Personal, pocket media
- current research on the use of mobile TV

Peter Olaf Looms
DR-New Media & TV
DR/Danish Broadcasting Corporation

Menu

1. **Who I am and what I do**
2. **Mobility and people**
   - What is it and what does it mean for content?
3. **Personal pocket media** (mobile TV)
   - What are they?
   - How are they different from other media?
4. **Research results** on mobile TV from Europe
   - What have we learned from this research?
   - What problems have been encountered?
   - What still needs to be investigated?
5. **Conclusions**
   - How fast is the market likely to develop?
   - What is needed in order to grow the market?

Who I am and what I do 1/4

- **Full-time strategy consultant at DR, a public service broadcaster - "to inform, educate and entertain"**
- **Responsible for several metadata projects:**
  - **Mapping metadata flows for radio and TV channels (analogue/digital/IPTV) as well as on-demand content within Denmark**

- 2 TV channels (satellite, cable, terrestrial, IPTV) with a market share of 40%
- 20+ radio channels (FM, DAB, Internet) with a market share of 70%
- The no. 2 Web portal in Denmark after MSN
- 30% of the mobile content market in Denmark
- Launching IP Datacast services on mobile handsets within 2 years

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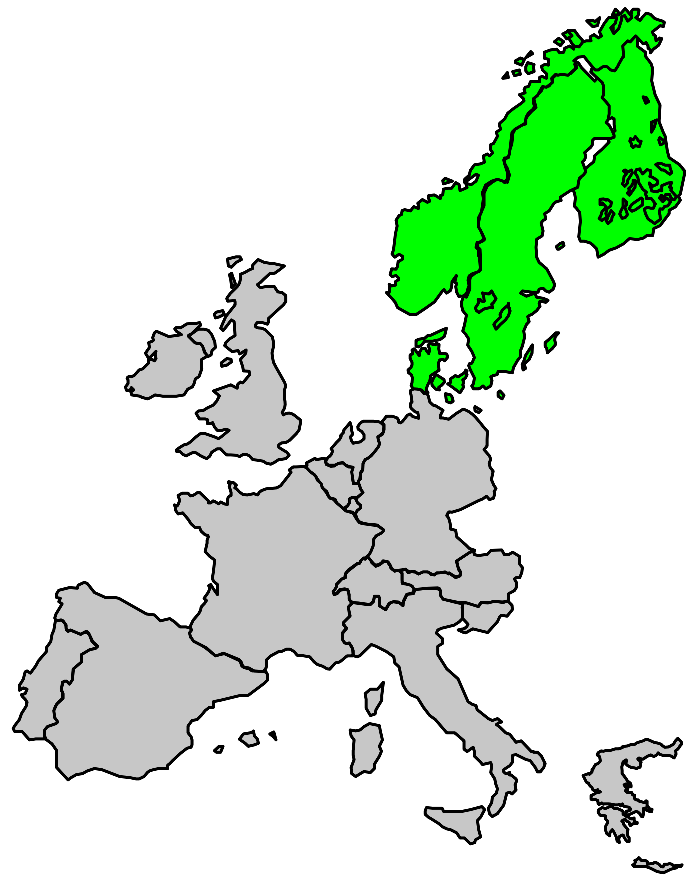

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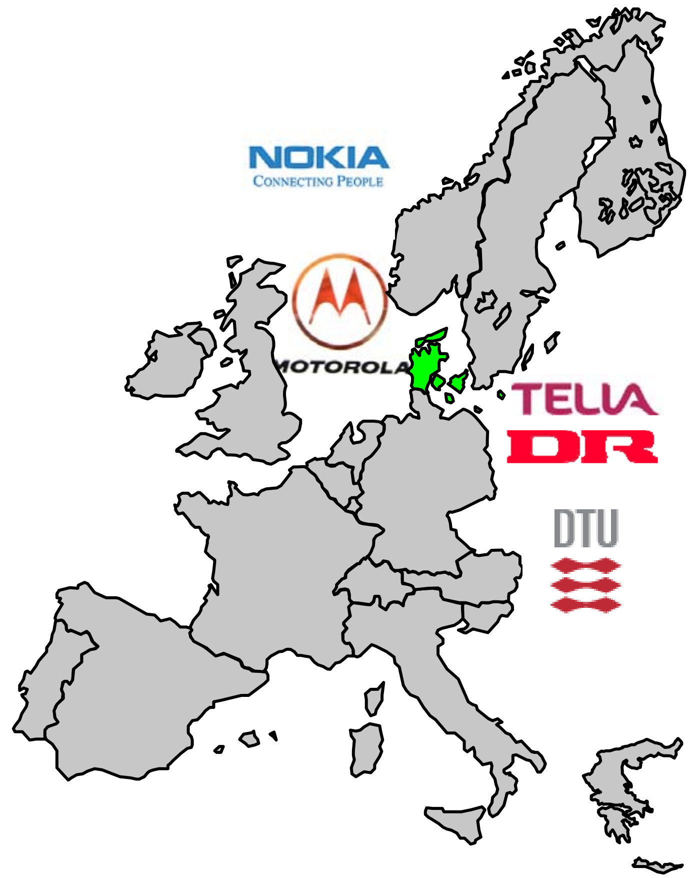

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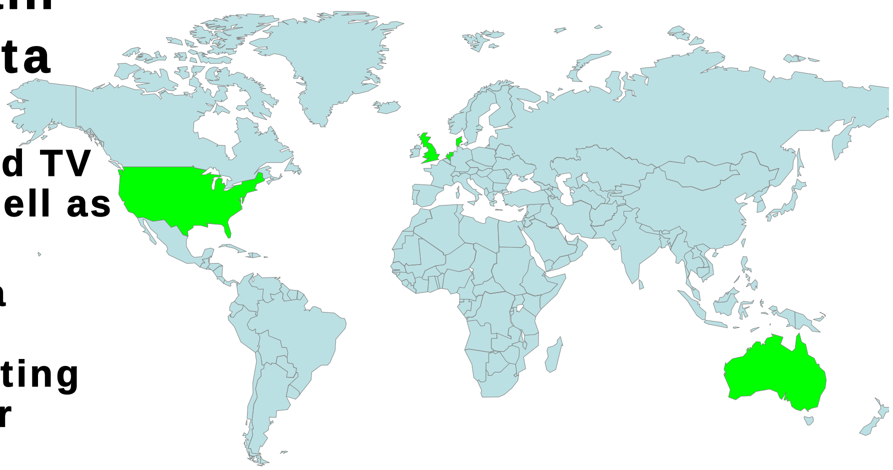
- Coordinating a state of the art study on mobile media using DVB-H
- Coordinating DR’s participation in ”Beyond :30”, a three-year research programme on new models for promos and advertising



Who I am and what I do 2/4

- **Teach postgraduate courses on project management and strategy**
- **Participate in R&D projects (mobile content for youth, PVRs, interactivity and advertising)**

- **the University of Hong Kong**
- **the IT-University of Copenhagen**
- **EMMDIS MSc Programme - Cross Media Production - INA, Institut National d'Audiovisuel, France**
- **Institute of Interactive Television Research, Murdoch University, Perth, Australia (October/November 2004)**

Who I am and what I do 2/4

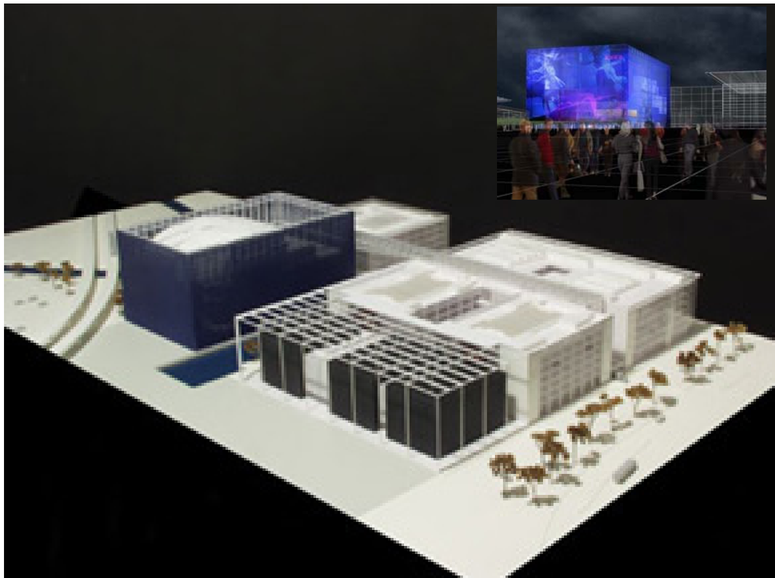
Who I am and what I do 3 / 4

- Current tasks:
  - **Chairman of 3 European working groups (broadcasters and manufacturers) for Personal Video Recorders (PVRs) in Europe**
  - **Digital Asset Management in connection with metadata services at DR (digital TV, digital radio, podcasting)**
  - **Benchmarking of web, mobile & digital TV projects in the Nordic countries within the Nordvision New Media group**

TVA test bed



DR Media Village



HKD 3.9 billion construction
HKD 1 billion on DAM
Launches end 2006


Mobility
- What is it and
what does it mean for content?

Mobility = On the move

Mobility = Waiting

Mobility

=

killing time

keeping updated

3. Personal Pocket Media

What are they?

Video

TV

Radio

Games

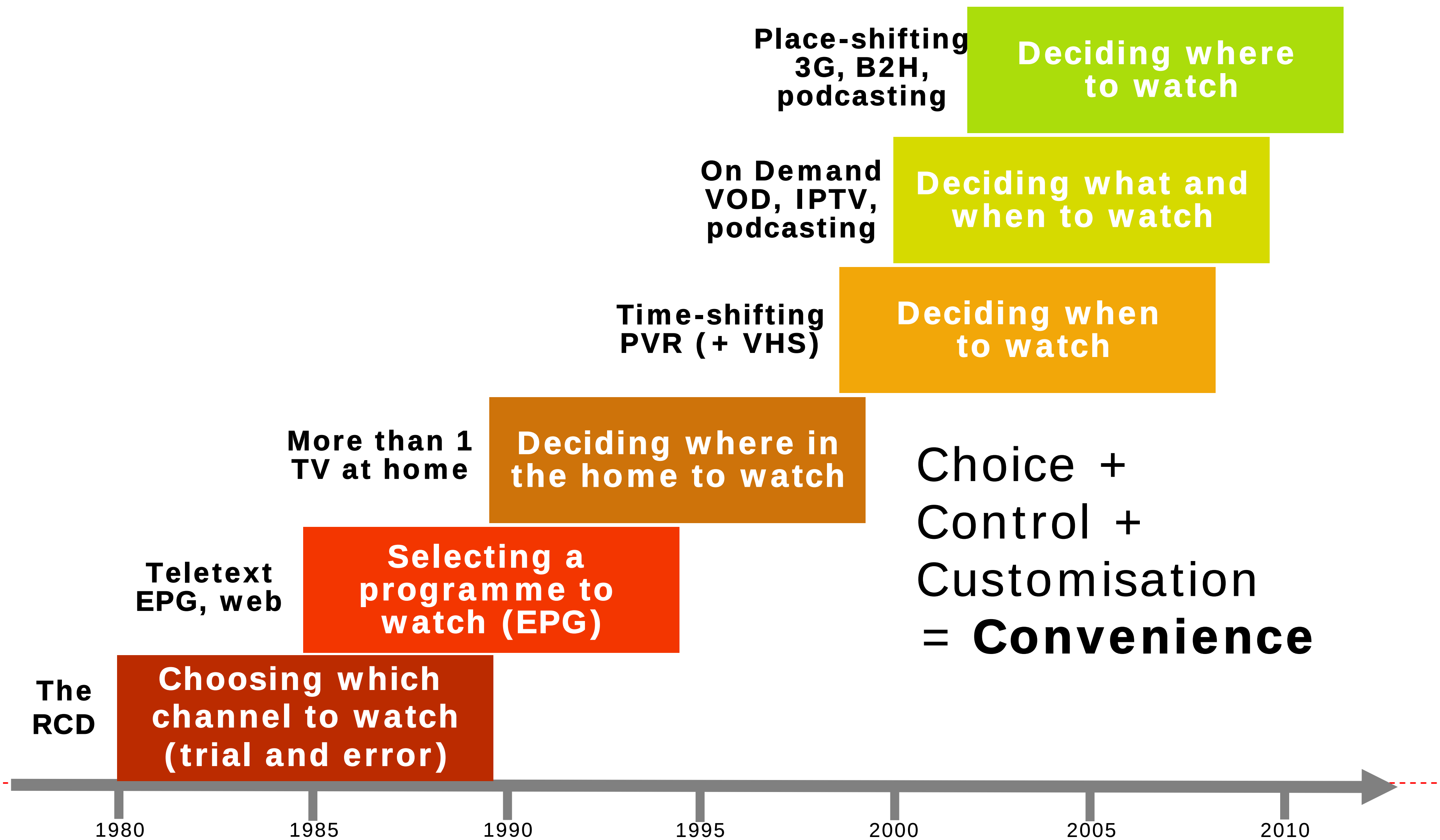
Music

This isn’t!

Media at home

1980 1985 1990 1995 2000 2005 2010

Media at home



Media at home and on the move

Networks: IEEE 802.11,WiMax, GPRS, 3G, DMB, DVB-H, FLO
Terminals: mobile phone, i-Pod, PVR, PSP, laptop


Viewing possible
Viewing impossible
Viewing
irrelevant
FOX NEWS channel
HJC
93

Media at home and on the move

Place-shifting 3G, B2H, podcasting — **Deciding where to watch**

On Demand VOD, IPTV, podcasting — **Deciding what and when to watch**

Time-shifting PVR + VHS — **Deciding when to watch**

More than 1 TV at home — **Deciding where in the home to watch**

Citizen media, peercasting — **Making programmes**

Teletext EPG, web — **Selecting a programme to watch (EPG)**

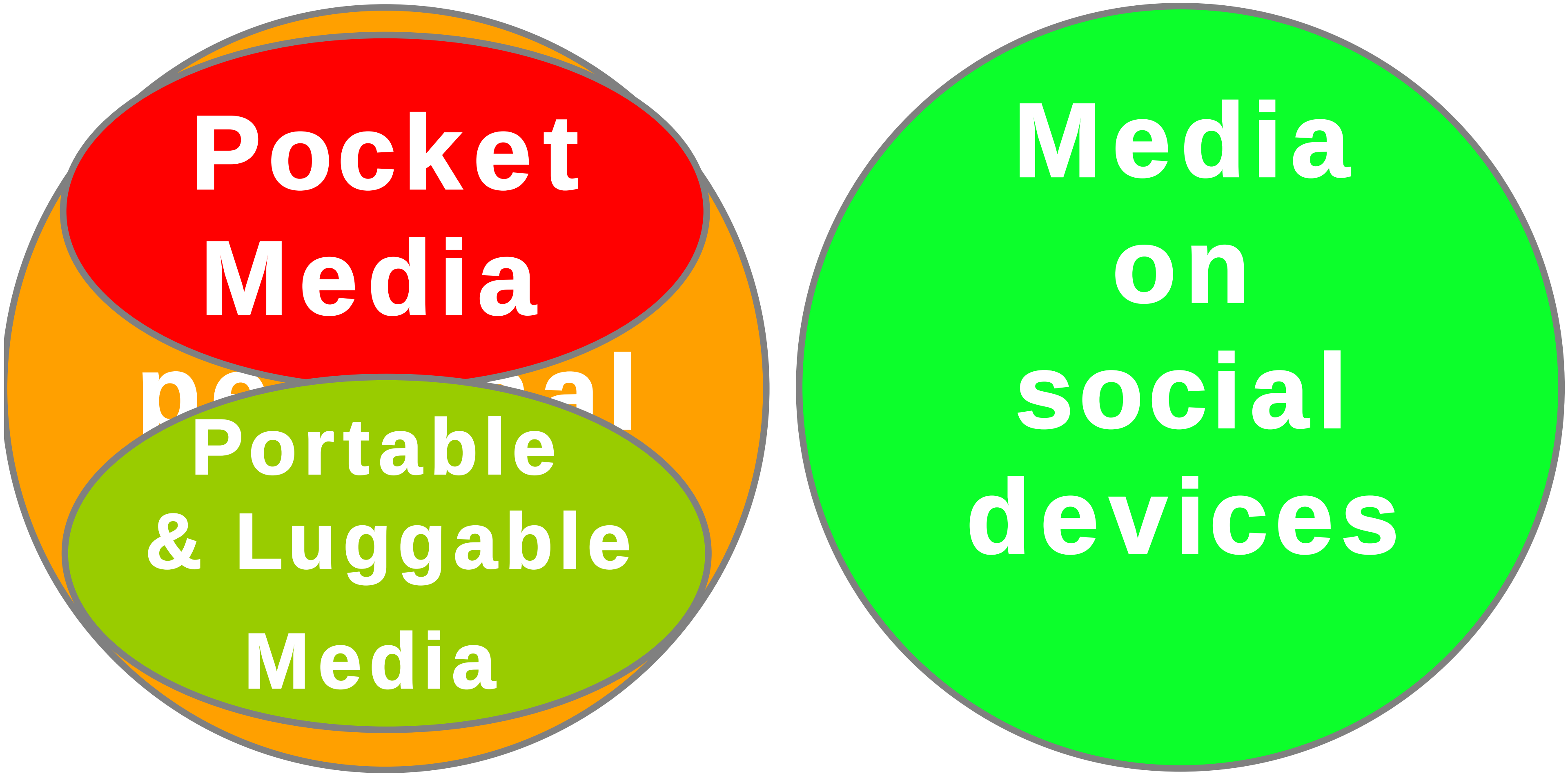
SMS, MMS, photos & videos — **Contributing to programmes**

