

Settling for Efficiency –
A Framework for the
European Securities Transaction Industry

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“It is my belief that getting clearing and settlement right for Europe is the most important problem facing European capital markets.”

(Don Cruickshank, 2001, Chairman of LSE)

“The additional cost that is associated with this fragmented infrastructure represents a major limitation on the scope for cross-border securities trading in the Union.”

(First Giovannini Report, 2001)

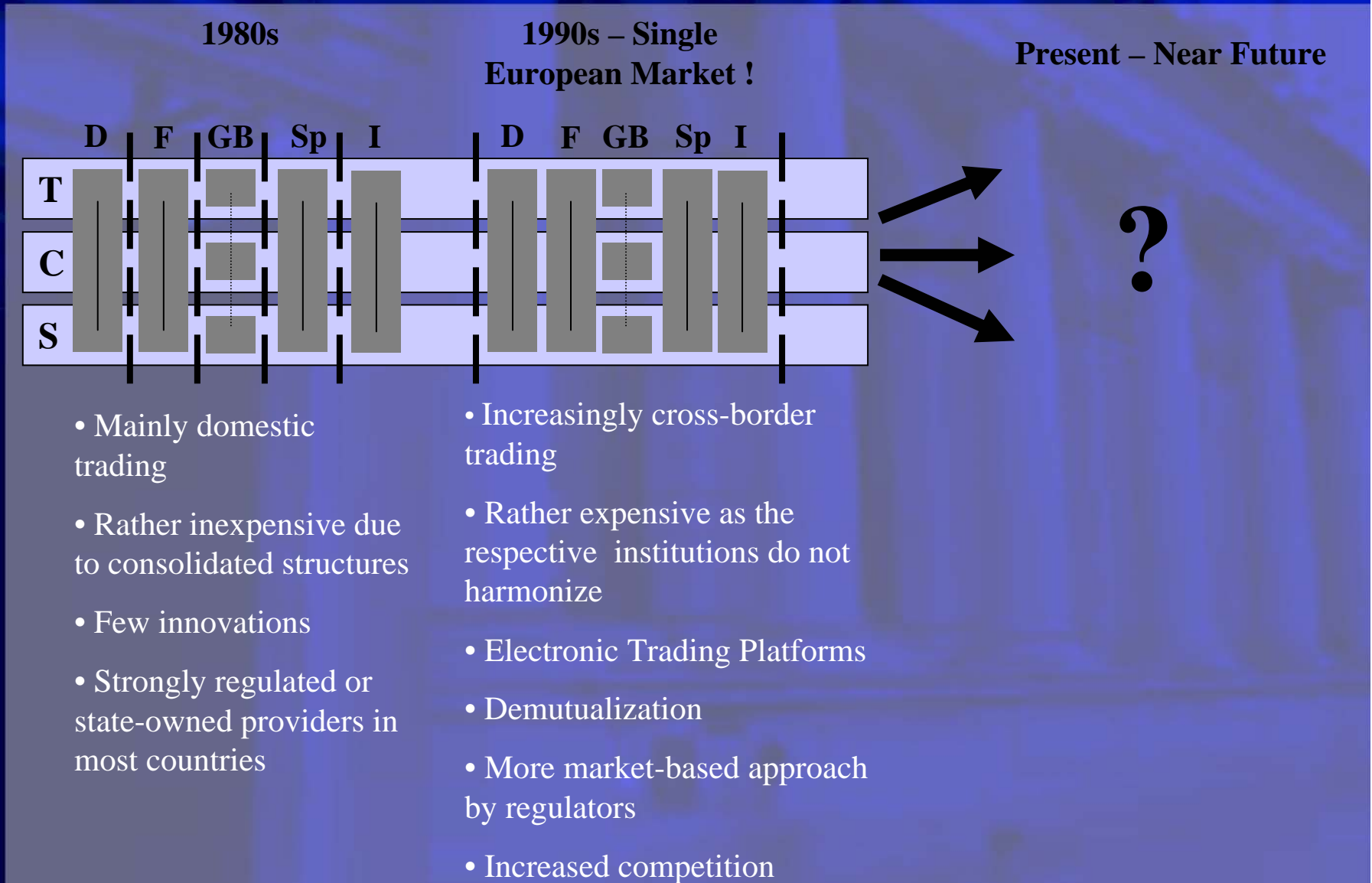
“We estimate the total incremental costs of cross-border equity cash trading and cross-border equity holdings in Europe at approximately 4.3 billion euro a year.”

