

# Mobile TV

Universidad de Palermo 2006  
October, 2006



# Making a Success of Mobile TV Content

**SIEMENS**



Different options to deliver Mobile TV



Market (Trends & Key Drivers)



Business Model and Strategies



User Scenarios



Technology

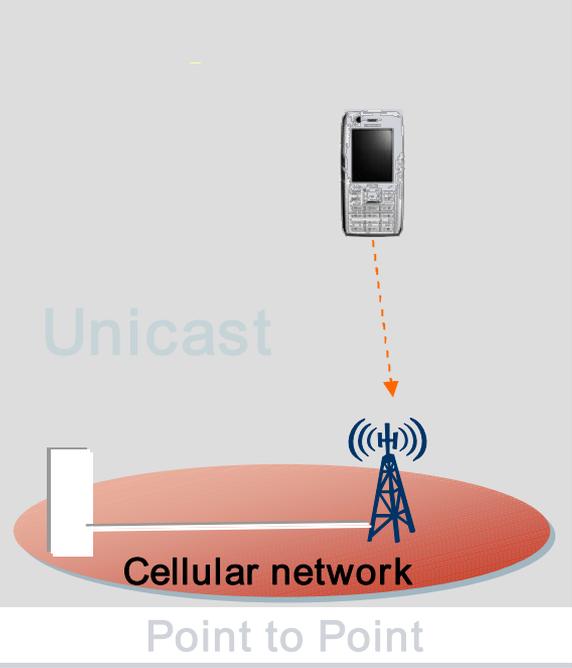


Summary

# Complementary services supporting different use cases Unicast, Multicast & Broadcast

## Mobile TV Streaming

Unicast streaming video on demand and live streaming via GPRS and UMTS



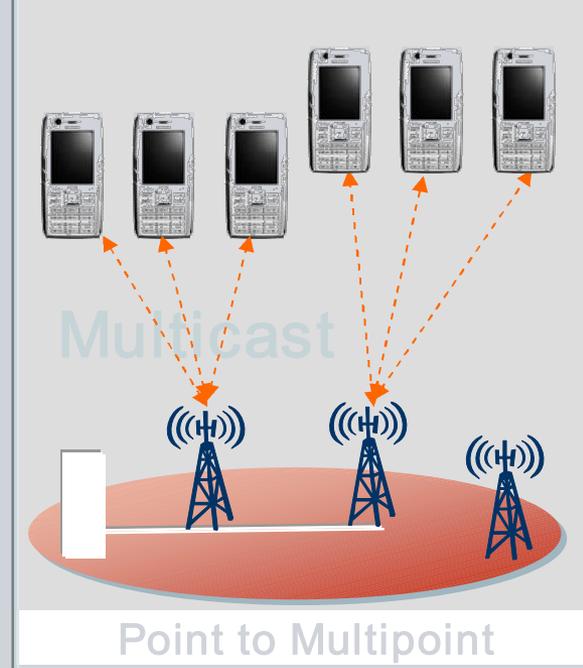
## Digital Video Broadcast for Handhelds (DVB-H)

Tailored to limitations of mobile devices (e.g. power consumption and resolution)



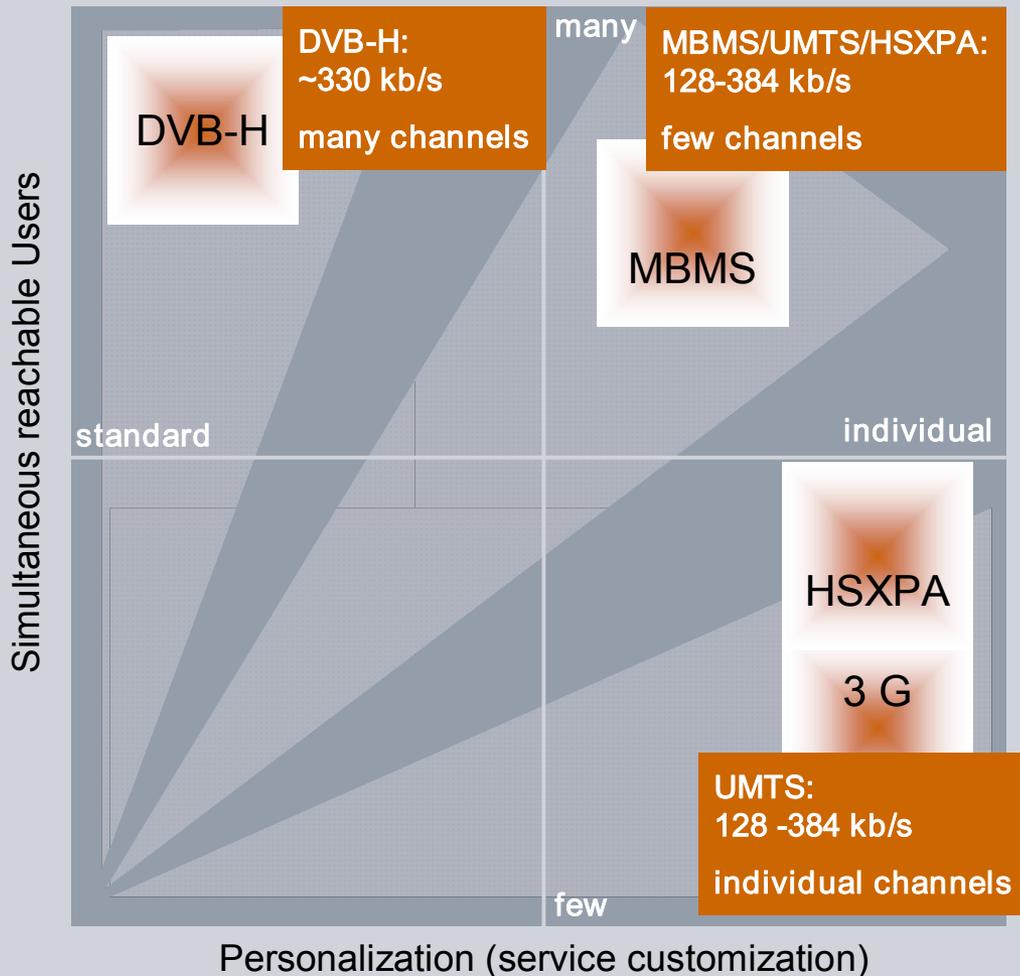
## Multimedia Broadcast Multicast Service (MBMS)

Improved scalability of existing GPRS and UMTS media delivery at lower costs



Cellular network is essential in each scenario to offer interactivity, personalization and charging

# The different media delivery mechanism meet specific operator strategies



## Key Messages

- Mobile TV market is today dominated by Mobile TV streaming
- Broadcast will start with commercial impact in 2007, while MBMS is expected in 2008
- Mobile TV streaming, DVB-H and MBMS are complementary services, which address different operator strategies and situations