The RCD — **Choosing which channel to watch (trial and error)**

Voting in TV shows — **Taking part in programmes**

1980 1985 1990 1995 2000 2005 2010

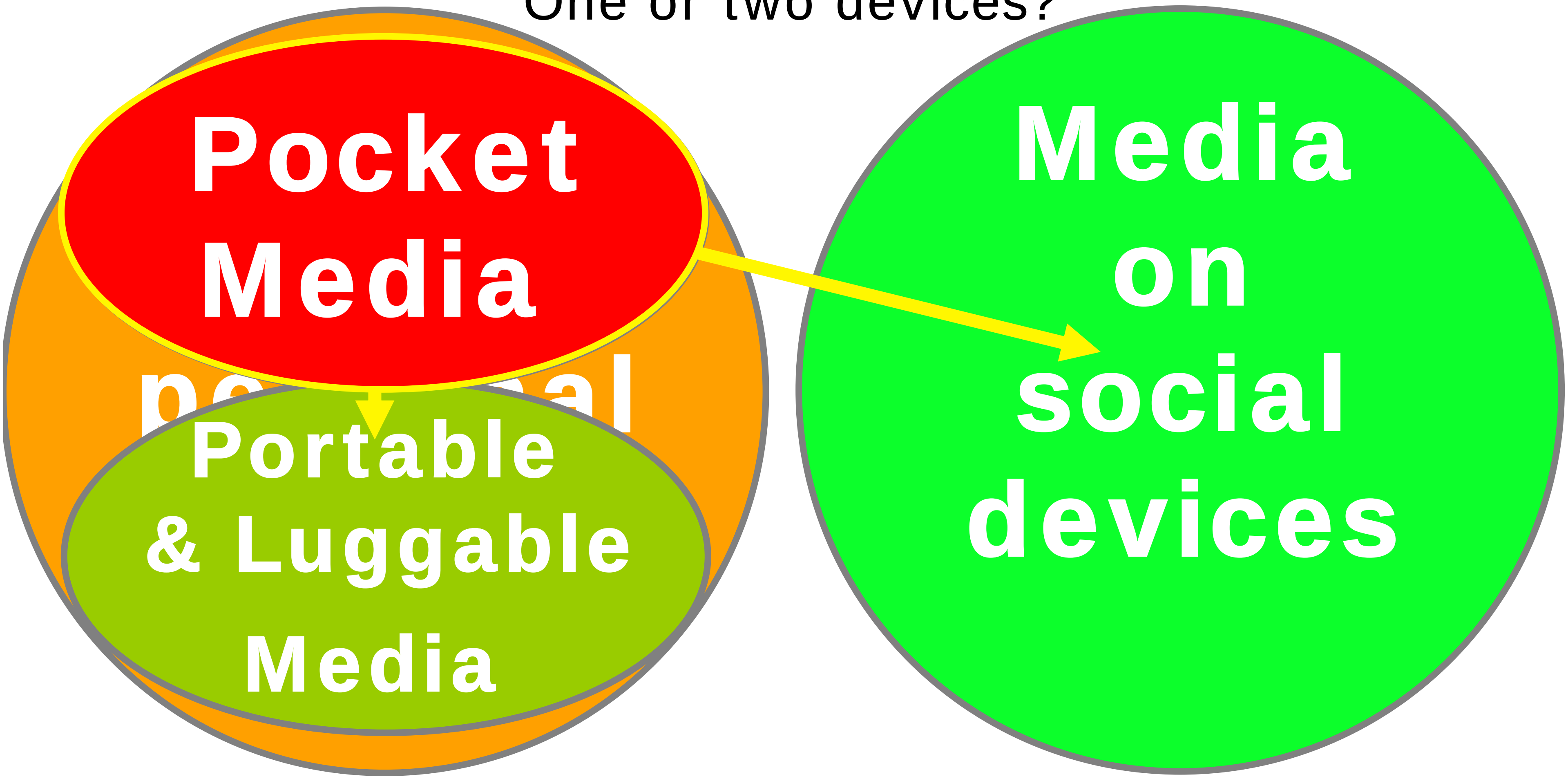
Personal pocket media



Personal pocket media

Personal pocket media

What are the contenders in the pocket?
One or two devices?



Conclusion

Video

Radio

Games

Music

TV

Mobile Pocket Media

Competition on the move and at home

Is there a sustainable market for personal pocket **TV?**

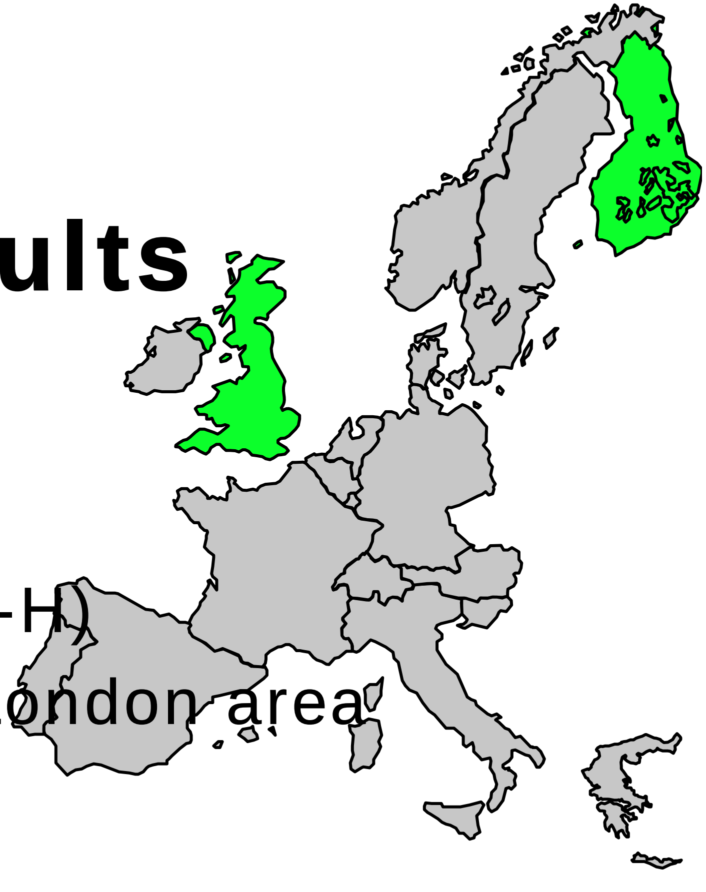
Research results

Research results

Two Finnish trials

Using DVB-H

Research results



Two UK trials:

O2 in Oxford (DVB-H)

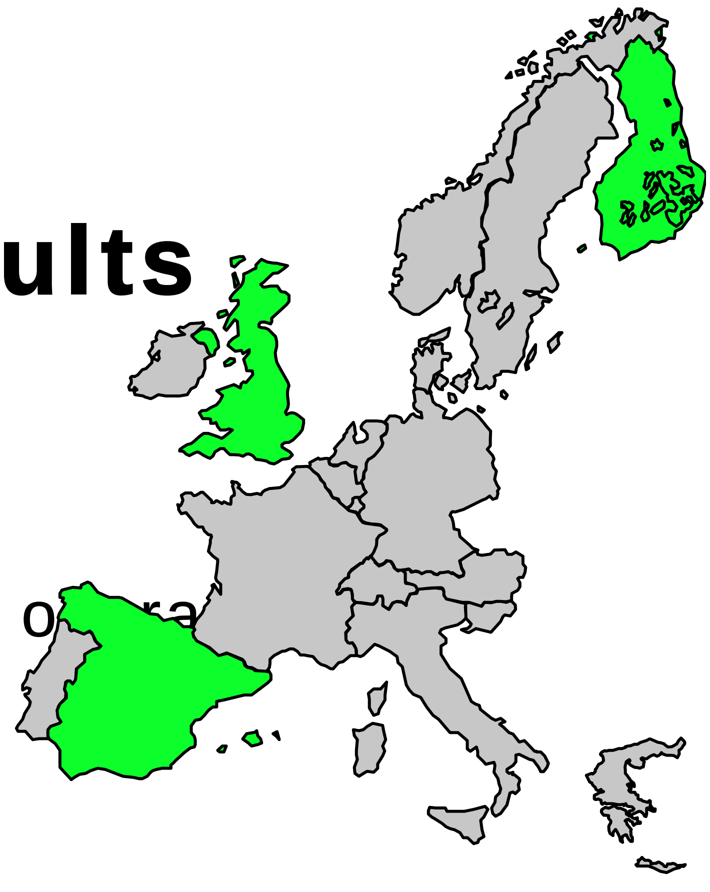
BT Wholesale (DAB-IP) in London area

Research results

Spain:

Results for three different o ra

Using DVB-H



Research results

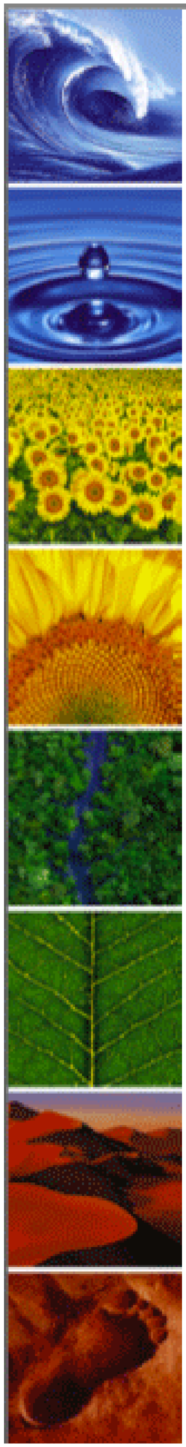
3 Italia:

Regular DVB-H operations

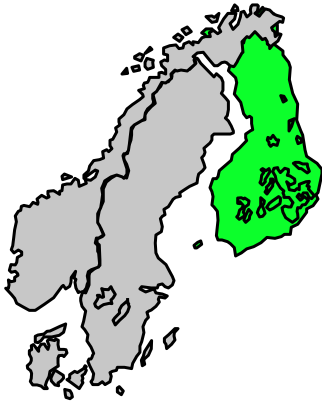
Since May 2006

	FINLAND	OXFORD	PARIS	MADRID
		Percentages of what????		
Willingness to pay for content	41%	76%	55%	68%
Average time spent per day (mins)	5-30	23	16	20
Most popular content types	**News, Sports, Entertainment, Current affairs (in Finnish)**	**News, Soaps, Music, Sport**	**News, Series, Music**	**News, Music, Entertainment Documentaries**

Powerpoint slide from
Mark Selby, NOKIA, June 12, 2006



Finnish Mobile TV Pilot

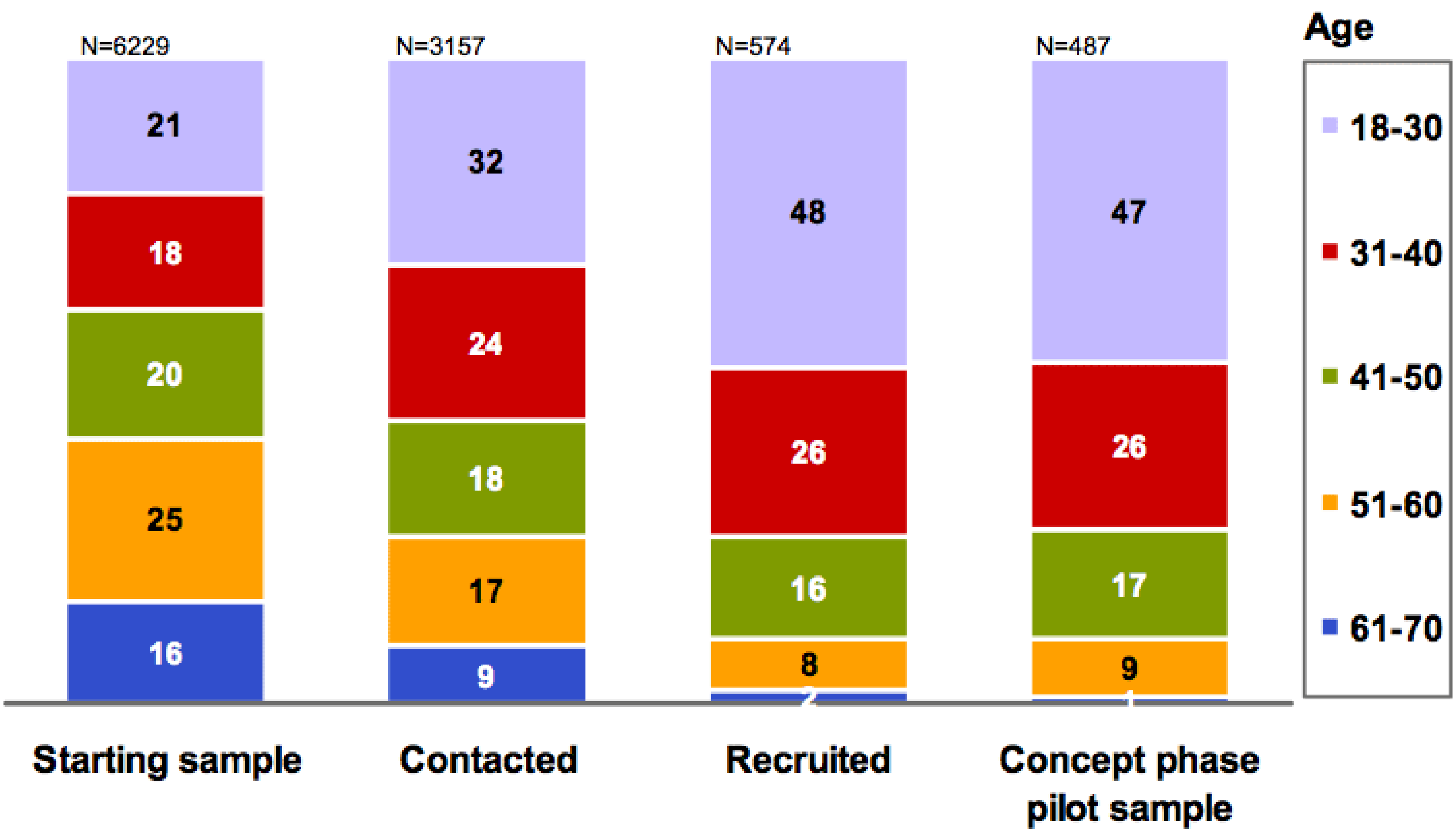


Results

August 30,2005

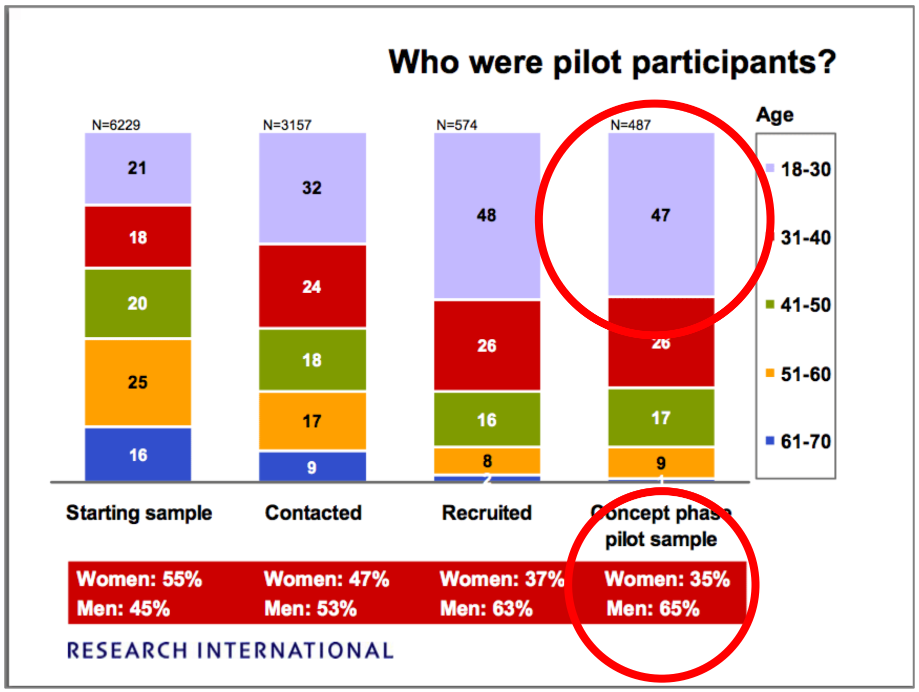
Juri Mäki

Who were pilot participants?



Starting sample	Contacted	Recruited	Concept phase pilot sample
Women: 55%	Women: 47%	Women: 37%	Women: 35%
Men: 45%	Men: 53%	Men: 63%	Men: 65%

RESEARCH INTERNATIONAL



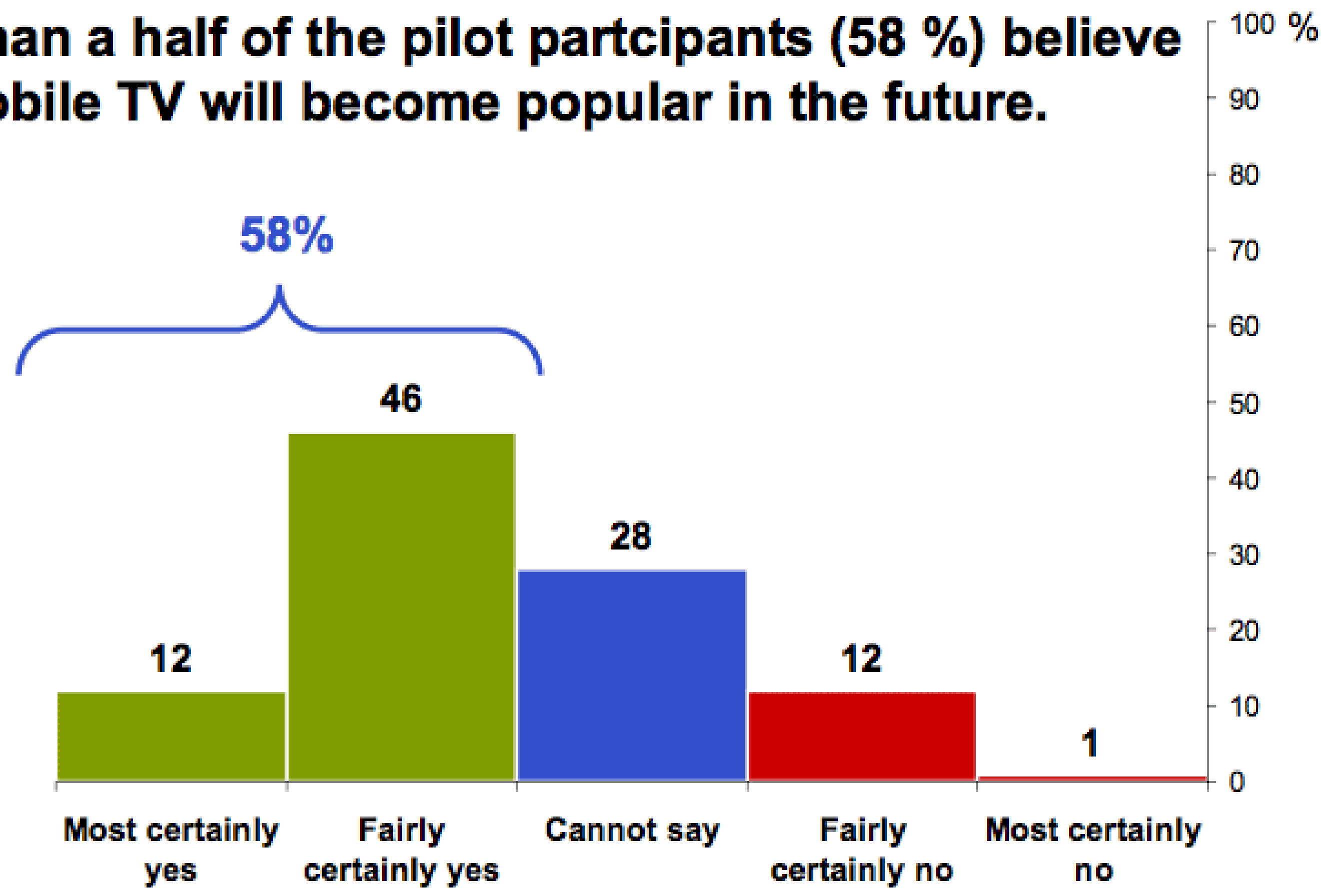
Trial sample of 487

- Many 18-30 year olds
- Predominantly men
- Claim that these are early adopters
- Cannot use this sample to talk about theFinnish population as a whole
- ”possible early adopters”

Does the service have future potential?

