A Method and a System for Realizing the Interactive Information through the Multimedia

Technical Field

The present invention relates to communication technique field, and more particularly, to a method and a system for realizing the interactive information through the multimedia.

Background Art

With the fast development of mobile communication, the functions of user terminal will become more and more as well as stronger and stronger. User terminals support online browsing, digital photography, television program play and network video play and the like, and users can realize operations like online transaction and online bank transfer through a user terminal.

Currently, a major source of income of many Internet service providers is advertisements. Therefore, the multimedia files played by many user terminals are some advertising information, and the said user terminals include mobile phones, computers and televisions. However, when the user watches a multimedia file through the user terminal, the user terminal only support playing the multimedia file, while does not support the user's trigger when playing the multimedia file so that the user cannot make connection through the user terminal to the server that provides services related to the advertisement while viewing the advertising information; rather, the user needs to manually input the website address to log on to the website to browse information related to the presented objects, and then logs on to the online bank to make payment on deciding to purchase, and accesses the server; or carries out telephone purchase additionally.

To sum up, the prior art is unable to access the server through the multimedia advertisements.

Summary of the Invention

The present invention provides a method and a system for realizing interactive information through the multimedia, to solve the problem in the prior art that it is unable to access the server through the multimedia advertisement.

The method of the present invention includes:

A. a user terminal parses and plays the multimedia files, which contains the interactive information carrying the communication sign;

B. the said user terminal accesses the server based on the trigger of the communication sign carried in the interactive information by the user.

The said interactive information carrying the communication sign in step A is displayed by the played multimedia files directly.

Step A includes:

A1: the user terminal parses and plays the multimedia files, and stores the interactive information carrying the communication sign, wherein the interactive information is obtained by parsing;

A2: during the process of playing the multimedia files, the user terminal displays the stored interactive information via a first information trigger window on receiving the trigger signal indicating that the user desires to display the interactive information,.

The interactive information obtained by parsing in step A1 includes: a first type of interactive information and a second type of interactive information.

The steps for displaying the said interactive information in the first information trigger window in step A2 include:
the user terminal continuously displays the first type of interactive information in the first information trigger window; or displays the second type of interactive information in the first information trigger window, and during playing the multimedia files, updates the second type of interactive information displayed in the first information trigger window by using the current second type of interactive information.

The format of the interactive information in the multimedia files is TLV format.

The said communication sign includes website address information and/or telephone number information.

The interactive information further includes one or more of vendor description information, transaction information, discount information and shopping-ticket returning information.

The transaction information includes one or more of beneficiary bank account information, vendor's name, names of the presented objects and unit price of the presented objects.

The system of the present invention includes: a user terminal and a server.
The said user terminal is used for parsing and playing the multimedia files, wherein the multimedia files include interactive information carrying a communication sign, and accessing the server based on the trigger of the communication sign carried in the interactive information by the user.
The server is used for providing access connection for the user terminal.

The user terminal includes: a multimedia file storage unit, a multimedia player and an interactive information storage unit;

The multimedia file storage unit is used for storing the multimedia files;

The media player is used for parsing and playing the multimedia files, and displaying the interactive information obtained by parsing, and accessing the server based on the trigger of the communication sign carried in the interactive information by the user;

The interactive information storage unit is used for storing the interactive information carrying the communication sign, wherein the interactive information is obtained by parsing the multimedia files.

The media player includes: a parsing unit, an operating unit and an interactive unit.

The parsing unit is used for parsing the multimedia files;

The operating unit is used for playing the multimedia files, and during playing the multimedia files, reading the interactive information that the user desires to display from the interactive information storage unit on receiving the trigger signal indicating that the user desires to display the interactive information,, and displaying the interactive information via the first information trigger window;

The interactive unit is used for accessing the server based on the trigger of the communication sign carried in the interactive information by the user.

The interactive information includes a first type of interactive information and a second type of interactive information.

Then, the interactive information storage unit includes:

a first storage unit for storing the first type of interactive information;

a second storage unit for storing the second type of interactive information;

The parsing unit is further used for updating the second type of interactive information already stored in the second storage unit by using the current second type of interactive information obtained by parsing during parsing the multimedia

files.

