

Interactive Mobile Broadcast Use Cases



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1 Introduction

Due to cost considerations and high user acceptance of well-known TV channel brands in a first step mobile TV service offerings will base mostly on simulcast stationary TV channels. But the schedule and layout of these channels do not fit best to such usage characteristics of mobile TV as watching duration or daily watching curve as well as not to the small screens of mobile devices. So in a second step special made for mobile channels may be expected being more adapted to the mobile watching experience.

But mobile TV may become more than watching TV on a mobile device. The mobile TV service is able to provide an enhanced and enriched TV experience.

Together with the video and audio content of a TV channel additional information can be sent to be selected and displayed by the user on an occasional basis.

Moreover, active elements as initiating a call, sending SMS or MMS or connecting to a specified web site can be included. Furthermore interactive applications can be broadcasted or downloaded to the mobile devices using broadcasted content and initiating specific actions.

By using communication functions of the mobile network interactive services may generate additional turnover contributing to the overall mobile TV business case.

However, interactive services do not come for free. The content provider has to arrange for the additional data related to the TV channels; the so called Interactivity data. But the setup of interactive services does not mean to develop new services at all. There are many interactive services on TV right now and many of them could be ported to mobile broadcast TV with very affordable efforts.

Very important, the interactivity ecosystem needs to be well defined in order to enable the instantiation of the technical solution(s).

All together as part of the mobile broadcast proposition, interactive services will fulfil an important role.

2 Objectives

Below we describe several use cases of interactive mobile broadcast services to illustrate the desired service offerings. It shall open content providers the range of possibilities to enrich mobile TV services.

So, on the one hand this document is intended for anyone who has an interest in interactive mobile broadcast services.

On the other hand the document will be used within **bmcoforum** to promote the technical realisation of needed interoperable solutions.

3 Broadcasting and Interactivity

Before entering a mobile broadcast service, the user has to select a channel by the help of an Electronic Service Guide and if necessary to purchase the service. Although this is also some type of interactivity we do not consider these actions hereafter as we will focus on interactive features that can be used as part of a broadcast service.

So, the interactive use cases considered here are limited to interactions triggered while receiving broadcasted media (like television, radio or even data). We will not consider interactions which base on any filecast application or data as after their reception they could be considered as any application or data stored at the device.

4 Use cases

In the following typical interactive mobile TV use cases will be described on a widely non-technical basis. Some technical requirements issues are then described in the next chapter.

The use cases are categorized into two classes:

- Information-specific use case
Information-specific use cases allow a user to access information while watching a TV channel or to access a special information channel
- Action-related use cases
Action-specific use cases allow a user to generate actions (as sending a SMS) by using the mobile communication channel.

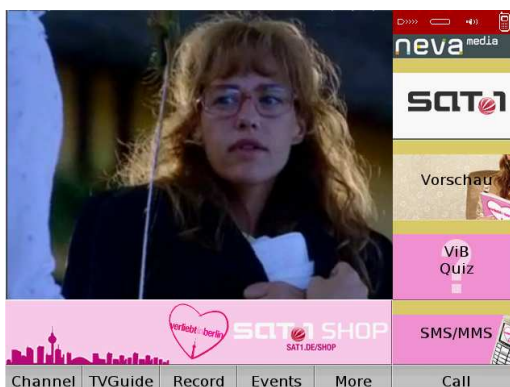
4.1 Information-specific use cases

4.1.1 Static show-related information

While waiting for his late flight, Michael starts watching TV on his mobile. He stops zapping at a cooking show. He finds buttons on his display labelled "Recipes", and "Where to dine". After activating "Recipes" he gets a screen with the recipe of the dishes prepared in this show. "Where to dine" leads him to restaurants which serve the dishes which are presented in this show.

Remark:

- In this use case all additional provided information is static and does not change during the cooking show.



4.1.2 Dynamic programme-related information

John wants to watch the NBA game of his favour basketball team Dallas Mavericks, but his girlfriend Jeanette prefers watching soap at the main home TV. So he uses his mobile. As he missed the first quarter, he is interested in the actual score of each of the Maverick players. He uses the button "Scores" to find out that Dirk Novitzki has 14 points, 4 rebounds and 1 foul so far.

Remark:

- In difference to the previous use case in this example the provided "Scores" information is dynamic and will change during the game.