Yes - assuming that the pricing and content are in line with consumers' expectations and needs.

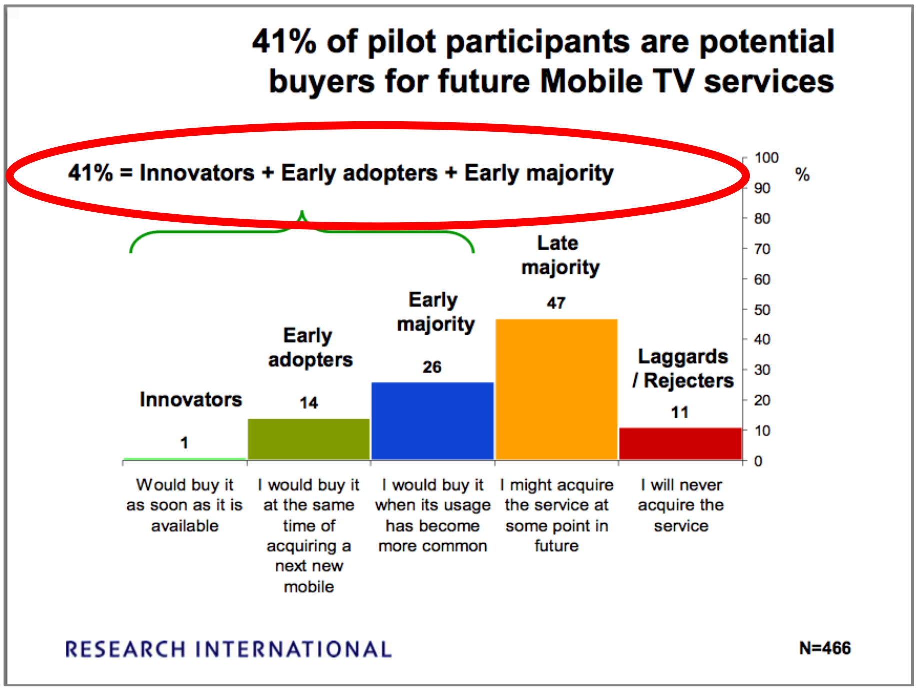
More than a half of the pilot partcipants (58 %) believe that mobile TV will become popular in the future.



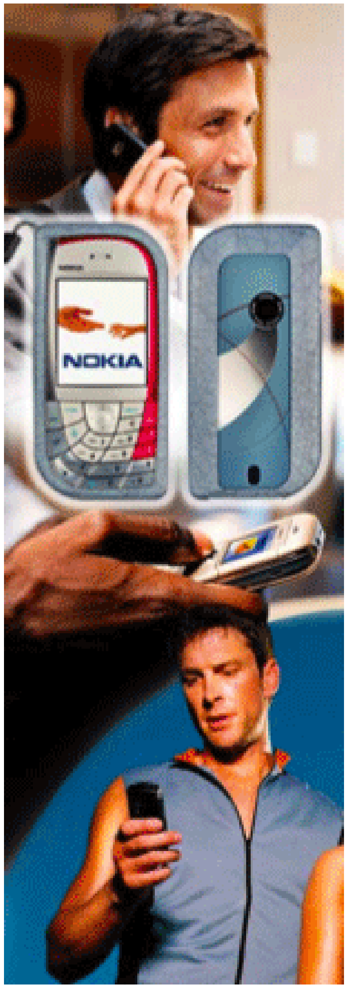
RESEARCH INTERNATIONAL

N=466

- Same problem: the actual figure is somewhere in the range **3,4%-41% of all Finns**



Typical Early Adopter



- Male
- Aged +30-40

Age, sex

- Smartphone
- Mobile phones with a camera

Mobile phone

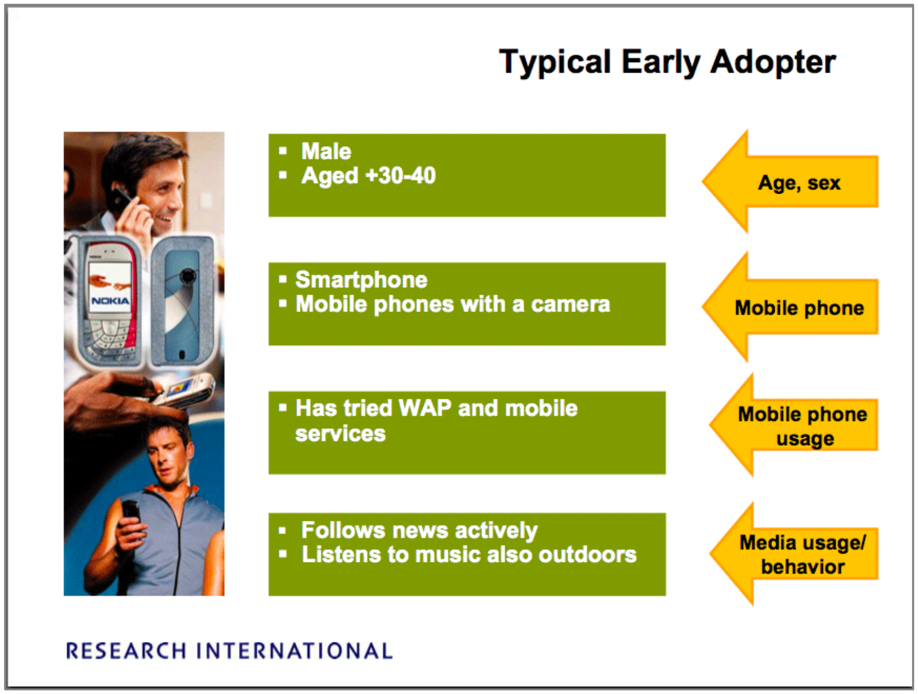
- Has tried WAP and mobile services

Mobile phone usage

- Follows news actively
- Listens to music also outdoors

Media usage/ behavior

RESEARCH INTERNATIONAL



Problems:

1. Self-fulfilling prophesy!: Nobody in the panel was over 40!
2. Results do not match fully those of the UK and Spain

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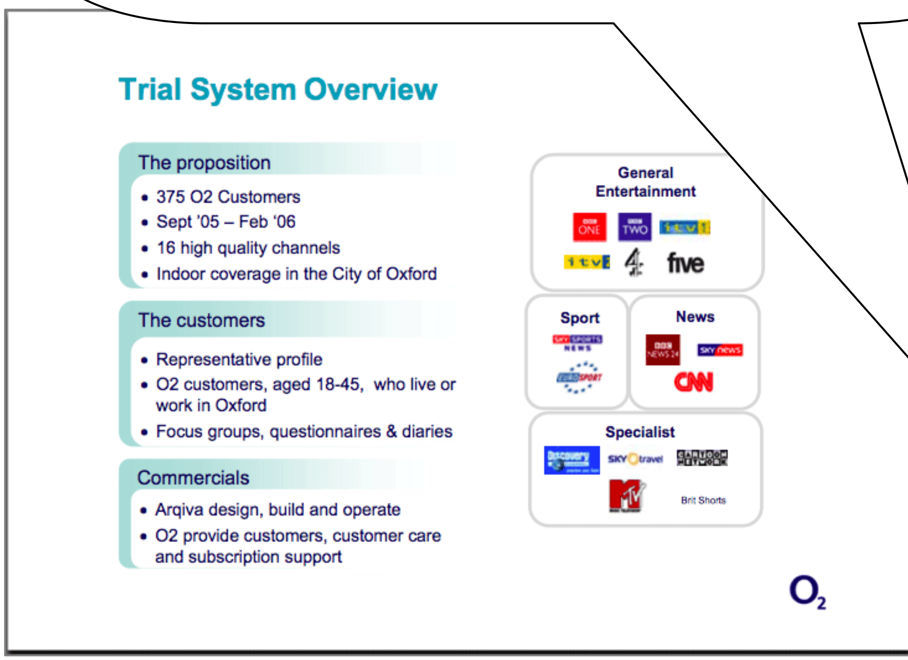
1. Self-fulfilling prophesy!: Nobody in the panel was over 40!
2. Results do not match fully those of the UK and Spain

John Cullen, O2 about the Oxford trial:

”We had a broad cross section of customers with a cut-off below 18 (minors) **and above 45 - this was a big mistake**.”



Requirements for Mobile TV adoption according to pilot participants

Satisfaction with the content

Content that is also suitable for irregular and short period viewing

Usability of the Mobile TV service

Easy and intuitive service usability provides a foundation for service adoption

Technical performance & reliability

Good technical functionality and reliability is needed for a positive user experience

Handset usability & acceptance

Good mobile phone qualities must not be compromised at the expense of the TV application

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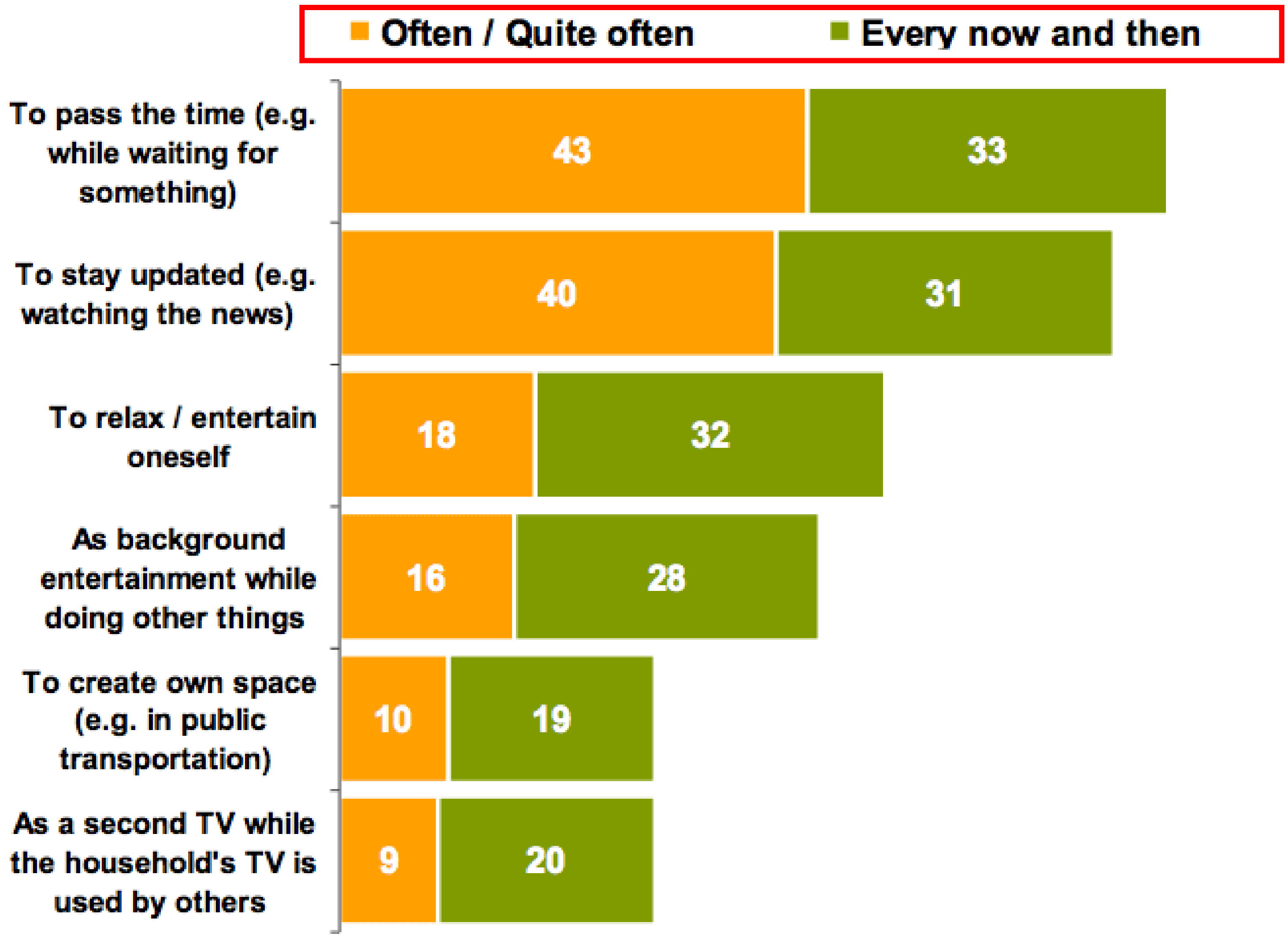
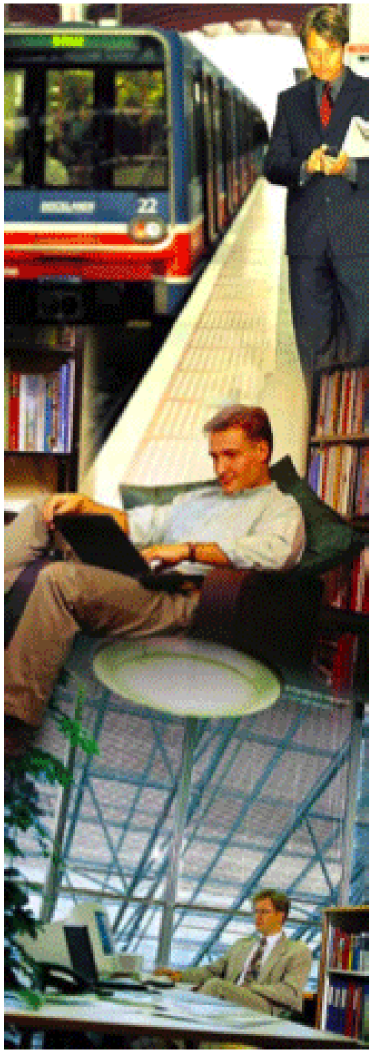
Mobile TV is used to pass the time and to stay updated



RESEARCH INTERNATIONAL

N=466

TOP 3 usage situations among active users



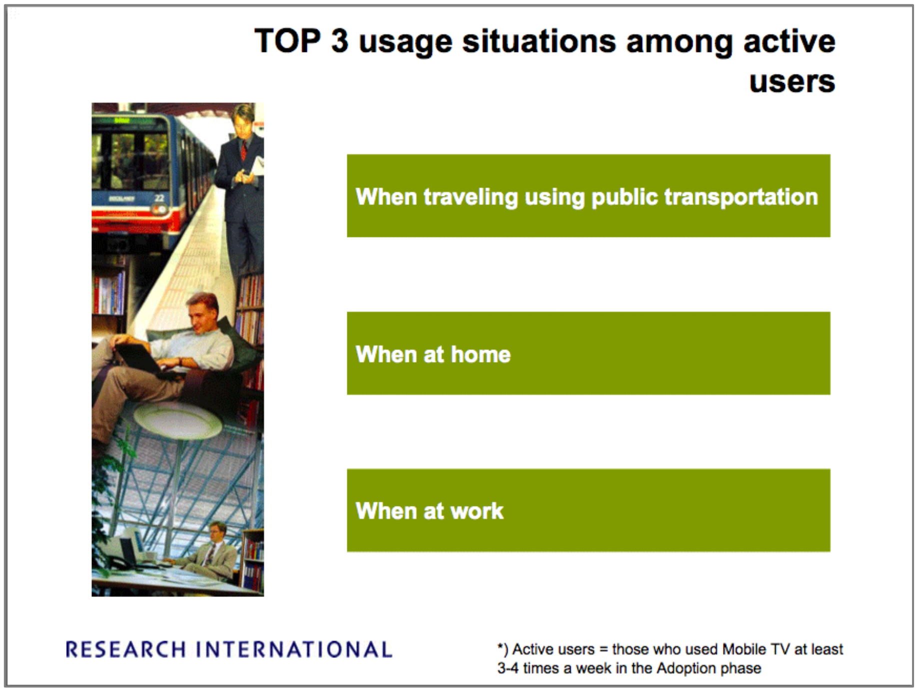
When traveling using public transportation

