

Mobile TV

The Evolution of business models and services

May 2009

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Nokia Siemens Networks

Business Development Mobile TV & Advertising

Mobile TV Broadcast

Status and market expectations

Mobile TV Broadcast services December 2008:

- 40 million users in Japan (ISDB-T)
17 million users in Korea (DMB)
15.4 million T-DMB, 1,85 million S-DMB
1 million users in Europe (DVB-H)
- DVB-H commercial services: Austria, Finland, India, Italy, Malaysia, Netherland & Switzerland
- More than 335 million broadcast mobile TV users worldwide by 2012¹ DVB-H will become dominant from 2009 onwards reaching 182 million users by 2012¹

Revenue potential:

- More then \$12 billion mobile video service revenues by 2010²
- Advertising and interactive applications will generate additional revenues

Sources: ¹Informa Mobile TV, 3rd Edition, Jul 2007

²Infonetics Mobile Video Devices Services and Subscribers, Oct 2007



Mobile TV is already commercial around the world

Current Nokia / Nokia Siemens Networks references

- 30 commercial Mobile TV Unicast customers
- No 1 in commercial Mobile TV Broadcast / DVB-H launches using OMA BCast DRM profile:

- Finland



- India



- Malaysia



- Netherlands



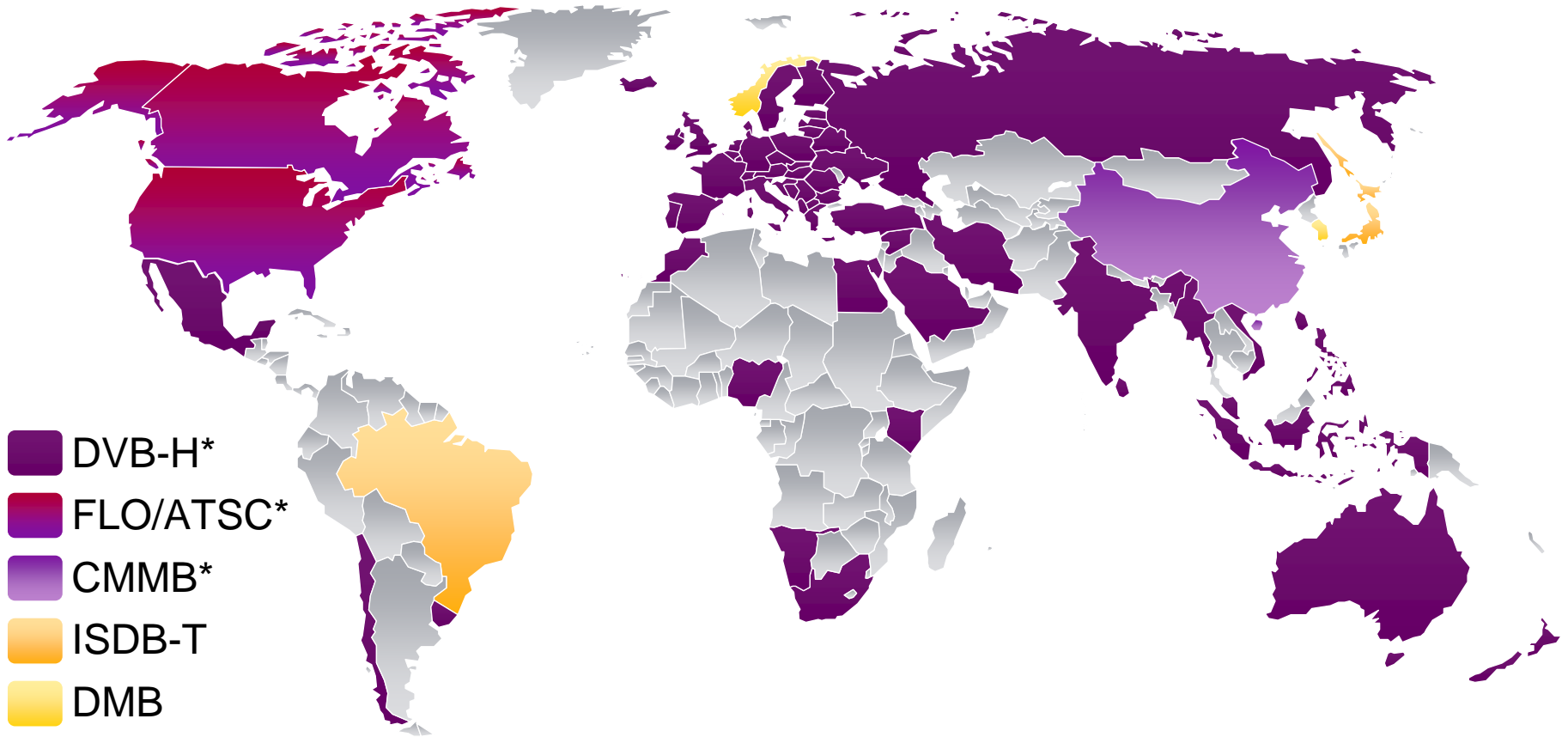
- Switzerland



Nokia / Nokia Siemens Networks references for DVB-H customers incl. trails & pilots



Estimated launches of commercial mobile broadcast TV services



Worldwide some 25 countries are expected to start commercial DVB-H mobile broadcast TV within 2009 / 2010

