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(54) Title: A SYSTEM FOR INTERACTING WITH USER IN SET-TOP BOXES MAKING TV BROADCAST

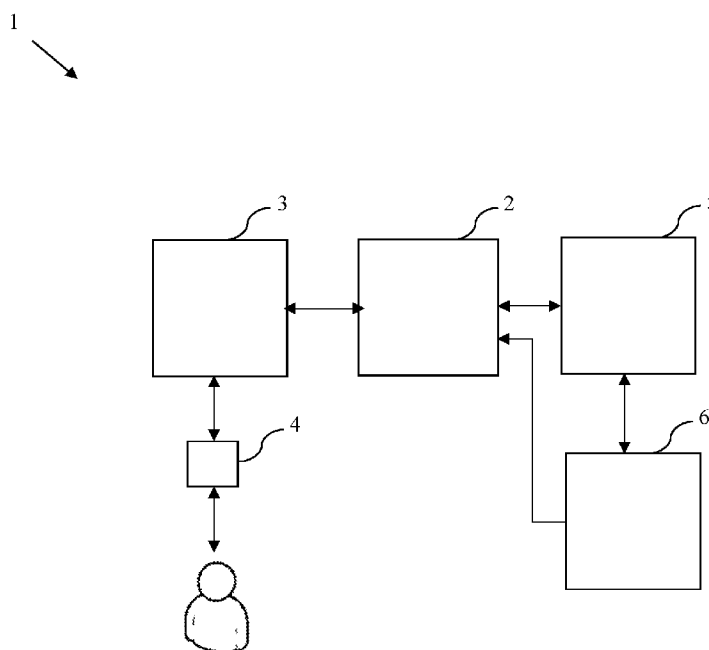


Figure 1

(57) Abstract: The present invention relates to a system which enables to interact with user interactively over a set-top box controlled by a control and to create user profiles by using interactions.

A SYSTEM FOR INTERACTING WITH USER IN SET-TOP BOXES MAKING TV BROADCAST

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Technical Field

The present invention relates to a system which enables to interact with user interactively over a set-top box controlled by a control and to create user profiles by using interactions.

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Background of the Invention

Use frequency of televisions which enable people to access images by transmitting image of moving figures to remote systems, increases with each passing day today. With developing technology, televisions also develop and can make broadcast over internet, broadcasts can be stopped or saved and thus they can be watched later. However, there are still no solutions which interact with television audiences today. Therefore, today there is need for solutions which receives audience estimates, comments related to TV programs instantly by establishing interactive interactions mostly among set-top boxes –which make TV broadcast– and users; shares them with users if required; scores audiences according to their estimation accuracies; and directs TV broadcast according to user comments. Thereby, user profiles are created by means of feedbacks received from users and interests of profiles for programs can be evaluated.

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The United States patent document no. **US2008077956** discloses a digital media service system with user interaction. The user interacts with a radio or television program by sending instant messages and can purchase products related to the program, download digital contents. The user communicates with digital media content by using computers, cell phones, personal digital assistants. While the

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broadcast provider offer advertisements, promotions, surveys or contests; the user send instant messages, take part in contests, answer survey questions by using the same communication way.

5 Summary of the Invention

An objective of the present invention is to realize a system which enables to interact with a user over set-top box interactively, to create user profiles by using interactions and to share relations among profiles and programs obtained over
10 interactions with broadcasters.

Another objective of the present invention is to realize a system which receives audience estimates about TV programs broadcasted in set-top boxes by means of control instantly; shares them with users if required; scores audiences according to
15 their estimation accuracies; and directs TV broadcast according to user comments

Another objective of the present invention is to realize a system which creates user profiles by examining behaviours arising from interactions between set-top box and user and whereby it is calculated whether other programs to be broadcasted can be
20 target group or not by evaluating interests of profiles for programs.