The operating unit is used for continuously displaying the first type of interactive information in the first information trigger window; or displaying the second type of interactive information in the first information trigger window, and during playing the multimedia files, updating the second type of interactive information displayed in the first information trigger window by using the current second type of interactive information.

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The transaction information includes one or more of beneficiary bank account information, vendor's name, names of the presented objects and unit price of the presented objects.

The technical solution of the present invention, in which the user terminal parses and plays the multimedia files, wherein the multimedia files includes interactive information carries the communication sign, and the user terminal accesses the server based on the trigger of the communication sign carried in the interactive information by the user, enables the user terminal to access the server by the interactive information in the multimedia and makes the transactions of the user more convenient and quick.

Brief Description of Accompanying Drawings

Fig. 1 is a flowchart of the method according to the present invention;

Fig. 2 is a flowchart of the method according to an embodiment of the present invention;

Fig. 3 is a structure schematic view of the system according to an embodiment of the present invention;

Fig. 4 is a storage structure schematic view of the interactive information in the interactive information storage unit according to the present invention;

Fig. 5 is storage structure schematic view of the interactive information in AVI format in the interactive information storage unit according to the present invention;

Fig. 6 is a storage structure schematic view of the transaction information sub-TLV carried in the interactive information in the interactive information storage unit according to the present invention.

Detailed Description of Preferred Embodiments

The central concept of the present invention is that the user terminal parses and plays the multimedia files, wherein the multimedia files include interactive information carrying a communication sign, and the user terminal accesses the server based on the trigger of the communication sign carried in the interactive information by the user;

Wherein, the format of the interactive information in the multimedia files is TLV

format;

The communication sign includes website address information and/or telephone number information;

The interactive information is contained in the heads of the multimedia files, and/or in the bodies of the multimedia files.

The interactive information further includes one or more of vendor description information, transaction information, discount information and shopping-ticket returning information.

The transaction information includes one or more of beneficiary bank account information, vendor's name, names of the presented objects and the unit price of the presented objects.

Referring to Fig. 1, the method according to the present invention includes the following steps:

S101: the user terminal parses and plays the multimedia files, wherein the multimedia files include interactive information carrying the communication sign;

The said user terminal may be a GPRS mobile phone, a 3G mobile phone, a 4G mobile phone, a computer, a PDA or a digital television, etc.;

The user terminal supports online payment, and supports Internet-based user identity authentication, user signature and electronic payment;

The user terminal supports popping up advertisement-related interfaces via the trigger of physical buttons or logic buttons, said physical buttons may be different for different user terminals: for mobiles, they refer to one or more specific buttons in the mobile phone keyboard; for digital televisions, they refer to one or more physical buttons in the remote controller; and for computers, they refer to one functional key or a combination of several keys in the keyboard or the functional

key of the mouse; said logic buttons refer to the logical buttons on the media player interface, and the function of the logical buttons is to pop up a payment interface of the objects presented in the advertisement, a selection interface of the advertisement or a menu selection interface during playing the multimedia files.

The format of the multimedia files may be JPEG, MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21, H.263, H.264 or AVI, and the like.

The interactive information included in the multimedia files played by the user terminal is encoded-and-written into the multimedia files while making the multimedia files.

Preferably, the interactive information carrying the communication sign is displayed in the first information window directly when playing the multimedia files;

Preferably, the user terminal parses and plays the multimedia files, stores the interactive information carrying the communication sign, wherein the interactive information is obtained by parsing; and during the process of playing the multimedia files, the user terminal displays the stored interactive information via the first information window on receiving a trigger signal indicating that the user desires to display the interactive information,;

The interactive information obtained by parsing includes: a first type of interactive information and/or a second type of interactive information;
Then, the steps for displaying the interactive information in the first information window include:
The first type of interactive information is displayed continuously in the first information window; and during playing the first type of interactive information,

the second type of interactive information is updated and displayed in the first information window by the current second type of interactive information;

The format of the interactive information in the multimedia files is TLV format;

The communication sign includes website address information and/or telephone number information;

S102: the said user terminal accesses the server based on the trigger of the communication sign carried in the interactive information by the user.

