METHOD AND SYSTEM FOR DETECTING MEDIA CONTENT CONSUMPTION AND GENERATING AND MANAGING FREQUENT VIEWER AWARD POINTS

Challenges are delivered to viewers and incorporated into media content. The challenges solicit responses from the viewers of the media content and the challenge output. Benefits are offered to the media content consumers. The responses are evaluated and bonus points are awarded to viewers based on the content and timeliness of the responses. The invention can be incorporated into a media content system or can operate in cooperation with the same. The bonus points are accumulated and maintained in an account that is associated with a subscriber. The subscriber can be presented with a catalog of benefits that can be purchased, at least in part, by applying the accumulated bonus points. Thus, media content is augmented by the inclusion of challenges, and viewers are awarded for viewing the content to receive the challenges and then responding to the challenges.
METHOD AND SYSTEM FOR DETECTING MEDIA CONTENT
CONSUMPTION AND GENERATING AND MANAGING
FREQUENT VIEWER AWARD POINTS

RELATED APPLICATIONS

[0001] This patent application claims the priority and the benefit of the filing date of United States Provisional Application for Patent assigned Serial Number 60/557,414 and having been filed on March 29, 2004, the contents of which is incorporated herein by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX

[0003] Not applicable.

BACKGROUND

[0004] The present invention relates to a method and a system for attracting content consumer audience members to view and participate in interactive and non-interactive media delivery, and, more particularly, to techniques for generating and accrediting frequent viewer reward points, accumulating and managing the reward points, and redeeming the points by offering an exchange
of goods and services (benefits) for points. Exemplary embodiments of the present invention further offer a method and a system for ensuring the effectiveness of commercial and non-commercial advertising, especially in the digital realm of broadcasting, where many opportunities entice the viewer or enable the viewer to skip and pass over the ads and other supplements. Recent developments in the digital world offer a wide range of communication networks for distributing media content. The worldwide web, cellular and global wireless networks, local fiber optic networks, electricity networks, satellite and digital terrestrial are just a few examples of means for broadcasting, carrying or delivering data and content to end consumers. The diversity continues with an ever-growing variety of devices for receiving and using media content: PVRs (Personal Video Recorder), PDAs (Personal Digital Assistant), portable computers, cellular phones and watches, game consoles, portable players, etc. The different means of consuming content are also evolving rapidly: downloadable content, content-on-demand, Pay-Per-Use/Play/View content, pre-recorded and personalized content, push content and many others. All of these may radically change the existing value chain of commercial broadcasting and pose a great challenge for content suppliers around the globe.

[0005] TV media delivers entertainment content and advertising content to its audience (e.g., over the air or by cable transmission). Media revenue may derive from viewers and/or from advertisers that advertise products and services through the media. It is in the interest of the media content providers to attract as many viewers as possible, to measure the number of viewers on a minute-by-minute basis, and to manage one or more databases of loyal viewers. The database of loyal viewers may be used to attract advertisers and to increase advertising fees. The advertising fees generally increase as the number of the viewers absorbing the ads increases, particularly if the viewers belong to a demographic group to which the ad appeals.
Moreover, the advertisers and/or media providers wish to provide the viewers with advertising and program content that is likely to be remembered and that will provide the advertisers with a measuring tool indicating the effect of their ads on the viewer. However, a typical viewer ignores and avoids the ads or often tunes his TV set to another station during the delivery of promotional or advertising content. Therefore, there is a need to motivate the viewer to observe the ads/program instead of changing to another channel or simply heading for the refrigerator. There is a need for feedback from the viewer that reflects his attentiveness to the ads or the program.

There are several methods that face the challenge of measuring viewers’ habits during TV broadcasting. For example, there are systems and methods for detecting channel selection behavior. Nielson (e.g., responsible for television’s Nielson ratings) collected data by placing an extra, dedicated box in the homes of participating consumers. In the case of Nielson, the boxes assist in analyzing what the consumer is watching on television and what the viewer’s demographic data is, and in collecting and eventually forwarding this data to interested parties. However, Nielson’s method is limited to a certain sample. Changing or increasing the sample is complicated and costly. US Patent Number 6,530,082 to Del Sesto, et al. discloses a system and method for providing the analysis of program viewership by automatically executing interactive applications that generate responses describing the viewers’ behavior. However, such methods are automated methods and do not indicate the awareness of the viewer to the program that is currently displayed on his TV set.

There are other means used for collecting information from the viewer or customer himself. One such example includes placing a card that includes a short survey within the packaging of a product. The purchaser of the product can obtain the card, complete the form and
send the form back to the manufacturer. Another such example is often seen in a shopping mall or other public location or even over the telephone, where a party physically queries members of the public regarding their purchasing habits, tastes, etc. Yet another example of data collection is "Hands up" marketing, in which special offers are made if consumers respond to questionnaires or send in requests for additional information. However, these methods are expensive, require heavy manpower in association with the measuring techniques, and cannot be implemented in a permanent way. Moreover, there is a delay between the action of the consumer consuming the goods and the provision of the feedback, and this may reduce the quality of the feedback.

[0009] US patent application publication No. 20030195807 to Maggio, Frank S. et al. discloses a system and a method for querying the viewer about a selected portion of the advertising/program content of at least one of the advertisements/programs. An offer of a reward is presented to the viewer as an incentive for each viewer to review the advertisements and to submit the response to the query. Respective responses to the query are collected through an electronic response or via a printed response from each of the viewers responding to the offer. The receipt of each response that includes a correct reply to the query serves to verify that the responding recipient has been exposed to at least the selected portion of the advertising content. This method suffers from the limitation that each query session is an individual transaction. Thus, the method does not develop "frequent viewer" behavior. The viewer has no incentive to continue observing the same station. Moreover, the system does not detect, filter or eliminate the possibility that a person who observes the program and responds to the questionnaire will not transfer the answers to his friends.

[0010] Therefore, there is a need in the art for a new method and system for developing and measuring the behavior of an individual "Frequent Viewer" for media content, such as: TV
programs, ads or stations, channel, etc. getting a true indication that the viewer is observing
certain content/channels/programs/ads and collecting the information in automatic, reliable and
secure way and close to the event itself.

SUMMARY OF THE DISCLOSURE

[0011] Exemplary embodiments of the present invention solve the above-described needs by
providing a method and a system for generating and accrediting “Frequent Viewer” Bonus Points
(FVBP) to frequent viewers. The system manages a “bank” of FVBP and grants (accrredits) the
viewers FVBP for responding to a challenge that is displayed on the viewer TV set or on their
receiving screen or apparatus. In addition, the system may offer a menu-like catalogue (fixed or
updated) comprises of a collection of offers, goods and services (benefits) that may be
exchanged (redeemed) for FVBP. Different items may have different values. The value of the
goods may vary and be in the range of a few cents to thousands of dollars. Therefore, different
goods may have different value in FVBP.

[0012] Accumulating FVBP is attractive in that the more FVBP that are collected or earned,
the more the benefit to the holder. Therefore, users are motivated to increase their FVBP
accounts by being loyal to certain content: channels/programs/ads and responding to the
challenges. However, the desire to increase the number of accumulated FVBP may lead to
efforts to “cheat the system”. This fraud may have a dangerous affect on the bank of FVBP
because the number of FVBP may be unlimited, and FVBP may reflect monetary, commercial
or other value. This vulnerability to fraud is not present in common methods in which the gifts
or rewards are distributed by drawing lots, and therefore the cost of collecting responses is
limited, thereby reducing the vulnerability or the effect of fraud. To reduce the risk to the
service provider, secured transactions are preferred. However, the present invention is not limited to secured transactions.

[0013] One aspect of an exemplary embodiment of the present invention is to transfer and present a challenge to one or more viewers. The challenge may be associated with a TV broadcast as part of the event that the challenge intends to measure viewer demographics. An event can be a program, an ad, participating in an interactive event (e.g., purchasing goods or services via the TV), etc. In this application the words “event”, “program”, “media content”, “channel”, “ads”, “movie”, and “promotion” are used interchangeably. Henceforth, the description and the claims of the present invention may use the term ‘program’ as a representative term for any of the above group. At the receiver's end, the challenge is processed, and the result of the processing (the challenge output) is displayed on the TV screen or other device. Once the challenge is displayed, the viewers may respond to the challenge. Responding to the challenge may be performed by touching a pointing device on the display screen over the position of the desired response, or by using traditional selection and acceptance keystrokes, such as the "arrow" keys to select a response and the "enter" key or “OK” key to accept the selection. The term ‘keystroke’ represents entering of data or instructional information by the user. It can be carried out by tapping a key in a keypad or a keyboard or a remote control, by pointing a soft key that is displayed on the user’s display, or via a voice command. The response is transmitted to the service provider. Transmitting the response to the service provider may be done via the return channel of the TV, common Internet Protocol (IP) connection, or via a cellular data connection in cellular communication. A valid response accredits the viewer a certain number of FVBPs. If the viewer is a subscriber of the service, then the new FVBPs are
added to the subscriber’s FVPBs account in an FVPB bank. In this application the verb “grant” and “accredit” may be used interchangeably.

[0014] If the viewer is not a subscriber of the service, the new FVPBs may be kept for the viewer in a temporary account for a certain period of time. The temporary account may be associated with the viewer by certain identification information. The identification information may be the viewer’s name, phone number, receiver identification (ID) number, serial number, etc. At the end of the period the FVPBs, if the viewer has subscribed to the service, the FVPBs could be transferred to the viewer’s new or permanent FVBS account. If the viewer did not redeem the FVPBs and has not subscribed to the service, the FVPBs may be abandoned.