Another objective of the present invention is to realize a system whereby reports can be drawn up such as which program should be promoted to which group, television broadcast programs can be determined according to hours of use and
25 intensity of interaction.

Another objective of the present invention is to realize a system whereby rating of programs broadcasted in set-top boxes are determined according to interactions of users with TV.

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Detailed Description of the Invention

“A System for Interacting with User in Set-Top Boxes Making TV Broadcast” realized to fulfil the objective of the present invention is shown in the figure attached, in which:

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Figure 1 is a schematic view of the inventive system for interacting with user in set-top boxes making TV broadcast.

The components illustrated in the figure are individually numbered, where the numbers refer to the following:

10

1. System
2. Broadcast server
3. Set-top box
4. Control
5. Interaction server
6. Interaction interface

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The inventive system (1) for interacting with audience over TV broadcast comprises:

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- at least one broadcast server (2) whereto companies transmit their broadcast contents; and which shares the transmitted broadcasts with platforms;
- at least one set-top box (3) which is controlled by a command (4) in communication with the broadcast server (2); shares the broadcast content included on the broadcast server (2) with the users; and interacts with the users interactively;
- at least one interaction server (5) which is in communication with the broadcast server (2); wherein the contents to interact with audiences are included; transmits the additions that will be made to the broadcast to

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- be given from the set-top box (3) to the broadcast server (2) in order that it shares it with the user over the set-top box (3); keeps the responses received for the contents wherein additions are made; and creates user profiles by analysing the behaviours of the user on the set-top box (3);
- 5 - at least one interaction interface (6) which enables to communicate with authorities in order that the content to be included to the broadcast content is prepared on the interaction server (5).

10 The broadcast server (2) included in the inventive system (1) is a platform wherein channel broadcast streams of TV channels, user rights are included and whereby broadcasts are shared with users over the set-top boxes (3). Broadcasts are transmitted to users by means of the broadcast server (2).

15 In the inventive system (1), the set-top box (3) is an electronic device which is developed in order to get users to watch TV broadcasts by connecting to the broadcast server (2); whereto audiences can transmit their preferences by means of a command (4) comprising multiple keys; which transmits the broadcast that it receives by running preferably over Internet to a television receiver.

20 In a preferred embodiment of the invention, the interaction server (5) is in communication with the broadcast server (2) and shares the interactions prepared over the interaction interface (6) in order to provide interaction with audiences, with the broadcast server (2). The interaction server (5) connects to the broadcast server (2) and inserts the questions to be asked in order to interact with audiences, onto

25 broadcasts. The interaction server (5) keeps the answers given to the contents added onto the broadcast, the user profiles and their position in the rank.

30 In the inventive system (1), the interaction server (5) creates a user profile by analysing the behaviours of the user on the set-top box (3) according to the programs interacted and the frequency of interaction. The interaction server (5) also estimates possible interactions of the user from the analysis of the user behaviours

and decides on whether to provide more interaction for the related user on the set-top box (3) or not. Apart from this, the interaction server (5) also anonymizes the profiles of the users interacting with the program being watched and ensures that they are shared with the broadcast companies over the broadcast server (2).

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In a preferred embodiment of the invention, timers run on the interaction server (5) and it interacts with the TV server (2) by being activated when an interaction occurs. The interaction server (5) transmits the interaction text and in which channel an interaction will be provided to the broadcast server (2). Also, the interaction server (5) shares the responses and information about how long they will stay on the screen with the broadcast server (2) if it is an interaction for which an answer is expected. The broadcast server (2) transmits the information it receives over the interaction server (5) to the set-top box (3). Thus, the set-top box (3) displays the interaction to the user and if an answer is requested and the user answers, it transmits the answer it receives to the broadcast server (2). The broadcast server (2) transmits the answer it receives to the interaction server (5) and this information is transmitted to the broadcast server (2), the set-top box (3) and the user, respectively. The interaction server (5) can share the response ratios of the questions with the user over the set-top box (3).

