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TV goes Mobile

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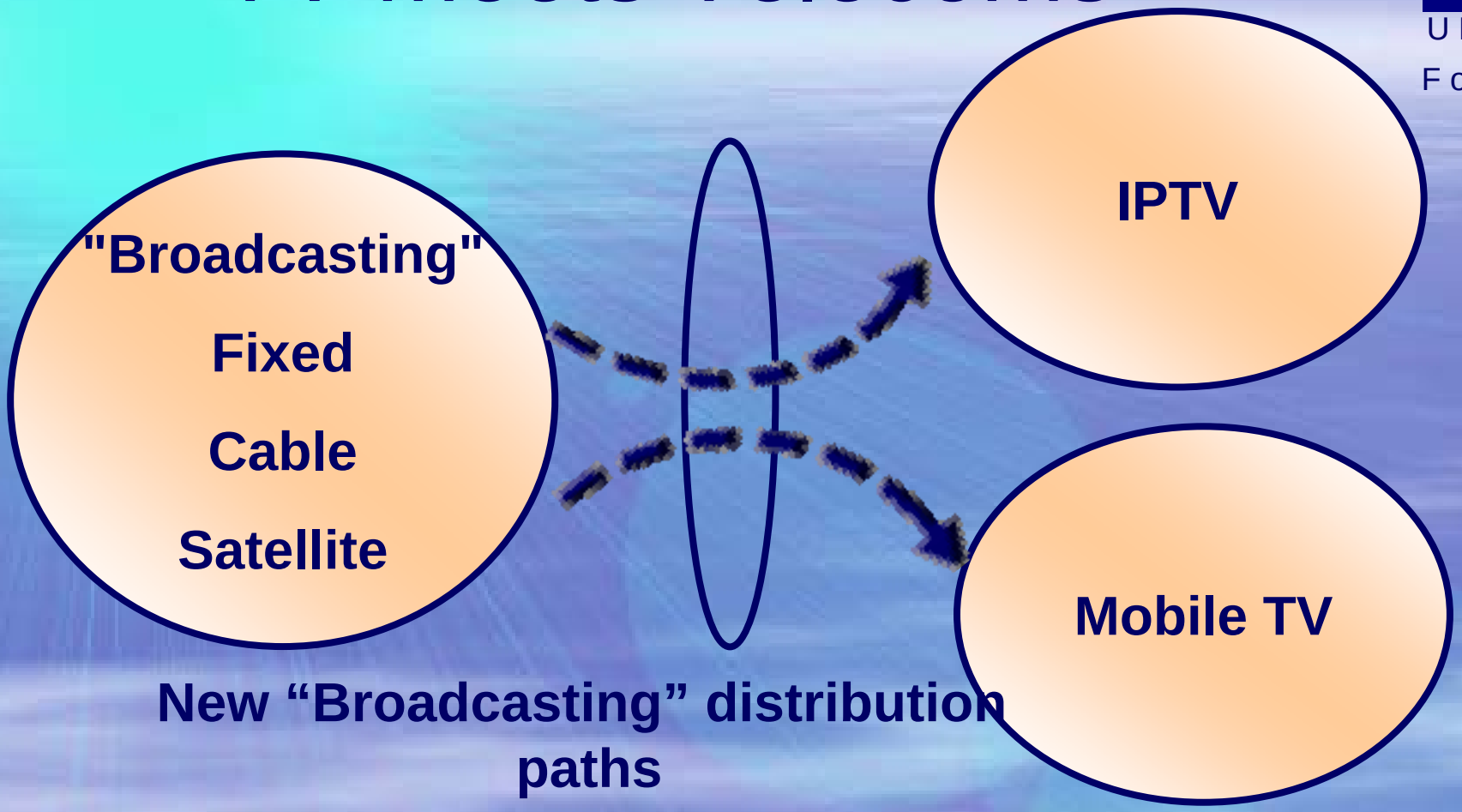
Content

- Many media delivery paths!!!!
- IPTV?
- Mobile TV
- Barriers for deployment
- Future convergence of IPTV and MobileTV Platforms
- Conclusions

TV meets Telecoms



New "Broadcasting" distribution paths

The new Digital TV ecosystem

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Broadcast distribution

IPTV

Mobile Broadcasting

Home

Multi room redistribution

Home networking for TV playback experience

Internet services

Broadband

Sync content to portable device

Mobility

Internet

Legal super distribution

Mobile TV market emergence

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Unconnected devices

Connected devices

Mobile TV leading to convergence between connected and unconnected commercial electronic devices.

