

Advantages of the Hosted Emergency Notification System

White Paper

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Introduction

Although hard statistics are difficult to come by, there is no question that the trend in emergency notification has been away from on-premise equipment toward “hosted” offsite IVR systems.

In the telecommunication arena, **Interactive Voice Response**, or **IVR**, is a specialized computer which manipulates voice files as well as data files. An IVR (also called IVRU or VRU) allows the processing of large call volumes to be automated. IVR enables customized recorded messaging, text to speech messaging, touch tone and spoken voice recognition, the offering of menus of choices and the capture of caller response data. IVR can be linked to databases for specialized calling patterns, unique message delivery or data collection. IVR can be used for outdial notifications, or to provide information to inbound callers.

Users of IVR technology may choose either on-premise “box” solutions or an off-premise “hosted” solution. An on-premise box is tied to local phone lines. The connection of the IVR to the line is called a port. The IVR box typically comes in 16 and 24 port configurations, although larger on-premise boxes of 50-100 ports are not uncommon.

The other way to utilize IVR technology is to use an offsite “hosted” system. IVR “farms” located at geographically dispersed sites with thousands of ports are able to provide massive call handling capacity. These farms provide IVR services nationwide, are typically tied to a long distance carrier’s Point of Presence (POP) site, and do not experience the vulnerability and limitations of on-premise equipment.

Since September 11, 2001 both natural and man-made disasters have highlighted the risks of on-premise emergency notification equipment. These events have increased awareness of the benefits of the hosted solution.

On 9/11, control of the Washington, D.C. area telephone lines was taken over by the U.S. Military. No telephone lines were available to the federal agencies located in the district. No one with on-premise equipment was able to use it because the phone lines were unavailable. In fact, the Pentagon’s own onsite IVR was unusable due to evacuation of the building. During the major 2004 and 2005 hurricanes, scores of emergency managers and those who depended upon on-premise equipment found themselves without the ability to perform mass communications and notifications of critical staff, due to both power outages and the loss or damage of the equipment site.

Voice Response Unit

The number one trend in hosted systems *is* the hosted system itself. Outsourced Voice Response Unit technologies alleviate the inherent challenges presented by premise-based equipment. First and foremost, an on-premise solution is limited by the number of ports in the IVR and associated telephone lines. Each port needs its own telephone line. The number of lines to the network is a limitation as well. During an emergency, phone lines are at a premium and frequently the IVR will be displaced to accommodate the needs of staff. A mass of incoming calls can prevent the IVR from making outdial calls. A further but less obvious limitation can occur at the telephone central office (TCO) serving the site of the VRU. If that is in a potentially high traffic location or in a municipal complex, it is very likely that, during an emergency, the TCO will be overloaded with other traffic and the VRU will not have circuits available.

Another major drawback of onsite VRU equipment is that it involves multiple points of failure. Vulnerability is the obvious risk. If an organization’s facilities are compromised by a disaster, the VRU equipment is compromised as well. If an agency’s site is evacuated, loses electricity, is

flooded or damaged, its VRU is worthless. If the telephone company serving the site, the phone lines into the site, or the lines out of the site are down or heavily loaded, notifications cannot be sent. This may occur even though the intended contacts have full access to their phone service. A power surge or disk failure can remove an in-house VRU from service for extended periods of time as well. Communications are halted right at the moment they are most critical.

The repair time associated with onsite equipment is a critical issue as well. Even if the vendor is able to ship a new unit overnight, precious hours are lost, whereas with a hosted solution, there is no interruption to the service. Additionally, shipping replacement units and parts to devastated areas simply may not be possible logistically.

The major capacity drawback of on-premise VRU is that it will always be both too big and too small. It will be too big in that it will sit idle most of the time, incurring monthly phone line charges along the way, yet when called upon during an emergency, it will not be as fast as desired due to limited port count. The considerable and expandable capacity of hosted solutions allow calls to be placed as fast as the phone network can absorb them and received as fast as the network can deliver them.

Cost Incurrence

Cost is a consideration in every aspect of business operations, and call handling is no different. In comparing the cost of on-site VRU to a hosted solution, potential purchasers frequently fail to consider all the relative costs.

The costs associated with supporting in-house equipment go far beyond the equipment itself. The initial purchase, programming and maintenance are obvious expenses. Less obvious are the costs of upgrades, telephone line charges, training and in-house programming. Because their products have an eventual obsolescence, some “box” suppliers ultimately stop supporting their older operating systems and charge a substantial fee to move to the new one. When that happens, what’s lost isn’t just money, but considerable employee resources.

Any type of equipment will eventually wear out. Three to five years is generally the life expectancy of a PC, and VRUs are PCs. The purchaser will then have to buy new equipment and incur training and staff time expenses. Less obvious than the cost of equipment replacement are the “soft” costs of in-house support and training the staff who will program, maintain and test the new VRU. A hosted solution eliminates the costs of phone lines, upgrades, ongoing maintenance, programming and training.

Call Handling

A key innovation in hosted technology is the inbound call handling feature. Due to limited port count, most onsite VRU systems only perform outdial programs. Hosted systems can offer exclusive ports slated for simultaneous inbound call-handling. This is a critical function; studies have shown that depending on the nature of the call, for every five outdial calls made, two to three inbound calls are generated. With in-house equipment, these incoming calls tie up lines needed for the outbound alerts. In a major event, these calls can flood the internal system. With inbound capacity, organizations can run inbound IVR programs for applications such as employee accountability, while also offering information hotlines for customers, media or the general public.

