



## STREP

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## MOBISERVE

### **New mobile services at big events using DVB-H broadcast and wireless networks**

#### **Deliverable 1.2: Service scenarios (sports and home) (WP1.2+ WP1.3)**

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## 1. Introduction

This document is the result of Task 1.2 (Sports/Games Service scenarios and focus group) and Task 1.3 (Definition of new usage scenarios of rich-media content in the home and at hotspot).

The main objective of Task 1.2 is to identify two relevant convergent service scenarios, particularly IP Datacast based, for users on the move, in sports / game areas.

Task 1.3 mainly deals with home and hot spot environment. The home environment contains devices with a large storage space and processing power, as well as connectivity. This enables new applications of DVB-H content such as:

- Storage/backup of material;
- Combination of user-recorded video and broadcasted video;
- Advanced content analysis/metadata creation;
- Content sharing;
- Service relay of DVB-H to WLAN

The hotspot environment (e.g. airport, restaurant) is similarly interesting in deploying applications like:

- Location-dependent content broadcast and sharing
- Community-based content broadcast and sharing

The main objective of Task 1.3 is to identify one user scenario in home and one in the hotspot context.

The scenarios will inform the technology development process, providing the technology developers with realistic and detailed scenarios of use from the user perspective. These scenarios will also be used to gather more detailed feedback from users about the way they would like to interact with a particular service. Scenarios will also be the basis for service prototyping that will be implemented both for performing the first usability tests with the users, and for providing sample interfaces to the team that will actually implement the services in the project.

The scenarios in this document do not take into account of the technical feasibility analysis which will be performed in Task 1.4 for the reason that technologies will be evolving in the process of the project and this document aims at give a pure user's perspective on innovative service scenarios.

The service scenarios are defined on the basis of:

- User requirements based on the analysis performed in Task 1.1
- New technologies/functionalities/solutions addressed in MOBISERVE.

The work has been carried out in the working process listed below:

1. Collect all Use Cases from all partners

All partners contribute to conceive two use cases (functions) for sports scenario and two for home and hot spot scenarios. And all use cases were collected and served as inputs for focus group investigation.

2. Conceive scenario stories covering all Use Cases for focus group

One story covering all use cases was conceived for focus group. This is for a better understanding of use cases by the end users.

3. Take focus group results analysis as inputs to refine scenarios

A user needs analysis report was worked out by Task 1.1. In this report, the acceptance of all use cases by users is analysed and ranked. The use cases less favoured by end users were removed.

4. Deliver final scenarios

The final scenarios were delivered in chapter 3 in this report.

## 2. Use Cases

As the result of Use Cases collection, the Use Cases is listed in the following table:

<b>ID</b>	<b>Use Cases</b>	<b>Description</b>
1	Alerts from the events on the air.	Alert on noticeable events such as a interested tennis match might be reaching the end of match (match points) and offer the possibility to the user to switch directly to that channel. The alerts could be also grouped by interest. This kind of service could be subscribed.
2	Zoom (Multi-Angle)	The TV program can be enjoyed from different angle such as focusing on the interested player.
3	Polling	Collection of the end users' feedback (e.g. voting) or play (e.g. betting).
4	Time-Shifting (Smart Pause)	The ability to record the actual viewed program while switch to another activity such receiving a phone. As such, the user would not loose any piece of the viewed program.
5	Program associated information	The TV program related information is broadcasted along with the associated TV program. For instance, the description about the teams participating to the football match. Inside this information, there may be some links (URL) which allows user to get further information on a specific interested issue like a player biography.
6	Program independent data	Broadcast of the program independent data such as weather, traffic
7	Stadiums' Guide (with MAP)	To be guided on the way to go inside and outside the stadiums
8	Multi-Language	Multi-lingual for the TV program as well as the broadcasted information
9	Selection of preferred commentators	While viewing a competition, one may have the possibility to choose the preferred commentators (sportscasters)

<b>ID</b>	<b>Use Cases</b>	<b>Description</b>
10	Online shopping (associated with program)	TV program triggered online shopping. That is, the goods are shown in the TV program, the online shopping of those goods are suggested.
11	User feedback	User may want to express his/her opinion regarding the viewed programs or other suggestions.
12	Online Gaming	Game download via broadcast channel, local or online play and online ranking.
13	Multi payment modes	Different payment modes may be offered to the users, namely, by theme (for instance football or formula 1), pay-per-view, daily, weekly, monthly, etc.
14	Live program	Repurpose (retransmission) of the live TV program
15	Download (scheduled)	Any kind of data could be scheduled to be downloaded via the broadcast channel.
16	PVR	Based on the usage profile stored on both the mobile device and the home entertainment system, all relevant and potentially interesting services (Audio/Video and applications) can be stored in the PVR system.
17	User profile and preference (user initiated)	User might be able to define his/her profile and preference.
18	Automatically usage statistics data collection (system initiated)	The usage statistics such as which programs have been seen by whom, for how long, at what time, etc.
19	Diary	Record one's own daily experiences: what did I see? What is my opinion? Etc.
20	ESG	Electronic Service Guide
21	Rich Media enabled ESG	
22	Rich Media function support	AV control, Media library, VoD
23	Access to Internet thru Rich Media interface	