*) possible with OMA BCAST service layer

Complementary technologies for ensuring seamless E2E Mobile TV experiences

Broadcast, DVB-H



Mobile TV content to masses, > 20 channels

Unicast



User-controlled personalized channels and interactivity

MBMS



Multimedia services to masses and communities

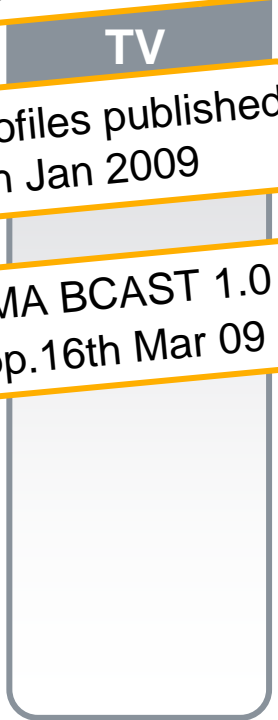
Interoperability and standard alignment drives Mobile TV broadcast market

OMA BCAST DRM profile & OMA BCAST Smart Card profile

IOP Test Fest 19 – 27 Mar 2009

Profiles published 7th Jan 2009

OMA BCAST 1.0 app. 16th Mar 09



OMA IOP Test Fest → IOP Testing for the commercial launch

bmcoforum Profile → Selected features for implementation



OMA BCAST → Preferred service layer standard

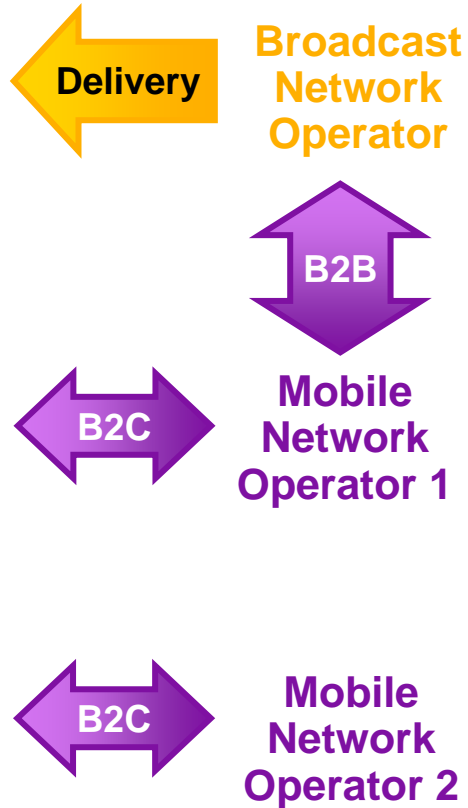


DVB-H → Preferred broadcast standard



3GPP Rel.6 Compliancy → Latest streaming standard

DVB-H business model builds on cooperation between BNO and MNOs



- TV Program 1 (All)
- TV Program MNO 1
- TV Program MNO 1a
- ...up to 30 programs

- TV Program 1
- TV Program 2
- TV Program MNO 1

5€/mth

- TV Program 1
- TV Program 2
- TV Program MNO 1
- TV Program MNO 1a

10€/mth

- TV Program 1 (All)
- TV Program MNO 1
- TV Program MNO 2
- ...

3 Italy offers six mobile TV channels for free in addition to premium packages (summer 2008)



Guarda gratis gli Europei di calcio sul tuo TVfonino!

Free channels

- La3
- Raiuno
- Raidue
- Mediaset
- SkyMeteo
- Current Tv



Sky package

- Sky Sport mobile
- Sky Cinema mobile
- Sky Tg 24



Pricing:

1 €/ day
2 €/ week

Glamor package

Adult channels

- Playboy
- Penthouse

Pricing:

5 €/ day
9 €/ week

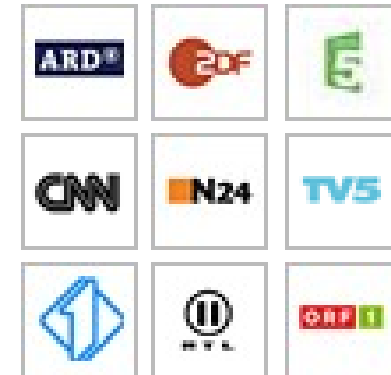


Nokia Siemens Networks

Swisscom "Bluewin TV mobile" offers one mobile TV service (DVB-H & unicast) since May 2008



Only one mobile TV subscription:
2 CHF / day (~ 1,25 €) or 16 CHF / month (~ 10 €)



20 channels in "HD quality"
via **DVB-H** network
44% coverage: Bern, Basel,
Genf, Lausanne & Zürich

All channels streamed
via Vodafone live!
3G network
in **99% of Switzerland**

KPN Netherlands offers bundle package with free mobile TV since June 2008

TV op je mobiel

Zonnesteekweken:
€ 120,-
abonnementskorting



- Gratis MobielTV t.w.v. € 9,95 /mnd
- Geen 27,50 maar 22,50 /mnd
- Gratis Samsung P960 TV

[info en bestel](#)

toestel: **€ 0.00**

KPN € 27,50 2 jaar	€ 22.50
actie: GRATIS Mobiel TV	€ 0.00
Totaal per maand	€ 22.50




N 96 launch
15th Sept. 08



10 TV channels via DVB-H included as "premium service" in top operator package

+ 2 pay TV channels 5€/mth eredivise live / ahem

Samsung P960 TV



[info en bestel](#)

LG KB620



[info en bestel](#)

Je kunt de volgende 10 zenders ontvangen




Austria: Three mobile operators using one DVB-H network



End-User



* since 22nd
Sept. 08
new brand



15 DVB-H TV channels: ORF1, ORF2, ATV, Puls4, Pro7Austria, RTL, Sat1Österreich, VOX, Laola1.tv, LaLaTV, Red Bull, RTL 2, N24, Super RTL

5 DVB-H radio-channels: Ö3, FM4, Kronehit, Ö1, Lounge FM

Unlimited Mobile TV with Showtime XL package (Total of 40 TV and radio channels)



Unlimited Mobile TV until End 2008 - 9 €/ month from Jan. 2009 onwards **



GESTOCHEN SCHARF UND RÜCKELFREI!



