

“Mobile TV”

Bosco Eduardo Fernandes,

Sept 20th, 2007

Mobile TV-Quo Vadis?

VDE/ITG Section 5.2.4 workshop

Content

- Introduction
- Mobile TV Today and Tomorrow
- The Technology is Ready...Well...Not Quite
- Business opportunity but is there a Business Model?
- Summary

Content

- Introduction
- Mobile TV Today and Tomorrow
- The Technology is Ready...Well...Not Quite
- Business opportunity but is there a Business Model?
- Summary

Market emergence

Unconnected devices



Connected devices



Content leading to convergence between connected and unconnected commercial electronic devices.

Mobile TV needs go beyond Linear TV

The delivery of digital television, other audio and video services over broadband data networks using the same basic protocols that support the internet is growing extremely fast.

It is revolutionizing the entertainment experience.

It is “customer intimacy” that can provide a competitive advantage.

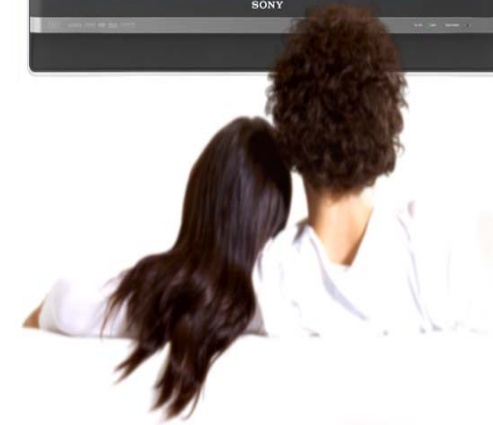
User demand

“watching my personal TV” at home

“time killing” during transport

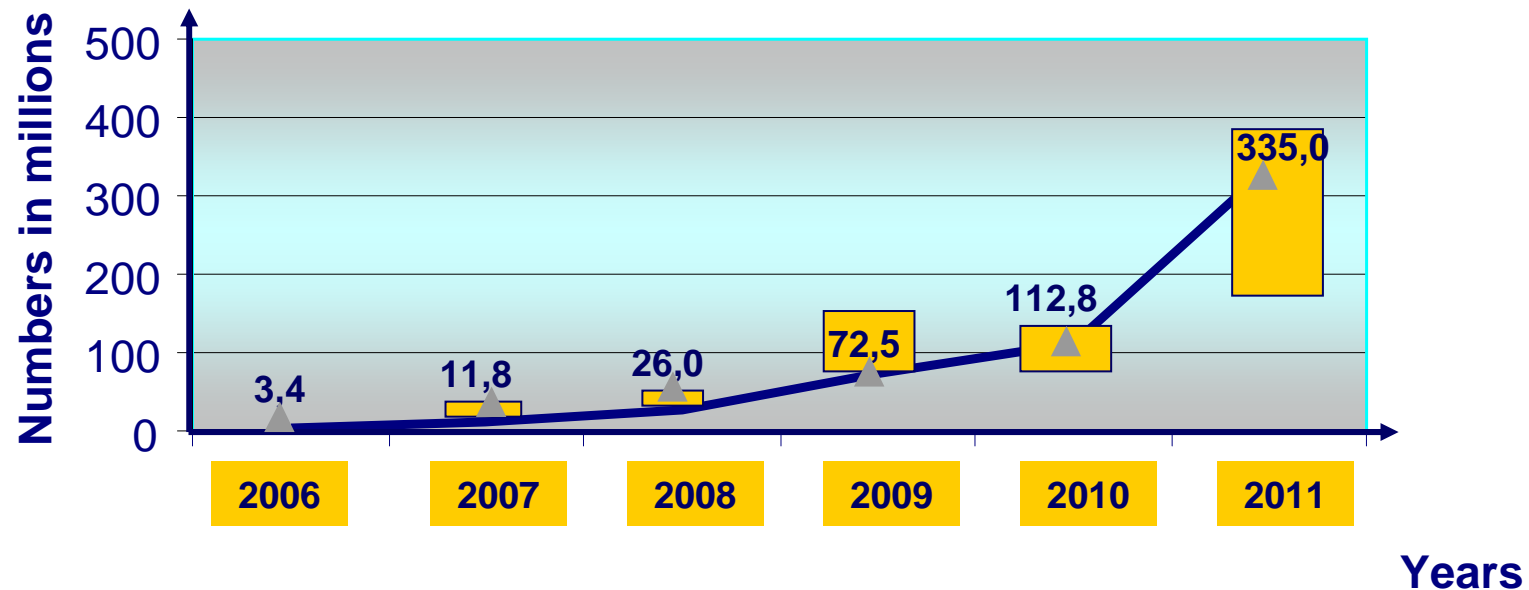
“entertain and miss nothing” at work

At an Affordable price!!



Worldwide Outlook

Live Mobile TV Subscribers



Estimates by and Source: In-Stat, ABI, NSR, Datamonitor, Informa Telecoms & Media, eMarketer, Strategy Analytics, Gartner, Yankee Grp.

Revenue potential:

Combined mobile TV and video market opportunity reaching €7-9 Billion by 2011 and €20 Billion by turnover of 2015

Opportunities are within an active market

Leverage today's technology:

- Widest range of TV-enabled terminals both for the low-end and high-end to service a mass market needed.
- Quality of experience can be guaranteed through reliable and high capacity mobile networks

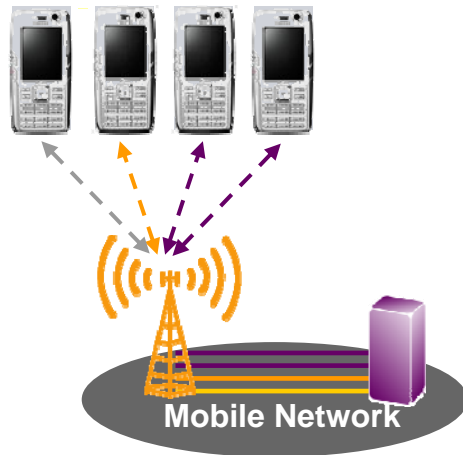


Position yourself in the Mobile TV ecosystem:

- Business model to establish relationship between mobile network operator, broadcast operator, (Internet) service provider and content provider to be established

Complementary technologies are required to support different use cases and growing Mobile TV usage

Unicast



- User-controlled personalized channels and interactivity

Broadcast with DVB-H



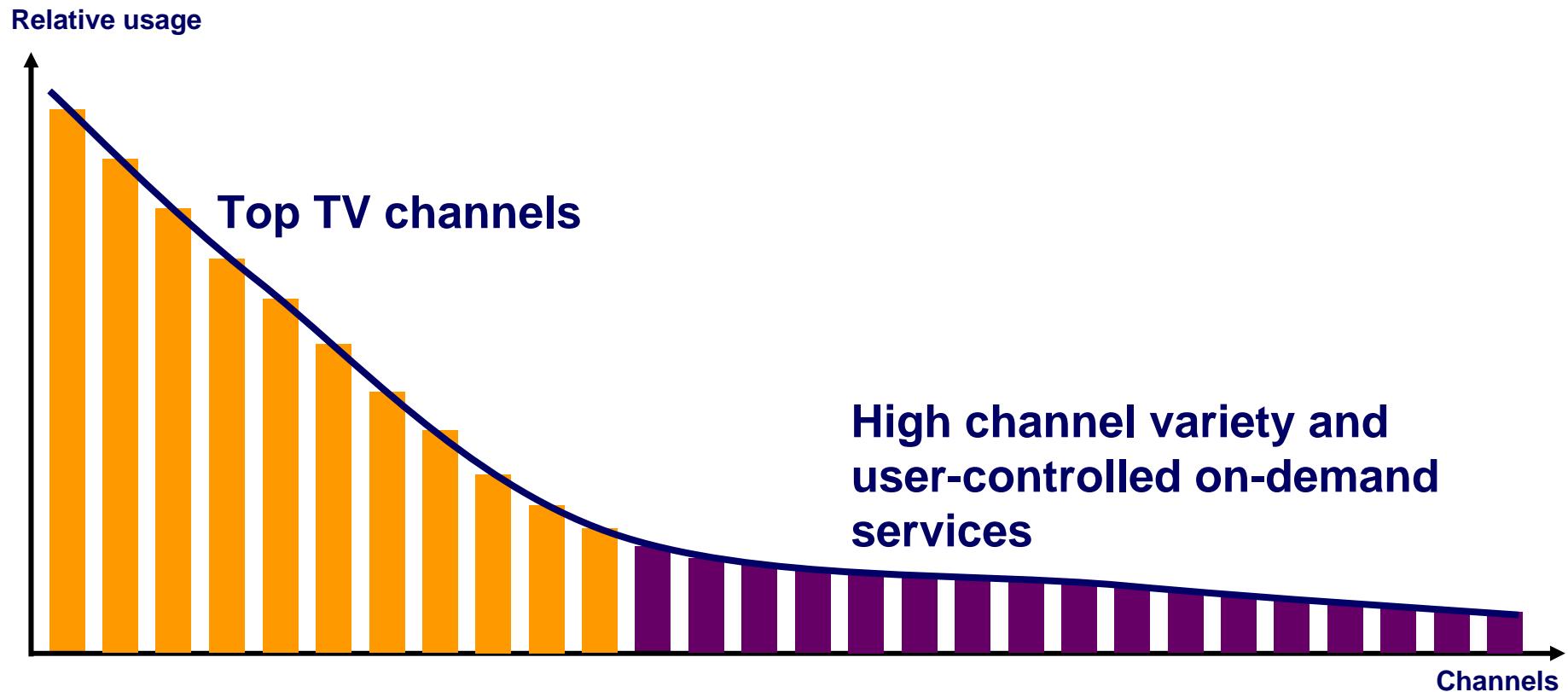
- Delivering more than 20 channels to an unlimited number of subscribers

