APEX

MESSAGING SYSTEMS

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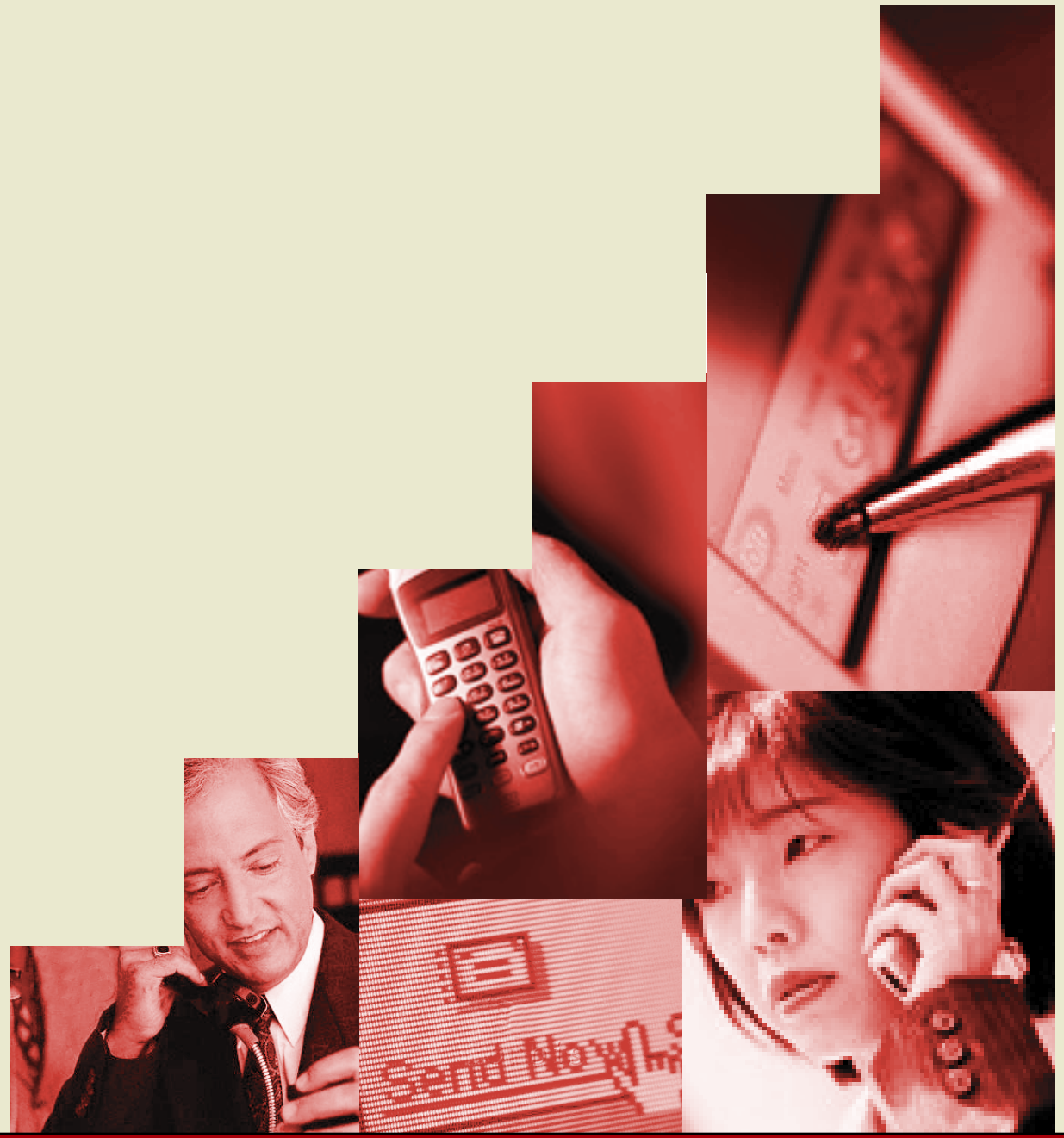
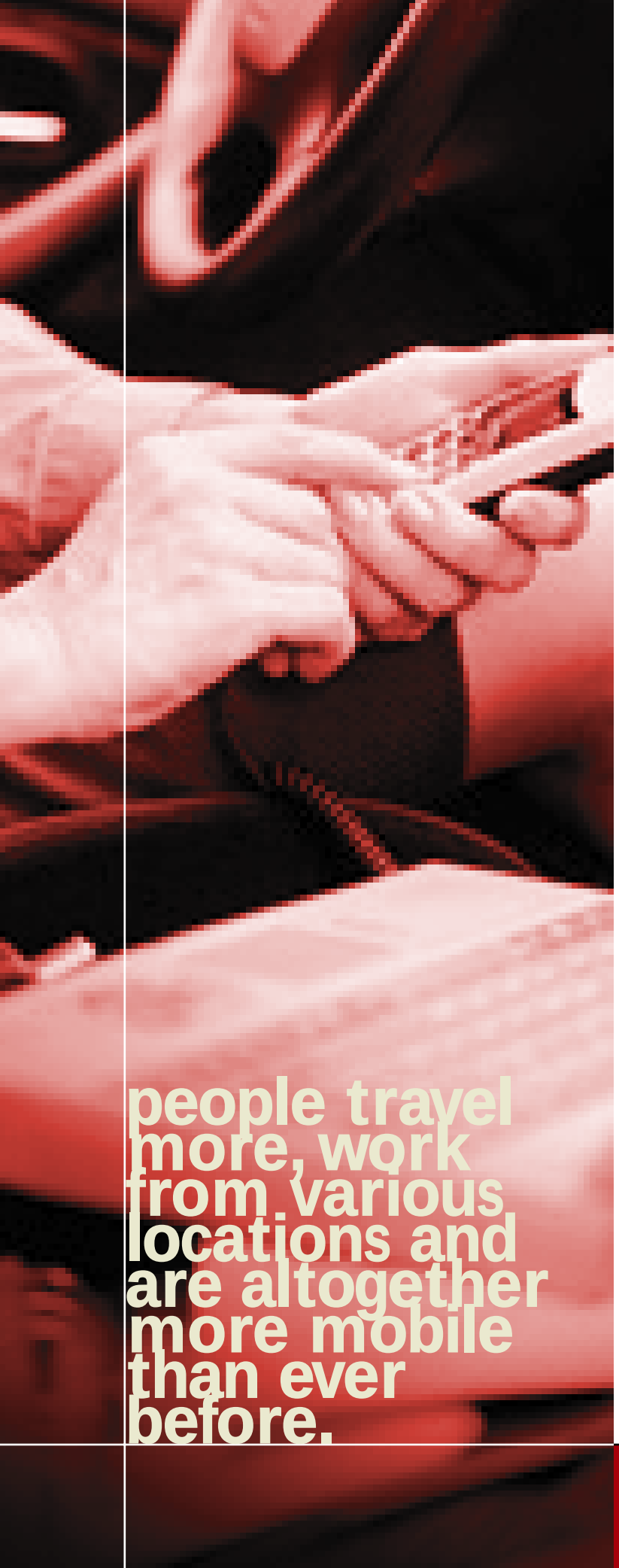