Buy N77 before 14. Aug & get free Mobile TV till End 2008 - later 9 €/ month + 7 channels via UMTS



** new offering with N96 for 19€/per month starting September 2008

Nokia Siemens Networks



Evolution of business models for Mobile TV in Summer 2008

Cooperation

Different mobile operators use the same DVB-H network provided by one broadcast operator (e.g. Austria)

Low entry barrier

Basic mobile TV channels for “free” to stimulate usage and support upgrade to premium packages (e.g. 3 Italy)

Bundling

Mobile TV is offered as part of premium packages (e.g. 3 Austria, kpn Netherlands)

Holistic mobile TV

One "seamless" mobile TV service combining DVB-H & unicast technology (e.g. Swisscom)

Media combination

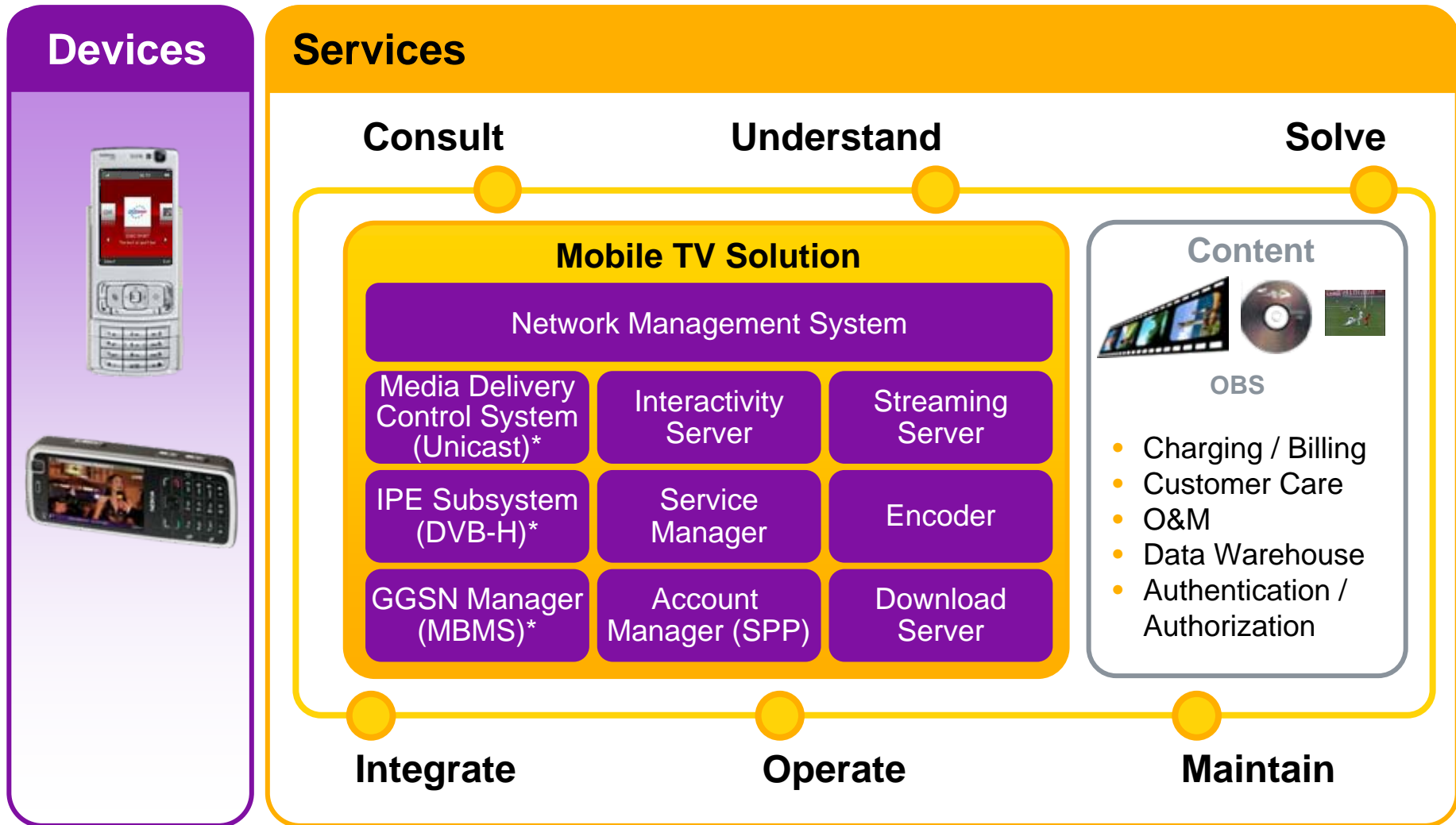
DVB-H supports mixture of mobile TV & "interactive" radio channels (e.g. Austria)

Advertising

Mobile TV channels with advertising insertion (3 Italy). Free TV offerings based on targeted advertising likely to emerge