When at home

When at work

RESEARCH INTERNATIONAL

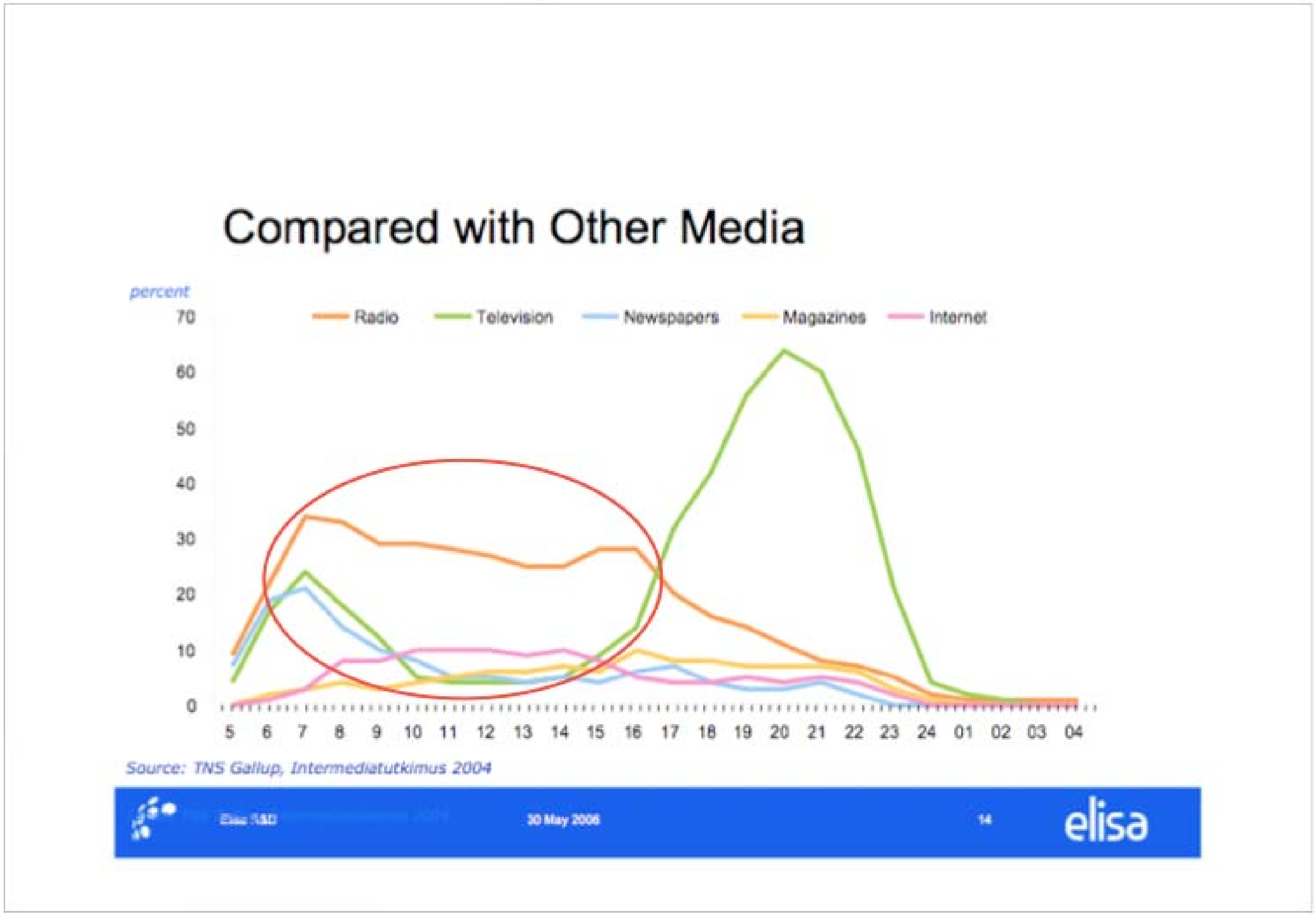
*) Active users = those who used Mobile TV at least 3-4 times a week in the Adoption phase



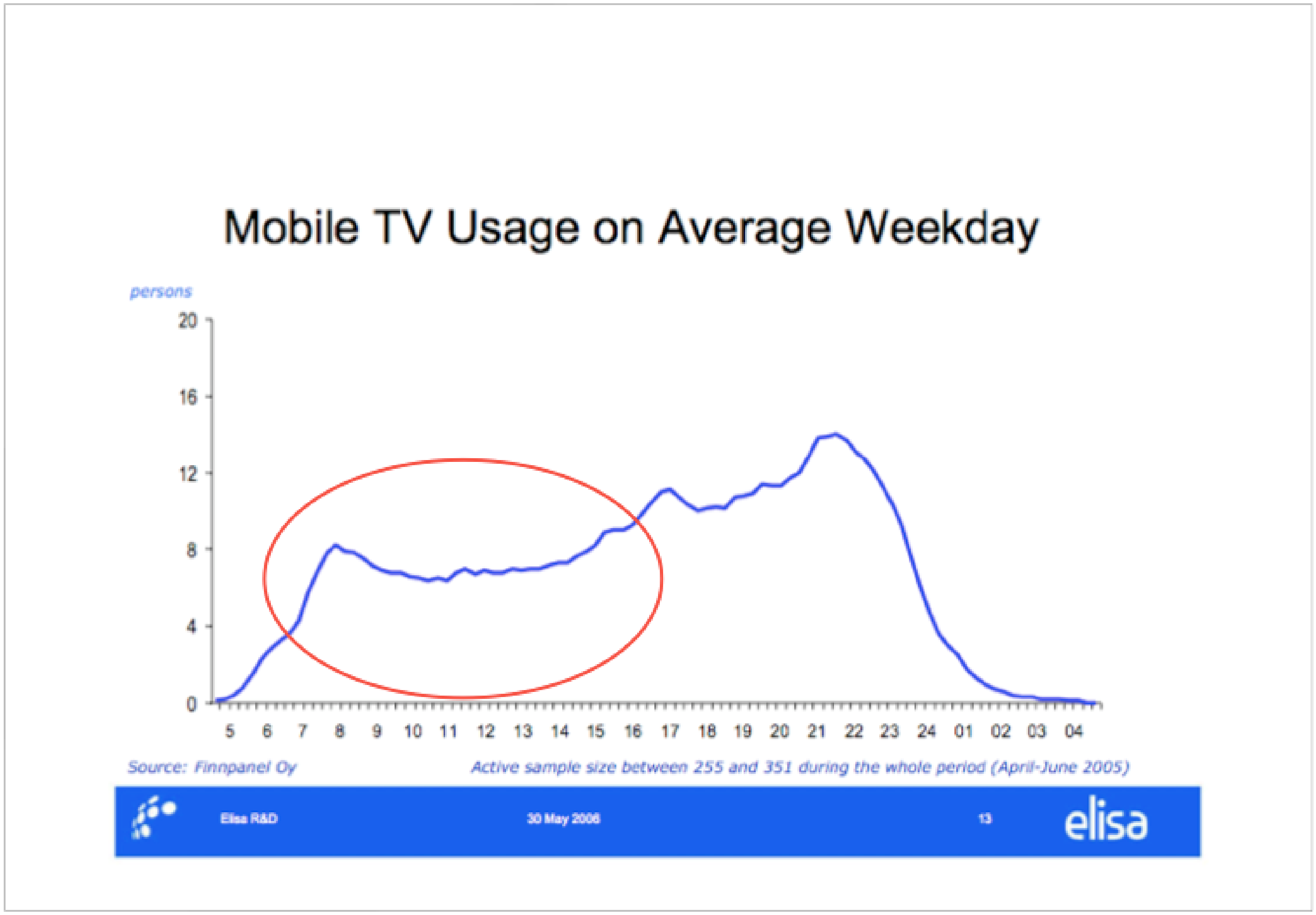
User contexts:

1. Finnish results impacted by poor/non-existent indoor reception
2. Proportion of those using services on the move vary greatly from country to country
   London has 3 million commuters who travel at least 30 mins. per day on the train

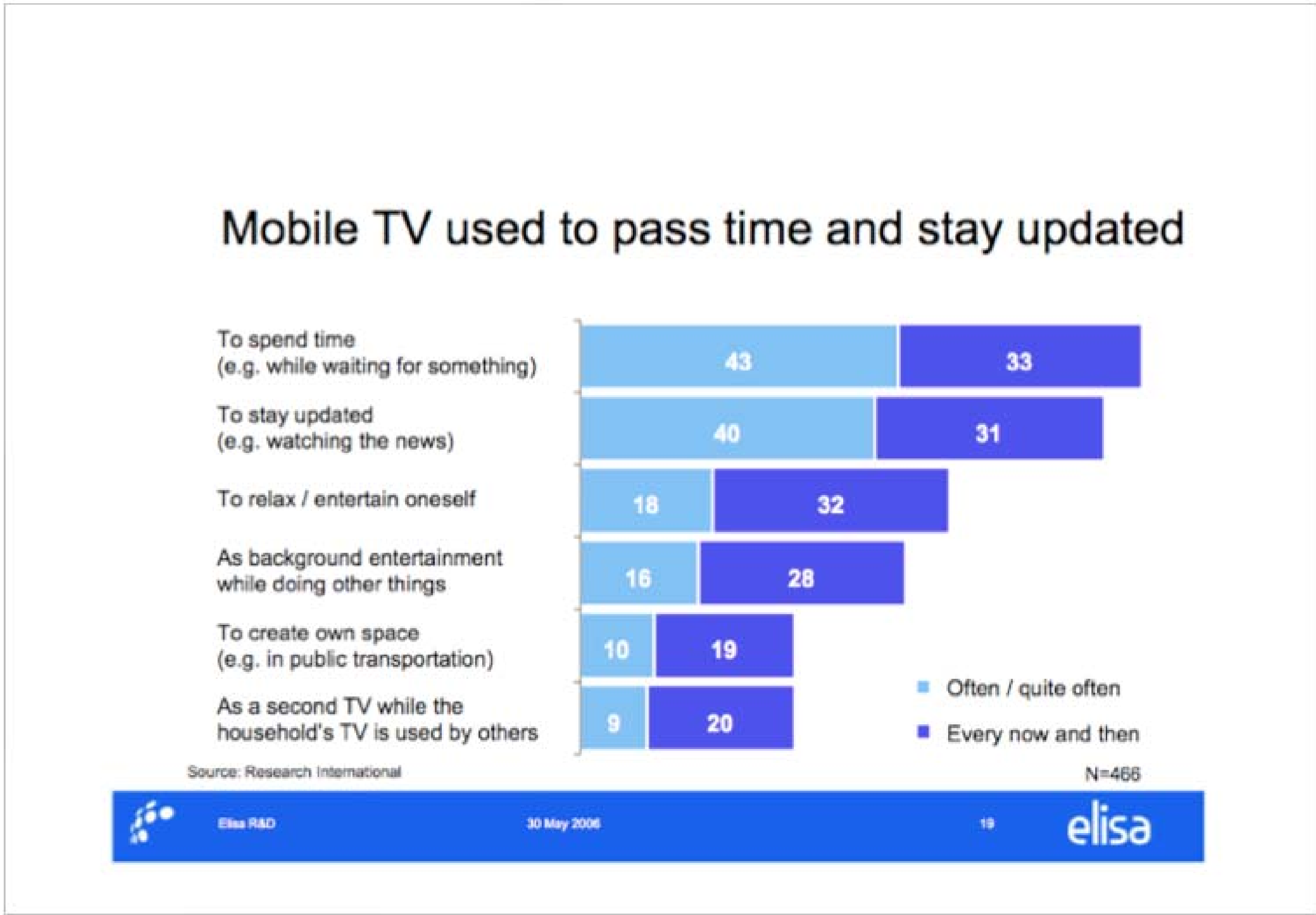
Finland


Compared with Other Media
percent
70
60
50
40
30
20
10
0
Radio
Television
Newspapers
Magazines
Internet
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 01 02 03 04
Source: TNS Gallup, Intermediatutkimus 2004
30 May 2006
14
elisa

Finland


Mobile TV Usage on Average Weekday
persons
20
16
12
8
4
0
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 01 02 03 04
Source: Finnpanel Oy
Active sample size between 255 and 351 during the whole period (April-June 2005)
Elisa R&D
30 May 2006
13
elisa

Finland


Mobile TV used to pass time and stay updated
To spend time
(e.g. while waiting for something)
43
33
To stay updated
(e.g. watching the news)
40
31
To relax / entertain oneself
18
32
As background entertainment
while doing other things
16
28
To create own space
(e.g. in public transportation)
10
19
As a second TV while the
household's TV is used by others
9
20
Often / quite often
Every now and then
Source: Research International
N=466
Elisa R&D
30 May 2006
19
elisa

Finland

DR

Finnish Mobile TV Demo Services by Elisa

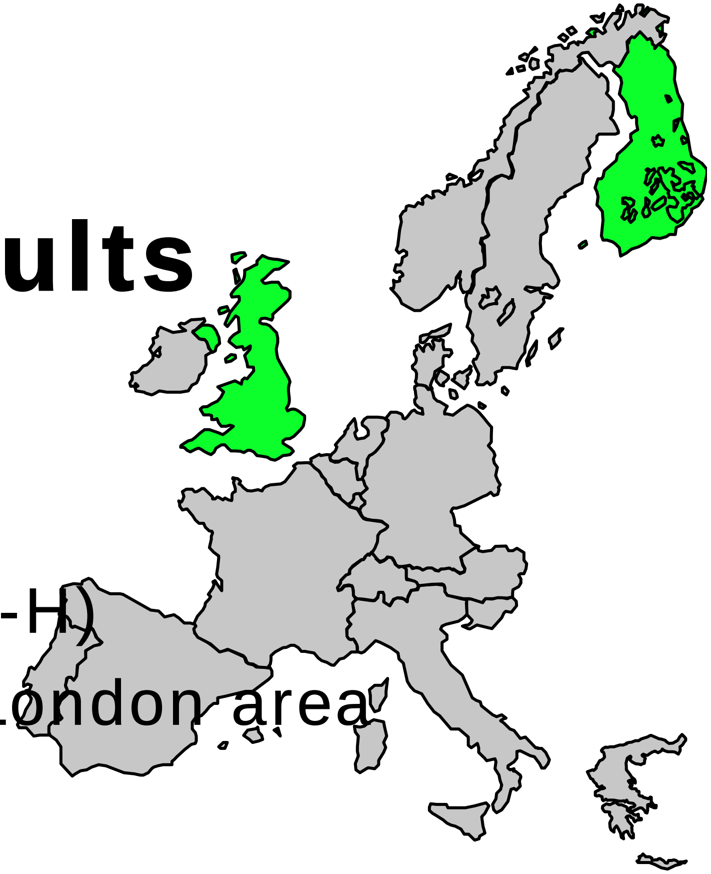
- Video Clip Playlist
  - Communities send and schedule video clips, and offer additional services for interaction channel
- Local MMS News
  - Users send their own pieces of news, i.e. videos, images or texts, from their camera phone
- Event Specific Broadcast
  - MobileMonday Global Summit 2006
- Enhanced Radio
  - Visual elements, e.g. artist images and additional information, automatically combined with regular radio

Research results

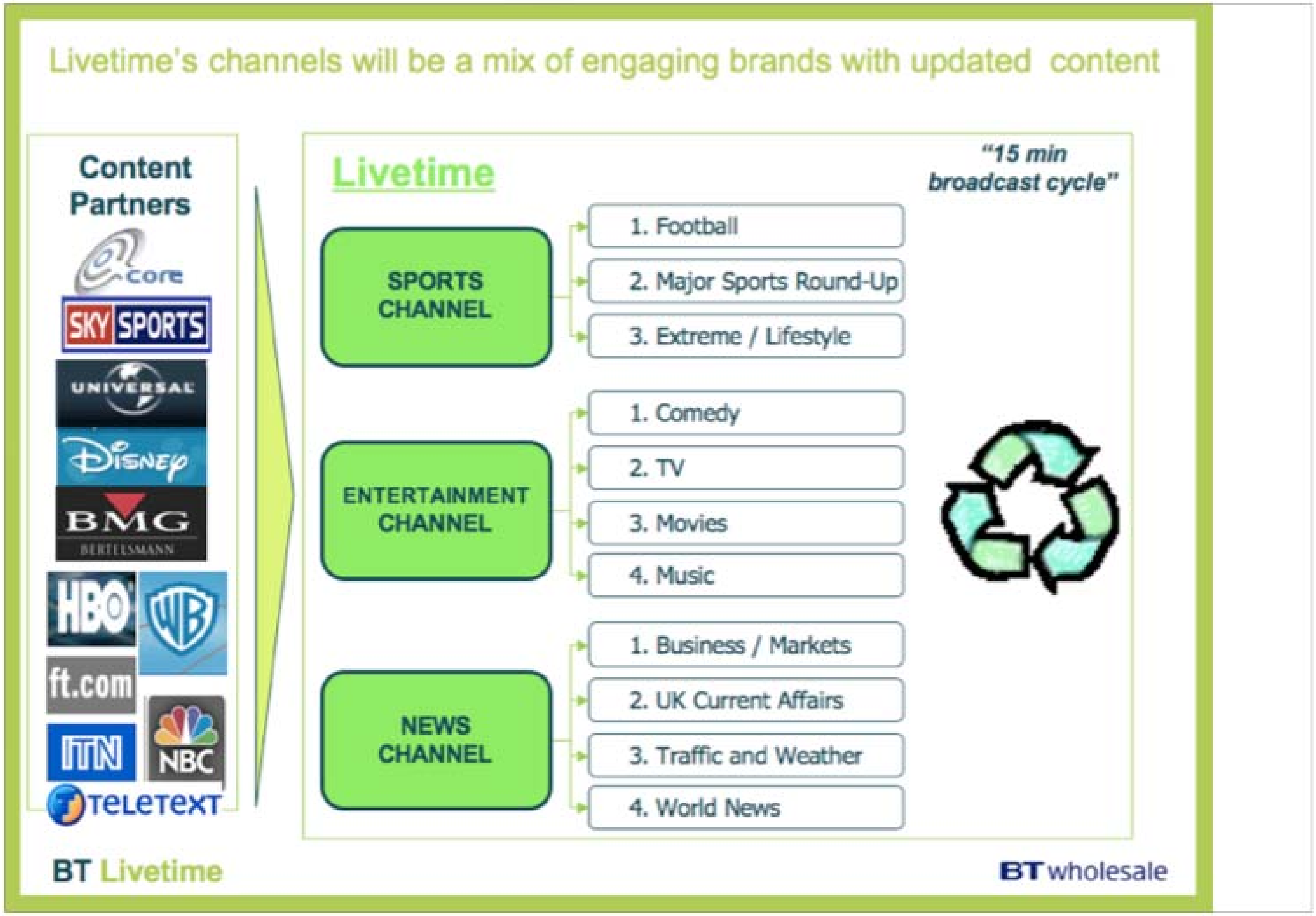
Two UK trials:

O2 in Oxford (DVB-H)

BT Wholesale (DAB-IP) in London area



BT Livetime (1st trial)



