

Unified Communications

Definition

Unified communications encompasses all forms of call and multimedia/cross-media message-management functions controlled by an individual user for both business and social purposes. This includes any enterprise informational or transactional application process that emulates a human user and uses a single, content-independent personal messaging channel (mailbox) for contact access.

Overview

Unified communications has repeatedly been the center of many discussions involving the future of communications. Unified communications encompasses a broad range of technologies and many potential applications. It is important to note that it is still in its infancy and many definitions have been used by the messaging industry. This tutorial will present one view of unified communications and present its appeal as a powerful mode of communication. The benefits to subscribers will be discussed along with considerations for service providers and the ways in which they will benefit from unified communications.

Topics

1. The Concept of Unified Communications
2. Benefits to Subscribers
3. Considerations for Service Providers
4. Benefits for Service Providers

Self-Test

Correct Answers

Glossary

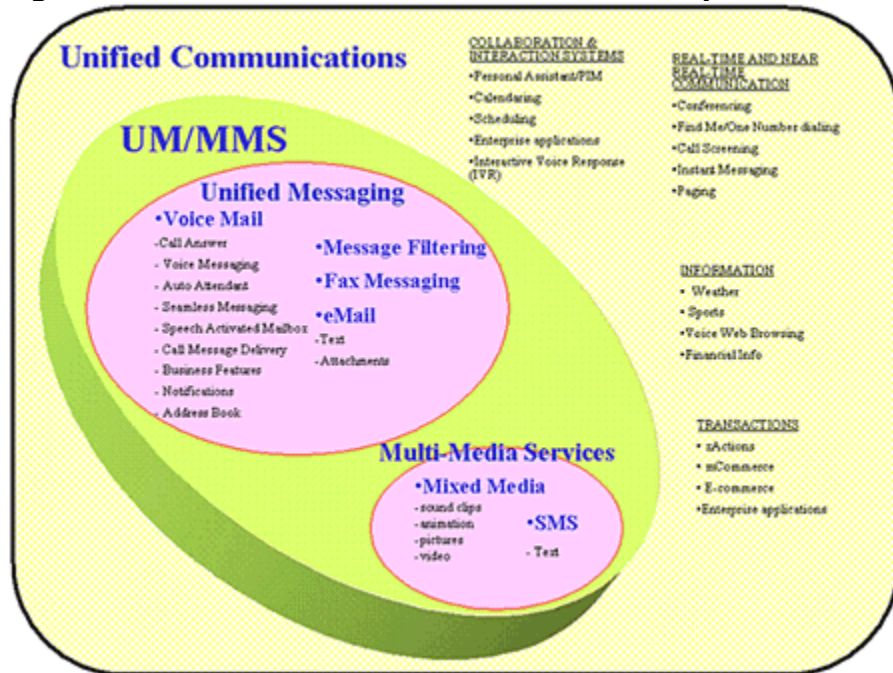
1. The Concept of Unified Communications

The essence of communication is breaking down barriers. In its simplest form, the telephone breaks distance and time barriers so that people can communicate

in real time or near real time when they are not together. There are now many other barriers to be overcome. For example, people use many different devices to communicate (wireless phones, personal digital assistants [PDA], personal computers [PC], thin clients, etc.), and there are now new forms of communication as well, such as instant messaging. The unified communications concept involves breaking down these barriers so that people using different modes of communication, different media, and different devices can still communicate to anyone, anywhere, at any time.

Unified communications encompasses several communication systems or models including unified messaging, collaboration, and interaction systems; real-time and near real-time communications; and transactional applications. Unified messaging focuses on allowing users to access voice, e-mail, fax and other mixed media from a single mailbox independent of the access device. Multimedia services include messages of mixed media types such as video, sound clips, and pictures, and include communication via short message services (SMS). Collaboration and interaction systems focus on applications such as calendaring, scheduling, workflow, integrated voice response (IVR), and other enterprise applications that help individuals and workgroups communicate efficiently. Real-time and near real-time communications systems focus on fundamental communication between individuals using applications or systems such as conferencing, instant messaging, traditional and next-generation private branch exchanges (PBX), and paging. Transactional and informational systems focus on providing access to m-commerce, e-commerce, voice Web-browsing, weather, stock-information, and other enterprise applications.

