# COMMUNICATION TERMINAL AND ADVERTISING METHOD USING THE SAME

## Technical Field

The present invention relates to a communication terminal and an advertising method using said terminal, wherein informations such as music, voice, or images for advertisement are reproduced or displayed as a call signal, said informations to be transmitted to said communication terminal from the private branch exchange or base station in the wired or wireless communications network, or pre-stored into the memory of said communication terminal and to be selected by the user. After transmitted to said communication terminal from the private branch exchange or base station in the wired or wireless communications network, or pre-stored into the memory of said communication terminal, these informations are reproduced or displayed therein as a call signal according to the user' s selection.

## Background Art

In general, as for the methods of exchanging information with the other party afar, there is a digital communication method, which exchanges digital information such as texts or numbers as well as an analog communication method, which exchanges analog information such as voice. And, a call is accomplished by an originating party's dialing a telephone number on a communication terminal and then confirming a ring-back tone, in conjunction with an called party's acknowledging the call from the buzzer of a communication terminal and then answering the same.

Moreover, to accomplish a call, a communication system needs to be in place, comprising wired or wireless communication terminals and exchange system, capable of originating and answering, wherein said communication terminals and the exchange system are connected in a wired or wireless manner by means of a subscriber's line, with the exchange systems being connected by trunk cables.

Meanwhile, with the recent development of various technologies, communication systems are not an exception in rapid growth and development.

Figure 1 shows a schematic diagram of a typical communication system currently in use. A wired or wireless terminal (A or B), capable of originating and answering, is connected to an exchange system line or a wireless channel. Between the switches, or the base stations, connections are via transit trunk cables in a wired or wireless manner.

Moreover, an exchange system comprises a speech-path unit, which provides a mutual speech path with respect to the originating and answering parties, and a control unit, which controls the speech-path unit. The control unit contains various programs, which process originating and answering, receive numbers, translate numbers, process busy calls, and do disconnections. Further, the exchange system uses a common-channel signal mode (signaling system No.7), which enables transmission of signals during a call, enables a high-speed transmission of data, and enables connection between different types of communication terminals.

Figure 2 shows a schematic circuit diagram of said communication terminal.

The communication terminal comprises a call-processing unit 1 which processes the user's voice transmitted from the private branch exchange or base station; a signal-processing unit 3 which processes the signals transmitted from the private branch exchange or the base station; a memory unit 5 having a pre-stored music, melody, etc.; and an output unit 7 which outputs the voices from a call processing unit or the music or melody pre-stored in the memory unit 5. Moreover, when a call signal is inputted into the answering communication terminal via a subscriber's line or a wireless channel from the private branch exchange or the base station, then the music, melody, etc., pre-stored in the memory unit 5 by a user, is outputted via the output unit 7 as an answer tone.

Figure 3 shows an outline of an intelligent network providing various types of additional services.

The intelligent network is generally equipped with large-scale computers and database onto the communication systems of Figure 1, which comprises a transfer network exchanging and transmitting information such as voice and data, a signal network transferring the

control signals between the various elements of the transfer network by means of a common-channel signaling mode (No.7), and a service network controlling the services of the intelligent network while maintaining the user data.

The transfer network comprises a service switching points (SSP) and a local exchanges (LE), which carries out the functions of call connections and signal-gateway. The signal network comprises signal transfer points (STP), which relays the service signals by means of common-channel signaling mode (No. 7). The service network comprises a service control point (SCP) having software, database and computers which can change and add respective services. Moreover, the service control point (SCP) uses a service management system (SMS) and X.25 protocol. The signal transfer point (STP) uses a signaling engineering and administration system (SEAS) and X.35 protocol.

Currently, the following sets of services are being provided by means of the intelligent network (IN): free phone (FP), credit calling (CC), personal number (PN), wide area centrex (WAC), virtual private network (VPN), emergency response service ERS), televoting, public directory, teleconference, etc.

Figure 4 shows the diagrammatic flowchart of signals in a general call.

Currently, the method and the communication terminal have been developed, wherein said communication terminal reproduces the melody pre-stored in the answering communication terminal as an answer tone when the private branch exchange or the base station transmits a call signal to the answering communication terminal.