APEX
VOICE COMMUNICATIONS

APEX Voice Communications is a leading manufacturer of open architecture Enhanced Services platforms for Intelligent Call Processing, Messaging, Prepaid and Billing. A responsive and innovative company, APEX has concentrated on providing fully featured platforms and scalable solutions for the telecom industry that are easy to use and maintain. Founders Ben Levy and Elhum Vahdat started with an idea for open standards-based call processing systems in 1989 and have consistently expanded the vision to encompass the primary areas that APEX sells into today. APEX supports customers worldwide, from large-scale service providers to growing companies in niche markets. With over 50% of their clients internationally based, APEX is sensitive to the requirements of the international marketplace. In 1995, APEX opened its European office in Munich, Germany; in 1996, its Latin American office in Boca Raton, Florida; and in 1998 its Asian office in Hong Kong.



Unified Messaging for Imroved Communications

Today an ever-increasing number of people are turning to a growing number of devices - telephones, mobile phones, PCs, PDAs, pagers - to help them communicate. There is an enormous increase in the "virtuality" of messages due to the fact that people travel more, work from various locations and are altogether more mobile than ever before. And with every new device they use to communicate, people find themselves forced to check another messaging system.

The APEX Messaging System is APEX Voice Communications' answer to the challenges posed by this demanding messaging market. We have combined years of experience in the industry with the latest technologies to provide a high-density unified messaging solution that integrates messages from different media into a single store. Designed for service providers on both traditional and IP-based networks, APEX Messaging is a universally accessible, service-ready platform that can easily be customized to meet customers' specific needs. It enables subscribers to send and retrieve voice, fax and e-mail messages anytime, anywhere, using practically any communications device - wireline phone, wireless phone, PC, PDA or WAP-enabled device.

For a complete unified communications solution, APEX Messaging also offers enhanced features such as one number

Enhanced Services Products

APEX Messaging System
A WAP-enabled unified voice, fax and e-mail solution for network service providers with a browser-based subscriber and operator user interface.

APEX Switch Manager
A web-based drag-and-drop control processor and service creation environment for the Cisco VCO/4K open programmable switch with Intelligent Peripheral functionality for Intelligent Networks.

OmniVox® Intelligent Call Processor (ICP)
A high-density platform supporting Enhanced Services including IVR, fax, switching, conferencing and messaging.

OmniView® Service Creation Environment
An award-winning drag-and-drop application development and maintenance environment integrated with OmniVox.

OmniNet® Network Services Manager
An SNMP-based network services manager accessed via any Java-enabled browser for controlling and administering large LAN/WAN-based ICPs from a single location.

APEX Media server
An IP-based media platform with a drag-and-drop service creation environment for interactive applications on the Next Generation IP network.

APEX Wireless E-Mail
A service-ready solution that integrates the wireless network with the Internet, allowing subscribers to send, receive and reply to e-mail messages by mobile phone without using a computer.

APEX Prepaid System
A prepaid calling platform with complete call processing and debit accounting capability, unlimited network and service expandability, distributed switching architecture, international telephony support and a Windows®-based interface.

APEX Billing System
An all-in-one billing solution for traditional and Enhanced Services (long distance, travel card, carrier, cellular, callback, IP, voice/fax mail and prepaid).

APEX Messaging is a universally accessible, service-ready platform that can easily be customized to meet customers' specific needs.

Features

Scalability

The APEX Messaging System is a fully scalable, modular, open architecture platform that provides the capabilities to effectively meet clients' current requirements and address future demands.

APEX Messaging's modular software design allows customers to choose only the modules they require. The design gives service providers the option of offering voice mail or unified messaging and other enhanced services such as prepaid calling, follow me and one number services.

APEX Messaging can be configured to run on a single Intelligent Call Processor (ICP) for the Public Switched Telephone Network (PSTN) or a Media Gateway (MG) for the Internet Protocol (IP) Network. For increased capacity on either network, additional components can easily be added. The Messaging Data Store (MDS) is a server that may be sized to the service provider's requirements in terms of message store, peak hour access, service groups, etc.

No "forklift" upgrades are required with APEX Messaging and service interruptions are virtually nonexistent.

Subscriber Access

The APEX Messaging System allows end users unified access to their messages through the following means:

- World Wide Web - subscribers can read e-mail, view faxes and listen to voice mail through the World Wide Web. APEX Messaging also provides subscriber self-provisioning and management via the Web.
- Wireless Devices - PDAs and WAP-enabled devices can provide the same functionality as above without requiring access to a PC.
- Wireless/Wireline Phones - subscribers can listen to voice mail and e-mail through text-to-speech (TTS) technology, and have access to provisioning functions by phone. APEX Messaging also allows subscribers to record messages and attach them to e-mail messages.
- E-mail - Any standard e-mail client that supports Internet Messaging Access Protocol 4 (IMAP4) can be used (Microsoft Outlook, Netscape Messenger, Qualcomm Eudora, etc.). These clients connect via the Internet and interact directly with the MDS.

