Next Generation Networks (NGNs)
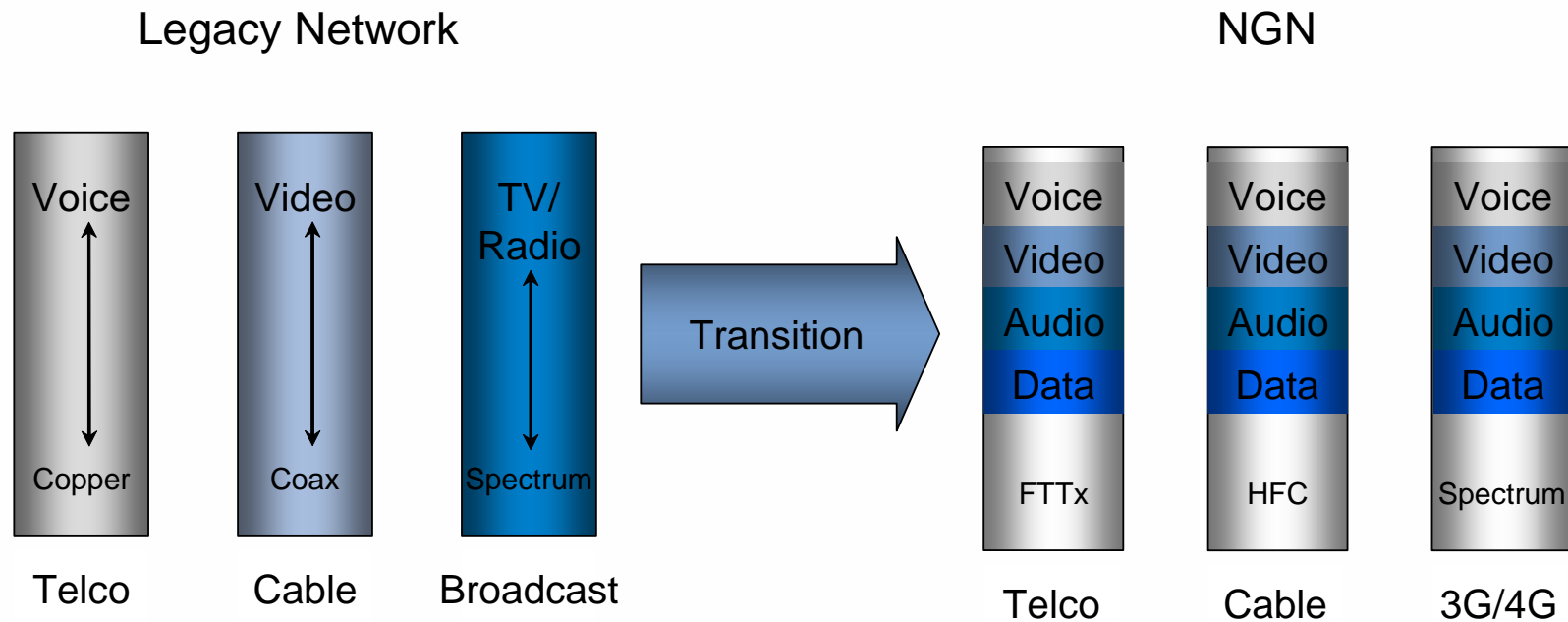
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Next Generation Networks (NGNs)

- Throughout Europe (and the world), public networks are evolving into
  Next Generation Networks (NGN)
  based on the *Internet Protocol (IP)*.

- Different approaches to financing, business models, the role of government, and the regulatory approach are visible in different Member States.

The shift to NGN

Legacy Network

NGN

Voice	Video	TV/Radio
↕	↕	↕
Copper	Coax	Spectrum

Transition →

Voice	Voice	Voice
Video	Video	Video
Audio	Audio	Audio
Data	Data	Data
FTTx	HFC	Spectrum

Telco   Cable   Broadcast

Telco   Cable   3G/4G

- Historically, many networks delivered a single service.
- With NGN, any network can deliver (nearly) any service.

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NGN Core, NGN Access

- **NGN Core:** Replace traditional circuit switches with IP routers and VoIP gear in order to reduce operating cost and to offer new services.

- **NGN Access:** Drive fibre deeper into the network in order to offer higher speed, greater reliability and lower operating cost.