From fixed to mobile triple play

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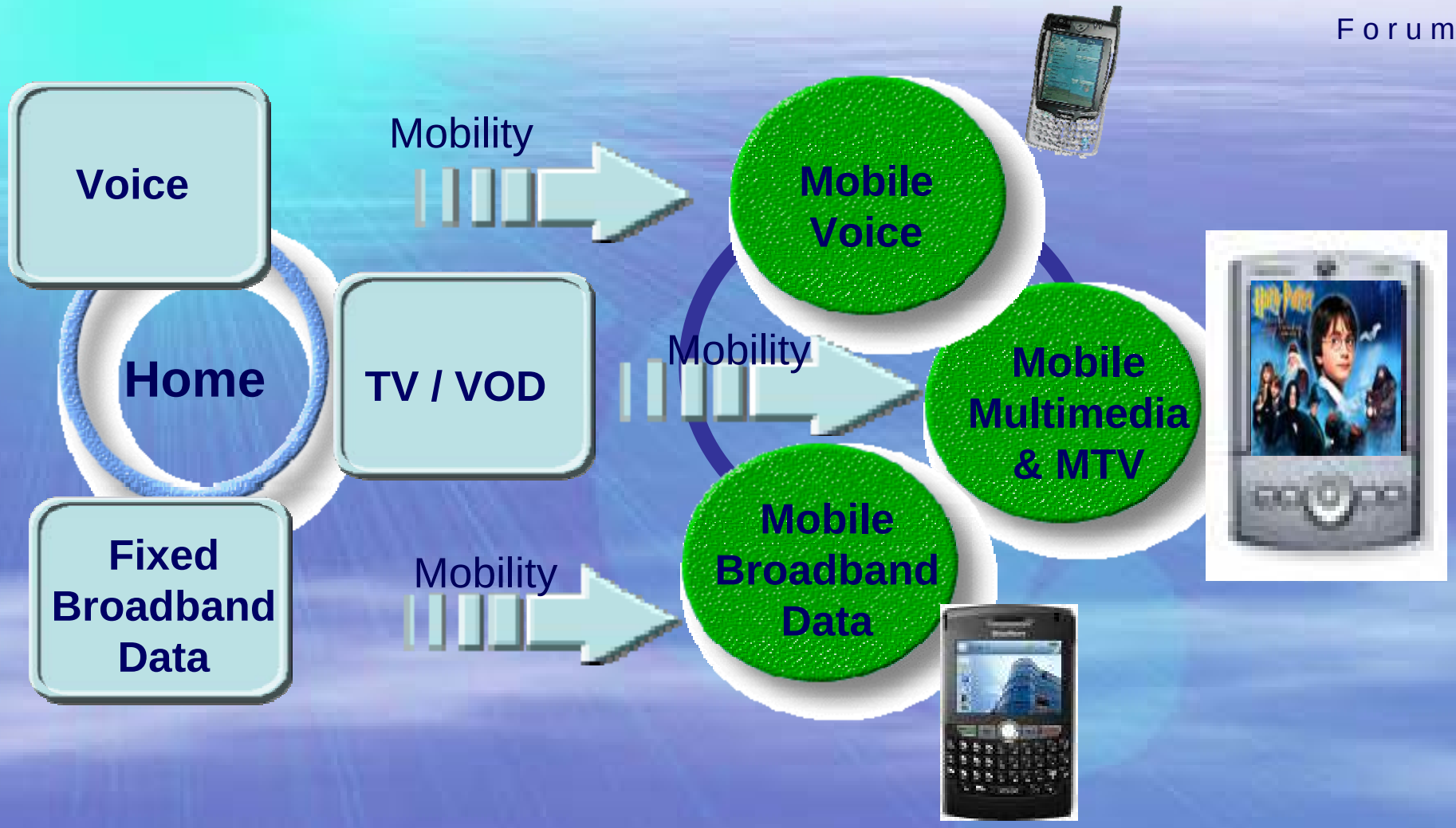

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IPTV

IPTV—internet protocol television

- **The delivery of digital television, other audio and video services over broadband data networks using the same basic protocols that support the internet.**
- **IPTV promises to revolutionize the entertainment experience, but how can service providers recover the cost of building infrastructure and acquiring subscribers?**
- **To get the most out of IPTV, service providers must deliver a unique, high-quality experience that matches the needs and willingness to pay of individual customers.**
- **Service providers must also supplement traditional subscription revenues with advertising and value-added services.**
- **IPTV delivers a level of interactivity and personalization that Cable can not match at present. It is this "customer intimacy" that can provide a competitive advantage.**

IPTV Market Forecast

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- 2006:
  - IPTV subscribers hit **3.6 million** in 2006, generating almost 1 billion euros in annualized revenues. Western Europe accounts for two-thirds of worldwide IPTV subscribers (Canalsys).
  - The top five IPTV providers by subscriber base account for just over 60% of the market. PCCW 18.2% share, France Telecom with 16.8% and Free Telecom on 14.0%, Telefonica and Fastweb (It).
- 2007:
  - MRG (April'07) $3.6B / **14.3 million** sub in 2007
- 2009:
  - RNCOS (India, Aug'06) 53 million global in 2009, service revenues $38B.
- 2010:
  - Over **20 milllion** global IPTV subsribers by 2010 (NSR'07) generating $17billion revenues
- 2011:
  - Strategy Analytics (jan'07) **40.9 million** in 2011
  - MRG: $20.3B / **64.6 million** in 2011

IPTV Delivery

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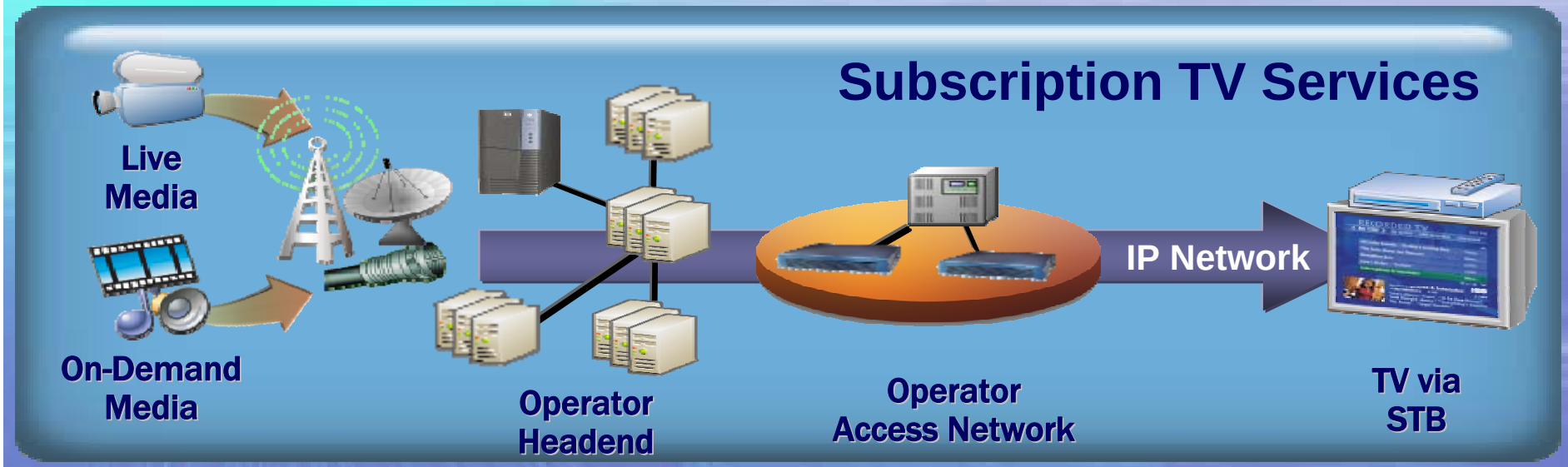