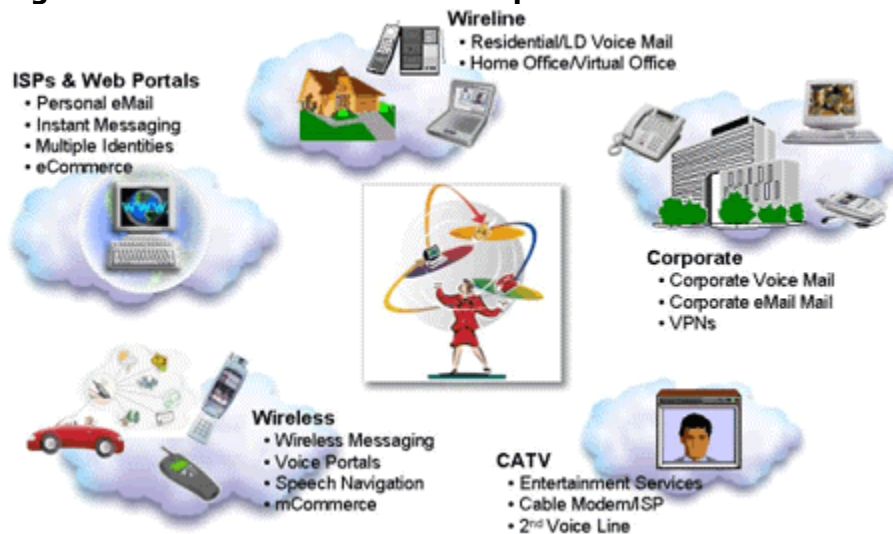
Figure 1. Unified Communications and Its Components



2. Benefits to Subscribers

Today's subscribers live in multiple networks (see *Figure 2*). More and more subscribers belong to numerous electronic communities and have an ever increasing number of innovative communications devices to choose from, whether it is a mobile phone, PDA, pager, hand-held computer, or a wireless application protocol (WAP)-enabled device. With a wide range of services and devices at their disposal, greater demands are being placed on the subscriber in the way they manage their communications. Today's busy consumers want an intuitive, easy-to-use method for unifying their communications.

Figure 2. Subscribers Live in Multiple Networks



Unified communications provides control for the individual user. It can help to send and receive messages, whether they are voice, e-mail, or fax. It also will notify the user whenever mail arrives. The concept of notification is becoming a large part of messaging. Some people want to be reached at all costs, anywhere, at any time. Whether they are at home or on vacation, they want to be notified of messages. Others are more protective about their privacy. They do not want to be reached, for example, when they are sleeping or having dinner. Unified communications technology provides the power to reach people almost anywhere, at any time, and provides the flexibility to allow people to control when they can be reached. Subscribers can interface with messages how and when they want.

With unified communications, subscribers reduce the number of places they must check for incoming voice, fax, e-mail messages, and other media types. From a single interface, they can check for all messages.