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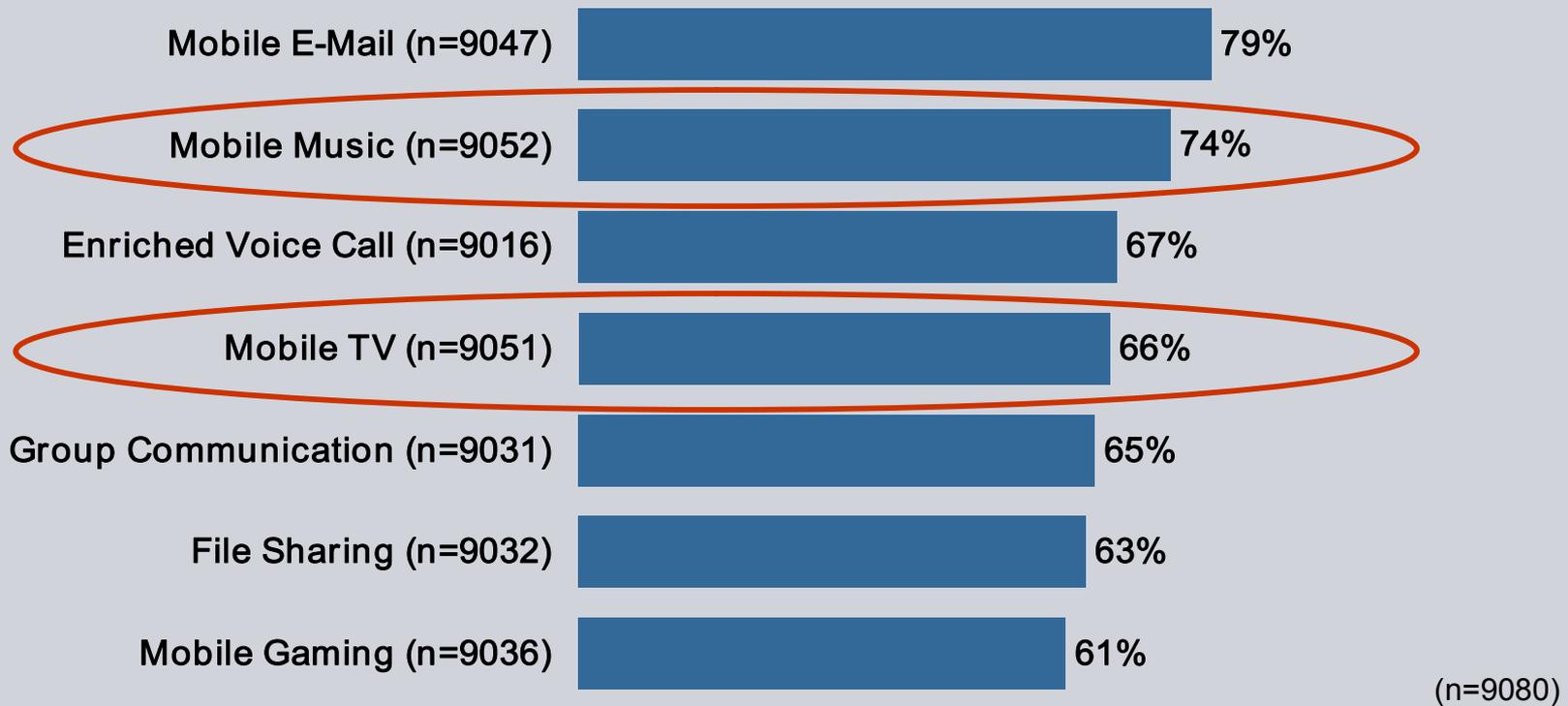


Summary

# Siemens' worldwide survey shows high end user interest in mobile music and TV



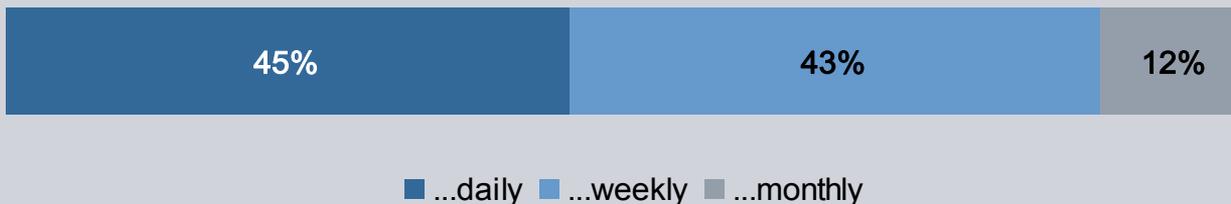
## Interest in different applications (all countries)



- more than two thirds of all survey participants are interested in mobile music and mobile TV

# High frequency-of-use and significant willingness-to-pay are predicted for Mobile TV

## How often would you use Mobile TV?



## How would you like to be charged for using Mobile TV Streaming - Live / on Demand?

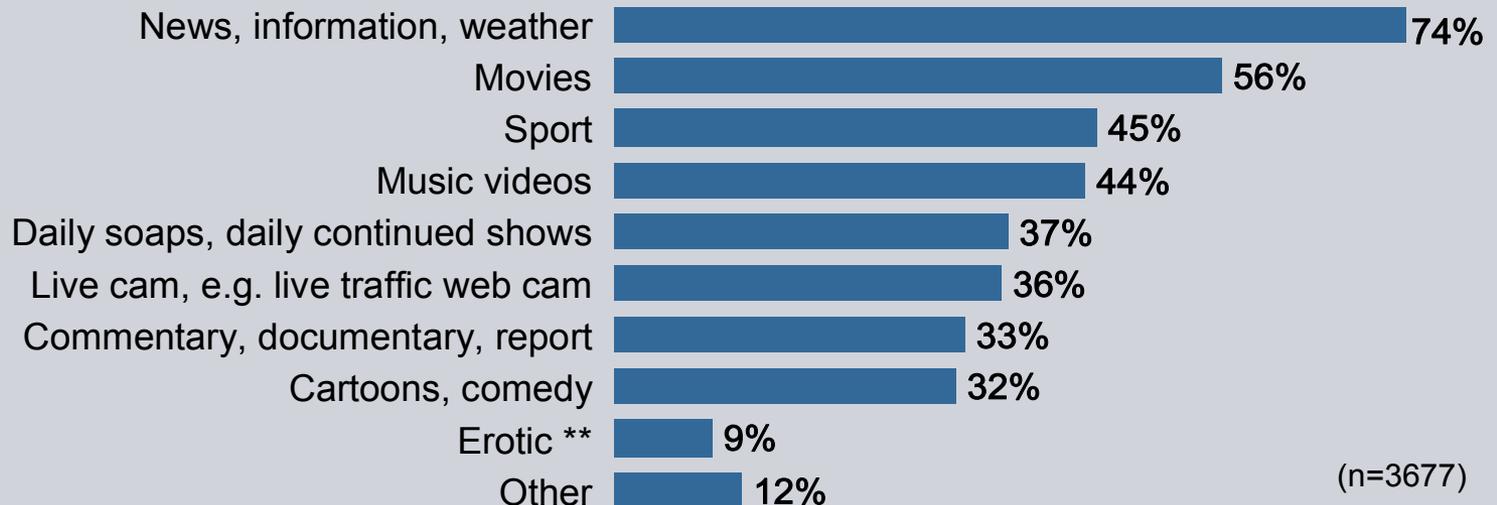


Stated willingness-to-pay: 12.2 € / month (active users)

- The majority of respondents state they would use TV Streaming on a daily or at least weekly basis
- The preferred charging scheme is a monthly flat rate – especially among users from the USA, Korea, Italy and Spain

# Most attractive contents for Mobile TV are news, information and weather programs

Which types of TV programs would you like to receive on your wireless device?  
(multiple responses possible)\*



\*) Only respondents being interested in Live TV and/or TV On Demand (at least 4 points on a scale from 1 to 10)

\*\*\*) Not shown to respondents in India, Indonesia and China.

- Users are highly interested in receiving news, information and weather on their mobile device
- The preference of specific programs varies strongly across the different target groups – e.g. male users like sports more than females, and music videos are most attractive for the 16-25 year-olds

## Summary of Mobile TV user needs



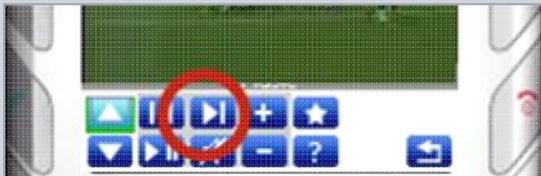
WHAT?