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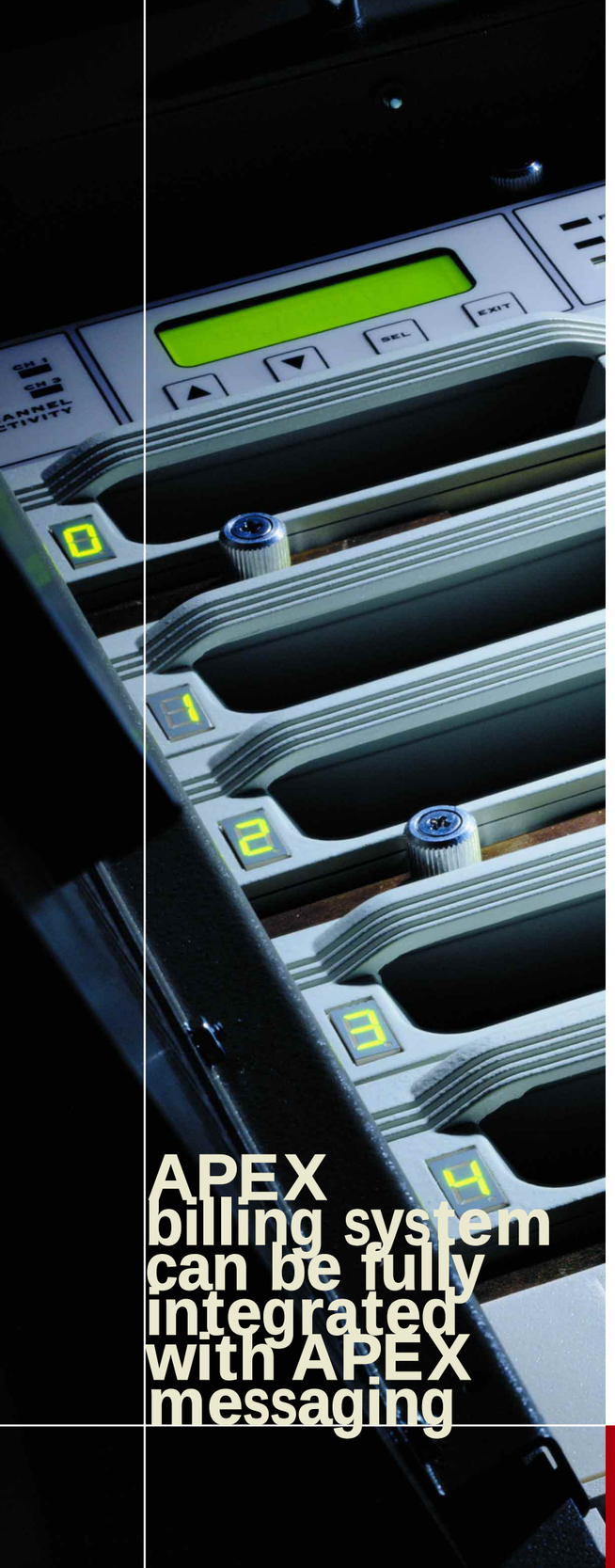

Administration and Management

All administrative and management functions are performed via an intuitive browser-based interface and include application customization, classes of service creation, reporting and backup creation. Service Management functions are performed by the Service Control Node (SCN) and include Dialed Number Identification Service (DNIS) maintenance, application updates and prompt maintenance.

Provisioning

System provisioning is performed through a browser interface. The system allows operators and administrators to perform functions such as addition and deletion of mailboxes, customer service, application maintenance, etc.

Subscriber self-provisioning is also Web-based and allows subscribers to configure their mailbox from any location. Subscribers can set message notification guidelines, create distribution lists, maintain their address book, forward their messages, etc. using this option.

APEX Messaging utilizes an XML interface for data interchange, enabling service providers to integrate APEX Messaging's provisioning functions with their own provisioning systems.

Service Creation

The APEX Messaging System has an embedded service creation environment that allows administrators to quickly customize the messaging application and develop, run and manage completely new enhanced services. This award-winning service creation environment is highly flexible and provides the command icons necessary to create virtually any call flow. It also includes a "C-Hook" facility that allows administrators to link their own "C" function calls for complete customization capabilities. With the telecommunications industry changing at a rapid pace and competition ever-increasing, the capability to quickly develop and deploy new services gives carriers the advantage they need to stay ahead, attract customers and reduce churn.

Fault Tolerance

APEX Messaging is designed for use by carriers in high call volume environments and delivers the high availability features these customers demand. High availability software and clustering are used with the servers that can achieve 99.999% fault tolerance. ICPs, MGs and proxies can be deployed in an N+1 configuration to guarantee service availability.

