

ICT from a Commons Perspective

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The problem

- “Markets” cannot describe the full range of exchange regimes
- Neoclassical analysis cannot adequately integrate
 - Institutions
 - Governance practices
 - Transitions
 - Dynamic character of organizations
- Infrastructure can be modeled vis exchange, but not “market”
- Too narrow conception of “market failure”
- Inadequate dealing with innovation

The answer

Markets are embedded in commons

Part 1

The problem with markets

The problem with markets 1

- Conceptual & analytic inconsistency among e.g.
 - Retail markets
 - Bazaars
 - Stock markets
 - Wholesale markets
 - Labor markets
 - Arms markets
 - Gift exchange
 - Peer-to-peer sharing
- But we aren't misguided by any chimera of comparability

The problem with markets 2

- Conceptual & analytic inconsistency among exchange regimes for e.g.
 - Laissez fare trade
 - Highly regulated sectors (e.g. pharmaceuticals)
 - Utilities (e.g. electricity)
 - Other infrastructure (e.g. telecoms)
 - Usage of government property (e.g. parks)
 - Usage of non-owned resources (e.g. air)
- But we can't solve the whole coordination problem

The problem with markets 3

- Conceptual & analytic incompatibility among transitions from e.g.
 - State-owned to private ownership
 - Highly regulated to little regulated
 - Legal to illegal trade
 - Monopoly to ?
- And we're ill-equipped to deal with volatilities

Part 2

The Commons applied to ICT

Features of the commons

- Governance
- Context
 - Institutions
 - Systems & networks
- Exchange
- Norms that account for more than optimization

Commons applied to ICT

- Variety of exchange regimes
 - Competitive markets
 - Licensed markets
 - Regulated markets (vis. "Market failure")
 - Monopolies, oligopolies
 - State-owned (GETS, 911, municipal WiFi)
 - Gift relations (peer-to-peer)

Exemplary problems for ICT that a commons approach helps solve

- Determining relationships among exchange regimes (e.g. interconnection)
- Guiding relationships among competitive and non-competitive elements (e.g. wireless/wireline; conduits/services)
- Valuing sunk costs
- Determining incentives for innovation

Part 3

Applying the commons approach to wireline infrastructure

Exemplary objectives

- To promote the efficiency of investment in broadband to avoid the fate of the railway
- To show how vertical integration and institutions of telephony and cable firms may be the source of major economic efficiency problems
- To explain why rights-of-way, conduits, and other lower level characteristics of infrastructure are inefficiently served by simple market analyses

Investment assumptions

- RBOC & cable TV companies are unable to determine the means to invest in broadband
- Investors have only distorted information
- Inefficient investment results in substantial social cost (and indeed private cost)
- This failure threatens broadband innovation

Problem of vertical integration

- Appropriate vertical integration essential to investment
- Benefits from scale & scope are currently restricted
- Inappropriate vertical integration fails to provide information on layer-level investment
- How to know layer-level costs
 - Without intermediate markets, economic costs unknown
 - Merely accounting costs can be provided
 - Engineering data restricted to given market structure
 - Therefore no efficient investment level can be known

Vertical integration and activities

- Stigler (1951): why firms do not evolve into monopolies (division of labor & extent of market)
- Firms are aggregations of activities, each with their own technological & organizational characteristics (scale & scope/division of labor)
- Telecoms have been artificially preserved from these forces

Innovation and intermediate markets

- Smithian competition is based on innovation
- Vertical integration potentially constrains entry

At great cost to innovation & efficiency
For both society and the firm

Absence of intermediate markets in broadband

- Market valuation is essential at each layer
- Rights-of-way & conduits have not been regarded as "markets"
- No means to price poles, ducts & conduits

The pricing problem

- No way to create an efficient “market” for rights-of-way or for poles, ducts & conduits, perhaps even for fiber
- Impossibility of optimal pricing because of the lack of benchmarks
- All investments above lower levels are distorted by this pricing problem

Theories of markets, governance and “the commons”

- From Hardin to Coase
 - Commons always suffer from the free-rider problem (Hardin 1968)
 - “Governance matters” (Coase 1960)

Commons contain markets

We define commons to include all economic exchange, whether market-based, based upon central-planning allocations, or other arrangements that could be government and/or community based. Market cannot be defined independently of commons.

Hardin 1998: “managed & unmanaged; private & public”;
Ostrom & Bowles: “common pool resources”

The regulator and the “managed commons”

- Formulate the problem in terms of the “commons” characteristics of the lowest layers of broadband
- Don’t search for optimal pricing solutions, search for governance
- Better governance involves institutional change and new market relations
- Efficiency of investment in broadband is directly related to the efficiency of investment at all levels

“Managing” the commons is a
raison d’être for government

end