Broadcast using MBMS



- Save 3G capacity for groups watching the same content

Use cases set different demands for the network

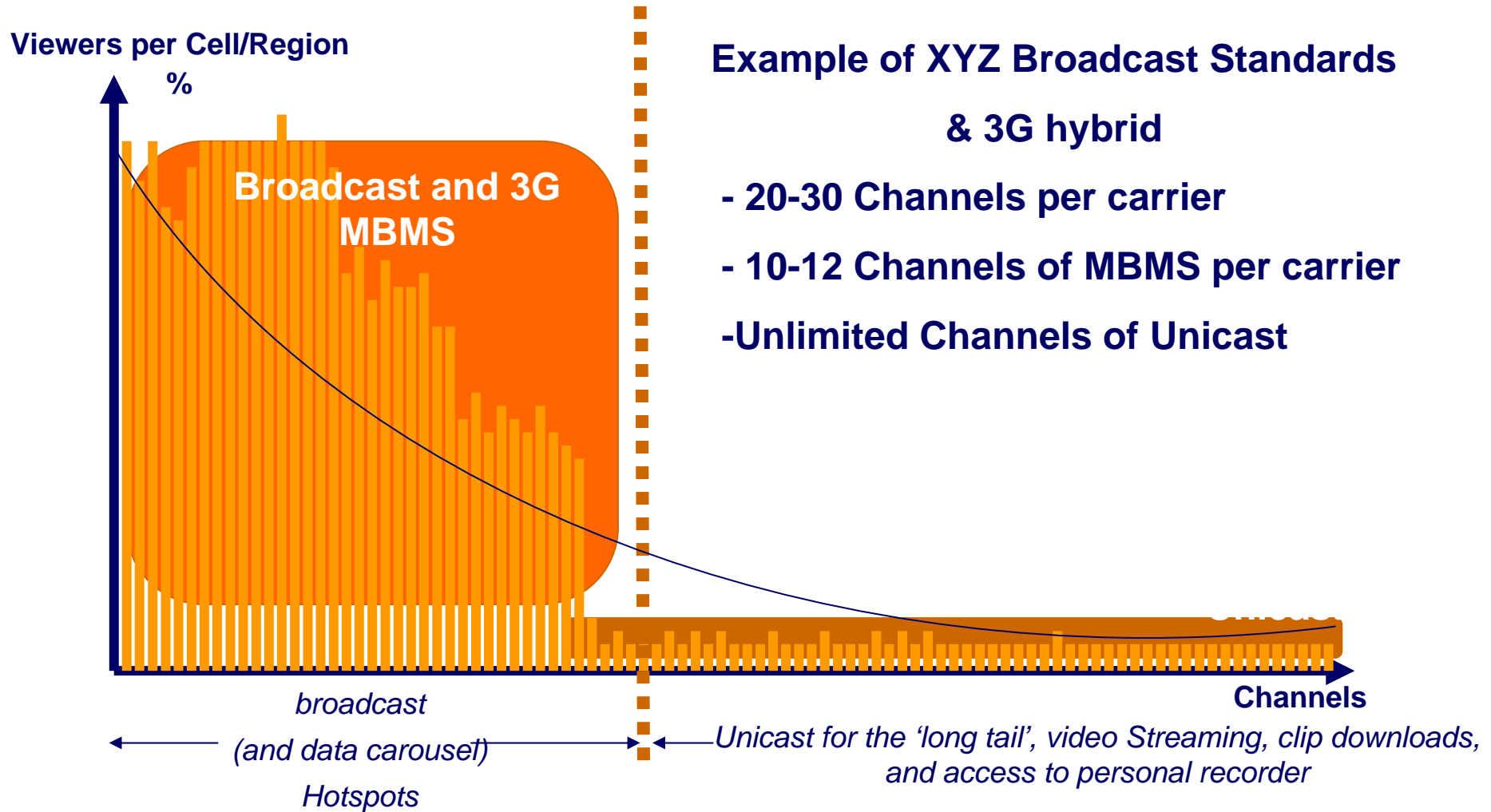


Top TV channels account for 80% of the usage
⇒ Efficient broadcast

User controlled personalized channels
⇒ Point-to-point Unicast

From Unicast to Broadcast

Network efficiency profile



Content

- Introduction
- Mobile TV Today and Tomorrow
- The Technology is Ready...Well...Not Quite
- Business opportunity but is there a Business Model?
- Summary

No shortage of options !

there are 16 mobile TV broadcast technologies and increasing...

Broadcast technologies

DAB

No capacity

DAB-IP

DVB-H Italy, Finland, USA

ISDB-T Japan, Brazil

MediaFLO USA

T-DMB Korea; Germany

A-VSB USA only

T-MMB China Only

Satellite technologies

DVB-SH

S-DMB Korea only

CMMB China only

S-TiMi China only

Telecoms based technologies

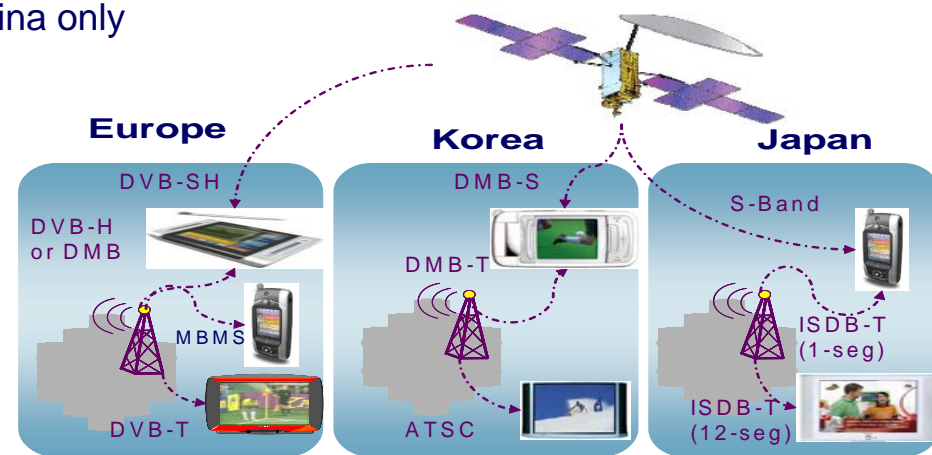
FDD-MBMS

TDD-MBMS (TDtv)

BCMCS CDMA2000 version of MBMS

TD-SCDMA the wildcard

FDD-MBMS in TDD spectrum



Nokia Siemens Networks

Content

- Introduction
- Mobile TV Today and Tomorrow
- The Technology is Ready...Well...Not Quite
- Business opportunity but is there a Business Model?
- Summary

