

# Enhanced Services Messaging

## Definition

Network-based enhanced services are applications and features that add value to basic wireline and wireless telephone service; call answering, voice messaging, fax messaging, and wireless prepaid services are popular examples. In the near future, unified messaging, embracing voice mail and the Internet, will dramatically increase use of these services.

## Overview

Today, basic mailbox services such as voice mail are becoming commodities in an increasingly competitive, deregulated telecommunications marketplace. At the same time, service subscribers are becoming more sophisticated, enthusiastically adopting new communications technologies—from wireless personal computers (PCs) to the Internet. To assure their continued competitiveness and profitability, telecommunications service providers must begin to think outside of the box, expanding their vision of enhanced services to meet rapidly evolving subscriber demands. This strategy is essential to improve subscriber loyalty and to attract new subscribers from the competition.

## Topics

1. Marketplace Dynamics
2. Emerging End-User Demands
3. Evolution of Enhanced Services
4. Unified Messaging
5. Universal Connectivity
6. Real Solutions, Real Benefits

Self-Test

Correct Answers

Glossary

# 1. Marketplace Dynamics

Around the world, the marketplace for telecommunications services is undergoing rapid evolution. The global trend toward deregulation and privatization has proven to be a catalyst for increased competition. Many network operators have sought to achieve a competitive advantage through acquisition and consolidation, giving rise to a truly global marketplace for services. Meanwhile, lower economic barriers to market entry have opened the door to a flood of new service providers, further intensifying competitive pressures.

Against this backdrop, the challenge for network operators comes into sharp relief: to survive and thrive in the next century, network operators must effectively differentiate their service offerings from those of their competitors. Network operators must find new service solutions that attract and retain the most profitable subscribers, assuring the earnings growth their shareholders demand.

In a world in which dial tone has become a commodity—and voice mail is rapidly moving toward commodity status—network operators must develop closer relationships with their customers. That means understanding the real-world needs of today's subscribers and delivering innovative, fast-to-market services that satisfy those needs.

## 2. Emerging End-User Demands

What is it that today's end users really want? The answer depends on a range of factors, from regional infrastructure considerations to socioeconomic issues such as the rise of the small office home office (SOHO) market segment in the United States or the explosion of wireless use in Asia. There are, however, a number of broad trends driving subscriber demand for new value-added communications services in the information age, including the following:

- the explosive growth of Internet communications
- the proliferation of messaging media, including voice, fax, e-mail, etc.
- the increasing popularity (and decreasing cost) of wireless communications
- the emergence of new devices, such as text-capable wireless smartphones

Perhaps the most powerful market trend is the increasing mobility of today's subscriber. Residential and business users in markets around the world are more

mobile than ever before—and they demand solutions that help keep them in touch with colleagues, clients, family, and friends.

Key user demands emerging in the enhanced services marketplace include the following:

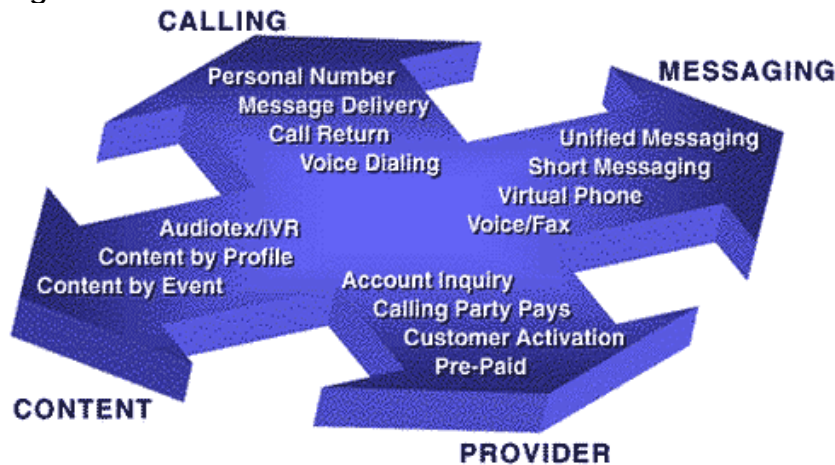
- one mailbox for all communications—voice, fax, and text messages, as well as other information
- access from the terminal of their choice—anytime, anywhere
- Internet integration with their mailbox
- a single number for callers to reach subscribers, no matter where they are
- a single number for subscribers to access all their value-added services, with seamless linking of services
- a consistent, friendly, easy-to-use interface
- easy self-provisioning and modification of services
- simplified and consolidated billing
- a single, easily available, and smart customer-service center

In other words, subscribers are looking for innovative, easy-to-use communications solutions that increase their personal flexibility and productivity.