Evolution to Unified Communications

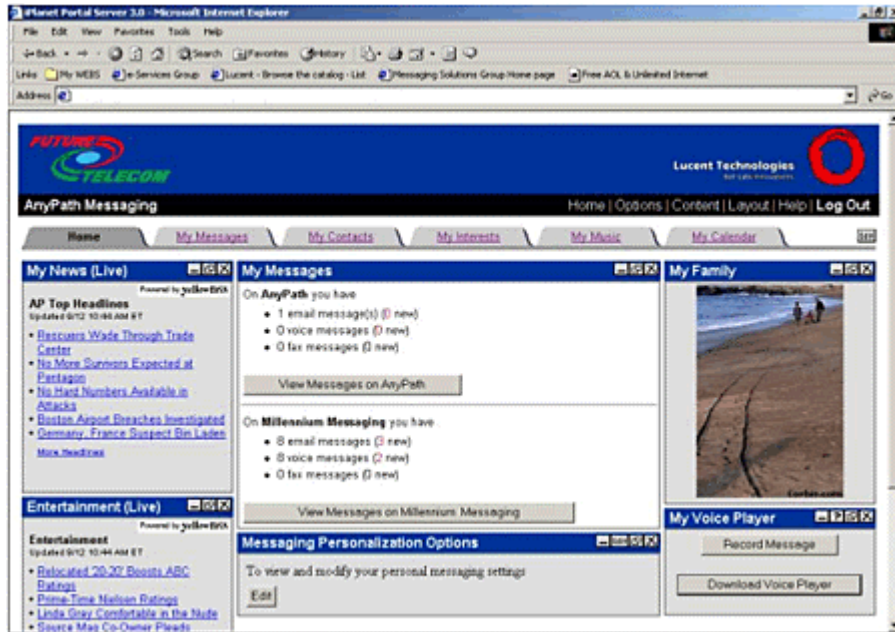
A natural evolution in application value, which has built upon available technologies, has occurred in messaging (see *Figure 3*). Technologies exist that enhance the integration of voice mail and e-mail, such as text-to-speech software that converts e-mail into spoken words. For example, at the airport, a user could call in on a phone and hear e-mail messages, making it easy to reach important decisions without delay. Other enabling technologies, such as speech recognition, are becoming more reliable and cost-effective. For example, people who drive frequently will find speech recognition a particularly convenient interface, especially if it is used to dial numbers or navigate menu options.

Figure 3. Unified Communications Evolution



Easy-to-use user interfaces are essential to accessing the unified mailbox. Whether from the phone or from any Internet-enabled device, the subscriber can navigate through a unified mailbox with ease and full control at all times (see *Figure 4*). Checking e-mail from the phone becomes intuitive, and, likewise, hearing voice messages from a PC becomes second nature.

Figure 4. An Example of Unified Mailbox Access through the Web



Unified communications can be used as a business tool as well. It can provide efficient business communication or act as an interface to a 24-hour storefront. People can use the phone to get information or to make transactions. They can purchase merchandise or trade stock without talking to a live person. With the emergence of new technology, especially the Internet, the 24-hour storefront has flourished. More information can be accessed and more shopping can be done than ever before.

Understanding the needs of the diverse market segments is essential to the success of deploying unified communications to a market. By mixing and matching various unified communications applications, service providers can increase market penetration, maximize revenues, and stimulate interest for more unified communications functionality.

The Messaging-Savvy Subscriber

The premium-class subscriber will be one of the first to adopt fully enhanced unified communications. Whether these subscribers are heavy corporate messaging users or small office/home office (SOHO) business entrepreneurs, with unified communications they have a means of saving time and increasing productivity. With text-to-speech and automatic speech-recognition technology, subscribers are able to navigate through voice portals and to access a variety of information and message content from any phone. Using standard voice protocols, they are able to hear their voice messages on a PC or other devices. Future services can tie even more applications into the unified mailbox.

Consumers can have their unified mailbox become a personal agent, sending personalized information and notification preset by the subscriber. Other capabilities include the ability to look up contact information in a wide variety of contexts, whether the information may be located in personal, corporate, or worldwide directories. For example, the traveling salesperson who may be delayed at an airport is still able to stay in touch and conduct business with the office and clients. With unified communications, the salesperson is able to check voice messages, e-mail, and faxes, conduct transactions with corporate enterprise servers, have access to calendars and scheduling, all from the convenience of a wireless phone, Web portal, or PDA.

3. Considerations for Service Providers

From the standpoint of the traditional telco or Internet service provider (ISP), high service availability is important. It is imperative that the service reaches thousands of people, and that it is absolutely reliable. It must be available 24 hours per day, and it must be something on which people rely and take for granted. If a system suffers too many outages, people will complain and will wonder why they are not receiving the expected service levels.