[0015] Other exemplary embodiments of the present invention may be used in non-interactive TV broadcasting. An exemplary embodiment of the present invention may be used in analog TV or digital TV. A viewer of non-interactive TV may respond to a challenge by calling a certain phone number and responding by using the telephone keypad and DTMF signals. The viewer may respond by sending Short Message Service (SMS), email, fax, mail, etc. Transferring the media with the challenge to the user’s devices may be done over cellular network, IP network or by broadcasting over cable TV, satellite, etc. The present invention is not limited to the method of transferring the media with the challenge to the user’s devices. In this application the words “broadcasting”, “delivery”, “transmitted” and “transferring” may be used interchangeably.

[0016] In some embodiments of the present invention a viewer may prevent the displaying of some or all of the challenges by filtering the received challenge.

[0017] In order to deliver a secure transaction, an exemplary embodiment of the present invention may process the received challenge, at the subscriber’s receiver, and display the result of the processing on the TV screen or other display in such a way that it will not be easily
processed by artificial means. Moreover, processing the challenge at the receiver's end may be based on private properties that are associated with the particular receiver. For example, the ID number of the receiver, the ID number of the smart card, etc. The broadcasting of the challenge may include a plurality of options. A receiver may select an option that fits its private property and display it to the viewer. Therefore, different viewers may respond to different challenges simultaneously, and communicating the response between peers will be meaningless.

[0018] In an embodiment of the present invention, different challenges may be presented to different viewers at the same time or correlating to the same content. By offering different challenges to different users, “knowledge sharing” can be prevented. Several users may try to use the same response produced by one user to a certain challenge. By differentiating the challenges, this scenario is prevented. In a further embodiment of the present invention, challenges may be generated in the user end device and/or a challenge may be selected randomly from a set of predetermined options. Challenge selection or generation may take into account the unique ID or other properties of the end user device.

[0019] In yet another embodiment of the present invention, the challenge may comprise a visual representation of alphanumeric symbols that can be recognized by a human eye but are very difficult to decipher by automatic or inhuman means. This challenge may be displayed in different areas on the display screen, and its’ position may change from time to time.

[0020] Exemplary embodiments of the present invention may also support various and different accreditation models. A content provider may set group of various rules for accrediting users. For example- A provider of a daily program may promise viewers (or a certain number of viewers) a certain prize, should they respond to a minimum number of challenges presented to them during the program in the upcoming days. Or an advertiser that may ask viewers to try and
“catch” as many advertisement spots of a certain company as possible, during the next two
hours by responding to the challenges presented along side the ads.

[0021] In an embodiment of the present invention, a server at the service provider premises may
receive the responses and may verify that the response is valid. A valid response is a response
that matches the viewer, the private properties of his receiver, and the time limitation, if it exists,
in which the response was given. If the response matches the limitations, then the appropriate
number of FVBPs is granted to the subscriber’s account.

[0022] Different numbers of FVBPs may be granted for different challenges. The number of
FVBPs may be dependent on the program, the ad, and the hour in which the challenge is
displayed. In some challenges, the number of granted FVBPs may be depended on the quickness
of the response to the challenge. For example, a counter, which counts down, may be displayed
with the challenge indicating the amount of FVBPs that will be granted at the moment of
responding to the challenge.

[0023] Other embodiments of the present invention may reduce the level of security of the
service. For example, the association between the challenge and the receiver may be eliminated.
Therefore, all the viewers may face the same challenge. Such an embodiment of the present
invention may be used in an analog TV or digital TV, which is not interactive. Therefore,
checking the response in the server may be done by verifying the time and the content of the
response, and, if both of them are true, the response is validated and FVBPs may be granted to
the viewer’s account.

[0024] From time to time, subscribers may receive reports on the status of their accounts.
Reports may detail the last transactions and a description of available merchandise or benefits
that may be redeemed for FVBPs. These reports may be sent by mail, email or may be
downloaded by the subscriber via a TV set, Internet, cellular, etc. It should be noted that the terms “viewer”, “subscriber”, “subject”, “client” and “user” are used interchangeably herein.

[0025] Exemplary embodiments of the present invention supports the current needs of the art by disclosing a method that motivates viewers to consume certain media and participate in an ongoing process of collecting feedback on the media consumption. The method offers secure and non-secure challenge-response transactions, collecting and managing FVPB bank.

[0026] Other objects, features, and advantages of the present invention will become apparent upon reading the following detailed description of the embodiments with the accompanying drawings and appended claims.
BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a simplified block diagram with relevant elements of a rewarding system that uses an exemplary embodiment of the present invention.

FIG. 2 illustrates a simplified block diagram with relevant elements of a communication module in interactive user equipment that uses an exemplary embodiment of the present invention.

FIG. 3a illustrates a simplified block diagram with relevant elements of an agent module in the user equipment that uses an exemplary embodiment of the present invention.

FIG. 3b illustrates exemplary letters with modulation that may be used by an exemplary embodiment of the present invention in order to display a challenge.

FIG. 4a & 4b is a flow diagram showing an exemplary method for subscribing process; and

FIGS. 5a & 5b is a flow diagram showing an exemplary method for handling a response.

FIG. 6 is a flow diagram showing an exemplary method for purchasing process.
DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

[0027] Turning now to the figures in which like numerals represent like elements throughout several views, exemplary embodiments of the present invention are described. For convenience, only some elements of the same group may be labeled with numerals. The purpose of the drawings is to describe exemplary embodiments as opposed to limiting implementations. Therefore, features shown in the figures are chosen for convenience and clarity of presentation only.

[0028] FIG. 1 illustrates a block diagram with the relevant elements of a rewarding system 100 that uses an exemplary embodiment of the present invention for collecting a response from a viewer, verifying the validity of the response, granting FVBP s and managing a bank of FVBP s. The rewarding system 100 may comprise: a service provider premises (SPP) 120, a plurality of user equipment or user devices 110a-c, communication channels 142 and 144 between the SPP 120 and the plurality of user equipment 110a-c, external network 150 and connection 152 between the external networks 150 and the SPP 120. Three user equipments 110a-c are shown in Fig. 1 by way of example, but it should be appreciated that any number other than three may be used with the present invention. The external network may be a packet-based network and/or circuit switched networks. The network may be ISDN and/or ATM and/or PSTN, and/or cellular and/or IP, etc. The present invention is not limited to the type of the communication protocol and to type of the physical embodiment of external network 150.

[0029] An exemplary user equipment 110a-c may comprise a display 112, an input device 114, and a communication module 116. User equipment 110a-c may have audio capabilities (not shown in the drawings) to communicate with the user, in addition to the display. User equipment
110a-c may be a single device with internal modules or may be a system comprising separated devices. In a case in which the rewarding system 100 is digital TV equipment, then the display 112 is the TV screen, the communication module 116 may be a digital TV receiver such as a set-top box, and the input device 114 may be the remote control. Usually, the communication between the remote control 114 and the set-top box or receiver 116 is wireless communication. A common wireless method may use Infra Red (IR) medium, Bluetooth or other RF protocol.

[0030] In an embodiment of the present invention that is used in non-interactive TV broadcasting, the input device 114 may be a keypad of a telephone or a cellular phone that is used for communicating the response to the challenge to the SPP 120.

[0031] Other types of user equipment 110a-c may also be used. For example, in a cellular system, the user equipment may be a single device having internal modules. The display 112 may be a video display of the cellular phone, the input device 114 is the dialing keypad, and the communication module 116 is the internal circuitry of the cellular phone. In other cases, the user equipment 110a-c can be a laptop computer, a PDA such as a handheld computer, a palm computer, an Internet appliance or other device having the communications, processing and display capabilities for performing the present invention. These devices may use a display 112 that is a flat panel graphical display. The input device 114 may be a writing pen or a touch screen display, etc. In some embodiments the input device 114 may be a common QWERTY keyboard. The terms 'input device', 'keyboard', and 'keypad' are used interchangeably throughout this description. Henceforth, the description of exemplary embodiments of the present invention will use the term 'keypad' as a representative term for any of the above devices or similar devices. More information about the operation of the user equipment 110a-c is disclosed below in conjunction with FIG. 2, 3, 4a, and 4b.
[0032] Communication channels 142 and 144 may carry data among other types of communication transportation, depending on the type of system 100. Usually the data transportation over 142 and 144 is based on the IP protocol. Communication channels 142 and 144, which may be combined or separated, may each take the form of plane communications, such as, but not limited to, telephone lines, coaxial cable, cable TV or fiber-optic cable, or may be wireless communication, such as, but not limited to, cellular communication, satellite TV, etc.

[0033] Along their path of communication, channels 142 and 144 may change forms and may use any combination of the above mentioned types of communication. The discloser of the present application refers to communication channel 144 that carries the data from the service provider 120 to the user equipment 110a-c as the source channel. Communication channel 142 is referred to as the back channel or the return channel. The terms “back channel”, “return channel” or “return path” may be used interchangeably throughout the description. The terms “digital TV” and “interactive TV” may also be used interchangeably throughout the description.

[0034] In an exemplary embodiment that is used within a digital cable TV network, both channels 142 and 144 and the TV broadcasting signals may be transferred by a single cable coupled to a cable modem. In another embodiment, the television broadcasts and an Internet data connection 144 may be provided by a satellite communication, while the back channel 142 may be provided by another communication channel such as a telephone connection, cellular, SMS, IP connection, etc.