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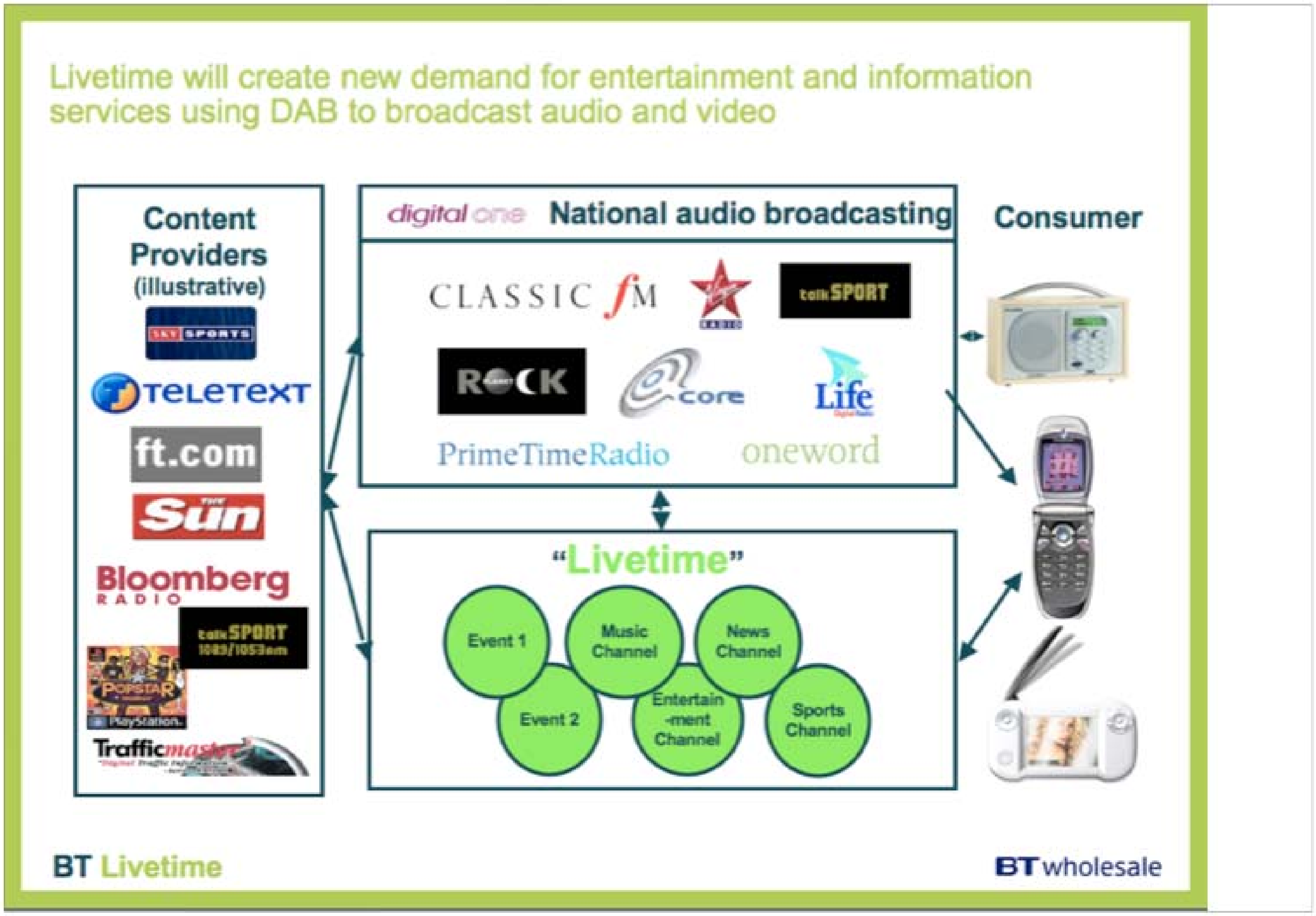

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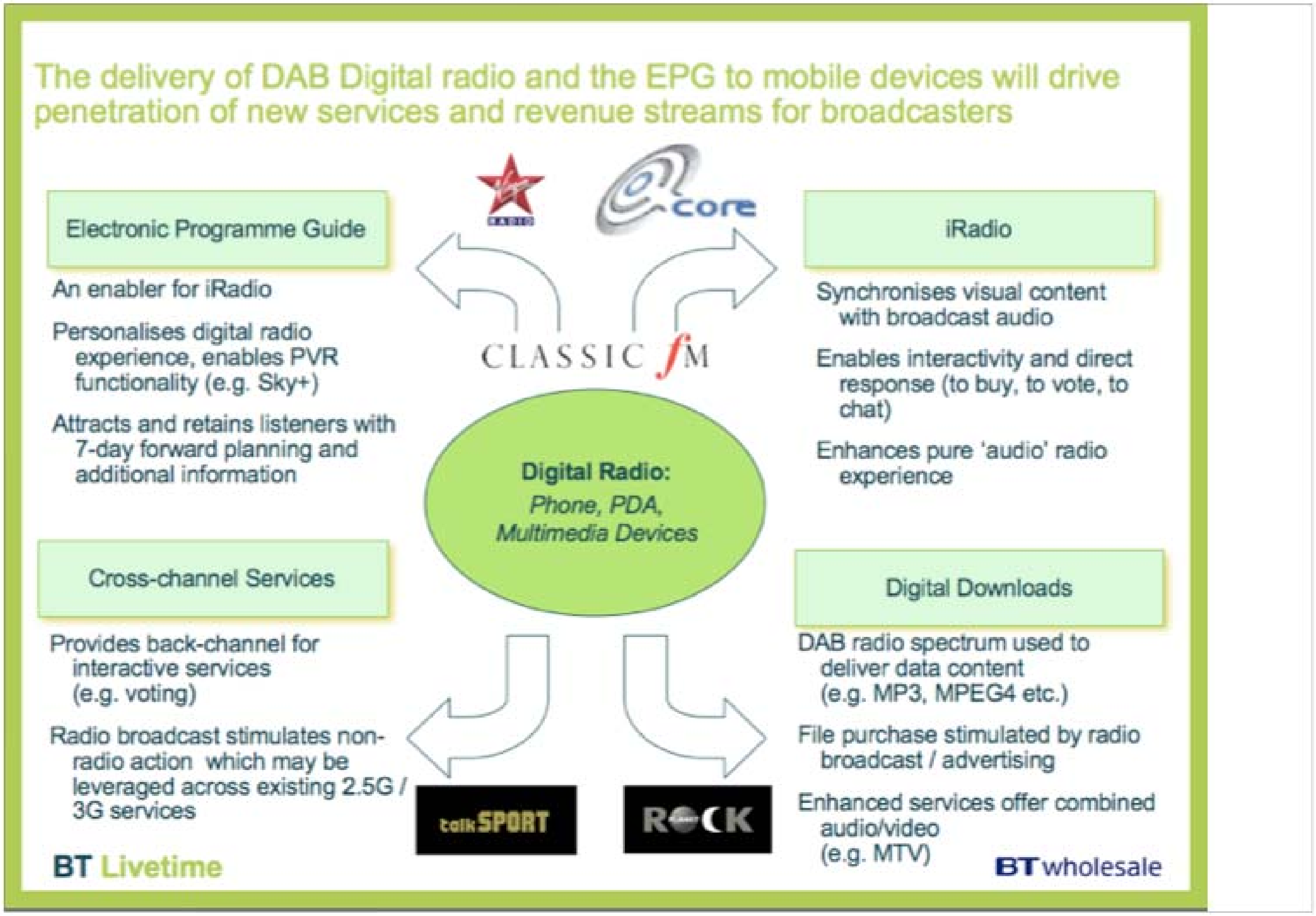

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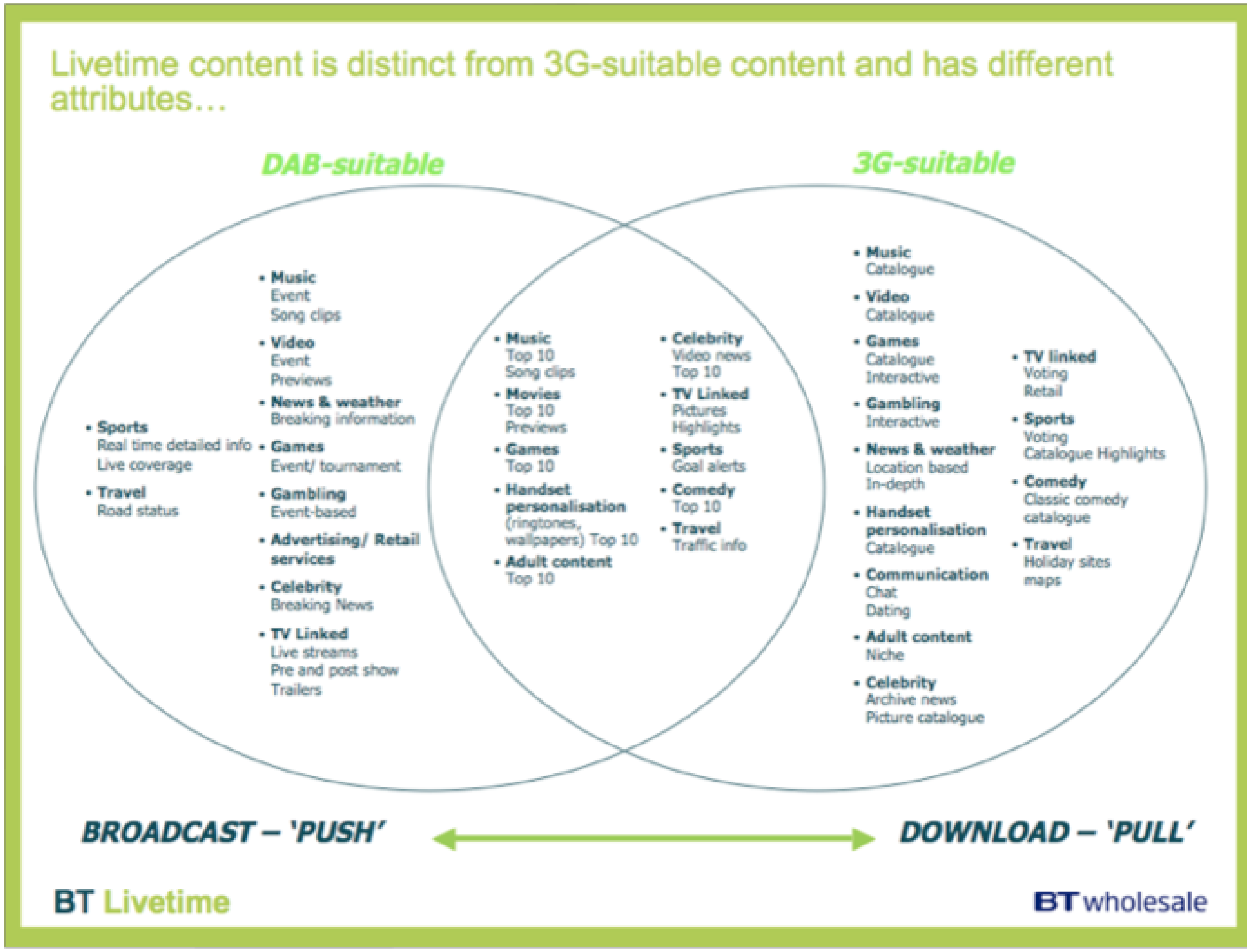

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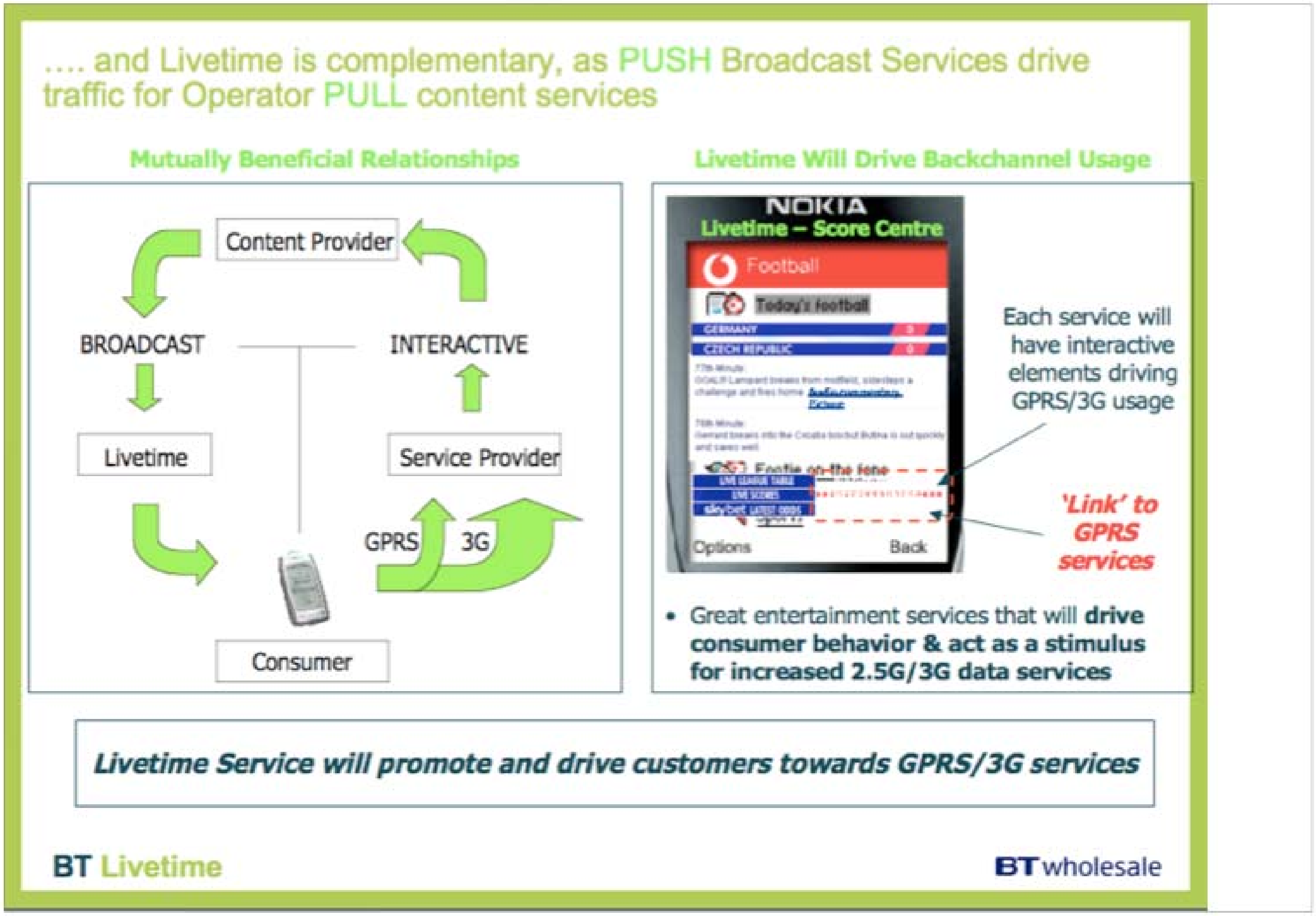

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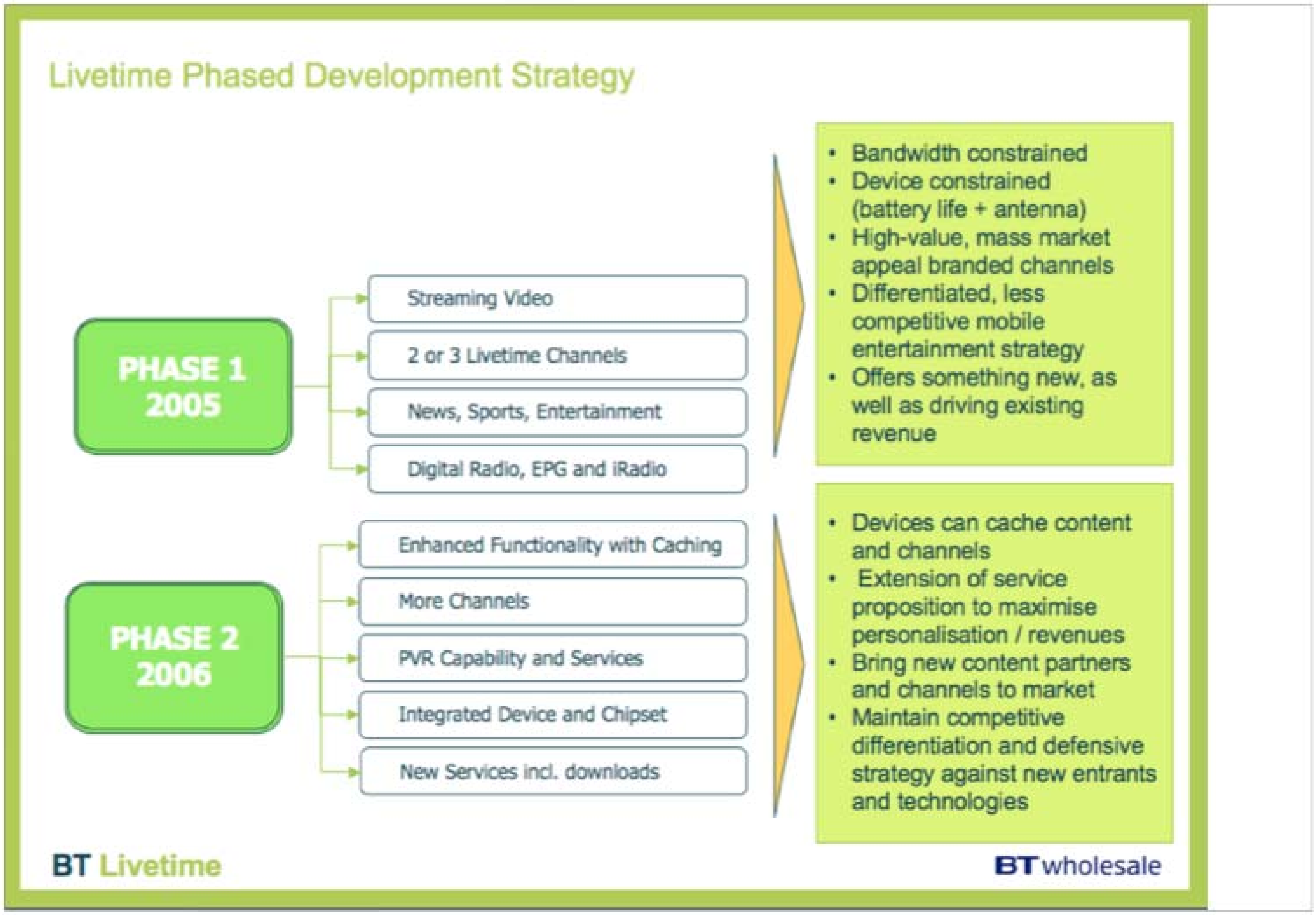