- Event-driven usage of TV Streaming
- Used to retrieve news, information, weather programs



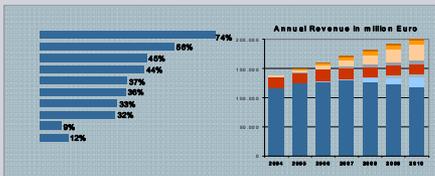
WHO?

- High interest across all target groups
- Especially high among young and business users



HOW?

- Easy channel-switching
- Easy navigation



HOW OFTEN?

HOW MUCH?

- Very frequent usage (daily) foreseen
- Highest Willingness-to-Pay: 12.2 € / month (based on Ø of all users)



WHERE?

- Interest highest in Korea and India
- ARPU potential highest in Norway and Canada

# The latest market forecast for Mobile TV show rapid growth in usage and revenues

## Informa Telecoms & Media (London)

- 84 million broadcast TV handsets sold annually in 2010
- 125 million broadcast mobile TV users by 2010



## Shoestock Group (Silver Spring, Md.):

- Mobile TV revenues of \$ 9.7 billion in 2010 (most pessimistic scenario)
- Mobile TV revenues of \$ 27 billion in 2010 (optimistic projection)

## Booz Allen Hamilton (Dr. Roman Friedrich):

- Mobile TV revenues of 200 – 300 million € in Germany 2007
- Mobile TV revenues of 1 billion € in Germany 2010
- Mobile TV revenues of 4 – 4,5 billion € in Europe 2010

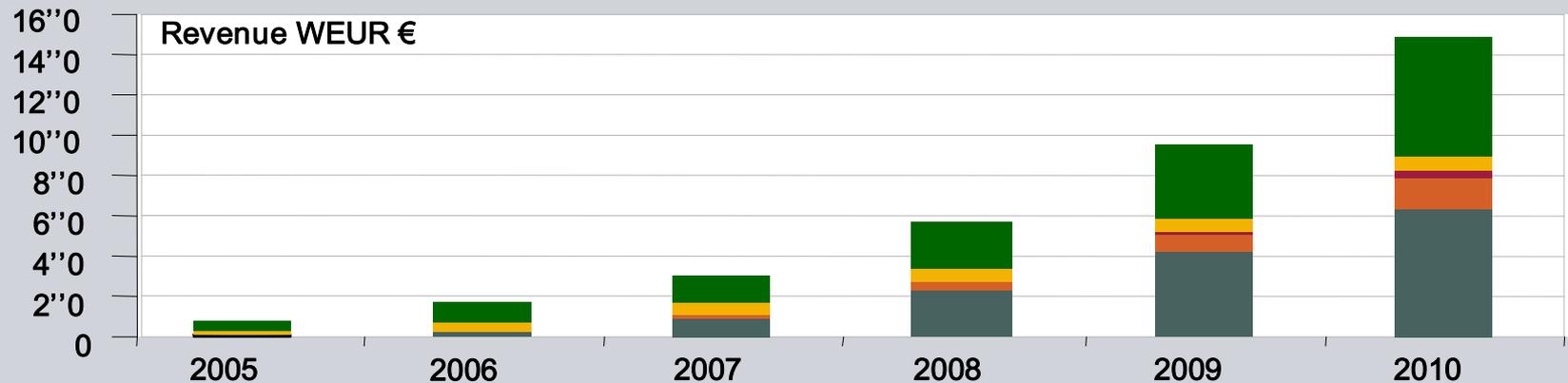
Status:  
May 2006

# Mobile TV service categories

Two third of mobile TV revenues require interactivity



<p><b>Interactive Mobile TV (DVB-H)</b></p>  <p><b>Scheduled program with return channel for interactivity</b></p>	<p><b>Buffered Personalized Infotainment</b></p>  <p><b>News Magazine, Learning Lessons, Movie Guide, Local Event Guide</b></p>	<p><b>Multiplayer Online Games</b></p>  <p><b>Quiz, Roll Play, Strategy-, Sport-Adventure-Games</b></p>	<p><b>Location Based Traffic Guide</b></p>  <p><b>Car navigation support with real-time traffic information</b></p>	<p><b>Passive Mobile TV</b></p>  <p><b>Scheduled TV Program (no interactivity)</b></p>
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Source: Siemens COM, 2004

# Consumption Patters and User experience indicate “TV **SIEMENS** anytime” as possible killer applications

	Mobile TV Streaming	Digital Video Broadcast for Handhelds	Multicast / Broadcast Service
Description	User select from a range of short video clips on the key themes, such as news, sport and music	Users have a wide range of streaming TV channels available, comprising traditional TV and made-for-mobile material, as well as a wide variety of video clips to suit individual interest	Users choose from a small number of streaming TV channels and a variety of video clips on key themes
Penetration of service in 3G (usage)	20%	75% (3G/DVB-H Terminals)	50%
Average daily video usage	3 minute	20 minute	10 minute
Average revenue per service user per months	10 €	15 €	7 €

\*) either e.g. information to a current location, or related to situation at that location (traffic jam, soccer game)

# Mobile TV Broadcast and Cellular Network Integration

One to All



Broadcast and cellular networks will be integrated to offer interactive TV applications



One to One



## Drivers

- ✓ Self explanatory value of TV
- ✓ End user device developments

# Making a Success of Mobile TV Content

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Market (Trends & Key Drivers)