Although a conventional communication terminal can reproduce the music, melody, etc. pre-stored in the memory as an answer tone, it has the problem that the conventional communication terminal cannot reproduce or display the information such as music, voice, or images, which is sent to the answering communication terminal from the private branch exchange or the base station.

## Disclosure of Invention

Therefore, one object of the present invention is to provide a communication terminal and advertising methods using the same, which

can selectively reproduces the information such as music, voice, or images, which is pre-stored in the memory or sent from the private branch exchange or the base station, on a speaker or a display device as an answer tone.

Another object of the present invention is to provide a communication terminal and advertising methods using the same, which can display on a displaying device the information such as the music, voice or images, which is pre-stored in the memory or sent from the private branch exchange or the base station.

Still another object of the present invention is to provide a communication terminal and advertising methods using the same, which can advertise via a speaker or a displaying device the information such as music, voice or images, which is pre-stored in the memory or sent from the private branch exchange or the base station.

Brief Description of Drawings

Figure 1 is a schematic diagram of a general communication network.

Figure 2 is a schematic circuit diagram of a conventional communication terminal.

Figure 3 is a diagram outlining the intelligent network providing various types of services.

Figure 4 is a diagram which illustrates how a call is accomplished by means of a communication terminals.

Figure 5 is a schematic circuit diagram of the present invention.

Figure 6 is a flowchart explaining Example 1 of the present invention.

Figure 7 is a flowchart explaining Example 2 of the present invention.

Modes for Carrying Out the Invention

The present invention is explained in detail with references to the attached drawings as below:

Example 1

Figure 5 is a schematic circuit diagram of the present invention.

As shown in Figure 5, the present invention comprises: a call-processing unit 10 which processes the user's voice call transmitted via a subscriber's line or a wireless channel from the private branch exchange or the base station; an information signal processing unit 30 which processes the signals and information such as music, voice or images for advertisement transmitted via a subscriber's line or a wireless channel from the private branch exchange or the base station; a switching circuit 50 which converts between transmitting mode and memory mode according to the user' s selection; a memory unit 70 which pre-stores the information such as music, voice, or images for advertisement in the built-in memory; and an output unit 90, comprising a speaker, a microphone and a display device, which outputs the voice of said call-processing unit 10, and the information signals of said information signal processing unit 30 and said memory part 70.

Moreover, the output part 90 can convert the information such as music, voice or images to the data such as texts, and display the same on the display device.

Moreover, the information signal processing unit 30 can send or receive music, voice, data, etc., via a subscriber's line or a wireless channel from the private branch exchange or the base station. The output unit 90, comprising a speaker or a microphone, in addition to said display device, can simultaneously or selectively reproduce and display the voice, texts and image data.

Figure 6 is a flowchart explaining one embodiment of the present invention.

The operation of the present invention is described in detail with reference to Figure 6.

First, the information signal processing unit 30 determines whether there is an input of a signal or information signal such as music, voice, or image for advertisement, which is transmitted via a subscriber's line or wire channel from the private branch exchange or the base station.

As a result, if the information signal is not inputted (NO), detection is made once again whether there is an input of an information signal while maintaining the in-active state of the call-processing unit 10. Alternatively, if the information signal is inputted (YES), detection is made which mode has been selected between the transmission mode and the memory mode on the switching circuit 50 by the user's manipulation.

Consequently, if the switching circuit 50 is detected to be in a transmission mode, the information signal inputted from the information signal processing unit 30 is outputted to the output unit 90. Alternatively, if it is selected as a memory mode, the information such as music, voice, images, pre-stored in the memory unit 70 is outputted to the output part 90.

Thereafter, the output unit 90 reproduces or displays the information such as music, voice, images for advertisement via a speaker, microphone or display device according to the mode of the switching circuit 50, which is transmission mode or memory mode to the user' s choice.

Further, if the answering user transmits an answer signal for a call to the private branch exchange or the base station via a subscriber' s line or a wireless channel, then the call-processing unit 10 is set to an active state, which leads to a voice call. Then, the data such as text, numbers, and images is inputted to the information signal processing unit 30, and displayed on the display device of the output unit 90.

