

DAB ROLL-OUT AROUND THE WORLD

August 2005

- Over 100 members from 30 different countries
- Encouraging rollout of DAB across the world
- Safeguard & developer of DAB standards
- Overseeing development projects - receivers, content, systems
- Providing industry updates
- Multimedia included in WorldDAB statutes in 2005

Quick Review of DAB!

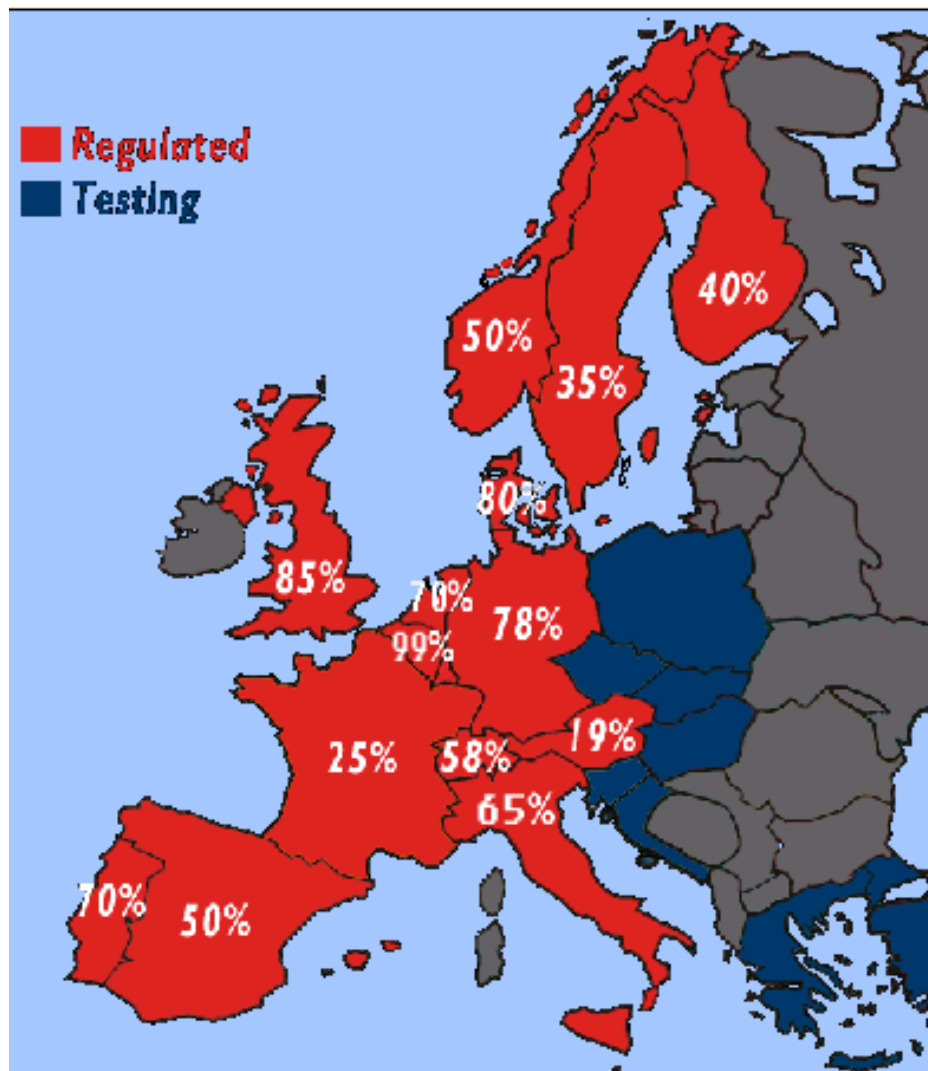
- Two routes DAB is taking - **both progressing synchronously!**
 - DAB - Digital Radio (audio and data services to replace current analogue offering)
 - Multimedia/video and convergence [DAB as a technology to transport content, to consumer products (telecoms/multimedia/video) or b2b for the mobile environment]
- More and more countries actively promoting and seeing receivers enter the market - over 150 receivers commercially available.
- More and more trials and tests for DAB multimedia worldwide