[0035] In case of non-interactive TV the back channel 142 may be implemented by common telephone connection, cellular, SMS etc. The connection may be via external network 150 and connection 152.
Service Provider Premises (SPP) 120 may be a media provider such as, but not limited to, TV station, TV operator (cable and/or satellite), TV network, an Internet service provider, a cellular service provider, etc. In some embodiments of the present invention, SPP 120 may only provide a bank of FVBPs services, which offers the services of granting, banking and managing the trade with FVBPs. Such an SPP 120 may serve media companies and/or advertising companies etc. If SPP 120 is just a bank of FVBPs, it may not communicate directly with the end user equipments 110a-c. The communication with the end user will be done through the media companies via the external network 150.

An exemplary SPP 120 may comprise the following relevant elements: a receiver (RX) 122, a transmitter (TX) 126, a response module (RM) 124, a viewer database 132, a bank of FVBPs (BOF) 136, a goods and services (benefits) database (GSDB) 138, a management module (MM) 134 and a challenge module (CM) 128. Each element may be one or more servers sharing the same application and load or a software application that is installed in a server with one or more other applications. All the elements, in SPP 120, may be connected over a computer network such as but not limited to Local Area Network (LAN). The implementation of those elements depends on the volume of transportation via the SPP 120. For example, the response module (RM) 124, viewer database (VDB) 132, bank of FVBPs (BOF) 136, management module (MM) 134 and a challenge module (CM) 128 may be applications that share one server. This server may deliver the functionality of a FVBPs bank. In an embodiment of the present invention, which is not installed in a media provider, the receiver (RX) 122 and the transmitter (TX) 126 may be eliminated.

Transmitter 126 may include a multiplexer (MUX), for example an MPEG multiplexer. In one entry the MUX may receive common media/information (i.e. audio and video) in the
other entry the challenge is received. The MUX combines them into a stream that includes the media and the challenge. The challenge may be text, graphic, audio/video or interactive application. In a digital TV premises, the transmitter **126** may be a satellite transmitter or a cable transmitter, depending on the communication network that is used. In a cellular operator’s premise, the TX **126** may transmit the common cellular communication with text messages, graphic and video.

**[0039]** In an embodiment of the present invention, wherein SPP **120** is installed in an analog TV media provider, TX **126** may include a graphical and character generator. The generator may receive the challenge from CM **128**, convert it into video signal and mix the video signal with the media before broadcasting it to the audience.

**[0040]** RX **122** is used to receive the back channel **142** carrying the response, to the challenge, from the users **110a-c**. In a satellite digital TV premise, the RX **122** may be an Internet access module that is connected to the Internet via a common connection. Other embodiment may use modem to modem communication. For a cable TV premise, RX **122** may be a cable modem that is adapted to accept Internet Protocol data communication. In a cellular service provider’s premise, the RX **122** may receive common cellular communication with text messages (SMS) and graphics. In an Internet service provider premise, RX **122** and TX **126** may be the common means that are used for receiving and transmitting IP based communication between one or more users **110a-c** and the IP operator. In order to secure the operation of the service, an exemplary embodiment of the present invention may use encryption in the communication over connection **142** between user equipment **110a-c** and SPP **120**. The encryption algorithm may be a standard algorithm such as but not limited to 3DES, RC4, etc. 3DES is a mode of the DES encryption algorithm that encrypts data three times. Three 64-bit keys are used, instead of one, for an
overall key length of 192 bits (the first encryption is encrypted with second key, and the resulting cipher text is again encrypted with a third key). RC4 is one of a series of symmetric encryption algorithms developed by RSA Security. RC4 is a variable key-size stream cipher with byte-oriented operations. The algorithm is based on the use of a random permutation. Other embodiment may use proprietary algorithm.

[0041] In order to handle non-interactive TV, an exemplary RX 122 may have an IVR (interactive voice response) module that communicates with a viewer. The viewer may call a certain telephone number in order to respond to a challenge. The IVR module may instruct the viewer to deliver the response as well as identification information of the user himself. The viewer may use the keypad of the phone, generating DTMF signals, in order to respond to the IVR.

[0042] RX 122 processes the received signals according to the type of return channel 142; it may remove overhead information in which the response is embedded. The overhead information depends on the type of return channel 142. In case of non-interactive response, RX 122 may decode the DTMF signals or SMS, cellular data, etc. The decoded digital response is transferred to RM 124 via a buffer. The buffer may be a part of receiver 122 or RM 124. The buffer may be a FIFO (First In First Out) or any other type of buffer.

[0043] Response module (RM) 124 gets the response from RX 122 via the buffer. For a viewer that is a subscriber of the bank services, RM 124 may retrieve, from VDB 132, authentication information that is associated with the client. Based on the retrieved information RM 124 may verify that the response matches the authentication information and the challenge to which the response is associated with. In some cases additional limitation may be checked. For example, the timing in which the response was given, if it matches the requirements. If the response
successfully passes the verification, then the appropriate number of FVBPs is granted and added to the client's account in BOF 136. The information on the account number is also retrieved from VDB 132. A report may be sent to the client with the results. The report may be sent electronically via connection 152 and external network 150 or by printed material, or it may be retrieved by the user when it is needed. The report may be sent periodically or per event or any combination of those.

[0044] In case that the viewer is not a subscriber of the service and the received response is the first event of this viewer, an exemplary embodiment of the present invention may save the response and the appropriate FVBPs in a temporary section of VDB 132. Different types of identification information may be used to mark the entry in the VDB 132 of the new responder. For example, if the viewer responded via an interactive means, such as interactive TV, then the ID number of the end user equipment may be used. In other embodiments of the present invention, the identification information may be the telephone number, or any number or name that is entered by the user in response to an instruction, an IVR instruction or a visual instruction.

The new responder is requested to subscribe to the service by delivering the appropriate forms including the identification information that was used in the first event. The subscribing party may be limited to a certain period of time from the first event. At the end of this period the information in the temporary section may be deleted.

[0045] An exemplary embodiment of the present invention may use authentication process in order to eliminate frauds. An exemplary method may send a group of more than one question for a challenge and a group of answers that includes at least one correct answer to each one of the questions and may include additional wrong answers. The user equipment 110a-c, which has a software agent of the service, and the RM 124 may be configured as follows: each one of the
user equipments 110a-c that receives the challenge will select a single question and displays the selected question with the group of answers. Different algorithms may be used for selecting a question. For example, each question in the group may have an ID number. The question that its ID number matches the end of the ID number of user equipment 110a-c may be selected by this user equipment 110a-c and will be displayed with the group of answers. The ID number of the question may have any number of digits. The number of digits may be used also for controlling the distribution of the challenge or the size of the sample. For example, if three digits are used, then the number of optional different ID numbers of user’s equipment is 999 options. In case that three questions are in the group (each one is associated with different ID number), then the sample will be 3 out of the 999, which is equal to 0.3% of the current audience.

[0046] In order to improve the understanding of the above exemplary embodiment of the present invention, the following example of a challenge may be used. A group of the following question (as illustrated in Table 1) and their ID number will be broadcast, with a group of answers (as illustrated in Table 2). The correct answer for each question is written in the parenthesis (in Table 1), the information on the correct answers will not be broadcasted and are added just for improving the explanation. Only user equipments 110a-c, which has a software agent of the service, and that their ID number is ended with the same digits (i.e. ‘133’; ‘452’ and ‘953’) will participate in this challenge. The rest of the audience will not be aware of the challenge; the challenge will not be displayed on their display. The question that will be displayed on a user equipment 110a-c will be the one that its question ID (the first column in Table 1) is the same as the last digits of the ID number of the user equipment 110a-c. For example, the question: “What is the color of Bill’s shirt?” will be displayed on the equipment that its ID number terminates with ‘133’.
Table 1: An exemplary group of questions

<table>
<thead>
<tr>
<th>Question ID</th>
<th>The content</th>
</tr>
</thead>
<tbody>
<tr>
<td>133</td>
<td>What is the color of Bill’s shirt? (black)</td>
</tr>
<tr>
<td>452</td>
<td>What is the color of Bill’s shoes? (white)</td>
</tr>
<tr>
<td>953</td>
<td>What is the color of Bill’s hat? (brown)</td>
</tr>
</tbody>
</table>

Table 2: An exemplary group of answers

<table>
<thead>
<tr>
<th>Answer number</th>
<th>The content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>brown</td>
</tr>
<tr>
<td>2</td>
<td>pink</td>
</tr>
<tr>
<td>3</td>
<td>white</td>
</tr>
<tr>
<td>4</td>
<td>red</td>
</tr>
<tr>
<td>5</td>
<td>black</td>
</tr>
</tbody>
</table>

[0047] For the example that is described above, an exemplary RM 124 may receive the ID number of the user equipment 110a-c that had sent the response with the answer number (the first column in Table 2). The RM 124 may run the following verification: If the ID number ended with ‘133’, then the correct answer is answer number ‘5’; if the ID number ended with ‘452’, then the correct answer is answer number ‘3’; if the ID number ended with ‘953’, then the correct answer is answer number ‘1’. The rest of the answers are faulty. In some embodiments of the present invention, the ID numbers of the questions, the user FVBPs account and the ID number of the user equipment may be encrypted in order to increase the security of the system. An encryption algorithm may be a standard algorithm such as, but not limited to 3DES, RC4, etc. Other embodiment may use proprietary algorithms.

[0048] The above exemplary algorithm may be used to control the size of the sample, as well as to change the participants in the sample. Moreover, it may reduce the risk that damage will occur if a viewer tries to share his answer with his friends. His answer may not match the ID
number of his friends' equipment or they may not have been selected to participate in the current sample.