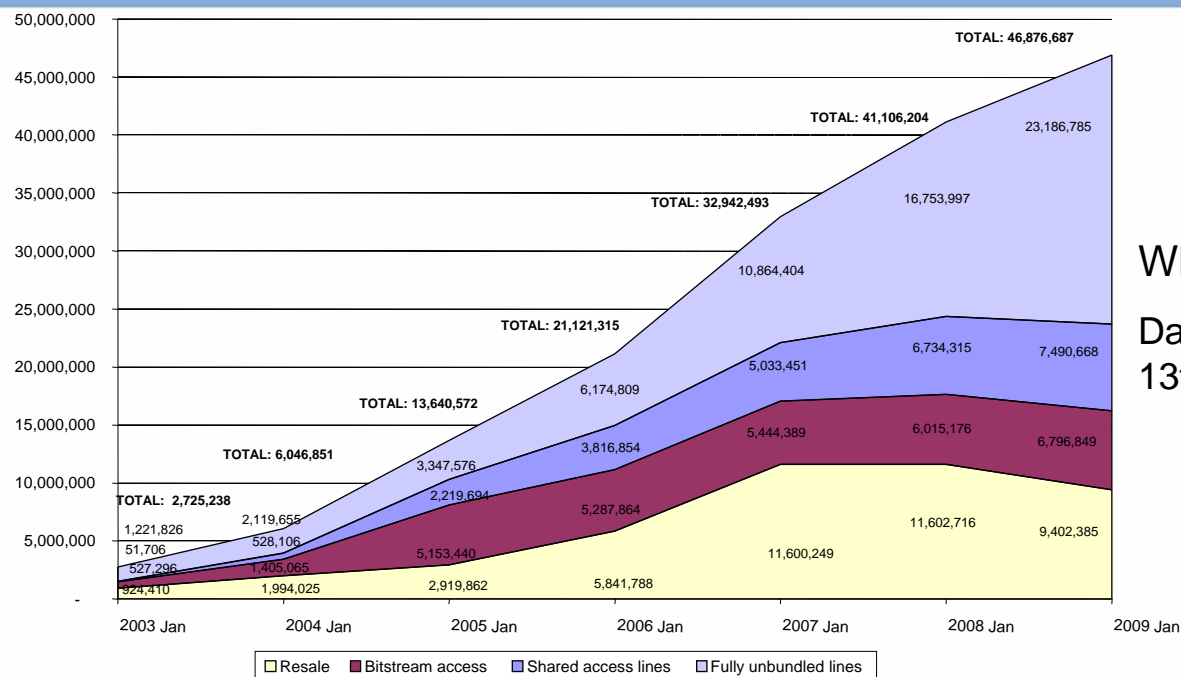European Parliament ITRE Committee, 10 November 2009, summary of NGN study

A range of challenges

- Changes in the character of competition
- Changes in last mile remedies
- Challenges in deploying fibre-based NGA
- Migration of interconnection to an IP basis
- QoS and network neutrality
- Challenges during the migration period
- Standardisation and interoperability
- Spectrum management
- Functional separation

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Changes in the nature of competition

- Much of regulation and public policy of electronic communications deals with market power (SMP).
- The shift to NGN implies changes in the value chain, and thus subtly alters market power.
- Implications for regulation?
  - New forms of competition emerge?
  - Old barriers remain?
  - New barriers emerge?

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Changes in last mile remedies

Wholesale broadband access

Data sources: Commission, 13th/14th Implementation Reports

- New challenges with access to trenches, manholes, ducts, building wiring, and other infrastructure.
- FTTN/VDSL: the DSLAM moves to the street cabinet.
- FTTB/FTTH: a range of access possibilities.

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Achieving fibre-based NGN Access

Network Type	Cost per home accessed [in €]					
	DE	FR	SE	PT	ES	IT
VDSL	457	n.v.	352	218	254	433
PON	2,039	1,580	1,238	1,411	1,771	1,110
P2P	2,111	2,025	1,333	1,548	1,882	1,160

Source: WIK report on Next Generation Access for ECTA (2008)

- No Member State is likely to achieve full coverage without public stimulus/subsidy.
- Only limited prospects of replicating infrastructure.

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Functional separation

- Seeks to make non-discrimination more readily enforceable.
- An intrusive remedy that should not be imposed lightly.
- Is not specifically an NGN issue, but could be useful to deal with last mile NGA problems.

European NGN policy initiatives

- The Review package (including separation)
- Commission draft Recommendation on NGA
- Commission's Guidelines for State Aid
- Commission's Recommendation on fixed and mobile call termination

Recommendations

1. Pending Review package.
2. More use of sub-national markets/remedies.
3. Refine and complete the NGA Recommendation.
4. Better understanding of costs/benefits of NGA.
5. Impact assessment of ways to promote NGA.
6. Political discussion of NGA goals, and means of achieving them.
7. Consider move to Bill and Keep interconnection.
8. Monitor move to IP-based voice interconnection.
9. Continue to look to free high quality spectrum.

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