(Clearstream International White Paper, 2002)

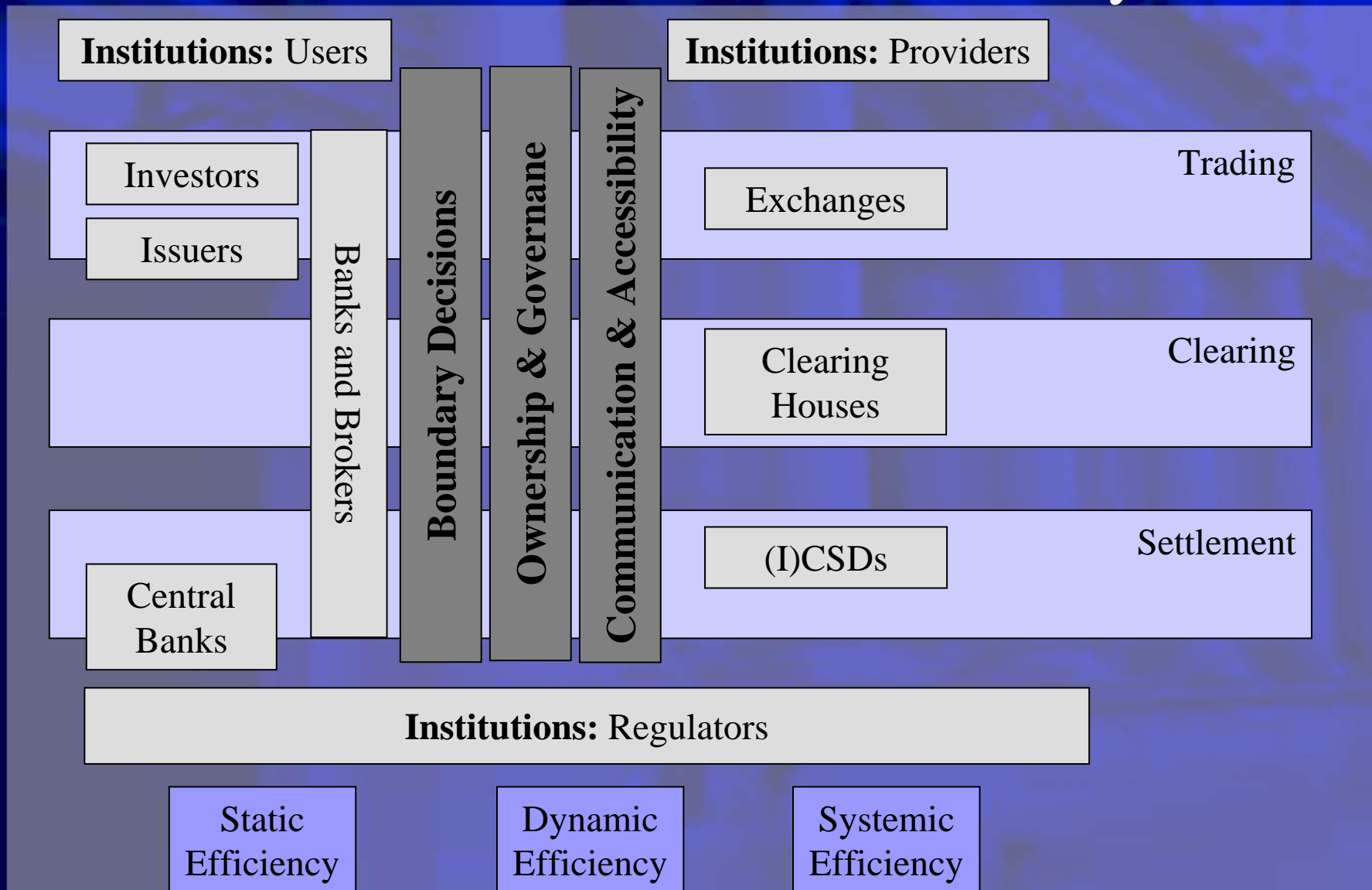
Motivation and Outline

- Offer a comprehensive economic analysis of the securities transaction industry and help to guide ongoing discussions between industry participants and politicians
- Develop a framework for structuring and analysing the key action parameters in the industry
- Apply this framework to present three idealized organizational designs and evaluate their relative efficiency

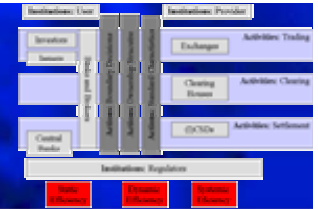
The European Securities Transaction Industry