E2E solution for seamless Mobile TV experience: Unicast; DVB-H Broadcast & MBMS



*) modular extension

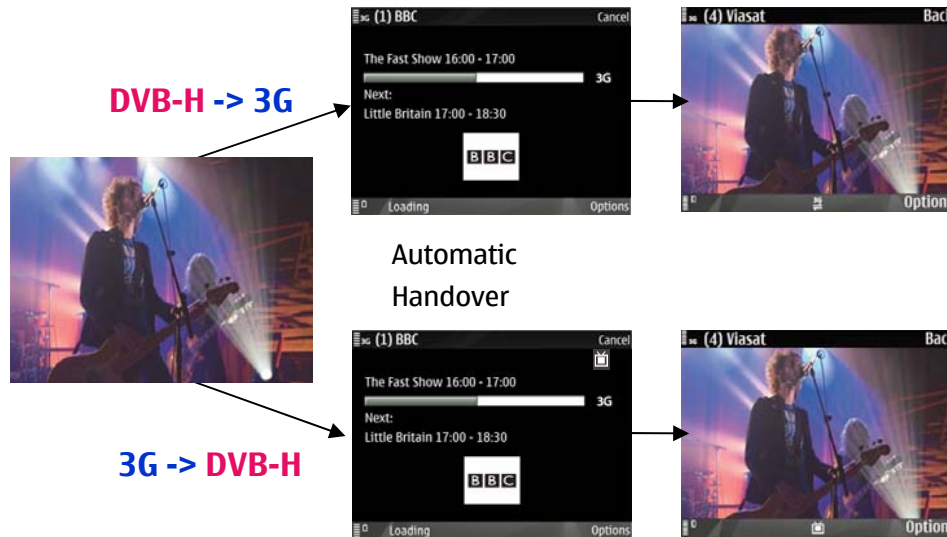
Holistic TV delivering best Mobile TV consumer experiences with most efficient channel mix



Holistic Mobile TV Experience

Best of Broadcast and Cellular

- Automatic Handover: Client will monitor network coverage and switch source based on signal strength (DVB-H or 3G)
- Both broadcast and streaming TV channels can be used with one ESG
- Most popular channels over DVB-H and “long tail” over cellular networks



Unified UI
Broadcast &
Streaming

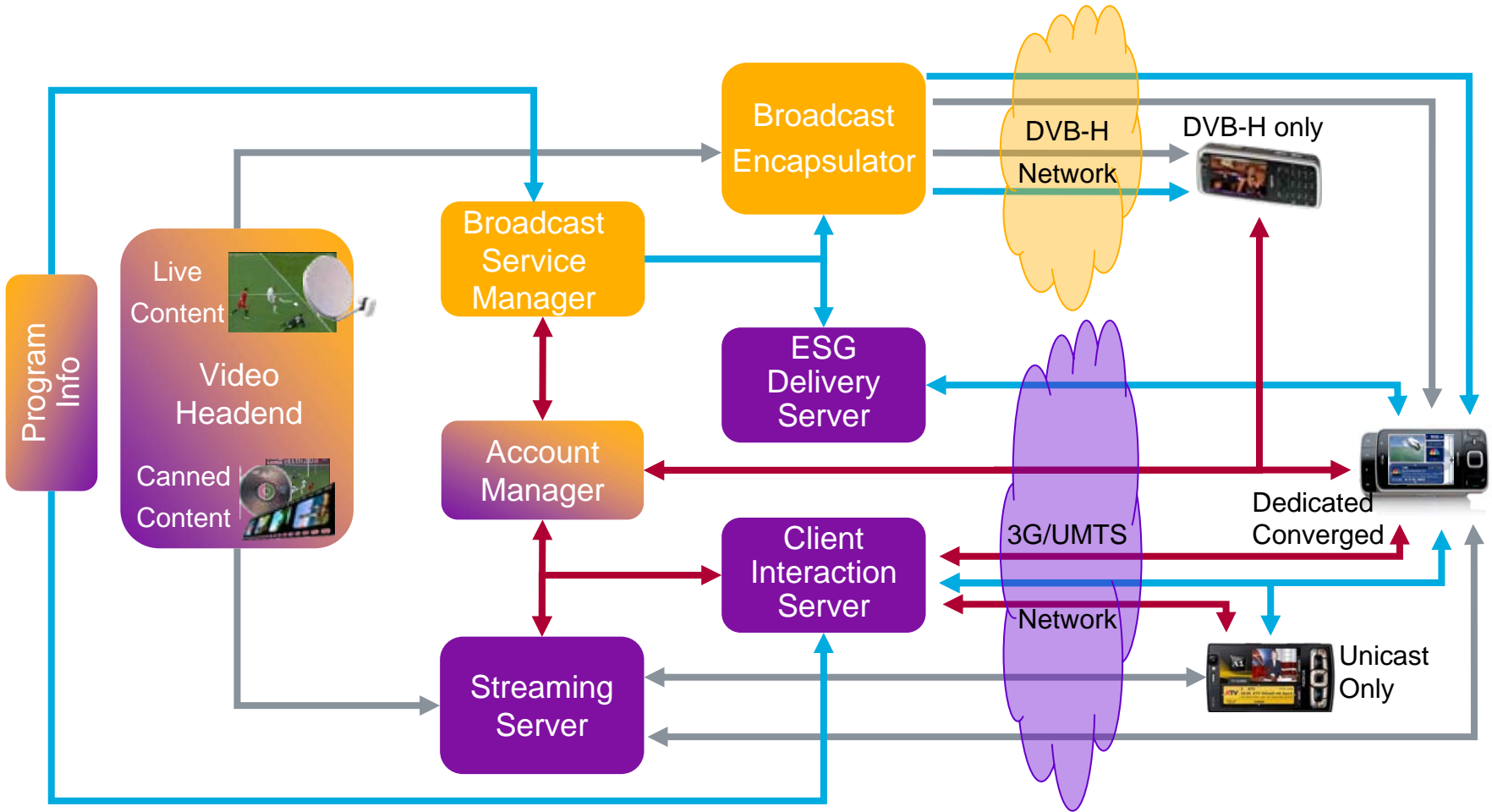


Broadcast e.g. 15
channels
Streaming e.g. 50
channels

Automatic handover between bearers ensure best possible QoS

Holistic Mobile TV – the full picture

Platform logical architecture






Mobile TV DVB-H eco system differs from market to market

CAPEX

Terminal Subsidy	
Mobile TV platform	
Network Infrastructure	

OPEX

Marketing	
Content rights <ul style="list-style-type: none">• Sports• Movies• News• other	
DVB-H network operations	