DAB roll out – Worldwide Network Infrastructure

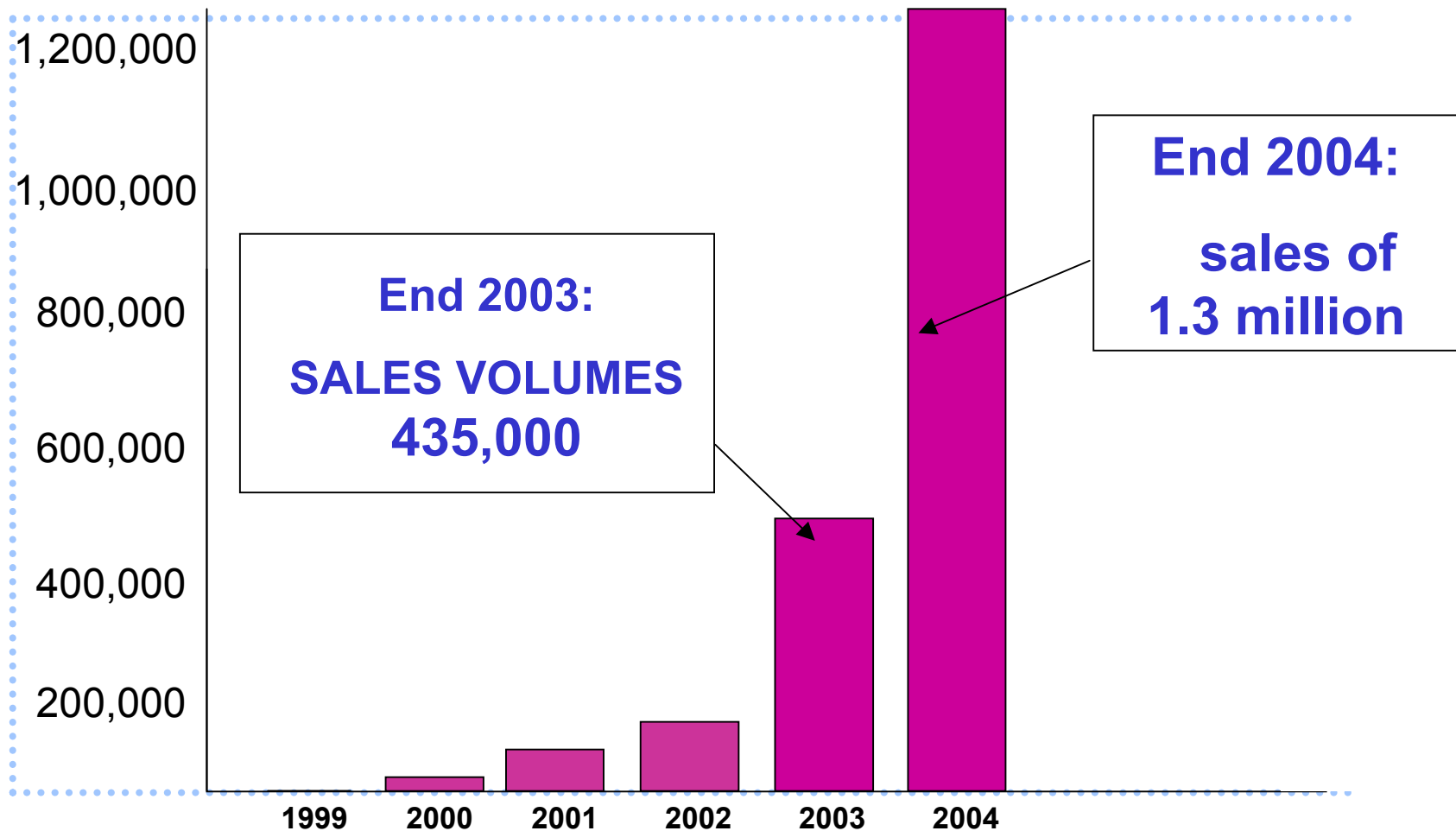
DAB on-air in nearly 40 countries



DAB Digital Radio in Europe



UK - rapid growth in 2 years



Other European Countries follow suit

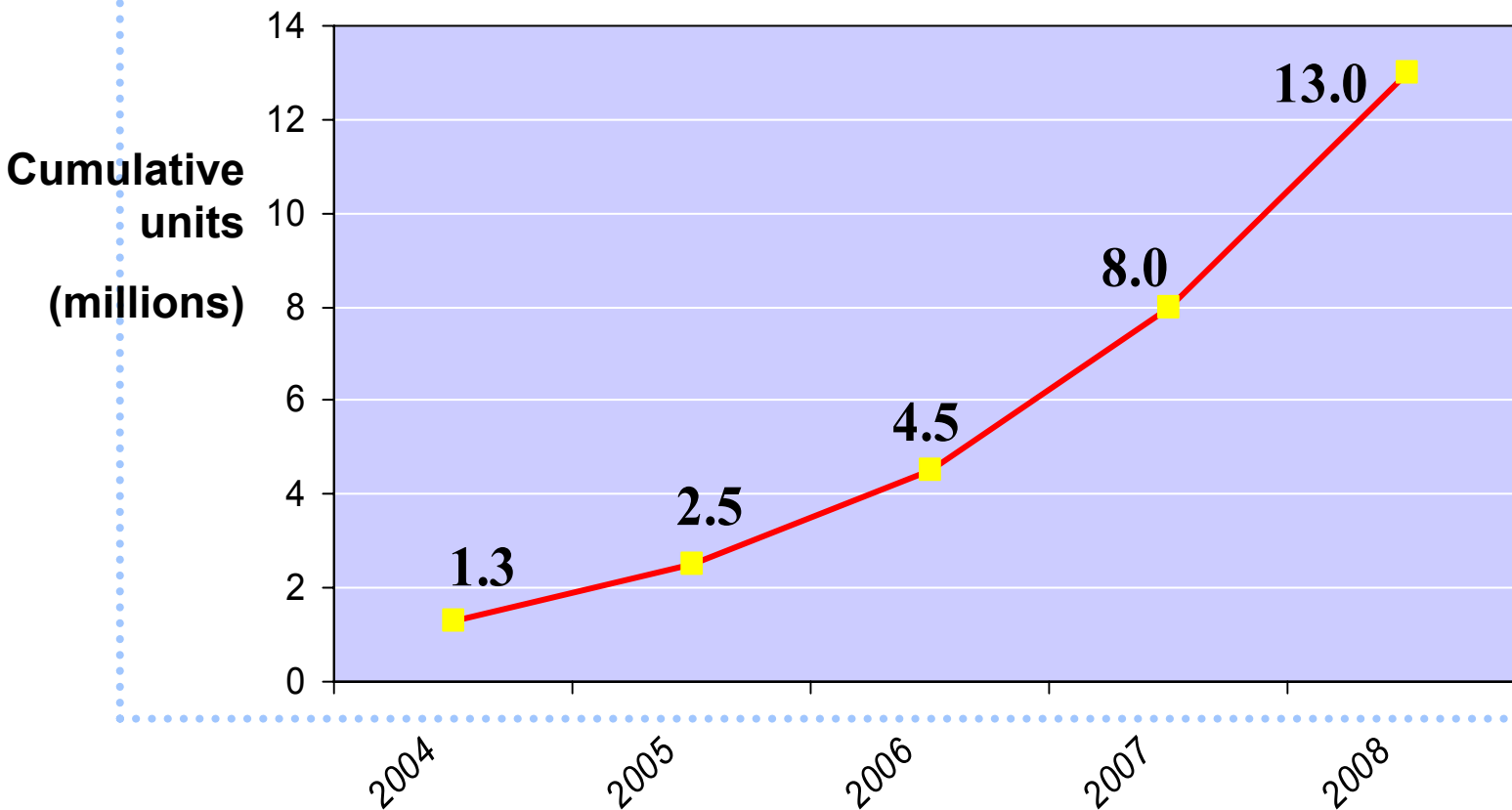
1st year that receivers are sold at affordable prices in other European countries and have experienced explosive growth rates...

Denmark increased from 6,400 at end of 2003 to 40,000 at end 2004 - **525 % growth rate.**

Belgium increased from 6,000 at end of 2003 to 30,000 at end 2004 - **400 % growth rate.**

UK - 5 year forecasts

13 million DAB sets (30% UK households)

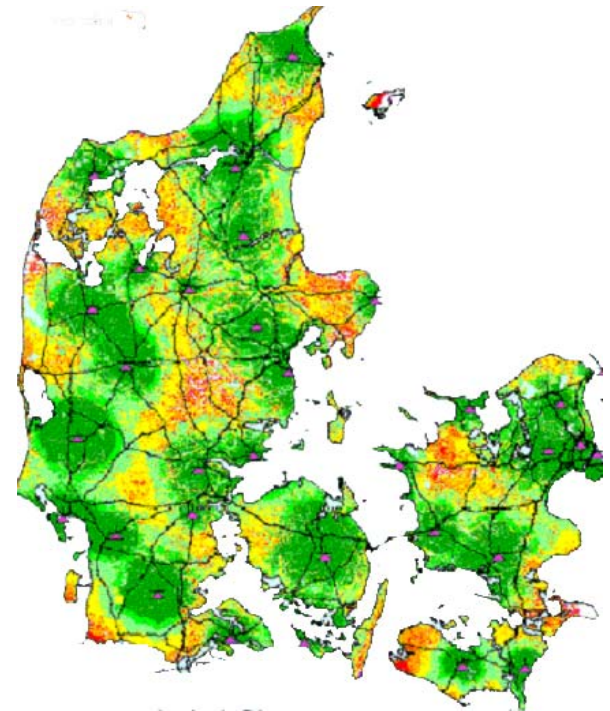


Europe - forecasts for DAB

- **European forecast ~ 40 million sales by 2010**
- 2005/06 growth in Germany, Denmark, Norway, Sweden, Belgium, Spain & Italy
- Multimedia devices & DAB in PDA/phones in 2006
- In-car market growth in 2006/07 - focus in Germany

Source: Eureka Research

- Coverage nearly 100% population
- Many new audio services on-air (18 DAB-only channels)
- Market launch in 2004
- Sales near 80,000 in 12 months



- Good Coverage ~70% population
- National & local audio services on-air
- Consumer launch Dec 2004
- Over 15,000 radios sold in few months



- 98% coverage
- 6,000 receivers by end 2003 -
30,000 receivers by end 2004!
- 10 DAB stations on air - 4 unique to
DAB

Flemish Community

- New DAB only services
- Retailers stocking receivers
- VRT marketing campaigns
- Dedicated web site www.dab.be