Business Model and Strategies



User Scenarios

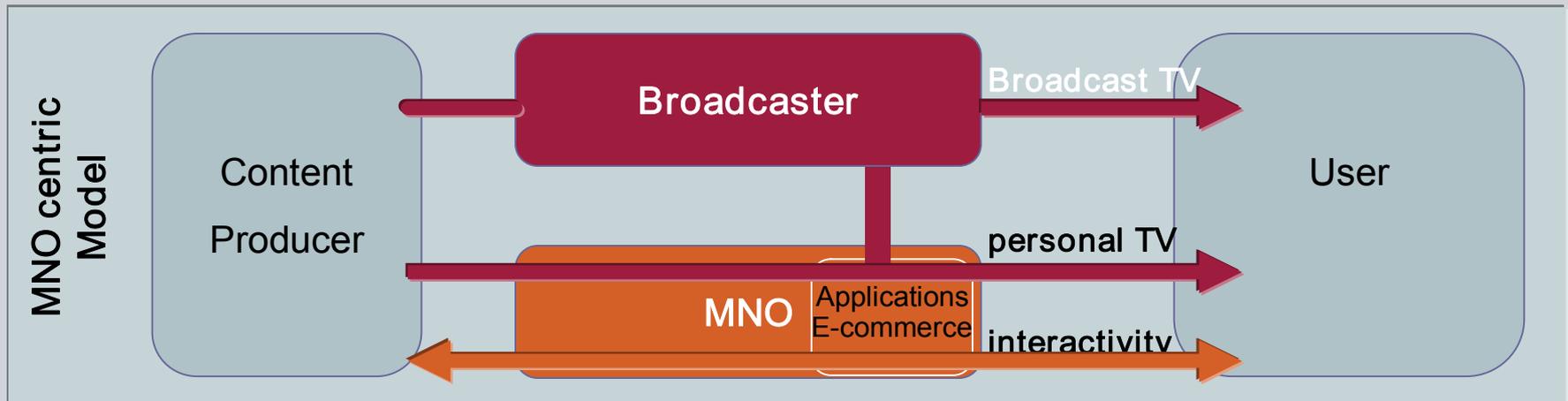


Technology

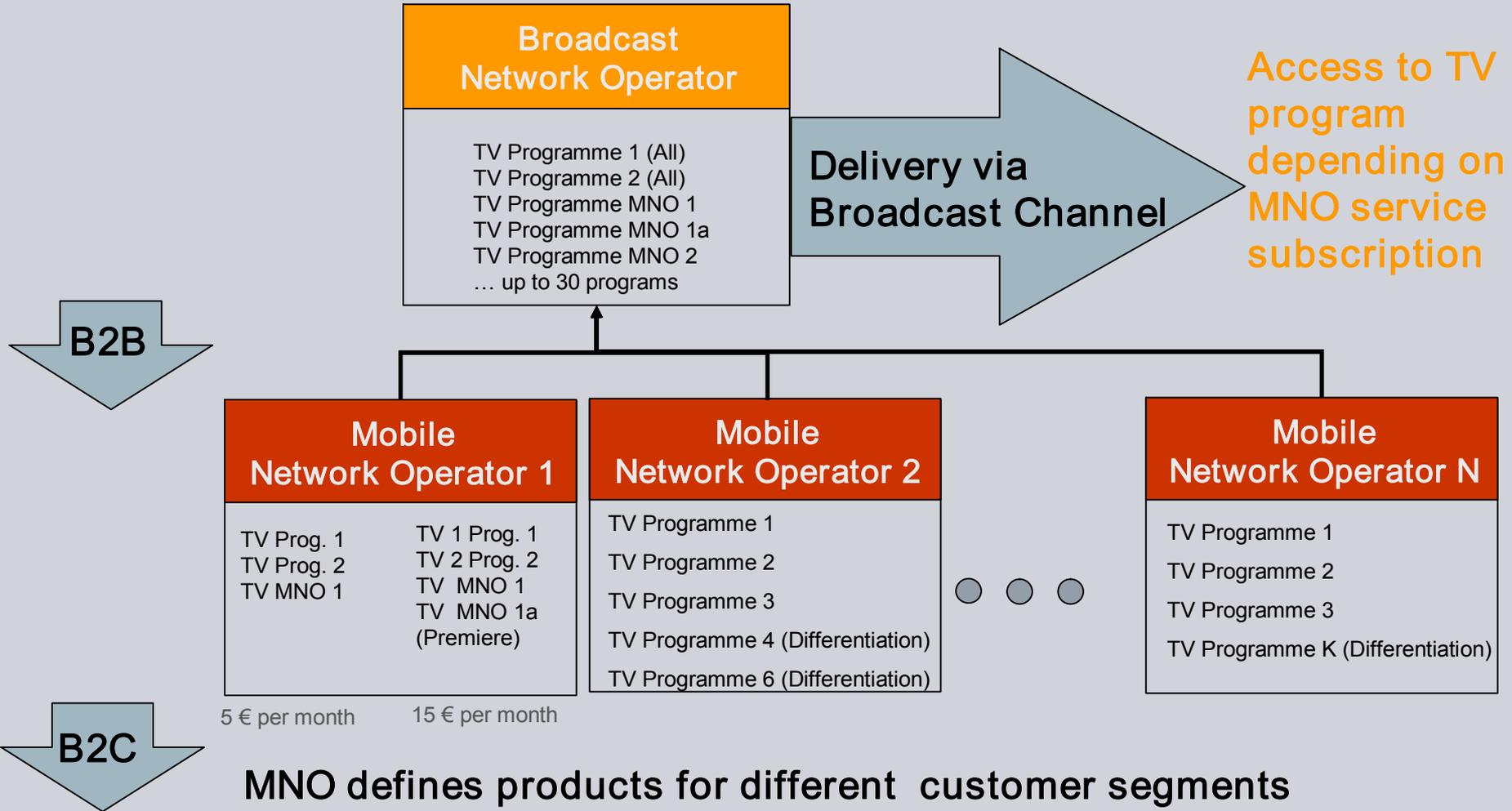


Summary

# The DVB-H business model has to be enabled by cooperation



# The DVB-H business model has to be enabled by cooperation. (Plain & Premium TV, Interactivity not considered)



# Mobile Broadcast – Mobile operators and Media industry may create a win-win situation

## Mobile Network Operators

### Assets

- One-to-one customer relation
- Uplink channel for interactivity
- Charging mechanisms based on individual usage
- Distribution beyond national boundaries

### Expectations

- Participate in value chain of Media Industry
- Retain end-user's satisfaction
- Repeat successfully established value proposition partnerships
- Get Broadcast Channel

## Media/Broadcast Industry

### Expectations

- DVB-H or/and MBMS is a new channel to widespread content
- Maintain branding
- Content may be charged on an individual base
- Offering interactivity

### Assets

- Best knowledge of generation and repurposing of content
- Broadcast Channel

# The Mobile Operator as owner of the customer relationship will partner with the Broadcast Mobile / DVB-H Operator

END USER



Buys and consumes DVB-H products (subscriptions, terminals, ...)

## Broadcast Network / DVB-H Operator

Operation	Standard Service	Standard Content
<ul style="list-style-type: none"> <li>Operates DVB-H network</li> <li>IP Encapsulator</li> </ul>	<ul style="list-style-type: none"> <li>Content preparation</li> <li>Service protection</li> </ul>	<ul style="list-style-type: none"> <li>Buys standard content</li> <li>Content import</li> </ul>



CONTENT PROVIDER



Provides content (Live-TV, videos, EPG data, other content)

## Mobile Network Operator

Operation & customer relation	Service Differentiation	Individual Content
<ul style="list-style-type: none"> <li>Operates Mobile network</li> <li>Manages cust. relationship (subsMgt, billing, customer care)</li> </ul>	<ul style="list-style-type: none"> <li>Electronic Program Guide for specific channel def.</li> <li>Pricing Model</li> <li>Interactive TV. e.g. voting/quiz</li> <li>Usage Tracking</li> </ul>	<ul style="list-style-type: none"> <li>Buys individual content and aggregates it to marketable products</li> <li>User specific rights mgt</li> </ul>