With the speed and capacity available through today’s hosted Emergency Notification System (ENS) vendors, it is not sufficient for an organization to simply accept a vendor’s promised

capacity, they must ensure that the vendor works with the local telecom provider and Long Distance carrier. Currently, reputable ENS vendors are working with local telephone network engineers to understand capacity constraints prior to system deployment. In fact, some vendors will include a volume test to examine how the system will function on the local telco network.

Vendors of onsite and hosted systems alike typically offer 24/7/365 support through a toll-free number. However, when a problem occurs on a hosted system, an immediate fix is possible because the equipment resides with the vendor, where trained technical support personnel are available. If in-house VRU equipment is not functioning properly, there is no immediate resolution that even a staffed help desk can provide, other than to talk the local personnel through troubleshooting or to initiate equipment replacement.

Operating system changes on hosted VRU are transparent to the client or end-user. In fact, comprehensive hosted solutions frequently provide all future enhancements and upgrades at no additional charge. Since a hosted solution is a service, the burden of assuming day-to-day functionality shifts from the client to the service provider. That eliminates clients' staff costs, testing, programming, upgrades and more.

The trend with outsourced hosted IVR is to maintain a very large platform, which processes moderate call traffic for multiple clients at all times. This means that the system is consistently in a functional state; therefore, when a disaster occurs it can be relied upon to respond. In-house equipment may remain dormant awaiting an incident, running the risk of revealing a problem only when activated. Also, with hosted systems, testing, upgrades and updates are ongoing processes. Because the VRU platform resides with the vendor, they maintain it, performing system tests and installing improvements. Due to the built-in system of self-testing processes, outsourced telecom services are consistently more dependable than on-site solutions.

Messaging and Reporting

Hosted systems are inherently better positioned to provide superior geographic and system redundancy. They typically have multiple dispersed VRU sites, providing multiple back-up options and allowing calls to be placed and received regardless of conditions at the primary site.

With a Web-based system, outdial and inbound messages can be sent or received from virtually any location with either phone service or access to the Internet. One of the key advantages of the hosted, Web-based system is that messages can be triggered from the field. In the event of natural disaster such as a flood or fire, emergency responders at the site of the event can directly trigger the appropriate alerts.

A key aspect of hosted emergency notification systems is that the vendor also hosts the contact database. Some vendors are beginning to offer complementary systems for database cleansing. These are automated data scrubbing programs that perform daily updates to clients' contact data.

In addition to support for database accuracy, hosted solutions are now offering online, or Web-based, near real-time call data reporting (CDR). Reports can be user or event-based, are viewed online via secure Web sites and self-refresh regularly, keeping the information current. Hosted systems have the flexibility to make available standard reports as well as ad-hoc or custom reporting capabilities. They frequently include extensive search capabilities on any field or combination of fields in the database such as address, zip code, beat, district, credentials, skills, event type, user and so forth. The user can drill down into any report for a greater depth of detail. These systems include the ability to export management, system, and user performance reports in a range of results such as tables, charts and graphs, and various file formats like Microsoft Excel, Word and PDF.

Another trend with the hosted solutions is the ability to provide compound channels of notification. Calls, text messages, e-mails and faxes can all be sent from the same platform, and the results collected in the same database. For example, a message can be sent to health care providers instructing them to read a fax or e-mail. They can then call in to confirm receipt of the information.

Text messaging is seeing widespread use in the private sector, and as such is increasingly used as a channel for distributing emergency alerts. The next capability in the business continuity and employee notification arena will be interactive Short Message Service (SMS) or text messaging. Due simply to greater capacity, this functionality will be employed with greater ease in hosted systems.

As the lessons of recent disasters sink in, and companies become more aware of the need for effective crisis communications, there is every reason to believe that the trend toward hosted solutions will continue.

A Twenty First Century Solution

The **emergency notification system** offered by Twenty First Century Communications is a web-enabled hosted solution that can be used to quickly reach any number of individuals or groups. The key applications of the system are mass public alert and mobilization of critical staff such as managers, first responders, and emergency personnel. It can also be used for routine, non-emergency communication.

Twenty First Century offers simultaneous outdial and toll-free inbound calling capability. In fact, TFCC accesses the largest telecommunications platform in North America, with 10,000 outdial and 30,000 inbound ports. On both functions, the system can perform a simple broadcast, or it can poll contacts to collect information. It also includes a real-time customizable reporting function which tracks call results in whatever terms are appropriate for the situation.

The system provides targeted messaging with an unlimited number of possible scenarios, messages, recipients, and groups. Also, Geocoded Mapping can be used to designate notification areas on a web-based map. The system will identify the residents and businesses in that area, generate phone numbers, and deliver notifications or instructions. Messages can be pre-recorded for later use, created on the fly, and/or changed as the situation unfolds.

Twenty First Century's systems are accessed through the internet, with 24/7/365 toll-free live technical support. TFCC's automated solutions assist organizations in conserving resources, as these hosted services do not require the purchase of any additional equipment, software, licenses, or phone lines. There is no maintenance on the part of the client nor are there fees for upgrades.

Twenty First Century Communications is a certified vendor of the General Services Administration (GSA) authorized under federal law to provide its services to any governmental agency through recently approved Cooperative Purchasing legislation.

Whatever the likelihood or frequency of natural disasters, the absolute truth is that they will occur. The critical key to response and recovery, from best to worst case scenario, is communication: getting the right information to the right people.

For more information about Twenty First Century Communications and its technologies, please visit www.tfcci.com.