<b>ID</b>	<b>Use Cases</b>	<b>Description</b>
24	Overlay information of choice	
25	Top list recommendation	Based on the profile and the preference of the user.
26	Content upload	User might want to upload content in order to let other people share his/her experience.
27	3D scene analysis	A 3D model of the current game situation may be present to the user. By performing gestures with the pen on the touch screen, the user is able to rotate and zoom into the scene. Important details like offside (football game), defense assignment (basketball game) will be highlighted.
28	Breach-of-the-rule detection	The end-user device detects automatically potential breach-of-the-rule situations and highlights the scene and gives a comprehensive description. The user can compare the device decisions to those of the referee.
29	VOD	Video on Demand
30	Intelligent ESG presentation	Channels of interest to a customer can be grouped together at the end-user device.
31	Local (re)play	This means the possibility offered by the terminal to slow down the motion and freeze). It can be applied to both the live TV program and recorded one.
32	Usual Mobile phone functions while watching TV	Still being able to use the usual mobile phone while enjoying the TV program.
33	Exciting spots (clips) available while watching the live TV program	For instance, during a basketball, the content provider cuts the interesting moments (clips), such as a nice shoot, along with the competition and notifies the user whenever these clips are available
34	Interactivity with the TV programs	Being able to influence the broadcasted program's progression, whether pre-recorded or live

<b>ID</b>	<b>Use Cases</b>	<b>Description</b>
35	Emergency notification	Emergency events which are needed to be broadly announced to the public such terror, accident, earthquake, ...
36	Relay from DVB-H to WiFi	
37	High quality video transforming from Mobile to TV	The image/video on the mobile is sometimes unsuitable to be shown on the big screen due to the poor resolution and quality.
38	Content sharing in the community	Sharing your collection with those friends who have common interest.
39	Indoor non-interruption	Handover to WiFi network when DVB-H signal is weak.
40	Location dependent content	While the main program may still come from DVB-H, based on the location, what happened around could be also enjoyed such as more views on a match when you are at the stadium.
41	Location dependent application	At the airport, everything about your flight; in the shopping center, price comparison; in a coffee shop, selection of the programs best fit your disposal time and profile.
42	Mobile TV to home computer	No conflict with your love ones provided that different programs can be shown simultaneously on different devices.
43	Mobile TV to laptop at backyard	No hassle with messy cables and go wherever you want in your home

**Table of Use Cases**

### 3. FINAL SCENARIOS

For a better understanding by users, a story covering all use cases was conceived for the focus group carried out in Task 1.1, and user needs analysis was conducted as well in Task 1.1.

As the analysis results turned out, the following functions are not favoured by the end users:

- Alert messages during a match
- Slow down the motions while watching a local file or a live program
- Breach of the rule service
- Message sent to community based on profiles
- Overlay layer to present different categories of information
- Automatic usage data collection
- Scheduled download
- Share diary with others
- Multi-angle service
- VOD
- ...

Detailed quantitative information is available in the report *User Needs* (D1.1 of MobiServe project).

According to these results, scenarios are refined and final scenarios are defined hereafter.

#### 3.1. Sports Scenario 1

Functions/Services related:

- Personalize the references on the mobile phone
- Watch programs provided (e.g. VOD) according to the profile on mobile
- Online shopping
- Program independent data information (traffic, map, weather, etc.)
- Polling
- Program related information and services

Olympics games start. Tom is a sports fan. He personalizes his preferences on the mobile phone. The mobile phone presents Tom's favourite programs according to his pre-settings.



Tom bought tickets for basketball final, reserved hotel room through his mobile, and subscribed to city information (weather, traffic, map, location based service, etc) service.

By the help of the traffic and map information provided by MobiServe, Tom arrived at the stadium without any problem.

Tom was sitting in the basket ball stadium excitingly. Before the match started, Tom received a polling message on which team is going to win the match, and if Tom's choice turned out to be true, he will receive a match ticket as reward. Tom chose his favorite team and sent back his answer.

During the match, all kinds of information are sent to the mobile, and Tom can choose to display the information received on the screen of his mobile. Tom chose to display information on basketball players in the match and also the information from the badminton match that is happening at the same time.

### 3.2. Sports Scenario 2

Functions/Services related:

- Emergency notification
- Alerts for coming programs
- Live Programs
- Multilingual Services
- Clip download

The match finished. Tom was in the subway to go back to hotel. He received an emergency notification informing that the subway route NO.1 (which is the route he will pass through) stopped working because of an accident. So Tom decided to go back to his hotel by taxi.

In the taxi, Tom received an alert informing the football match is about to begin. He entered the football channel directly through the alert message received and began watching the live match. Tom was informed that two languages (Chinese and English are available), he chose Chinese; and in Chinese he can chose from two groups of commentators, and he chose his favorite one.

Suddenly, team A scored. An alert arrived informing the availability of a video clip for this score. Tom chose to download the clip in background and after watching the live match, Tom started watching the downloaded clip.

Tom was back to his hotel. Based on his profile and collected usage data, different kind of information which was in the interest of Tom was pushed to his mobile, and Tom enjoyed all these during the night.