Example 2

Figure 7 is a flowchart to explain Example 2 of the present invention.

Example 2 is explained in detail with reference to Figure 7.

As shown in Figure 7, the present invention comprises: a step 100 which involves pre-storing the information such as music, voice or images for advertisement as a call signal in the computers installed in the private branch exchange or the base station; a step 200 which determines whether the dial signal has been inputted to the exchange of the private branch exchange or the base station from the originating

communication terminal; a step 300 which makes a selection according to said dial signal as to whether it is a call within the private branch exchange or the base station, or a call from the other switching network; a step 400 which involves transmitting a ring-back tone to the answering communication terminal while simultaneously transmitting the information such as music, voice, or images for advertisement, pre-stored in the computers, to the originating communication terminal as a call signal; a step 500 which reproduces the information such as music, voice, images for advertisement as an answer tone via a speaker on an answering communication terminal; and a step 600 which repetitively executes or terminates the step 500 according to the answer signal transmitted to the private branch exchange or the base station from the answering communication terminal.

Here, in the private branch exchange or the base station includes exchanges and computers. In the computers, there are various application programs and database installed therein. Further, between the private branch exchange or the base station, and the other switching network, they are connected by means of a common-channel signaling mode (No. 7) in a wired or wireless manner.

The operation of the present invention is described in detail as follows:

First, the information such as music, voice or images for advertisement is stored (step 100) as a call signal in the computers installed at the private branch exchange or the base station, followed by step 200.

Then, in step 200, the originating communication terminal detects whether the dial signal has been inputted to the local switching network or the base station. If it is detected to be "NO," step 200 is once again executed. Alternatively, if it is determined to be "YES", step 300 is executed.

Next, in step 300, it is determined whether the call is from the private branch exchange or the base station, or from the other exchange networks. If it is detected to be "NO," then the private branch exchange or the base station, and the other telephone network are connected by means of a common-channel signaling mode (No. 7) in a wired or wireless manner, followed by step 400. Alternatively, if it is

selected to "YES", then the progression into step 400 is made.

In continuing, in step 400, a ring-back tone is simultaneously transmitted to the originating communication terminal from the exchanger of the private branch exchange or the base station while the information such as music, voice, or images for advertisement, pre-stored in the computers, is transmitted to the answering communication terminal as a call signal, followed by the progression into step 500.

Consequently, in step 500, the information such as music, voice, or images for advertisement is reproduced as an answer tone via a speaker on the answering communication terminal, followed by the progression into step 600.

Moreover, in step 600, it is detected whether the answer back was transmitted to the private branch exchange or the base station from the answering communication terminal. If it is detected to be "NO", step 500 is executed. If it is detected to be "YES", step 500 restarts, and the toll for the call is initiated.

Industrial Applicability

As described above, the present invention can reproduce or display on the output unit, according to the selection of network users, the information such as music, voice, or images for advertisement, pre-stored in the installed memory or transmitted from the private branch exchange or the base station via a subscriber's line or a wireless channel. As such, the present invention has the effect of audiovisually advertising the information such as music, voice, or images, in addition to the information such as texts or numbers, to the network users.

Further, the present invention stores information such as music, voice, or images as a call signal in the computers installed at the private branch exchange or the base station, and then transmits the information to the answering communication terminal and reproduces the information such as music, voice, or images as an answer tone via a speaker on the answering communication terminal. As such, the present invention has the effect of advertisement by communicating the information such as music or voice for advertisement to the communication terminal of the answering user.

CLAIMS

1. A communication terminal which comprises:

(a) a call-processing unit 10 which processes the user's voice call transmitted via a subscriber's line or a wireless channel from a private branch exchange or a base station;

(b) an information signal process unit 30 which processes the signal and information of music, voice, or images for advertisement, transmitted via a subscriber's line or a wireless channel from the private branch exchange or the base station;

(c) a switching circuit 50 which converts between transmitting mode and a memory mode according to the user's selection;

(d) a memory unit 70 which pre-stores the information such as music, voice, or images for advertisement in the built-in memory; and

(e) an output unit 90, comprising a speaker, a microphone and a display device, which outputs the voice of said call-processing unit 10, and the information signal of said information signal processing unit 30, and said memory unit 70.

