

Mobile TV

Universidad de Palermo 2006
October, 2006



Making a Success of Mobile TV Content



Different options to deliver Mobile TV



Market (Trends & Key Drivers)



Business Model and Strategies



User Scenarios



Technology

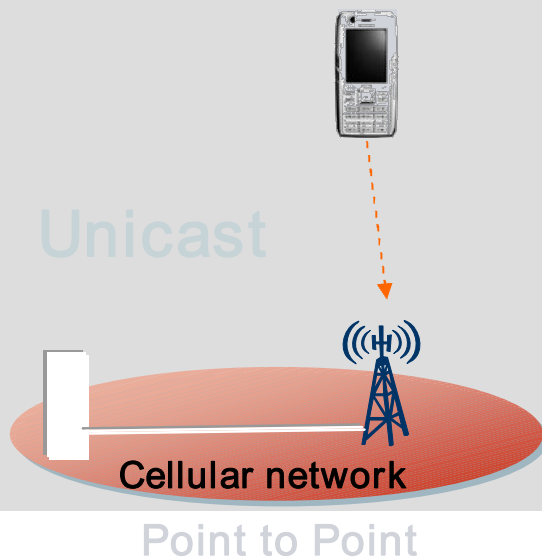


Summary

Complementary services supporting different use cases Unicast, Multicast & Broadcast

Mobile TV Streaming

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



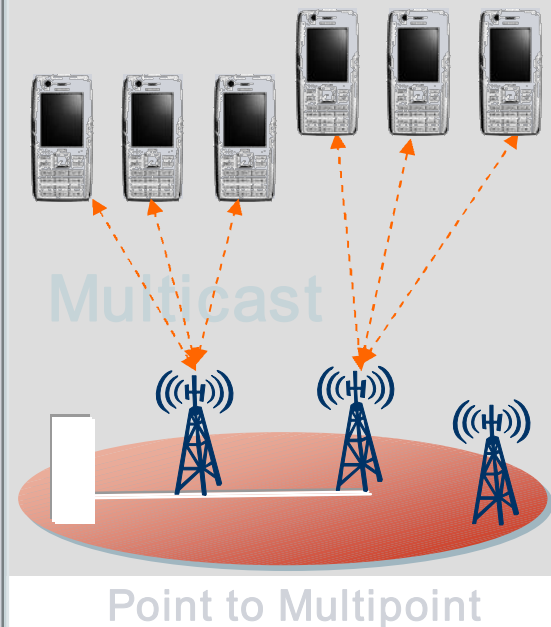
Digital Video Broadcast for Handhelds (DVB-H)

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



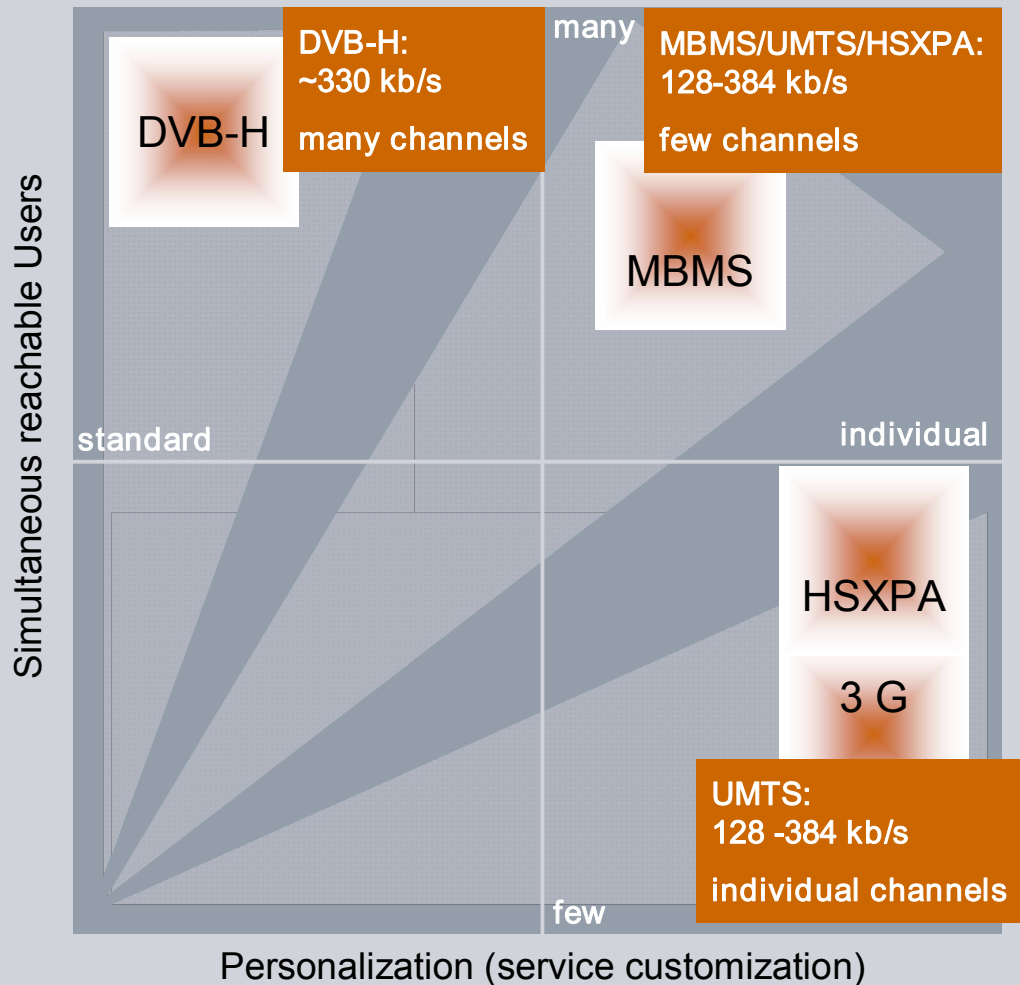
Multimedia Broadcast Multicast Service (MBMS)