[0049] Each challenge may use a different combination of ID numbers. The above algorithm was given by way of example and is not intended to limit the scope of the invention. Other algorithm may also be used. More information on the authentication process and the operation of RM 124 is disclosed below in conjunction with FIGs. 3, 4a&b and 5a&b. Other exemplary embodiments may not authentication at all or may not deliver different challenges to different viewers. In some embodiment of the present invention, a valid answer may be considered a correct answer that is given during a certain period of time from broadcasting the challenge.

[0050] Viewer Database (VDB) 132 may include demographic information about the subscribers of the FVBPs bank services. VDB 132 may include a temporary section. The temporary section may be used for saving information and FVBPs that belong to viewers that responded to the challenge but, have not yet subscribed to the service. A subscriber may register in advance for the service. The registration may be done electronically or via printed form. The information on each subscriber may include demographic information, family information, hobbies, important dates, consuming habits, billing information, password, etc. Part of the information may be kept in a private section of VDB 132. After registration, a viewer may get a FVBPs account number (FBAN). Later, the new subscriber may be requested to send via his user equipment his FVBPs account number. During sending this response by a user of interactive equipment, the user equipment 110a-c may add automatically, without the awareness of the client, also the ID number of the user equipment 110a-c. The association of these two numbers is kept in the appropriate entry in the VDB 132 and may be used later on by RM 124 in order to associate
future responses to the appropriate viewers and their FBAN. The information from database 132 may be retrieved by management module 134; BOF module 136; RM 124 and CM 128.

In an embodiment of the present invention the user receives a password. The password may be used when the user interacts with the service provider. The password may be used if a user equipment 110a-c serves two or more individuals. Each individual may have a different account and password. The password may also be used when a user applies for report or exchanging FVBPs with goods or services.

Embodiments of the present invention may use different exemplary methods in order to authenticate the user of non-interactive equipment. An exemplary embodiment of the present invention may request a user of non-interactive equipment, always to respond to a challenge via a specific telephone line. During subscribing, the viewer is requested to define the telephone number of this line. During receiving a response to a challenge, the association of two elements of data, the subscriber ID and the telephone number, may be used for verifying that the telephone number, which is sent automatically, and the ID of the responder are matched to an entry in the VDB 132.

During day-to-day operations of some embodiments of the present invention, VDB 132 may be updated each time a user is responding to one of the challenges. The RM 124 may update the entry of the viewer with information regarding the program in which the viewer responds to the challenge. This information may be used later on in order to deliver statistical information on the audience of the relevant show to the customers of the service (the advertisers, producers of TV shows, etc.). An entry of a subscriber in VDB 132 may comprise a profile of the subscriber. The profile may include information on his favorite programs; type of programs (i.e. sport, action, news, etc.) the distribution of his viewing hours, favorite benefits, etc.
In parallel to the viewers’ section, VDB 132 may have additional sections. For example VDB 132 may have a subject section. The subject section may contain information on different ads, TV program, etc. Each entry may include information on the number of viewers who view the subject, when they view it, average age, income, etc. This information may be retrieved by the management Module 134 in order to prepare and deliver reports. The reports may be done according to different criteria. Exemplary criteria may be age, show time, sex, income etc. The reports may be delivered to the customers of the service via printed material or electronically via connection 152 and external network 150. The discloser of exemplary embodiments of the present invention refers customer of the service to advertiser companies, producers of programs, etc.

Other sections may be the temporary section that is used to hold information of responders that are not subscribers. The information in this section is deleted after a certain period of time. For example, the period of time may depend on the challenge and may be changed from challenge to challenge or the period may be configured to a period. Exemplary periods may be from few days to few weeks.

BOF 136 may be a database that comprises a plurality of accounts. Each account may be dedicated to a subscriber. Each account may have a FVBPs account number (FBAN). The information in each account may comprise the number of FVBPs that are possessed by the viewer or the list of the transactions in the account. A credit transaction is received when a RM 124 determines that a valid response has been received from the owner of the account. A debit transaction is done when the owner of the account converts FVBPs to goods and/or services. Other embodiments may use additional types of transactions, for example transferring of FVBPs from one account to another, when appropriate approvals are given by the owners of the relevant
accounts. Another embodiment may allow users to buy FVBPs using real money (i.e. US dollars). Other examples may allow the subscriber to loan FVBPs under the appropriate conditions or security, etc.

[0057] GSDB may comprise information on the goods and services (benefits) that are available to the users. Each entry in the GSDB 138 may be associated with a type of goods/services. The information on each type of goods/services may include photos, value in FVBPs and in real money, description, order information, payment instructions, links to the supplier of the goods/services, links to the appropriate subscriber’s profile, links to relevant TV programs, etc. The link to a subscriber’s profile may be used in order to create a personalized catalog. For example, a subscriber that likes sports programs may be offered a catalog with goods that are associated with sports. Other subscribers that prefer musical programs may get a catalog with CDs, tickets to concerts, etc. The links to program may be used in order to generate a catalog that will be broadcast during certain programs and offers goods/services, which are relevant to the current program. The personalize catalog may improve the utilization of the FVBPs and may increase the willingness to get more FVBPs.

[0058] BOF 136 may also include information of the commitments or the payments that were done by the customers of the service (Advertisers, producers, etc.) in order to support the value of the FVBPs that have been issued.

[0059] Exemplary embodiments of the present invention may use various methods to prevent bankruptcy or overdrawing of the service. A few examples include: limiting the aggregation of FVBPs for a certain period of time; limiting the amount of goods that can be extracted; limiting the goods to a winner, such as the first to order or some other way to narrow the domain of winners; balancing the BOF by adjusting the value of the goods in FVBPs from time to time.
according to the total of FVBPs that have been delivered to the subscribers and the total value of the available goods; limiting the value, in FVBPs, of each challenge and the size of the sample to which the challenge will be broadcast (which may be a function of the willingness of the customer of the service to pay for this feedback), etc. The BOF 136 is managed by MM 134.

More information on the BOF 136 is disclosed below in conjunction with FIG. 4b and 5a.

[0060] Purchasing some of the goods/services may require a combination of real money and FVBPs. The FVBPs may cover portion of the price.

[0061] An exemplary embodiment of the present invention may deliver more than one type of FVBPs. The type of the FVBPs may depend on the challenge, the user, the response, etc. Each type has different lifetime. The lifetime may be displayed with the challenge.

[0062] Challenge module (CM) 128 is the module that generates the challenges. The module may have a bank of challenges that have been prepared in advance and were stored in CM 128. A challenge may be a group of questions and possible answers. Other challenges may be embedded in a software program (challenge-program) that may be transmitted to the appropriate user equipment 110a-c. In the user equipment, the challenge-program may be installed and wait to be triggered by a command that will be transferred. In other cases, the challenge-program may start its task at a predefined time. An exemplary challenge-program may display certain graphical shapes and colors on the display of the user equipment. The viewers may be requested to follow the sequence of the challenge. An exemplary challenge-program may have two or more sequences and the selected sequence may be dependant on the ID number of the user equipment. In some embodiments, the challenges may be encrypted before being broadcast, for increasing the security of the system. When the challenge is ready it may be transferred to the transmitter 126 to be broadcast to the audience.
For non-interactive broadcasting CM 128 may generate challenges that are mixed with the broadcast media. For example, a challenge may be one or more questions with or without variety of possible answers. The text message is converted to video and is mixed with the video of the broadcasting.

The operation of CM 128 is controlled by MM 134 that defines, among other things, the selected challenges and the size of the sample to which the challenge will be exposed. The sample is controlled by defining the ID number of the user equipment that may participate in the sample, for example. More information on the CM 128 is disclosed below in conjunction with FIG. 3 and 4.

An exemplary embodiment of the present invention may enable the option that a sample will be selected according to the profile of the subscriber. The selection may be done by downloading personalized information regarding the subscriber. The personalized information may be stored by the agent and may be used upon receiving a command that is transmitted with the broadcasting of the media. From time to time, for example, when a set top box of a subscriber establishes a connection with SPP 120, MM 134 may send update information to the set top box. The update information may include updated profiles of the subscriber, updated catalogs, reports on the subscriber’s account etc.

This personalized information may be used later on during viewing the broadcasting. An exemplary challenge may include an instruction that defines the profile of the subscriber to which the challenge will be displayed. Another usage of personalized information may be used when an instruction to display a catalog of available goods/services is broadcasted. Then each agent may display the appropriate updated catalog that has been received and stored during the
connection with SPP 120 prior to the relevant broadcasting. More information on those features is disclosed below in conjunction with FIGs. 2, 3 and 6.

[0067] Other embodiment of the present invention may broadcast, during off peak hours for example, personalized information of a plurality of subscribers, one after the other. Each personalized packet may be associated with ID information that defines the user equipment 110a-c to which the packet is aimed. The appropriate user equipment that listens to this broadcast may process the packet with the appropriate ID and update its stored personal information.

[0068] Management module (MM) 134 manages and controls the operation of the service. In addition MM 134 may generate reports to the subscriber (viewers) and/or to the customers of the service (advertiser, producers etc.). MM 134 may define the size of the sample and the selected ID number. It may manage a historical table of previous challenges and their samples in order to improve the definition of the current sample. MM 134 may control the interaction with the subscribers. It may manage the subscribing process, opening an account in BOF 136 and opening an entry in the VDB 132. The interaction with the subscribers and the customers may be done via external network 150 and connection 152. More information on the MM 134 is disclosed below in conjunction with FIGs. 4a, 4b, 5a, and 5b.

[0069] MM 134 may create one or more catalogs of benefits that are available to the subscribers of the service. Each catalog may define a certain group of products and services. Each group may be associated with a certain profile of a subscriber, a certain type of programs, etc.