The user terminal receives the interactive information triggered by the user from the first information window, and accesses the server by using the received communication sign carried in the interactive information;

The user terminal creates a call connection according to the telephone number information triggered by the user, or logs on to the server according to the website information triggered by the user;

The interactive information further includes one or more of vendor description information, transaction information, discount information and shopping-ticket returning information;

The transaction information includes one or more of beneficiary bank account information, vendor's name, names of the presented objects and the unit price of the presented objects.

Referring to Fig.2, the method according to an embodiment of the present invention includes the following steps:

S201: encoding-and-writing the interactive information into video files;

The video files may be multimedia files in any format, and the present embodiment takes files in AVI format as an example to make explanations;

Each item of the interactive information is stored in the multimedia files in TLV format, that is, the format of Type-Length-Data, and all the advertisement information can be assembled in an interactive information TLV;

The interactive information includes:

vendor description information, of which the type can be defined as a number of one byte, e.g., with a value of 0, or can be a character string with a fixed length, e.g., for the AVI file structure, the 4 bytes 'DISC' can be used to represent the sub-TLV type. Here the English description format of AVI is used, and the 'DISC' is the abbreviation for vendor description.

transaction information, of which the type can be defined as a number of one byte, e.g., with a value of 1, or can be a character string with a fixed length, e.g., for the AVI file structure, the 4 bytes 'BUYA' can be used to represent the sub-TLV type, which is the abbreviation for buy address. The TLV further includes some sub-TLVs, e.g., sub-TLV like vendor address, unit price of the presented objects, name of linkman, etc.

website address for introducing buying sites: of which the type can be defined as a number of one byte, e.g., with a value of 2, or can be a character string with a fixed length, e.g., for the AVI file structure, the 4 bytes 'PURC' can be used to represent the sub-TLV type, which is the abbreviation for purchase;

website address of the detailed information of the presented objects: the type of which can be defined as a number of one byte, e.g., with a value of 3, or can be a character string with a fixed length, e.g., for the AVI file structure, the four bytes 'INFO' can be used to represent the sub-TLV type, which is the abbreviation for information;

website address of the discount and sale information: the type of which can be defined as a number of one byte, e.g., with a value of 4, or can be a character string with a fixed length, e.g., for the AVI file structure, the four bytes 'DCNT' can be used to represent the sub-TLV type, which is the abbreviation for discount;

telephone number information: the type of which can be defined as a number of one byte, e.g., with a value of 5, or can be a character string with a fixed length, e.g., for the AVI file structure, the four bytes of 'TELN' can be used to represent the sub-TLV type, which is the abbreviation for television number; as for the user terminal that does not support telephone dialing function, this item will be hidden automatically and will not be displayed;

All the said interactive information is combined into a TLV, the type of which is interactive information TLV, and for the AVI file, a TLV of 'COMC' type, or called list according to the naming of the AVI, can be added to the AVI head via the interactive information. The interactive information TLV may include the respective sub-TLVs, wherein the vendor description information sub-TLV is necessary for each vendor, and in the respective sub-TLVs of the same vendor, it must be placed in the first position, and other sub-TLVs are optional. However, usually for each vendor, at least one of the other types of sub-TLVs is required;

The whole TLV can be written in the head of the video file, or in the video file body; just like the writing manner of captions. The realization manner that the

whole TLV may be written in the head of the video files is simple, however, one video file only supports advertisements of one or several presented objects or service information, which is less flexible; for the manner that the whole TLV may be written in the video file body, the written interactive information can be updated by the contents of the interactive information with the play of the video files, which is more flexible; in addition, for different multimedia files, the interactive information may have different writing manners;

For the practical realization, video files may support both writing manners; the interactive information written in the head of the video files is effective during the whole life cycle of the video file, while the interactive information written in the body of the video files is updated continuously with the play of the video files;

S202: parsing the video files and the interactive information carried in the video files;

The interactive information encoded-and-written in the video files is parsed by the video files by the media player of the user terminal during parsing the video files, and the parsing result is sent to the interactive information storage unit of the user terminal;

S203: reading and displaying the vendor description information carried in the interactive information;

When the user has an intention for purchasing or for further finding out information related to the presented objects or service, the user will press the trigger button, and at this time, the user terminal will display an interactive interface, and the media playing program of the user terminal will read contents in the interactive information storage unit and displays them via the interactive

interface;

The interactive interface may be a menu or a graphic selection interface, the detailed contents of the interface or the menu lie on the interactive information encoded-and-written into the video files in step S201, and the interactive interface may be a multi-level menu or a multi-level interface, and what is displayed on the first level interface of the interactive interface is the vendor description information, namely, the contents of the vendor description information sub-TLV for the respective vendors;

S204: reading and displaying the transaction information, websites for introducing the buying sites, websites for presenting the detailed information of the objects, websites of discount and sale information, and telephone number information carried in the interactive information.