### 3. Evolution of Enhanced Services

In light of market and user dynamics discussed in the previous sections, enhanced services are evolving into four key modules, as shown in *Figure 1*.

Figure 1. Evolution of Enhanced Services



## Calling Services

These value-added services are designed to increase calling ease, convenience, and flexibility. Calling services include the following:

- **personal number**—This innovative service enables subscribers to be reached via a single number, no matter where they are. The service sequentially or simultaneously calls all of the subscriber's predetermined numbers, which can be modified at any time, until the subscriber is reached.
- **message delivery**—Also called outdial message delivery, this service provides a call-completion solution for nonsubscribers of voice mail. The network-services platform automatically outdials the recipient's number and plays the message, offering the ability to send a message reply.
- **call return**—Also called live reply, this service enables subscribers to reply to voice messages with a single keystroke, without terminating their voice-mail sessions.
- **voice-activated dialing**—This service, based on advanced speech-recognition technology, enables subscribers to place calls simply by speaking a name, command, or number. It is particularly effective for serving the needs of mobile users.

## Messaging Services

Today's emerging messaging services allow users to access, exchange, and manage all their messages in all media more easily—saving time and increasing convenience. Messaging services include the following:

- **unified messaging**—This important new service category actually represents a range of flexible capabilities that allow subscribers to access all their messages from diverse systems, in any media (voice, fax, e-mail, and even video), from anywhere in the world. More on this in *Topic 4*.
- **short message service (SMS)**—Using a dedicated short-message platform linked to the network-services platform, this service delivers brief text messages directly to a subscriber's screen-equipped handset. SMS can deliver message notification from the messaging platform (e.g., "You have received a voice message from John Smith.") or messages from callers (e.g., "Meet you tonight at 8 p.m. John."). The most advanced SMS systems can even deliver e-mail and other text messages from other networks directly to the handset.
- **virtual phone**—Also called virtual mailbox, this service enables users without their own telephone service to receive voice messages. Subscribers call into the messaging platform from any dual-tone multifrequency (DTMF) telephone (such as a payphone) to access and review their messages.
- **voice/fax messaging**—This service enables subscribers to send voice or fax messages quickly and easily to other subscribers on the network. It is ideal for distributing messages to multiple recipients, such as a workgroup, committee, or team.

## Provider Services

This category of services is designed to make managing enhanced services easier for network operators and subscribers alike. Innovative provider services include the following:

- **account inquiry**—This allows subscribers to call into the network-services platform and obtain up-to-date billing information. This service can increase subscriber satisfaction, while substantially reducing customer-service costs.
- **prepaid services**—These enable service subscribers to purchase preloaded calling credit, enabling instant activation of wireless and

other communication services. Again, the result is increased subscriber satisfaction and reduced overhead and credit risk for network operators.

- **calling party pays**—This wireless billing option, already popular in Europe, frees wireless-service subscribers from paying for incoming calls. The platform identifies and bills the caller, just as with wireline calls.
- **customer activation/provisioning**—Another service designed to reduce customer-service cost, while increasing satisfaction; this capability enables subscribers to activate and manage new services and features quickly and easily, either by phone or via a secure site on the World Wide Web. Advanced systems also support over-the-air activation via wireless handsets, enabling mobile users to modify services while on the go.

## Content Services

Also called information services, these services provide delivery of or access to information of interest to subscribers. This includes the following:

- **content by profile/event**—This type of service delivers content customized to a subscriber via mailbox, smartphone, or the Web. This content can be organized like a profile, based on subjects of interest to the subscriber. Content can also be provided based on an event, such as notifying a subscriber when a particular stock quote has reached a predetermined price.
- **AudioTex/IVR**—AudioTex provides automated access to recorded information of interest—from weather forecasts and airline arrival information to news headlines and restaurant reviews. In advanced configurations, subscribers can access and navigate a variety of available databases to find specific information using interactive voice response (IVR).

While this list is by no means intended to be comprehensive, it offers a glimpse of emerging services available to help network operators satisfy subscriber needs and compete more effectively. The precise mix of services and service bundles will depend on the particular needs of each market segment.