Offer the best end-user experience

Mobile TV that responds to end-user demands and market developments

2002–2005

Trials, pilots and technology launches



2005–2006

Mobile TV offering services independent from time and location



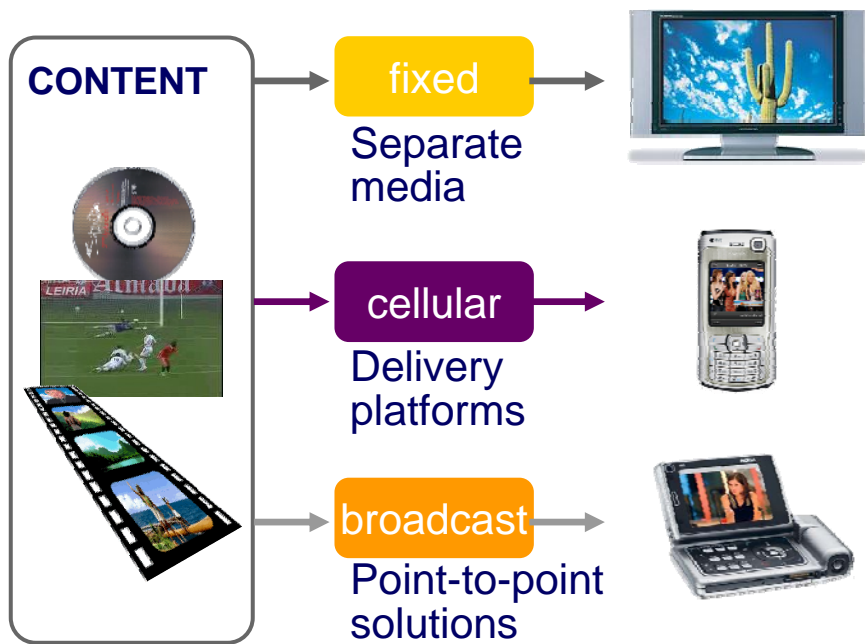
2007–2008

Increased interactivity: end-users participate in and create their own experience



Strengthen your brand through seamless content delivery relevant to users' needs

Today



Tomorrow



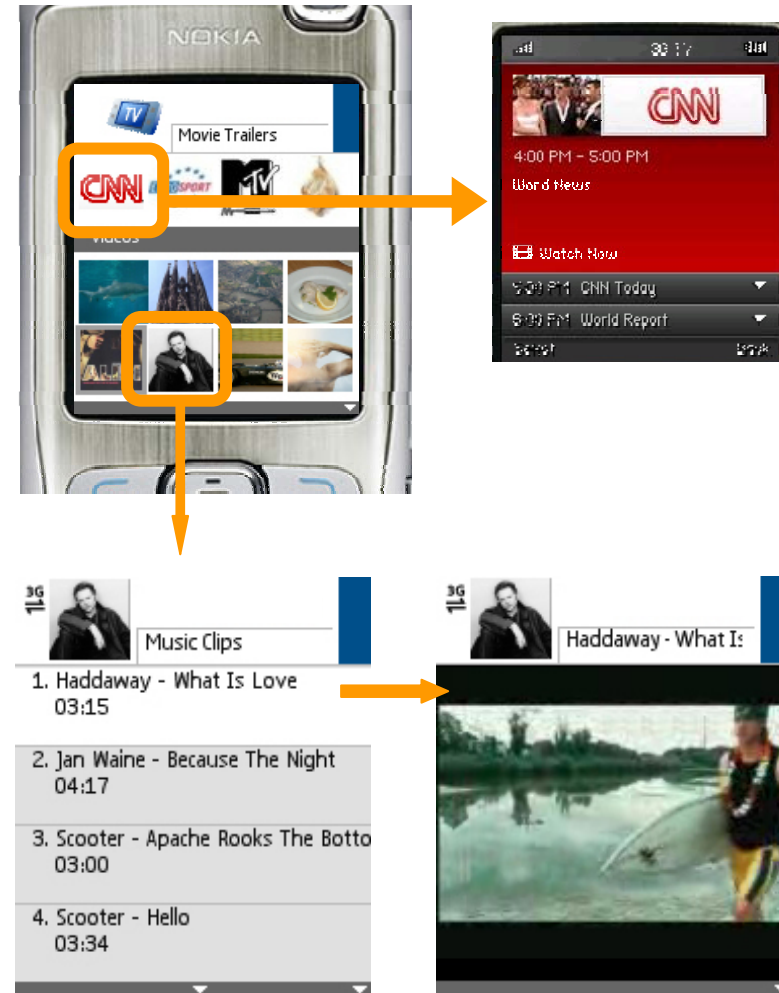
Experience Mobile TV with streaming/Unicast today

Use case:

- Mobile TV live streaming, Video on Demand and downloads based on 3G networks

Solution proposal highlights:

- Utilizing existing networks (UMTS/HSDPA)
- Market leader for Mobile TV with best end-user experience through fast channel switching
- Easy service navigation through electronic service guide
- Personalized advertisements allow new business models
- Clear evolution strategy towards DVB-H, MBMS and convergence with IPTV



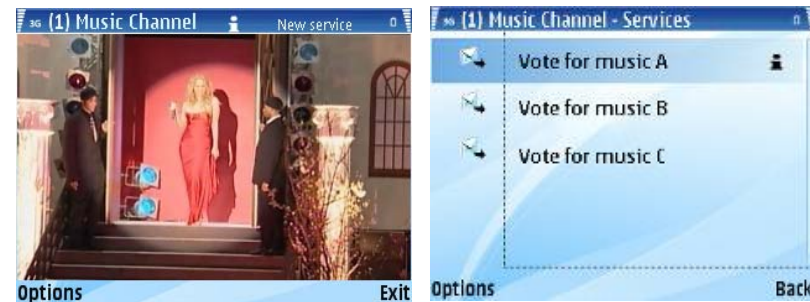
Introduce mass market Mobile TV with DVB-H

Use case:

- Broadcasting Mobile TV
- Get users involved using interactive solutions, e.g SMS-based chat, voting

Solution proposal highlights:

- Market leading end-to-end offering together with Nokia terminals
- Flexible and intuitive product definition and service management
- Commercial solution available with full standard smartcard and clear migration path towards OMA BCAST security
- Interoperability with all major terminal vendors
- Support of full turnkey radio network roll out



Enable efficient multimedia “casting” with MBMS

Use case:

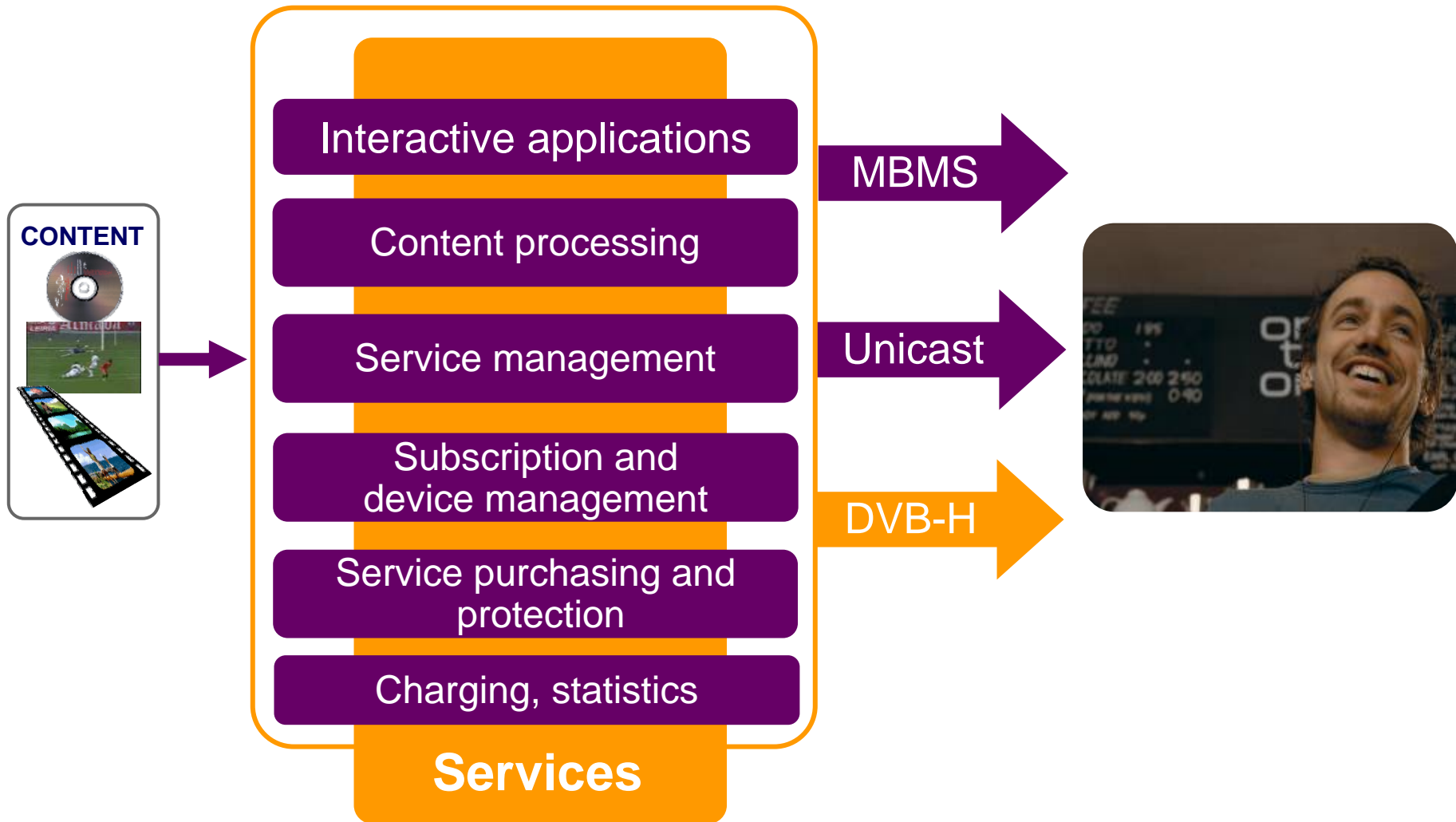
- Multicast and broadcast multimedia service delivery efficiently during peak times
- Offers time- and place-dependent services, e.g. dedicated content for mass events