When the user selects a vendor description information of a vendor, the interactive interface will pop up a secondary menu or interface, and the contents of the secondary menu or interface are transaction information, website address for introducing the buying sites, websites for obtaining more goods information, websites of discount and sale information, and telephone number information etc.;

S205: logging on to the server and carrying out online transaction

After the user selects an operation with respect to a presented object or service information from the secondary menu or interface of the interactive interface, the user terminal is triggered and will connect to the corresponding bank payment website, goods information website, etc., and the interactive interface will pop up the browser interface automatically, wherein the website address of the browser will be filled by the user terminal automatically, and the browser logs on to the

corresponding Internet website through Internet, then the user can perform corresponding operation via the displayed browser interface and carry out online transaction;

For the user terminal that supports telephone dialing, a call connection can be created directly by the telephone number information triggered by the user.

Referring to Fig. 3, the system according to the present invention includes: a user terminal 30 and a server 31;
The user terminal 30 includes: a multimedia file storage unit 301, a media player 302, and an interactive information storage unit 303;
The media player 302 includes: a parsing unit 3021, an operating unit 3022 and an interactive unit 3023;
The interactive information storage unit 303 includes: a first storage unit 3031 and/or a second storage unit 3032.

The user terminal 30 is used for parsing and playing the multimedia files, wherein the multimedia files includes interactive information carrying the communication sign, and accessing the server 31 based on the trigger of the communication sign carried in the interactive information by the user;
The server 31 is used for providing access connection for the user terminal 30;

The multimedia storage unit 301 stores the multimedia files, wherein the multimedia files include interactive information carrying the communication sign;

According to the present embodiment of the system, the said multimedia files are video files in AVI format;

The current commonly used multimedia files usually use the TLV structure or

TLV-like structure, and therefore respective types of multimedia files are suitable for the storage of the interactive information;

The interactive information is included in the video file head and/or the video file body;

For the video files in AVI format, the following two solutions can be used to write the interactive information into the multimedia files:

Solution one: writing the interactive information in the video file head, and the interactive information forms a new list, namely, the TLV is called a 'COMC' list in the AVI file format, and the 'COMC' list is written below the 'avih' chunk in the 'hdrl' list of the AVI, and in this way, during playing the whole video file, the interactive information is fixed and will not change with the playing of the video files;

Solution two: writing the interactive information in the video file body, which is similar to the 'txts' stream for displaying captions; an advertising information stream can be added for the interactive information, and the advertising information may change dynamically like the 'txts' stream; the advertising stream is used to load the TLV composed of the interactive information, and the interactive information supported by this manner will change dynamically during playing the video files;

The media player 302 parses and plays the multimedia files, and displays the interactive information obtained by parsing, and accesses the server 31 automatically or based on the trigger of the communication sign carried in the interactive information by the user;

The interactive information storage unit 303 is used for storing the interactive information carrying the communication sign, wherein the interactive information is obtained by parsing the multimedia files; Fig. 4 shows a structure schematic view of the interactive information stored in the interactive information storage unit 303;

Fig. 5 shows the storage structure schematic view of the interactive information in AVI format; According to the present embodiment, the interactive information includes: vendor description information, transaction information, discount information, shopping-ticket returning information and buying address information;

The transaction information includes: bank website address information, beneficiary bank account information, vendor's name, names of the presented object, unit price information of the presented objects and telephone number information;

The structure of the transaction information sub-TLV is shown in Fig. 6; and the sub-TLVs included in the transaction information sub-TLV are: sub-TLV of the website address of online bank, the AVI type of which is BKAD (bank address); bank account sub-TLV, the AVI type of which is BKAC (bank account); vendor's name sub-TLV, the AVI type of which is VEND (vendor); sub-TLV of the name of the presented object, of which the AVI type is PROD (product); sub-TLV of the unit price of the presented object, of which the AVI type is PRIC (price);