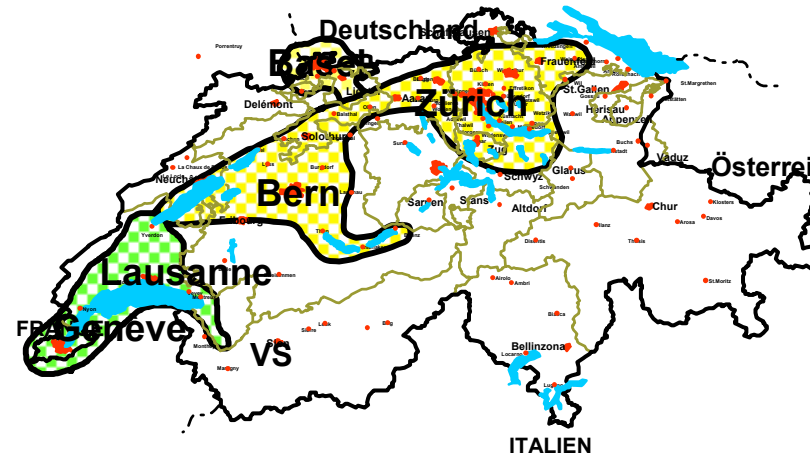


The Netherlands

- 70% coverage and 6 NOS services on air
- Two additional new NOS services in 2005 (text, EPG also to be added)
- Call for tender in Autumn 2005 - licences due spring 2006
- Shut off planned for 2019



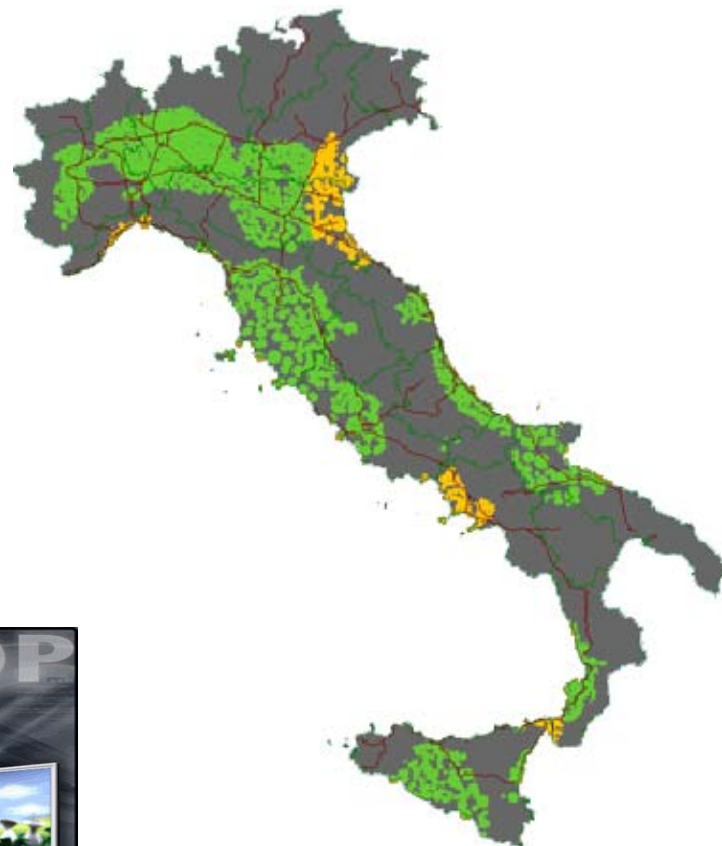
- 58% coverage with plans to extend
- 9 DAB services on air
- **Phase 1**
In 2004 public broadcaster broadcast language stations for all linguistic regions
- **Phase 2**
In 2005 to develop second multiplex with commercial broadcasters
- **Phase 3**
Develop third multiplex for nationwide use
- **Phase 4**
L-band for local use



- Coverage around 85% population
- Over 150+ audio services on-air
- Over 100,000 sets sold to date
- Focus: in-car & mobile devices