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Summary

# Mobile TV

## Streaming and Broadcast are complementary services

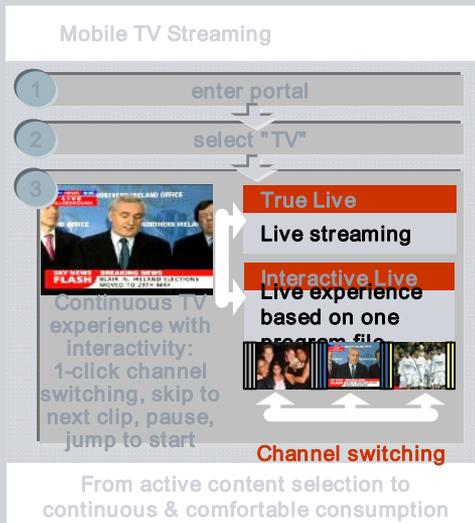
### Mobile TV Streaming

#### Use Cases

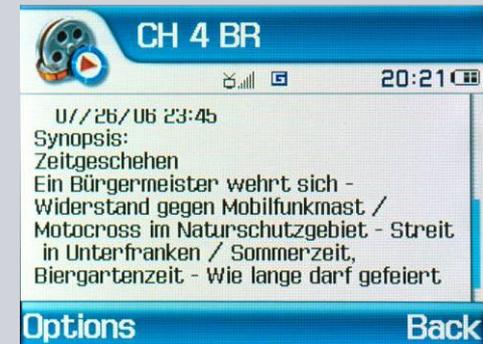
- Personalized channels
- Interactivity

### Digital Video Broadcast for Handhelds

- Conventional TV
- Interactivity via cellular network



# ESG provides information on the Mobile TV service and content



# Interactive Services Create Value Added and additional revenue



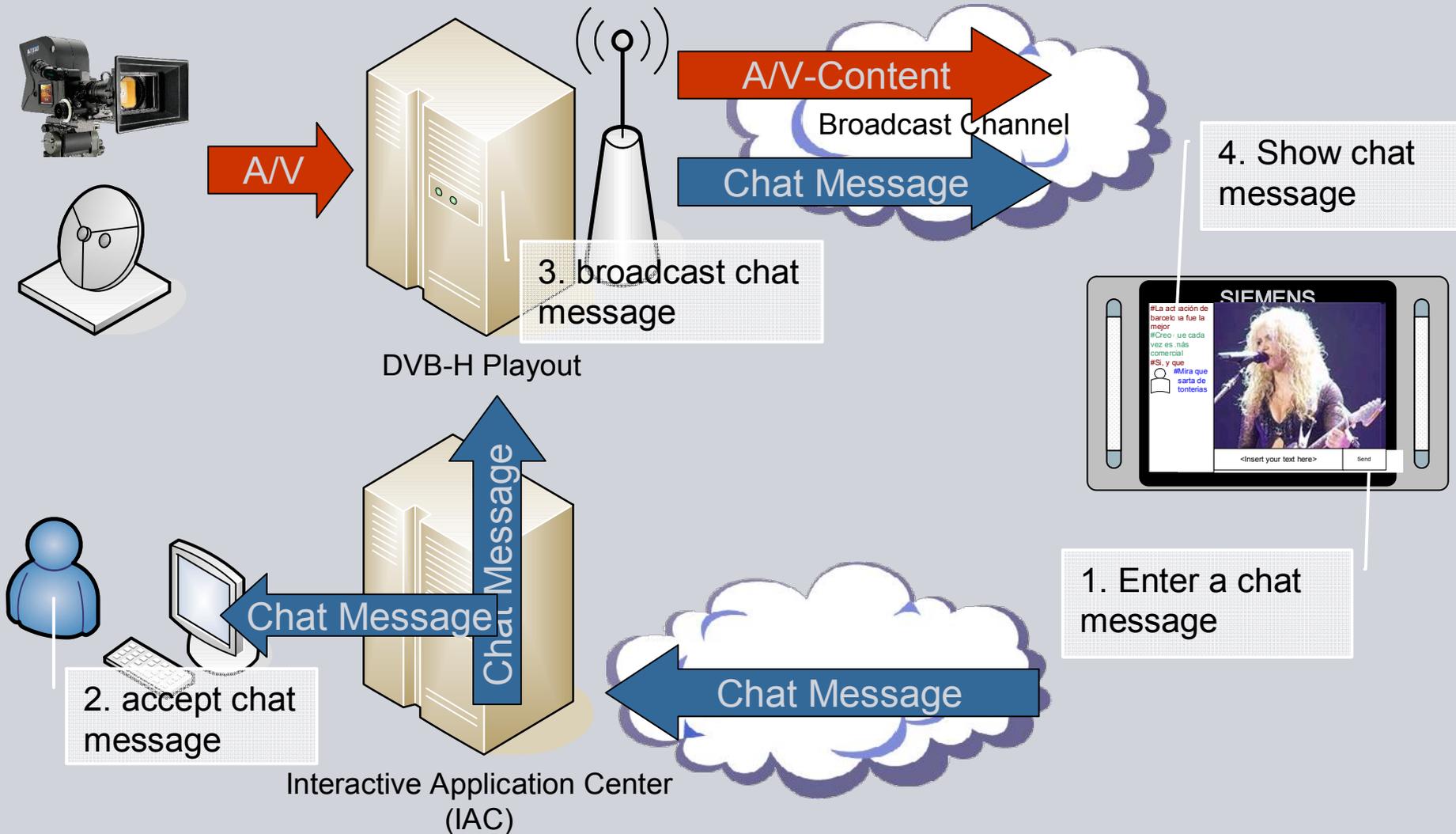
The screenshot shows a mobile application interface for a TV program. On the left, a host in a tuxedo is speaking into a microphone. On the right, a vertical menu titled "Vote the finalist:" lists five options: "Sheyla and John", "Kate and Steven", "Paula and Albert", and "Mary and Peter". At the bottom, there is a "Chat" section with two messages: "Jack: I think, Peter and Mary had the best performance today." and "Anne: I love the song, Kate and Steven presented. I just have downloaded it." Below the chat are five buttons: "PROGRAM", "RECORD", "TVGUIDE", "INTERNET", and "MORE". To the right of these buttons is a red button labeled "CALL: #Guide".

Vote the finalists:

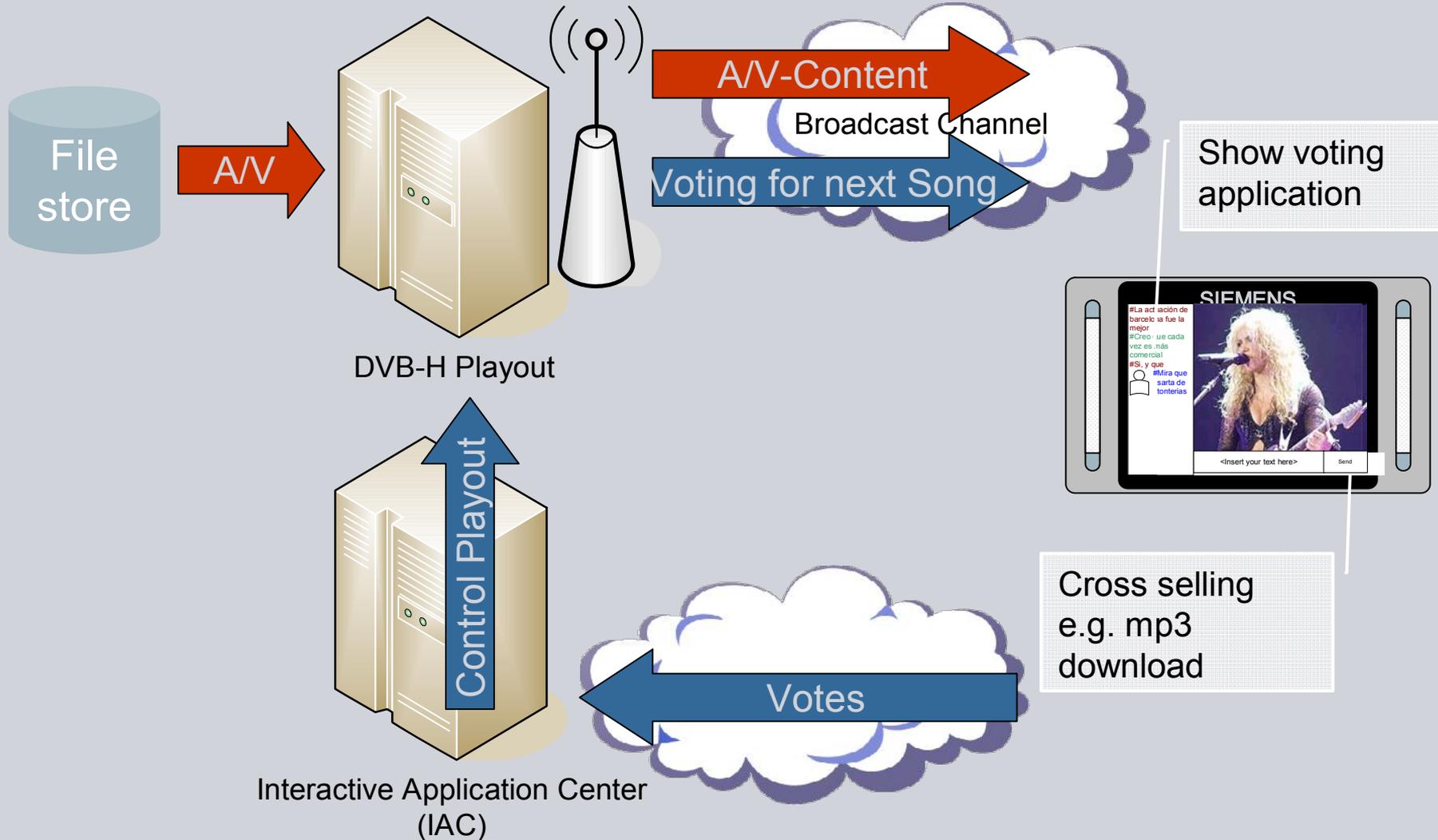
Interactive Services Related to the TV program like:

- Voting
- Song download
- Donating
- Chat
- etc.