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The interaction server (5) examines the interactive behaviours of the user from the set-top box (3) in user profiling transaction, in accordance with statistical distribution methods within the scope of pre-determined issues. Interaction types such as issues of interacted programs, hours, days of interaction, comment, competition, estimation are the scopes of issues considered by the interaction server (5). The interaction server (5) determines profiles of users in one or more fields based on these information. For example, such as sports fan, contestant, night bird or predictor.

30 The interaction server (5) compiles the information about the user and the related results by sorting in accordance with the request of the user to see the profile from

the set-top box (3) and transmits them to the broadcast server (2). And the broadcast server (2) shares the results with the user by transmitting the information transmitted to it to the set-top box (3). The request to see profile reaching the interaction server (5) is created on the set-top box (3) at first and then the set-top
5 box (3) transmits this request to the broadcast server (2) and the broadcast server (2) transmits it to the interaction server (5).

In a preferred embodiment of the invention, the interaction interface (6) is a platform used for defining the content that will be communicated with audiences
10 over the set-top box (3), on the interaction server (5). Questions to be asked to audiences are prepared and in which time period they will be presented to users are mostly decided on the interaction interface (6). The interaction interface (6) is preferably in the use of system administrators.

15 The interaction interface (6) provides interface opportunity for anonymizing profiles of users who interact with the program being watched on the set-top box (3), and sharing it with the related persons.

The interaction interface (6) sets interactions of authorized person on it and enters
20 in which category the interaction is made for profiling the user. For example, entry is made by using the tagging structure by sports, football, Fenerbahçe. The interaction interface (6) transmits the set interactions to the interaction server (5) and after the interaction server (5) saves the settings, it receives the result transmitted by it.

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In the inventive system (1), it is aimed to interact with audience for programs being broadcasted over the set-top box (3). Questions are asked to the user about the program. These questions can be displayed to all users of the set-top box (3) and they can also be displayed to a certain group. The questions are preferably answered
30 by using the command (4) over the set-top box (3). The questions asked by means of the set-top box (3) are usually questions for enabling users to make comment.

Answers which are given to questions asked in the inventive system (1), estimations made can be taken into game form and raced with one another. Thus, personal performances of users of each set-top box (3) are included in their profiles.

- 5 Within these basic concepts; it is possible to develop various embodiments of the inventive system (1) for interacting with user in set-top boxes making TV broadcast; the invention cannot be limited to examples disclosed herein and it is essentially according to claims.

CLAIMS

1. A system (1) for interacting with audience over TV broadcast; **characterized by**
- at least one broadcast server (2) where to companies transmit their broadcast contents; and which shares the transmitted broadcasts with platforms;
 - at least one set-top box (3) which is controlled by a command (4) in communication with the broadcast server (2); shares the broadcast content included on the broadcast server (2) with the users; and interacts with the users interactively;
 - at least one interaction server (5) which is in communication with the broadcast server (2); wherein the contents to interact with audiences are included; transmits the additions that will be made to the broadcast to be given from the set-top box (3) to the broadcast server (2) in order that it shares it with the user over the set-top box (3); keeps the responses received for the contents wherein additions are made; and creates user profiles by analysing the behaviours of the user on the set-top box (3);
 - at least one interaction interface (6) which enables to communicate with authorities in order that the content to be included to the broadcast content is prepared on the interaction server (5).
2. A system (1) according to Claim 1; **characterized by** the broadcast server (2) which is a platform wherein channel broadcast streams of TV channels, user rights are included and whereby broadcasts are shared with users over the set-top boxes (3).
3. A system (1) according to Claim 1 or 2; **characterized by** the set-top box (3) that is an electronic device which is developed in order to get users to watch TV broadcasts by connecting to the broadcast server (2) of the set-top boxes (3); where to audiences can transmit their preferences by means of a command (4)

comprising multiple keys; which transmits the broadcast that it receives by running preferably over Internet to a television receiver.