Integration with APEX Billing and Prepaid Systems

For service providers requiring a complete messaging and billing solution, the APEX Billing System can be fully integrated with APEX Messaging. APEX Billing allows messaging services on the PSTN and IP networks to be billed at a flat or usage-based rate.

Combined with APEX Prepaid, APEX Messaging provides a valuable messaging service to help prepaid providers differentiate themselves and reduce churn. With this option, outgoing calls from APEX Messaging can be linked to calling cards or customer accounts.

Subscriber self-provisioning is also Web-based and allows subscribers to configure their mailbox from any location.

System Overview

The APEX Messaging System is designed to provide a solid, feature-rich platform that delivers uninterrupted service to a massive and growing base of subscribers. APEX Messaging's open architecture utilizes standard Internet protocols commonly used for e-mail to efficiently process all messages from all sources in the same manner. The platform was built from the ground up to support IMAP4 and Lightweight Directory Access Protocol (LDAP) natively on the message store without a translator. These protocols provide an optimal interface for the subscriber, since all e-mail, faxes and voice mail reside in the same store and have a common access method.

Voice Mail

Calls are forwarded to APEX Messaging if the subscriber's line is busy or the subscriber does not answer the call. Subscribers can also choose to have all calls unconditionally forwarded to voice mail. Call control information is sent via the PSTN or IP interface. Direct calls placed by subscribers to retrieve messages are handled by the service provider's network in a similar manner.

Fax Mail

Fax calls are delivered to APEX Messaging in much the same way as voice messages. APEX Messaging provides two convenient options - Never Busy Fax, where fax calls are automatically sent to APEX Messaging when the subscriber's fax line is busy, and Fax Bucket, where all faxes are received by the system. Subscribers can have faxes automatically forwarded to pre-defined fax machines, a fax machine designated at the time of message retrieval (i.e. a fax machine close to the subscriber at the time of retrieval, a hotel fax line, etc.) or they can choose to store them in the mailbox for review via PC.

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E-mail

E-mail is routed to the APEX Messaging System and stored in the subscriber's unified mailbox.

Message Notification

With the receipt of any message - voice mail, fax mail or e-mail - the APEX Messaging System activates a notification process according to pre-defined subscriber preferences. Typical message waiting indicators are a stutter dial tone or flashing light on a wireline telephone, or an SMS message on a wireless telephone. A subscriber may also be notified via phone call to a pager, wireline or wireless phone or by e-mail. Custom options are also available.

Message Retrieval

The major benefit of the APEX Messaging System for the subscriber is unified message retrieval. Messages can be retrieved via telephone, fax machine, personal computer or PDA.

When using a telephone, the user may play voice messages or listen to e-mail, through text-to-speech technology. The system plays the e-mail header information and gives the subscriber the option of hearing the body of the message. The subscriber can then respond to voice messages with a voice message, and e-mail messages with a pre-defined text message (i.e. "I got your e-mail. I will reply later." or "I will call you regarding your message.") or by recording a response that will be sent as an audio attachment to the e-mail. Calls can be returned by the subscriber without disconnecting from the system, and integration with the APEX Billing System provides the option of billing for these calls (prepaid or postpaid).

Faxes can be forwarded to other fax machines or, if calling from a fax machine, can be received on the same call.

Subscribers can also access their mailbox from a personal computer via any standard e-mail client (i.e. Microsoft Outlook, Netscape Messenger, Qualcomm Eudora) or through the World Wide Web. Voice messages and faxes are delivered as e-mail attachments. Voice Messages can be heard through the computer speakers and faxes can be viewed on the computer monitor or sent to a printer.

While in transit, subscribers also have the option of using WAP-enabled devices or wireless phones to access their mailbox.

A subscriber may also be notified via phone call to a pager, wireline or wireless phone or by e-mail. Custom options are also available.

Network Design

The Messaging Data Store (MDS) provides a single message store for all messages sent to the APEX Messaging System. It provides IMAP4 and LDAP services to the other nodes on the network for message access and directory information.

ICPs and MGs are the TDM and IP interfaces to the system. They take voice and fax calls from the PSTN and IP network respectively.