IPTV is not:

- Video streaming over Internet
- TV on a PC
- Best-effort video services
- Build on uncertain Business models

IPTV is:

- TV Services across managed IP networks
- Broadcast TV
- All Forms of On-Demand TV/Video
- Electronic Program Guide
- "Connected Entertainment"

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Mobile TV

Mobile TV

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Mobile TV refers to the transmission of both linear and non-linear content to a mobile device.

It includes:

- Live TV
- Time-Shifted TV
- On demand audiovisual content

segmentation of mobile TV services

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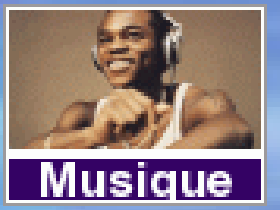
- **consumer interest**
- news & weather
- sports
- music,
- entertainment
- **basic or premium**
- basic plan with few channels
- full bouquet



No shortage of options !

there are 16 mobile TV broadcast technologies and increasing…

Broadcast technologies

- DAB No capacity
- DAB-IP
- DVB-H Italy, Finland, Switzerland, Germany, NL France
- 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

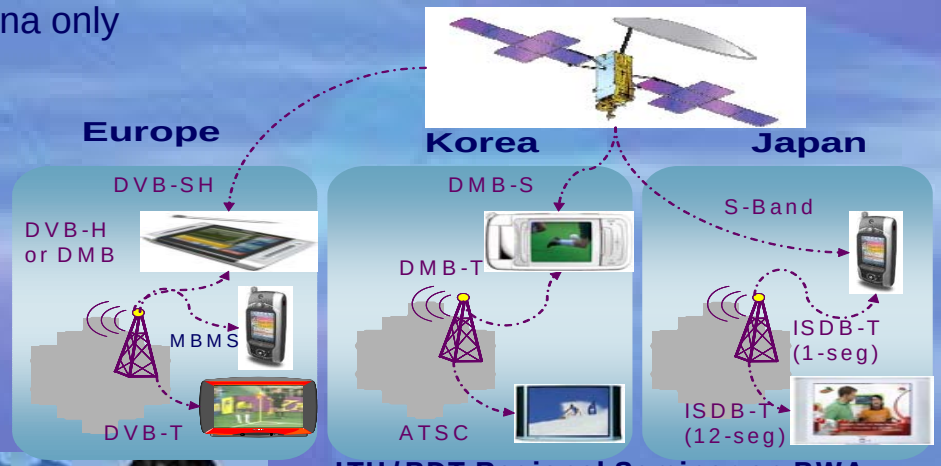
FDD-MBMS

TDD-MBMS (TDtv)