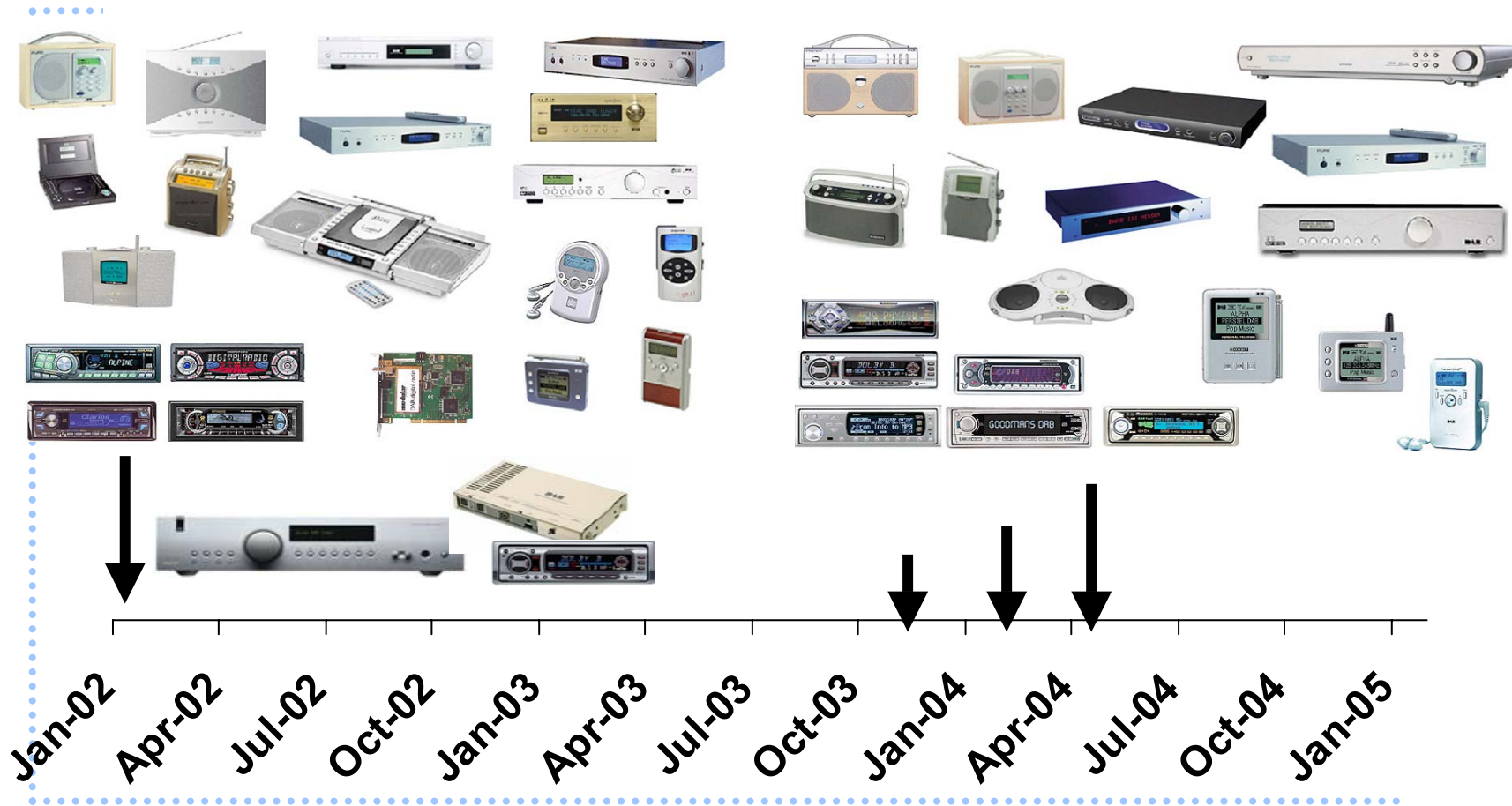


- Coverage now 65% population
- New regulation in place
- Multiplex consortia launching new services in 2005
- Market launch in 2005/2006 with strong sales growth expected



Rapid DAB receiver developments

DAB covers full range (~150 types)