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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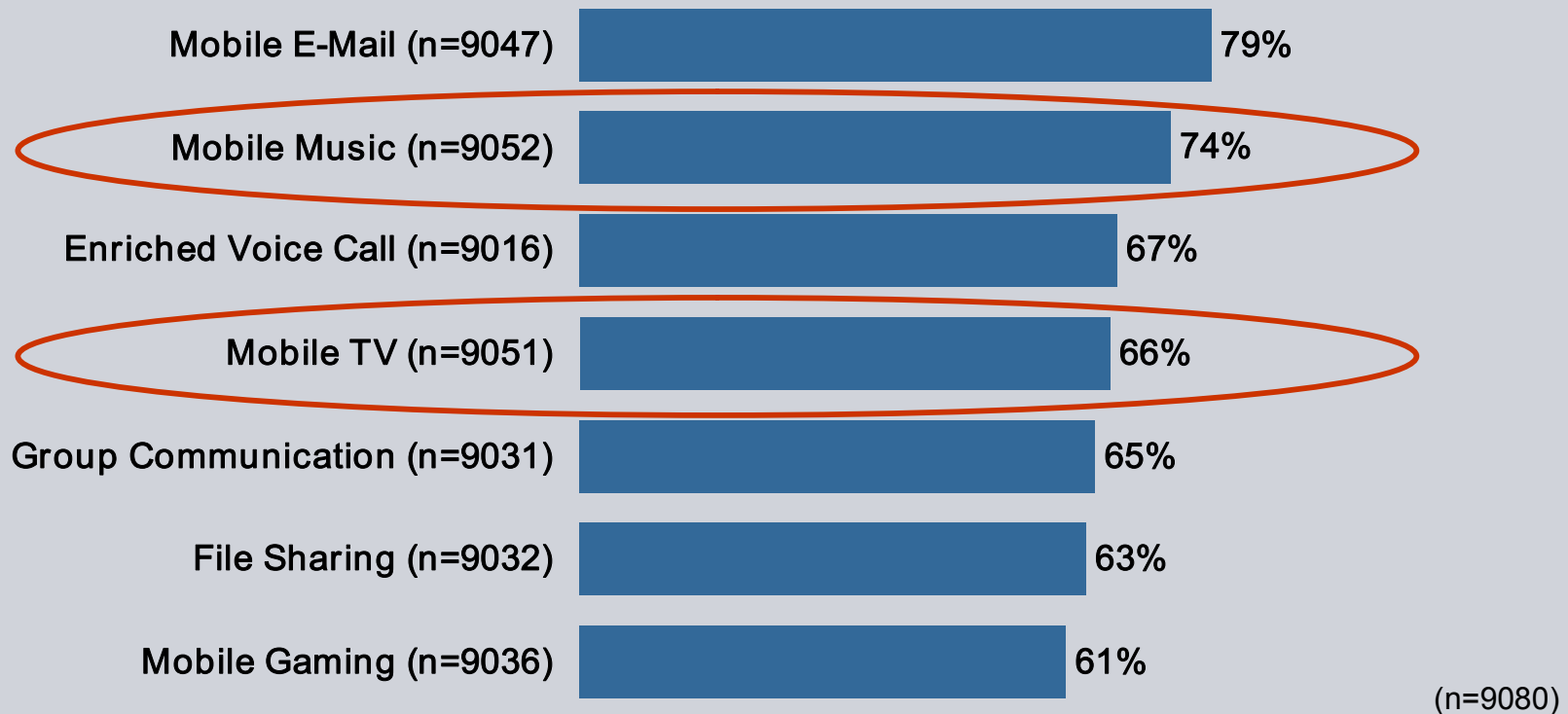
Technology



Summary

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

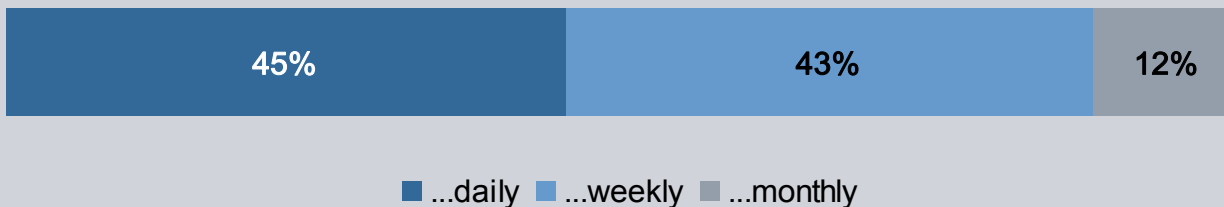
Interest in different applications (all countries)



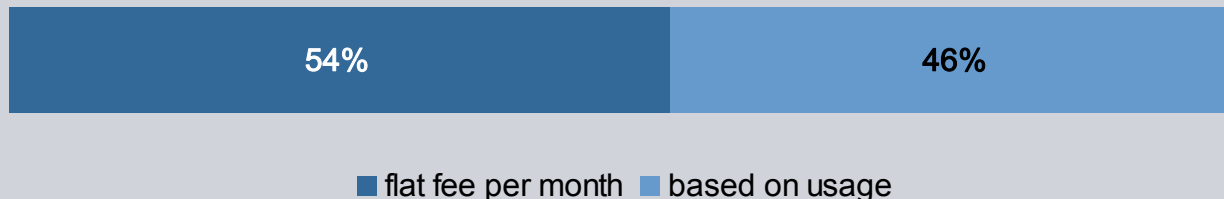
- more than two thirds of all survey participants are interested in mobile music and mobile TV

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?

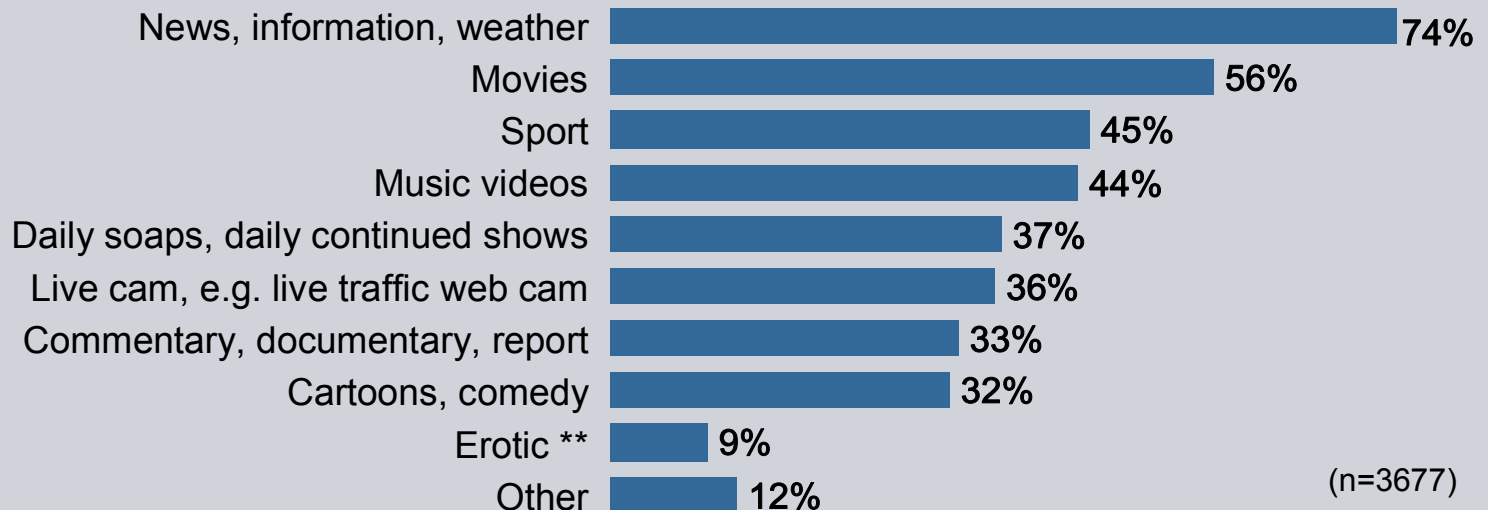


Stated willingness-to-pay: 12.2 € / month (active users)

- 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)*

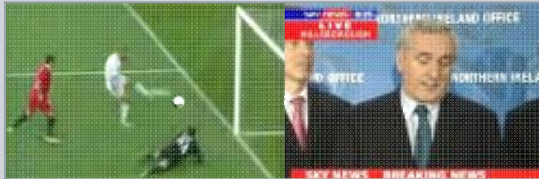


*) Only respondents being interested in Live TV and/or TV On Demand (at least 4 points on a scale from 1 to 10)

**) 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



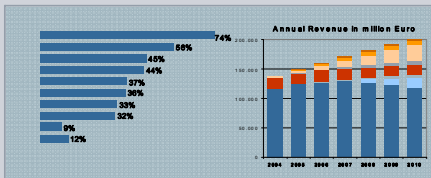
WHO?

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



HOW?