BCMCS CDMA2000 version of MBMS

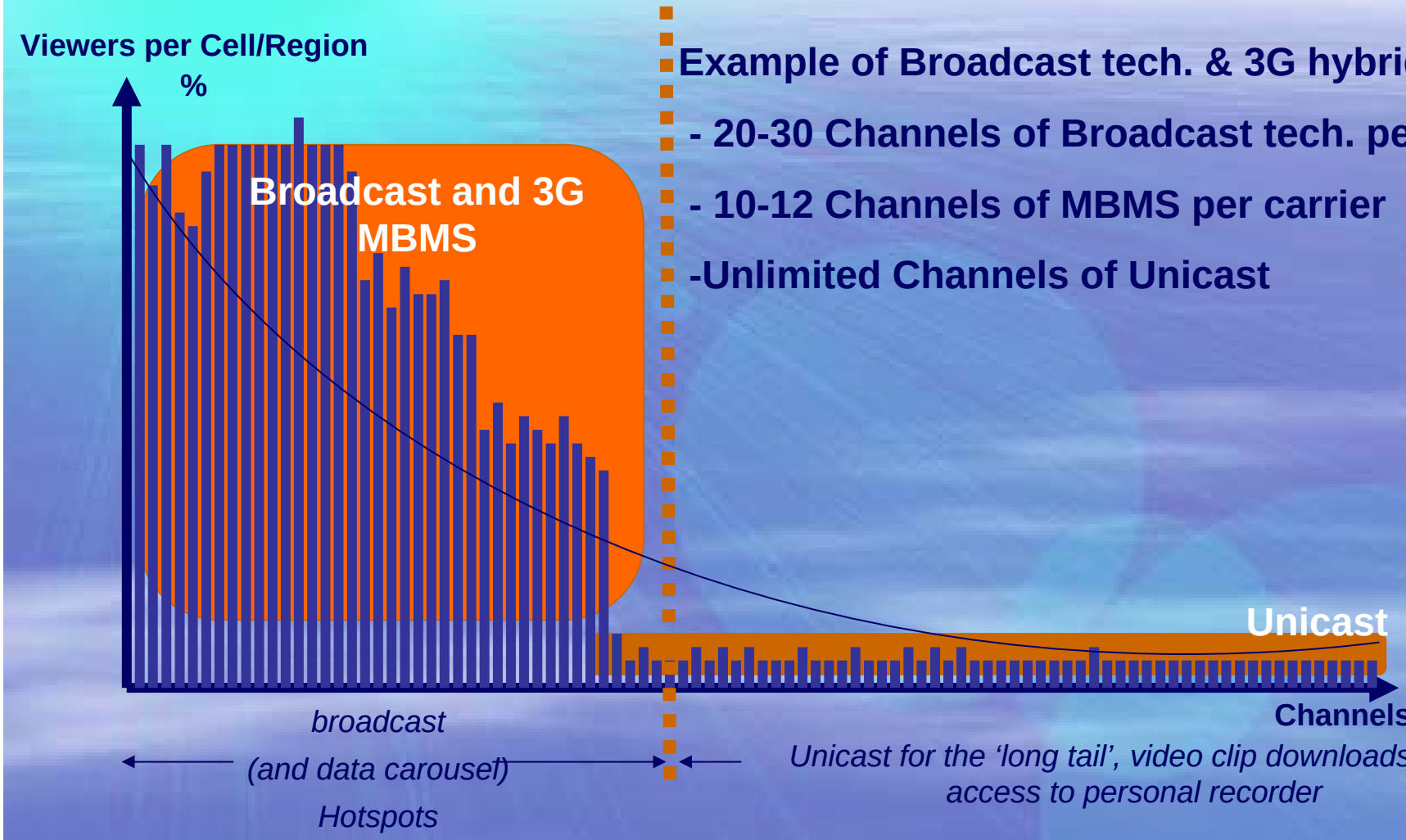
TD-SCDMA the wildcard

FDD-MBMS in TDD spectrum



From Unicast to Broadcast

Network efficiency profile



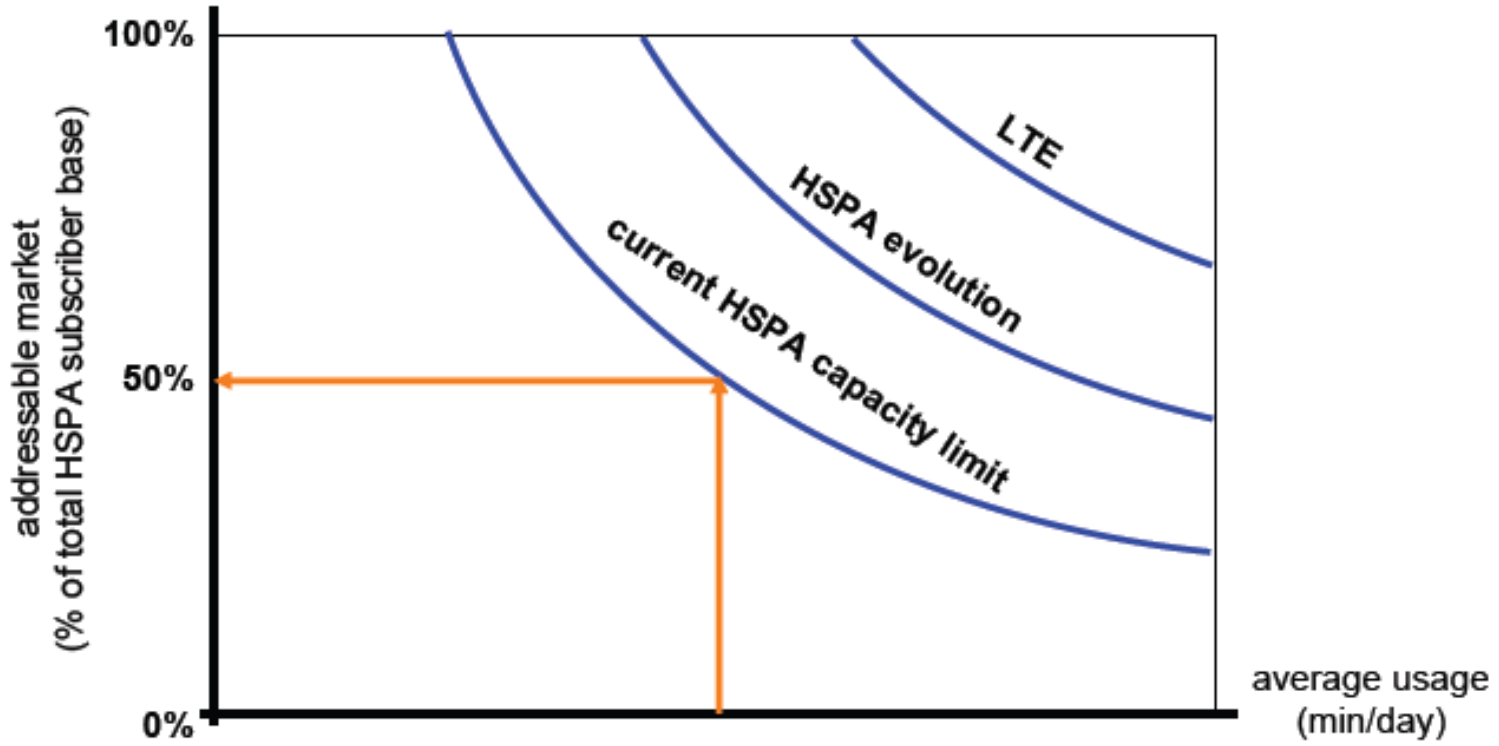
Example of Broadcast tech. & 3G hybrid

- 20-30 Channels of Broadcast tech. per carrier

- 10-12 Channels of MBMS per carrier

-Unlimited Channels of Unicast

3G Access Improving



High data rates, Low latency and better than best effort quality of service (QoS)