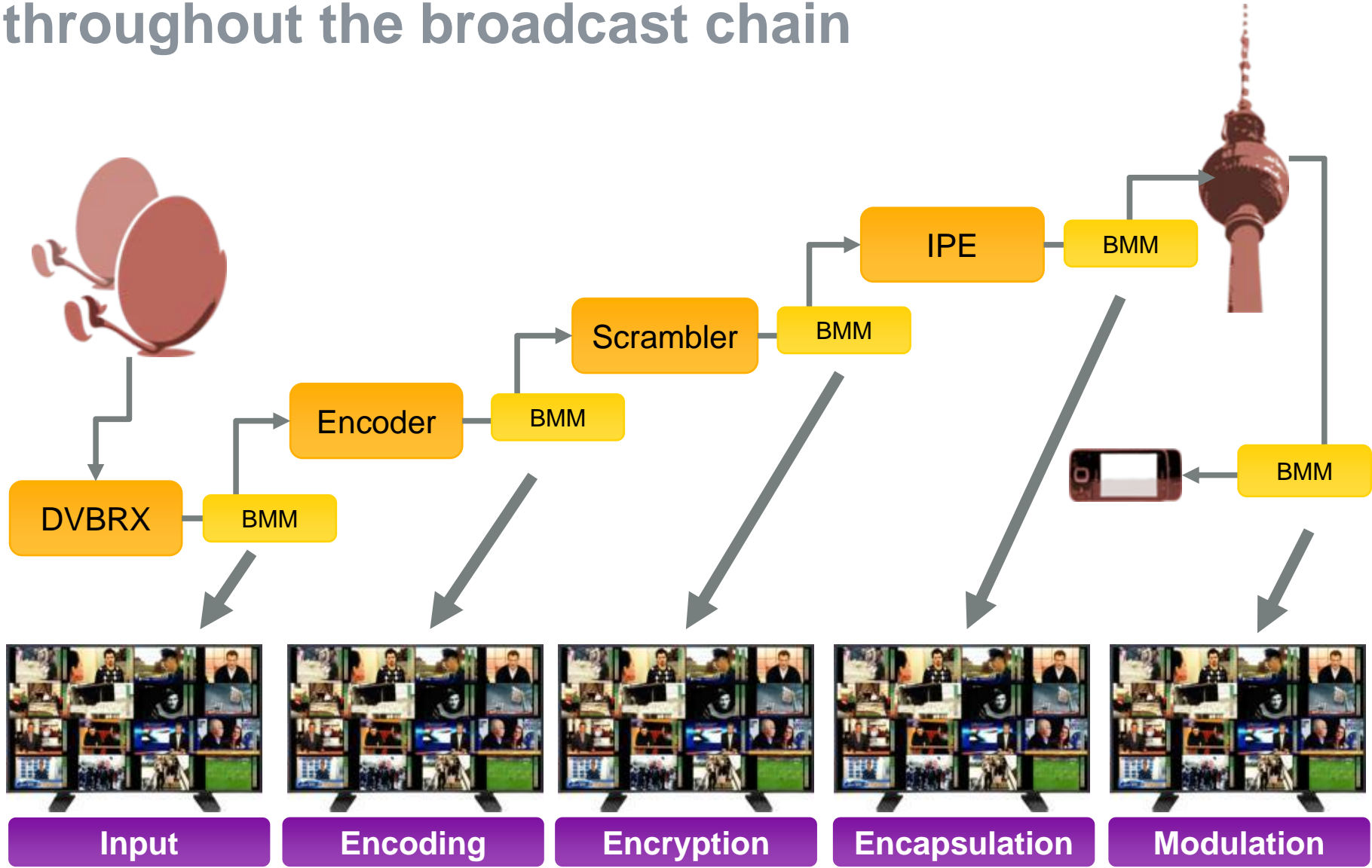
Broadcast multi-screen monitor visualizes the TV broadcast offering



- Visualize the DVB-H A/V Services on a big screen in the Network Operation Center
- Visualize the Input A/V Streams coming from DVB
- Stream the Multiscreen Display to any remote MPEG2 Player
- Visualize encrypted A/V Services