Developing a Framework for the Securities Transaction Industry

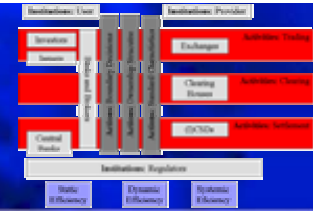


3 Efficiency Concepts



- (1) Static Efficiency → delivery of service at minimal costs
 - Costs of production:
Potential EoScale, EoScope, network economies
 - Regulatory costs
- (2) Dynamic Efficiency → delivery of state-of-the-art service
 - Innovativeness:
Level of competition
 - Contestability:
Barriers for new entrants
- (3) Systemic Efficiency → robustness against adverse shocks
 - Ex ante and ex post risk management
 - Industry structure
 - Public and/or private regulation

3 Activities of the Value Chain: Description



(1) Trading

- Centralized vs. decentralized trading
- Continuous vs. call market
- Floor-based vs. automated trading
- Trading costs:
 - Intermediation costs (brokerage fees, exchange-related fees)
 - Liquidity costs (spread costs, market impact costs)

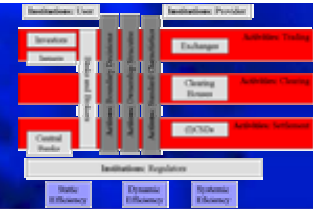
(2) Clearing

- Bilateral vs. multilateral clearing (+ CCP)
- Gross vs. net clearing

(3) Settlement

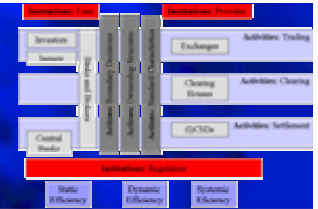
- Synchronicity of settlement (DFP vs. DVP)
- Gross vs. net settlement

3 Activities of the Value Chain: Efficiency Analysis



- Trading
 - Static efficiency
 - EoScale and network effects in one security
 - EoScope when offering more than one security
 - Dynamic efficiency (Contestability)
- Clearing and settlement
 - Static efficiency
 - EoScale, network effects, and EoScope
 - Dynamic efficiency (Contestability)
 - Systemic efficiency
 - Sources of and alleviation efforts to systemic risks
 - Market concentration
- Vertical interdependencies
 - Vertical integration and efficiency
 - Effects of net clearing on trading and settlement

3 Institutions in the Securities Transaction Industry



(1) Providers of infrastructure

- Exchanges
- Clearing houses
- Central securities depositories

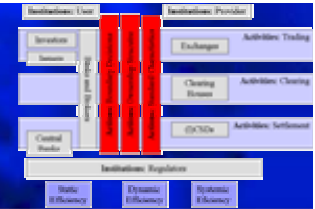
(2) Users

- Banks and brokers
- Issuers and investors

(3) Regulators

- Central banks
- Policy makers, e.g. European Commission

3 Action Parameters for the Infrastructure Providers



(1) Boundary decision

- vertically integrated silo (STP- efficiency gain)
- vertically focused firm (deconstruction of value chain)