It is necessary to provide a lock when modifying the contents in the interactive information storage unit 303, and at this time no program is allowed to access the contents, and they can only wait. Only the media player 302 has the right to modify the contents in the interactive information storage unit 303;

The interactive information storage unit 303 can be located in any storage media, and the size of the storage area depends on the number of items of the supported advertising information and the size of the storage capacity occupied by each of the items;

Wherein, the interactive information can be classified into a first type of interactive information and a second type of interactive information according to the different manners via which the interactive information is written into the multimedia files, wherein the interactive information written in the multimedia file head is the first type of interactive information, and the interactive information written in the multimedia file body is the second type of interactive information;

The parsing unit 3021 is used for parsing the video files, wherein the video files include interactive information carrying the communication sign, and for transmitting the parsed interactive information carrying the communication sign to the interactive information storage unit 303, wherein the first type of interactive information obtained by parsing is transmitted to the first storage unit 3031; and the second type of interactive information obtained by parsing is transmitted to the second storage unit 3032;

Then, the first storage unit 3031 is used for storing the parsed first type of interactive information, and the first type of interactive information is parsed and stored when the parsing unit 3021 starts to parse the video files;

The second storage unit 3032 is used for storing the parsed second type of interactive information, and updating the stored second type of interactive information itself by the currently received parsed second type of interactive information;

The operating unit 3022 is used for playing the multimedia files, and during playing the multimedia files, reading the interactive information that the user desires to display from the interactive information storage unit 303 on receiving the trigger signal indicating that the user desires to display the interactive information, and displaying the interactive information via the first information window, and continuously displaying the first type of interactive information in the first information window; or displaying the second type of interactive information in the first information trigger window, and during the process of playing the multimedia files, updating the second type of interactive information displayed in the first information trigger window by using the current second type of interactive information;

The first type of interactive information and the second type of interactive information can exist alone according to the practical need, and the detailed realization is the same as what mentioned above, these will not be explained in detail.

The interactive unit 3023 is used for accessing the server 31 based on the trigger of the communication sign carried in the interactive information by the user;

For example, after the user accesses the payment bank website through the interactive unit 3023, the operating unit 3022 pops up the electronic payment interface of the online bank, in which the producer's or vendor's name, goods names, unit price of the goods, number for purchasing and bank account, etc. are included, and the user just needs to fill in information like the number for purchasing.

To sum up, the present invention adds interactive information related to the presented objects or service information into the interactive information, e.g.,

transaction information, website address of the vendor, discount web site, service telephone number, etc.; via these interactive information, the user can directly contact with the vendor, producer or service provider via Internet or telephone conveniently, wherein the service provider includes web service provider or bank. What described above greatly facilitates user's operation. This is different from the current advertising mode; and the current advertising mode is usually unilateral and the advertising contents are pure advertisements, after viewing the advertisements, the user needs a remembering or recording process for the contents of interest; for the user, viewing the advertisements and the payment operation of the objects presented in the advertisements are separated;

The media player according to the present invention, on the one hand, parses the newly added advertising information TLV, and on the other hand, is able to support the user's trigger; when the user has an intention to purchase or find out further information on the presented object, via the user terminal's keys, touching the displaying screen and clicking a functional key of the media player, or the combination of these actions, the media player can pop up the selection interface automatically, and the selection interface can either be a menu selection interface or a panel selection interface; after the user performs one or more selections through the selection interface, the selection interface will automatically display the interface that the browser logs on to the server, and the user can perform related online payment or web access; for the user terminals like mobile phones, a call connection can be created. Therefore, by using the technical solution of the present invention, the user does not need to input website information or telephone number manually, which facilities the user's operation.

According to the present invention, the media advertisements and user's electronic payment are connected. After viewing discount information, the user can decide to buy quickly, from viewing related advertising contents to deciding to purchase and

to paying fees, the whole process can be accomplished immediately. As for the user that does not have the intention to purchase or find out further information about the presented objects, the multimedia files will not pop up any contents during the playing process. Therefore, using the technical solution of the present invention will make the user's buying operation much more convenient.