## 4. Unified Messaging

Perhaps the most important category of emerging enhanced services is unified messaging. More than a single service, unified messaging actually describes a

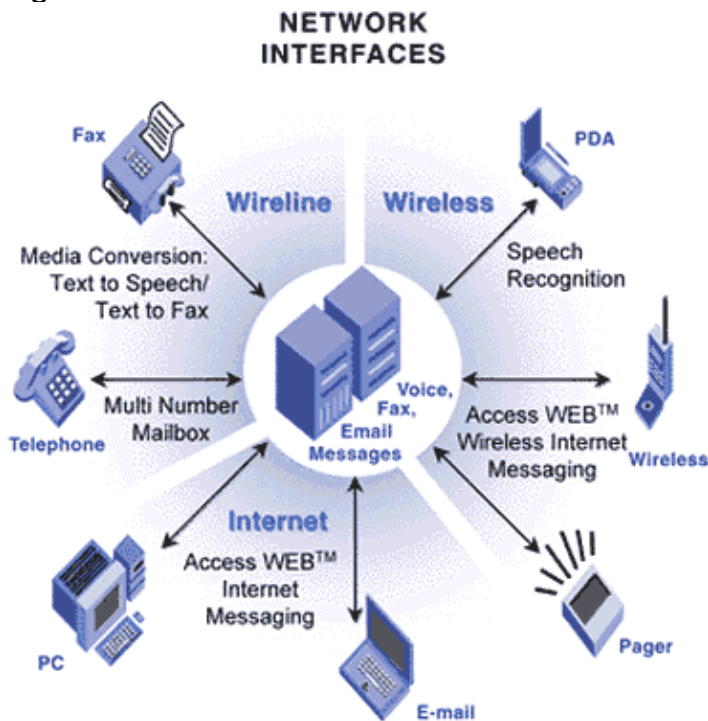
new category of capabilities—and a new way to view the network operator/subscriber relationship.

While actual unified messaging solutions are still evolving, key elements of such a service offering include the following:

- single mailbox and network account for all messages: voice, fax, and e-mail
- multinetwork accessibility including wireline (public switched telephone network [PSTN], Internet) and wireless (cellular digital packet data [CDPD], code division multiple access [CDMA], personal digital cellular [PDC], groupe speciale mobile [GSM])
- multiterminal accessibility via fixed or wireless telephone, fax machine, personal digital assistant (PDA), or PC (Web browser)

Regardless of how network operators decide to configure their unified messaging offering, the focus is the same: to provide subscribers with a single, easy-to-use access point for managing all their communications. From a network operator's viewpoint, this means interfacing with a broad range of networks and systems, as shown in *Figure 2*.

Figure 2. Network Interfaces



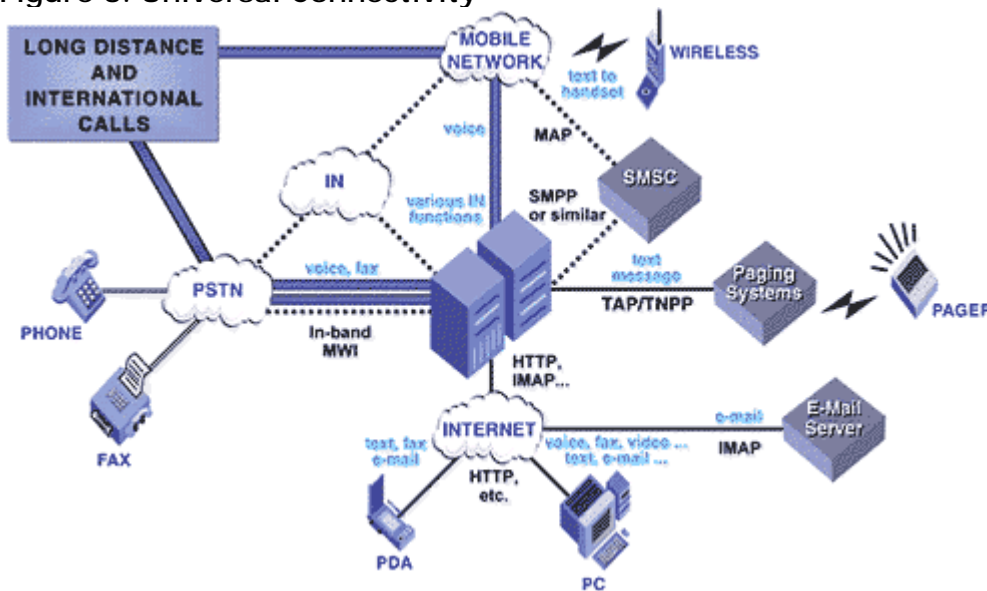
## 5. Universal Connectivity

Delivering an expanding array of innovative services is only part of the challenge. Network operators must also enhance their price competitiveness. This means minimizing total infrastructure costs by providing all services (or as many as possible) with a single network-services platform.