## Example of broadcast chat

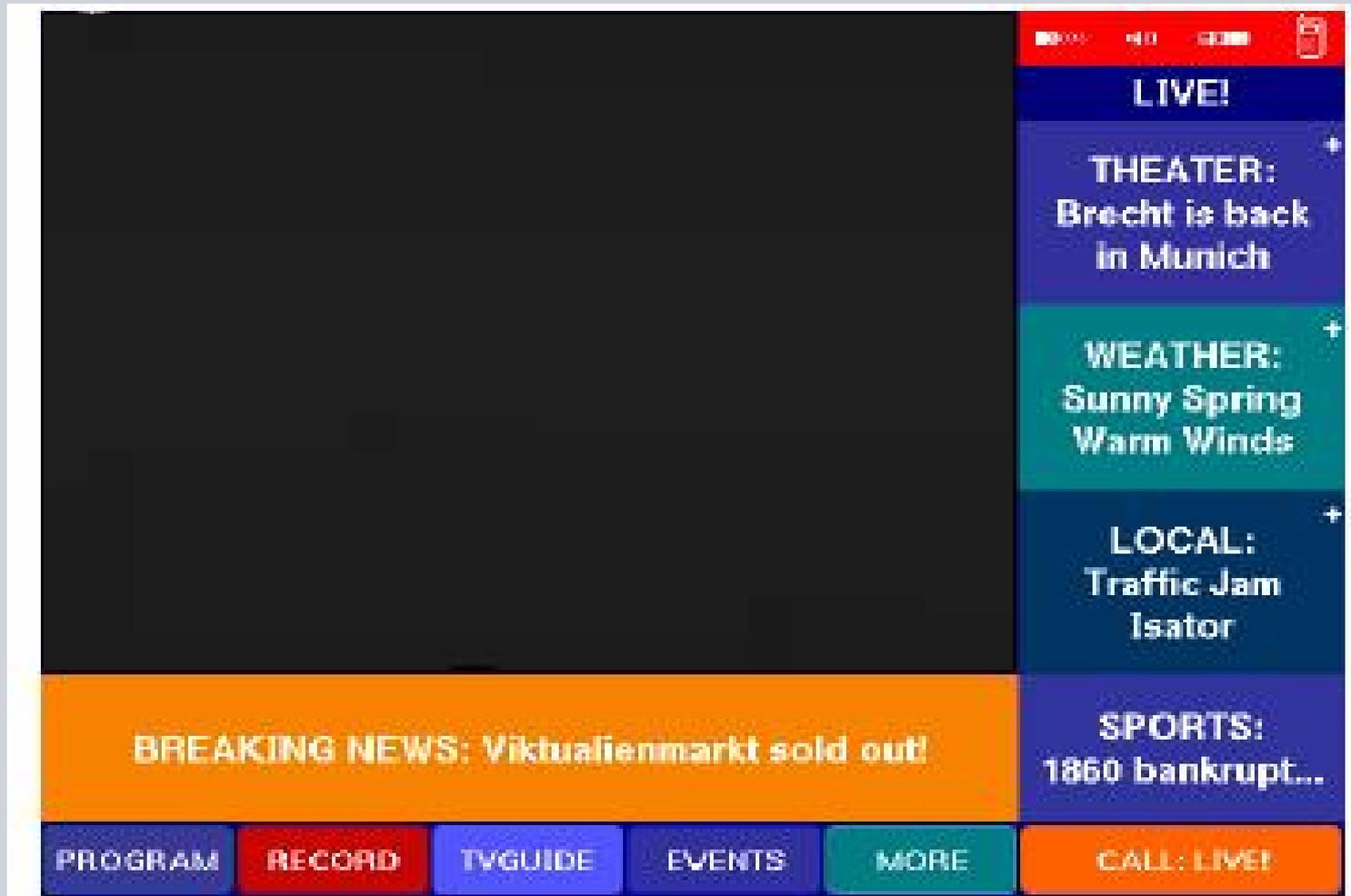


# Example for full automated interactive program Jukebox



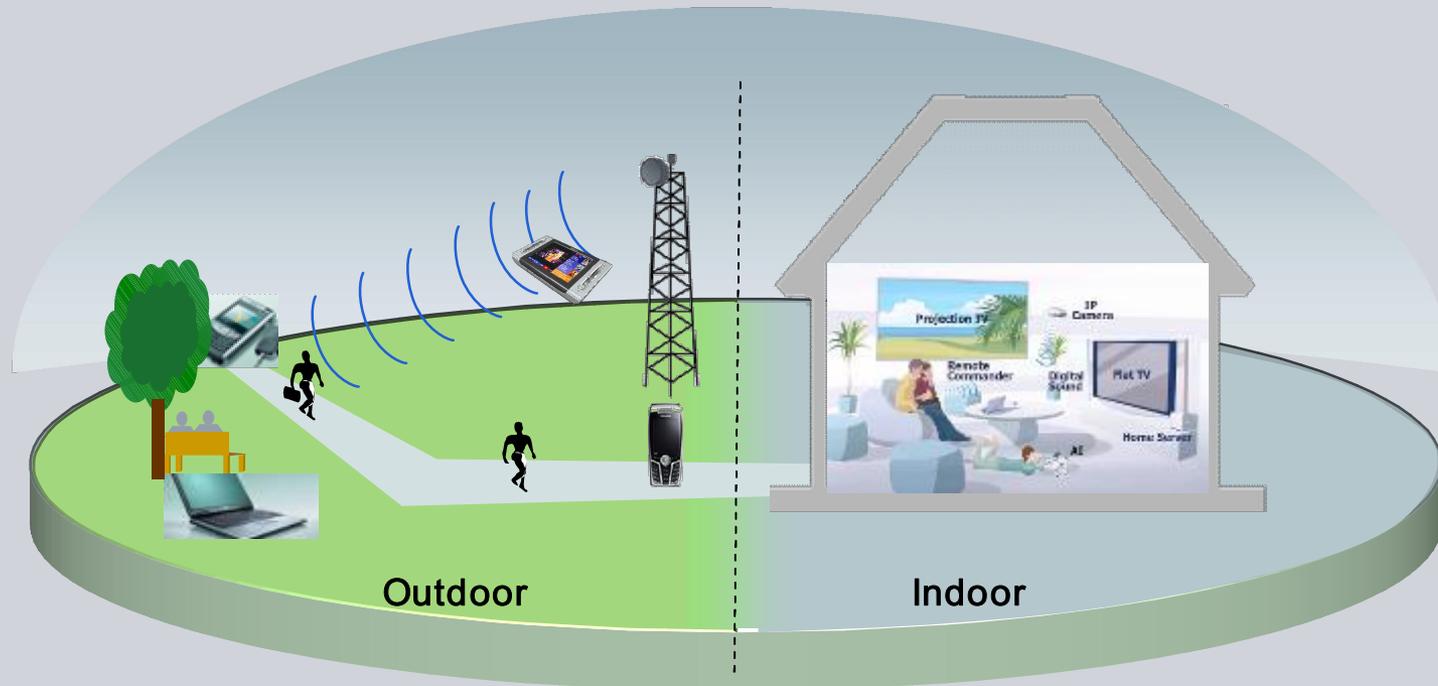
# Mobile TV Interactive Application

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# Converging Mobile TV and fixed line IPTV is a logical step forward

## Converged TV Service



**Service providers win** because additional services in the bundle reduce churn and consolidate the subscriber's spending with one provider.