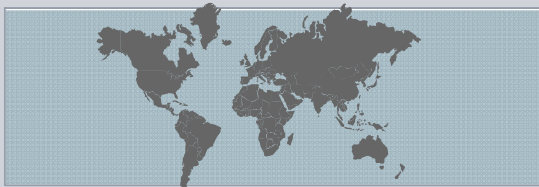
- Easy channel-switching
- Easy navigation



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)

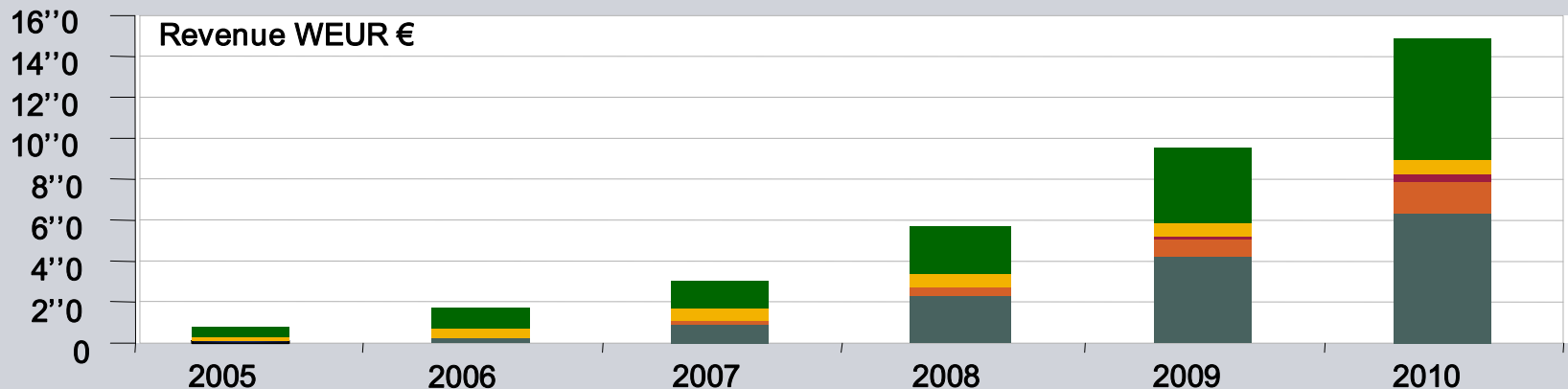
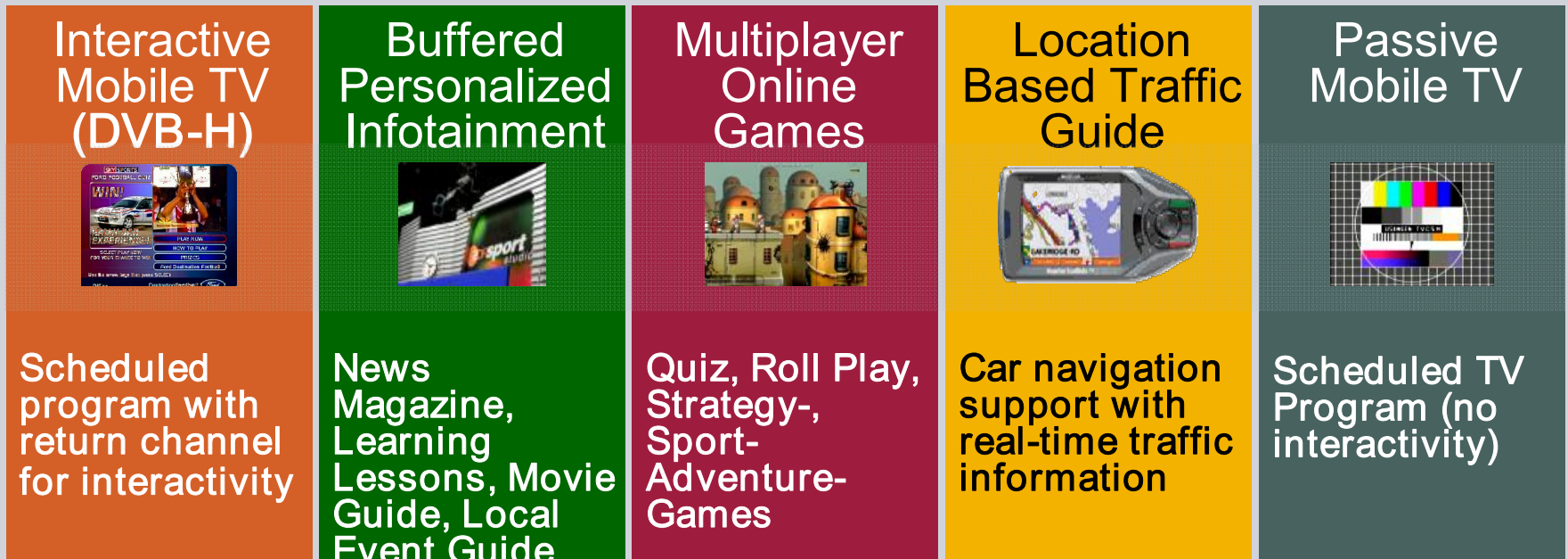
Booz Allen Hamilton (Dr. Roman Friedrich):