The results of the first trial

Pilot Overview

BT movio

First ever European Pilot of DAB-IP Mobile Broadcast TV

Key Pilot Objectives:

- *Proving the technology and quality of service*
- *Understanding consumer thirst for Mobile Broadcast*
- *Desired content and usage behaviours*
- *Propensity to pay*

Pilot Structure and Details

- Pilot ran from June to December 2005
- 1000 pilot users within the M25 using an enhanced DAB network
- Fully encrypted broadcast video (TV) channels
- Access to ~50 DAB radio stations
- Interactive “Red Button” functionality
- 7 day rolling Electronic Programme Guide

The results of the first trial

DR

Key Pilot Findings

BT movio

- Two-thirds of pilot users indicated they would pay up to £8 per month for the service on their current network
- Over a third of pilot users would be willing to leave their current network to get the service
- During the pilot
  - TV was watched for an average of 66 minutes per week
  - Radio was listening to for an average of 95 minutes per week
- *In total, TV and Radio services were consumed for an average of 2 hours 41 minutes*
- 54% would buy a mobile phone which supported the service
- 59% of respondents rated the service as appealing or very appealing
- 63% would recommend to family and friends
- Results were consistent across demographics (age/gender/mobile phone spend/contract type)

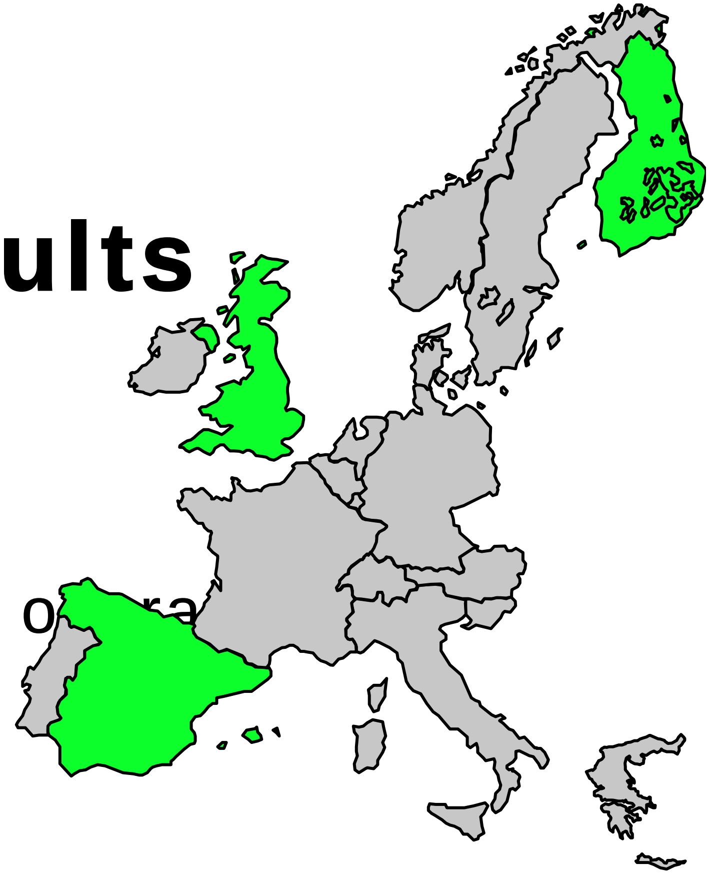
BT

Research results

Spain:

Results for three different o ra

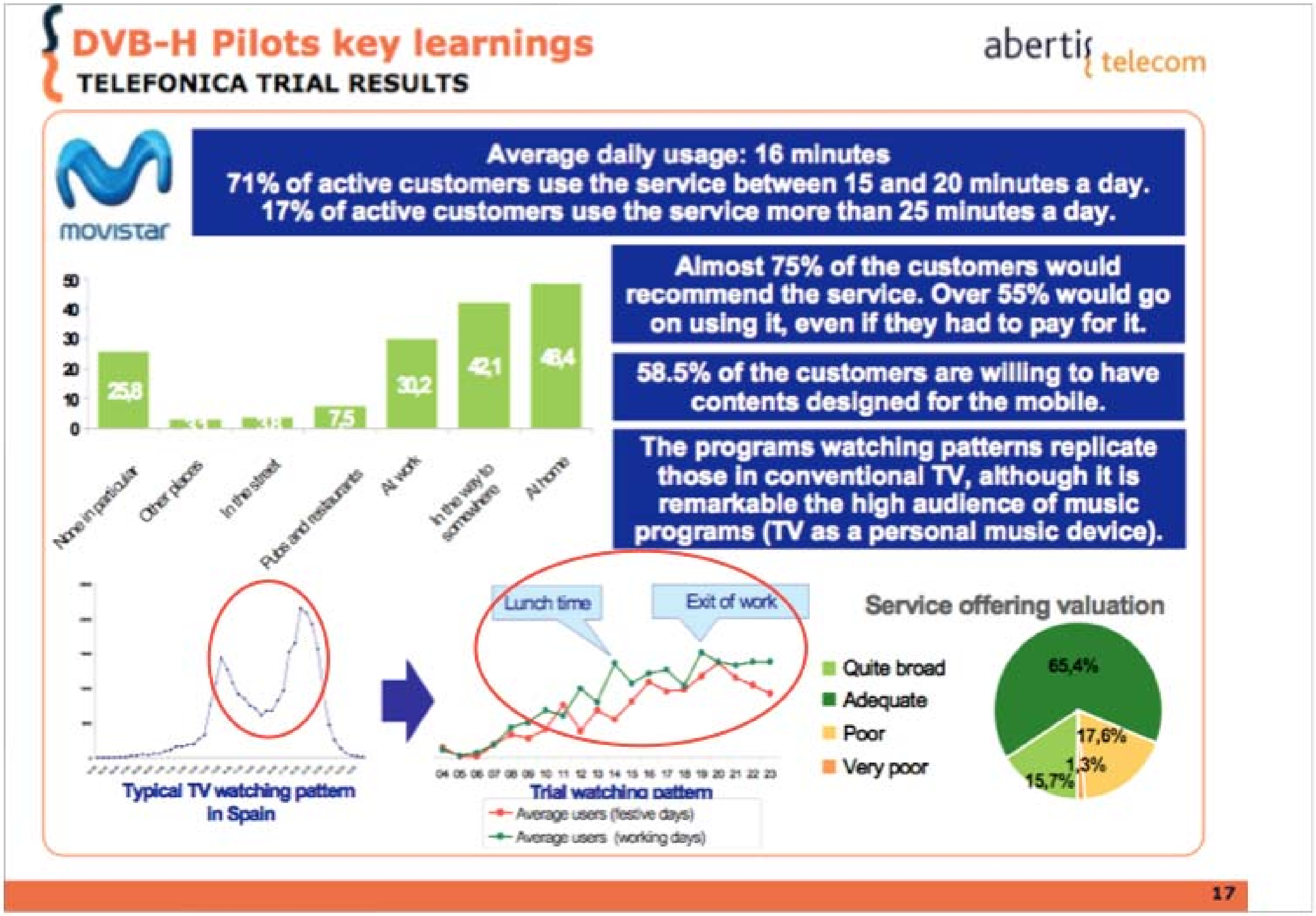
Using DVB-H



Spain


DVB-H Pilots
ROLL-OUT EXPERIENCE
abertis telecom
Abertis sponsored Mobile TV trials with all mobile operators in Spain involving all national broadcasters.
amena
abertis telecom
movistar
abertis telecom
vodafone
abertis telecom
Gijón
Pilot Coverage DVB-H
abertis telecom amena NOKIA
Andorra
Zaragoza
Barcelona
Pilot Coverage DVB-H
abertis telecom NOKIA
Madrid
Spain
Valencia
Portugal
Pilot Coverage DVB-H
abertis telecom NOKIA
Sevilla
Image © 2005 MDA EarthSat
RTPA
cuatro
VEO
Antena 3
Sogecable
NET TV
Antena 3
cuatro
CNN+
3
JETIX
24
Sogecable
Antena 3
cuatro
Sogecable
NET TV
VEO
14

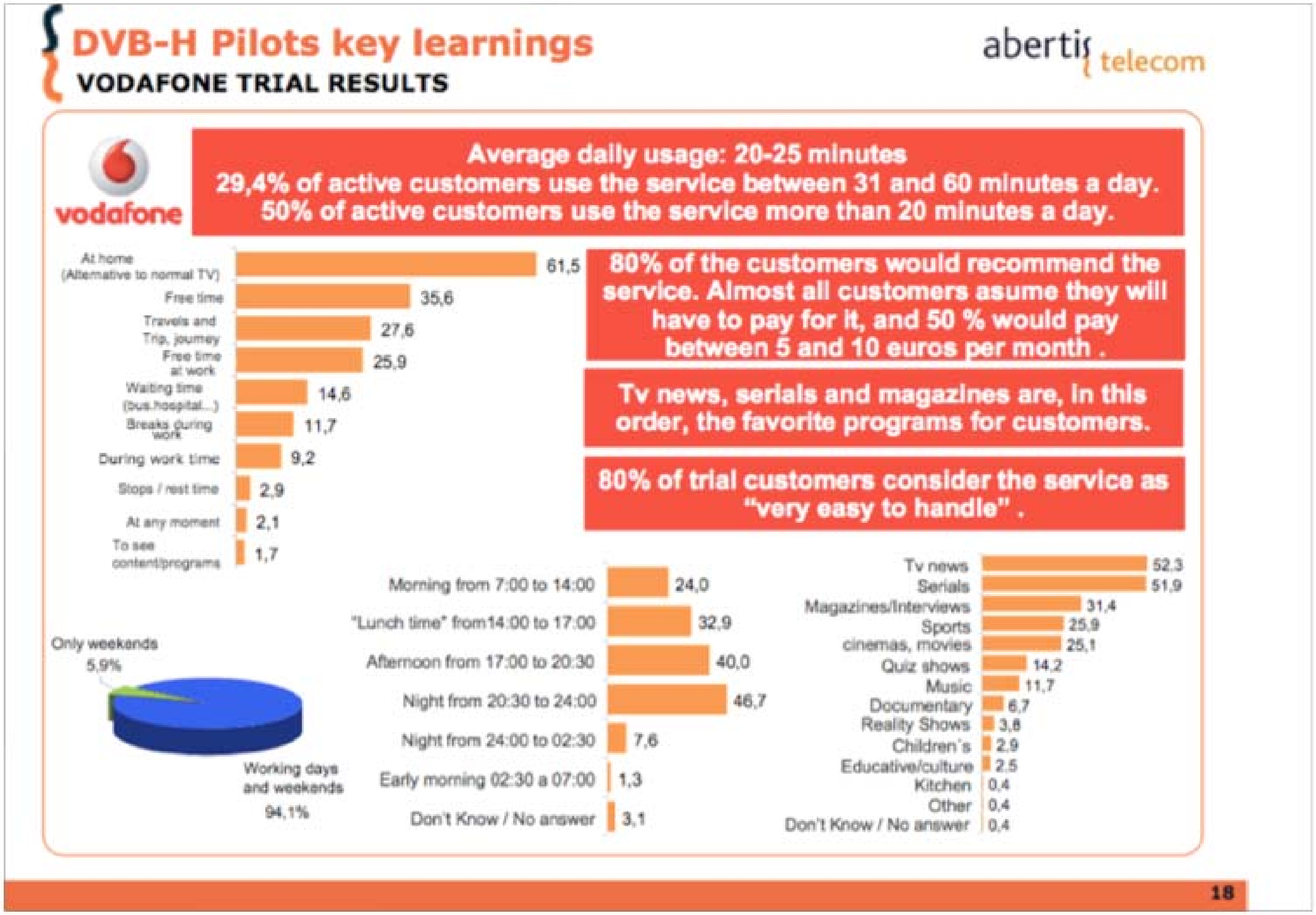
Spain



DVB-H Pilots key learnings
TELEFONICA TRIAL RESULTS
abertis telecom
movistar
Average daily usage: 16 minutes
71% of active customers use the service between 15 and 20 minutes a day.
17% of active customers use the service more than 25 minutes a day.
Almost 75% of the customers would recommend the service. Over 55% would go on using it, even if they had to pay for it.
58.5% of the customers are willing to have contents designed for the mobile.
The programs watching patterns replicate those in conventional TV, although it is remarkable the high audience of music programs (TV as a personal music device).
50
40
30
20
10
0
25,8
7,5
30,2
42,1
48,4
None in particular
Other places
In the street
Pubs and restaurants
At work
In the way to somewhere
At home
Typical TV watching pattern in Spain
Lunch time
Exit of work
04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Trial watching pattern
Average users (festive days)
Average users (working days)
Service offering valuation
Quite broad
Adequate
Poor
Very poor
65,4%
17,6%
1,3%
15,7%
17

Spain

DR



DVB-H Pilots key learnings
VODAFONE TRIAL RESULTS
abertis telecom
vodafone
Average daily usage: 20-25 minutes
29,4% of active customers use the service between 31 and 60 minutes a day.
50% of active customers use the service more than 20 minutes a day.
At home (Alternative to normal TV) 61,5
Free time 35,6
Travels and Trip, journey 27,6
Free time at work 25,9
Waiting time (bus.hospital...) 14,6
Breaks during work 11,7
During work time 9,2
Stops / rest time 2,9
At any moment 2,1
To see content/programs 1,7
80% of the customers would recommend the service. Almost all customers asume they will have to pay for it, and 50 % would pay between 5 and 10 euros per month .
Tv news, serials and magazines are, in this order, the favorite programs for customers.
80% of trial customers consider the service as "very easy to handle" .
Only weekends 5,9%
Working days and weekends 94,1%
Morning from 7:00 to 14:00 24,0
"Lunch time" from14:00 to 17:00 32,9
Afternoon from 17:00 to 20:30 40,0
Night from 20:30 to 24:00 46,7
Night from 24:00 to 02:30 7,6
Early morning 02:30 a 07:00 1,3
Don't Know / No answer 3,1
Tv news 52,3
Serials 51,9
Magazines/Interviews 31,4
Sports 25,9
cinemas, movies 25,1
Quiz shows 14,2
Music 11,7
Documentary 6,7
Reality Shows 3,8
Children's 2,9
Educative/culture 2,5
Kitchen 0,4
Other 0,4
Don't Know / No answer 0,4
18

Research results

3 Italia:

Regular DVB-H operati

Since May 2006

Italy

Italy – Mobile Media

Co...pany

Born in March 2003, 3 Italy reached major achievement in few years..

CUSTOMERS

- 5.6 million subscribers as of 31st December 2005
- 55% market share of the Italian UMTS market as of December 2005
- 2.8 million new subscribers in 2005

NETWORK

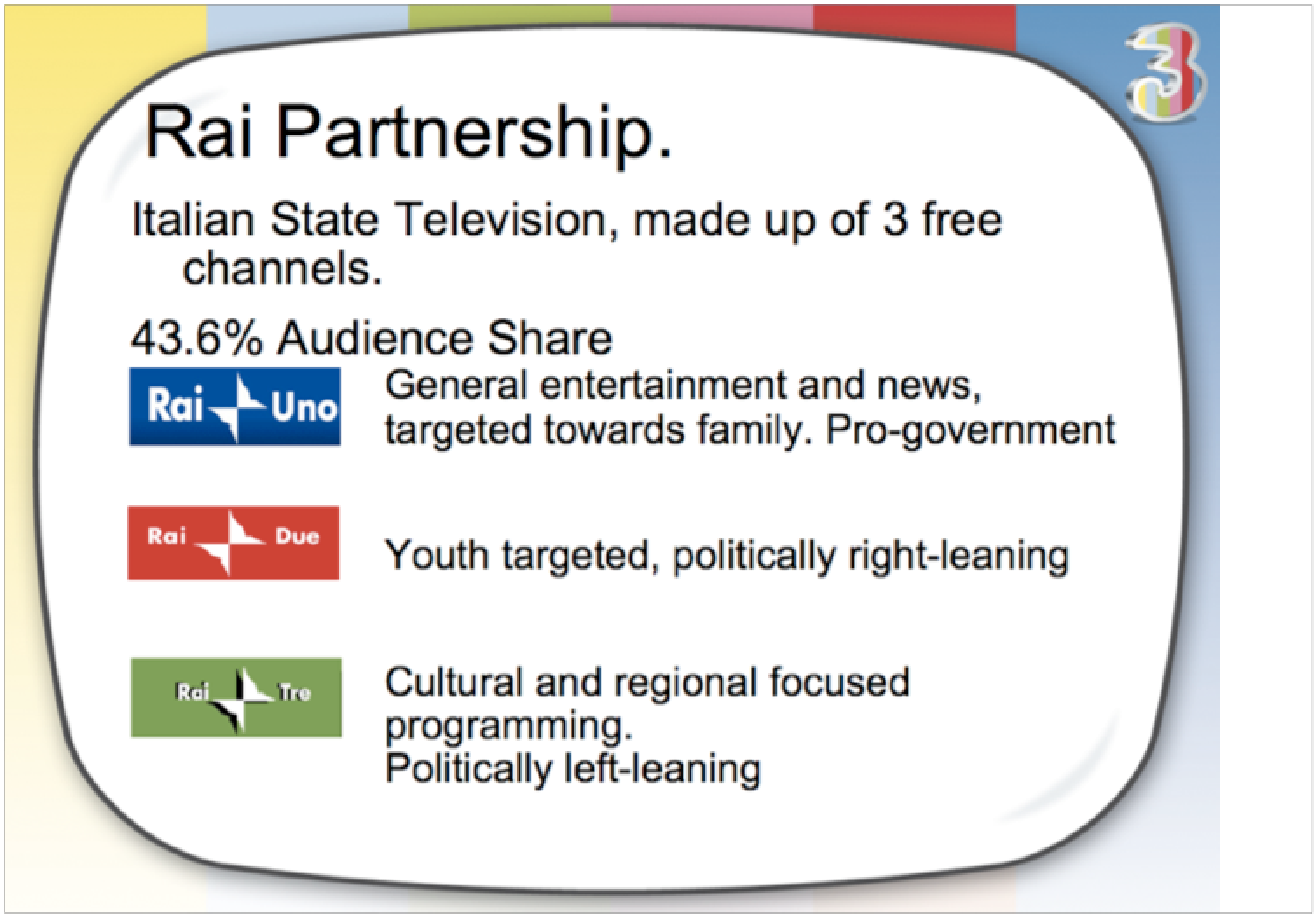
- 80% population coverage as of 31st December 2005 (99% with 2G roaming)
- 75% TV broadcasting coverage as of April 2006

ARPU

- €30.7 (FY '05), the highest of the Market
- 30% of ARPU from non-voice services (13% of ARPU from media services) as of 3Q'05 vs. 16% on average for the other players

Italy

DR

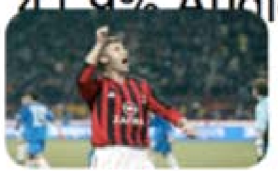

Rai Partnership.
Italian State Television, made up of 3 free channels.
43.6% Audience Share
Rai Uno
General entertainment and news, targeted towards family. Pro-government
Rai Due
Youth targeted, politically right-leaning
Rai Tre
Cultural and regional focused programming.
Politically left-leaning

Italy

Mediaset Partnership.