4. A system (1) according to any of the preceding claims; **characterized by** the
5 interaction server (5) which is in communication with the broadcast server (2) and shares the interactions prepared over the interaction interface (6) in order to provide interaction with audiences, with the broadcast server (2).

5. A system (1) according to any of the preceding claims; **characterized by** the
10 interaction server (5) which connects to the broadcast server (2) and inserts the questions to be asked in order to interact with audiences, onto broadcasts.

6. A system (1) according to any of the preceding claims; **characterized by** the
15 interaction server (5) which keeps the answers given to the contents added onto the broadcast, the user profiles and their position in the rank.

7. A system (1) according to any of the preceding claims; **characterized by** the
interaction server (5) which creates a user profile by analysing the behaviours of
the user on the set-top box (3) according to the programs interacted and the
20 frequency of interaction.

8. A system (1) according to any of the preceding claims; **characterized by** the
interaction server (5) which estimates possible interactions of the user from the
analysis of the user behaviours and decides on whether to provide more interaction
25 for the related user on the set-top box (3) or not.

9. A system (1) according to any of the preceding claims; **characterized by** the
interaction server (5) which also anonymizes the profiles of the users interacting
with the program being watched and ensures that they are shared with the broadcast
30 companies over the broadcast server (2).

10. A system (1) according to any of the preceding claims; **characterized by** the interaction server (5) whereon timers run and which interacts with the TV server (2) by being activated when an interaction occurs.

5 11. A system (1) according to any of the preceding claims; **characterized by** the interaction server (5) which transmits the interaction text and in which channel an interaction will be provided to the broadcast server (2).

10 12. A system (1) according to any of the preceding claims; **characterized by** the interaction server (5) which shares the responses and information about how long they will stay on the screen with the broadcast server (2) if it is an interaction for which an answer is expected.

15 13. A system (1) according to any of the preceding claims; **characterized by** the broadcast server (2) which transmits the information it receives over the interaction server (5) to the set-top box (3).

20 14. A system (1) according to any of the preceding claims; **characterized by** the set-top box (3) which displays the interaction to the user and if an answer is requested and the user answers, it transmits the answer it receives to the broadcast server (2).

25 15. A system (1) according to any of the preceding claims; **characterized by** the interaction server (5) which examines the interactive behaviours of the user from the set-top box (3) in user profiling transaction, in accordance with statistical distribution methods within the scope of pre-determined issues.

30 16. A system (1) according to any of the preceding claims; **characterized by** the interaction server (5) which compiles the information about the user and the related results by sorting in accordance with the request of the user to see the profile from the set-top box (3) and transmits them to the broadcast server (2).

17. A system (1) according to any of the preceding claims; **characterized by** the interaction interface (6) which is a platform used for defining the content that will be communicated with audiences over the set-top box (3), on the interaction server
5 (5).

