solutions player that has a strong heritage in IVR. It is one of the largest IVR platform providers globally and in the last couple of years introduced a contact center suite through its acquisition of Nuasis. Intervoice has an inbound and outbound hosted IVR offering for enterprises and carriers in North America and Europe. The vendor currently has one of the largest professional services teams dedicated to speech application development and VUI design.

LiveVox

LiveVox provides outbound dialing, inbound self service and an ACD in one solution for billing and collections contact centers. The solution is based on SIP technology and uses this in a hosted environment to provide cheaper calls. It originally began as an outbound services provider, but it is now offering inbound speech services as well. LiveVox is set apart from its competitors because it offers a fully SIP-based solution, which provides for greater scalability and more competitive pricing.

MessageOne

MessageOne provides services for email management and archiving solutions as well as emergency notifications. It has seen a strong demand for its AlertFind crisis notification service for which it offers predefined templates for inbound and

outbound speech notifications. MessageOne was recently acquired by Dell, which should provide it with a larger partner network and help it to expand its customer base.

MIR3

MIR3 provides emergency notifications for private sector companies as well as for governmental, educational and military organizations. Its Intelligent Notification Global Enterprise Platform supports two-way notification communications across any channel, including text-to-speech outbound messaging. It has a large global installed base and acquired TelAlert in 2007 in order to expand its portfolio.

Nortel

Nortel is traditionally a premise-based IVR solutions provider and has recently entered the hosted IVR market, providing both inbound and outbound speech and DTMF applications. Although it was late to market with this solution, it has the advantage of a strong professional services team, and experience in delivering contact center applications. Its focus is on large enterprises and it is providing hosted IVR alongside its contact center and IP telephony solutions. Nortel has developed several customizable, packaged speech applications for the leading hosted IVR markets, including retail, healthcare and financial services. It also supports open standards: Voice-XML, CCXML and SIP.

Nuance

Nuance is the largest speech recognition company in the world. Through its acquisition of BeVocal, Nuance has gained a sizable hosted IVR operation and currently provides hosted inbound speech solutions for enterprises and carriers in North America.

Rightnow

Rightnow is focused on providing hosted CRM solutions and its hosted speech offering is part of this strategy. It offers multichannel interactions including voice, email and text and integrates its inbound and outbound speech with CRM and contact center systems. It has partnerships with both Genesys and Nuance and will utilize these further to maximize its voice-self service coverage.

SendWordNow

SendWordNow provides a web-based emergency notifications service and is currently focused on the North American market. The SWN Alert Service is multimodal, including outbound speech and text notifications. Although it is smaller than its two key competitors, MIR3 and MessageOne, it has a significant installed base across a number of industries.

Silverlink

Silverlink provides customized and packaged automated outbound solutions for health plans, pharmacy benefit managers (PBMs), population health and disease management companies and medical supply companies, including Medicare and Medicaid. The Silverlink Automated Voice Services (SAVS) platform uses algorithms, business rules and analytics to predict the outcome of customer calls with the option for personalized voices. Silverlink uses a hosted model for its

multichannel solution which includes speech recognition and contact center integration. Silverlink has seen rapid growth for its outbound services and currently holds a strong position in the US healthcare market.

SoundBite

Supporting speech, text and email for outbound communications, SoundBite provides multichannel solutions for collections and customer care. Its strength is in outbound applications, although it also provides inbound solutions. It develops applications using its own XML language which it believes to be more flexible than Voice-XML and has licensed Nuance's speech recognition technology. It provides bespoke applications which are run on a hosted multi-tenant platform. The service includes answering machine detection and enterprise management capabilities. The company has shown healthy growth in sales.

Teleperformance

Teleperformance is one of the largest global contact center outsourcers that offers hosted inbound DTMF and speech as part of its interactive services. Through its acquisition of VoiceFX in 2004, the provider inherited the majority of its IVR assets. It offers a hybrid solution that includes a blend of live agents and IVR. Its primary markets for hosted IVR services are financial services, retail and direct response. As a contact center outsourcer, Teleperformance has a large global footprint but the bulk of its hosted IVR customers are in North America. In terms of outbound services, Teleperformance only provides simple outbound notifications at this time.

Tellme

Tellme, a subsidiary of Microsoft, is currently the largest speech-enabled directory assistance provider. While it has an enterprise practice, the company is known primarily for its directory assistance solution. Looking forward, Tellme will increase its presence in the enterprise market and focus on providing hosted inbound solutions. Integration with other parts of Microsoft is likely to occur over the next few years as Microsoft's presence in contact centers increases and provides a launch pad for Tellme.