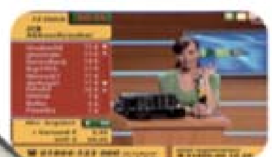
Top private Italian company in TV media sector.

41.9% Audience Share



The very best of Mediaset's programming including:

- The best from Canale5, Rete4, Italia1
- Football Serie A
- Moto GP
- Top events, concerts, theatre



Italy

SKY Partnership.

Digital TV via satellite, launched in '03.

More than 3.6m subscribers

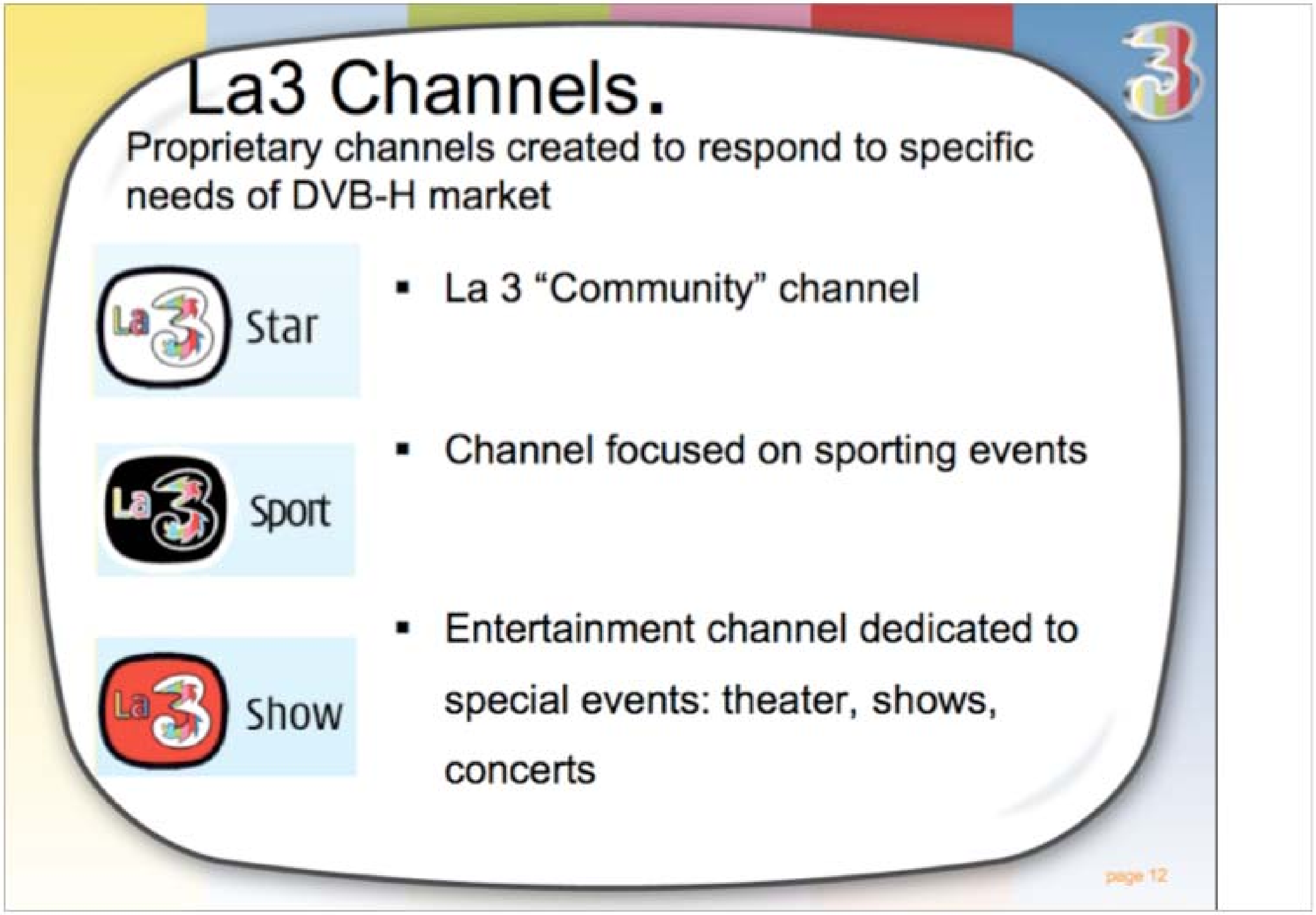
SKY CINEMA — The best cinema productions: the most recent to the classics

SKY SPORT — 24 hours a day – the most important competitions, championships and matches

SKY VIVO — All the top International and Italian reality shows

SKY TG24 — National and international news updates minute by minute

Italy


La3 Channels.
Proprietary channels created to respond to specific needs of DVB-H market
La 3 Star
La 3 "Community" channel
La 3 Sport
Channel focused on sporting events
La 3 Show
Entertainment channel dedicated to special events: theater, shows, concerts
page 12

Italy

H3G signed contracts with the biggest Italian content providers

H3G will produce four channels exploring new programme formats that will fit the DVB-H market

Italy

H3G developed strictly with the Handset providers to create a new type of pocket TV

Samsung Stealth

LG U900

Inch

Resolution: QVGA

Televoting: in real time

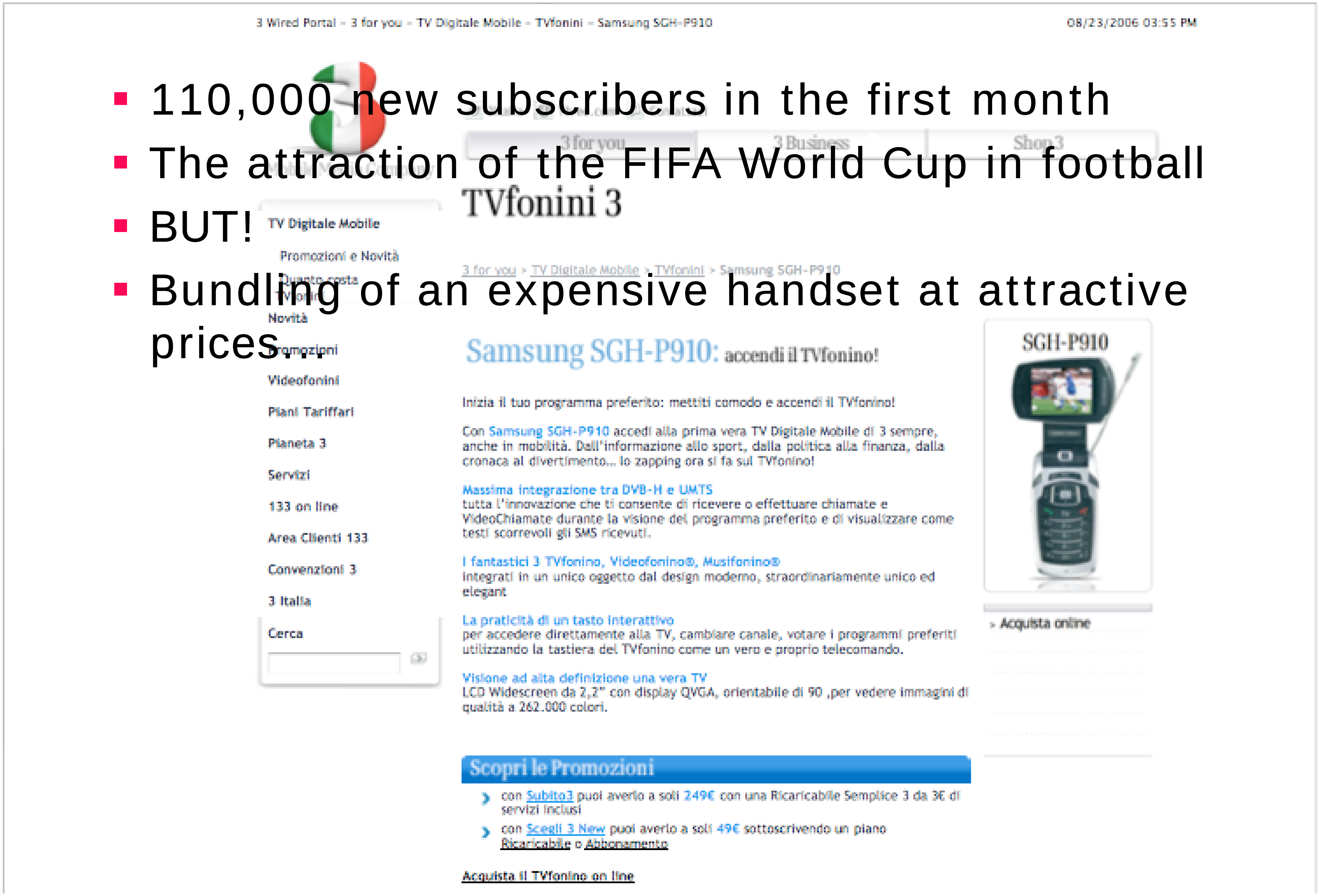
Inches

Resolution: QVGA

Televoting: in real time

Italy

- 110,000 new subscribers in the first month
- The attraction of the FIFA World Cup in football
- BUT!
- Bundling of an expensive handset at attractive prices…



Other results

Mobile TV

- Norwegian Broadcasting Corporation, NRK has streamed TV to mobile phone since 2004

- Live streaming of both NRK1 og NRK2

- Sport events is probably the most popular content
  - Winter Olympics (on demand / live)
  - Goals (on demand)
  - The ability to fit the content to the platform is vital

NRKs 3g mobile TV test
Winter olympics, Torino 2006

- Two live streams
- Highlights and round ups on demand
- NRK.NO internet
  - About 450.000 started streams
- WAP.NRK.NO mobile internet
  - About 220.000 started streams

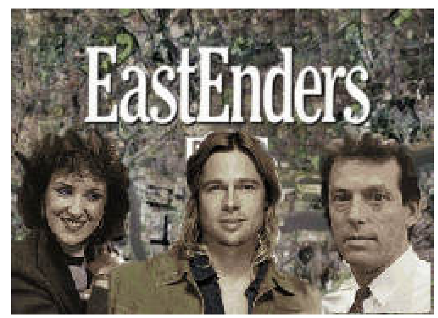
NRKs concept for fitting content to the small screen

- Soccer goals on demand are also pretty popular

The sequence is cropped for optimal viewing on small screens

Other indications

- Oxford trial indicates that news, sports, soaps, music and documentaries were popular content (January 2006).
- 3 Denmark reports an above-average interest in the TV2 package during Tour De France (sports)



the MTV strategy

MTV has a strategic focus on mobile television

1. **popular shows from TV**
2. **Added value**: behind the scenes, previews, out-takes, content also known from DVD market.
3. **Original programming**, eg. shows designed for mobile television.

source: Gideon Bierer, MTV

What have we learned?

What have we learned?

Where do people use personal pocket media?

- They are used more at home than on the move
- At home there is competition from ordinary TVs, laptops and other devices - so why watch on a mobile?

What do users expect?

- It's both about killing time, keeping updated and ”must see” programmes
- Radio is used as least as much as TV
- People expect to see existing TV channels on TV and not just looped content
- People are willing to pay - but not a lot

What are the problems? 1 / 2

On the move

- A typical session length is 7 minutes - so how does this match with normal programmes?
- Why do people ask for TV channels rather than looped content (NVOD) or on demand content?
- What is the balance between time-killing and keeping people up-to-date?
- Time killing is in competition with iPods and handheld devicesfor playing games
- Keeping up-to-date is a competition between the Web, TV and radio
- Is there a viable business model for live personal pocket media?

What are the problems? 2 / 2

At home

- Why do people watch on a pocket device at home?
  - Novelty?
  - Flexibility?
  - Individual viewing in a social context (with other people in the room)?
  - Built-in participation?

Right now we don’t really know

What still needs investigating?

What still needs investigating?

Personal pocket media in the home

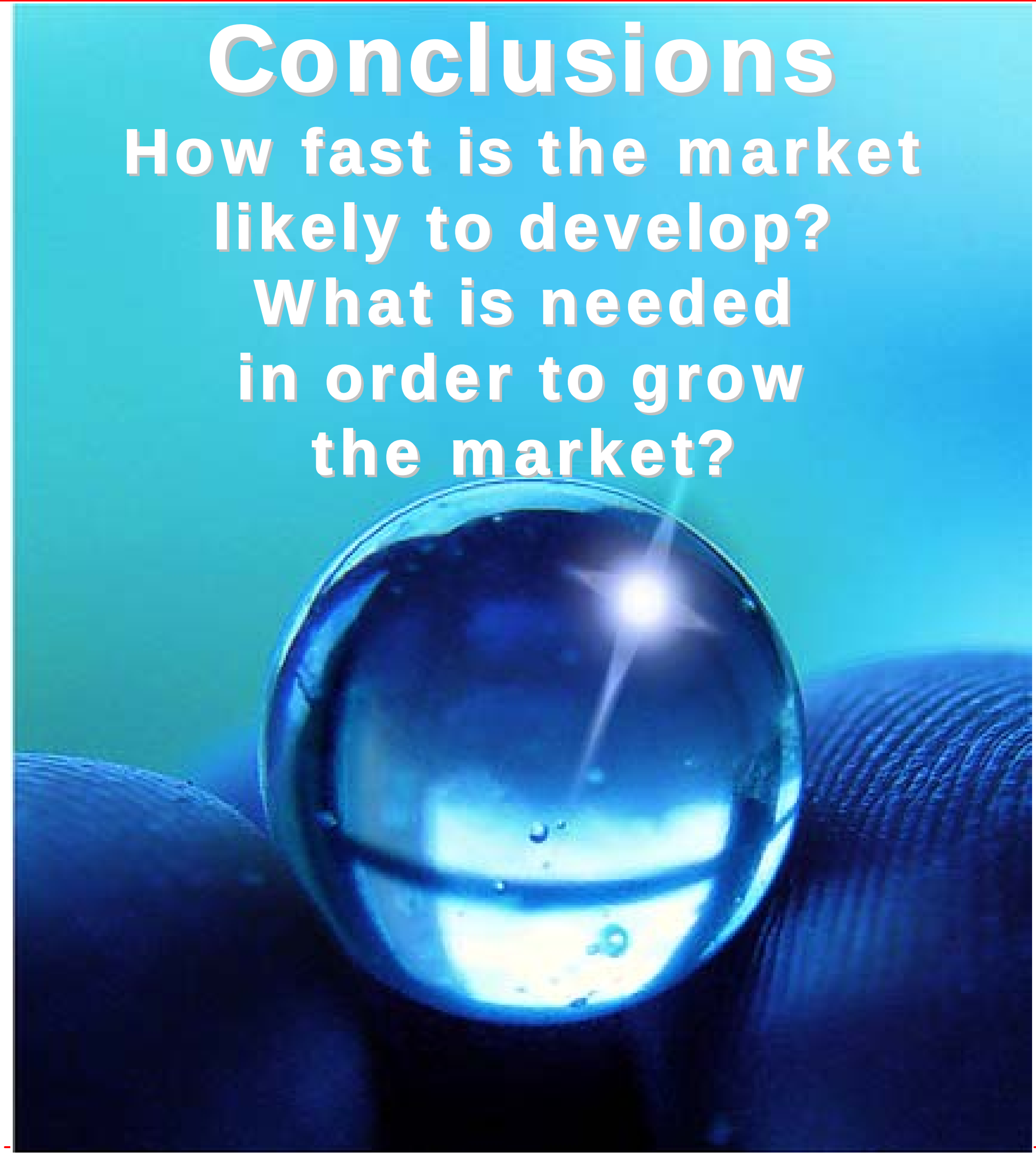
- What are the needs and gratifications driving this use?

Personal pocket media on the move

- How important is keeping up-to-date for ordinary people, not business people?
- Is there a viable market for up-to-date services, not just time-killing given the competition from pod- and vodcasting, games and other devices?

Business models

- How is going to pay for the infrastructure?
- Is there a good case for pperonal pocket media justifying the initial investment and running costs?


Conclusions
How fast is the market
likely to develop?
What is needed
in order to grow
the market?