[0070] FIG. 2 illustrates a block diagram with the relevant elements of a communication module (COM) 116, in an interactive end user equipment 110a-c (FIG. 1), that may be used in an exemplary embodiment of the present invention in order to receive, process, display the
challenge to the viewer as well as to deliver the response of the viewer to the service provider. COM 116 may comprise a receiver 210, a transmitter 220, a display interface 230, a processor 240, an input device interface (e.g. keypad) 250 and a memory 260. Memory 260 may be volatile memory, non-volatile memory or any combination of either of these. The internal elements of COM 116 may communicate over bus 245. Bus 245 may be a TDM bus, ATM bus, IP based bus, etc. COM 116 may have audio capabilities (not shown in the drawings), such as an audio decoder and encoder to communicate with the user.

[0071] For an interactive TV application, COM 116 may be a set-top box or other means of processing and transmitting communications of digital TV. In one embodiment, display 112 (FIG. 1) may be a TV set and the input device 114 (FIG. 1) may be the remote controller of the set-top box 116. Receiver 210 may be a tuner that is tuned to receive broadcast signal, to remove a carrier signal, and to decode the data/audio/video signals. The decoded data/audio/video streams are transferred to the digital processor 240. Processor 240 may manipulate the signals (add text, graphics, animation, etc.) and send the manipulated signals via the display interface 230 to the TV 112 (FIG. 1). Digital processor 240 may execute a type of software program, an agent of SPP 120 that can access the SPP 120 via a transmitter 220. More information about the software agent is disclosed below in conjunction with FIG. 3. Transmitter 220 may be a cable modem or a common telephone modem, etc.. The user interacts with the set-top box via remote controller 114. Usually remote controller 114 (FIG. 1) communicates with the set-top box 116 via infrared (IR) transmissions. Therefore, the input device interface 250 is an infrared receiver for receiving the IR transmissions from the remote control unit 114 (FIG. 1). In another exemplary embodiment of the present invention, the input device interface 250 may also be used for interfacing with a QWERTY keyboard and/or a pointing device such as a mouse.
[0072] In a cellular communications environment, the user's equipment may be a cellular phone with video communication capabilities, a handheld computer having a cellular modem, or a similar device. Receiver 210 and transmitter 220 may be the TX/RX of the cellular phone. Input device interface 250 and display interface 230 are provided for coupling input keys 114 (FIG. 1) and a video display 112, respectively, with processor 240.

[0073] Memory 260 provides storage for the software applications that can be executed by processor 240, as well as storage for temporary data and the current challenge that may be used as well as the responses to previous challenges that have not been transmitted, yet, to the SPP 120 (FIG. 1). In addition to the common applications of COM 116, which are stored in Memory 260, memory 260 may also store a communication software program, such as a chat application, instant messaging, etc.; and a software program (the agent) and one or more challenges that may be displayed to the viewer according to an embodiment of the present invention. In some embodiments of the present invention, memory 260 may store personalized information, such as but not limited to, the profile of the subscriber, personalized catalogs (i.e. catalogs that matches the preference of the subscriber), catalogs that match certain type of programs, etc.

[0074] In non-interactive user equipment 110a-c COM module 116 is the common TV tuner without any modifications. It can be analog or digital TV tuner. In non-interactive TV SPP 120 may process the challenge and convert it to video signals that may be mixed with the media before broadcasting it to the user equipment 110a-c. The challenge, which is embedded in the media, will be processed in a common tuner and will be displayed on the TV screen as media.

[0075] A non-interactive user may respond to a challenge via a common telephone, cellular phone, email, SMS, or even via printed material (mail or fax, for example).
[0076] FIG. 3a illustrates a block diagram of an agent module in interactive user equipment that uses an exemplary embodiment of the present invention. Agent module 300 may be a software program that is stored in memory 260 (FIG. 2). The agent may be invoked and run by processor 240 (FIG. 2) when a challenge is received from SPP 120 (FIG. 1).

[0077] An exemplary embodiment of an agent module 300 may comprise a challenge processing module (CPM) 310; a display module (DM) 320; a response processing module (RPM) 330; agent database (AD) 340; responses buffer (RB) 350 and a repeater 360. Upon receiving a new challenge, processor 240 may invoke the agent module 300. The challenge may be processed and analyzed by CPM 310. In some cases, a decision may be made by CPM 310 whether to display the processed challenge (the challenge output) or not. The decision may be based on the ID numbers that are associated with the challenge, and the identification number of the user equipment that may be stored in AD 340. Some of the challenges may be associated with a certain type of profile of subscribers. Those challenges may carry the profile identification. Upon processing a challenge, CPM 310 may determine whether the profile of its subscriber matches the required profile. If the profiles match, the challenge is displayed. There are some cases that the challenge may be display without any limitations and independently on the user ID.

[0078] In an alternate embodiment of the present invention CPM 310 may control the number of times that a challenge may be presented to a user. In some cases, the challenge may include a note indicating the number of times that this challenge can be displayed to a user. Another note may include information whether to display the challenge to a user that already responded to this challenge in a previous broadcasting, etc.

[0079] If the challenge has two or more options, which depend on the ID number of the user equipment, CPM 310 may select the option that matches the ID number of the user equipment.
Then the selected challenge may be transferred to display module 320 for being display to the user. If the challenge is independent of the ID number of the user equipment, the challenge may be transferred directly to the DM 320. In parallel of transferring the challenge to DM 320, CPM 310 may inform the RPM 330 about relevant parameters of the challenge that may be required for processing the response. Exemplary parameters may be the time interval for getting the response, the correct response to the challenge, ID number of the user equipment, etc.

[0080] DM 320 may process the challenge before displaying the challenge output on the screen of the interactive equipment. Some of the challenges may be displayed with information on the associated FVBPs. The information may be the amount of FVBPs, the expiration date, etc. In an exemplary embodiment of the present invention, DM 320 may add modulation to the challenge in order to reduce the success of artificial equipments to respond to the challenge. An exemplary modulation may add graphical shapes to the alphabetic letters in order to generate unknown and undetectable fonts. Exemplary letters with modulation are illustrated in FIG. 3b. For example the shape 380a and 380b demonstrate the letter ‘A’ and ‘B’, respectively. These shapes are unique in comparison to common letters. Shape 380c illustrates the letter ‘C’ in a background of lines. An artificial intelligent system may face difficulties in analyzing these letters, which are embedded in those shapes.

[0081] An exemplary DM 320 may comprise a graphical generator with a link to a look up table (LUT) that may comprise a plurality of shapes that are associated with each one of the letters in the alphabet. The LUT may be stored in AD 340. DM 320 may randomly replace letters in the challenge with one of its associated shapes. The information in the LUT may be changed_updated from time to time by SPP 120 (FIG. 1). There are some challenges that may not be modulated. There are other exemplary embodiments in which DM 320 may not have the
nodulation capabilities. The data of the challenge output from DM 320 is transferred to display interface 230 (FIG. 2) for further processing before being displayed on the display of the user equipment 112 (FIG. 1).

[0082] RPM 330 may receive the response via input device interface 250 (FIG. 2). The response may be the number that represents the choice of the viewer for the correct response to the challenge. In another challenge, the correct response may be a string of characters/numbers in a certain sequence according to the challenge. In another challenge, the response may be a short message, for example in a subscribing challenge, etc. RPM 330 may add a time stamp to the response. The time stamp may represent the time at which the response has been given. An indication that a response has been received may be set by RPM 330. This indication may be used in order to prevent more than one response to a challenge.

[0083] Depending on the type of the challenge or the embodiment of the present invention, RPM 330 may verify the validity of the answer. The validity may be determined by checking (a) if the answer is true or false (in cases that the correct response has been transmitted with the challenge from SPP 120, FIG. 1a or 1b) if responding to the challenge was done in the correct time, etc. In some challenges, RPM 330 may create a short report to be displayed to the viewer indicating whether the response to the challenge has been accepted or denied. At the end of processing the response, RPM 330 may store the processed response, with the time stamp, the ID number of the challenge and the ID number of the user equipment in RB 350.

[0084] AD 340 may control the agent database section in memory 260 (FIG.1). AD 340 may store information that is used for processing the challenges and the responses. For example, AD 340 may store the ID number of the user equipment, the LUT that is used in order to modulate the displayed alphabets, personalized profile of the subscriber, personal catalogs, etc. In addition,
AD 340 may store one or more future challenges that may be invoked later upon receiving an appropriate trigger from SPP 120 (FIG. 1). Some of the challenges may be personalized challenges. The personalized challenges may be sent to the appropriate user equipment prior to the timing of the challenge.

[0085] RB 350 is a buffer that is used to store the processed responses until a command for transmitting them to SPP 120 is received. RB 350 may be implemented as a section of memory 260 (FIG. 2). When a command to send the responses is received, repeater 360 may retrieve the responses one after the other from RB 350, process each response according to the type of the return channel 144 and transfer the response via transmitter 220 (FIG. 2) to SPP 120 (FIG. 1).

After transmitting the responses repeater 360 may release the RB 350.