Heim	Gast	Datachannel
Punkte		Spielinfo
Jared Newson 0	Ajene Malaki Moye 0	
Rebounds		Bestleistungen
Jared Newson 0	Ajene Malaki Moye 0	
Assists		8. Spieltag
Adrian Penland 0	Jamaal Davis 0	
Steals		Extras
Gabe Martin 0	Johnny Gray 0	
Blocked Shots		Back
Gabe Martin 0	Matt Kiefer 0	
Effektivität		Deutsche Telekom
Jared Newson 0	Ajene Malaki Moye 0	
0	0	BBL
Bayer Giants	vs. WALTER TIGERS	
und Livespiel abonnieren unter Extras		

4.1.3 TV channel dependent information

During the lunch break Mary is watching on her mobile a music channel broadcasting the top40 music clips. When Anne joint and asked her about a tennis match later this afternoon, Mary clicks on the "Local" button at her phone to get the picture with the weather forecast for her region. As it will be sunny she also looks for any expected traffic jam. Both are interested in the results of the quarter final of the Paris Open, so Mary clicks on the "Sport" button to open the sport overview window and browse there.

Remarks:

- This use case is specific as it does not include linear video and audio.
- All provided information is dynamic and will change over the time.
- The use case is close to videotext in stationary TV. But the formats may be much richer, including more than text, e.g. graphics and pictures, but also video and audio portions.



4.1.4 Brand advertising

Mike uses the special mobile TV tariff of his provider for students. He pays a reduced subscription fee for allowing displaying on his mobile banner ads while watching TV. The banner ads are customised to a profile he defined when subscribing the service and which can be changed. When he sees the interesting banner of a well-known fashion provider, he pushes at the banner and receives more information on the latest product news.



4.2 Action-specific use cases

4.2.1 Jukebox

Beatrice is waiting for her boyfriend Mauro at a park bench. To kill the time she watches a music channel on her mobile. She pushes on the "Select a song" button and gets a list of music clips she can select to be played later at this channel. She selects a brand new title of Celine Dion by pushing on the title. To the selection she can add some funny message which may be broadcasted when the song of Celine Delon is broadcasted, so she writes "Mauro, you are the best". Then she completes the selection.

After a while the song of Celine Delon is broadcasted. In the middle of the song her message is displayed. Beatrice shows it to Mauro and gets a sweet kiss from him.



4.2.2 Voting during live TV

At Monday night Alice is meeting her friends at a party. She knows that her lovely casting show will run this night at one of the TV channels. Not to miss the voting for her favourite she has switched on an alert at her mobile phone which will give her an alert signal when the voting will start. So during the party there is no need for her to follow the whole casting show.

Together with the alert signal she sees at the display the casting show including the "Vote now" button. Pressing the button the list of candidates will be displayed. Now she can give her vote for her favourite by pushing the corresponding button.



4.2.3 Answering a lottery question of a live TV channel

Bernd is watching on his mobile a tennis match. During all breaks he finds on the display a lottery question where he can win tickets for the Wimbledon finale this year. Clicking on the question he is watching a short advertising based movie explaining the question and giving some advice for the answer. When the movie has finished a list of answers is displayed. As the question is very easy he thinks to know the right answer and will select it.



4.2.4 Participation in a quiz show

Helen is watching the quiz show "Who wants to be a millionaire?" and pushes the "Participate" button on her mobile. When the show candidate is given a question, Helen sees the question on her phone and the potential answers as well and can select her choice for the right answer by pushing on it.

a) Local participation

After the show is over Helen presses the "Score" button and sees the reached score e.g. calculated by a combination of the weight of the question and her personal answering time. Helen is happy that this time her high score reached a new peak value.

b) Participation as an external show candidate

After the show is over Helen presses the "Score" button and sees the reached score. As she is participating in the quiz show as an external candidate she presses the "Transmit" button and the score is automatically transmitted to the TV station. At the end of the quiz show she is happy to be named by the moderator winning the third prize.

c) Participation as part of her girlfriend community

After the show is over Helen presses the "Score" button and sees the reached score. As she had set up together with her girlfriends a community feature for this show, comparing the results of them she presses the "Community" button and the score but also all individual answers are automatically transmitted to the community system. Pressing the "Chat" button she opens a chat with her girlfriends to discuss the individual answers. Helen is proud that this time she was the winner.



4.2.5 Betting

In the past Phil has been successful in horse race betting. He appreciates the new services allowing him betting directly from his mobile phone while watching the TV transmission from the John Smiths Grand National in Liverpool on his mobile. After the presentation of the horses of the main race he pushes the "Betting" button and the candidates are shown. He selects his favourite horse and confirms the 50 € he will bet on Catharine to be under the best of three. He will be informed that his bet was accepted. After the race is over Phil will be informed in his mobile that he won 80 €.

4.2.6 Ordering an advertised product

Jenny is watching her lovely fashion channel. She knows that all in the live TV channel shown products can be directly ordered. She uses the "Order now" button when a sweet shirt is advertised. First she gets a detailed description of the product including another video and the price information. She decides to order the shirt and presses the corresponding button.