In addition, users are very interested in the interactivity with programs. For this reason, a separate scenario for an interactive mobile TV entertainment show was conceived to illustrate interactivity with program. In this scenario, no additional use cases have been used. To read the detailed interactivity scenario, please refer to the annex of this report.

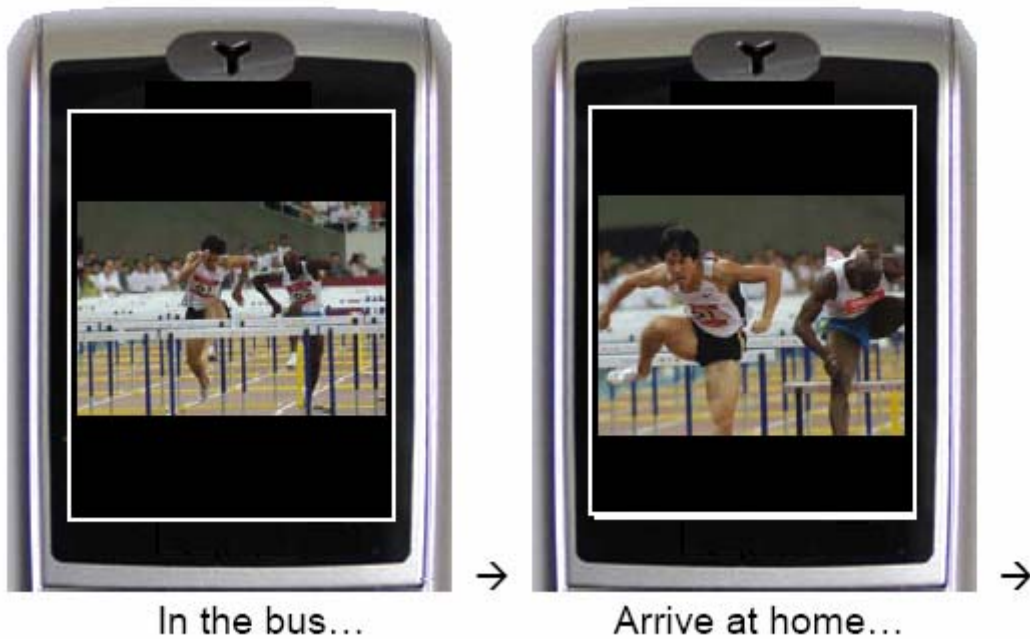
### **3.3. Home Scenario: “Reliving Olympics at Home”**

Functions/Services related:

- Seamless handover of content from mobile to TV (continuously watching the same content)
- Reserve the highlights on mobile phone
- Watch high quality home-version videos on TV-set
- Play the content of mobile phone on the household TV set
- Share content with friends on mobile phone
- Share content with friends on TV-set

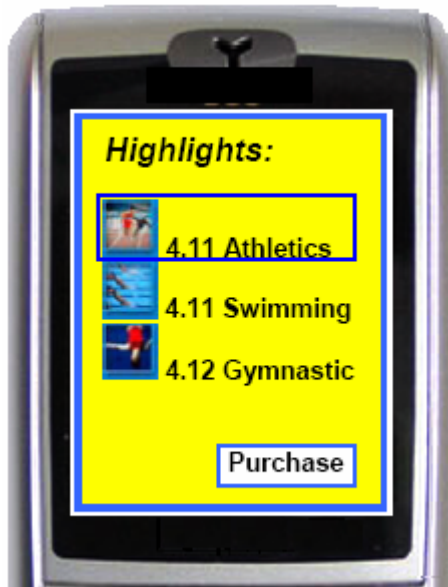
#### **Episode 1**

After a match, Tom takes bus back to the hotel. Even in the bus, he doesn't want to lose any moment and keeps watching the Olympic game on his mobile phone. When he arrives, he connects his phone to the big TV screen and continues watching the program on the TV screen.



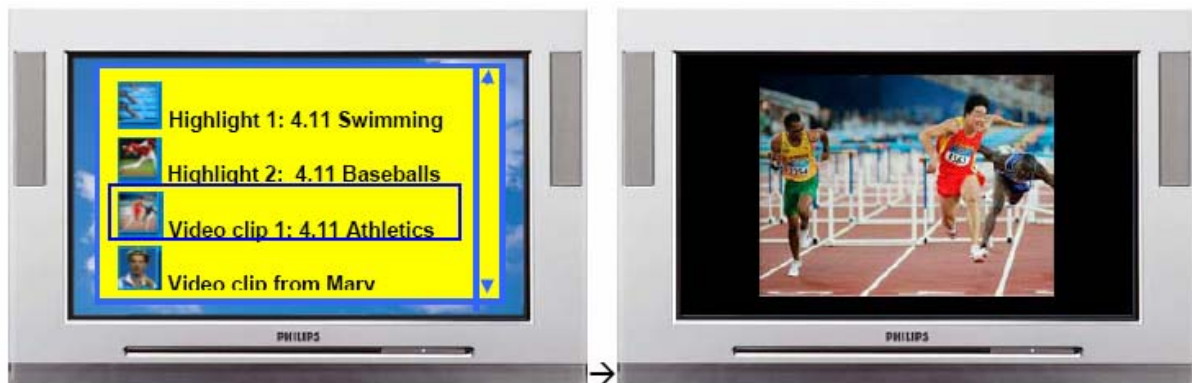
## Episode 2

In the stadium, Tom recorded a lot of interesting and funny moments. After the game, via his phone he indicated which highlights he wants to keep, so he can see them later at home. Tom subscribes to the special service: as soon as he indicates that he wants to keep this highlight, the highlight of a good quality, dedicated to watch on a big screen TV, is sent to his home server.