Leading brands & form factors

Boomboxes

Bush



Goodman's

Kitchen radios



Sony



Panasonic



Roberts

Hi-Fi systems



Samsung



LG

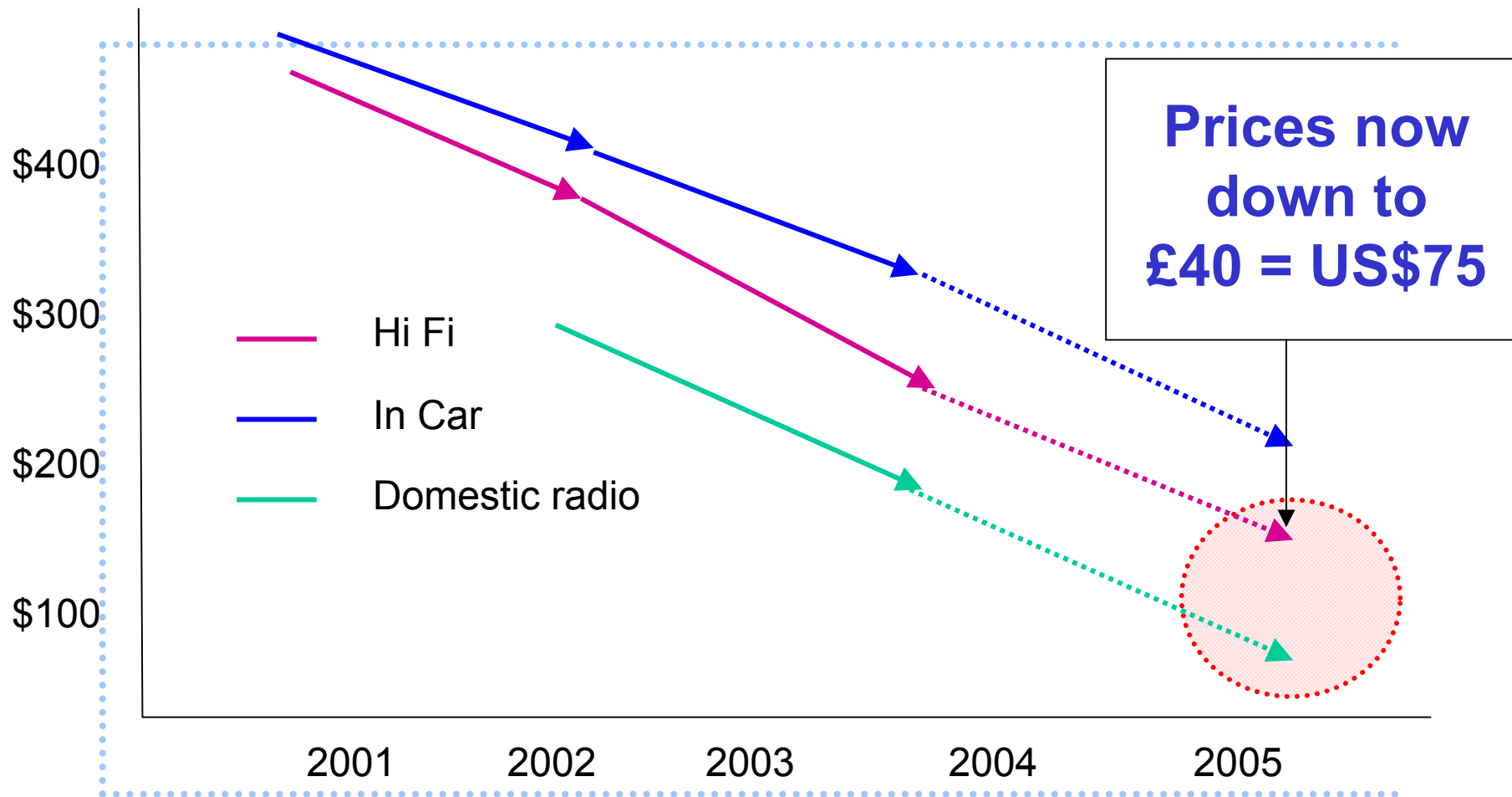


Panasonic



Goodman's

Prices falling to consumer



In-car DAB - Germany & UK

- In 2005 most car manufacturers are now offering DAB as upgrade option (GM, Ford, Volvo, Audi, VW, Jaguar, Land Rover, Mitsubishi, Renault, DaimlerChrysler)
- General Motors offer DAB as standard on UK models (plan rollout in Europe)
- By 2006/07 many manufacturers plan standard fit of DAB on various models



DAB in the world of Mobile Multimedia

DAB already becoming Multimedia

- In addition to many new Audio Services
- DAB already delivering PAD services - artist names, track titles, text information
- Shortly followed by Program Guides (EPG), Music Downloads, Graphics & Video Clips
- **DAB radios are becoming multimedia devices**

Increase in mobile DAB devices



DAB Audio Rewind/Store/Replay

- **Pause & Rewind**
- **Record & Replay**
- **Download to SD card**
- **USB connection**
- **Playback MP3 files**



