METHOD AND SYSTEM FOR TRANSMITTING INTERACTIVE CONTENTS

TECHNICAL FIELD

The present invention relates to delivery and access of contents. In particular, it relates to distribution, access and feedback of internet-based interactive contents between content providers and content receivers via wireless network.

BACKGROUND

Internet-based interactive and/or multimedia content such as on-line movies, video / audio clips, animation or online game are becoming a major part of the information intended for distribution through the third generation (3G) mobile services. Effective distribution services of multimedia contents during the period of second-generation upgrades (2.5G) are required, which will help service providers attract more customers and to smooth the migration into 3G.

Presently, the major way to distribute internet-based interactive, multimedia content to mobile electronic devices such as mobile phones or personal digital assistants (PDAs) is through web-based environment. Users of mobile phones are presented with an information-access environment similar to that on a personal computer, such as the mobile version of Internet Explorer through which contents and information are searched and receivable by browsing through a hierarchy of menus and hypertext links.

In order to access and consume a multimedia content such as a movie or video clip, users typically experiences browsing through many levels of menus, sub-menus and page links before the desired content can be reached.

For users who have less or very little experience of internet browsing, this manner of accessing interactive, multimedia contents is rather cumbersome and time-consuming. In addition, due to the dedicated applications and the constraints in size in order to meet the requirement of portability and to be cost-effective, most models of mobile devices are designed with a limited number of operation keys. Accordingly, browsing for information or contents using a mobile phone under the internet-based environment becomes even less efficient. Moreover, as the display screen of a mobile device is much smaller than that of a computer monitor, available screen real estate also limits the browsing efficiency. As a result, a great deal of interactive contents created and placed on the Internet for distribution, in particular those connected through deeper level menus / web page links become very difficult to be accessed by mobile devices. In one aspect, users face problem to access desired contents and on the other hand, service providers of these contents also receive low rate of visits hence may suffer a low return from their business investments.

It is therefore a need to provide a system and method to break the barrier between internet-based content providers and mobile device users, to enable smooth and effective access and transmission of internet orientated, interactive contents between content providers and users, in particular the majority of the public who are presently or, potentially mobile device users but are not familiar, or encountered problems with pc-based internet browsing experience.

SUMMARY OF THE INVENTION

In accordance with a first aspect of the present invention, there is provided a method for transmitting internet-based interactive content between a first party who is a content provider via wireless network, and a second party who is a content user or content consumer. The method comprises allocating a channel to each one of a plurality of content supplied by the first party; providing indicators of each channel to the second party for selection to activate a channel; detecting an input from the second party, and delivering to the second party a series of content through an activated channel. Each channel has a first end for connecting to the first party and a second end for connecting to the second party. Each channel has an indicator for addressing the channel. A channel is activated to connect the first party and the second party for transmitting contents when the input made by the second party matches the indicator of the selected channel.

According to the method, firstly, services created by content providers are each allocated with a dedicated channel. Each channel forms a direct transmission path between the content providers and the users. Each channel has one end, such as a server side, connected to a content provider for receiving the content, and another end, such as a client side, connected to an interface through which the users are able to access the contents. An indicator is provided for each channel, which is displayed on the interface for users to select, and serves as an automatic link to address the channel. When interested in accessing a particular content, a user activates the corresponding channel, by inputting at the interface a channel number which matches the indicator of a particular channel. When a channel is activated, contents allocated therewith can then be transmitted or delivered to the user, and performed on the interface for the user to consume.

When content from another source is desired to access, the user keys-in another number or a command at his mobile device, which matches the indicator

of a corresponding channel allocated to said another content source, channel activation can then be switched to this channel, and contents are accessed in the same manner.

In accordance with a second aspect of the present invention, there is provided a system for transmitting interactive content between a first party who is a content provider and a second party who is a content user or content consumer. The system comprises a plurality of channels each being allocated to a corresponding series of content supplied by the first party, and an interface for the second party to access. Each channel has a first end for connecting to the first party and a second end for connecting to the second party. The second end has an indicator for addressing said channel. The interface has a channel selector for activating one of the plurality of channels connected to the interface. When interested in receiving a particular series of content, the second party operates the channel selector to match the indicator so that to activate the channel allocated to this series of content. The system therefore delivers the content to the user.

In one embodiment of the present invention, a unique number is used as indicators to address each channel. Accordingly, to activate a particular channel, such as channel number 10, the user keys-in the number "10" at the interface so that to match the channel number 10 to activate this channel. To switch to the next channel, e.g. channel 11, the user may either press a "next" or "forward" key once, or directly key-in the number "11" to activate channel 11.