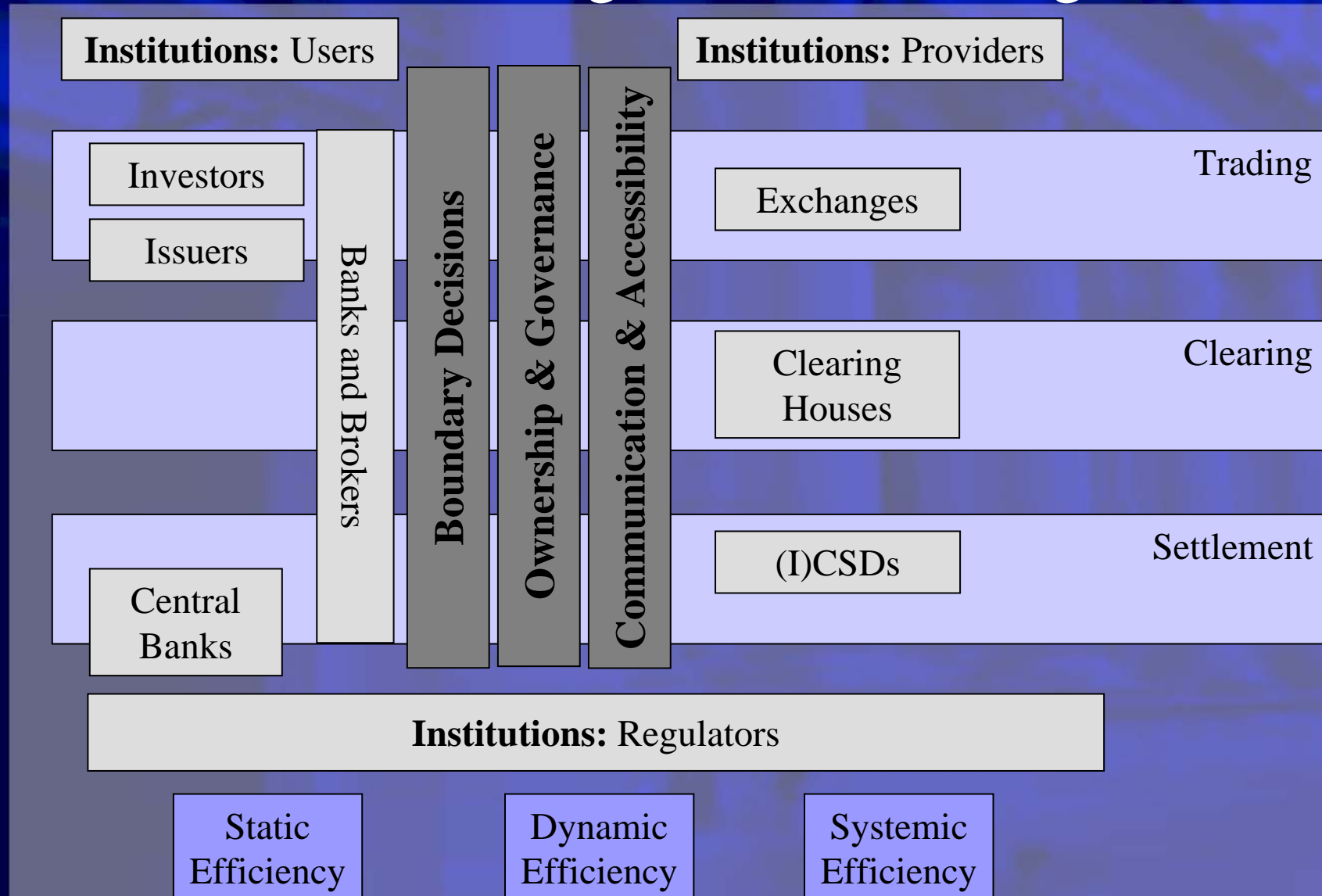
(2) Communication standards and accessibility of value chain

- proprietary standards (specificity, ownership incentives)
- open standard (no strategic foreclosure, less regulatory burden)
- open access vs. restricted access (dominance on other stages)

(3) Ownership and Governance

- for-profit ownership (“one share – one vote”)
- mutual ownership (“one user – one vote”)
- public ownership (“one mess – no vote”)

Applying the Framework for efficient Organizational Design

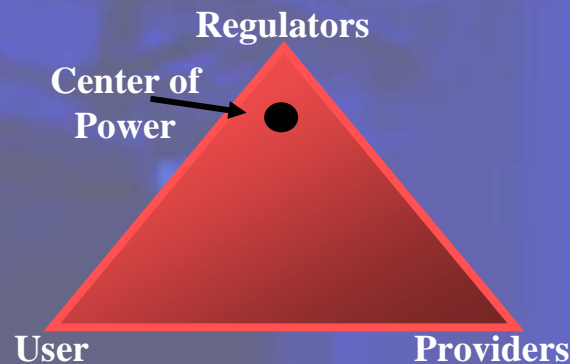


Some Remarks on System Theory

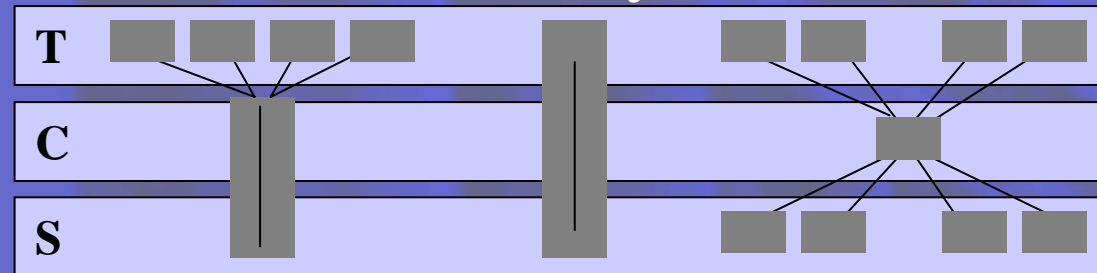
- (1) Complementarity implies that the configuration of the system's elements is important
 - Complementarity as positive cross-derivative, i.e. first-order returns to one element are even more enhanced if first-order returns of second element are also reaped
 - Supermodularity in case of less 'well-behaved functions'
- (2) Consistency means to exploit the complementary relation between the elements to optimize the objective function
 - If complementarity exists, consistently configured systems will do better
 - Milgrom/Roberts (1990): Checking for consistent systems by looking for supermodularity in each single pair of elements