[0086] FIGs. 4a and 4b illustrate a flowchart with relevant steps for performing an exemplary method 400a and 400b in accordance with an embodiment of the present invention, which may be used for subscribing to the frequent viewer bonus services. Method 400a may be used during interaction with a potential subscriber, while method 400b may accomplish the subscribing process by opening an account at SPP 120 (FIG. 1) for the new subscriber. Subscribing process may be initiated 410, from time to time, by MM 134 (FIG. 1), which may instruct CM 128 (FIG. 1) to transmit 412 a subscribing challenge. The subscribing challenge may be displayed over the screen with other promotions or in between programs. The subscribing challenge may describe the service and its advantages and may prompt the viewer to select and press one of the optional keys. Exemplary optional keys may be a subscribing key (e.g. ‘5’); more information key, (e.g. ‘7’); exit (e.g. ‘3’), etc. In addition to the optional keys, the subscribing challenge may offer a telephone number to which a viewer may call instead of using the optional keys. In interactive communication, the subscribing challenge may include a software program. The application
program may be used by processor 240 (FIG. 2) in order to perform the required steps for communicating with a potential subscriber. Processor 240 may manage the subscribing process on-line while communicating with SPP 120 (FIG. 1) or off-line. At the end of an off-line subscribing process, the subscribing information may be stored and then later communicated to SPP 120. In an embodiment of the present invention, wherein SPP 120 (FIG. 1) is installed in an analog TV media provider, the subscribing challenge may be mixed with the video as it is disclosed above in conjunction with TX 126 and CM 128. A phone may be used by non-interactive user.

[0087] At the viewer’s side, the received subscribing challenge may be processed 414 differently by different types of user equipment. If the user equipment is non-interactive, then the challenge may be displayed as long as the challenge is broadcasted and the viewer may respond to the challenge by phone, SMS, etc. For interactive equipment, a subscribing application that may be embedded in the subscribing challenge may be used by processor 240 (FIG. 2) for performing the next steps. Then method 400 may proceed to step 420. In step 420 a decision is made whether the viewer has already subscribed to the service. If the viewer is a subscriber, then method 400 may be terminated 424 without displaying the subscribing challenge to the viewer. If the viewer 420 is not a subscriber, then the challenge is displayed 422 and method 400 may wait to receive a response from the viewer. The waiting period may be in the range of few minutes. The response is given via input device 114 (FIG. 1) having been transferred via input device interface 250 (FIG. 2) to processor 240.

[0088] At the end of the waiting period, a decision 430 is made as to whether a response has been received. If no response has been received or the response was ‘3’ 432 indicating that the viewer is not interesting, processor 240 (FIG.2) may proceed to step 424 and terminate the task.
If the response 436 was '7', indicating that the viewer is willing to receive more information about the service, then processor 240, which processes 439 the request, verifies if additional information was transmitted with the challenge and was stored in memory 260 (FIG. 2). If additional information was stored ("yes"), the additional information is retrieved and then displayed 422 and method 400 waits for the next response. If there is no additional information, an exemplary embodiment of the present invention may return to step 422 informing the viewer that there is no additional information and requesting his response. Another exemplary embodiment of the present invention may send a request to SPP 120 (FIG. 1) requesting additional information. The request may be sent on line or may be stored in memory 260 and later may be sent. The viewer may be informed 422 when the additional information will be ready to be retrieved.

If the response 434 was '5', indicating that the viewer is willing to subscribe to the service, then processor 240 may start a loop from step 440 to step 448. Each cycle in the loop is dedicated to an information segment. Following are few examples of information segments: name and address, chosen password, payment information, favorite programs, hobbies, etc. In each cycle, (a) the information segment is displayed 442, (b) the user may respond via his input device 114 (FIG. 1), (c) the response is received 444, the response is processed and stored 446 in memory 260 (FIG. 2), and (d) a decision regarding additional information segments is made 448. Process 446 may include validation of the response by verifying the existence of all the necessary fields in each segment, etc. Then a decision is made 448 whether additional information segment exist. If additional information segments exist, method 400 returns to step 440 and process the next segment. If no additional information segments exist, a confirmation message is prepared 450 and is displayed for a certain period of time. Finally, method 400 may
then be terminated. The confirmation message may inform the new subscriber of his password, user name, may give the subscriber information about the service, and may indicate that the subscribing bonus was given to the subscriber. In some cases, the message may include additional steps that the new subscriber has to do in order to confirm the registration, for example to call a certain number. The subscribing information may be transferred to SPP 120 (FIG. 1) during the next communication session between the user equipment 110 (FIG. 1) and SPP 120 over the return channel 142 (FIG. 1). The next session 400b may be initiated by the user equipment 110 during and/or at the end of the subscribing challenge or at any other time. Or the session 400b may be initiated by SPP 120.

[0091] A user without interactive equipment may call a certain number. The number may be displayed as part of the subscribing challenge. An IVR system may respond to the call using vocal instructions instead of audio/visual and may run a similar loop as disclosed above. At the end of the process, the new subscriber may be instructed to use the same phone line for responding to future challenges.

[0092] In an alternate embodiment of the present invention in which a cellular phone is used as the user’s equipment, the responses of the user may be sent via SMS or via an integrated application of the cellular.

[0093] Other embodiment of the present invention may publish a web site address as part of the subscribing challenge. A viewer who wishes to subscribe may apply to the web site and get a web page with a subscribing form. The subscribing form may include similar information segments as disclosed above. Other embodiment of the present invention may use email, fax, post, SMS, etc.
[0094] FIG. 4b illustrates a flowchart with relevant steps for performing an exemplary method 400b in accordance with an embodiment of the present invention, which may be used for opening an account at SPP 120 (FIG. 1). Method 400b may be initiated 460 each time a subscribing form is received. Other embodiments may accumulate a plurality of subscribing forms and at a certain intervals of time, or when the accumulated forms reaches a certain amount, then initiating the opening account task 460. In some cases, such as when the received form is a paper form, an operator may be needed for entering the form manually.

[0095] For each new subscriber, an entry in VDB 132 (FIG. 1) is allocated 462. Authentication parameters may be retrieved from the subscribing form and are stored in the new entry. The authentication parameters may include parameters such as, but not limited to, subscriber name; subscriber chosen password; ID number of his user equipment (for interactive subscriber) or the phone number from which he will respond to future challenges (for non-interactive subscriber); etc. Personal information may also be retrieved and stored in the new entry. The personal information may include billing information, age, sex, favorite programs, etc. The links from the new entry to other sections of the VDB 132 (FIG. 1) may be issued and stored in the new entry and in the other sections. The other sections in the database may be a section that is dedicated to subjects such as, but not limited to, sports, news, movies, etc. Then a link may be initiated between an entry of a subscriber that likes sports and the sports section of the VDB. The sports section may be associated with sports channels, sports programs, sports events and sports goods/services.

[0096] At step 464 a new FVBPs account is created, at BOF 136 (FIG. 1) for the new subscriber and a link between the new account and the new entry in the VDB 132 is defined and stored in both locations.
[0097] After allocating and creating the new entry and the new account VDB 132 is searched for finding a temporary account that may be associated with the new subscriber. The search may be based on one of the authentication parameters of the new subscriber, which are stored in his entry in the VDB 132. If a temporary account is found 470, then the information that is stored in the temporary account is transferred 472 to the new entry in VDB; the FVBPs are transferred from the temporary account to the new account; and the temporary account is released. If a temporary account is not found 470, then method 400b may proceed directly to step 474 and grant subscribing FVBPs to the new subscriber and may create a subscribing report. The subscribing report may be sent or retrieved to/by the subscriber. The report may include welcome message authentication parameters, account number and the number of FVBPs that have been granted to the new subscriber and the number of FVBPs that were added from his temporary account.

[0098] If 480 the new subscriber uses interactive user equipment 110 (FIG. 1), then an appropriate software agent may be sent from SPP 120 and downloaded 482 into the user equipment 110 and method 400b terminates 484. If the user equipment is non-interactive 480, then method 400b is terminated 484. In other embodiments of the present invention, a challenge may be broadcasted with an associated agent program. Other embodiments may install an agent program as an integral section of the software of processor 240 (FIG. 2). The agent may be activated after the subscribing of the viewer to the service.

[0099] FIGs. 5a and 5b illustrate a flowchart with relevant steps for performing an exemplary method 500 in accordance with an embodiment of the present invention, which may be used for processing a received response. Processing task 500 may be initiated 510 from time to time by MM 134 (FIG. 1), which may instruct RM 124 (FIG. 1) to get the next response from a buffer.
that stores the received new responses 512. The buffer may be a part of receiver 122 or RM 124 (FIG. 1). The buffer may be a FIFO (First In First Out) or any other type of buffer. Task 500 may run in a loop, from step 512 to step 570, until handling the last response in the buffer, then the process may be terminated.

[00100] The retrieved response is checked for validity 514. First, validity parameters may be searched and retrieved from the response. The validity parameters may include parameters such as, but not limited to: ID number of the user equipment that has sent the response; a password; a user name; information on the challenge itself, such as the challenge number, date, responding time, etc; the content of the response (i.e. the selection of viewer). Checking the validity of the response may be based on the types of the challenges, as is disclosed above in the previous paragraphs. For some challenges, the time interval between the time of displaying the challenge and the time of responding is compared to the time limit of the challenge. The ID number of the responder’s user equipment is used to define the relevant challenge that was displayed to the responder and comparing his response to the correct answer of the relevant challenge, etc. Other embodiments may use other methods to verify the validity of the response.

At the end of the verification a validity flag may be set if the response is valid.

[00101] At step 516 an entry, in VDB, that matches the parameters of the response is searched. The search may be based on one or more parameters depending on the functionality of the user equipment. For interactive equipment, the ID number of the user equipment may be used for searching the appropriate entry in VDB 132 (FIG. 1). For non-interactive equipment, the phone number that was used for responding, or the user name and/or the password may be used for searching. Other embodiments may use other parameters in order to search the appropriate entry.
If an entry is not found 518, then method 500 may jump to step 550, point A in FIG. 5b. If an entry that matches the responder is found 518, then the validity flag may be checked 520. If the response is not valid (i.e., the validity flag is not set) 520, a report on the invalid response is prepared 534. Other embodiments of the present invention (not shown in the drawings) may save invalid responses in VDB as well as the valid responses. Other embodiments (not shown) may ignore invalid response without saving it or sending a report on the event.