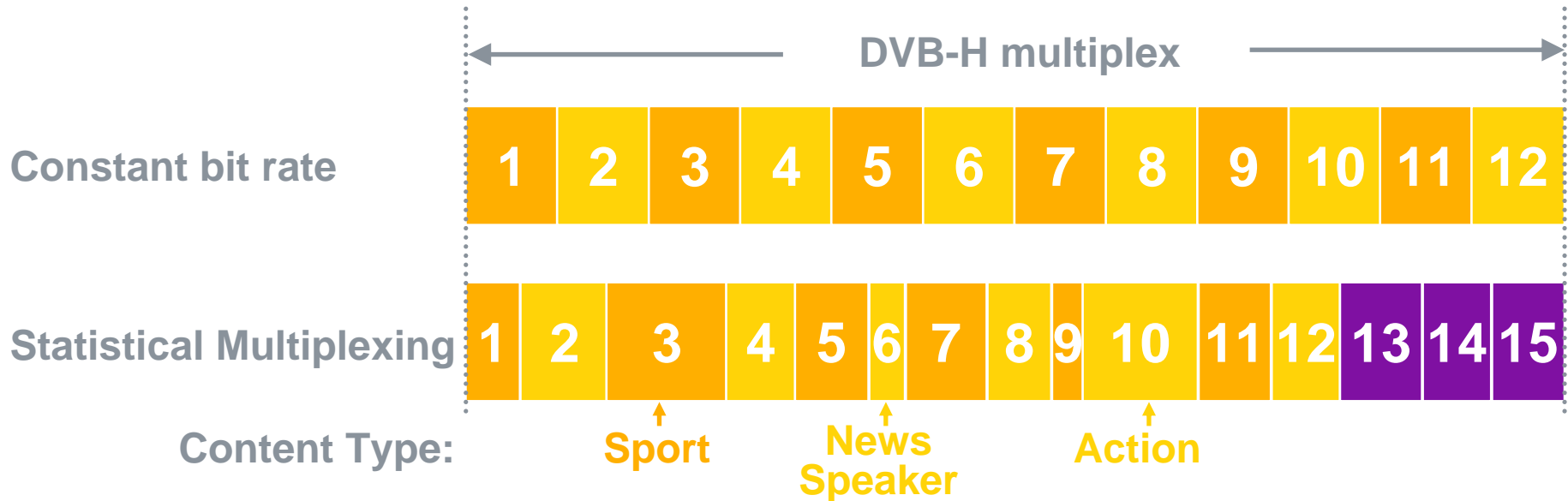


Monitoring components allow quality check throughout the broadcast chain



Statistical multiplexing offers more channels

- Use variability of video signals to increase number of channels
- Improve the video quality compared to constant bit rate encoding
- Overall gain approx. 25% - 30% depending on content of channels



Allow a higher number of TV channels in DVB-H multiplex

Mobile Quality Analyzer captures TV, service and terminal usage

- MQA Agent is a background process running on standard Nokia mobiles
- Capturing true end-user quality experience combined with radio interface details
- Over-the-air administration and measurement collection



See how thousands of subscribers truly experience services
What – When – Who !

DVB-H enables new interactive radio services, already live in commercial launch in Austria

Different radio services in DVB-H to address specific communities

Info.fm

NEWS / WEATHER / TRAFFIC
reports/backgrounds/interviews
sport

presented by GMIT

WEATHER
Today HI 86°F | LO 57°F

SPORT
Oden Out For Year

MARKET
Dow Jones
13.424,88 +133,23
+1,00%
Time: 4:30PM
Date: 09/13/2007

- Stock Market update
- Favorite sport
- Traffic information

Classic.fm

RIHANNA dont stop the music
CIARA - cant leave em alone
JEANNIE ORTEGA - crowded

NEWS
New outbreak of foot and mouth in Britain

CD TIP
4 The Soundtrack

EVENTS
Sunday 09/16/2007 Sunday Songs
Sunday 09/23/2007 Organ & Oboe

presented by GMIT

- CD recommendations
- Related events
- Breaking news

Blaster.fm

RIHANNA dont stop the music
CIARA - cant leave em alone
JEANNIE ORTEGA - crowded

WEATHER
Today HI 86°F | LO 57°F

RadioCAM

CHAT
El-malak: hello junior
junior: Hello El-malak
junior: how are you?
El-malak: fie thx u?
junior: great

send" Nickname: Message"
@ 4444

presented by GMIT

- Chat while listening
- Studio web cam
- Current local weather

Efficient DVB-H spectrum usage for multiple radio services



Visual radio is already life in commercial DVB-H services

Radio programs with visual add-ons

- Weather - breaking news – stocks – traffic report
- Cover – events – tickets – commercials
- Playlist – announcements – studio webcam - chat

Visual radio examples

17° ☀️ ON AIR SILKE SUPER 17.10.07 | 17:45

ARTIST
Aphex Twin
TRACK
Windowlicker
ALBUM
Come To Daddy
WEB
aphextwin.co.uk

TRAGEDISTIPP
Intro Intim: Cocorose,
Hebbelschnebel und Trend
17.10. 20h 8EUR
Maria am Ostbahnhof (1/4)

ANDERE MUSIK FÜR BERLIN
100.6 MOTOR FM

MotorFM via DVB-H

90elf Dein Fußball-Radio. Gleich bei 90elf: Die zweite Liga live!

FSV Frankfurt - Hansa Rostock 0 : 0

Rostock wechselt zum letzten Mal:
Menga kommt für Enrico Kern.

SpVgg Gr. Fürth 1:1 Alemannia Aachen	FC St. Pauli 2:0 SV Wehen	RW Ahlen 0:3 SC Freiburg	FSV Frankfurt 0:0 Hansa Rostock
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90elf via DVB-H and DVB-T

my fun radio **news**

Gehen zwei Sandkörner durch die Wüste - Meint das eine: "Meine Güte, ist das heute voll hier!"

Cam

Jetzt läuft:
**STEFANIE HEINZMANN
MY MAN IS A MEAN**

danach läuft
**KARRIEREFRAUEN AUF
DEM WEG NACH OBEN**

Tel.: 0137 - 300 600 www.MyFunRadio.de

MyFunRadio via DVB-H

Interactive applications generate additional revenues in combination with TV services

OMA RME / 3GPP DIMS &
JSR 272 implementations 2009



Broad range of new interactive services

CHAT: Online communication while watching TV

QUIZ: Who knows the right answer wins a prize

VOTING: Best player, game, goal, song, video-clip

DOWNLOAD: scenes, extra camera views, etc.