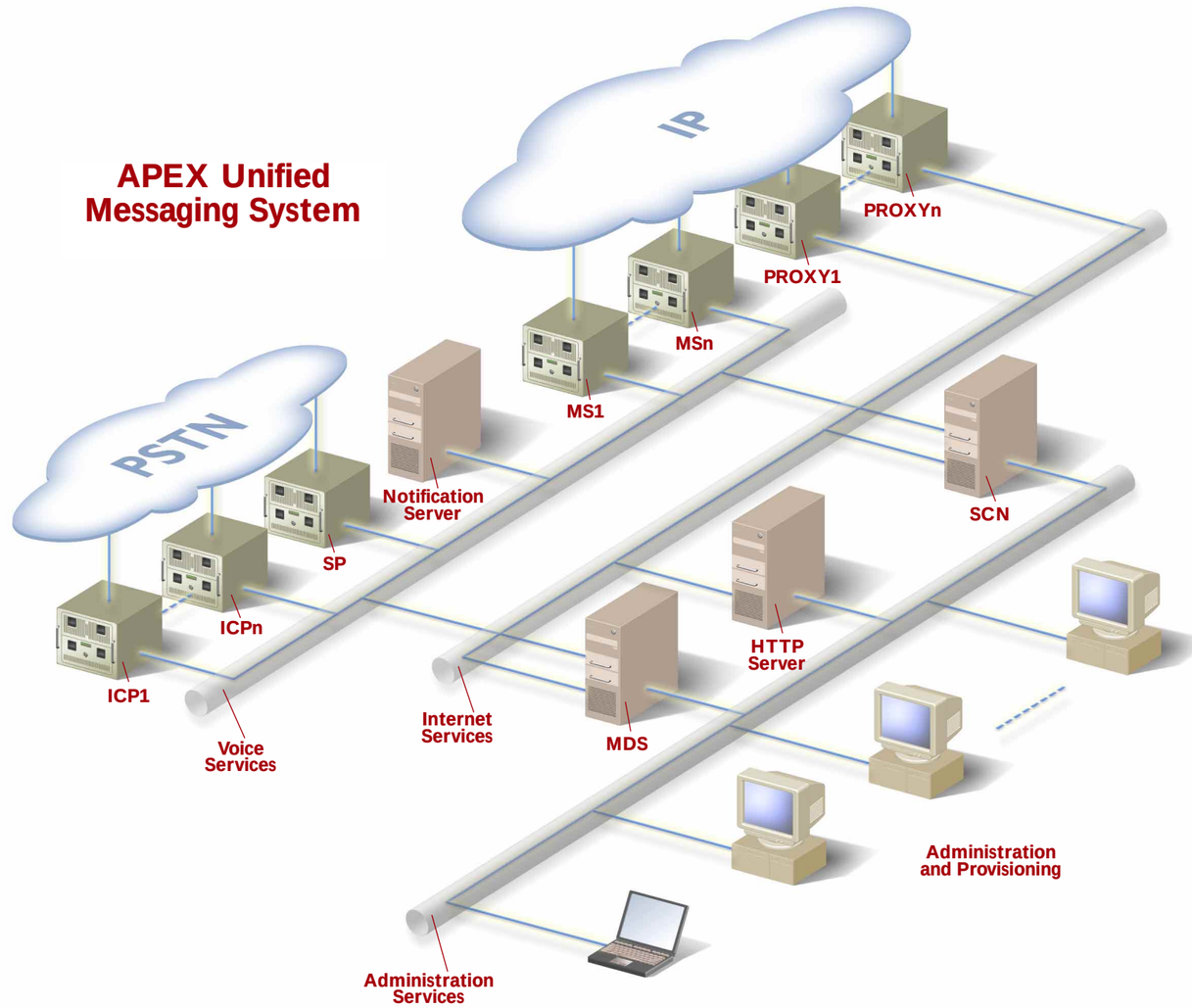
Proxy servers mediate Internet access between subscribers and the APEX Messaging System. Subscribers can access their messages via e-mail clients and web-mail, and can administer their mailboxes through their browser. The HTTP Server receives requests from the proxy servers on behalf of subscribers to display mailbox information and messages on Web browsers and WAP-enabled devices.

The message Notification Server handles notification procedures for subscribers upon receipt of messages. It supports Short Messaging Service (SMS) and paging protocols, as well as other specialized notification mechanisms required by the service provider. Note that SMDI notification is supported by the Signaling Processor (SP) and callback notification is handled by an ICP or MG, as required.