The first party may be one or more content providers who supply interactive contents such as digital audio-visual products. Examples of content providers include movie studios, news agencies and sport game media. The second party may be one or more content consumers who are interested to receive the audio-visual products to consume, such as users of mobile phones or personal digital assistants (PDAs).

If a user knows the relationship between a channel number and a content provider, he may directly key-in the channel number to the mobile device so that to activate the particular channel. Alternatively, he may use the "up", "down" "forward" or "backward" keys provided on the mobile device to navigate through the channels so that to switch the current channel to a next or a previous channel.

In one embodiment, all the channels are connected to the interface in parallel, so that selection and activation of each channel can be made under same steps of operations. In a further embodiment, one or more of the channels are reserved as a guide or a portal channel which provides introductions and previews of content channels. The guide or portal channel(s) may also provide links to categories of the channels.

In this context, the term "delivering" includes a situation where the requested series of content reach the user, which is ready for being performed at any time without the need to further connect to the content provider. In one embodiment, the content is considered delivered when the contents are downloaded and stored at the user's device, in which the user may decide to view or listen to the contents at any time. In another embodiment, the content is considered delivered when the contents are played live at the user's device.

In accordance with a third aspect of the present invention, there is provided an electronic mobile device for use in the method and system according to the present invention. The device enables the selecting, receiving and feedback of interactive content according to the present invention. The device comprises a radio frequency transceiver for receiving the content from the content providers and for transmitting content selections to the content providers. The device further includes a decoder that converts the received radio frequency signals to the list of indicators as described above. The device also includes a data storage medium for storing code that, when executed, performs the steps of displaying on the device the list of indicators, transmitting a signal which indicates a selected

indicator, and receiving interactive content through the channel corresponding to the selected indicator

Other aspects and advantages of the present invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, illustrating by way of example the inventive concept of the present invention. Further, preferred features of the invention are set out in the dependent claims appended thereto.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other aspects and advantages of the present invention will be described in detail with reference to the accompanying drawings, in which:

Fig. 1 is a schematic diagram showing a system for transmitting interactive information according to one embodiment of the present invention;

Fig. 2 is an enlarged view showing an interface of a user's mobile device for use in a system illustrated in Fig. 1;

Fig. 3 is an enlarged view showing an interface of a user's mobile device for use in a system illustrated in Fig. 1 when a particular channel is activated;

Fig. 4A is an enlarged view showing an interface of a user's mobile device for use in a system illustrated in Fig. 1 when a supplementary information of a selected channel is accessed;

Fig. 4B is an enlarged view showing an interface of a user's mobile device for use in a system illustrated in Fig. 1 when a channel preview screen is activated;

Fig. 5 is a schematic diagram showing a system for transmitting interactive information according to a further embodiment of the present invention;

Fig. 6 is an enlarged view showing an interface of a user's mobile device in a system illustrated in Fig. 5;

Fig. 7 is a flow chart showing a method for transmitting interactive content according to one embodiment of the present invention, and

Fig. 8 is a simplified clock diagram of an electronic device for use in the method and system according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in Fig. 1 and Fig. 2, a system 110 according to one embodiment of the present invention is provided for enabling transmission of internet-based interactive contents, such as movies, videos, audios, games, etc. between content providers 120 and users 130. By way of example only, the plurality of interactive contents includes content series 1, 2, 3 and n which are provided by content providers 122, 124, 126 and 128, respectively.

The system 110 has a plurality of communication channels, wherein four channels 112, 114, 116, 118, are allocated each to a respective content provider 122, 124, 126 and 128. Each communication channel has a respective first end 112a, 114a, 116a and 118a for connecting to content providers 122, 124, 126 and 128 for receiving contents therefrom. Each communication channel also has a respective second end 112b, 114b, 116b and 118b for connecting to user interface 134 for distributing the contents thereto. Each channel forms a direct transmission path between content providers 122, 124, 126, 128 and users 130 via a wireless network 150.

The interface 134 is provided for direct access by each user 130. In one embodiment, interface 134 is in the form of a display screen 134a and a keypad 134b on a user's mobile device 132, such as a mobile phone or a personal digital assistant (PDA). All the contents from content providers 122, 124, 126 and 128, or a part thereof, are available for each user 130 to access under, for example, a service or subscription agreement between the system 110 and users 130.