Solution proposal highlights:

- First demonstration use cases available
- Allows MNOs to retain end-to-end responsibility by building on top of existing 3G networks
- Brings cost savings via efficient usage of network resources
- Dynamic change of delivery mechanism according to usage (point-to-multipoint versus point-to-point)



Leverage synergies through proposed convergent Media Delivery Solution architecture



Capture mass market success with interoperable mobile TV solutions

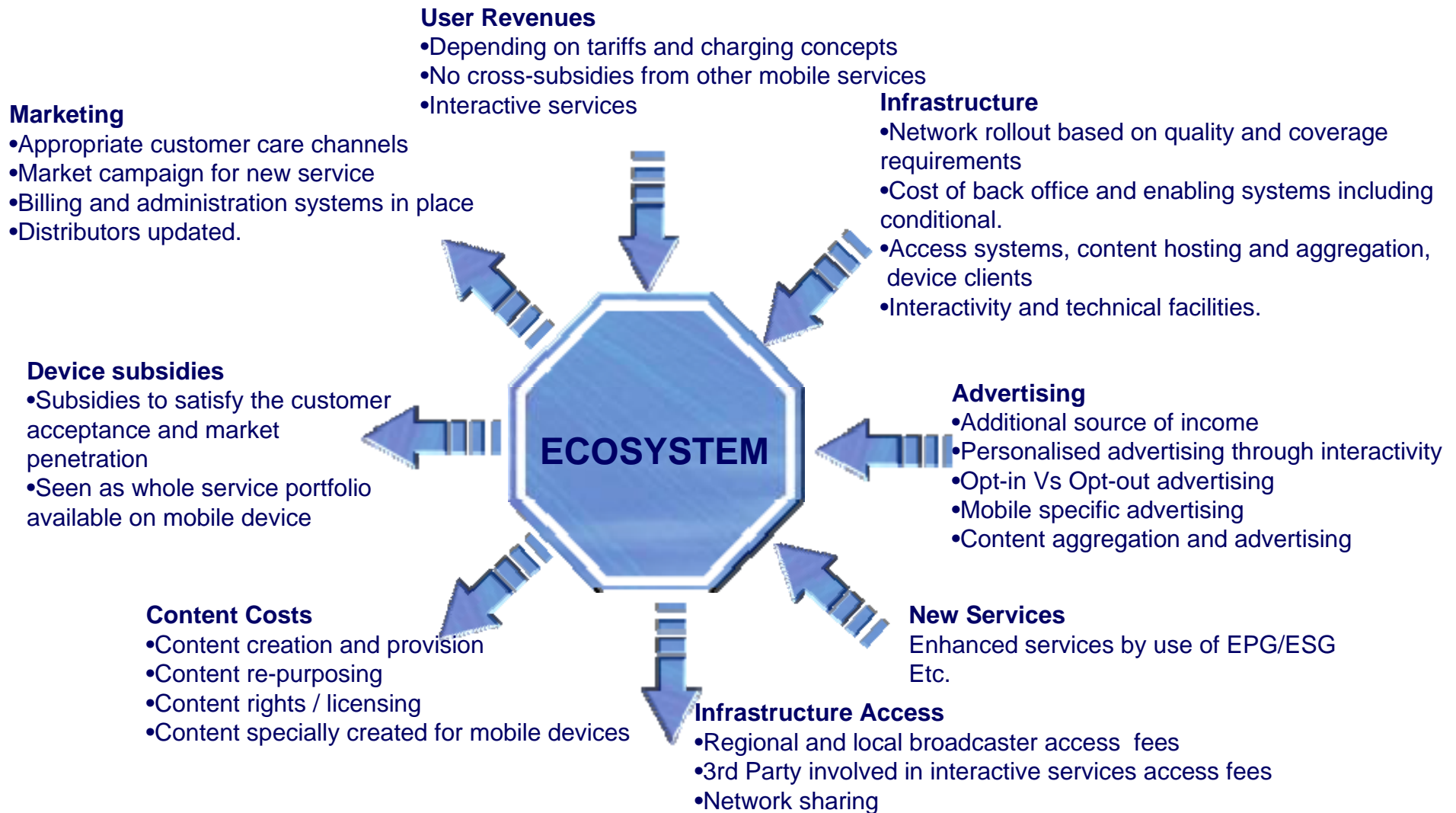
- Unicast: 50+ WCDMA/ EDGE terminals with full 3GPP Release 5 support, also available for HSDPA
- Additional Java client and video center client for best user experience
- Interoperability with all major terminal vendors for DVB-H



Content

- Market trends
- Mobile TV Tomorrow
- The Technology is Ready
- Business Opportunities
- Summary

Building an ECOSYSTEM



Stakeholders

End-users – Ultimately decides what he likes, when he wants to enjoy viewing or listening and what and how much he wants to pay for or not.

Broadcasters – Aggregating audiovisual content into “radio and TV stations” as known by the general public.

They determine the station’s radio- and TV-program as appears in radio and TV listings in newspapers, in dedicated magazines as well as on the web. Commercial stations normally sell time slots during and in between programs to advertisers. Broadcasters normally operate based on a broadcasting license.

Mobile Broadcast service provider or “mux operator” – Provides a mobile broadcast service on a wholesale basis. Normally holds a platform or mux license.

Broadcast Network Operator (or “technical broadcaster”) – Operates the mobile broadcast infrastructure based on a radio frequency license. The frequency licensee could outsource the operation of the infrastructure to a third party.

Content aggregator is an entity that bundles an number of TV channels/multimedia content for distribution. The content aggregator is normally responsible for the creation of the service guide. The mobile network operator could act as content aggregator.

Mobile Network Operator – Operates a mobile cellular network providing mobile services to end-users. In many markets mobile handsets are being subsidised by mobile network operators. Handset subsidy is recouped from future end-user revenues.

Handset vendors – Produce mobile handsets capable of receiving radio and television broadcasts. Their role differs per market.

Advertisers – A collective term comprising a value chain in itself consisting of the actual advertiser, advertisement agencies and enablers. Mobile advertising is still in a nascent state.