### Episode 3

Olympics are over. Tom is back at home and he has friends coming over tonight to see his pictures and recordings. Tom connected his mobile phone to the big screen in the living room. And the show began... Everybody liked Tom's recordings of the funny moments. They also enjoyed very much watching highlights of the finals.



Connected to big TV screen...

### Episode 4

Mary couldn't make it to the party, but she really wanted to see the videos and also to show hers, so Tom established a share link with her. Mary didn't feel left out, because she got streaming videos from Tom's phone on her mobile and TV. Watching all these highlights and recordings in the home theatre, was like reliving Olympics again.



### 3.4. Hotspot Scenario: “Smart Guider”

Functions/Services related:

- Get tourist information at the airport
- Get Olympic related programs at the airport
- Get recommendations in shops
- Click products for E-shopping when watching the advertisement
- Get specific Olympic related programs in restaurants or bars
- Interactive discussion group

#### Episode 1

During the period of Olympics, Beijing airport provides a special service -- “mobile information desk”. Tom comes from Shanghai for Olympics. As soon as he arrives at the airport, he receives a message on the mobile phone, presenting diversified programs about tourist information and Olympics related information. Tom checks the Olympic Schedule and watches the program about Olympic Games.



## Episode 2

Tom has been in Olympics for several days. Before returning, he goes shopping near the stadium for souvenirs. He receives a notification on the mobile phone, which offers special recommendations. He could access to the shop on-line via a click on certain product presented. If he is interested, he could pay via the mobile phone.



## Episode 3

During the Olympic games in Beijing, there are many restaurants and bars filled with sports fans. Just now, Liu Xiang won in the hurdle race. Tom comes to a coffee bar for celebration. As soon as he comes in front of the bar, he receives a message, which introduces the performances offered in the bar. Specially tailored Olympic programs and interactive

discussion group are presented. Thanks to the interactive discussion group and live show on the big screen, Tom celebrates the exciting moment together with new friends in the bar.



On Tom's Mobile...