- 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



Source: Siemens COM, 2004

Consumption Patterns 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

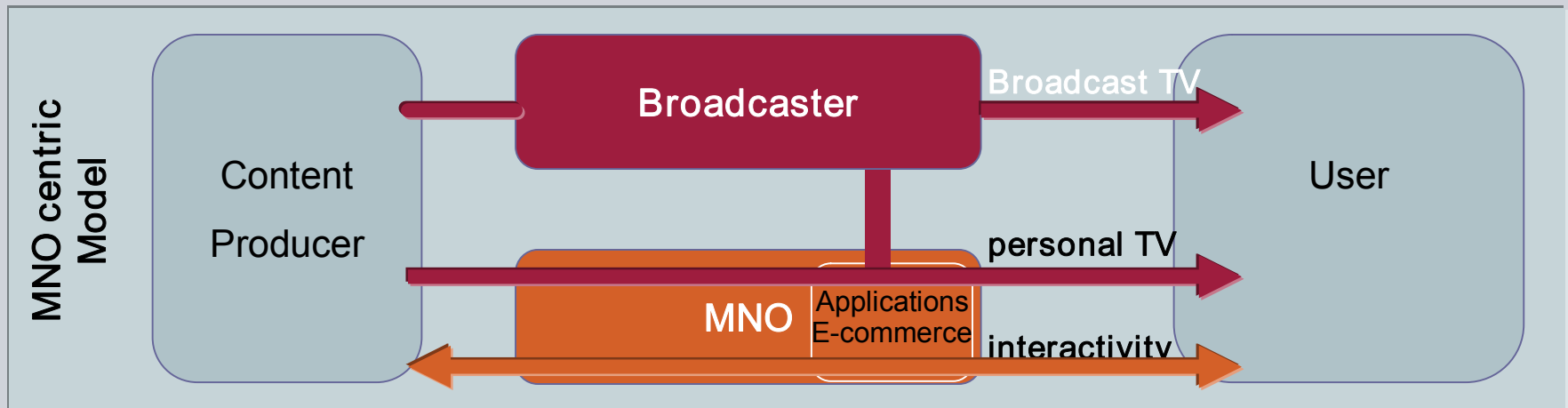


Technology



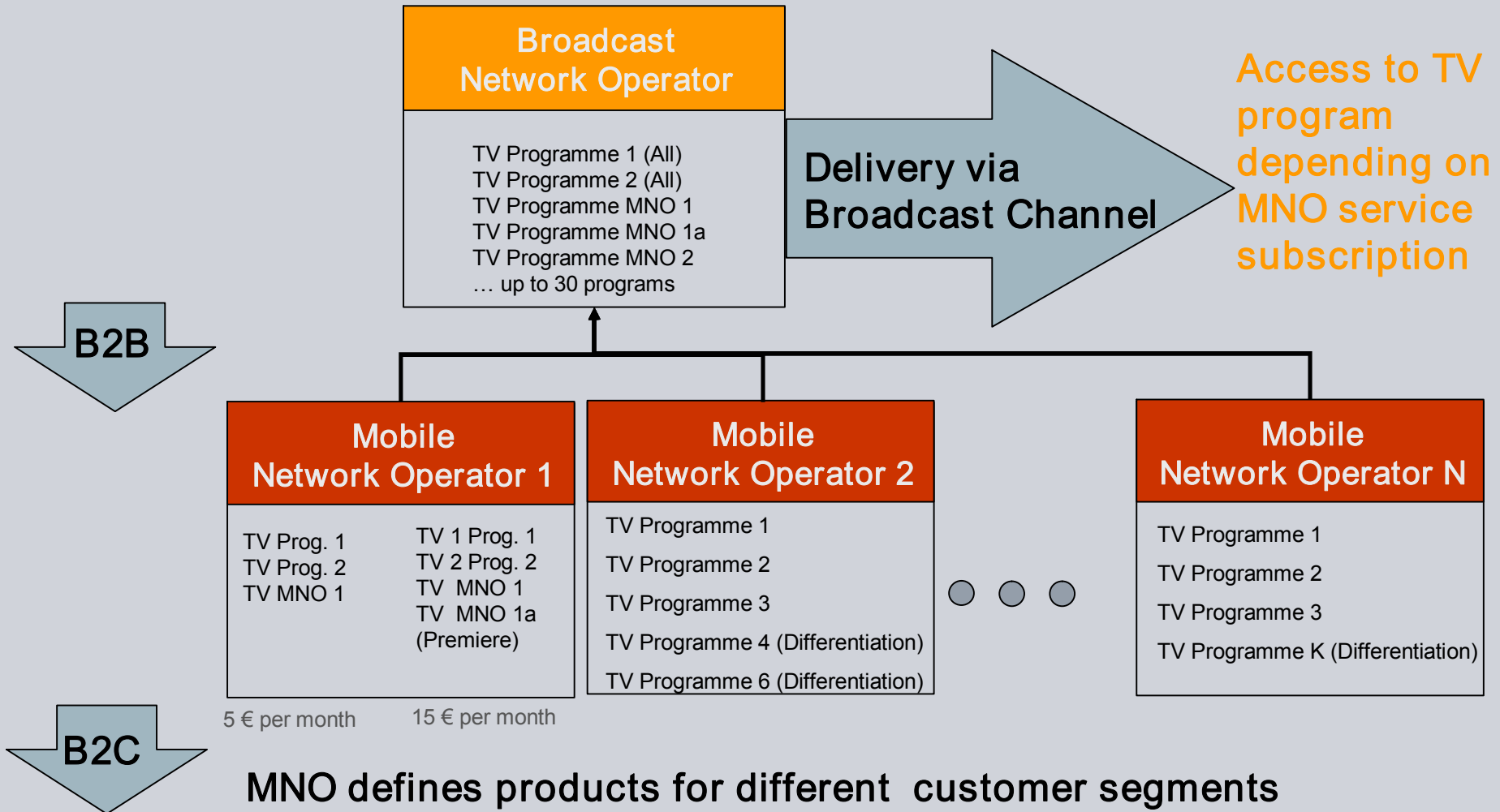
Summary

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)

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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

- Operates DVB-H network
- IP Encapsulator

Standard Service

- Content preparation
- Service protection

Standard Content

- Buys standard content
- Content import

B2B

B2B

Mobile Network Operator

Operation & customer relation

- Operates Mobile network
- **Manages cust. relationship** (subsMgt, billing, customer care)

Service Differentiation

- **Electronic Program Guide** for specific channel def.
- **Pricing Model**
- **Interactive TV.** e.g. voting/quiz
- **Usage Tracking**

Individual Content

- Buys **individual content** and aggregates it to marketable products
- User specific rights mgt

B2C

B2B

CONTENT PROVIDER



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

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Summary

Mobile TV

Streaming and Broadcast are complementary services

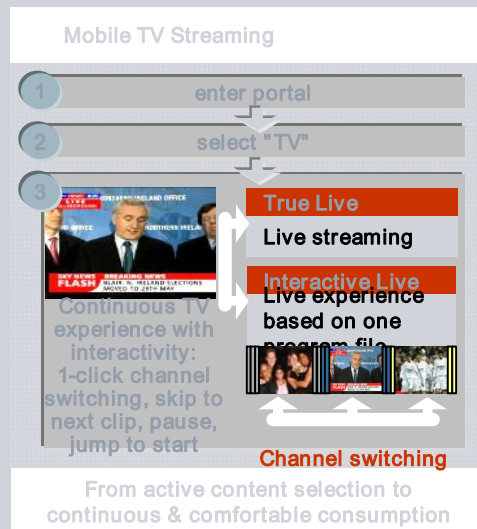
Mobile TV Streaming

Use Cases

- Personalized channels
- Interactivity

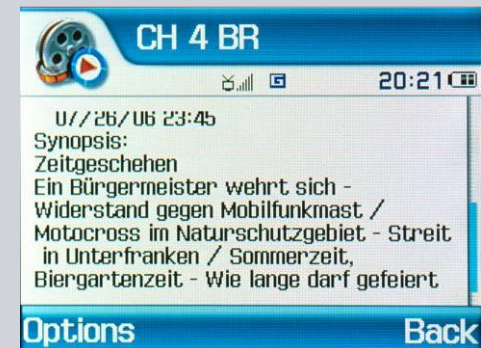
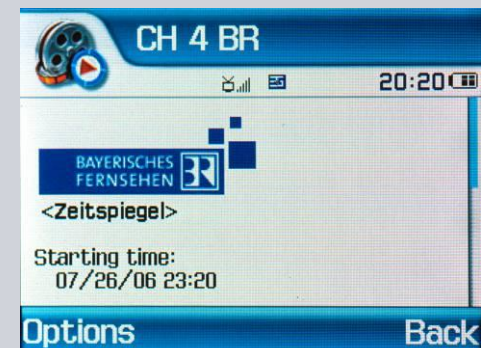
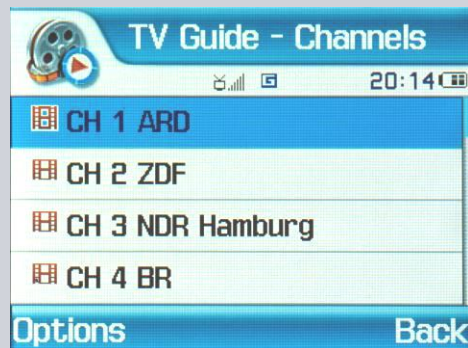
Digital Video Broadcast for Handhelds

- Conventional TV
- Interactivity via cellular network



ESG provides information on the Mobile TV service and content

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Interactive Services Create Value Added and additional revenue