Relationships

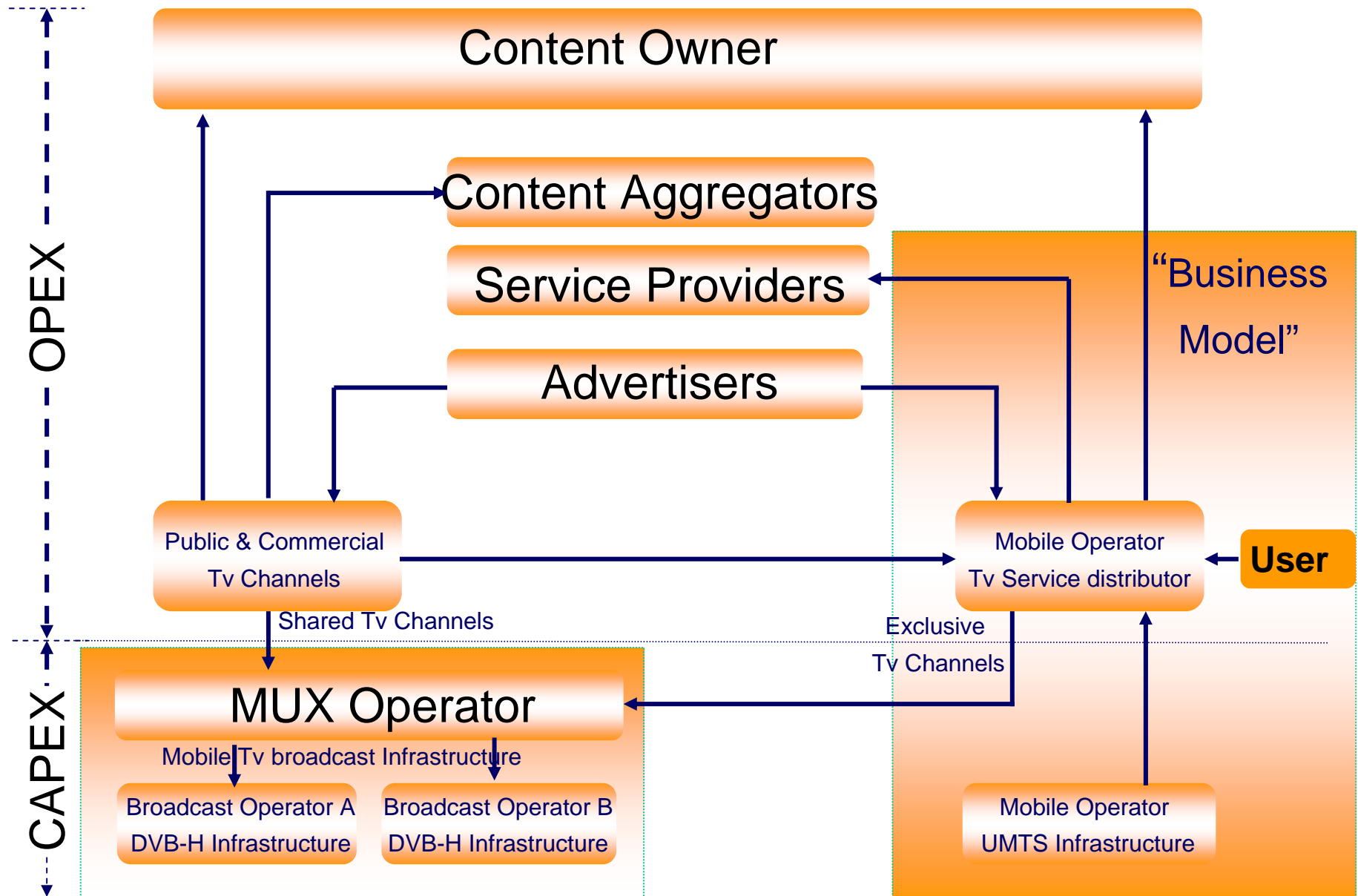
“TV channels” could have a contractual relationship with mobile network operators. Those contracts would typically cover financial and service aspects as well as content right issues.

Public broadcasters are often state financed and not allowed to charge for their services. Nevertheless there is a need to formally agree which public TV channels are available for mobile viewing as well as potential restrictions regarding content rights.

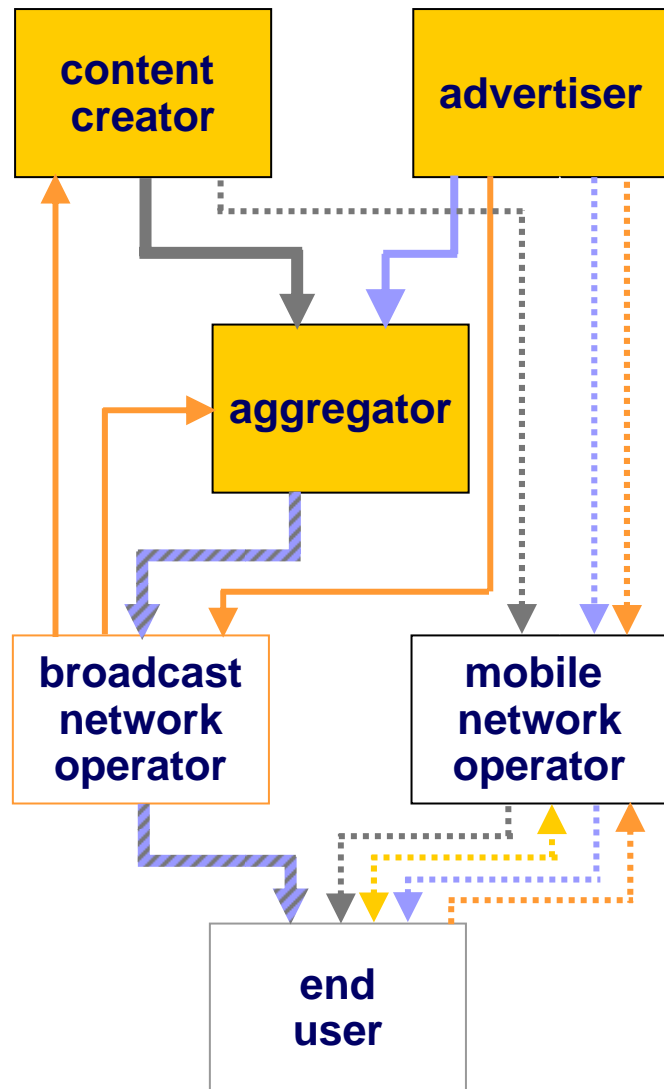
Mobile operators could charge commercial TV channels for the distribution of their programs to mobile viewers, while TV channels could charge for specific mobile content rights (in case the mobile operator hasn't handled this).

Mobile operators recoup their costs by charging end-users for the service. Although still in a nascent state in due course broadcasters and mobile operators could attract third party revenue streams from advertising.

Generic Business Model



Broadcaster model (free to air)



broadcasted TV channels

- are free for the end user
- fully financed by advertisers

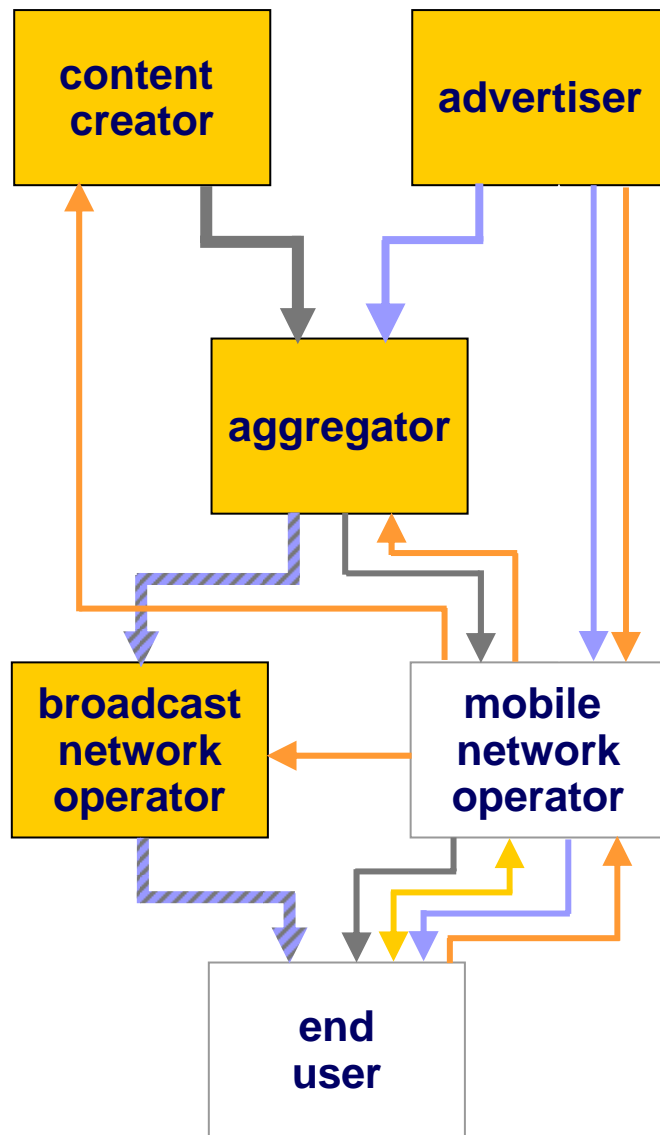
mobile operators

- subsidise mobile device including TV receiver capability
- could offer supplementary TV channels via 3G for a premium
- could offer 'TV synchronised' interactive services
- device based integration of user experience






- interactivity
- content flow
- advertising flow
- content + adverts
- money flow