If the response is valid 520, then the event is saved 522 in the appropriate entry in VDB 132 (FIG. 1) and the relevant account is increased with the appropriate number of FVBPs. Then, the existence of links to other sections in VDB is checked 530. The links may be associated with the challenge or with the entry of the responder in the VDB. If there are links to other sections, some of those sections may likewise be updated 532. The sections that may be updated are sections to which the response may be relevant. For example, if the relevant challenge was given in a certain program or ad, the section that relevant to the TV program or ad may be updated. The responder’s profile may be updated also. For example, the favorite section of the responder’s profile may be update with the relevant program, etc. If there are no links to other sections 530, then method 500 may proceed to step 534.

At step 534, a report is updated with information on the valid response and the additional FVBPs. The report may be sent automatically to the responder or may be stored and may be sent later or may be retrieved by the responder when the report is needed.

Then at step 570, a decision is made as to whether the response is the last response in the buffer. If the response is the last response, the method 500 terminates 572. If the response is not the last response, the method 500 returns to step 512 and picks the next response.
Returning now to step 518, if an entry is not found, then method 500 may proceed to step 550 in FIG. 5b and a decision is made whether the response can be saved in the temporary section. The decision may be based on the ID parameters and on the validity of the response as determined at step 514. If the found ID parameters may enable the retrieving of the data from the temporary entry, when needed, and the validity flag is set then the response may be saved and the method 500 proceeds to step 552. Exemplary ID parameters may be the ID number of the user equipment that has sent the response; a password; a user name; the telephone number from which the response was given, etc.

If the response cannot be saved in a temporary entry 550, then method 500 may proceed to step 570 in FIG. 5a. In step 552, a temporary entry is issued. The ID parameters of the responder may be used as an index to the entry. The response and the FVBPs are saved in the temporary entry. Information on the expiration date of the entry may be saved and be used for releasing the entry when the expiration date will arrive.

At step 560 a decision is made as to whether a report may be issued to the responder. A report may be issued if one of the ID parameters that have been found in step 514 can be used as a mailing address. For example, if the ID number of the user equipment has been found, then a report may be sent to the user equipment. If a report cannot be sent, then the method 500 proceeds to step 570. If a report can be issued, then a report is prepared on the event 562. The report may be embedded in an invitation to join the rewarding service and a subscribing form may be added to the invitation. Then method 500 may continue to step 570.

FIG. 6 illustrates a flowchart with relevant steps for performing an exemplary method 600 in accordance with an embodiment of the present invention, which may be used for a purchasing process. Exemplary method 600 may be used by a subscriber that has interactive
equipment. Exemplary method 600 may run off-line under the control of processor 240 (FIG. 2). Processor 240 may use information, such as but not limited to personalized catalogs, status of the relevant account, etc. This information may be downloaded, earlier to the purchasing event, to memory 250 (FIG. 2) from SPP 120 (FIG. 1). In some cases, the purchasing process may be done on-line under the control of the MM 134 (FIG. 1) and processor 240. In other cases, the purchasing process may start off-line with information that exists in the user equipment 110 (FIG. 1). During the purchasing event, a request may be sent, on-line, to SPP 120 requesting more information, additional catalogs, approving the purchase, etc.

[00110] A user may initiate 610 the purchasing task 600 by selecting an interactive channel, which is dedicated to the frequent viewer service. Other embodiments of the present invention may display a purchasing button as a part of a displayed challenge. The subscriber may select the purchasing button in order to initiate 610 the process. In some cases, a purchasing ad is displayed inviting a subscriber to push the purchasing button. The purchasing ad may describe a special deal, which may be personalized. The personalized ad may be loaded off line, during the off peak hours, and may be stored at the user equipment. SPP 120 (FIG. 1) may broadcast a trigger for displaying a personalized ad. When the trigger is received, the personalized ad may be retrieved and displayed.

[00111] Upon initiating the task, a decision is made 612 as to which type of catalog to offer to the subscriber. The decision may be based on the TV program during which the purchasing task was initiated. For example, if the initiation was during a sports program, then a catalog that relates to the program, the players, etc. may be displayed. If the program was a music program then a catalog of CDs may be displayed, etc. These catalogs may include personalized information and goods, which may be based on previous purchasing. An
embodiment of the present invention may display catalogs of goods according to the current status of the subscriber’s account. The value of the goods/services may be less than the number of FVBPs that the subscriber has accumulated. In other embodiments of the present invention the cost of the presented goods/services may be higher than the current FVBPs, which are owned by the user. In such a case the user may pay the difference in dollars.

[00112] In some cases, the decision 612 on the type of the catalog may be made off-line by processor 240 (FIG. 2). In these cases, a variety of catalogs are transmitted off-line, prior to the current event, and then stored in the memory 260 (FIG. 2) of the user equipment. In other cases, the decision may be made by SPP 120 (FIG. 1), which broadcasts on-line, a selection of one or more catalogs. At the end of step 612, a selection of a few types of catalogs may be displayed.

[00113] A displayed page may include information on one or more options to be selected by the viewer; short descriptions on each option and one or more selection buttons requesting more information, etc. The displayed page may also include images, sounds, video clip, etc. Exemplary section buttons may be navigation buttons, execute buttons, check out buttons, and exit. The navigation buttons may include cursor control (i.e. up/down, left/right, etc.) or selecting of next/previous page.

[00114] At step 620 method 600 may wait for the next response. If a response has been received 620, then the response type is analyzed. If the response is one of the navigation keys 630, then the request is executed internally or may be sent to SPP 120. For example, if the response requests the previous page, then responding may be done internally and the previous page may be displayed immediately 632. If the response is for the next page, which may not exist in the memory of the user equipment, then a request may be send to SPP 120 and a message
reporting a delay may be displayed to the viewer. Then method 600 may return to step 620 waiting for the next response. Other navigation keys may be roll up or roll down, along the different optional goods or services. Responding to those requests may be done internally.

[00115] If 620 the response was selecting the execute button 640, then method 600 may execute the selected option 642. The execute button indicates that the subscriber is willing to purchase certain goods or services, which are marked by the cursor on the display. An exemplary embodiment of the present invention may log the request in a purchasing list and may display the next page in the catalog. An update balance of the subscriber’s FVBPs account may be displayed also. The method 600 may then return to step 620 waiting for the next response.

[00116] If the response was “check out” 650, then an order is initiated. A list of the goods/services that have been selected during this purchasing session are displayed 652 with their associated costs. The total amount of FVBPs that are needed for the entire order may be displayed with the balance of the subscriber’s account. The shipping address for the goods may be displayed also. Several options may be offered to the subscriber at this point. For example, approving the order; modifying the order; or canceling the order. The method 600 then may proceed to step 654 waiting for a response from the user.

[00117] If the subscriber’s response at step 654 is a selection of the canceling option, then method 600 proceeds to step 662. If the subscriber’s selection at step 654 is to modify the summarizing message, then the modification is processed 658 and stored and a modified message is displayed. Then method 600 may return to step 620 waiting for the next response. In some cases, method 600 may return to step 654 and not 620. If the subscriber’s response at step 654 is to approve the order, then the appropriate entry in VDB 132 (FIG. 1) and the appropriate FVBPs account may be updated 656 with the information of the transaction. An order may be
generated to the appropriate suppliers, based on information that is stored in GSDB 138. The GSDB 138 (FIG. 1) may be updated also. A terminated message may be displayed to the subscriber. The terminate message may provide a “thank you” message to the subscriber for the deal and may inform him about expected shipping dates. Then the purchasing task may be terminated 664.

[00118] Returning to step 620, if the exit button has been selected 660 without ordering any goods, then a terminate message may be generated 662 thanking the subscriber and inviting him to come back.

[00119] In non-interactive equipment, an exemplary embodiment of the present invention may display catalogs of benefits in a dedicated TV channel. In some cases, few benefits may be displayed in between programs or ads. Each product may have a product ID number. When a subscriber is willing to fulfill his FVBPs and convert them into goods/services he may call a certain phone number, which is displayed with the goods. An operator or an IVR system may respond to the call and collect necessary authentication information from the subscriber as well as the product ID of the selected goods/services.

[00120] Another embodiment of the present invention may use a web site for handing a plurality of catalogs; some of the catalogs may be personalized catalogs. In some embodiments of the present invention, the web site may be part of SPP 120 (FIG. 1). It may use GSDB 138 (FIG. 1) and may be loaded with personalized catalogs. The URL or the web site may be broadcast from time to time and be displayed to the viewers inviting them to fulfill their FVBPs and to convert the points into goods/services. The interaction between a subscriber and the web site may be interactive and may use a method such as but not limited to method 600.
In this application the words “unit” and “module” are used interchangeably. Anything designated as a unit or module may be a stand-alone unit or a specialized module. A unit or a module may be modular or have modular aspects allowing it to be easily removed and replaced with another similar unit or module. Each unit or module may be any one of, or any combination of, software, hardware, and/or firmware. In this application the words “benefits”, “goods”, and “services”, “prizes” and “rewards”, are used interchangeably.

In the description and claims of the present application, each of the verbs, “comprise”, “include” and “have”, and conjugates thereof, are used to indicate that the object or objects of the verb are not necessarily a complete listing of members, components, elements, or parts of the subject or subjects of the verb.