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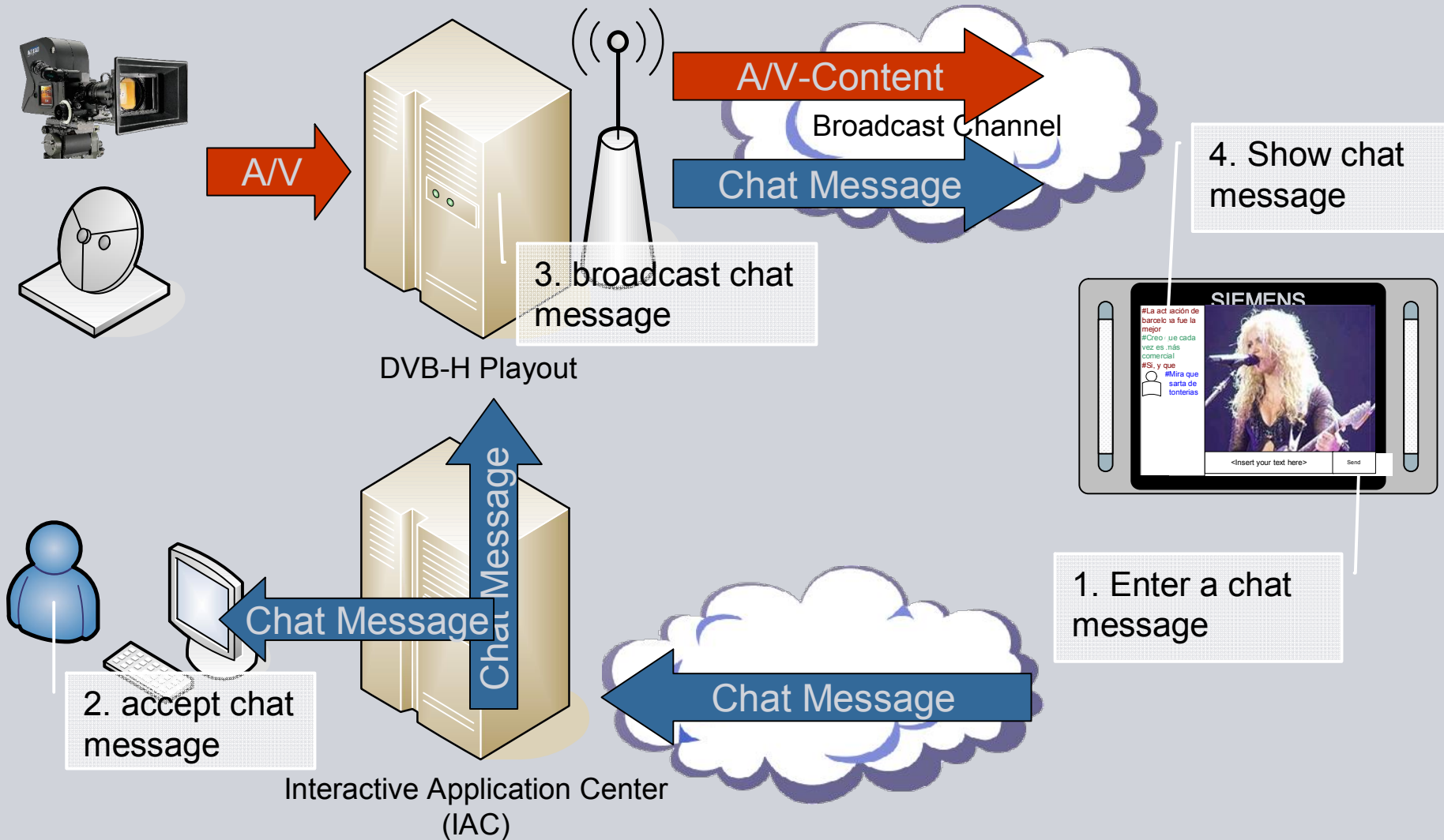


Vote the finalists:

Interactive Services
Related to the
TV program like:

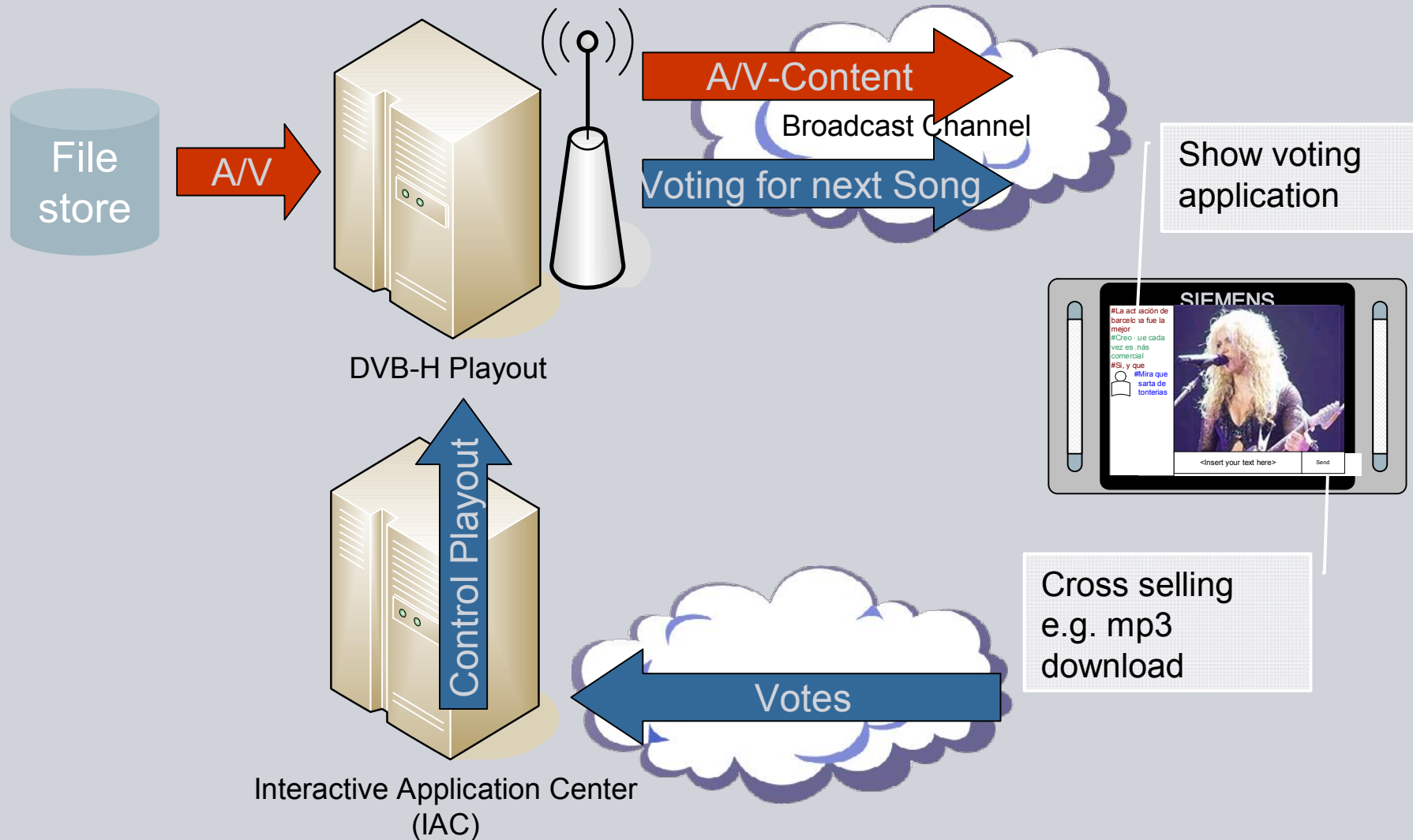
Voting
Song download
Donating
Chat
etc.