- broadcasting flows

Telco model

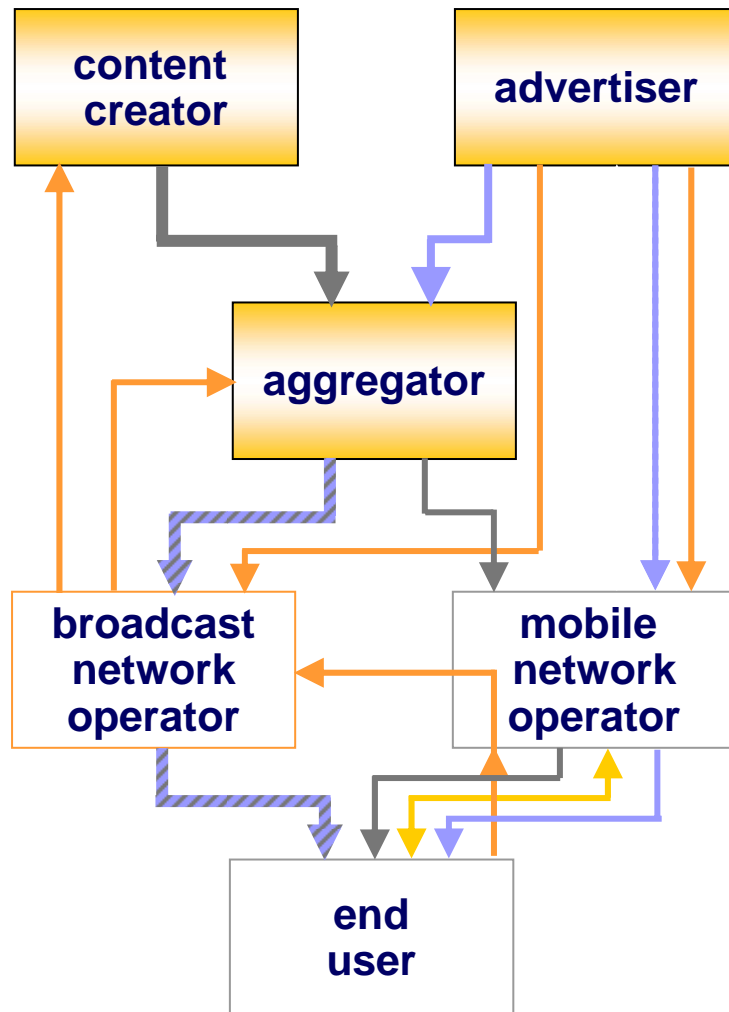


wholesale operator broadcasts top TV channels
 unicast for long tail TV channels
 personalised adverts
 direct user interaction for advertisers
 sales of premium content through operator portal

-  interactivity
-  content flow
-  advertising flow
-  content + adverts
-  money flow

 broadcasting flows

Collaborative Model

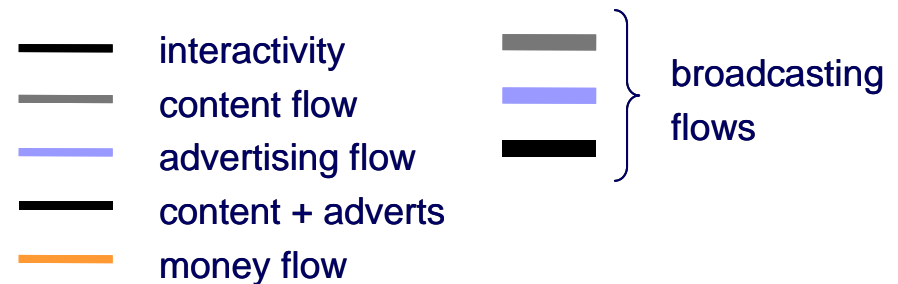


integrated end user experience

independent party operates mobile TV broadcast infra

mobile operators:

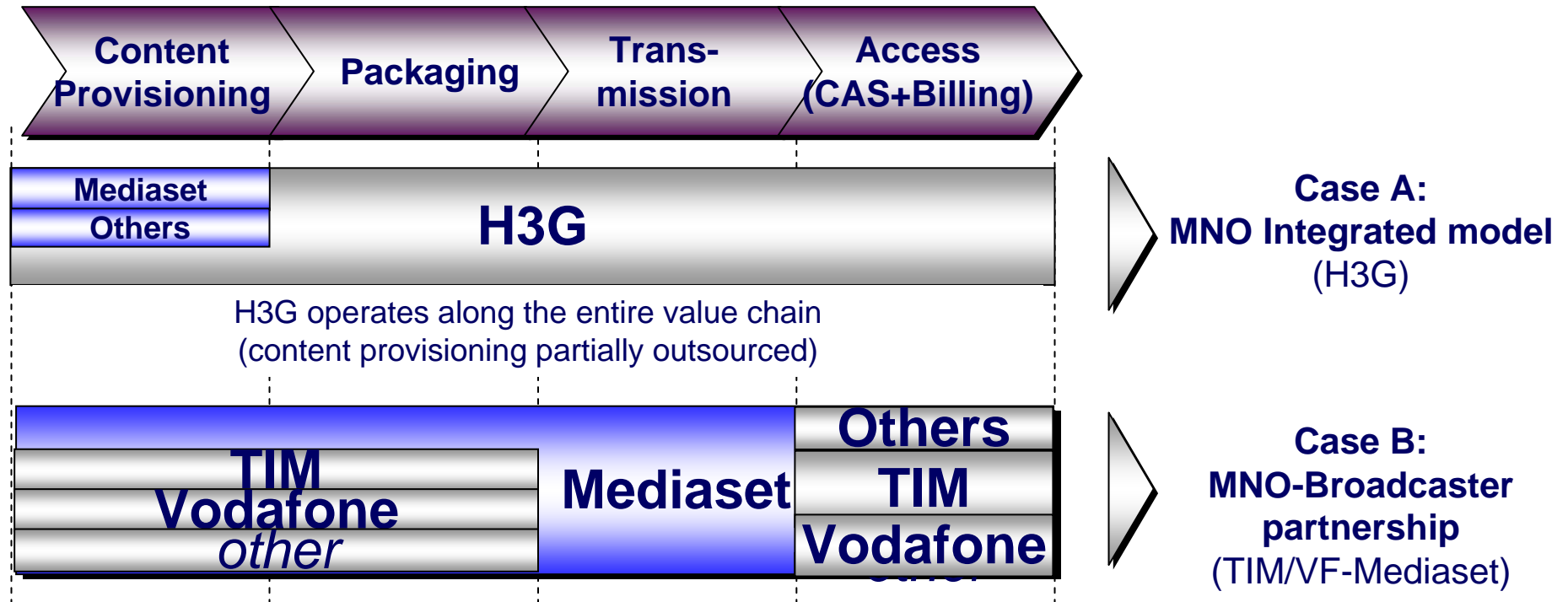
- manage customer relationship
- collects money from end-user
- could complement the TV offer with TV via 3G as well as interactive services



In Italy two business models are emerging to deliver mobile TV services

Positioning along the Mobile TV Value Chain

Existing cases in Italy



Mediaset is the carrier for the telcos and packager of its channel bouquet (e.g. simulcast commercial channels + premium events such as soccer).
Mediaset channels are available to all MNOs