The Signaling Processor provides out-of-band signaling to the ICP network. The Signaling Processor accepts Signaling System 7 (SS7) and/or Station Message Desk Interface (SMDI) signaling. In all cases, the Signaling Processor receives call data information from the PSTN and makes it available to the individual ICP handling the call on the local network

The Service Control Node manages network services. It communicates via Signaling Network Management Protocol (SNMP) with the ICPs and MGs and performs network management functions.

A number of administration and provisioning consoles are available to system administrators and operators to perform functions such as adding and deleting mailboxes, customer service, application maintenance, backups, etc.



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Unified Messaging–A Necessity

It is now widely accepted that the technology and market conditions currently exist for the rapid implementation of unified messaging. Because of the convenience and cost benefits a single point of access to all messages affords, end users will soon come to expect unified messaging services from their carriers. In today's highly competitive telecommunications environment, carriers who cannot provide the latest services quickly and cost-effectively will get left behind. The APEX Messaging System combines leading-edge technology and industry standards with APEX's widely recognized service creation environment to offer a cost-effective, highly customizable unified messaging platform to serve the needs of any service provider - large or small.

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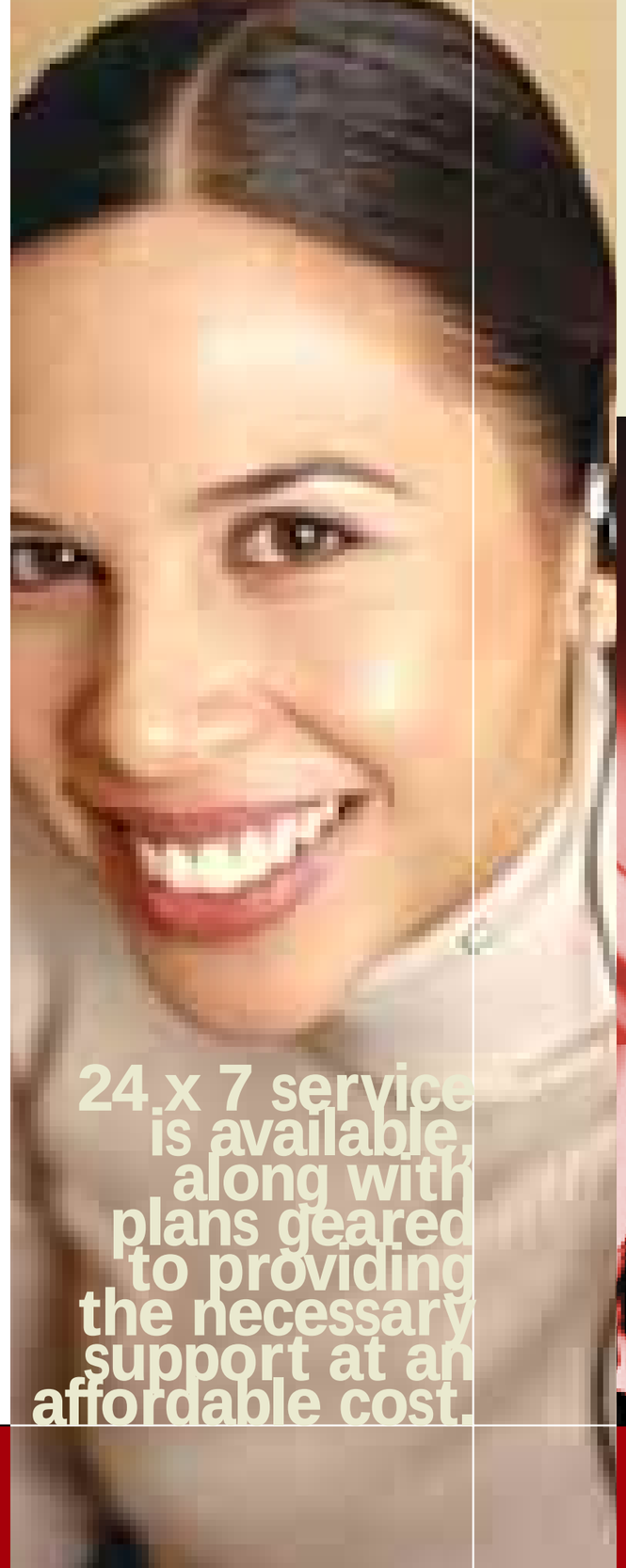
Supporting Our Customers