Best use of UHF Spectrum

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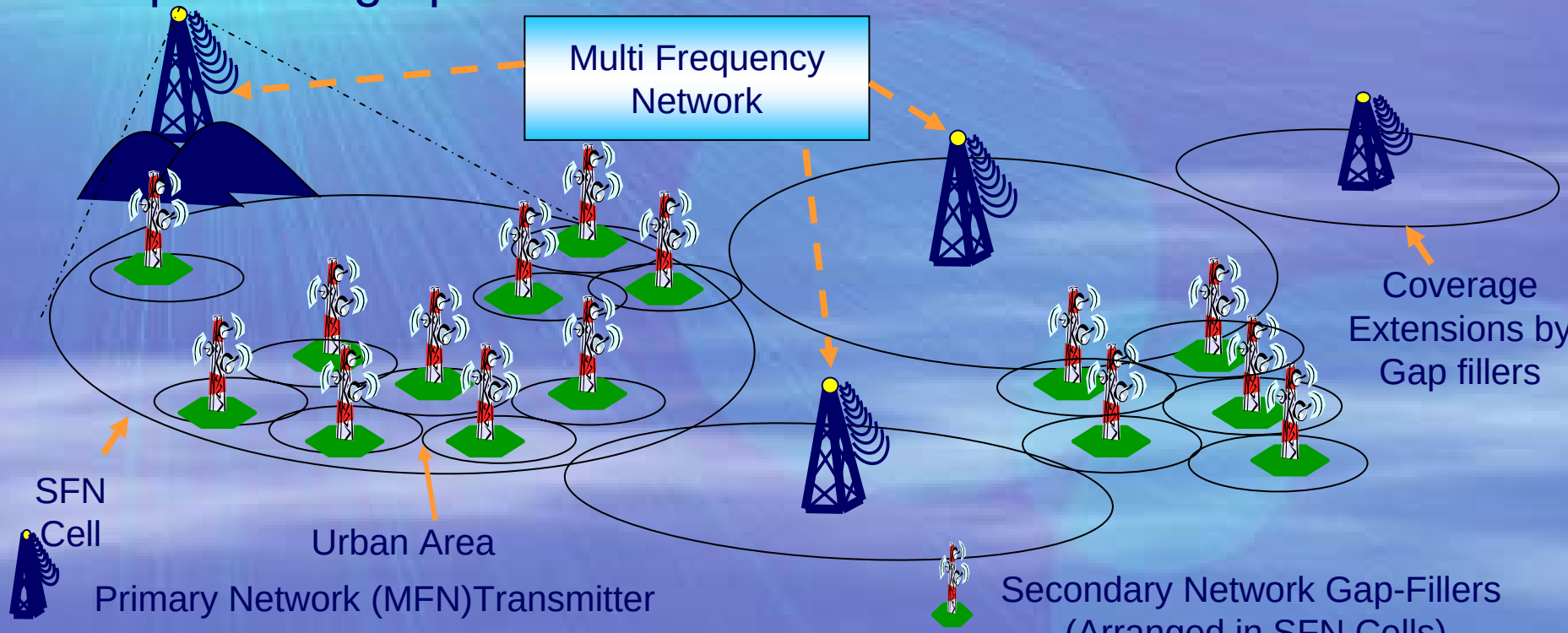
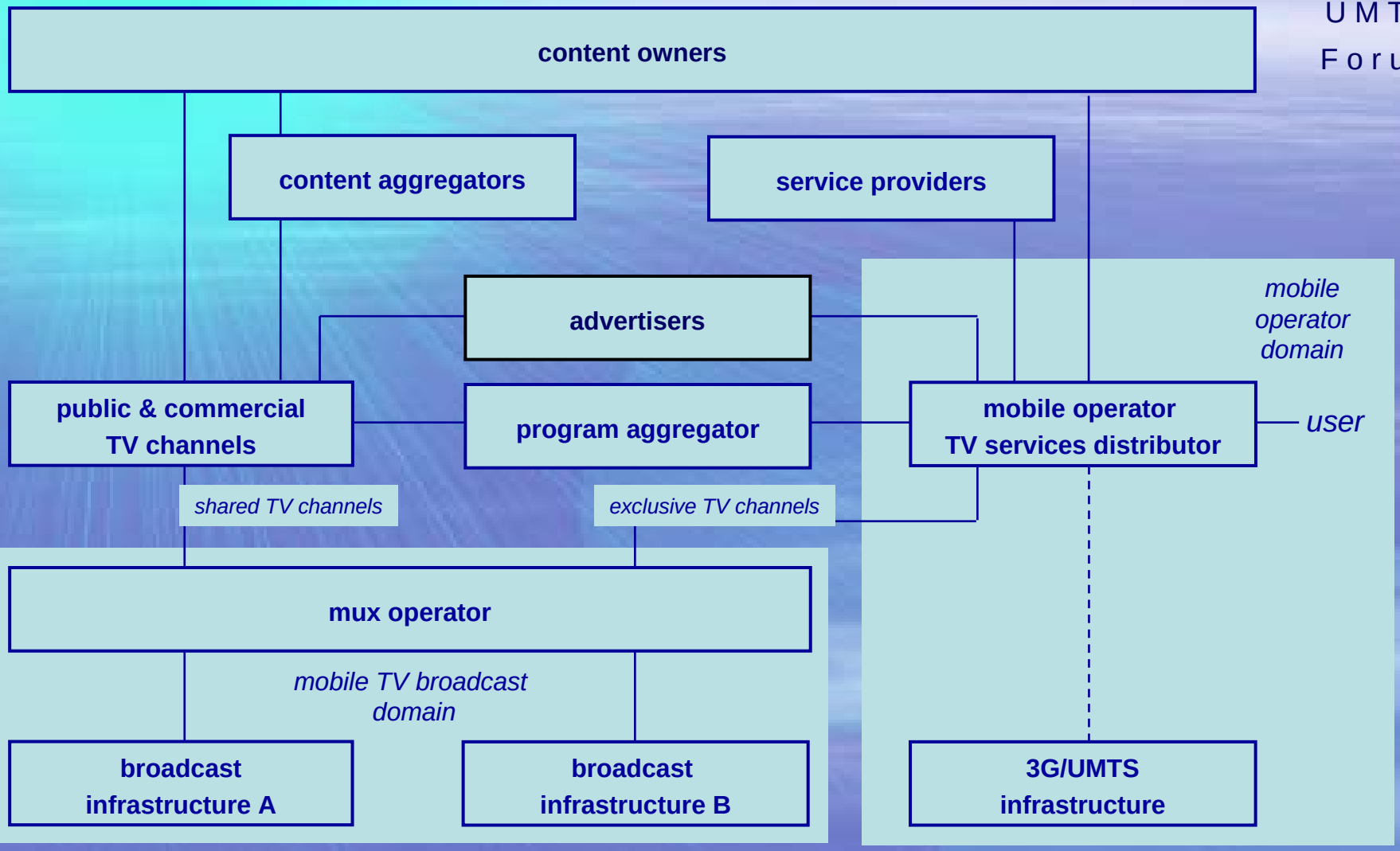
- UHF frequencies when deployed as single frequency networks (SFN) makes network configuration more complex, however is a highly efficient use of spectrum, and a network of two or three overlapping SFNs could be a promising option.



