

Economic challenges in electronic communications and media

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May 28, 2010

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Structure

1. Looking back: the liberalization of the telecommunications market
2. Looking ahead: competition and market structure
3. Broader context: convergence of telecom, Internet and media
4. Relevance for society of electronic communications and media

...with a focus on the Netherlands

Based on De Bijl, P. (2009)

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1. Looking back: the liberalization of telecommunications market

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Policy objectives for competition and market structure

1. Liberalization and privatization
 - ▶ monopoly → competition
 - ▶ public sector → private enterprise
2. Phasing out regulation
 - ▶ promoting competition using access regulation
 - ▶ protecting investment incentives
 - ▶ “ladder of investment”
3. Intended result: infrastructure competition
 - ▶ technological progress: telecoms no longer seen as a natural monopoly

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- ▶ 2008: evaluation of various liberalization processes, on request of Parliament
- ▶ Telecoms:
 - ▶ higher quality, accessibility and efficiency
 - ▶ dynamic market, without major problems
 - ▶ higher employment, lower real wages

- ▶ General view: liberalization of telecoms is very successful

Ministry of Economic Affairs, *rapport Effecten Marktwerkingsbeleid* (2008)

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Area of tension

1. Incumbent KPN and cable companies need to invest in infrastructure; entrants need to roll out their own networks, versus . . .

2. . . . desirability of (regulated) access to existing networks, so that consumers benefit from price competition early on

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1. Many consumers who put their trust in entrants, have experienced:
 - ▶ aggressive and deceptive acquisition
 - ▶ false invoices, lousy service
 - ▶ chaotic transition of customer accounts
2. Result: substantial switching costs + psychological resistance
3. Business proposition strongly based on:
 - ▶ regulated monopoly power of incumbents
 - ▶ regulated arbitrage opportunities for newcomers
4. So far, there is no sustainable competition
 - ▶ despite very promising starting point in the Netherlands

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2. Looking ahead: competition and market structure

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Is there a need to continue access regulation?

Is $n = 2$ enough for effective facilities-based competition?

1. $n = 2$ is enough

- ▶ 2 symmetric networks, competing in a Cournot fashion, have incentive to offer access to an entrant without its own network
- ▶ in equilibrium: no foreclosure
- ▶ networks compete to grant access → access price goes down to marginal cost level

2. $n = 2$ is not enough

- ▶ networks have an incentive to escape “commodity trap”
- ▶ horizontal differentiation through exclusive content deals
- ▶ mandatory access needed to intensify competition

Bijlsma and Van Dijk (2008), Kocsis and De Bijl (2007)

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Should we have more patience?

1. Is competition in the short term compatible with network investments?
2. Or is infrastructure competition — due to increasing scale effects — ultimately not feasible?

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Market characteristics

1. Scale effects have made a comeback
 - ▶ upgrading to fiber requires substantial investments
2. After the bubbles and the hypes: economic cycle does not spare telecoms
 - ▶ high fixed costs + very low marginal costs
 - ▶ technological uncertainty
 - ▶ intermittent, slow adjustments of supply → temporary overcapacity + downward pressure on prices
3. How realistic is infrastructure competition?
 - ▶ if it is going to work anywhere, it has to be in the Netherlands
 - ▶ but it will be a precarious balance

Eli Noam (2006), *Columbia Business School & Columbia Institute for Tele-Information*

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Transition

Telecom 1.0 public monopoly with utility function [... – 1998]

Telecom 2.0 liberalization, privatization and regulation
[1998 – 2007]

- ▶ innovation
- ▶ service competition as a stepping stone towards infrastructure competition

Telecom 3.0 broadband Internet + fiber upgrades [2008 – ...]

- ▶ next generation networks
- ▶ increased importance of investments

Eli Noam (2010)

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1. Many of the current market and system characteristics are similar to those of Telecom 1.0
2. Is Telecom 3.0 primarily a high-speed variant of Telecom 1.0?
 - ▶ cross-border
 - ▶ links to Internet and media
 - ▶ oligopoly rather than monopoly

Eli Noam (2010)

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3. Convergence of telecom, internet and media

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Convergence

1. Speech and content: digital packets
2. Transportation based on IP: packets travel on all networks
3. IP: watch TV, surf the internet, talk, publish digital content, offer services, ...
4. Distinction between producers and consumers fades away
5. Large variety of new players

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Future?

1. Telecom
 - ▶ very dynamic market
 - ▶ ... but market engineering has turned out to be much harder than we thought in the 90s
2. Internet
 - ▶ radical innovations come from newcomers and outsiders
 - ▶ ... not from established players [this is why net neutrality is so important!]
3. Media
 - ▶ new generations of users ignore old structures and “social compartments”
 - ▶ users create their own content and social networks — no need for gatekeepers [again: net neutrality]

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1. Telecom and broadband internet are a success story, but we're not there yet
 - ▶ regulation still aims at transition to facilities-based competition — but will it work?
 - ▶ if sector-specific regulation remains necessary → ultimately we may need vertical separation
2. Media policy = internet policy
 - ▶ fundamental rethinking of broadcasting media regulation is called for...
 - ▶ ...including a crystal-clear definition of public tasks
3. This is the moment to redesign regulation
 - ▶ Netherlands: bundle OPTA, Radiocommunications Agency and Media Authority
 - ▶ like Ofcom (UK) and FCC (USA)

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4. Relevance for society of electronic communications and media

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1. Network externalities
 - ▶ the more users, the more social value is generated
2. External effects for the economy and society
 - ▶ lubricant for economic and social interactions and transactions
 - ▶ cf. road, railways, energy, ports

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Examples

1. All sectors
 - ▶ cheap, open access to high-speed networks → platform for innovation
2. Energy
 - ▶ data networks as part of *smart grids* → effective management of electricity networks
3. Health care
 - ▶ effective interaction patients – doctors – hospitals → cost control
4. Road traffic
 - ▶ traffic management → less congestion

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1. Suppose the cost to connect all households in the Netherlands to FTTH networks amount 1,000 euros per household
2. Is it socially profitable to connect all households?
3. Yes, provided that this leads to cost savings of 1% (of total expenditures) in electricity, health care, transportation and education

OECD (2009), *Network Developments in support of Innovation and User Needs*, Working Party on Communication Infrastructures and Services Policy

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Security

1. Telecom (and ICT) integral part of vital infrastructures
 - ▶ network failure → social disruption
2. Trust in ICT is a public interest
 - ▶ telebanking, public transport, privacy, digital identities, . . .
3. Warfare in the near future: sabotage of telecom- and ICT-infrastructures
 - ▶ see publications of *U.S.-China Economic and Security Review Commission*
4. Different perspective of national security as a public interest
 - ▶ management of information security is complex
 - ▶ requires fundamental approach by engineers, economists, lawyers, psychologists and policy makers

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The role of the government

1. Starting point in “normal” markets:
 - ▶ private profits as drivers of investments
2. Social value of broadband connectivity is potentially much larger than private value
 - ▶ market failure: underinvestments
3. *Should the government take on a more active role — possibly invest itself?*
 - ▶ this is the question in telecoms for the coming decade
 - ▶ more important than the question whether we have effective competition or not

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Conclusion: challenges in telecoms and media

1. Regulation
 - ▶ anticipate potential necessity of vertical separation
 - ▶ regulation by a single organization
2. Policy
 - ▶ net neutrality is crucial condition to keep the Internet an open platform for innovation
3. Government versus market
 - ▶ rigorous analysis of social value of ICT
 - ▶ re-evaluation of the role of the government

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Selected background material

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