Each channel has an indicator, such as a channel name or channel number 112c, 114c, 116c and 118c. In this embodiment, indicators of channels 112, 114, 116 and 118 map channel numbers 2, 4, 6 and 8 at interface 134, which correspond to contents from content providers 122, 124, 126 and 128,

respectively. Channel numbers 2, 4, 6 and 8 are displayed on interface 134 at each user's mobile device 132.

In this embodiment, a system channel 101 is reserved by the system 110 and named as channel number 1 which, instead of being allocated to a particular content provider, is allocated to the system itself to present information of other channels. For example, channel 101 is an environment showing introductions and/or promotions of other channels, providing links to the categories of contents, etc, as shown in Fig. 2. When users access the service, channel 101 is made available to users as a category guide to access other channels 112, 114, 116 and/or 118.

However, channel 101 and channels 112, 114, 116 and 118 are all parallelly connected to the interface 134. In this regard, the system 110 acts as a content provider which utilizes channel 101 to provide a special content which is a guide to other contents. Users may decide whether to have channel 101 appear as the default channel upon starting of the service. Alternatively, users may set any channel as the default channel to show up firstly each time when the service starts. Users can also set the last accessed channel to show up first when next time the service is accessed.

It should be appreciated that depending on the nature of contents and service behavior of the content providers, more than one channels, such as ten channels, may be reserved as system channels, which work the similar manner as channel 101 illustrated above. One system channel may be set to relate to one category of contents, such as movie. Another system channel may be set to relate to a different category of contents, such as music. A system having more than one system channel can be more efficient for administering content transmission services.

Fig. 2 shows a mobile phone 132 for receiving interactive contents through a system according to the present invention, started with system channel 101 as the default screen. Display 134a and keypad 134b serve as the interface 134 at which channel 101 is shown and mapped to channel 1. Interface 134 is configured to show system channel 101 as a default channel upon starting of the service for consuming the interactive content. Users are presented at display 134a by system channel 101 with an introduction or portal to other channels available for selection and access. Each channel is dedicated to a particular series of interactive content which the users subscribed to access.

In this embodiment, channel 101 provides an introduction window 160 and an index window 170. Introduction window 160 lists out channels with posters of contents presently recommended or promoted by content providers, together with the corresponding channel number. Users can access this channel by keying-in the channel number. In the example shown in Fig. 2, the channel currently under promotion can be accessed when users key-in the number "65".

Index window 170 provides users with a list of options and links, for example users with internet-searching experiences, to access contents according to the categories such as movie, music, travel, fashion, etc. A content transmission system having an index window according to the present invention provides users with the ability to access desired contents through an optional portal. Under this option, a user is able to access the desired contents by searching through content category, even if he is not sure as to which channel number provides the desired content.

To access a particular series of content, a user may either navigate through the available channels one after another by pressing the "forward" or "backward" keys provided on the mobile device 132, or key-in a number which matches the number of a channel. Taking channel number 4 as an example, channel 4 can be accessed when the user presses the "forward" key towards channel 4, or key-in

the number "4" from the keypad. Channel 4 can be activated accordingly, and the series of contents from content provider 124 is now delivered to the user.

Fig. 3 is an enlarged view showing a user's mobile device 300 for use in a system and method according to the present invention, when a particular channel is accessed and activated.

By way of example only, channel 4 is allocated to a sport news content which transmits sport news and related information from content provider 124. In addition to the main content related to a "today" event which is playable at display 134a, channel 4 also provides a highlightable screen object or a tag 310. Activation of tag 310 will link the user to information supplement to the main content under channel 4. In this example, tag 310 directs to "past news".

When desires to access the "past news", the user press the "up" or "down" key provided by the navigation button 136 to highlight the "past news" tag 310, and press the 'return" key 137 to activate tag 310. Information under "past news" is then shown on display 134a, as illustrated in Fig. 4A.

As shown in Fig. 4A, the interface under "past news" has more tags 410, 412, 414, 416 and 418 each of which is directed to one option or further information related to the "past news". Again, to access the information under each particular tag, the user may press the "up" or "down" key provided by the navigation button 136 so that to navigate through the tags one by one, and activate the tag to access information interested to the user. When one of the tags is highlighted, such as tag 418, the user can then press the "return" key 137 to activate tag 418 which directs to information under "read more".