Note: Additional content is provided by 3rd parties



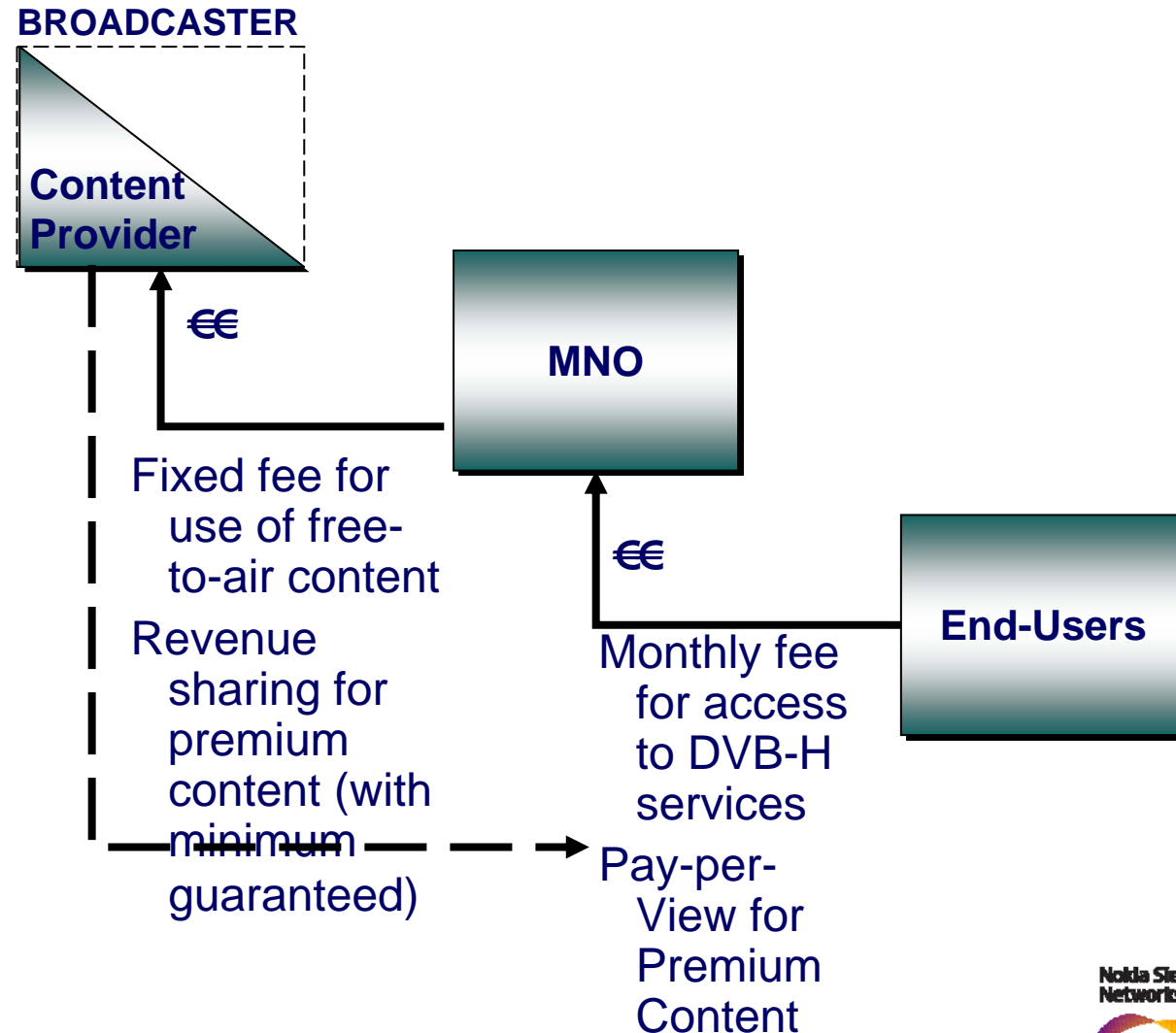
A) – MNO bills the end users and pays Mediaset for contents...

Revenue Model

Direct control over pricing policies to end users

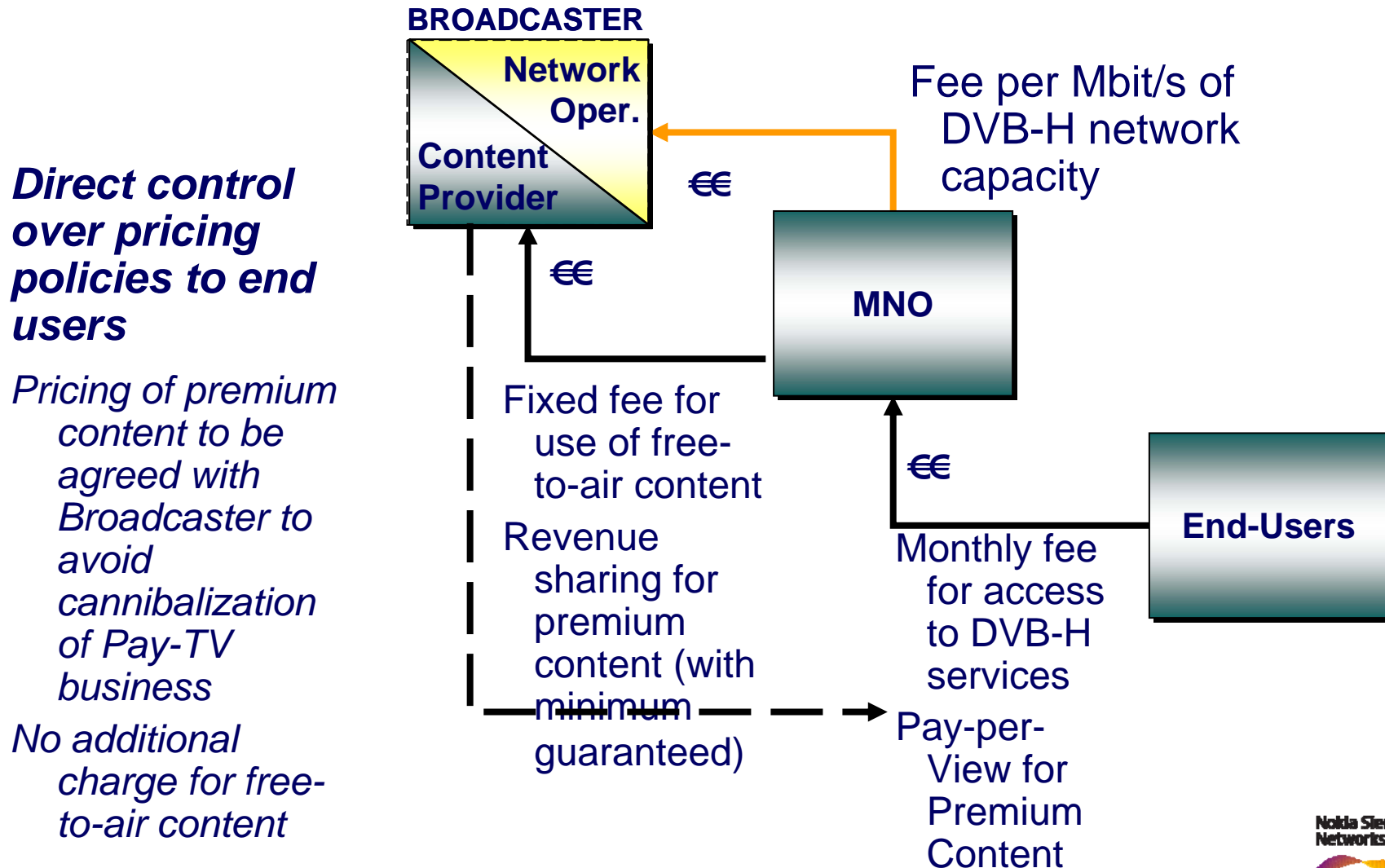
Pricing of premium content to be agreed with Broadcaster to avoid cannibalization of Pay-TV business

No additional charge for free-to-air content



B) - MNOs bill the end users and pay Mediaset both for content and network operation services

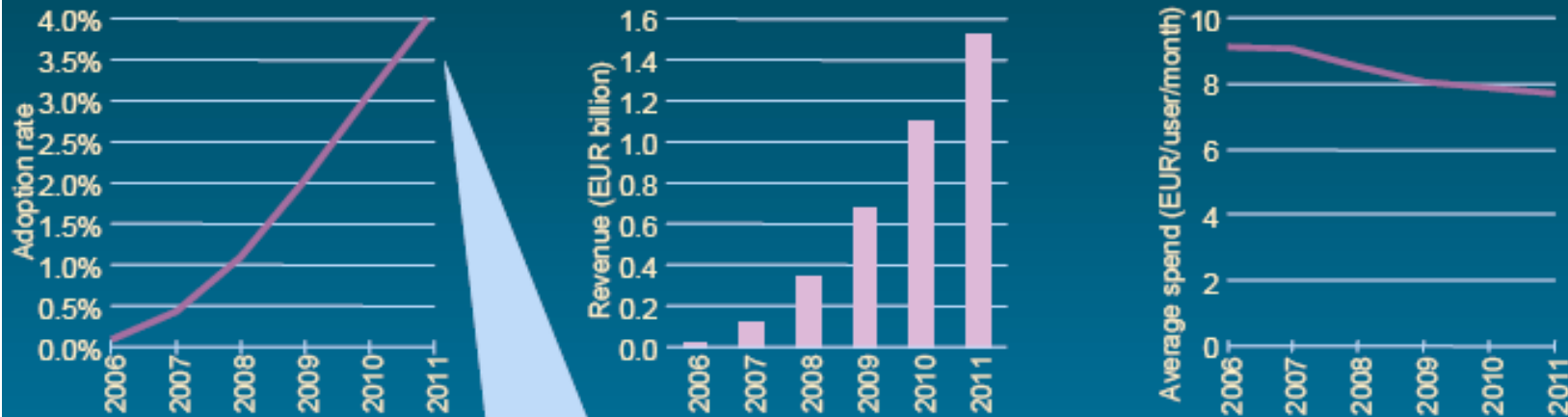
Revenue Model



Uncertainty???