Design 1: Regulated Monopoly

Influence of Institutions



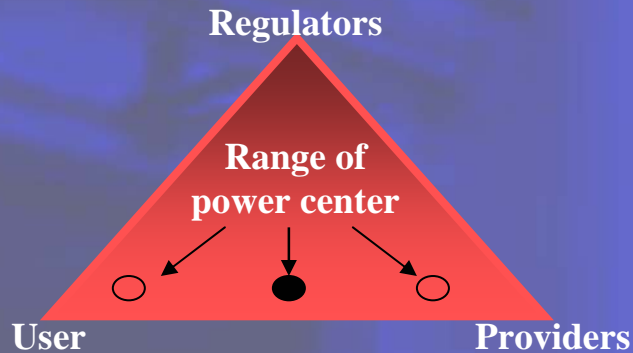
Possible Industry Structures



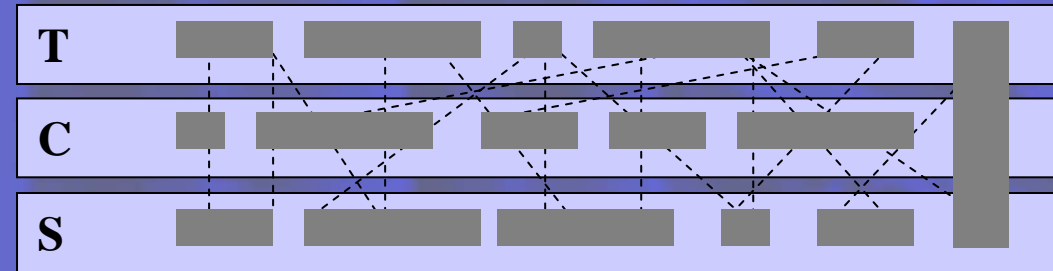
- Prevailing industry conditions:
 - Barriers to entry are high
 - Rate of technological innovation is low
- Implications:
 - Investment propensity of providers and users is low \Leftrightarrow little innovation activity
 - returns to innovation are low and private investments would be too low \Leftrightarrow public ownership likely
 - Generation of new information is low, long-range planning by provider/regulator pays off \Leftrightarrow Vertical silo is best solution
 - Proprietary standard owned by the monopolist. Open standards would lower control for the regulator \rightarrow overall system would be more fragile
- Efficiency and stability: scores high in static and systemic efficiency; robust