The present invention has been described using detailed descriptions of embodiments thereof that are provided by way of example and are not intended to limit the scope of the invention. The described embodiments comprise different features, not all of which are required in all embodiments of the invention. Some embodiments of the present invention utilize only some of the features or possible combinations of the features. Variations of embodiments of the present invention that are described and embodiments of the present invention comprising different combinations of features noted in the described embodiments will occur to persons of the art. The scope of the invention is limited only by the following claims.
CLAIMS

What is claimed is:

1. A method for detecting media content consumption by presenting a challenge output to
   media content viewers, the method comprising:
   a. transferring a challenge to a plurality of user devices;
   b. processing the challenge to create a challenge output;
   c. presenting the challenge output to a group of viewers, each one of the
      group of viewers being associated with a user device, wherein the
      associated user device is part of the plurality of user devices;
   d. responding to the presented challenge output by one or more viewers,
      from the group of viewers, by initiating one or more responses; and
   e. receiving the one or more responses;

2. The method of claim 1, wherein receiving the one or more responses further comprising
   storing the received response.

3. The method of claim 1, further comprising accrediting frequent viewer bonus points to a
   responding viewer.

4. The method of claim 1, wherein receiving the one or more responses further comprising
   checking the validity of the received response.

5. The method of claim 3 and claim 4, wherein the step of accrediting frequent viewer
   bonus points to a responding viewer is dependent upon receiving a valid response.
6. The method of claim 1, wherein presenting the challenge output on a user device is
dependent upon one or more private properties that are associated with the user device.

7. The method of claim 6, wherein at least one of the one or more private properties that are
associated with the user device is chosen from the group consisting of: phone number,
identification (ID) number, serial number, ID number of a smart card and user’s profile.

8. The method of claim 4, wherein checking the validity of the each received response is
depended on at least one parameter chosen from the group consisting of: time, ID number of the
user device, password; user name, challenge ID number, the content of the response.

9. The method of claim 1, wherein the challenge output is presented in a way that cannot be
easily processed by artificial means.

10. The method of claim 9, wherein the step of presenting the challenge output includes
using modulated shapes.

11. The method of claim 1, wherein the user device displays media content and the step of
presenting a challenge output is performed during the display of certain media content.

12. The method of claim 11, wherein responding to the challenge output is dependent upon
the content of the media which the challenge output is presented with.

13. The method of claim 1, wherein the challenge output instructs the user to follow a
sequence of instructions.

14. The method of claim 1, wherein responding to the challenge output is done via the user
device.

15. The method of claim 1, wherein responding to the challenge output is done via means
other than the user device.
16. The method of claim 15, wherein at least one of means other than the user device is
chosen from the group consisting of: SMS, mail, email, phone, fax and web site.

17. The method of claim 1, wherein the group of viewers is defined by the challenge that is
being transferred.

18. The method of claim 17, wherein the size of the group of viewers is defined by the
challenge.

19. The method of claim 17, wherein the user devices that are associated with the viewers in
the group of viewers are defined by the challenge.

20. The method of claim 14, wherein the response is stored in the user device and the step of
receiving the response is delayed.

21. The method of claim 14, wherein the step of receiving the response is performed on-line.

22. The method of claim 1, wherein the step of presenting the challenge output to a viewer is
triggered by transferring an additional command.

23. The method of claim 14, wherein the response includes private properties which are
associated with the user device.

24. The method of claim 14, wherein the response includes private properties which are
associated with the viewer.

25. The method of claim 1, wherein the group of viewers are associated with the whole
plurality of user devices.

26. The method of claim 4, wherein each user device has particular properties and the
response includes data to identify the user device, and the step of checking the validity of the
response includes matching the properties of the user device and the response.
27. The method of claim 3, wherein the number of frequent viewer bonus points that are accredited in association with a challenge depends on the response time.

28. The method of claim 1, further comprising limiting the number of times the same challenge can repeatedly be presented to a certain user device.

29. The method of claim 1, further comprising limiting the number of times a challenge is presented to a certain user device if a viewer has responded to the challenge.

30. The method of claim 1, wherein the transferred challenge is encrypted.

31. The method of claim 1, wherein the received response is encrypted.

32. The method of claim 1, further comprising preparing reports on viewer’s behavior.

33. The method of claim 32, wherein the report is produced based on at least one criteria chosen from the group consisting of: viewer profile, response, user device, time, date, media content.

34. The method of claim 1, wherein transferring the challenge is done by broadcasting the challenge to a plurality of user devices.

35. The method of claim 34, wherein broadcasting is done over at least one network that is chosen from the group consisting of: cable TV, satellite TV, terrestrial TV, and fiber optic networks.

36. The method of claim 1, wherein transferring the challenge is done over at least one network that is chosen from the group consisting of: cellular network, communication network, and Internet Protocol network.

37. The method of claim 1, wherein, a rewarding service is offered, the method further comprising:

one or more viewers providing subscription information to the rewarding service;
creating an entry in a database for each viewer providing subscription information;
creating a frequent viewer bonus points account for each subscriber; and
offering a one or more benefits, wherein at least a portion of the cost of each one of the
benefits, can be redeemed through the use of frequent viewer bonus points.

38. The method of claim 37, wherein the accredited frequent viewer bonus points are added
to the frequent viewer bonus points account of the responding viewer.

39. The method of claim 37, wherein there are two or more types of frequent viewer bonus
points and wherein at least one type of the of frequent viewer bonus points is chosen from the
group consisting of: the type of the challenge, the user and the response.

40. The method of claim 37, wherein the type of the one or more benefits depend on the
program in which the one or more benefits were displayed.

41. The method of claim 37, wherein the entry in the database includes profile information of
its associated subscriber.

42. The method of claim 37, wherein the entry in the database includes one or more
personalized catalogs.

43. The method of claim 37, wherein the entry in the database is temporary.

44. A system for offering a rewarding service to a frequent viewer, the system comprising:
a transmitter operable to associate media content with a challenge
and transmit the association of media and challenge;
a receiver operable to receive a response to a transmitted
challenge;
a viewer database including an entry for each subscriber to the
system;
a response module operable to:

identify a subscriber associated with the response;


determine that the response is valid;

if the response is valid, accredit frequent viewer bonus points

to the subscriber; and

store the frequent viewer bonus points into a frequent viewer

bonus points account associated with the subscriber.

45. The system of claim 44, further comprising a database of goods

and services which can be purchased by a subscriber, at least in part, by

applying the frequent viewer bonus points in the subscriber’s frequent

viewer bonus points account.

46. The system of claim 44, further comprising a plurality of user devices communicatively

coupled to the transmitter and operable to receive the association of media and challenge

transmission.

47. The system of claim 46, wherein the user devices are used by the subscriber to generate a

response to the challenge.

48. The system of claim 44, wherein the association of media and

challenge includes association of media and a trigger to a challenge that

was previously transferred.

49. The system of claim 44, wherein the association of media and

challenge includes an application program that is sent with the media.
50. The system of claim 44, wherein the association of media and challenge includes mixing the video signal of the challenge with the media.

51. The system of claim 45, wherein database of goods and services is offered according to viewer’s profile.

52. The method of claim 1, wherein the challenge output is presented while the media content is consumed.

53. The method of claim 2, wherein a rewarding service is offered, the method further comprising:
   a. creating a user account for each viewer that responds to the presented challenge output;
   b. accumulating further viewers’ responses in their respective accounts; and
   c. offering a benefit to viewers that have an account according to their account.

54. The method of claim 53, wherein a benefit that is offered to viewers is dependent on at least one parameter from a group consisting of: having an account, content of responses, validity of the response, quantity of responses, frequency of responses, random selection from accounts, time of response, date of response, media content.
Fig. 3b
Start Subscribing Process

Transmit Subscribing Challenge

Processing the receiving Challenge

Has been subscribed?

Display and Wait

Is a response

For each one of the Information segments

Display the Information segment

Wait and get the response

Process and Store the Response

More Information Segment

Confirmation Message

Process and inform the viewer.

Fig. 4a
Start Opening account Task

Allocate an entry in VDB. Define authenticating parameters. Define personal parameters and links to other sections.

Create a FVBPs Bank Account. Define link to the appropriate entry in VDB.

Search for temporary account.

Has a Temp. Acc.?

No

Yes

Transfer the Temp. Acc. to the viewer's bank account.

Grant subscriber FVBPs. Initiate a report to the new subscriber

Is Interactive User

No

Yes

Send Software Agent

End

Fig. 4b
Start Response Processing Task

Get the Next Response

Retrieve ID number. Check the response for validity.

Search for an Entry In VDB

Has an Entry?

Yes

Is Valid?

Yes

Save the transaction. Update the relevant bank account.

Has links to other sections?

No

Update the relevant sections.

Update Report

Last Response?

No

From FIG. 5b

End

Fig. 5a
Point A

Can be saved in Temporary Section

Yes: Open Temporary entry. Save the transaction.

No: Can Send a Report

Yes: Send a Request for subscribing

No: Go to step 570 Fig. 5a

Fig. 5b
Start Purchasing Task

Determine Types of Catalogs. Display a selection of one or more catalogs.

Get a user's response

Yes

No

Navigation Keys?

Display Next/Previous page

Execute Button

Log the Request & Display next step

Check Out

Display: List of purchased merchandises. Total cost in FVBPs. FVBPs bank account balance. Shipping information. Approval/modification

Response?

Modify

Canceled

Approved


End of Purchasing Task

Exit

Fig. 6