To meet the challenges of unified messaging and other emerging services, the network platform must be able to integrate with the full range of communications networks—the global PSTN, wireless switched networks, the public Internet, private packet-switched networks, and paging networks—while supporting the intelligent-network protocols that enable so many of today's advanced capabilities.

Such a universal connectivity scheme, based on a highly flexible, open network platform architecture, is shown in *Figure 3*.

Figure 3. Universal Connectivity



## 6. Real Solutions, Real Benefits

The bottom line for any enhanced service strategy must be increased profitability for network operators. From this perspective, the business case for innovative, outside-the-box enhanced services strategies is strong.

Leveraging today's emerging communications solutions to serve subscribers more effectively, as described in this tutorial, offers a variety of compelling benefits to network operators, including the following:

- brand identity/competitive differentiation
- reduced subscriber churn/greater customer loyalty
- increased call completion and call return
- increased airtime/revenue
- increased network utilization
- additional service fees
- lower customer service costs
- streamlined billing
- faster time-to-market of new services and features

All of these benefits add up to increased subscriber satisfaction and greater profitability for network operators. Only by embracing the innovative network-based service solutions of today can network operators effectively position themselves for service breakthroughs and market opportunities of the future.

## Self-Test

1. The global trend toward deregulation and privatization decreases competition.
  - a. true
  - b. false
2. Perhaps the most powerful market trend is the increasing stability of today's subscriber.
  - a. true
  - b. false
3. Message-delivery service was designed for voice-mail subscribers.
  - a. true
  - b. false

4. Virtual phone service can be used from a payphone.
  - a. true
  - b. false
5. Unified messaging aims at providing subscribers with multiple access points for managing their communications.
  - a. true
  - b. false
6. Perhaps the most important category of emerging enhanced services is \_\_\_\_\_.
  - a. prepaid services
  - b. personal number
  - c. customer activation
  - d. unified messaging
  - e. voice/fax messaging
7. Which of the following is not a characteristic of current marketplace dynamics?
  - a. many network operators seek to achieve a competitive advantage through acquisition and consolidation
  - b. network operators must develop relationships with their customers
  - c. network competitors must standardize their services
  - d. economic barriers to market have decreased
  - e. the marketplace for telecommunications is evolving
8. Key user demands emerging in the enhanced-services marketplace include all but \_\_\_\_\_.
  - a. a single number for callers to reach subscribers
  - b. one mailbox for all communications
  - c. separate and organized billing for each service

- d. Internet integration with user mailbox
  - e. self-provisioning and modification of services
9. Which of the following is not one of the four key categories of network-based enhanced services?
- a. content
  - b. accessing
  - c. calling
  - d. provider
  - e. messaging
10. All but which of the following will benefit network operators?
- a. low service fees
  - b. brand identity
  - c. reduced subscriber churn
  - d. streamlined billing
  - e. low customer-service costs

## Correct Answers

1. The global trend toward deregulation and privatization decreases competition.
- a. true
  - b. false**
- See Topic 1.
2. Perhaps the most powerful market trend is the increasing stability of today's subscriber.
- a. true
  - b. false**

- See Topic 2.
3. Message-delivery service was designed for voice-mail subscribers.
- a. true
  - b. false**
- See Topic 3.
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See Topic 1.

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- d. Internet integration with user mailbox
- e. self-provisioning and modification of services

See Topic 2.

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- a. content
- b. accessing**
- c. calling
- d. provider
- e. messaging

See Topic 3.

10. All but which of the following will benefit network operators?

- a. low service fees**
- b. brand identity
- c. reduced subscriber churn
- d. streamlined billing

e. low customer-service costs

See Topic 6.

## Glossary

### **CDMA**

code division multiple access

### **CDPD**

cellular digital packet data

### **DTMF**

dual-tone multifrequency

### **GSM**

groupe speciale mobile

### **IVR**

interactive voice response

### **PC**

personal computer

### **PDA**

personal digital assistant

### **PDC**

personal digital cellular

### **PSTN**

public switched telephone network

### **SMS**

short message service

### **SOHO**

small office home office