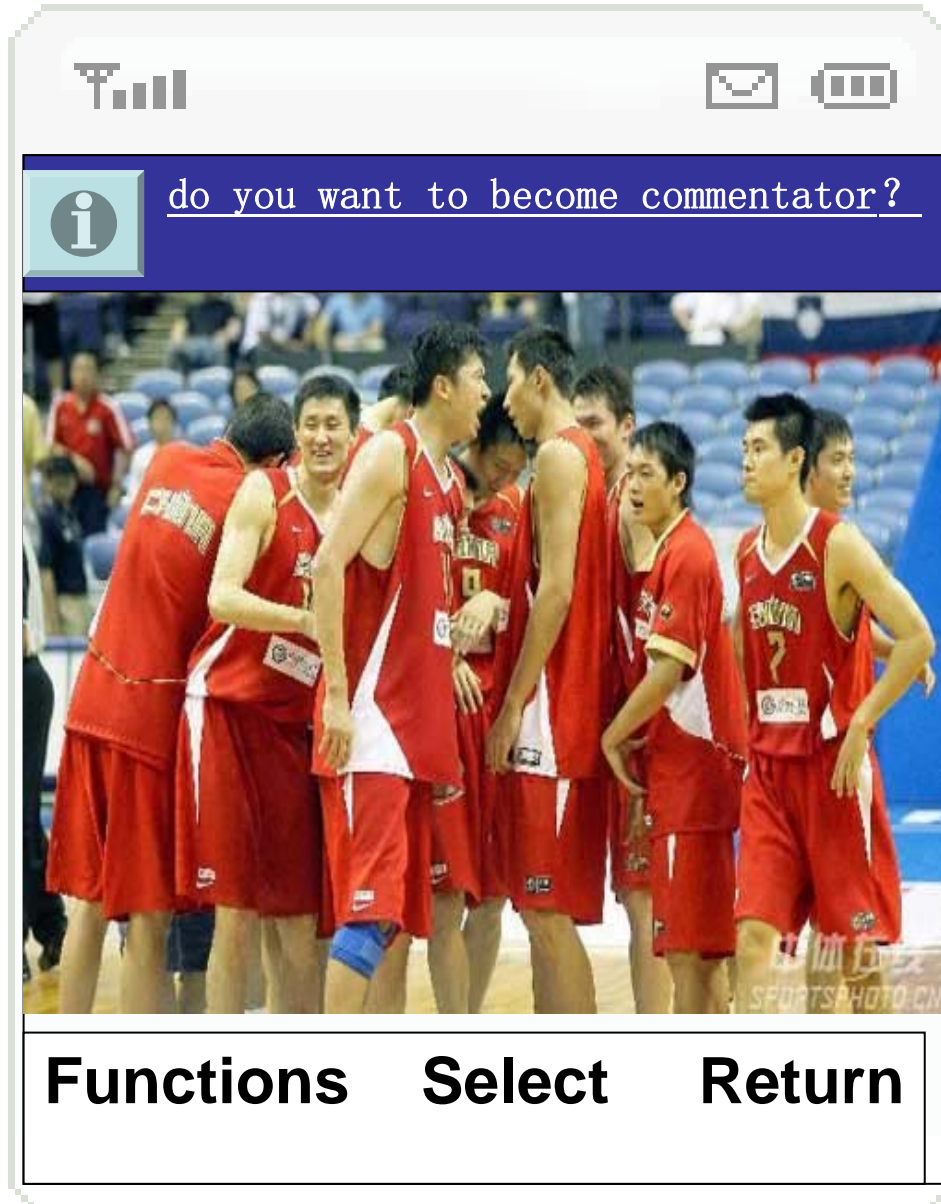


Big screen in the bar...

## 4. Annex: Interactivity Scenario

Tom was a Sports fan.

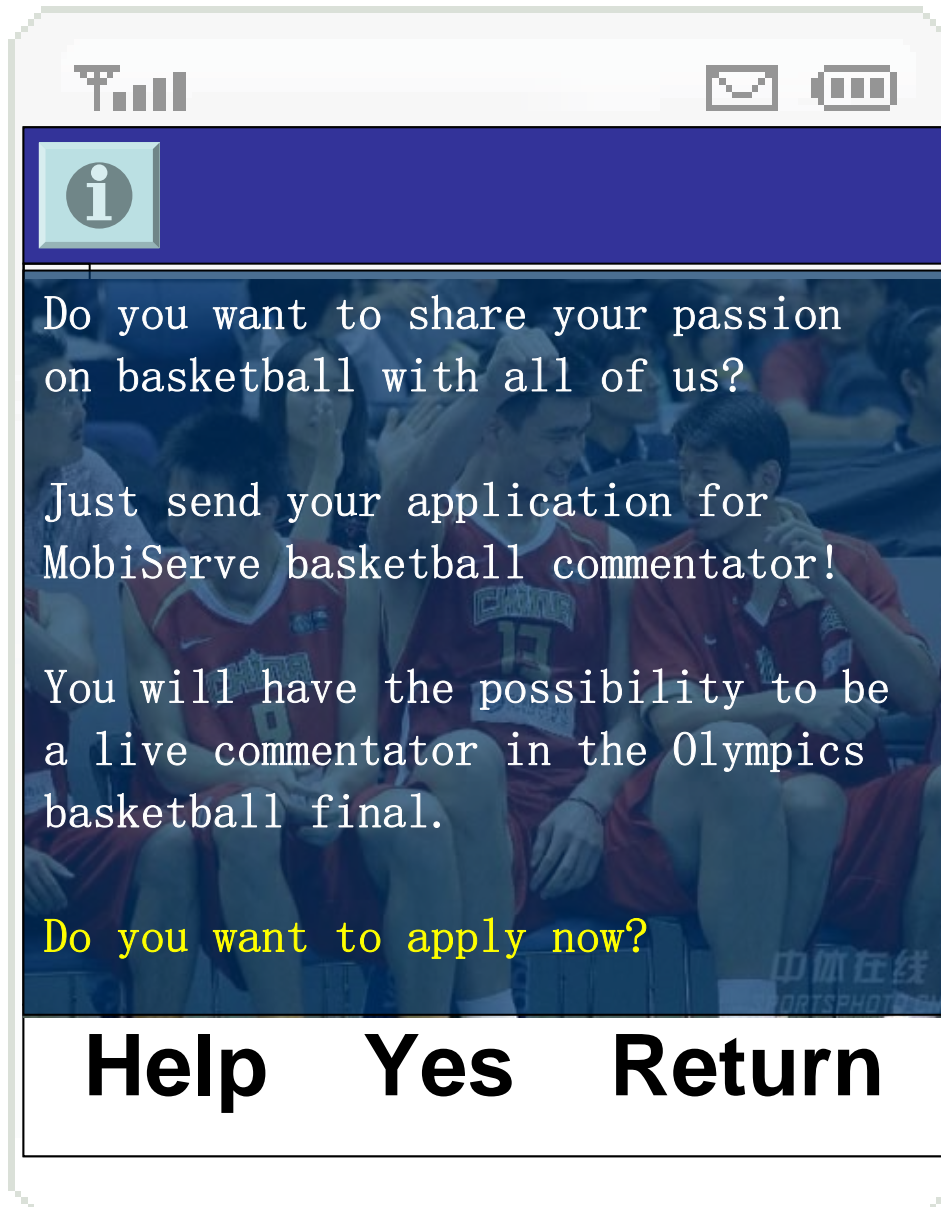
Tom watched a basketball match on his mobile phone when he was in a bus. He received a notification message while the basket ball players were entering the field.



Tom was very interested and he pressed the notification reading button.