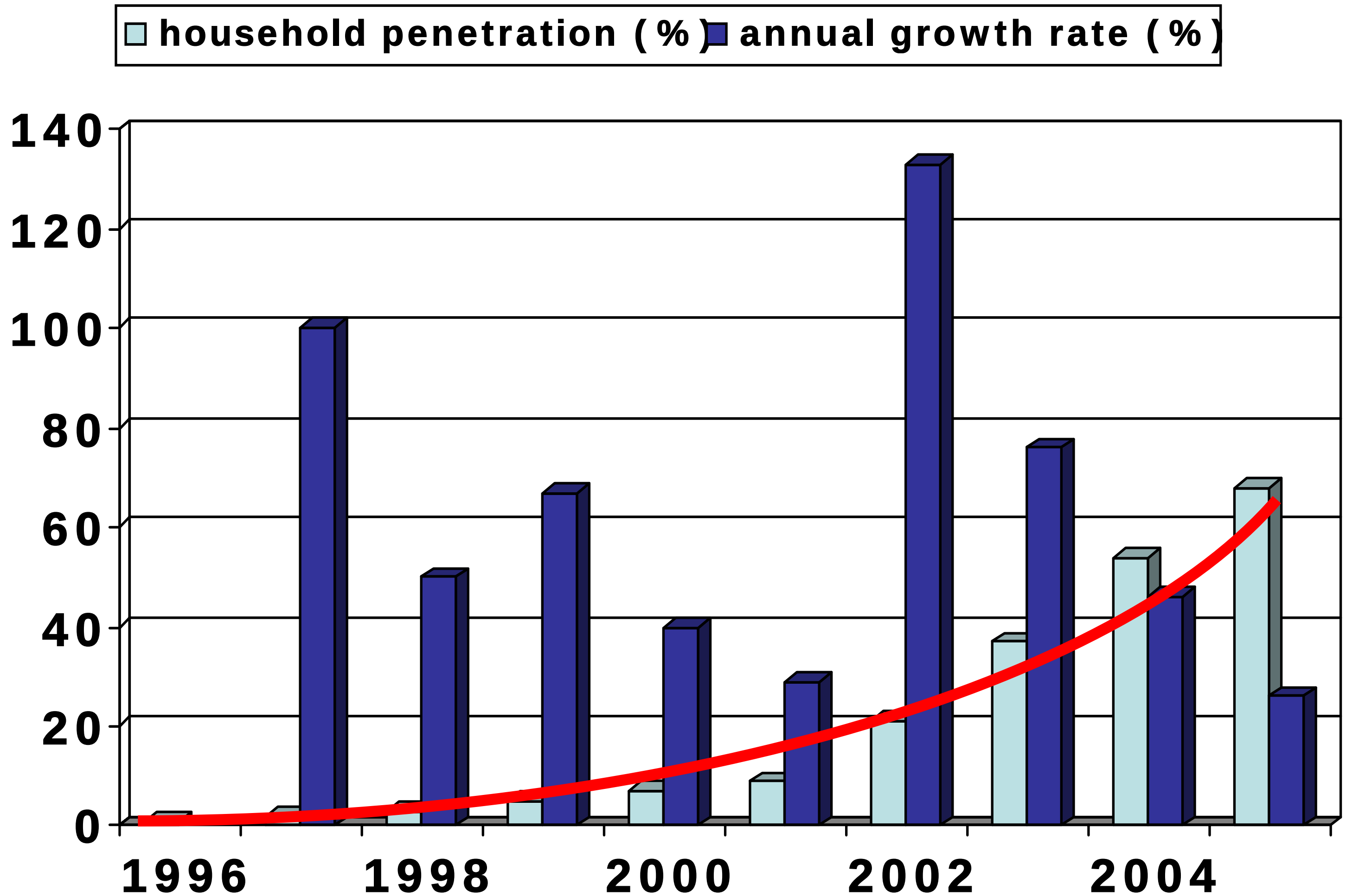
The demand for B2H

How much are they willing to pay?

- Subscription seems the best bet
- For commodities, unlikely more than EUR 7-10 per month [HKD 70-100/month]

The vexing question of timing...

How fast will B2H move compared with, say, DVD?



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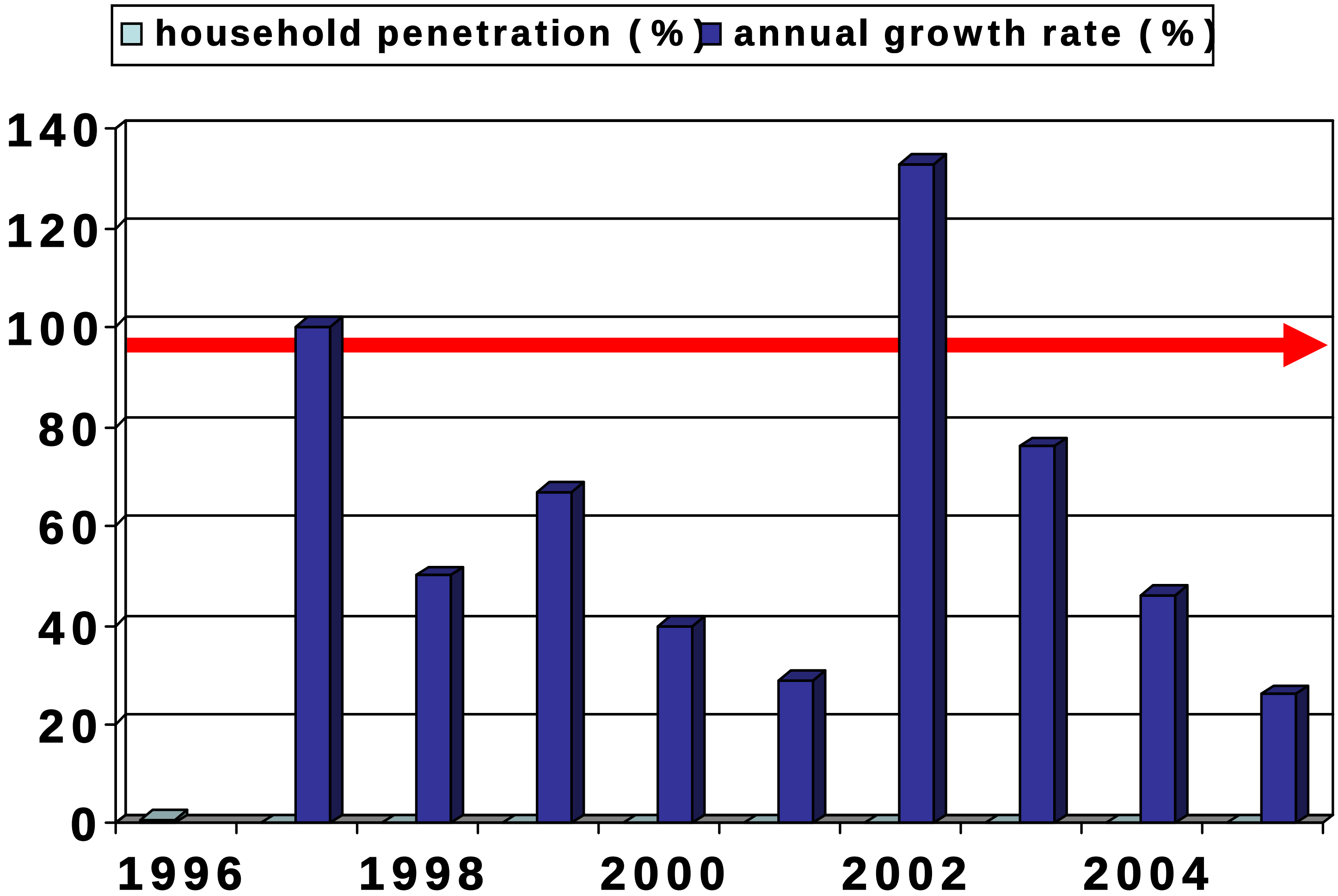
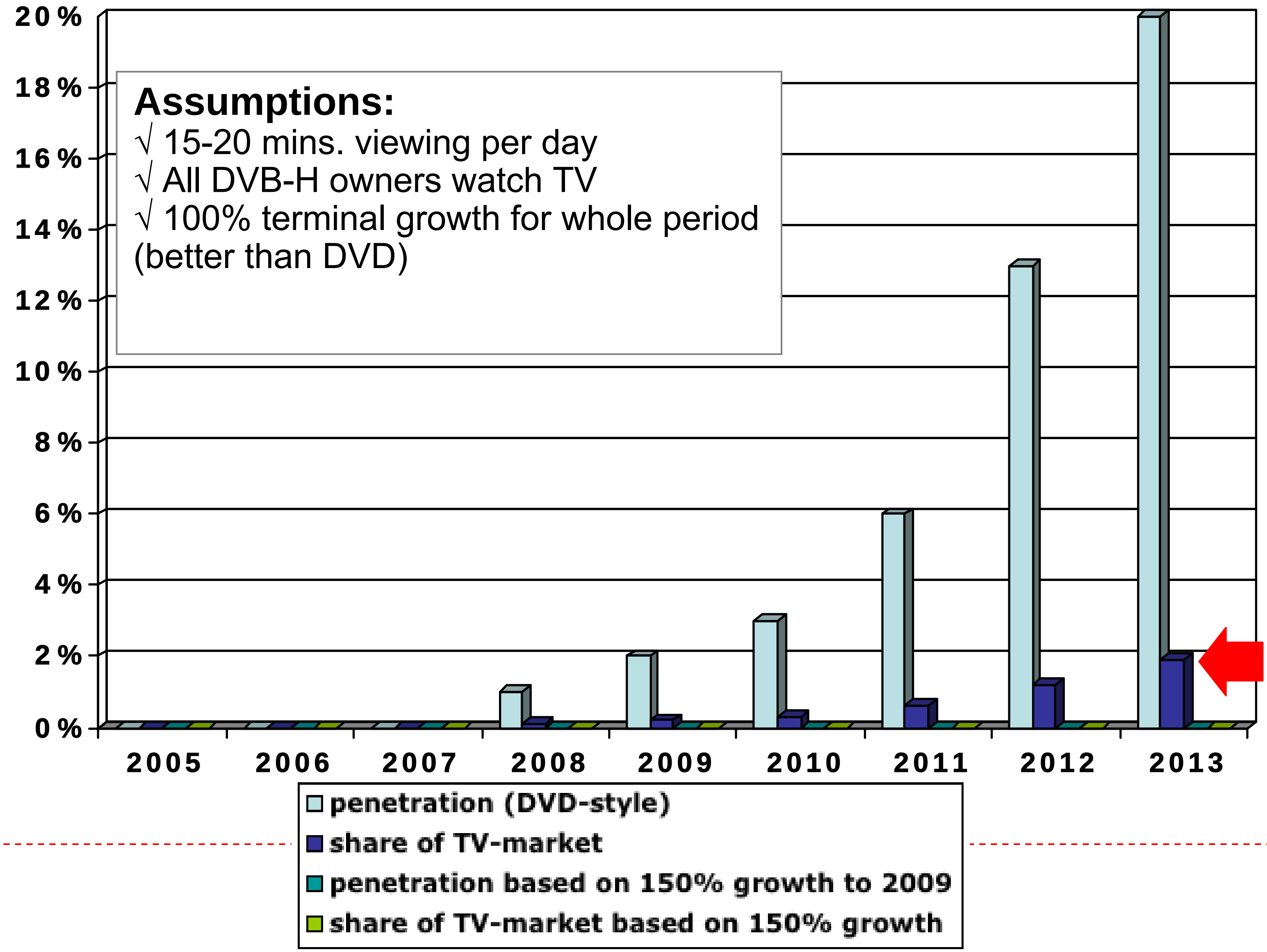


DVB-H take-up and viewing share

Our guestimate for Denmark



DVB-H take-up and viewing share

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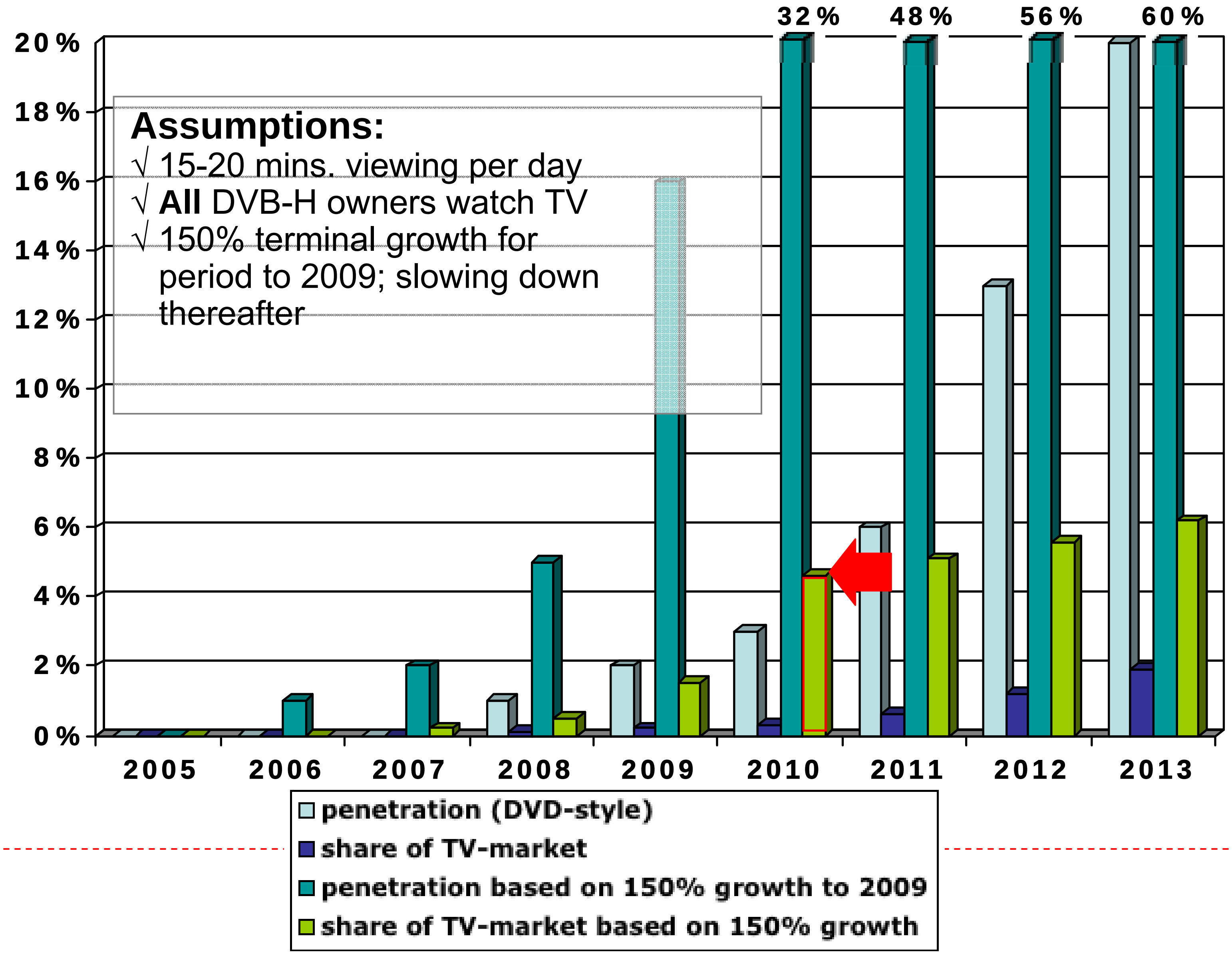
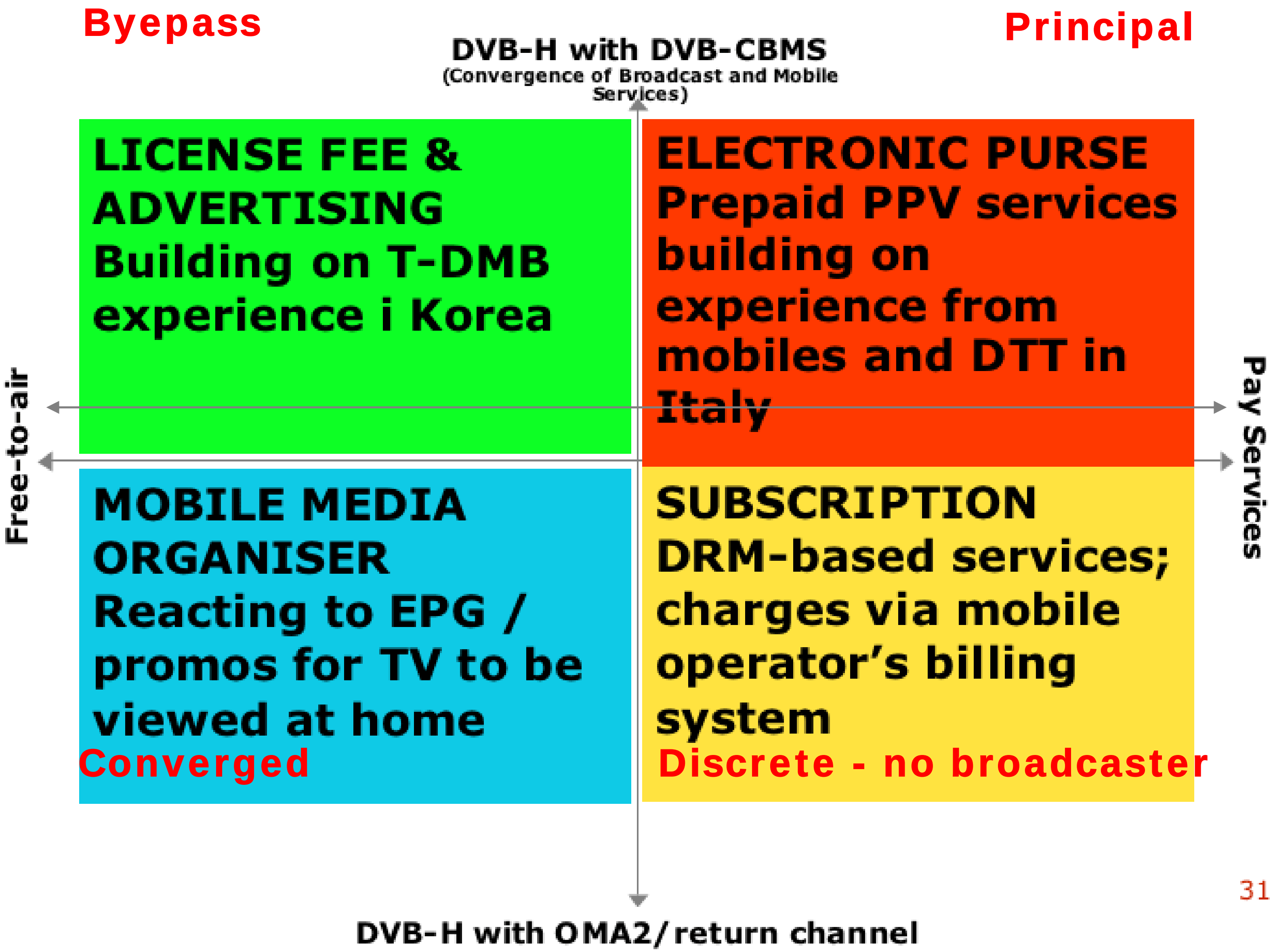


Business models

Mobile versus broadcasting?



Conclusions

- Mobile TV is going to happen - but perhaps not as fast as many would like
- We need to have a clearer idea of the kinds of content that lend themselves Mobile TV - and the competition from other personal pocket media - to to come up with sustainable business models
- There are many competitors in the ”On the Move” segment competing for a limited amount of time per day
- More R&D is needed on accessing and using content for Mobile TV - and the business models underpinning such services

Contact particulars

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