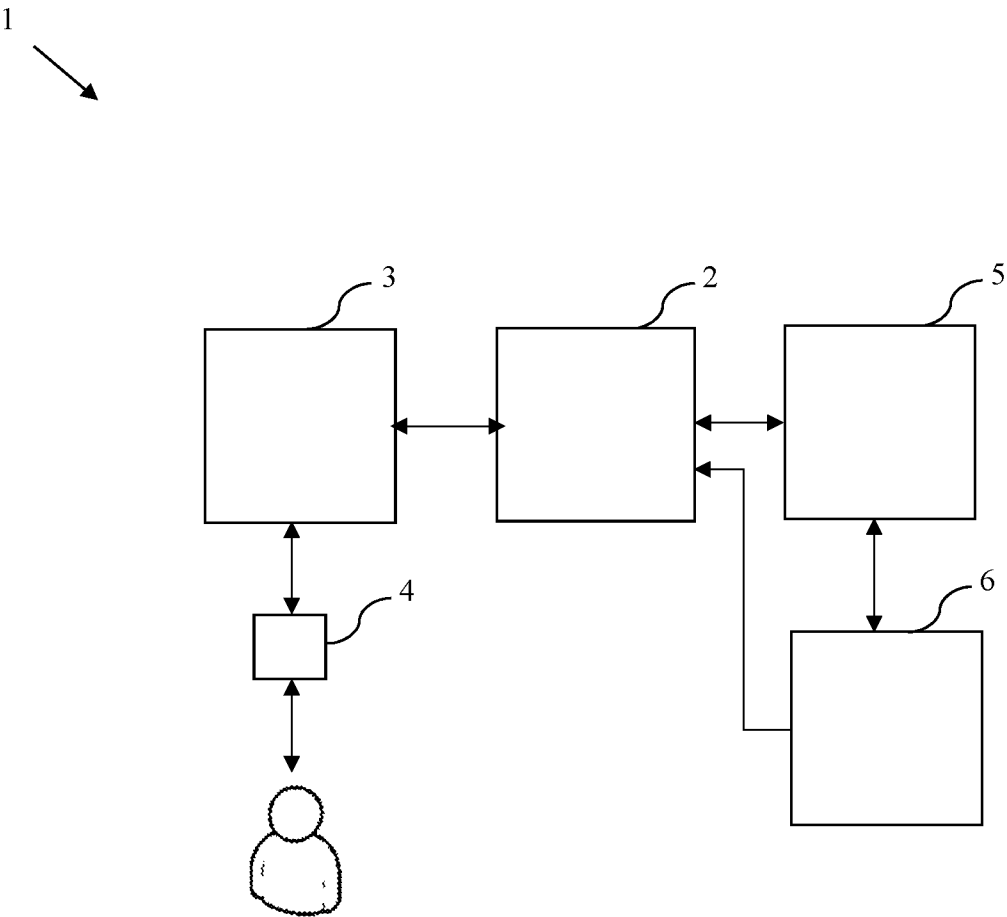
18. A system (1) according to any of the preceding claims; **characterized by** the interaction interface (6) wherein questions to be asked to audiences are prepared and in which time period they will be presented to users are mostly decided.
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19. A system (1) according to any of the preceding claims; **characterized by** the interaction interface (6) which provides interface opportunity for anonymizing profiles of users who interact with the program being watched on the set-top box (3), and sharing it with the related persons.
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20. A system (1) according to any of the preceding claims; **characterized by** the interaction interface (6) wherein interactions of authorized person are set in which category the interaction is made for profiling the user is entered.

20 21. A system (1) according to any of the preceding claims; **characterized by** the interaction interface (6) which transmits the set interactions to the interaction server (5) and after the interaction server (5) saves the settings, receives the result transmitted by it.

Figure 1



INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

H04H 60/33 (2008.01)i; H04N 7/173 (2011.01)i; H04N 21/4788 (2011.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04H; H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010333127 A1 (AT & T INTELLECTUAL PROPERTY I LP [US]) 30 December 2010 (2010-12-30) abstract, paragraph [0023], paragraph [0033], paragraph [0042], paragraph [0051], paragraph [0060], paragraph [0068], paragraph [0084], figures 1-2, figure 7	1-21
X	GB 2390459 A (GOINTERACTTV LTD [GB]) 07 January 2004 (2004-01-07) abstract, page 4, lines 13-31; page 6, lines 25-32; page 7, lines 1-13; page 13, lines 24-32; page 14, lines 1-6, 11-16, 26-32	1-4
A		5-21
X	US 2015281787 A1 (GOOGLE INC [US]) 01 October 2015 (2015-10-01) paragraph [0027], paragraph [0048], figure 1, figure 4A	1-2
A		3-21

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
US	2010333127	A1	30 December 2010	US 8904421 B2	02 December 2014
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GB	2390459	A	07 January 2004	NONE	
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