Indicative market forecasts suggest new revenues may be hard to secure

Adoption rate, average spend, ARPU and revenue for broadcast TV services in Western Europe, 2006–2011



It should be noted that 3 Italia's adoption rate is nearly 10% after 12 months of operation

Source: Analysys Research 2006

Mobile TV offers opportunities for the whole ecosystem

Increase customer loyalty:

- Trials show consumers want TV added to their mobile phone – consistently more than 65 percent of people show interest in mobile TV

Enhance your brand image:

- Operators offering mobile TV have gained much positive press
- Reports from end-users show the direct correlation between new and innovative services and enhanced brand image

New revenue streams and growth

First DVB-H launches show higher ARPU for mobile TV users

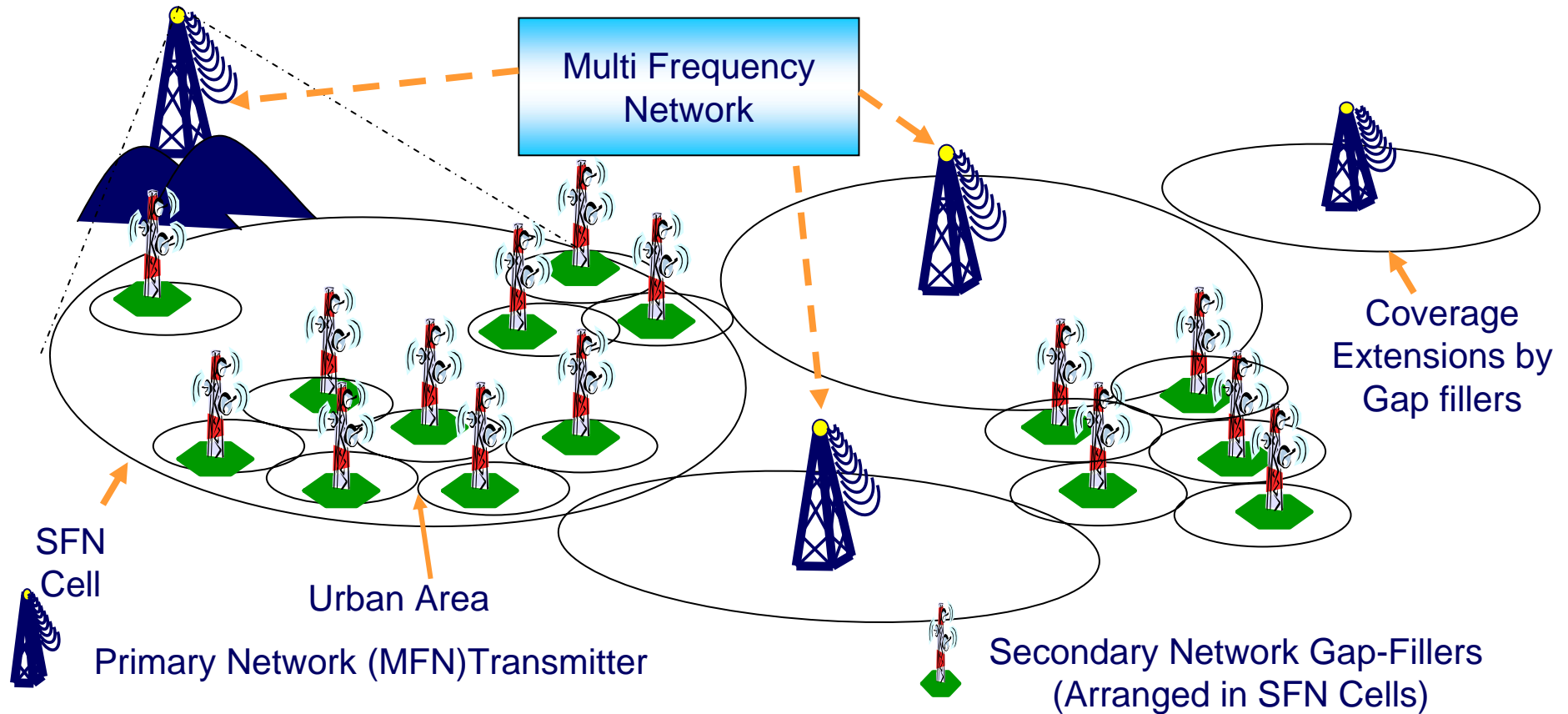
The Frequency Band

- UHF band has good propagation characteristics and if deployed using the terrestrial broadcast model provides coverage of a large city using 20 to 50 repeater sites.
- UHF band is also suitable for networks deployed using the cellular overlay model, since UHF frequencies are just below conventional global standard for GSM.

However, the UHF band is not available of in most parts of the world before 2012!

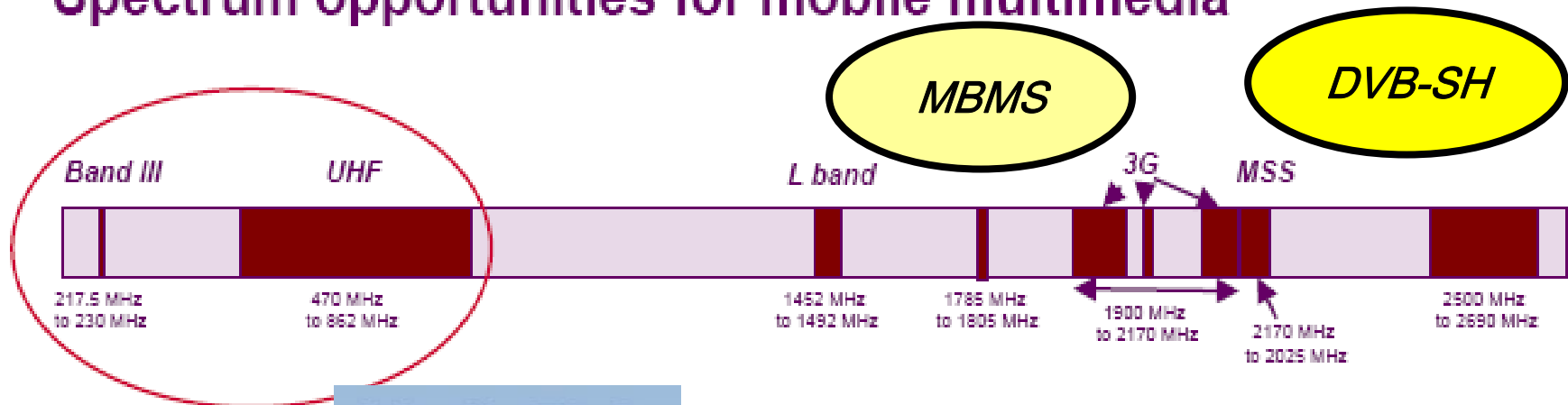
Best use of UHF Spectrum

UHF frequencies when deployed as single frequency networks (SFN) makes network configuration more complex, however is a highly efficient use of spectrum, and a network of two or three overlapping SFNs could be a promising option.



Frequency Bands for Mobile Broadcasting in Europe

Spectrum opportunities for mobile multimedia



Increasing antenna size and reducing capacity

MediaFLO™

Reducing propagation range and increasing transmitter network costs



This section displays logos and images for various mobile multimedia technologies and devices:

- World DAB** logo.
- DVB-H HANDHELD** logo.
- A handheld device with a screen.
- IPWireless** logo.
- TD+tv** logo.
- A mobile phone with a screen.



Content

- Introduction
- Mobile TV Today and Tomorrow
- The Technology is Ready...Well...Not Quite
- Business opportunity but is there a Business Model?
- Summary

Summary

- Mobile TV is at its infancy and will grow to an Enhanced Multimedia offering of broadcast, interactive services which will open out new opportunities but also change the Telecoms world.
- Regulation has and will adopt to the new situation but new to relax in many countries for this to be as successful as Mobile services today
- 3G mobile TV is breaking up traditional business models whereby mobile operators are establishing themselves as content aggregators and broadcasters. The media rights owners are licensing mobile rights directly to mobile operators.
- 2 MUX per country in the UHF digital dividend bands will enhance the way for innovative mobile Tv services. Harmonised spectrum to enable Roaming services will be need.
- Content Providers and Broadcasters will wish to own the User relationship. Operators can only avoid this by providing as much data over User patterns and profile as needed.
- Spectrum and Licences should be for free to allow for equal and fair terms for all parties involved to build a successful business.

Thank You for your attention!!!!