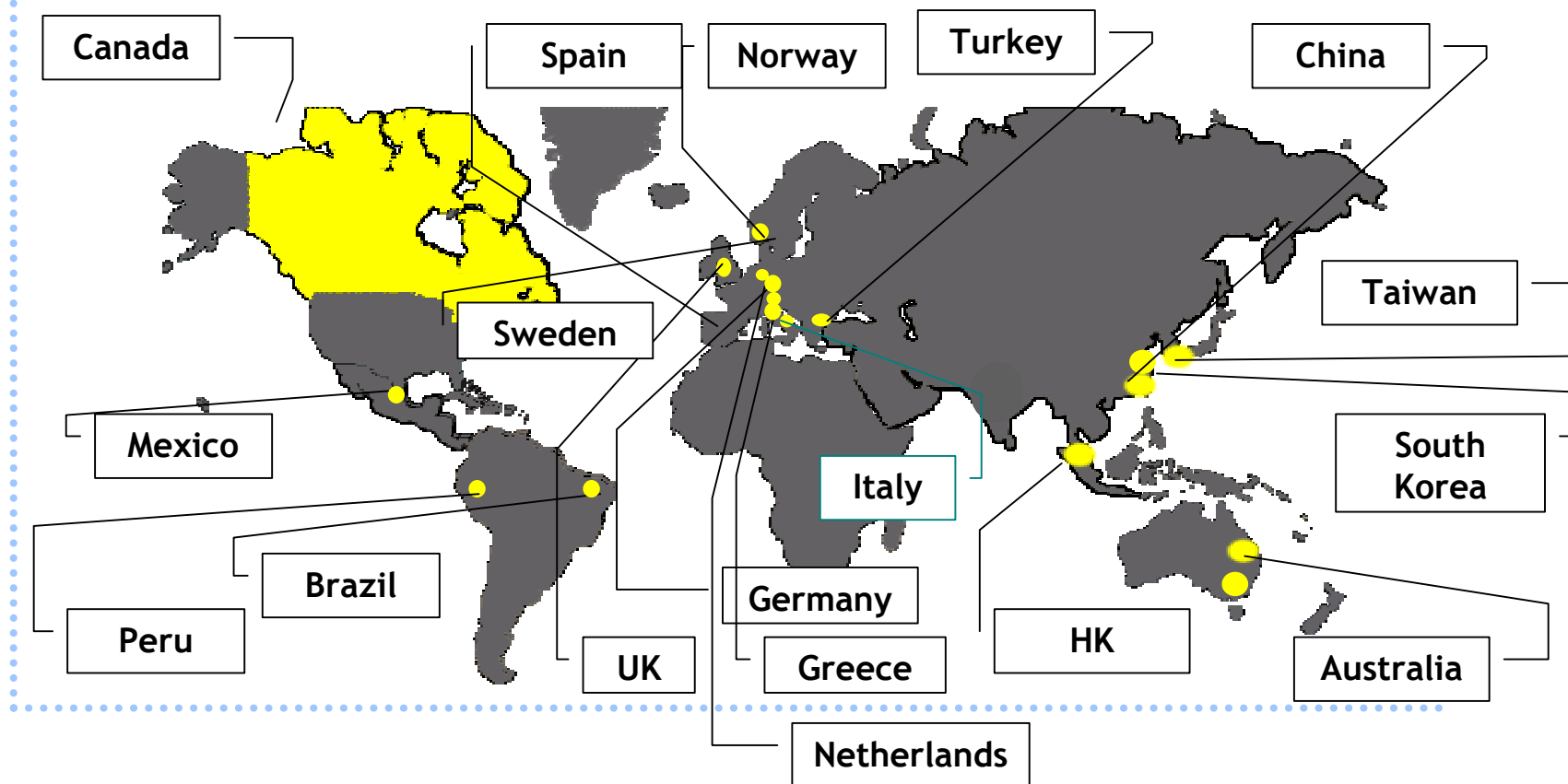
ROBERTS
Sound for Generations

PURE
DIGITAL



Worldwide DAB Multimedia projects

Many countries worldwide testing/trialling or plan trials of DAB multimedia broadcasts

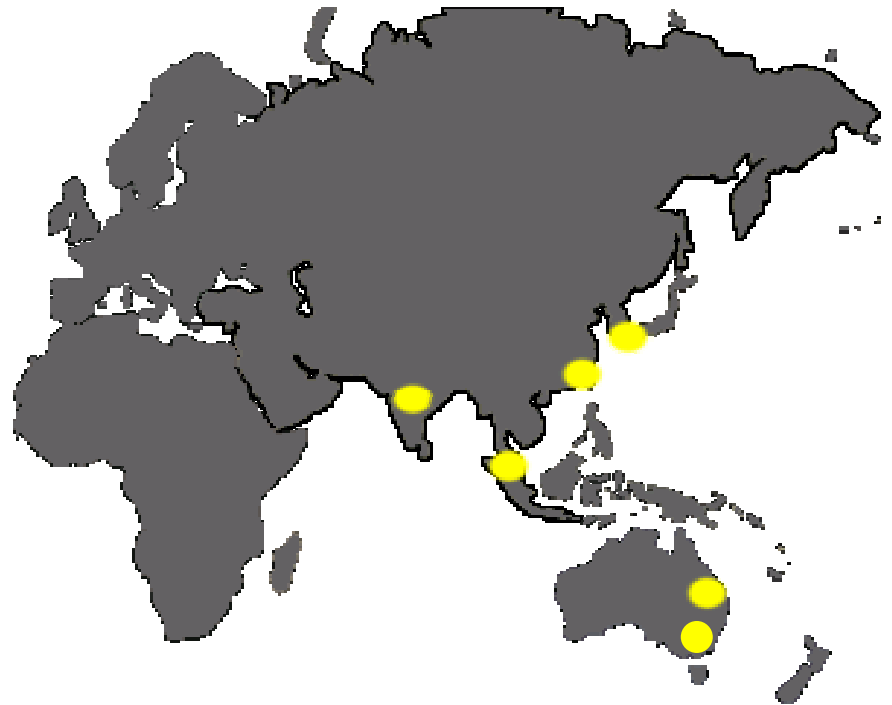


Asia-Pacific leading the way

Asia Pacific - hotbed of development in 2005

Focus on multimedia

- Korea
- China
- Singapore
- Taiwan
- Hong Kong
- Australia



Korea

- Commercial services on-air in 2005
3 national networks & 3 local multiplexes in Seoul
- Focus on multimedia/TV (DMB)
- Manufacturers develop DAB audio & DMB receivers with mobile products in 2005 - PMP, PDA & phones



China

- Guangdong: Video & Audio trials on-air
- Beijing: Audio trials on-air, multimedia soon - plans for 2008 Olympics
- Hong Kong: trials on-air, so far Audio services only
- China DAB Group - rollout plans for DAB across China



