Internet Economics

James Alleman

Interdisciplinary Telecommunications Program
University of Colorado & PHB Hagler Bailly
Copyright © 1999 James Alleman. All Rights Reserved.

Agenda

- Internet Market Structure
- Interconnect Issues
- Capacity Considerations
- Pricing Issues
- Cost Issues
- Conclusion/Summary

Internet Market Structure

- Synergy with PSTN
- Layers
- Regulation
- Ownership/Concentration

Internet Market Structure

- Synergy with Public Switched Network (PSTN)
  - Universal Service Fund
  - Interconnection/Access Charges
  - Competitive Local Exchange Carriers (CLECs)
  - Subscriber Access to ISP

Internet Market Structure

- Synergy with PSTN
- Layers
- Regulation

Internet Market Structure

- Synergy with PSTN
- Layers
- Regional NAP
- ISP
- Subscribers/Customers
Internet Market Structure (continued)

- Synergy with PSTN
- Layers
- Regulation
- Ownership/Concentration

Ownership/Concentration

- Backbone Providers (ISP)
  - Concentration of providers
  - Telco ownership, in some cases
    - GTE: BBNet
    - MCI WorldCom: UUNet
    - Sprint
    - The Big Boys!

Agenda

- Internet Market Structure
- Interconnect Issues

Interconnect Issues

- Price of Interconnection
- No Universal Service Fund (USF) Coverage
- Access Contribution
  - Common carrier treatment?
  - ISPs as CLECs?
Agenda

- Internet Market Structure
- Interconnect Issues
- Capacity Considerations

Capacity Considerations

- Congestion => Overbuild
- Inside/Boundary
- No Peak-load Pricing
- Dial up/PSTN

Agenda

- Internet Market Structure
- Interconnect Issues
- Capacity Considerations
- Pricing Issues

Pricing Issues

- Interconnection
- Allocative Mechanism
- Usage Sensitive Pricing

Pricing Issues

- Interconnection
- Allocation Mechanism
  - Rationing
  - Pricing
  - Why the concern?
Pricing Issues

- Interconnection
- Allocative Mechanism
- Usage Sensitive Pricing

Usage Sensitive Pricing

\[ P = \frac{AC}{2} \]

Usage Sensitive Pricing

Cost Issues

- Cheaper than PSTN?
- Replace the PSTN?
- VoIP -- Telephony Substitute?

Agenda

- Internet Market Structure
- Interconnect Issues
- Capacity Considerations
- Pricing Issues
- Cost Issues
Telephony Substitute? VoIP

Voice over IP (VoIP)

- Price Arbitrage
- Latency
- Standards

VolP, Price Arbitrage

- No Universal Service Fund
- No Access Charge
- No International Settlements
- Dual Use Networks

Other Issues

- E-Commerce
  - Privacy
  - Security of transaction
  - Jurisdictional issues
- Encryption

Agenda

- Internet Market Structure
- Interconnect Issues
- Capacity Considerations
- Pricing Issues
- Cost Issues
- Conclusion/Summary

Thank you!

Any Questions?