Mobile TV a complex business models



Critical Requirements for Success

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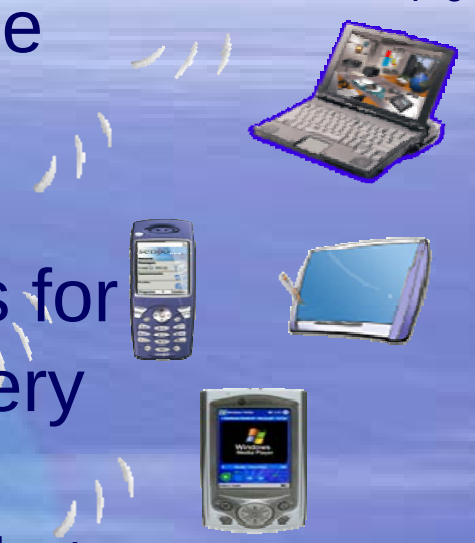
- Availability of content is critical for the commercial success of mobile TV networks.
- Implementation of effective solutions for total content management and delivery across those networks is also key.
- A whole range of infrastructure needs to be developed and deployed to make mobile television as effective and as viewable as fixed terrestrial television systems.



Mobile Devices

Home Desktop

Commercial launches or pilots

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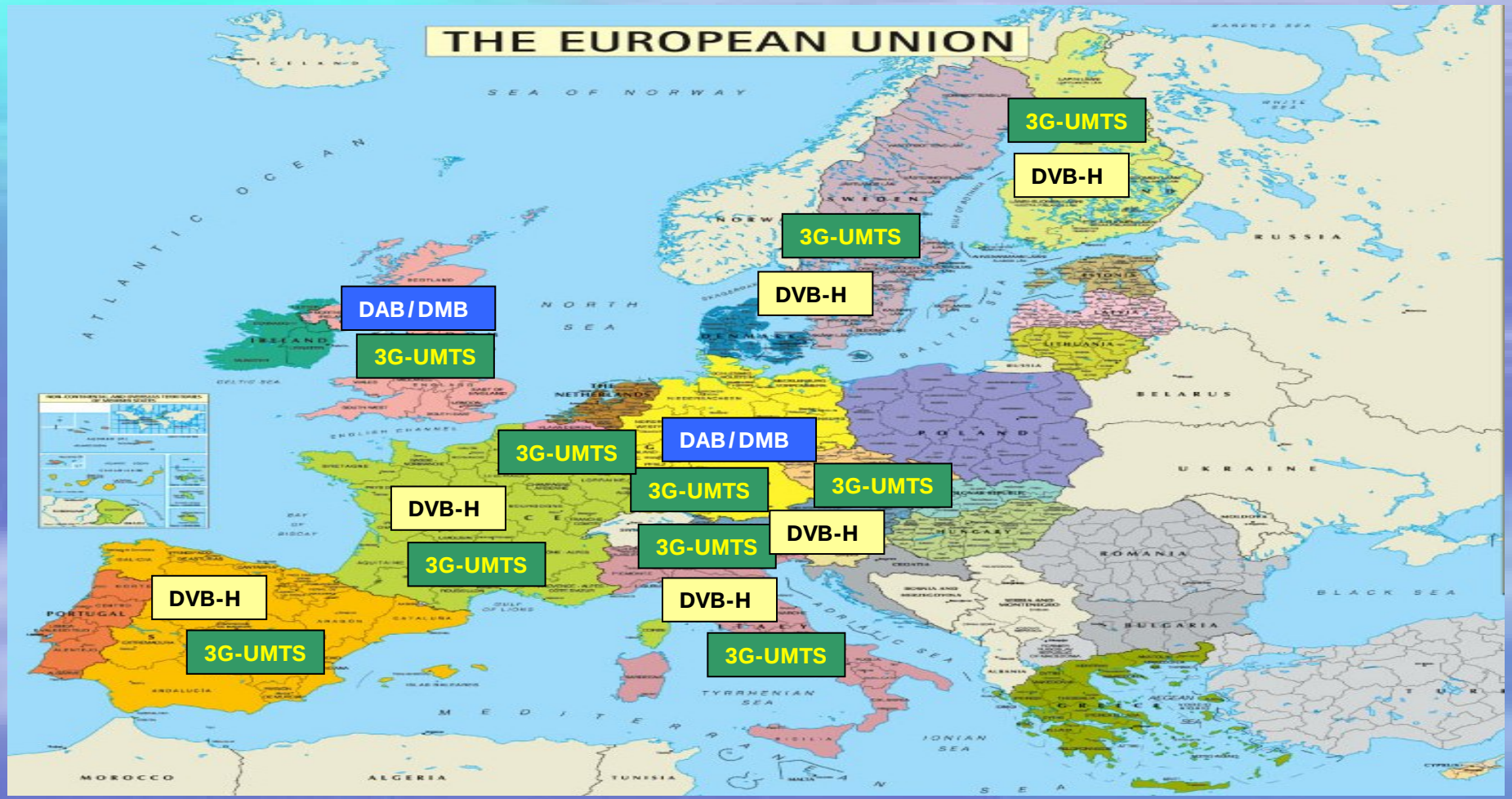

