



Regulation of Telecommunication Access Networks

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1. Motivation: Technological Change in Telecommunication Access Networks

Telecommunication access networks connect the customer premises with the service providers. Access networks were most efficiently provided by a single network operator. Competition was introduced by means of **access regulation**.

Convergence, i.e. the decoupling of services and networks, (1) increases **competition** between network infrastructures, (2) leads to **commoditization** of transmission services, and (3) triggers **investments** in access network infrastructure.

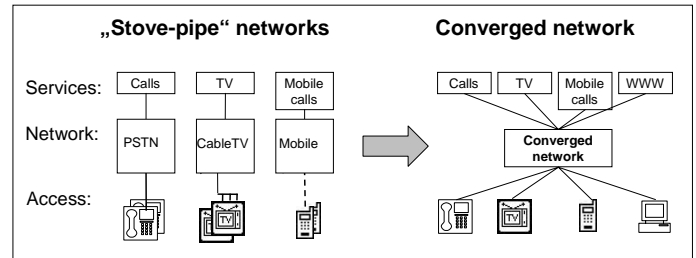


Figure 1: Converged communication networks

Research Question: Is there a continuing need for access regulation in converged networks?

2. Case Study Analysis: Regulatory Options and Strategies of National Regulatory Agencies

Regulation (if well applied) **reduces price distortions** and mitigates strategic behavior caused by market failure. However, regulation also **reduces investment incentives** for the regulated firm.

Analysis of **relevant market** shows a potential **segmentation into two markets**, "regular" broadband and "ultra" broadband. Ultra broadband maintains competitive lead because of vertical (quality differentiation). Because a duplicated roll out of fixed line infrastructures to the home remains unlikely, the need for access regulation depends on **existing competitive infrastructures**. Regulators need to **balance reduced price distortion and investment incentives**. Regulatory regimes are difficult to implement during the transition period of the access network (e.g. phase out of interconnection points).

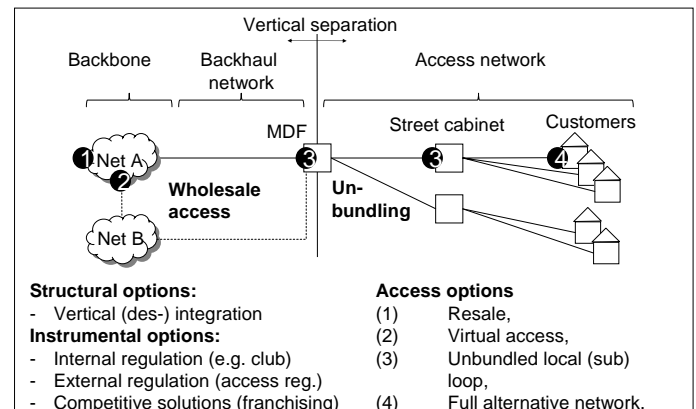


Figure 2: Structural and instrumental regulatory options

National regulatory agencies show diverse reactions (pure market structure explanations are insufficient):

	United Kingdom	Netherlands	Republic of Korea	USA
Competition	45% cable TV footprint	Cable and DSL have over 94% footprint	KT is dominant operator with 52% market share	Cable has 80% footprint (traditional data access)
Regulation	Functional separation	Asymmetric access regulation	Symmetric access regulation	Regulatory forbearance
Evaluation	Little fiber investment but increasing competition	Regulation protects service competitors	Strong government investments, strategic planning	Mixed results; low prices but moderate investment level

Table 1: Summary of country case studies investigating national regulatory approaches to convergence

3. Outlook: Defining Determinants for Future Regulation

Regulatory and antitrust analysis is generally based on theory of choice and focuses on the price mechanism but omits the costs for using it within an institutional environment. The focal shift to governance structures (with the transaction as unit of analysis) adds two dimensions to the analysis of firm behavior:

1) Organizational scope: Theories explaining industry organization yield different explanations for firm behavior (e.g. strategic vs. efficiency) and thus different policy implications. We empirically compare the applicability of theories of industry organization.

2) Political strategies: Firms seek to influence their institutional environment when facing large asset specific investments using political (or non-market) strategies. We analyze the use of political strategies in the telecommunication market.

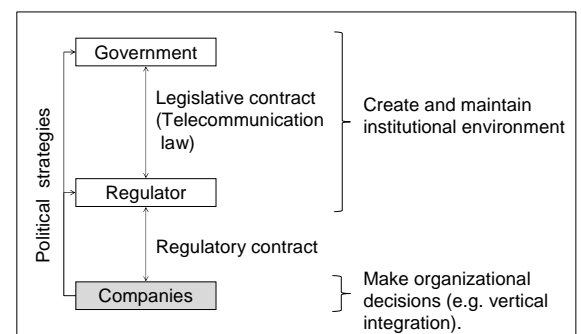


Figure 3: Institutional and organizational aspects

Goal: Define regulatory principles that safeguard innovations and support competitive markets.