

Published on TMCnet.com on December 10, 2007

The Latest Trends in VoIP Recording

by Bernd Ottow, Product Line Manager, ASC telecom AG

Introduction

The world is changing. New technological innovations occur every day, impacting the way we work and live. Only a decade ago, people would have been stunned at the prominence of the Internet in almost every home for information, commercial transactions and communications.

While some transformations happen quickly, others are introduced in a slow and steady manner. Communications technology sometimes follows the latter route. Time Division Multiplex (TDM), the basic technology underlying traditional telephony, has been consistently converted into Voice over IP (VoIP) within the last few years. Eventually, VoIP will completely replace TDM, primarily for cost efficiency; data and voice are transmitted over one infrastructure instead of two.

The Deployment of VoIP Recording

The need for recording communications has existed from the dawn of the telecommunications era. VoIP recording solutions include the preservation of audio data with call-index details such as time of the conversation, incoming and outgoing phone numbers, length of the call, etc. Call details are usually retrieved via a connection to the telephony system, generally through a CTI (computer telephony interface) link to the PBX or a decoding of signaling protocols, depending on the technology used. As the type of telecommunications changed, the technique for recording VoIP communications changed as well.

Voice over IP applies basic Internet Protocol (IP) network principles employed for years in data transmissions. For example, all kinds of digital information are broken down into small parts, known as network packets, then addressed and sent separately to the recipient.

The initial approach for recording Voice over IP communications was quite simple. IP network traffic, containing VoIP audio data in the form of RTP (Real-time Transport Protocol) packets, was monitored, filtered and collected as it was exchanged between IP phones. Since all IP PBX vendors use the standard RTP protocol for real-time transmission, this method may be used for any kind of VoIP environment, regardless of the telephony system, and is therefore called "passive recording." The recording is only affected by the customer's network infrastructure and the capability of network devices used to obtain the VoIP data.

However, confidential communications, especially for financial organizations, must be encrypted to prevent internal wiretapping. Otherwise, the monitored audio data would be subject to modification and abuse. Therefore, IP PBX vendors are adopting encryption for the entire environment to ensure

secure IP communications. Passive recording in an encrypted field is impossible when the decryption keys are unknown.

Therefore, an alternative way to perform VoIP recording was needed, through an active interaction with the environment. Two basic methods are used. The first works through a “soft phone” registered in the network. Call recording then takes place similar to the third-party in a conference call. The second method relies on a proprietary implementation from each IP PBX vendor with a built-in interface to deliver the audio and call-index information directly.

Thus, active VoIP recording may be used in an encrypted secure environment. As an interacting component of the network, it can receive the necessary encryption keys. Like any IP endpoint, the recording device may be located and accessed from anywhere in the network.

Value Added Applications to VoIP Recording

VoIP recording today offers new functionality and analysis capabilities. Different types of organizations use VoIP recording for their own, unique reasons.

Key clients

Companies with basic communications recording solutions mainly require them for proof of transactions. Some insurance companies are required by law to record all their communications for this reason. Further analysis is unnecessary.

On the other hand, contact centers focus on quality service for their end customers. They use call recording for quality monitoring and agent training.

A third group needs communications recording for security reasons. Airports and other public institutions use preventative recording to protect the public from terrorism and other planned attacks, often initiated by a threat call. These organizations also need the ability to analyze mass communications in an intelligent way.

Quality Improvement

An inbound contact center, especially one handling requests from end customers, will maximize its profits when callers are referred to agents trained to answer their questions competently and expeditiously. IVRs (Interactive Voice Responses) assign requests to the agent in the correct field, but the agent must be well trained in the first place.

Contact center operators understand the difficulty of the training process. Basic instruction may use e-learning mechanisms. But call recording of customer interactions provides practical customized training for a specific agent. On-the-job lessons may help much more than theoretical knowledge. To

find a good training sample, supervisors may search for calls with a long duration, perhaps indicating insufficient knowledge by the agent.

Automatic Call Identification

The latest VoIP recording solutions use automatic filtering methods to help supervisors identify calls when the end customer becomes angry.

The filtering uses special audio analysis tools such as emotion detection or keyword spotting. Emotion detection analyzes the audio stream through a special algorithm to identify a change in the volume of a talker.

Keyword spotting uses the principles of speech recognition to match spoken language with previously generated “dictionaries,” used to transform audible communications into a digital format.

Keyword spotting may also be used to prevent terrorism by identifying words such as “bomb” or “attack.”

Conclusion

VoIP recording solutions today serve multiple purposes. The trends include recording of encrypted voice data and many other functions for the processing and analysis of customer interactions. The virtualization of contact center environments will increase the customers’ expectations for on-demand services and result in more value-added applications to pure voice recording. In the future, video may be added to IP communications, especially for video conferencing.

Bernd Ottow, Product Line Manager for VoIP Recording, has worked for ASC telecom AG since 2001. His responsibilities include the product development process for design, management and integration of new VoIP products. With a degree in electrical engineering and information technology, he pioneered software development for recording in VoIP environments.

ASC is a leading global provider of innovative solutions to record, analyze and evaluate communications. With ASC software, all multimedia interactions in contact centers, financial institutions and public safety organizations are documented and analyzed by intelligent speech and text evaluation methods.