Example of broadcast chat



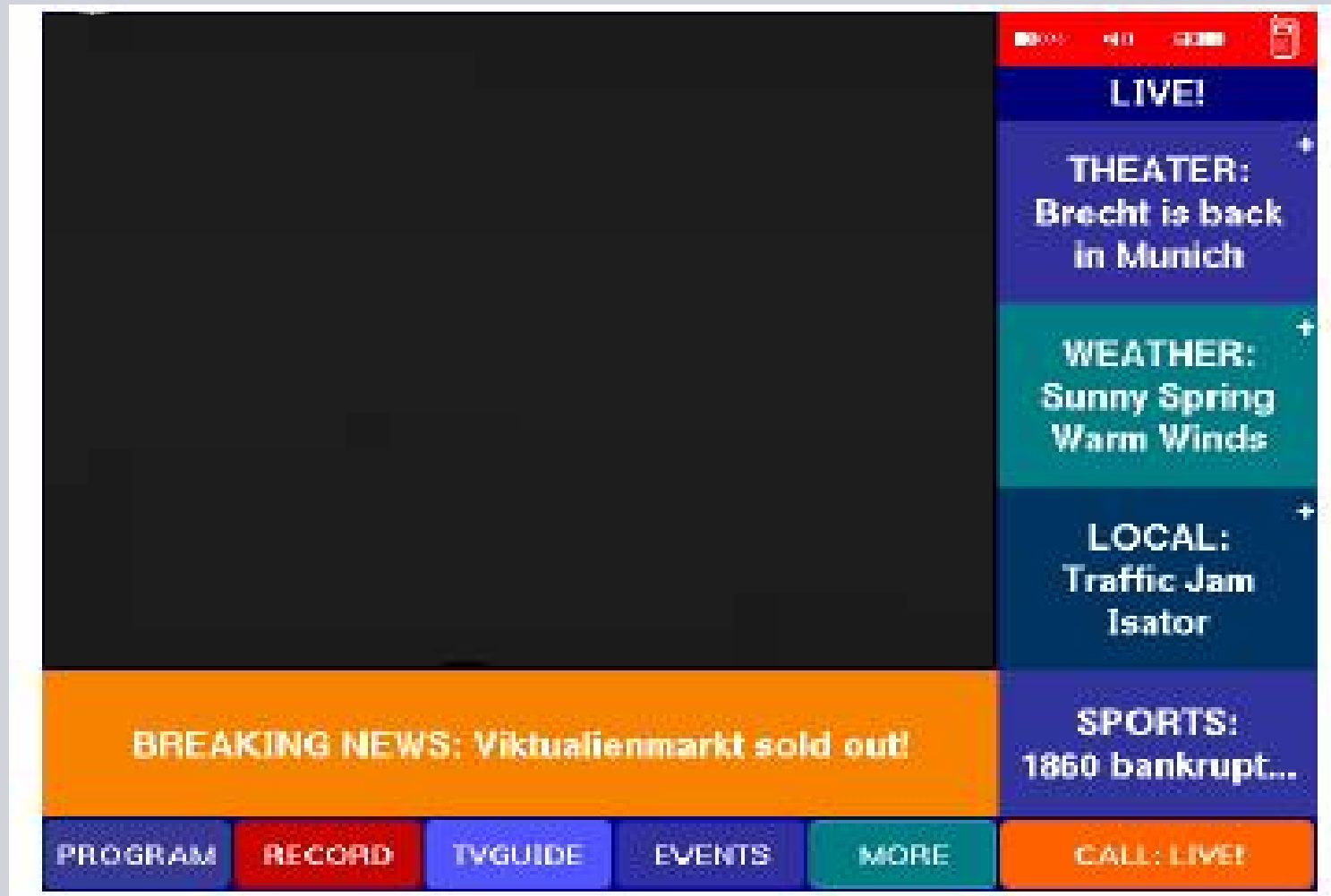
Example for full automated interactive program Jukebox

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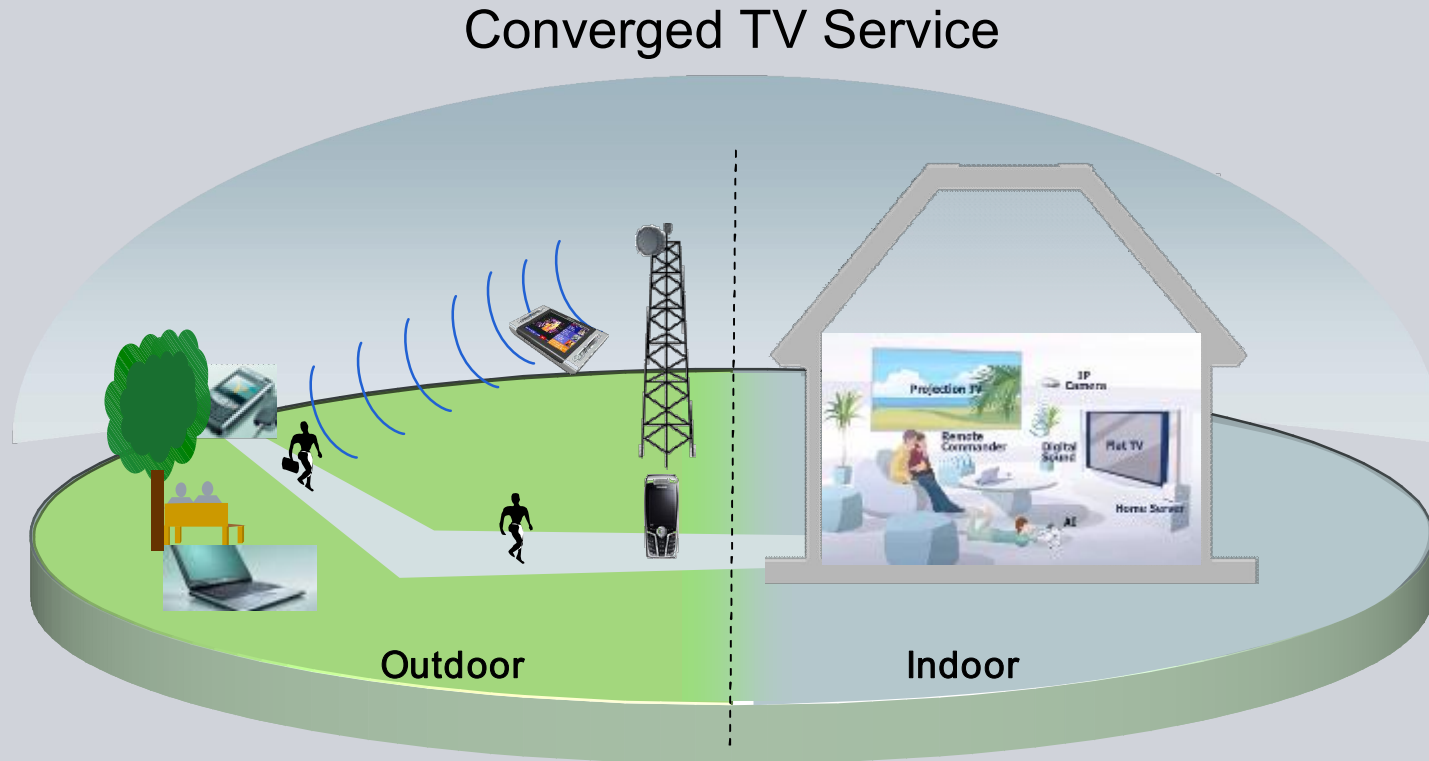


Mobile TV Interactive Application

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



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

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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