Taiwan

- Full commercial services in 2005
3 national + 3 local multiplexes
- Mix of Audio & Multimedia/video streaming (~50% each)
- Taiwan's audio & PC industry - integration into mobile multimedia devices



Singapore

- 2 multiplexes on-air - more in 2005
- Many new Audio services on-air
- Focusing on multimedia applications

Australia

- Trials in Sydney & Melbourne
- Plans for Multimedia trial services in 2005

Korea DMB leads the way

Using DAB platform - DMB products launching now



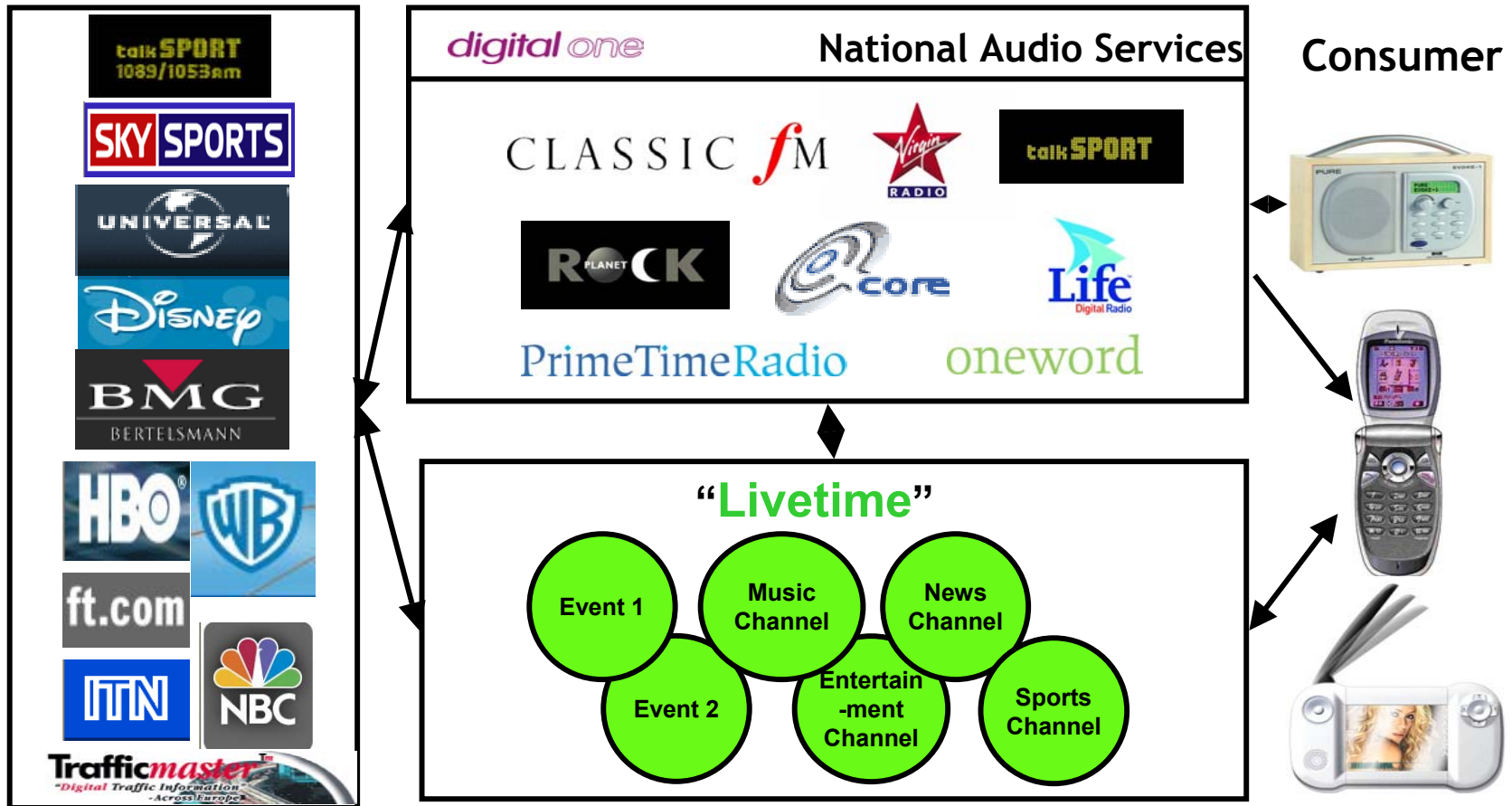
DAB Multimedia in Germany

Trials in Bavaria, Germany (2 year Pan-European project)



Focus on providing coverage
of World Cup 2006 via mobile entertainment devices

DAB Multimedia in the UK



BT LiveTime - DAB multimedia & mobile TV service launching in the UK in 2005

The window of opportunity for DAB to stake its claim in the multimedia world is here

Existing infrastructure, allocated spectrum, cost and power efficiency are available for the DAB community to exploit!

Thank you!