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Regulatory Issues

Regulatory Issues

- Mobile TV requires **new** regulatory approaches to enable financial incentives, market growth, technological innovations, etc.
- Telecommunications and Broadcast applications under separate regulatory jurisdiction
  - Different ITU Regulations
  - Separate Regulatory Authorities
  - Different Spectrum licensing models
  - Variety of operator models: Free-To-Air, Pay-TV , Pre-paid subscription models, etc.
- Broadcast spectrum regulation is fragmented per country and per industry
  - Culture is a national good and part of history
  - Who owns it? Telecommunications authorities? Broadcasting authorities?
  - Technology and service convergence require regulatory attention

Different on EU Level

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Which licence/authorisation conditions may hinder the introduction/deployment of mobile TV services?

Are there any regulatory restrictions to the use of existing digital platforms for mobile TV?

To what extent there may be a need for common approaches to authorisation of mobile TV across the EU?

Mobile TV success

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- **The** market actors should decide upon the rollout of **Mobile TV standards**, while emphasises should be on interoperability and proper delivery of content information to the consumer for mobile TV standards implemented.
- **Sufficient amount of spectrum for broadcast and multicast would lead to success of mobile multimedia services**
  - In both broadcasting and multicasting worlds, the more spectrum allocated, the more radio frequency channels and services can be contained
  - This factor could determine the overall viability and economic success of the Mobile TV services
  - ***It should be noted that the precise identification of the digital dividend spectrum is currently not achieved in Europe and it is difficult to evaluate the amount of spectrum that may finally be available to telecommunications applications.***
- **Spectrum has significant cost impact on handsets. If large number of small and fragmented bands are allocated to Mobile TV usage, then handset vendors will need to make handset that**
  - Either, are capable of operating on all these bands at an added complexity and cost, or
  - Are exclusively specified and developed for a single operator at a smaller quantity driving up the costs for consumers as the economics of scale would not be achieved.

Mobile TV successful across borders?

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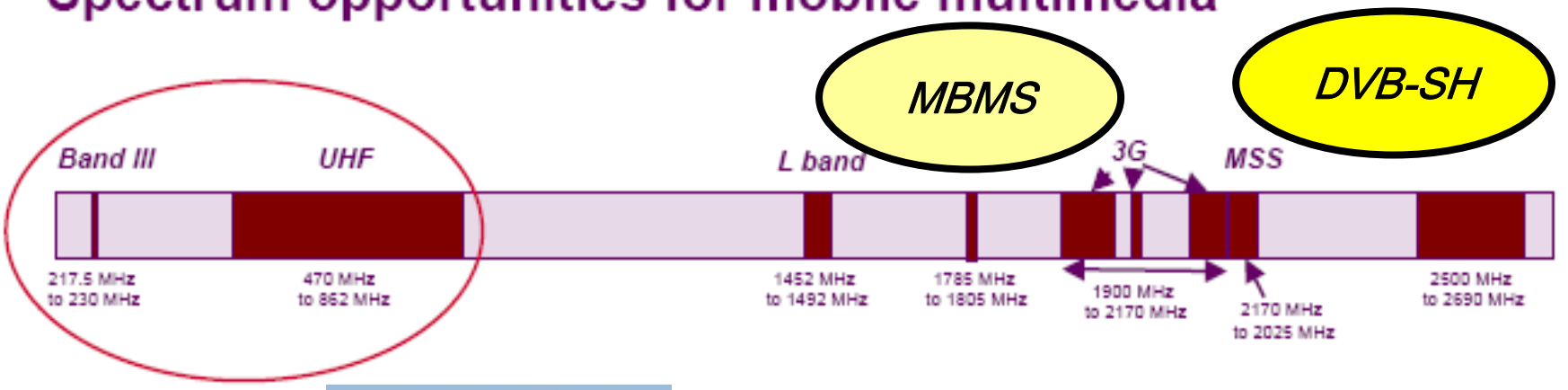
- What regulatory provisions are needed for **seamless mobile TV services** across the EU?
  - Cross-border services?
  - Interoperability/ roaming?
  - Pan- European dimension?
- It is still uncertain as to what a viable model is for licensing Content rights to mobile operators.

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

Ideal range?

DVB H HANDHELD

World DAB

IPWireless

TDtv

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Further Integration

The way forward?

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- The future of mobile TV depends on many factors; but since it is proved that consumers want mobile TV- it will happen.
- The Network model will be determined by how cost effectively networks can be deployed and the availability of frequencies and licences. This is likely to differ on a case-by-case basis.
- Utilising existing infrastructure will be a key element. It is not difficult to incorporate mobile TV services into existing broadband terrestrial broadcast systems- particularly if the systems were initially designed to accommodate additional services or channels. The most significant capital outlay would come with the deployment of additional repeater stations.