Another important consideration is scalable systems. Some of the current technologies and products on the market only work well on a small scale. The unified communications platforms should reach thousands of customers. The network-deployment cost for scaling up these systems must be manageable—merely having the technology to provide a user service is not sufficient. The service-provider involvement requires that different infrastructure services be available. For example, users must be added to the system en masse rather than having to type them in one by one. The systems also must be integrated with the existing service infrastructure of the service provider. A similar infrastructure service is needed, such as providing management reports, research data, or data-collection facilities to allow the service provider to know which part of the service is being used, what the popular services are, and which services or features are not as popular. This information helps service providers to determine where to invest next. The data-collection facility is another feature that service providers want to integrate into their service and system.

With the current developments in communication, standards are important. Also, products are needed that offer interoperability. These products may not be from the same vendor, but they must operate together to form powerful solutions for customers.

For the subscribers, it is important that the interface is simple and intuitive. In a business environment, people are forced to learn to use a service—such as voice

mail—that their company provides. There may be training sessions for employees to learn how to use the sophisticated features. For the individual subscriber, the situation is different. Service providers cannot offer a training session for all the people in the city, so the product must be intuitive from different device interfaces. If it is simple and people can use it, they will benefit from it and will want to continue the service. If the service is less than satisfying, subscribers will drop it. Instead of making products and services ever more sophisticated, they must be made intuitive, simple, and useful in solving problems.

4. Benefits for Service Providers

Unified communication offers several benefits for service providers. The first is subscriber-base growth. More people are subscribing because the provider is offering better solutions. Also, by using community messaging, more people appreciate this form of two-way communication. With unified communications, service providers can increase messaging availability with maximum penetration in existing and new global segments via a wider deployment with networking.

Unified communications provides a new source of revenue and the opportunity to streamline product and service offerings. By keeping the interfaces intuitive and the applications tailored to the market segments, service providers can build stronger customer loyalty and be more attractive to new customers, whether they are residential or small-business customers.

Unified communications can also streamline operations. The Internet has changed technology and communications. It has shown how standards work and how they can benefit even competing products. With standards, less training is required. Different machines and different systems can work together based on common standards. The power of the standard will streamline products and services as well as operations. Fewer service reports are needed. With network-management standards, for example, an essential system of control by polling different machines can be established to find out how these machines work. Streamlining operations will provide large cost savings for service providers.

Self-Test

1. With unified communications people are able to _____.
 - a. listen to their e-mail over the phone
 - b. listen to their voice messages over the PC
 - c. both of the above

2. Calendaring is an example of a collaboration and interaction system.
 - a. true
 - b. false
3. Text-to-speech technology converts _____.
 - a. spoken words to e-mail
 - b. e-mail to spoken words
 - c. fax to spoken words
4. For telcos and ISPs, what are some criteria to consider for a unified communications platform?
 - a. Reliability
 - b. Scalability
 - c. User interface
 - d. All of the above
5. Wireless users can take advantage of automatic speech recognition to _____.
 - a. dial
 - b. navigate menu options
 - c. both of the above
6. Instant messaging is an example of near real-time communications.
 - a. true
 - b. false
7. A unified communications user's mailbox can be accessed through the Web.
 - a. true
 - b. false
8. From which of the following possible sources would a unified communications user be able to get contact information?

- a. Personal contact lists
 - b. Corporate enterprise servers
 - c. Global directories
 - d. All of the above
9. Unified communications allows
- a. people to interface with their messages how and when it is convenient for the service provider
 - b. people to interface with their messages how and when they want to
10. Unified messaging can involve which of the following message types?
- a. Voice mail
 - b. E-mail
 - c. Fax
 - d. All of the above

Correct Answers

1. With unified communications people are able to _____.
- a. listen to their e-mail over the phone
 - b. listen to their voice messages over the PC
 - c. both of the above**

See Topic 2

2. Calendaring is an example of a collaboration and interaction system.
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 - b. false

See Topic 1

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- c. fax to spoken words

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See Topic 3

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See Topic 1

Glossary

ISP

Internet service provider

IVR

Interactive voice response

MMS

Multimedia messaging services

PBX

Private branch exchange

PDA

Personal digital assistant

PIM

Personal information management

SMS

Short message service

SOHO

Small office/home office

UC

Unified communications

UM

Unified messaging

VPN

Virtual private network

WAP

Wireless application protocol