

Broadband, Universal Service, and Competition

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Focus of Talk

- A resource is managed as a commons when it is “openly accessible to all within a community regardless of the entity’s identity or intended use.” Frischmann (2005)
- Open access and commons are used interchangeably. Id.
- “[M]anaging infrastructure resources in an openly accessible manner may be socially desirable when it facilitates...downstream activities.” Id.
- Affects of regulatory decisions on investments in infrastructure.

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Why do we make reference to the commons?

- Tragedy of the commons in England.
 - Overgrazing. Soil fertility harmed.
 - Allegedly privatization leads to an improvement in the efficiency of the economy.
 - Privatization was a necessary condition for the accumulation of capital.

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Challenges to the Proposition of a Tragedy

- Major gains in productivity not due to enclosures.
- R.C. Allen. argues that there were 2 agricultural revolutions marked by rising output and productivity. The first preceded the parliamentary enclosures (1520-1739) and was accomplished by small-scale farmers in the open fields, while the second occurred in the first half of the 19th century (1800-1850). He aims to show that the period in the middle (the time of parliamentary enclosures) was notable for its stagnation.
- Gains from privatization may be more dynamic than static and are attributable to the raising of capital.
- Establishing property rights was costly—fences.

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Local Decisions

- Gregory Clark: “In the final analysis, the decision to enclose always lay in the hands of local interested parties and, whatever national circumstances might obtain, it was local factors which ultimately determined how communities would act. It was by no means necessary for the same motivating forces to be operating in the same part of the country at the same time.

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Significant Differences Between Enclosures and Today’s Issues

- Cost structure different.
 - Today large fixed costs and small incremental costs.
 - My consumption of “free” digital goods may have some harmful dynamic affects but the static consequences are small since the good has already been produced.
- Exclusion (crowding) was more of an efficiency issue with the enclosures.
- Privatization remains an issue.

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Innovation in telecommunications

- Arguably treat the infrastructure as a commons in order that the platform can be used for downstream innovations and to promote price competition.
- Case studies:
 - High frequency unbundled network element—line sharing.
 - Cable modems.
 - FCC TRO—packet switching.
 - Risk sharing—cost pooling
 - USF.

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Line Sharing

- GTE DSL tariff.
 - Zero incremental cost of the loop because the loop is already in service.
 - Unused resource. No opportunity cost.
- Pursuant to Sec. 706 of the Act FCC wanted to speed-up the rollout of advanced telecommunications services.
- Commission wanted to promote competition in the DSL market.

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Line Sharing-2

- FCC's remand order states that line sharing may be at a zero price.
- Zero price avoids a price squeeze to CLECs that use line sharing and are competing with ILECs.
- Creates price squeeze with facility based competitors
 - cable companies
 - wireless providers who must buy spectrum.

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Line Sharing--3

- Not all ILECs opposed zero price. Verizon supported zero price because it was provided DSL service through an unregulated subsidiary.
- SBC on the other hand, favored a line sharing recurring price equal to half the price of the loop.

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Line sharing prices in selected states--2001

- Zero: New York, Minnesota, Michigan, Pennsylvania, Georgia, Illinois, Maryland, Massachusetts, Tennessee, Texas
- California: \$3.00 Verizon; \$5.85 SBC
- \$4.00 Washington
- \$13.70 Montana
- \$13.99 Nebraska.

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Impact of line-sharing prices

- Discourages facility based
- May have contributed to overinvestment in DLEC business.

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Cable Modem

- Not regulated. No common carrier obligation.
- ISPs negotiate prices with cable company.
- Cable company competing with ISP in downstream market.
- An upstream firm does not have an incentive to discriminate if facility provided in fixed proportions to downstream market.
- This is not a fixed proportions market—bundling of data, voice, and entertainment products.

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Cable Access Prices

- In 2000 Business Week reported that AOL-Time Warner sought a monthly recurring fee of \$30 from ISPs in contract negotiations. The AOL-Time Warner apparently also demanded 75% of the retail price if this exceeded \$30, advertising space at the top of the ISP's page and 25% of the ISP's advertising revenues. AOL's retail price was \$40.
- In 2001 Excite@home's wholesale price was \$25.95 and its retail price was \$39.95.

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Cable Access Prices--2

- The cable wholesale access prices had to be higher because the cable companies had to cover their costs that are technically equivalent to the DSLAM.
- A ILEC estimated its incremental costs of DSL at \$16/month.
- Assuming that the cable company had similar incremental costs, \$16, they were seeking a margin of \$14 = \$30 - \$16 to cover platform costs, a far cry from the regulated DSL price of zero.

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FCC TRO—change of rules

- 2003 TRO
 - Raises the line sharing price and phases out the line-sharing UNE.
 - Encourages firms to negotiate line sharing price. CLECs have comparatively little bargaining power.
 - Negotiated line sharing prices have been in the range of \$5 to \$8 per month.
 - CLECs are not impaired when denied access to next-generation packet switching technology. Greenfield for everyone.

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Packet Switching

- FCC accepts ILEC's representation that the provision of UNEs over next generation networks impedes the rollout of advanced services.
- UNE prices did impeded investments. Elasticity of UNE loop price to embedded cost in the range of .5 to .9.
- Risk sharing by small companies greatly advances the rollout of new technologies.

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Independent and Verizon Coverage of E911 Points in Rural Areas of Vermont

	Average Wirecenter E911 Points Per Sq Mile	Percentage of E911 Points within Range of Either an Existing Cable or DSL System
Verizon Territory	14.8	20.0%
Other Company Territory	15.7	85.2%

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Universal Service

- Downstream benefit of federal support.
 - Positive externalities.
 - Equity.
- High-cost fund for large ILECs.
- FCC hands out hundreds of millions of dollars with no accountability.
- Dissimilar to funding of education—no outcome assessment.
- Econometric evidence shows that the fund has no impact on access to advanced telecommunications services.

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Implications of Case Studies

- Government regulation can seriously harm a market (DSL).
- The negotiations between incumbents and entrants involves asymmetrical power (cable; post-TRO).
- The offering of inducements has a mixed record.
 - FCC refuses to audit private corporations with any rigor. Consequently the USF (commons) fund can be treated as a profit center by ILECs.
 - Risk sharing has a significant positive affect on infrastructure investment.

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Should the platforms be treated as a commons?

- Tentatively yes.
- Price and risk sharing remain key issues.
- Alternatives
 - Wholesale platform. Vertical coordination a problem.
 - Municipal networks.
 - VI again.
 - Ability to manage network evolution.

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Conclusions

- No global solution.
- As with the history of the commons, the sensible evolution of policy should be based on local conditions.
- The current usurpation of local and state authority reflects the mistaken belief that there is one policy solution that fits all situations.
- Common sense.

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