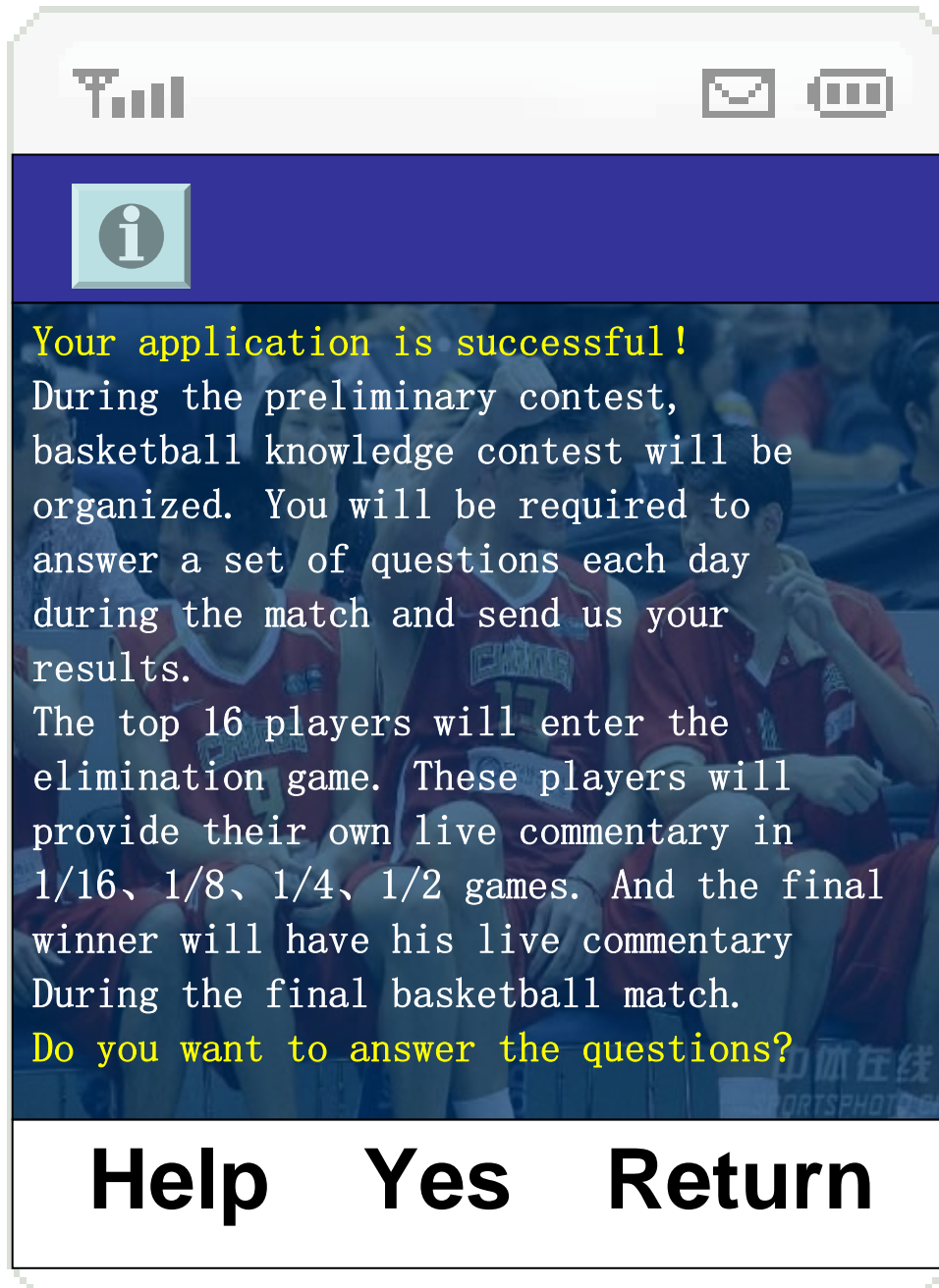


On Tom's mobile screen:



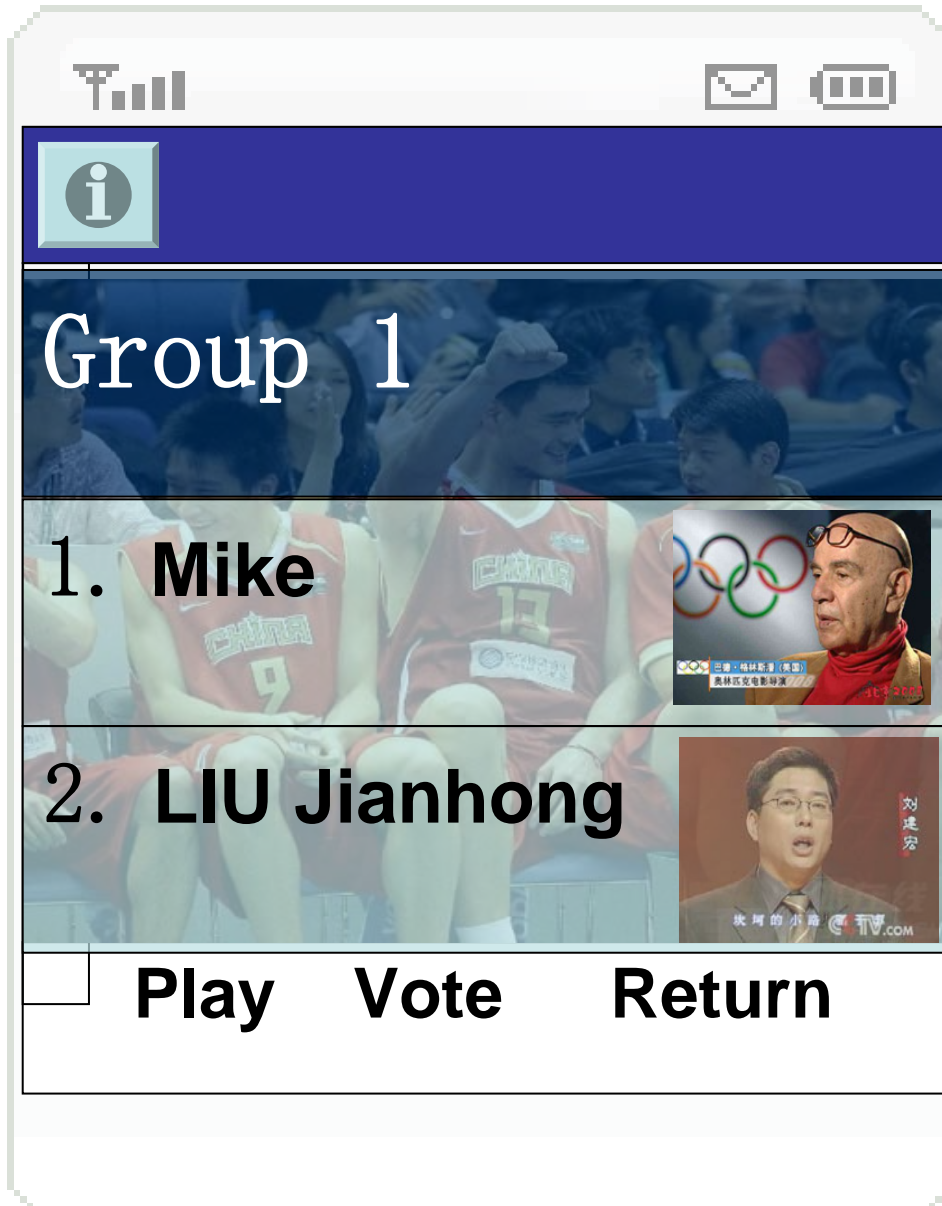
TOM was very interested and applied.

Tom's application was successful:

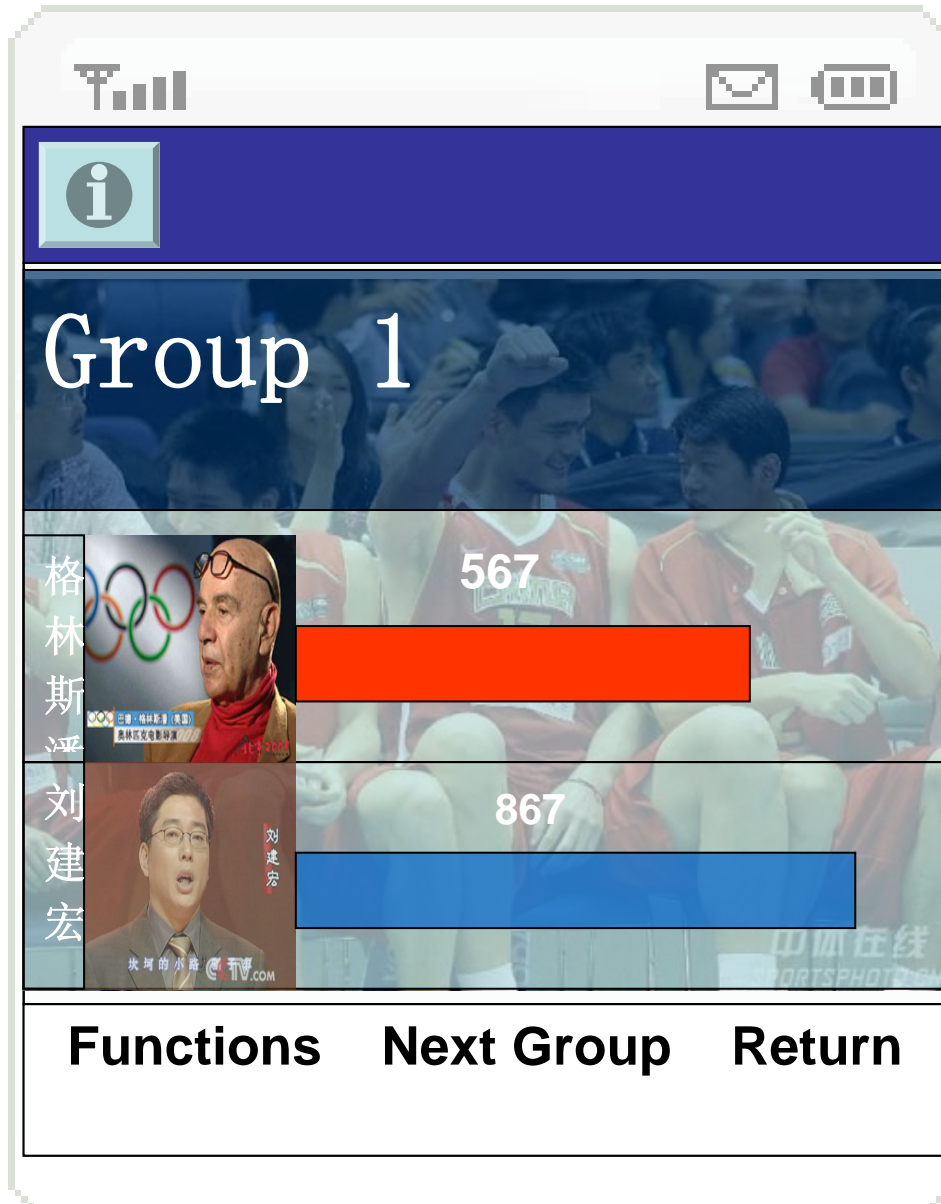


Tom finished answering the 10 questions and sent out his results.

TOM failed in the preliminary contest. But he wanted to know who the winners were. So he entered the voting system:

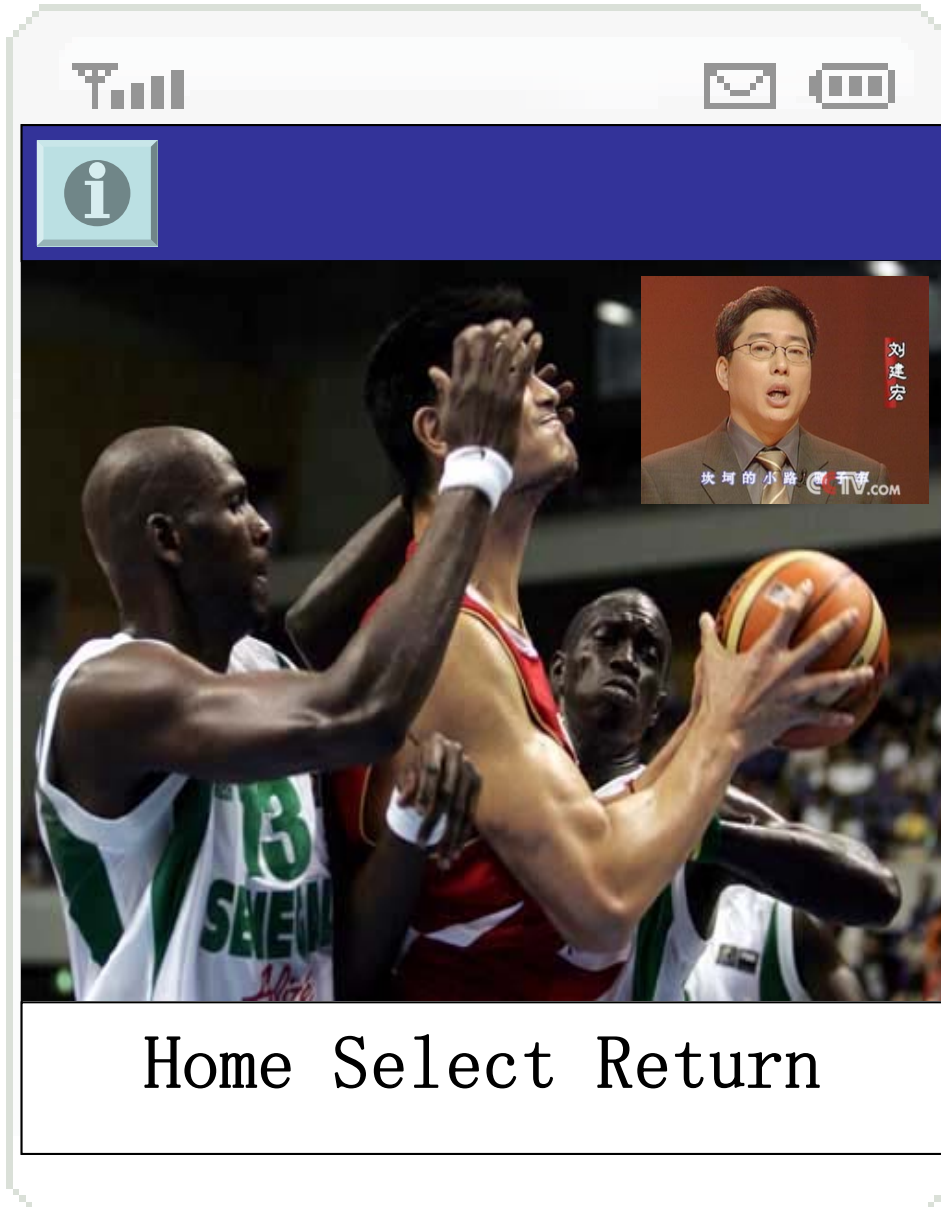


After watching the commentary videos, TOM voted for Liu Jianhong. The voting statistics appeared on the screen:



At last, Liu Jianhong became the final winner.

In the final match, Liu Jianhong was having his live commentary:



Users can switch between the two screens.