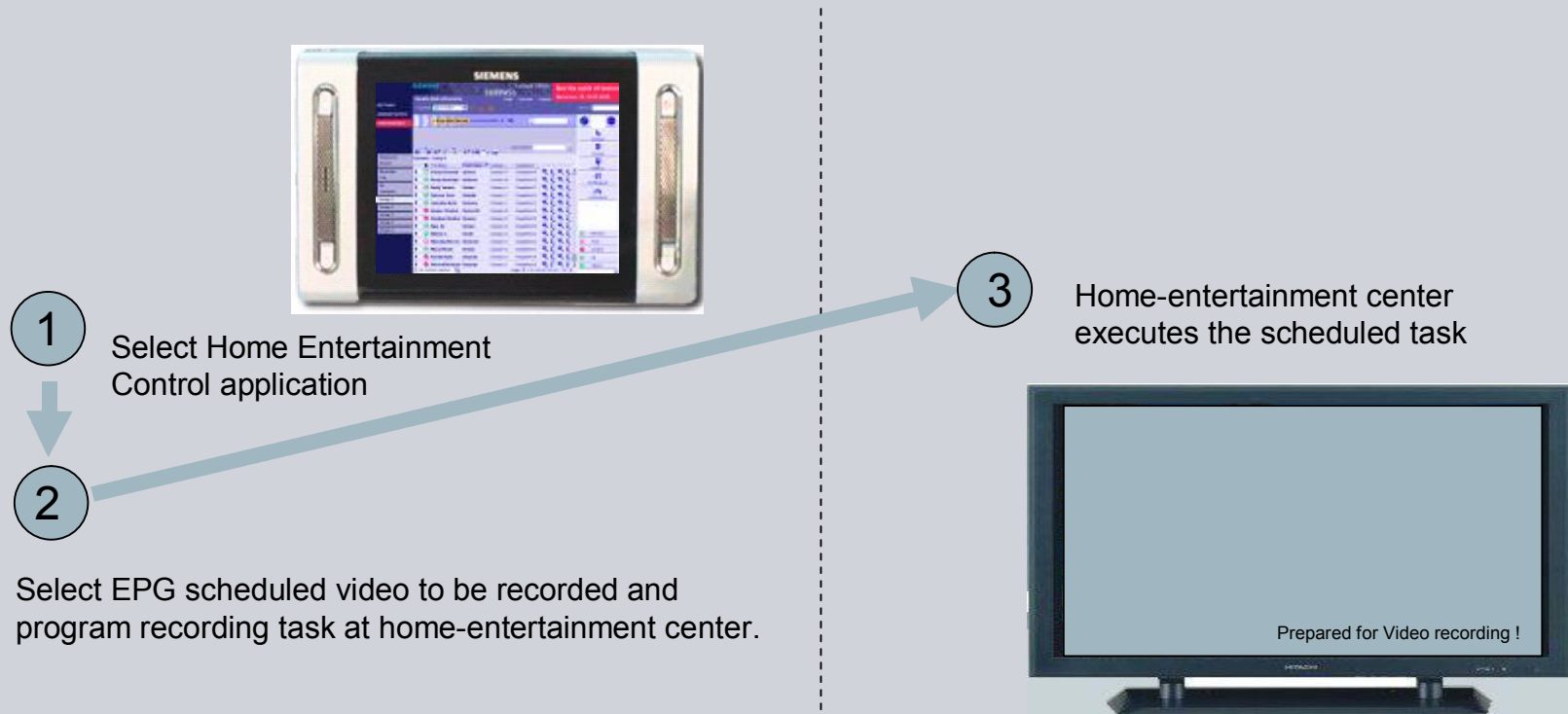


The mobile device becomes a remote control of the home-entertainment center

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.



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

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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.