Telephonetics VIP

Telephonetics VIP is a UK-based company providing both hosted and on-premise speech automation solutions. This includes inbound voice self-service and outbound reminders. It serves three core industries: healthcare, public sector and corporate. It has the largest market share for information provision and transactions in the UK entertainment industry. It has strength in its virtual directory and ticketing solutions for which Eckoh is its main rival. It works closely with Nuance for speech recognition but develops the grammars itself.

Tuvox

Tuvox is an applications vendor that provides hosted and premise-based managed inbound speech applications to enterprises in English speaking markets. It offers vertical application suites for retail, healthcare, utilities, travel & tourism and uses open standards to build sophisticated speech applications. It offers both packaged and bespoke solutions and one of its assets is its dialog design tool and service creation environment. Tuvox is known in the industry as a speech application provider across different deployment models. Its applications work with its partners that include Genesys, Aspect, Tellme and Convergys.

Varolii

Varolii was formed in 2007 from a merger of PAR3 Communications and EnvoyWorldWide, an emergency notifications provider. Varolii concentrates on tight integration with the contact center and back-office applications for its hosted inbound and outbound speech services. It has the ability to convert an outbound call to an inbound call and offers multichannel solutions for collections, retentions and business continuity markets. Varolii currently services customers in the US market but is growing rapidly to support global customers.

VoltDelta

VoltDelta offers a hosted IVR platform for DTMF and speech as well as computer telephony integration (CTI) for contact center integration. It uses the Envovx platform for its hosted IVR services. It has a strong heritage in the carrier space, as it is the largest directory assistance services provider in the world. The company is expanding into the enterprise market with its hosted solutions and positions itself as a highly reliable, carrier grade solution that can scale to the needs of enterprises (both large and small). Primarily an inbound vendor, VoltDelta has seen a demand for outbound alerts and is moving into this market.

West

West Interactive provides both hosted and premise-based contact center solutions alongside home agents and outsourced contact centers. It currently has the largest IVR port capacity outside of the North American carriers. It is unique in that it is strong as a provider of both inbound and outbound IVR. It also offers multichannel communications, professional services and analytics. West supports a wide range of vertical markets including financial services and communications.

Voxeo

Voxeo is a provider of Voice-XML and CCXML standards-based IVR platforms for both inbound and outbound IVR. The majority of its business is in hosting but it also provides premise-based and hybrid solutions. It has developed its own speech recognition and text-to-speech engines for US English but also supports Nuance's technology. It differentiates itself through its intimate understanding and capabilities in CCXML and 100% uptime guarantee. Voxeo has seen rapid growth and has a large installed base of developer customers that use its technology, including some of the leading IVR applications vendors.

Voxify

Voxify provides both inbound and outbound speech applications and partners with hosted IVR platform vendors to provide complete solutions to the enterprise market. Voxify differentiates itself through its patented 'conversation engine' technology which enables intelligent and conversational speech applications. It develops all applications internally and manages the integrated speech solutions to automate customer interactions. The vendor has one of the first speech-enabled outbound deployments for an airline.

Figure 10: The hosted IVR vendor landscape

Vendor	Hosted Inbound	Hosted Outbound	Premise-based managed IVR	Installed Base	Estimated Growth	Geographical Focus
Adepra	●	●	○	◐	●	EMEA, NA
Angel.com	●	●	○	●	◐	NA
Convergys	●	◐	●	◐	◐	NA
Eckoh	●	◐	◐	◐	◐	UK
EDS	●	○	●	◐	●	NA
Eliza Corporation	◐	●	○	◐	◐	NA
First Data	●	◐	○	●	◐	NA
Intervoice	●	◐	◐	●	●	EMEA, NA
LiveVox	○	●	○	◐	●	NA
MessageOne	○	●	○	●	●	Global
MIR3	○	●	●	●	●	Global
Nortel	●	◐	●	◐	◐	EMEA, NA
Nuance	●	○	○	◐	◐	NA
RightNow	●	◐	○	●	◐	APAC, EMEA, NA
SendWordNow	○	●	○	●	◐	NA
Silverlink	●	●	○	◐	●	NA
SoundBite	◐	●	○	◐	◐	NA
Teleperformance	●	◐	○	◐	◐	APAC, EMEA, NA
Telephonetics	●	○	○	●	◐	UK
Tellme	●	○	◐	●	◐	NA
Tuvox	●	◐	●	◐	●	NA, UK, Aus, NZ
Varolii	◐	●	○	●	●	NA
VoltDelta	●	◐	○	◐	◐	EMEA, NA
Voxeo	●	●	●	●	●	EMEA, NA, Aus
Voxify	●	◐	○	●	●	NA
West	●	●	○	●	●	NA

Source: Datamonitor DATAMONITOR

GO TO MARKET

Channel partners and pricing

The hosted speech and outbound IVR markets are still in their infancy. Many specialized hosted IVR providers are selling their solutions directly with systems integrators and partner ecosystems that are not yet well developed. There is a distinct difference between North America, where the majority of solutions are sold directly, and Europe, where channel partners are needed to accommodate language differences. Conversely, in APAC (outside of Australia and New Zealand) and CALA hosted IVR markets are slowly emerging. Hosted IVR vendors are partnering with traditional contact center and communications vendors to help sell their solutions.