Design 2: Competitive Fragmentation

Influence of Institutions



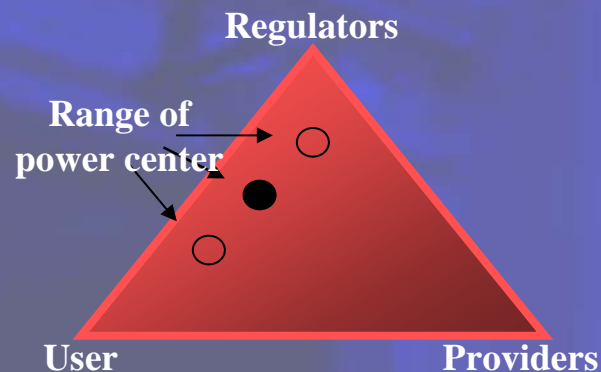
Industry Structure



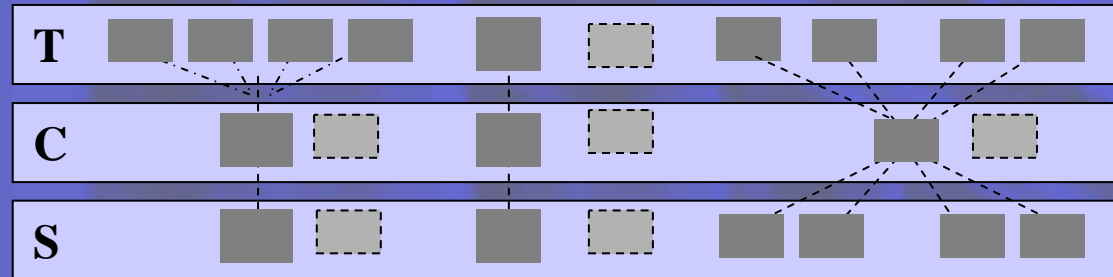
- Prevailing industry conditions:
 - Barriers to entry are low
 - Rate of technological innovation is very intense \Leftrightarrow fragmentation prevails
- Implications:
 - Investment propensity of providers and users is (too) high \Leftrightarrow strong innovation activity
 - private for-profit ownership \Leftrightarrow returns to innovation are high with appropriation of economic rents generated by innovative activities
 - Open standards ensure that all undertaken investments are compatible with each other
 - Vertical integration possible but necessity to cannibalize the own business, no cross-subsidies for inefficient lines of business
 - no need for a regulator \Leftrightarrow competition ensures that users always get a fair deal or can take action (internalization) to care for themselves
- Efficiency and stability: scores high in dynamic efficiency; rather robust

Design 3: Contestable Monopolies

Influence of Institutions



Possible Industry Structures



- Prevailing industry conditions:
 - Barriers to entry are low (due to contestable market conditions)
 - Rate of technological innovation is rather high
- Implications:
 - Investment propensity of providers and users is sufficiently high to prevent entry of potential competitors \Leftrightarrow consistent with rate of technological innovation
 - (a) mutual ownership with self-regulation by users or (b) for-profit infrastructure providers with open access regulation done by a public regulator
 - Vertical integration might bring static efficiency gains but increases the risk of entrenchment \Leftrightarrow (a) 'club' of self-regulating users becomes procrastinated or (b) rent appropriation motive for monopolist
- Efficiency and stability: scores high on all efficiency concepts; fragile

Overview of the TCS-Designs

		Regulated Monopoly	Competitive Fragmentation	Contestable Monopolies
Action Set	Boundary Decision	(1) Strong horizontal consolidation (2) Vertical integration (VI) (3) STP-possibility (4) No need for transfer prices	(1) Low horizontal consolidation (2) VI detrimental: cross-subsidies and cannibalization effects	(1) Strong horizontal consolidation (2) VI detrimental: incentive to appropriate open standard
	Communication standard & Accessibility	(1) Proprietary standard (2) Closed system	(1) Open standard (2) Open access	(1) Open standard (2) Regulated access
	Ownership & Governance	(1) Public ownership (2) Not for profit (3) Heavy public regulation	(1) Private ownership (2) For profit (3) Self-regulation as parameter of competition	(1) Private ownership (rather likely as mutual) (2) For profit (3) "Regulation light", self-regulation
Institutions	Users	(1) Low level of decision making power (DMP) (2) Low investment propensity	(1) Low - medium level of DMP (2) (Too) high investment propensity	(1) High level of DMP if mutual ownership, else lower (2) Low-medium investment propensity
	Providers	(1) Very few players (possibly only one) (2) Low - medium level of DMP (3) Low investment propensity	(1) Many players (2) High level of DMP (3) (Too) high investment propensity	(1) Very few players (2) Low - medium level of DMP (3) Low - medium investment propensity
	Regulators	(1) High level of DMP	(1) Very low level of DMP	(1) Medium level of DMP if providers are not mutually owned, else lower
Analysis	Static Efficiency	(1) High due to realized economies (2) Lessened by regulatory costs	(1) Low due to unrealized economies	(1) High due to realized economies (2) Low regulatory costs
	Dynamic Efficiency	(1) Very low due to lack of competition <ul style="list-style-type: none"> ➢ Low technological progress ➢ High entry barriers 	(1) Very high due to competition <ul style="list-style-type: none"> ➢ High technological progress ➢ Low entry barriers 	(1) High due to threat from potential competitors <ul style="list-style-type: none"> ➢ Medium technological progress ➢ Low - medium entry barriers
	Systemic Efficiency	(1) High due to centralized risk management (2) Possible moral hazard problems	(1) High due to redundancies and open standards (2) Lessened by low coordination among players	(1) High due to centralized risk management (2) Moral hazard issues unlikelier due to entry threat by potential competitors
	System stability	(1) Rather robust against changes in parameters	(1) Robust as long as high degree of innovation is existent (2) Bubble-prone	(1) Rather fragile. Precise configuration necessary. Regulation must ensure accessibility for potential competitors

Which Design?