According to another embodiment of the present invention, if navigation button 137 is reserved or configured to perform a different function, the system of the present invention is further capable to assign other keys such as the "tab" key

138 or even "soft keys" 139 and/or 140, to serve as the navigation key for selecting and highlighting the tags provided for accessing supplementary information under each particular channel.

In one example, soft key 140 is assigned to a function "Channel", which shown as "Chn" on display 134 referred to by label 420. By pressing soft key 140, a "Channel Switch" screen is activated, as shown in Fig. 4B.

The "Channel Switch" screen shown in Fig. 4B is an environment provided by the interface, and independent from all the channels, to allow user to flip through the indices or highlights of the channels available to access before activating any channel. The "Channel Switch" screen includes a preview window 430 showing screenshots of the contents of a particular channel. A description window 440 shows texts such as short descriptions and pricing of the content. With the "Channel Switch" screen activated, all navigation keys on navigation button 136 are reserved for flipping through the channels for preview.

Under the "Channel Switch" screen, soft key 140 is assigned to a function "Close", which shown "Close" on display 134 as label 420. Pressing key 140 allows return to the previous screen through which channel access becomes available.

It should be appreciated according to the illustration above, that capabilities and/or options for allowing users to access supplementary information embedded in a particular contents may be provided by the system at each and every channel in a similar manner. However, the numbers, properties and functions of the links, the tags, the assignment of key functions as well as the layout of the interface can be customized according to, hence independent from, the service behavior of a particular series of content.

Fig. 5 is a schematic diagram showing a system 510 for transmitting interactive information according to a further embodiment of the present invention. As shown in Fig. 5, the system 510 facilitates transmission of a plurality series of interactive contents between content providers 520 and users 530.

In this embodiment, the system 510 comprises an event server 590 connected between content providers 522, 524, 526, 528 and users 530. When any one of the contents, such as content of from content provider 526 is updated, event server 590 detects the update, and notifies the user for the update. Accordingly, as shown in Fig. 6, when content from content provider 526 is updated since last access, the system provides a sign or signal 690 to the user. When receiving the sign or signal 690, the user is notified that channel 6, which is allocated for content provider 526, is updated, hence he may only wish to activate channel 6 to access the updated information. By virtue of having a event server in the system, users need not to query each and every channel for updated information, but only queries, or being notified by, event server 590 for update, and activate channels with updated contents. Unnecessary network traffic can therefore be avoided and network operation efficiency can be increased accordingly.

According to another embodiment of the present invention, to further improve the network traffic and relief the server from having to know the complex business/service logics of each channel, event server 590 can be configured to only perform content update detection upon users' enquiry.

In this embodiment, event server 590 detects the status of one or more channels for update only when a status enquiry is received from a user. When the status update is obtained, event server 590 notifies the user, and disconnects from content providers. It is then up to the user to connect to the relevant channels for the updated information.

Reference is now made to Fig. 7. A method 700 for transmitting interactive content between a content provider and a user according to one embodiment of the present invention is provided. In a first block 710, the method providing allocating a plurality of channels each to a corresponding content provider for transmitting a corresponding series of contents. Each channel has a first end for connecting to the content provider for receiving the series of contents, and a second end for connecting to the user for distributing the series of content. Each channel is provided with an indicator for identifying the channel.

In a second block 720, the method further provides indicators of each channel to the user for selection, so that to activate a channel for transmitting a corresponding series contents through the activated channel. When a user input is detected at block 730, which matches the indicator of a channel, said channel will be activated so that the series of content can be delivered to the user, as shown in block 740.

In a preferred embodiment, the indicator is a number representing each channel and accordingly, the user input is made by keying-in the same number so that the channel can be activated.

Referring to Fig. 8, there is illustrated a simplified block diagram of an electronic device 800 for use in the method and system according to one embodiment of the present invention, that enables the selecting and receiving of interactive content according to the present invention. The device comprises a radio frequency transceiver 810 for receiving the content from the content providers and for transmitting content selections to the content providers. The device further includes a decoder 820 that converts the received radio frequency signals to the list of indicators as described above. The device also includes a data storage medium 830 for storing code that, when executed, performs the steps of displaying on the device the list of indicators, transmitting a signal which

indicates a selected indicator, and receiving interactive content through the channel corresponding to the selected indicator.

It should be appreciated by the foregoing that the present invention advantageously provides a method and system for transmitting interactive contents between content providers and users, which significantly increased the content access capability and efficiency for users, in particular mobile device users. According to the present invention,

Although embodiments of the present invention have been illustrated in conjunction with the accompanying drawings and described in the foregoing detailed description, it should be appreciated that the invention is not limited to the embodiments disclosed, and is capable of numerous rearrangements, modifications, alternatives and substitutions without departing from the spirit of the invention as set forth and recited by the following claims.