**Subscribers win** with lower costs, seamless services, and the simplicity of a single bill, ease of use and a single provider.

# The “ONE subscription service” provides users with maximum flexibility in audio and video consumption

## Outdoor

## Indoor

**Description:** With “ONE” subscription content bundles, like Premium channels and VoD, can be consumed via the IP TV set @home and the mobile devices MobileTV client on the move.

1

- Select the desired clip / program
- Select “ONE” subscription



2

Watch on the move



2



Watch @ home on your large screen of your entertainment unit

# The mobile device becomes a remote control of the home-entertainment center

Outdoor

Indoor

**Description:** On the move you can access your home-entertainment center. Program your personal video recorder by selecting an EPG item for recording.



1 Select Home Entertainment Control application



2

Select EPG scheduled video to be recorded and program recording task at home-entertainment center.



3

Home-entertainment center executes the scheduled task



# Intuitive personal program scheduling allows for efficient reminders while being on the move

## Outdoor

## Indoor

**Description:** Easily select your personal TV program @ home-entertainment unit. The Mobile device will announce start times of selected programs, enabling easy access.

3

Timely notification when selected program is live



4

Mobile TV watching !



1

Select your preferred day-program sitting relaxed @ home utilizing the program guide on your large screen home entertainment unit.

(2)

Optional: Select preferred notification message type when using mobile device: SMS, MMS, IM, ... or when watching a different channel @ home.

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# Media Delivery Solution for Unicast & Multicast & Broadcast

without QoS

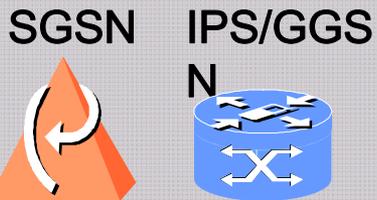


with QoS



DVB-H  
MBMS

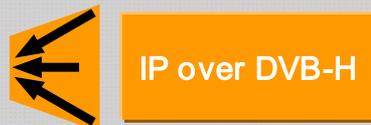
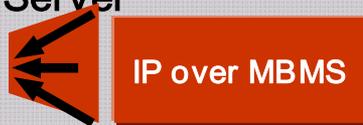
Transport



Control



Policy Control Server



## Media Delivery Solution (MDS)

Interactive Application Server  
[Voting, Quiz, Interaction Control, etc.]

Media Delivery Control System

Unicast Streaming Option

DVB-H Option

MBMS Option

[EPG/ESG, Scheduling & Synchronization, Event Processing]

Playout Headend

Conditional Access System  
[Service Purchasing & Protection]