Pricing options

The typical pricing strategies employed by hosted IVR providers include upfront application development, consulting and systems integration and per-minute/per-transaction pricing. Reduced rates come into place as the number of minutes per month increase, and professional services are included in the price. Some vendors, such as Angel.com, do not offer application development, but provide a web-based tool for enterprises to develop applications themselves in order to make speech more affordable. Custom deployments aimed at larger enterprises were initially popular but the market is developing to include cheaper packaged alternatives that reuse components and business rules. IVR solutions are therefore becoming more accessible to smaller enterprises that do not have internal expertise in application development or large budgets to pay for custom built applications.

In order to gain market share, outbound vendors are providing hosted services that typically do not have a fixed contract length, or consist of shorter contract periods that last up to one year. For the more mature inbound DTMF services, however, enterprise contract periods are typically longer than one year. This is likely to change as vendors consolidate and competition increases: enterprises will start to rely on using outbound services as part of their contact center strategy. The market is currently very price sensitive, with outbound IVR prices decreasing. Vendors should differentiate themselves by providing a combination of blended inbound and outbound services with personalization capabilities. Providing more sophisticated applications in this way will drive customer satisfaction higher and reduce costs for customers.

Future trends

The hosted IVR market will see vendor consolidation and an increasing use of standards

The hosted DTMF market is relatively mature and hosted speech and outbound services are the key growth areas. Datamonitor envisages a number of trends that will emerge over the next couple of years:

- In North America and Western Europe, there will be an increasing use of open standards as companies embrace Voice-XML, CCXML and SIP technologies to enable more rapid deployment and better integration with IP telephony systems. Application development will be based around Voice-XML and CCXML for intelligent routing. The use of SIP will see automated speech solutions become better integrated with contact center infrastructure and CRM applications.
- Vendors will broaden their IVR solutions to offer inbound, outbound and premise-based managed services in order to increase revenue. This is already happening, and Datamonitor believes this trend will continue. Those vendors that were

traditionally focused on inbound IVR will look into providing outbound services to complement their solution stack and increase revenue. In addition, there will be more influence in the hosted market from traditional and premise-based vendors such as Avaya, Cisco and Genesys that may well follow Nortel in providing hosted IVR solutions.

- Newer technologies, such as voice biometrics, will emerge in the market as IVR becomes more sophisticated to handle more complex transactions. Over the next few years, the number of voice biometric deployments will grow at a rapid rate as the technology will be used for speaker identification alongside outbound and inbound speech applications.
- Vendor consolidation will occur in the hosted market. There are currently many smaller niche players providing different speech-based solutions. Traditional premise-based IVR vendors may look to enter the market through acquisition. Smaller vendors may also merge to increase their chances of competing against the larger incumbents. Consolidation has already begun among the emergency notifications vendors, and Telephonetics' discussions regarding the acquisition of Eckoh in 2007 show that consolidation is on its agenda.

Recommendations

Vendors should differentiate themselves in new areas

It is important for hosted IVR vendors to embrace open standards, such as Voice-XML and CCXML, and migrate to a SIP model in order to provide better scalability and compete on cost. It is becoming increasingly difficult for vendors to differentiate themselves on the basis of IVR platform technology and self-service applications. As a result, vendors should look to differentiate themselves on price, SLAs, expertise and integrated self-service such as personalized applications and multimodal transactions. Some vendors have already chosen this route, but others should follow suit in order to compete. SIP allows vendors to differentiate themselves from a technology standpoint which translates to lower costs and increased scalability.

As well as being a cost saving mechanism to reduce CAPEX, the key advantage of hosted speech is scalability and its ability to help manage overflow calls and high business growth. Vendors should focus on marketing solutions from this perspective, particularly for outbound solutions where the market is newer and enterprises are unaware of the capabilities available.

Vendors should provide packaged solutions to grow into new markets

To cross Moore's chasm and move past the early adopter phase of the market, vendors should provide packaged solutions, targeted to specific verticals or business needs. Customized solutions will still be necessary for larger businesses, but packaged solutions address enterprises' cost concerns and provide accessibility for the mid-market. Vendors need to simplify the message sent to customers and introduce tailored roadmaps indicating how enterprises can migrate to packaged speech applications from their current IVR solution. Tracking application usage and enterprises' satisfaction will be important if vendors are to develop a successful portfolio.