2. A communication terminal according to Claim 1, wherein said communication terminal is a wired or wireless communication terminal.

3. A communication terminal according to Claim 1, wherein said communication terminal is a wired or wireless image communication terminal.

4. A communication terminal according to Claim 2, wherein said output unit 90 reproduces, via said speaker or microphone, the signals or the information such as music, voice or images for advertisement, inputted via said information signal processing unit 30, according to the mode of said switching circuit 50.

5. A communication terminal according to Claim 2, wherein said output part 90 displays, via said display device, the signals or the information such as music, voice or images for advertisement, inputted via said information signal processing unit 30, according

to the mode of said switching circuit.

6. A communication terminal according to Claim 2, wherein said output unit 90 reproduces, via said speaker or microphone, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory part 70, according to the mode of said switching circuit 50.

7. A communication terminal according to Claim 2, wherein said output unit 90 displays, via said display device, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory unit 70, according to the mode of said switching circuit 50.

8. A communication terminal according to Claim 3, wherein said output unit 90 reproduces, via said speaker or microphone, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory unit 70, according to the mode of said switching circuit 50.

9. A communication terminal according to Claim 3, wherein said output unit 90 displays, via said display device, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory unit 70, according to the mode of said switching circuit 50.

10. A communication terminal according to Claim 3, wherein said output unit 90 reproduces, via said speaker or microphone, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory part 70, according to the mode of said switching circuit 50.

11. A communication terminal according to Claim 3, wherein said output unit 90 displays, via said display device, the signals or the information such as music, voice or images for advertisement, pre-stored in said memory part 70, according to the mode of said switching circuit 50.

12. A communication terminal according to Claim 2 or 3, wherein said output part 90 reproduces, via said speaker or microphone, the signals or the information such as music, voice or images for

advertisement, inputted via said information signal processing unit 30, according to the mode of said switching circuit 50, and displays the information of images for advertisement on said display device.

13. A communication terminal according to Claim 2 or 3, wherein said output part 90 reproduces, via said speaker or microphone, the information such as music, voice or images for advertisement, pre-stored in said memory unit 70, according to the mode of said switching circuit 50, and displays the information of images for advertisement on said display device.

14. An advertising method by means of a communication terminal, which comprises the steps of:

pre-storing the information of music, voice, or images for advertisement as a call signal in a computer installed at a private branch exchange or a base station 100;

detecting whether a dial signal has been inputted to the exchanger of said private branch exchange or base station from an originating communication terminal 200;

selecting, according to said dial signal, as to whether it is a call within the private branch exchange or the same base station, or a call from the other exchanging network or base station 300;

transmitting a ring-back tone to an answering communication terminal while simultaneously transmitting the information such as music, voice, or images for advertisement, pre-stored in the computer, to the originating communication terminal by a call signal 400;

reproducing the information such as music, voice, images for advertisement as an answer tone via a speaker of said answering communication terminal 500 ; and

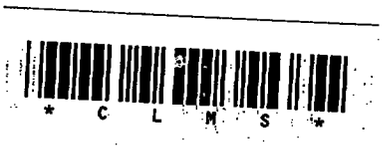
repetitively executing or terminating the step 500 according to the answer signal transmitted to the private branch exchange or the base station from the answering communication terminal 600.

15. The advertising method by means of the communication terminal according to Claim 14, wherein said communication terminal is a

wired or wireless communication terminal.

16. The advertising method by means of the communication terminal according to Claim 14, wherein said communication terminal is a wired or wireless image communication terminal.

17. The advertising method by means of the communication terminal according to Claim 15, wherein said step 500 comprises reproducing the information such as music, voice or images for advertisement as an answer tone via said speaker on the answering communication terminal.

18. The advertising method by means of the communication terminal according to Claim 16, wherein said step 500 comprises displaying the information such as music, voice or images for advertisement via said display device on the answering communication terminal.

19. The advertising method by means of the communication terminal according to Claim 15 or 16, wherein said step 500 comprises reproducing the information such as music, voice or images for advertisement as an answer tone via said speaker on the answering communication terminal, while simultaneously displaying the information of images for advertisement via said display device on the answering communication terminal 20.