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Summary

Media Delivery Solution for Unicast & Multicast & Broadcast

without
QoS

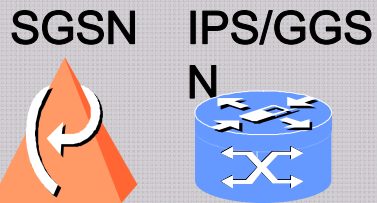


with
QoS



DVB-H
MBMS

Transport



Control



Policy Control
Server



IP over MBMS



IP over DVB-H

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

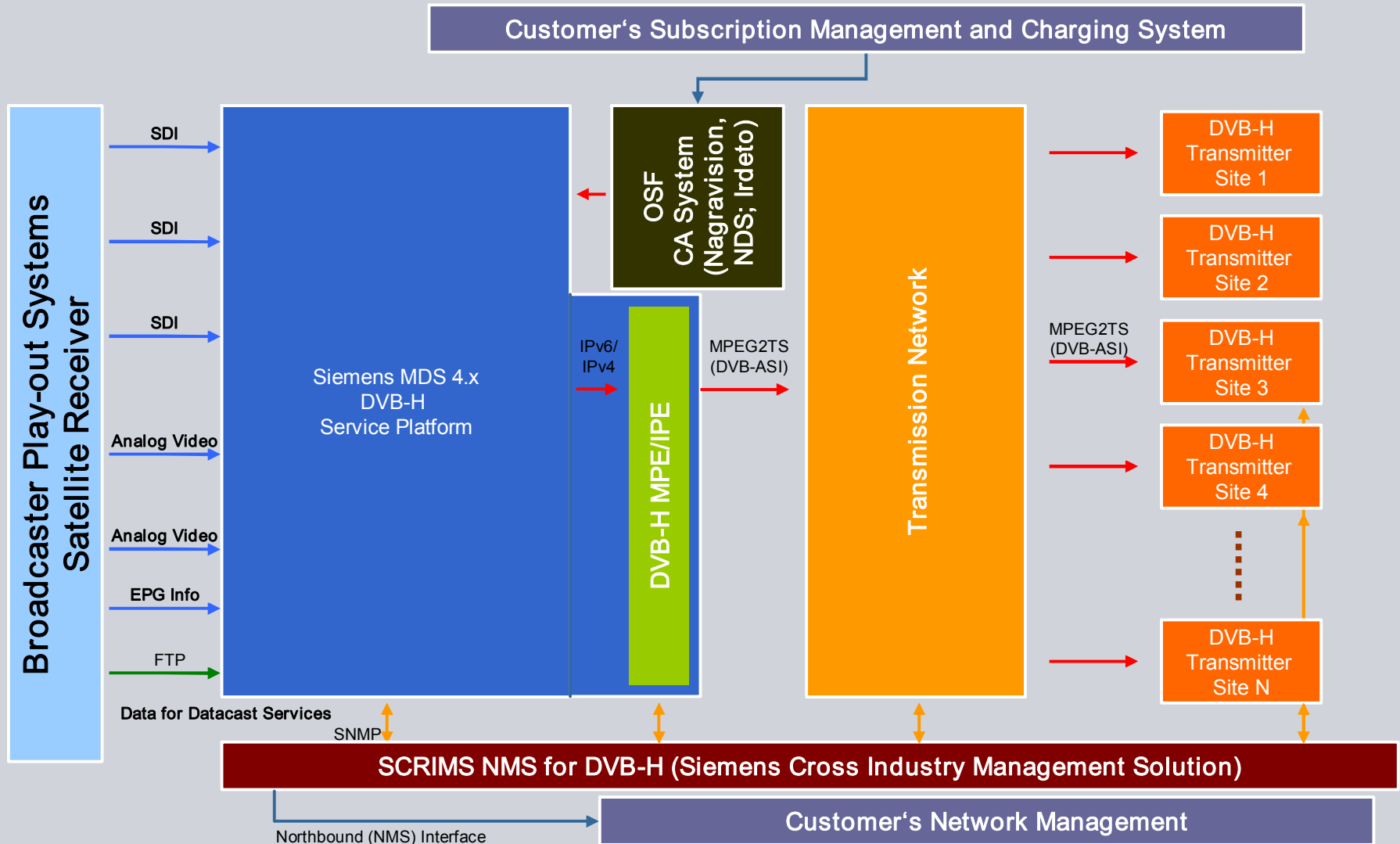


Backend
Infrastructure

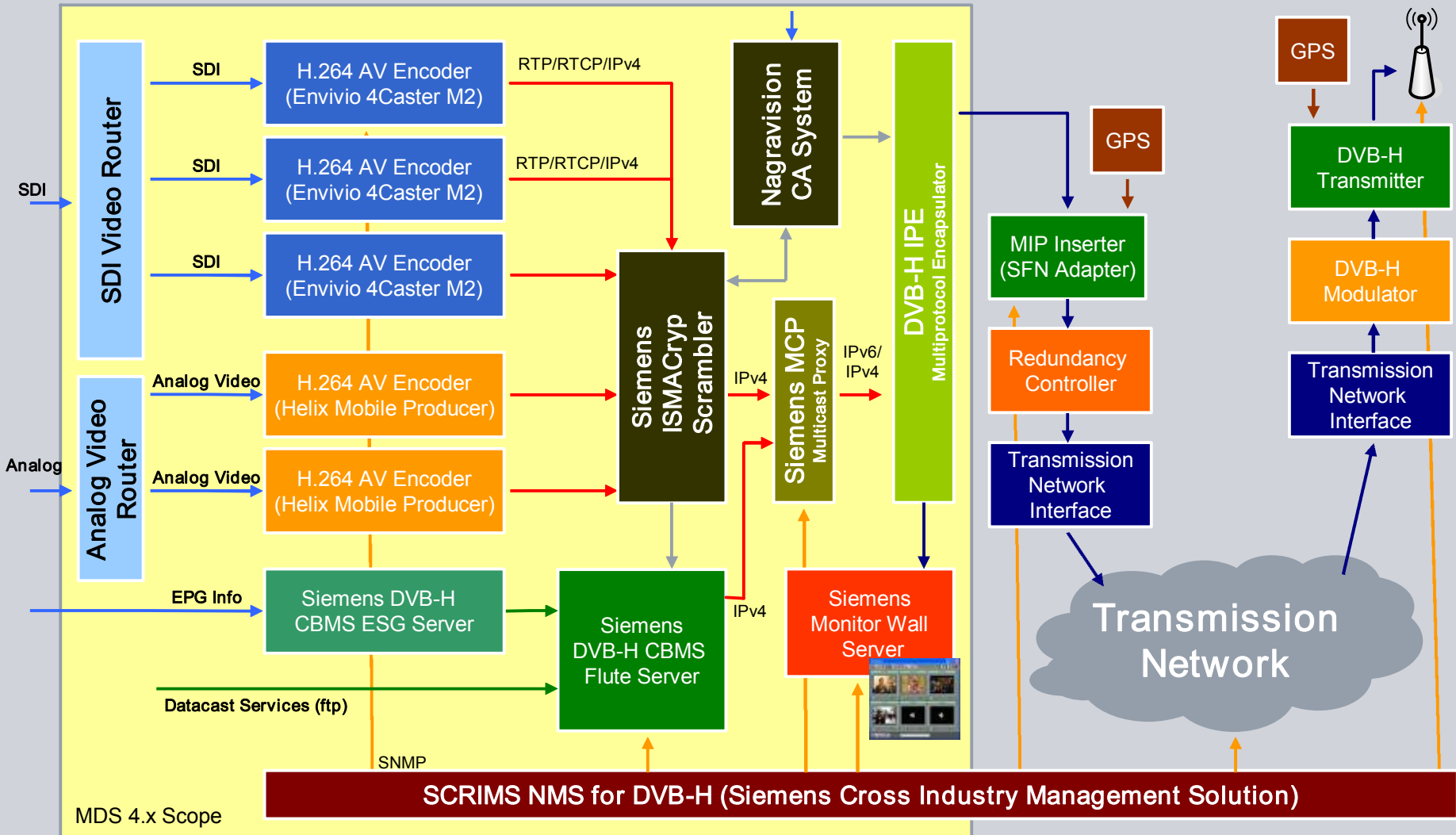
- Charging / Billing
- Customer Care
- O&M
- Data Warehouse
- B&R, QoS

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

DVB-H Solution Architecture Overview

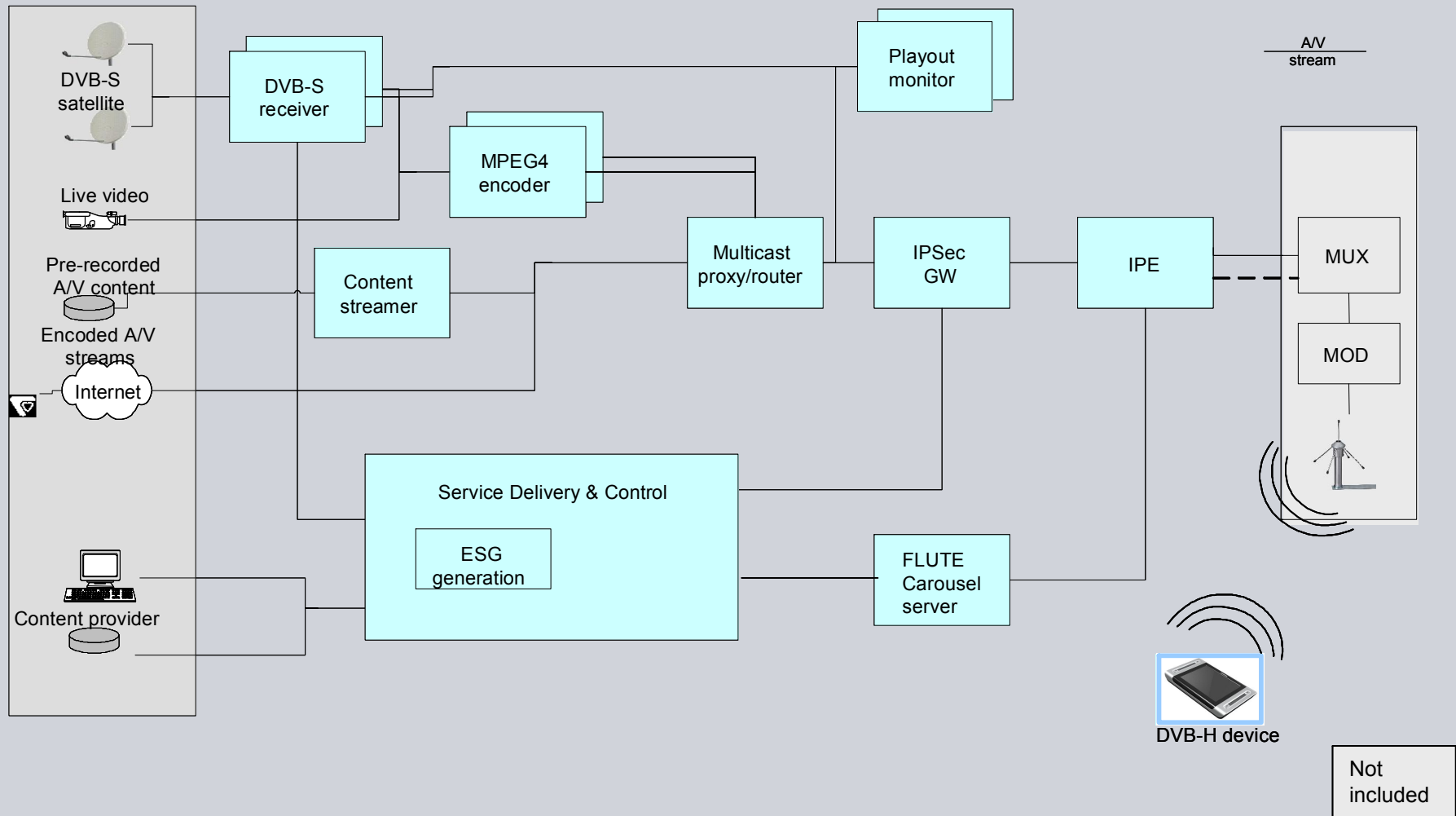


Functional Blocks



Mobile TV

Architecture overview



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Consumption Patterns 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