Convergence towards IMS TV

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Fixed Line TV

PVR
DRM
HDTV
Web Browsing
Messaging/Alerting
Home media distribution

P2P TV

Video Call
Collaboration
Group Mgmt control
P2P Chat/Messaging
Localized Video Sharing
Download and play
Streaming playback

Mobile TV

Interactive TV
Voting
PVR control
3GPP - MBMS
Common TV channels for IPTV and mobileTV
Home IPTV services in the device
Media portability

Common platform for Mobile TV and IPTV

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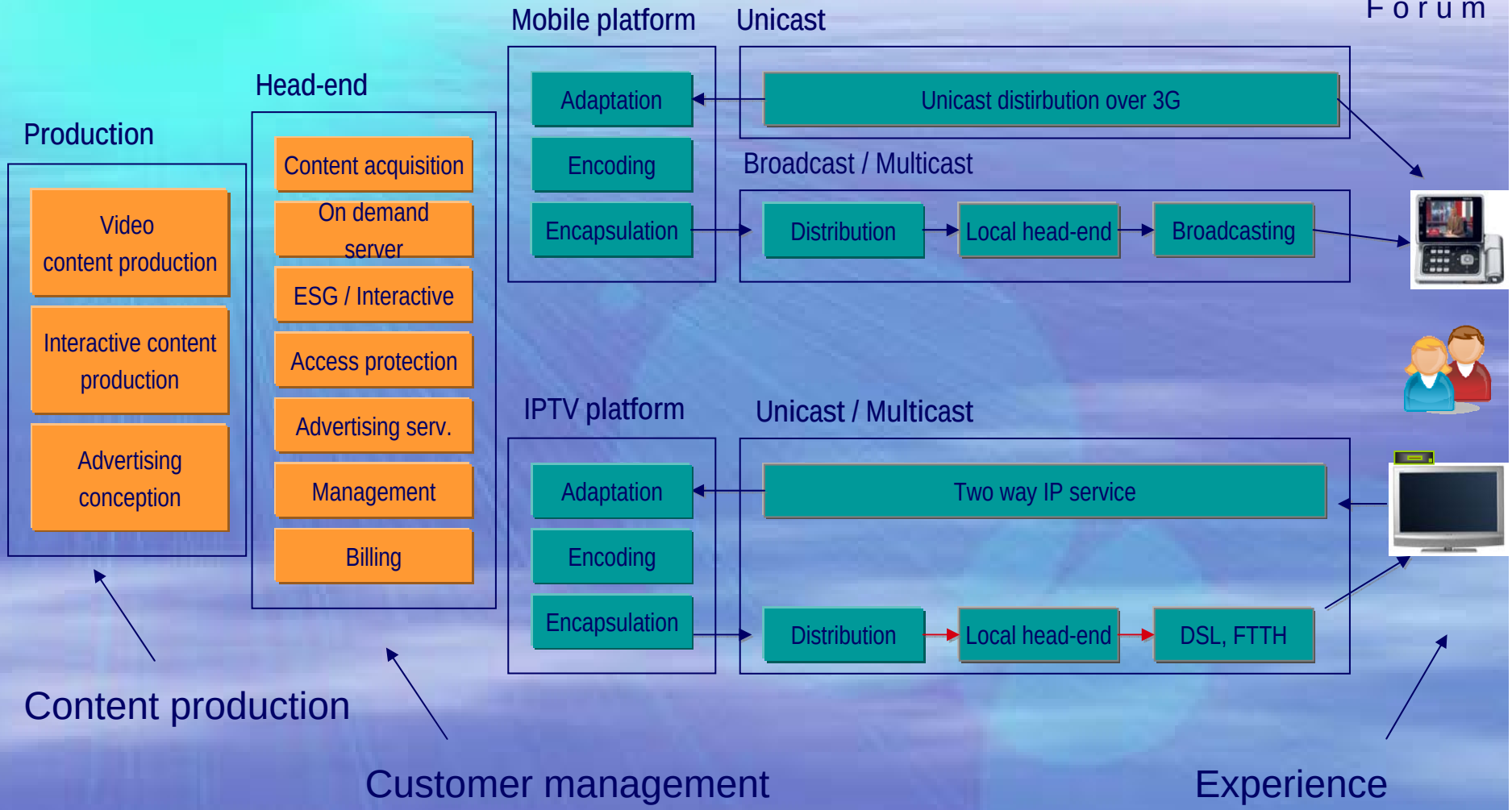

Content production

Customer management

Experience

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Conclusion

Conclusion

- Delivery of triple play services create new networking requirements and technical migration challenges.
  - Particularly in the access and aggregation parts of the network.
- IPTV is not so much a technology as a fundamental transformation in the distribution and consumption of television and video services.
- The world is ramping up their IPTV initiatives and launching a creative array of new consumer services, searching for the magic mix of traditional and emerging services Operators.
- Deployment of mobile TV is mainly dependent on Regulatory issues to be solved and spectrum availability.

Conclusion cont'd

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- 3G mobile TV is breaking up traditional business models whereby mobile operators are establishing themselves as content aggregators and broadcasters.
- Mobile industry calls for harmonised spectrum to enable the development of mobile multimedia services especially in the UHF bands.
- Economies of scales are necessary to enable the production of innovative content and to drive the change of business models.
- Develop a clear auction process
  - Consider the conditions that go with licenses for mobile broadcast.
  - Minimum coverage expectations in licenses or auction rules
  - Spectrum packaged and auction designed in a way that facilitates development of mobile TV.

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Thank You for your attention!!!!