CLAIMS

1. A method for transmitting internet-based interactive contents between a first party and a second party via a wireless network, the method comprising:

allocating a channel to each one of a plurality of content supplied by the first party, each channel having a first end for connecting to the first party and a second end for connecting to the second party, each channel having an indicator for addressing the channel;

providing the indicators to the second party for selection;

detecting an input from the second party to activate a channel, and

delivering to the second party a content through an activated channel,

wherein a channel being activattable to connect the first party and the second party for transmitting contents when the input made by the second party matches the indicator of the selected channel.

2. The method as recited in claim 1, further comprising receiving a request from the second party to access supplementary information associated with a selected channel.

3. The method as recited in claim 2, wherein the supplementary information being accessible through a plurality of tags linked to said supplementary information.

4. The method as recited in claim 3, wherein the tags being selectable by switching through the tags one after another.

5. The method as recited in claim 1, further comprising providing a notification to the second party when at least one of the plurality of content is updated.

6. The method as recited in claim 5, wherein the notification being provided to the second party upon request.

7. The method as recited in claim 1, further comprising providing a guide channel for navigating through other channels.

8. The method as recited in claim 1, wherein each indicator being a number and the command being made through a numeric keypad.

9. A method for transmitting internet-based interactive contents between a first party and a second party via wireless network, the method comprising:

allocating a channel to each one of a plurality of content supplied by the first party, each channel having an identification number to address said channel;

providing the identification number of each channel to the second party for activating a channel, and

delivering to the second party a content through an activated channel,

wherein a channel being activated for transmitting contents when an input made by the second party matches the identification number of the selected channel.

10. The method as recited in claim 9, comprising receiving a request from the second party to access supplementary information associated with a selected channel.

11. The method as recited in claim 10, wherein the supplementary information being accessible through a plurality of tags linked to said supplementary information.

12. The method as recited in claim 11, wherein the tags being selectable by switching through the tags one after another.

13. The method as recited in claim 9, further comprising providing a notification to the second party when any one of the plurality of contents is updated.

14. The method as recited in claim 9, further comprising providing a guide channel for navigating through other channels.

15. A system for transmitting internet based interactive contents between a first party and a second party via wireless network, the system comprising:

a plurality of channels each being allocated to a corresponding of content supplied by the first party, each channel having a first end for connecting to the first party and a second end for connecting to the second party, each channel having an indicator for addressing said channel;

an interface accessible by the second party, the interface having a channel selector for activating one of the plurality of channels connected to the interface,;

wherein a channel being activatable for transmitting contents between the first party and the second party when the channel selector matches the indicator of the selected channel.

16. The system as recited in claim 15, wherein the interface being connected to the second end of each of the plurality of channels in parallel.

17. The system as recited in claim 16, wherein at least one of the plurality of channels being reserved for providing a navigation guide to the rest of the plurality of channels.

18. The system as recited in claim 15, wherein each channel further comprising a plurality of links to supplementary information associated with the content transmissible through said channel.

19. The system as recited in claim 18, wherein the interface further comprising a plurality of command executors for activating the links to access the supplementary information.

20. The system as recited in claim 19, further comprising means for mapping the command executors and the links.

21. The system as recited in claim 15, further comprising an event server for obtaining a status update from each one of the plurality of content

22. The system as recited in claim 21, further comprising a notice sign issued by the event server for notifying the second party when one of the plurality of contents transmissible to the interface is updated.

23. The system as recited in claim 15, wherein the indicator of each channel being a unique number and the channel selector being a numerical key pad.

24. A device for selecting and receiving multimedia content comprising:
a radio frequency transceiver;
a decoder operatively connected to the transceiver that converts received radio frequency signals to a list of indicators of discrete multimedia content channels; and
a data storage medium operatively connected to both the transceiver and the decoder, which data storage medium contains code that, when executed, performs the steps of
displaying on said device said list of indicators;
transmitting a signal indicative of a selection of one of the indicators; and

receiving multimedia content through the multimedia content channel corresponding to the selected indicator.

25. The device of claim 24, wherein the device is selected from the group consisting of mobile phones and personal digital assistants.

26. The device of claim 24, further comprising:

a numeric keypad through which the indicators are selected; and

a display screen on which posters illustrating selectable content are displayed.