Obviously, those skilled in the art can make any modifications and variations to the present invention without departing from the spirit and scope of the present invention. In this way, if the modifications and varieties to the invention are within the scope of the claims of the present invention and the equivalents, the present invention is also intended to contain these modification and varieties.

Claims

1. A method for realizing interactive information through multimedia, characterized in,

A. a user terminal parses and plays multimedia files, wherein the said multimedia files include interactive information carrying a communication sign;

B. the said user terminal accesses a server based on the trigger of the communication sign carried in the interactive information by the user.

2. The method of claim 1, characterized in, the said interactive information carrying the communication sign in step A is displayed directly in a first information window when playing the multimedia files.

3. The method of claim 1, characterized in, the step A includes:

A1. the user terminal parses and plays the multimedia files, and stores the interactive information carrying the communication sign, wherein the interactive information is obtained by parsing;

A2. during playing the multimedia files, the user terminal displays the stored interactive information via a first information window on receiving a trigger signal indicating that the user desires to display the interactive information.

4. The method of claim 1 or 2 or 3, characterized in, the said interactive information includes: a first type of interactive information and/or a second type of interactive information;

the first type of interactive information is continuously displayed in the first information window;

the second type of interactive information is updated and displayed in the first information window by using a current second type of interactive information during playing the multimedia files.

5. The method of claim 1, characterized in, the format of the interactive information in the said multimedia files is TLV format.

6. The method of claim 1, characterized in, the said communication sign includes website address information, and/or telephone number information.

7. The method of claim 1, characterized in, the said interactive information further comprises one or more of vendor description information, transaction information, discount information and shopping-ticket returning information.

8. The method of claim 7, characterized in, the said transaction information includes one or more of beneficiary bank account information, vendor's name, names of the presented objects and the unit price information of the presented objects.

9. A system for realizing interactive information through multimedia, characterized in, the system includes a user terminal and a server,
the said user terminal is used for parsing and playing multimedia files, wherein the said multimedia files include interactive information carrying a communication sign, also the said user is used for accessing the server based on the trigger of the communication sign carried in the interactive information by the user;
the said server is used for providing an access connection for the said user terminal.

10. The system of claim 9, characterized in, the user terminal includes a multimedia file storage unit, a media player and an interactive information storage unit;
the said multimedia file storage unit is used for storing multimedia files;
the said media player is used for parsing and playing the multimedia files, and displaying the interactive information obtained by parsing, and accessing the server based on the trigger of the communication sign carried in the interactive information by the user;

the interactive information storage unit is used for storing interactive information carrying a communication sign, wherein the interactive information is obtained by parsing the multimedia files.

11. The system of claim 10, characterized in, the media player comprises: a parsing unit, an operating unit and an interactive unit;
the parsing unit is used for parsing multimedia files;
the operating unit is used for playing the multimedia files, and during playing the multimedia files, reading the interactive information that the user desires to display from the interactive information storage unit automatically or when it receives trigger signal indicating that the user desires to display the interactive information, and displaying the interactive information via the first information window;
the interactive information is used for accessing the server based on the trigger of the communication sign carried in the interactive information by the user.

12. The system of claim 11, characterized in, the interactive information includes a first type of interactive information and/or a second type of interactive information;
the said interactive information storage unit includes:
a first storage unit for storing the first type of interactive information; and/or
a second storage unit for storing the second type of interactive information;
the parsing unit is further used for, during parsing the multimedia files, storing the first type of interactive information, and/or updating the second type of interactive information stored in the second storage unit by using the current second type of interactive information obtained by parsing;
the operating unit is used for continuously displaying the first type of interactive information in the first information window; and/or displaying the second type of interactive information in the first information window, and during playing the multimedia files, updating the second type of interactive information displayed in the first information window by using the current second type of interactive information.

13. The system of claim 9, characterized in, the format of the interactive information in the multimedia files is TLV format.

14. The system of claim 9, characterized in, the communication sign includes website address and/or telephone number information.

15. The system of claim 9, characterized in, the said interactive information further includes one or more of the vendor description information, transaction information, discount information and shopping-ticket returning information.

16. The system of claim 15, characterized in, the said transition information includes one or more of the beneficiary bank account information, vendor's name, names of the presented objects and unit price information of the presented objects.