

Location Independent Voicemail Environment Decreases Operating Expense

White Paper

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The Cost of Distant Voicemail Access

A subscriber's voicemail messages are typically stored in close proximity to their home base therefore minimizing access expense. It is a common characteristic of mobile networks that a significant percentage of calls to a subscriber's mobile device originate from an area that is remote to the location of the subscriber's voice mail and other enhanced services. In addition, today's mobile lifestyle dictates that the subscriber often retrieves voice messages from a corresponding remote location.

A recent study with a major carrier deploying voice mail regionally showed that 30% of voice mail deposits and 5% of retrievals are terminated on a voice mail platform in a different location than the subscriber's mailbox. These remote accesses increase a carrier's operating expense associated with voicemail service. When the caller or subscriber accesses the subscriber's voice mail remotely, the expense to the carrier can increase significantly through lengthy navigation and message retrieval that ties up valuable voice trunking - for each remote access a long haul dedicated link must be established to the message store (Figure 1).

Figure 1: Voicemail access from distant locations

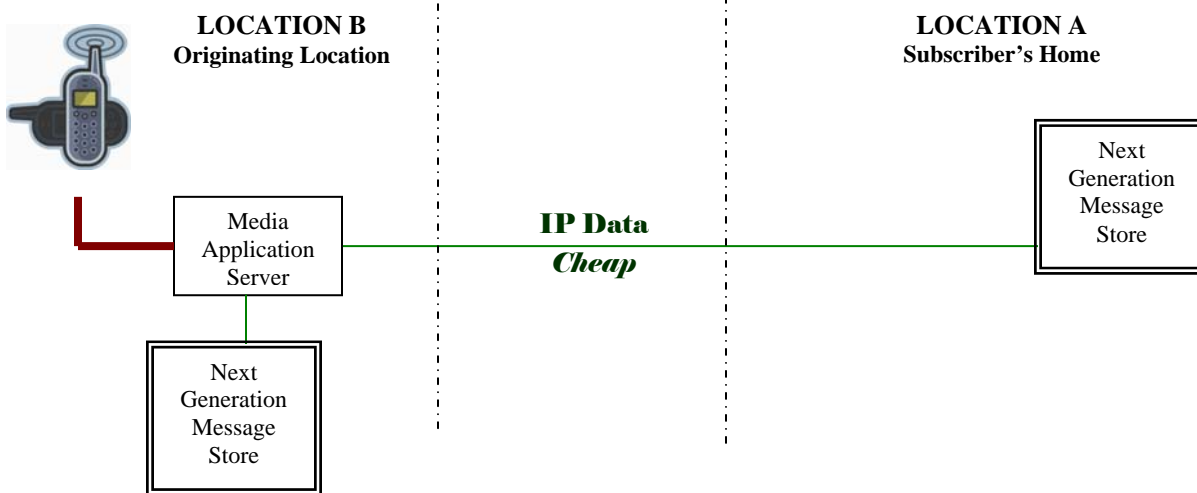


Location Independent Voicemail

With the latest release of Versera ICE[®] (3.5), carriers can better control these costs. With this Location Independent Voicemail Environment (LIVE[™]), there is no long haul dedicated line (T1 or E1) back to the messaging platform (specifically the Media Application Server utilized in Versera ICE). Instead the call is terminated locally and a significantly less expensive data connection is established to the message store to retrieve messages (Figure #2).

A Location Independent Voicemail Environment is accomplished by moving a subscriber's voicemail box closer to their actual calling location. If the subscriber travels to another city for a month their voicemail travels with them, thus avoiding the backhaul cost for retrievals.

Figure 2: Voicemail access using LIVE™



This scenario significantly decreases the cost for this long haul payload in several ways.

	With LIVE	Without LIVE
Call Termination	Local to the caller	Remote to the caller
Connection between caller and messages	Packet Data	Circuit Switched
Format for long-haul data movement	Compressed audio sent as packet data	G.711 uncompressed audio
System Prompts	Local to the caller	Played over long-haul circuit switched channel
Caller input (key presses)	Local to the caller	Played over long-haul circuit switched channel
Silence	Local to the caller	Played over long-haul circuit switched channel
Subscriber Greeting	Moved as compressed packet data	Played over long-haul circuit switched channel
Message Retrieval	Moved as compressed packet data	Played over long-haul circuit switched channel
Message Deposit	Moved as compressed packet data	Played over long-haul circuit switched channel
QOS	Lower QOS - near real-time packet data	Highest QOS - real-time call grade
Total amount of data moved "long-haul"	90% reduction in the total data	complete bidirectional audio paths for the duration of the call

Lower OpEx with LIVE

Typically a remote voicemail access ties up a 64 kbps PCM pathway in both directions, for 128 kbps total for the duration of the call. With LIVE, the two PCM pathways terminate locally. The local server contains system prompts for menus, feedback, etc. It can also collect key presses

from the caller. These interactions constitute about 23% of the elapsed time of all calls for a typical voicemail application. Without Location Independent Voicemail Environment, two pathways are required 100% of the time. If a carrier utilizes LIVE, only one pathway is required and for only 77% of the time resulting in a 61% reduction in bandwidth.

An additional savings is realized because the audio that does have to be transported is highly compressed compared to the 64 kbps PCM data on a circuit-switched call. With the GSM 6.10 codec at 13 kbps, this is an 80% reduction. When you combine this with the above mentioned 61% reduction, implementing LIVE will decrease the long-haul bandwidth that typical voicemail systems utilize by 92%.

The value of this was recently demonstrated by a large carrier in Africa who has a large subscriber base that relocates for extended periods of time for temporary employment. Based on calling patterns, the use of the LIVE was shown to reduce their long-haul payload by over 90% thus not only decreasing their ongoing OpEx but also delaying the need for additional capital investment — going LIVE has improved operating margin!

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