4.2.7 E-commerce in a music channel

Susanne loves pop music, that's why while on the move she often watches the music channel available on her mobile phone. She has learnt that it is very easy at the phone to buy a CD, download the title to the phone, ring tone, T-Shirts, poster, concert tickets of the artist broadcasted at the moment in the live TV channel. This afternoon she listens to the songs of a brand new CD of a start-up group. She likes the music; so she decides to order the ring tone of the cover title. She presses the "Ringtone" button to order it. As all personal information needed for the order is stored in her phone, she only has once to confirm the order by inputting her order pin code and pressing the "Confirm" button. She will be informed on the successful order and the ringtone will be downloaded to her phone.



4.2.8 Booking a car test drive

Dieter is interested in motor sports, so he uses his mobile phone not to miss the TV transmission from the main car exhibition of the year. While the latest Japanese car model is presented, a button is displayed named "Win a test drive". Dieter likes the model and decides to ask for the test drive by pushing the button.



4.2.9 Chatting with the live TV channel

Johanna is watching on her mobile an interesting talk show on the situation of a young woman in the country. During the show the moderator opens a chat room. Users are asked to give their comments on the raised issue; the comments will be broadcasted and displayed during the show. The studio guests are able to comment them as well.

Johanna decides to write her very personal opinion from a female student point of view. She pushes the "Comment" button, inputs the text and pushes the "Send" button. After a while her text is displayed at her mobile phone as part of the talk show chat room. She is very happy that most of the talk show guests agree with her point of view. Comments from other chat participants support her as well.

When the moderator asks for a personal photo, she pushes the just displayed "Photo" button, selects one of the photos from her phone and pushes the "Send" button.



5 Technical requirements

The use cases have been described here technical-independent. However, their requirements to technical implementations may differ a lot. The following list demonstrates the possible variety of these requirements:

- Some use cases may tend not to miss the broadcasted video/audio while being interactive watching the additional information or performing an interaction. This may not be important for other use cases.
- In some use cases interactive data is to provide in real time bound to the video/audio; in other use cases the update of the interactive data follows other requirements being more static.
- Some use cases may request the interactivity being available immediately after switching, so having a small tune in time – the time after tuning to a channel, the interactivity is available.

On the other hand, a variety of options is possible to implement the use cases as shown hereafter:

- Most of the interactive data can be broadcasted in parallel to the video and audio or accessed via the mobile channel.
- The interactive data can be of any multimedia type the device is able to display.
- Interaction may be implemented using different mobile phone features: telephone call, SMS, MMS or web access.
- Banner ads may be broadcasted regularly via the broadcast network and store locally in the device corresponding to the selected profile or the displayed banner ads corresponding to the selected profile may be transmitted via the mobile channel.
- Banner ads may be displayed e.g. in parallel to the broadcast TV channel or during channel zapping.

6 Next Steps

Today interactive services can be implemented by either using features of DVB-IPDC and/or OMA BCAST standards as well as by device specific applications.

At present, the standard features of DVB/IPDC and OMA BCAST provide limited functionalities only. Most of the use cases described before for their implementation require more sophisticated features and tools.

Device specific application may be adapted to the features available at a certain device type but normally need to be re-implemented for other devices types. Maintenance of such applications may be expensive.

The main objective of **bmcoforum** is enabling and fostering the development of open markets for mobile broadcast services. So in a next step **bmcoforum** will define a set of generic features and tools necessary for the implementation of the interactive use cases described before. Together with other parts of the industry and standard bodies **bmcoforum** will identify ways and a schedule for implementation of these features and tools.

7 On bmcoforum work item “Content Format and Services”

The work item “Content formats and services” is designed to examine the specifics of mobile broadcast content and services starting with plain mobile TV up to sophisticated interactive services, download applications and advertising approaches.

In November 2006, the study “Results of Mobile TV Pilots – A Survey” has been published which summarized market research on user, usage, content and services characteristics from eight mobile TV pilots worldwide.

In 2007 the group has started to consider interactive mobile broadcast content and services as well as mobile broadcast advertising.

While most commercial mobile TV services start with simulcasting existing TV channels, interactive mobile broadcast services are expected to play an important role for successful business in the future.

Initially the group analysed existing wide-spread standard approaches to interactive mobile TV. This study has been initiated to describe use cases for interactive mobile broadcast services. Another study will define generic features and tools for implementing them.

Mobile advertising is considered to be a potential significant success factor for future mobile broadcast business moving forward. Therefore the group has discussed actual prospects and next steps in mobile advertising and the role advertising will play in mobile broadcast content and services.

As commercial mobile broadcast services are partially advertising-based, audience measurement is required to get ads watching figures and more. The group is preparing audience measurement functional requirements to be implemented then on a variety of devices.

8 Authors

This report has been compiled as part of the “Content formats and services” work item of **bmcoforum**.

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- Icareus
- Initiative Media
- KPN
- MEDIA BROADCAST
- Motorola
- Nokia
- Nokia Siemens Networks
- NXP Semiconductors
- Plus TV
- Siemens
- Sofia Digital
- Streamezzo
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- T-Mobile
- Turner Broadcasting
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