Vendors should look for strategic partners to expand into new regions

Hosted IVR is immature in CALA and in emerging countries in APAC. However, contact centers are thriving in these regions and the cost of labor is rising. Vendors should move into these areas with hosted DTMF solutions, followed by speech and outbound IVR. Partnerships are vital for vendors to expand outside of their domestic markets. It will be particularly important for smaller players to form liaisons in the contact center space and ally with systems integrators in order to compete with larger competitors. So far, adoption of hosted IVR services in the US, Canada, France, Australia/New Zealand and the UK has been the highest. However, in order to cross the speech barrier and find customers in other countries, vendors should develop their partner ecosystems.

APPENDIX

Definitions

- **Interactive voice response (IVR)** – Interactive voice response (IVR) technology analyzes a sequence of spoken and/or dual tone multi-frequency (DTMF) commands and reproduces voice prompts to the caller. The call is then routed via a switch or serviced wholly within the IVR that is linked to a database. The IVR interacts with key systems such as PBXs and ACDs through analog ports, digital ports and LAN/WAN connectivity. IVR uses either speech or DTMF.
- **Dual tone multi-frequency (DTMF)** – The signal to the phone company that a caller generates when he/she presses keys on a telephone's keypad. DTMF has generally replaced loop disconnect ('pulse') dialing.
- **Speech recognition** – A speech recognition engine listens to and recognizes spoken words. In most cases it processes the incoming audio to isolate words, splits these words into segments (usually phonemes or diphones), and then statistically compares these segments with a linguistic database. Depending on the word spoken, a value is returned, normally with a degree of confidence, which will result in a menu selection or action through the IVR system.
- **Contact center** – Datamonitor defines a contact center by the following features:
 - an Automatic Call Distributor (ACD) or Private Branch Exchange (PBX) with equivalent functionality overlaid (or soft ACD);
 - 10 or more agent positions;
 - agent positions are desks from which agents make and/or receive telephone calls to and/or from internal or external customers. This is taken to imply that the call in question involves communication between the agent and the customer.
- **Session initiation protocol (SIP)** – This is a signaling protocol, used for setting up and tearing down multimedia communication sessions such as voice and video calls over the Internet. SIP was accepted as a 3GPP signaling protocol and permanent element of the IMS architecture for IP-based streaming multimedia services in cellular systems.
- **Applications** – An application, either DTMF- or speech-based, is the interface between machine and human, the design of which is critical to the success of a project and generally takes the largest proportion of implementation time. The application determines call flow, the words and grammars to be recognized (for speech), dialog initiatives, navigation through menus, confirmation questions and so on. In most cases it will also interact with other applications to retrieve content to satisfy the caller's requests.
- **Open standards** – The development of standards and standards-based platforms has challenged the proprietary siloed structure that is prevalent in traditional IVR systems. Standards offer the opportunity for platforms to be written in a standard language, thus rendering them interoperable with engines and applications developed by any other vendor, as long as the same language is used. Already in its second version, Voice-XML is more established than newer alternatives such as SALT, and is the dominant standard, with a growing sphere of deployments and developers surrounding and supporting it.

- **Voice-XML** – The World Wide Consortium's (W3C) standard markup language based on XML used for creating voice user interfaces that use advanced speech recognition (ASR) and text-to-speech (TTS) technologies.
- **Call control extensible markup language (CCXML)** – This is an XML-based language that can control the setup, monitoring, and tear down of phone calls. CCXML allows the industry to leverage the strength of web platforms and technologies to intelligently control calls on and off the telephone network.

Methodology

- **Vendors interviews** – Telephone interviews with the leading hosted IVR and outbound vendors in April – May 2008
- **In-house research** – Datamonitor's publications on related topics

Further reading

The Global IVR Market Model (Interactive Model) – IMTC0264, February 2008

Understanding the Changing Role of IVR in Evolving Infrastructures (Review Report) – DMTC2166, December 2007

Identifying Global Opportunities for Hosted Speech and DTMF Services (Strategy Focus) - BFTC1668, April 2007

Understanding the Market for Hosted Speech Applications (Strategy Focus) – BFTC1416, July 2006

The Outlook for Outbound IVR (Market Focus) – BFTC1464, December 2006

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We hope that the data and analysis in this brief will help you make informed and imaginative business decisions. If you have further requirements, Datamonitor's consulting team may be able to help you. For more information about Datamonitor's consulting capabilities, please contact us directly at consulting@datamonitor.com.

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