Streaming Server

Live Encoder

CONTENT

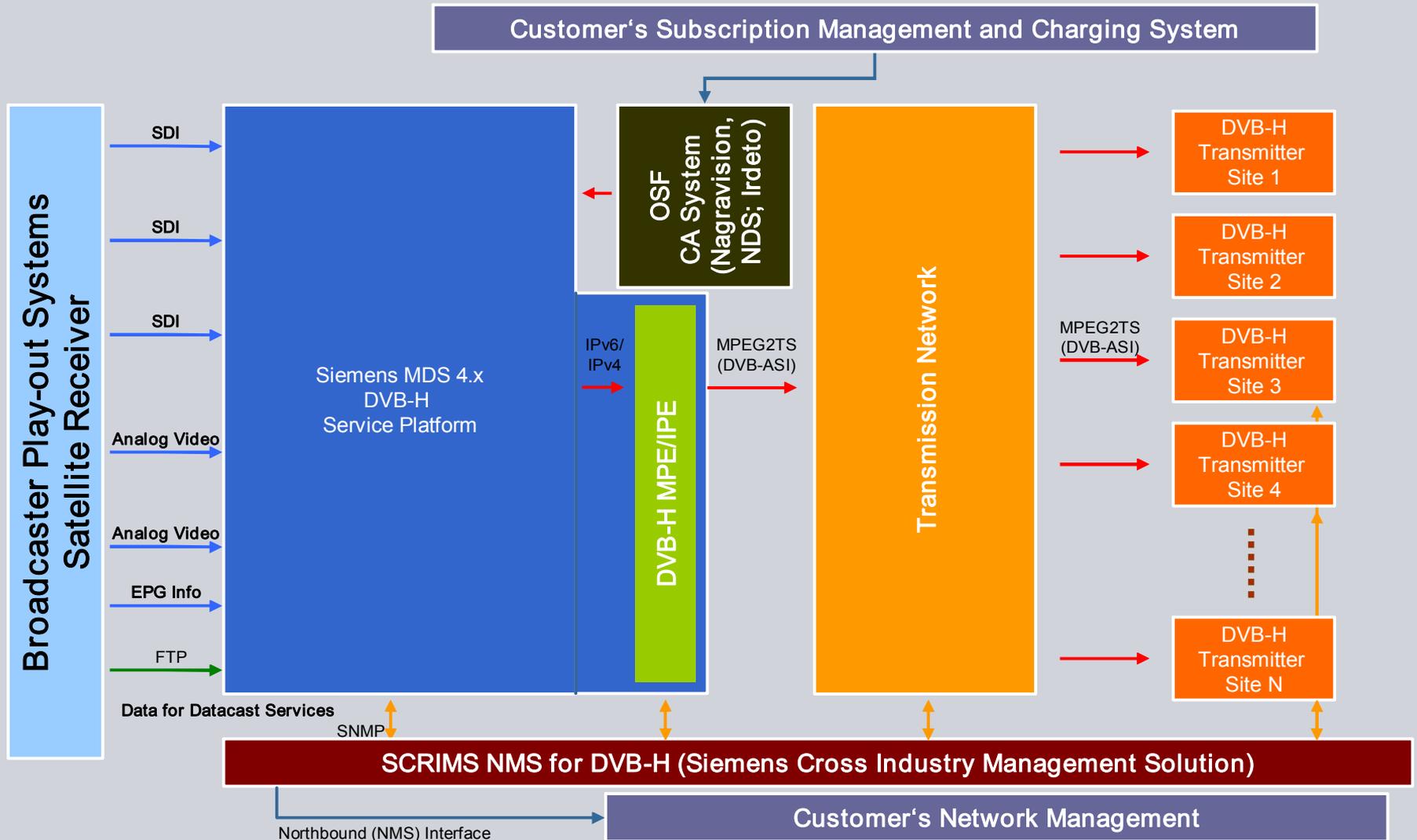


Backend Infrastructure

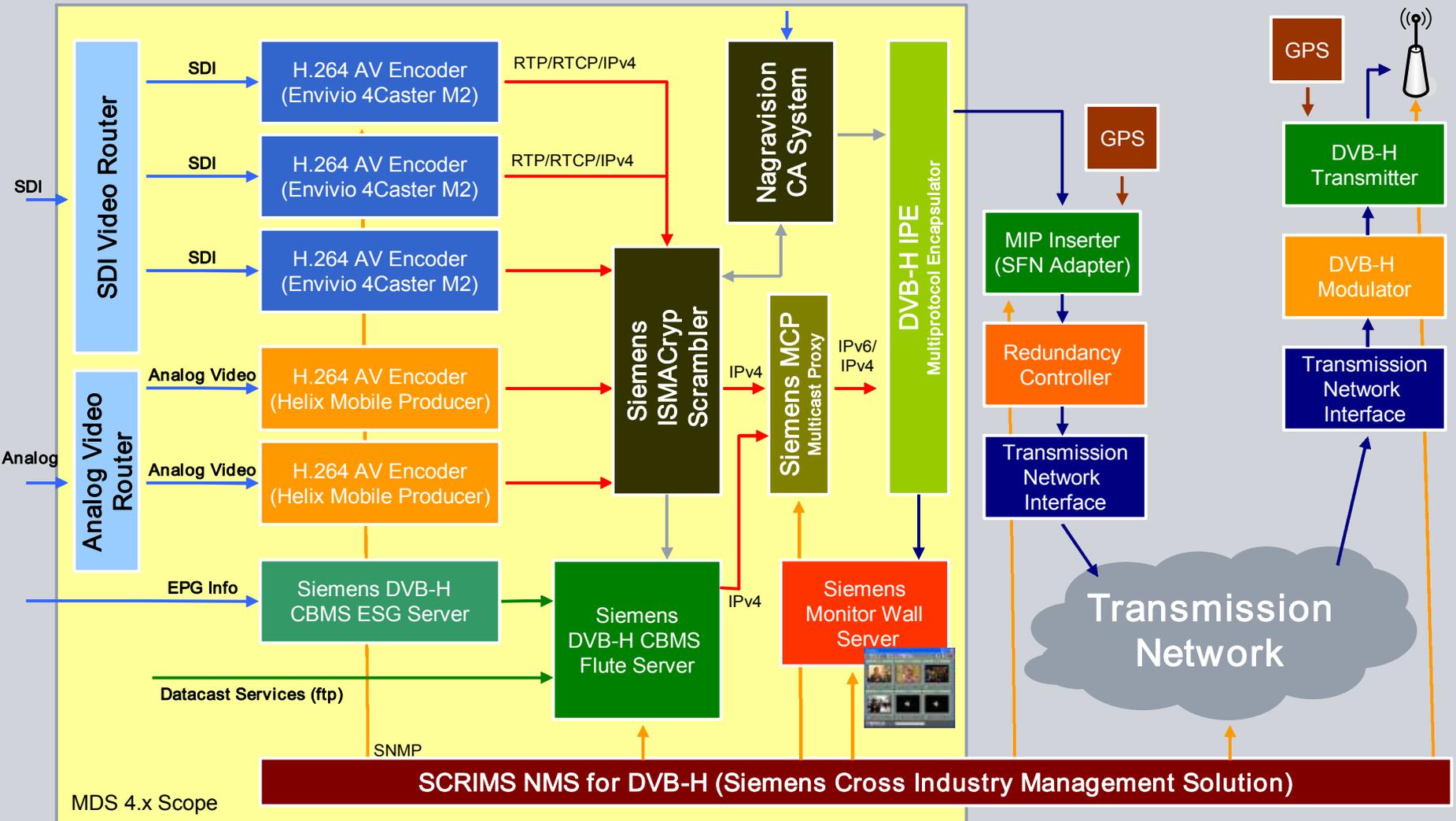
- Charging / Billing
- Customer Care
- O&M
- Data Warehouse
- B&R, QoS

IPS: Intelligent Packet Solution  
GGSN: Gateway GPRS Support Node  
SGSN: Serving GPRS Support Node

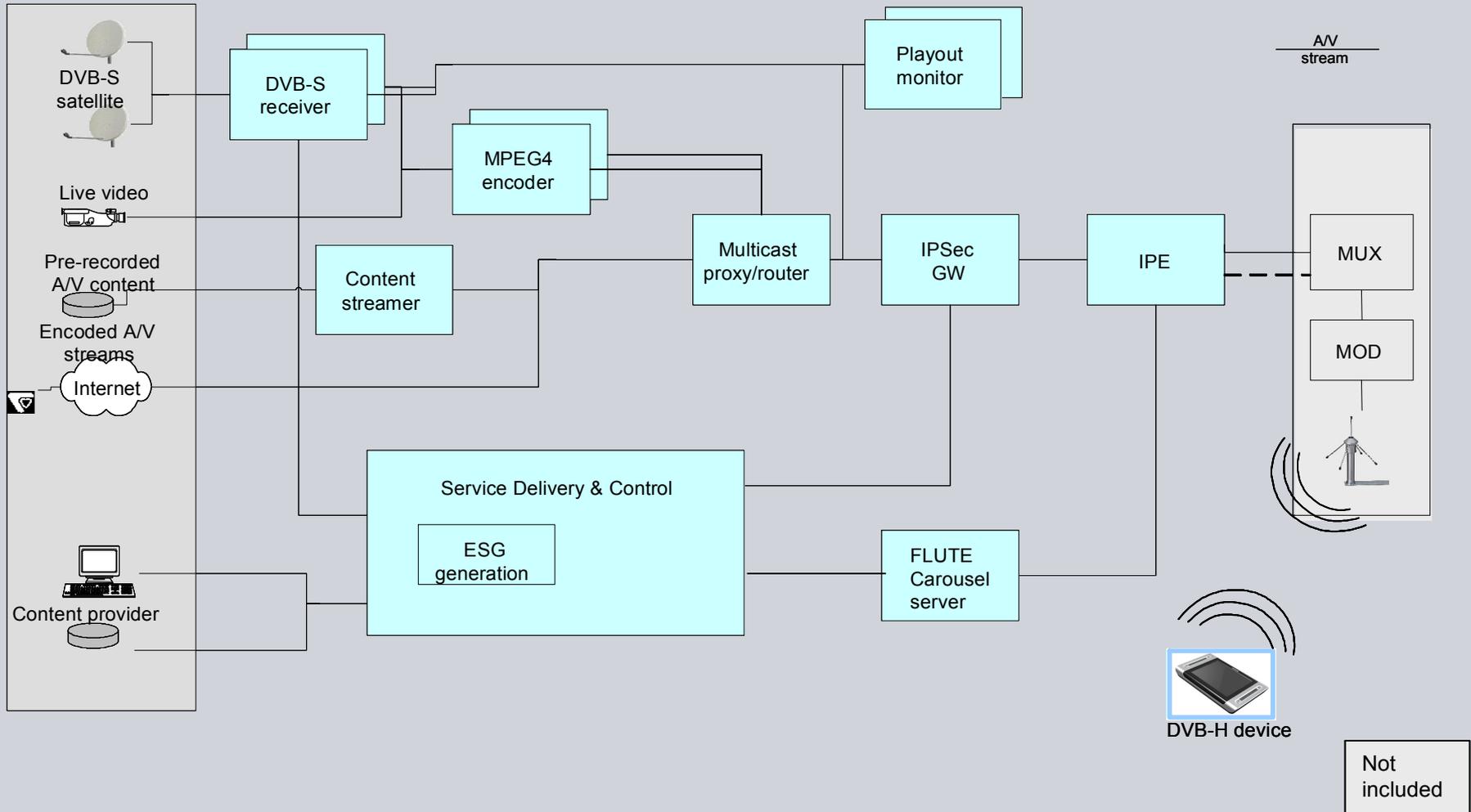
## DVB-H Solution Architecture Overview



## Functional Blocks



# Mobile TV Architecture overview



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# Consumption Patters and User experience indicate “TV anytime” as possible killer applications



## MNO Benefits

### New revenue streams

- through offering access to attractive self explanatory and well known service for customers (subscription)
- through additional traffic via return channel and interactivity
- through offering unique program channels (brand differentiation)
- by using cross selling possibilities
- through offering billing and e-commerce systems to partners

Complements current 2G/3G services with broadcast capability

## BC Benefits

### New revenue streams

- through offering access to attractive self explanatory and well known service for customers (subscription)
- through advertising
- by using cross selling possibilities