PURCHASE: tickets, CDs, fan articles

BETTING: Live betting before or during a game

Advertising generates additional revenues - sponsored services & targeting

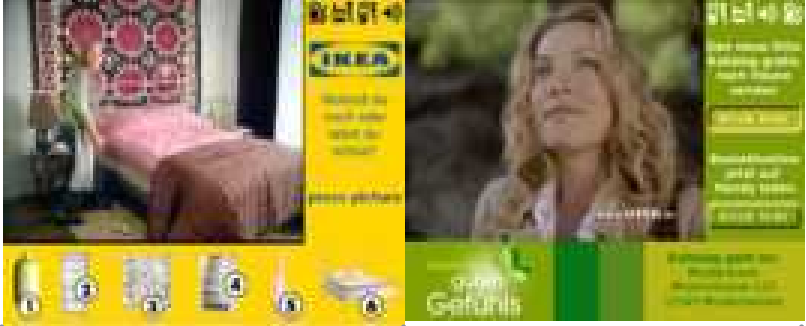
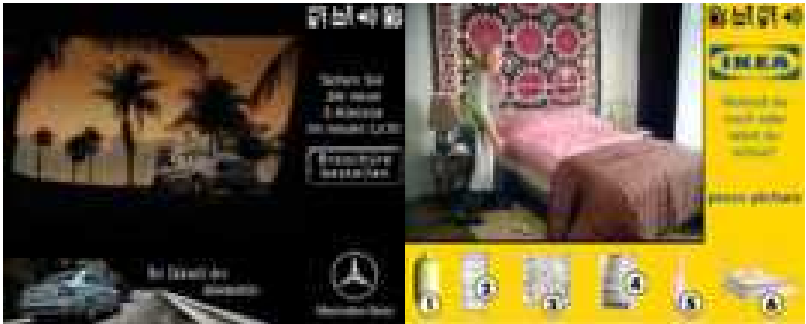


Target Group Ads



Ads are selected according to end-user groups

Interactive Ads



← time slot 1 → ← time slot 2 →

Depending on personal profile, MobileTV users see different sequence of ad interstitials

Personal Ads



Opt-in required for personalized user specific ads

Mobile TV Advertising use cases

Sponsored Intro (Pre- and Post roll)