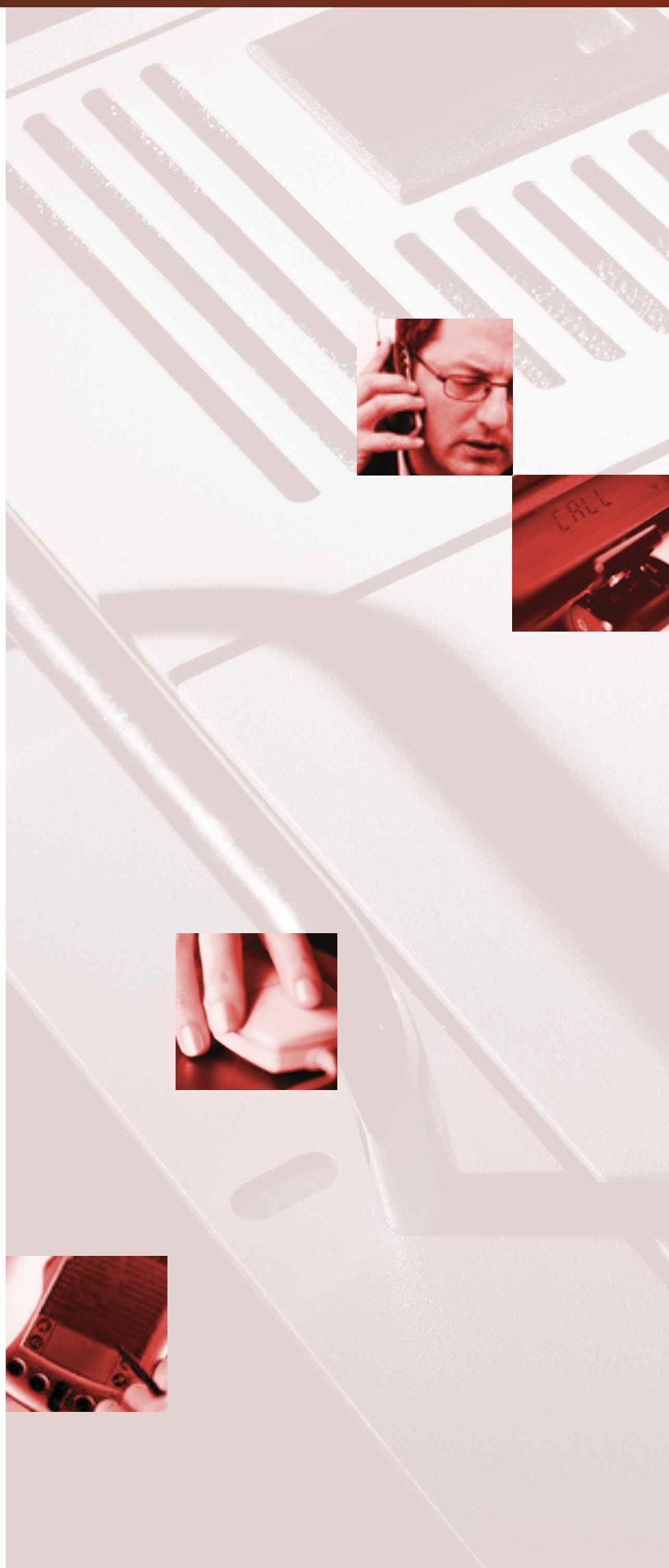
APEX Messaging is serviced and supported worldwide by APEX's trained staff in regional offices in the eastern and western US, Europe, Asia and Latin America. APEX maintains a database and trouble report system to track problems and escalation procedures to the appropriate personnel.

A project manager is assigned to every new customer to guide them through the installation and training process. The project manager will review the requirements and coordinate APEX's resources for the project. Training is offered at our Corporate Training Center.

In addition to project planning, training and installation services, APEX offers customization services and custom application development.

Various maintenance plans are offered with software and hardware options. 24 x 7 service is available, along with plans geared to providing the necessary support at an affordable cost.





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