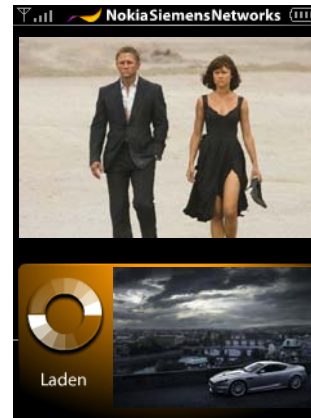


Video Ad Interstitial in Live and VoD

Ads in True Live and Simulated Live TV Channels



Ad Banners during switching/loading



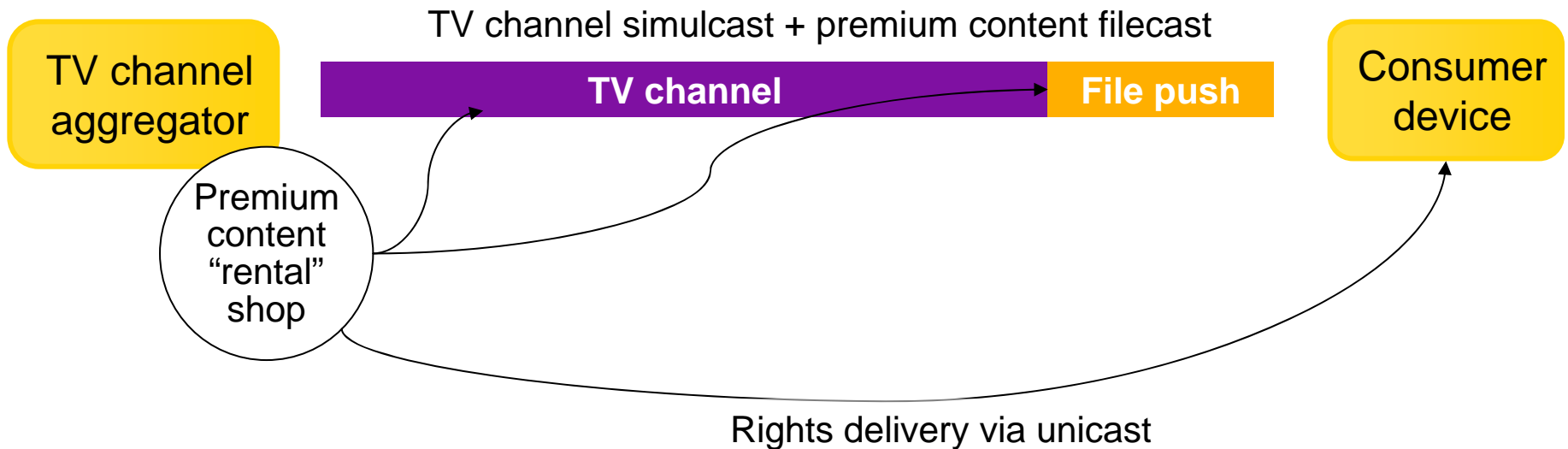
Ads during switching and loading of EPG

Enhancements

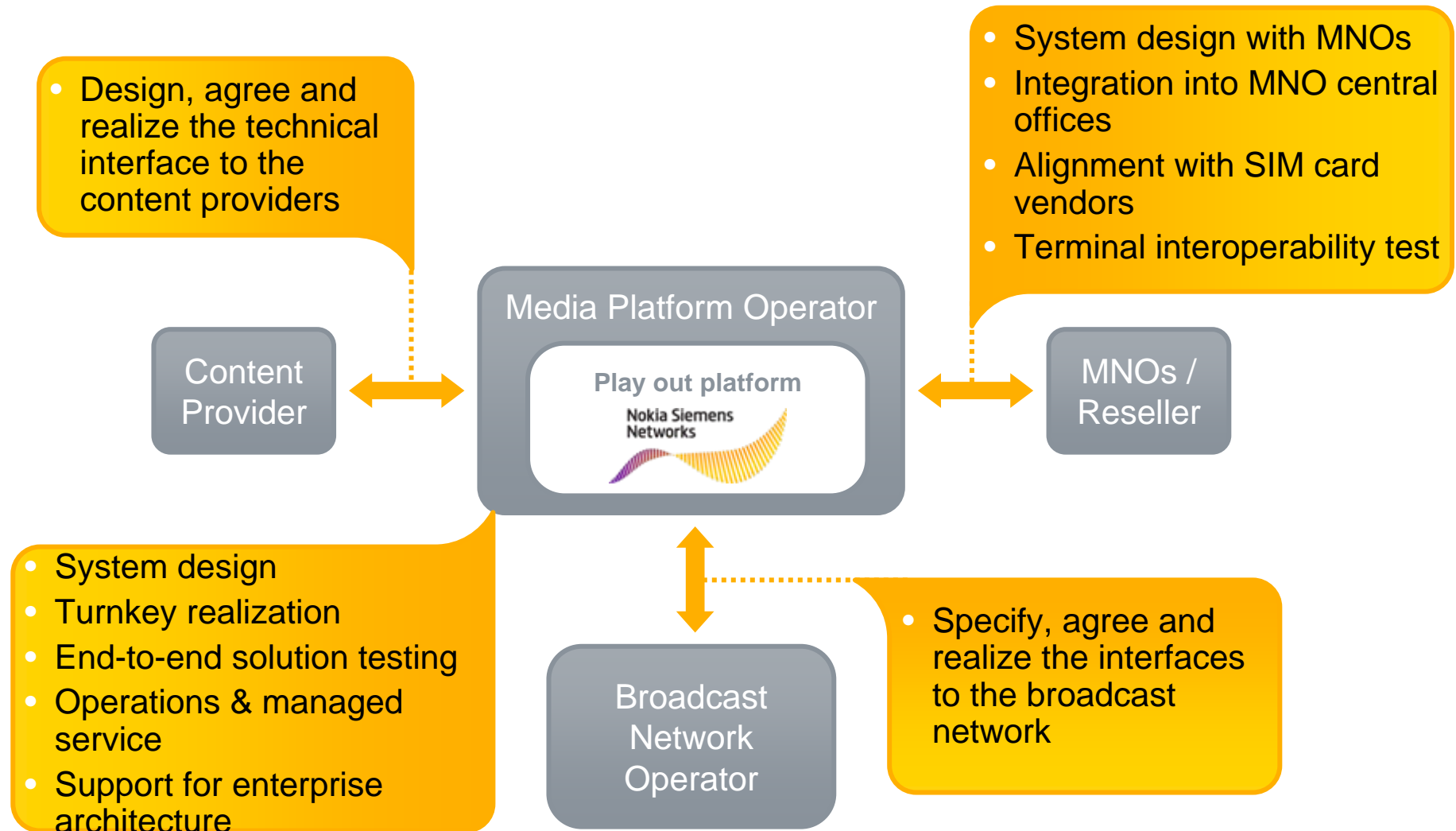
- Ads in ESG
- Ads in Menu
- branded TV Client
- splash advertising
- Video-overlay of ads
- Sponsored streaming (free / reduced rate)
- Advertisement trailer with follow-up possibility

Mobile TV broadcast / DVB-H provide overnight download service of content to terminals using filecast option

- Push Video on demand scenario:
free choice out of a daily selection of content
- Music
- Games
- eBooks



Nokia Siemens Networks is solving all challenges around commercial Mobile TV broadcast / DVB-H roll-out



Capture the Mobile TV opportunity



End-to-end solution

Reliable partner supporting chosen business model: turnkey delivery, managed service or hosting



Best user experience

Best end-user experience by offering a seamless Mobile TV solution (DVB-H and Unicast)



Open standards

Only open standards ensure interoperability and boost market growth



Proven technology

Best TV technology mix for your market conditions. Commercial technology in use in various markets



More revenues

Premium TV channels, interactive applications and advertising will generate additional revenues

Expand reach with rich media services (Mobile & IP TV) - anytime, anywhere, on any device

On the move



Seamless Mobile TV

- Unicast & DVB-H broadcast service convergence
- Interactivity & Advertising

High Definition IPTV

- Personal TV experience
- Basic interactive services including voting, betting, advertising

Unified user experience with one look&feel and one subscription

Rich multimedia experience
Advanced blended services



At home

Converged TV experience Innovation project (IPTV & Unicast Streaming)



IPTV

+

Mobile TV



=

- Common subscription on STB & Mobile
- Shared network recording
- Common user interface
- Remote controlling home entertainment device (STB)
- Session continuity
- Cross device program reminders

Thank you!

Complex technology out.
Practical solutions in.

**Real Business
Solutions**

Stefan Schneiders
Business Development Mobile TV & Advertising

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