



Performance from Experience

Regulating the Internet

CITEL FORUM

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Introduction and Outline

- Goals of Regulation
- How does the Internet differ from telephony?
- Impact of Internet on traditional telecommunications
- Regulatory options
- Potential for unanticipated consequences

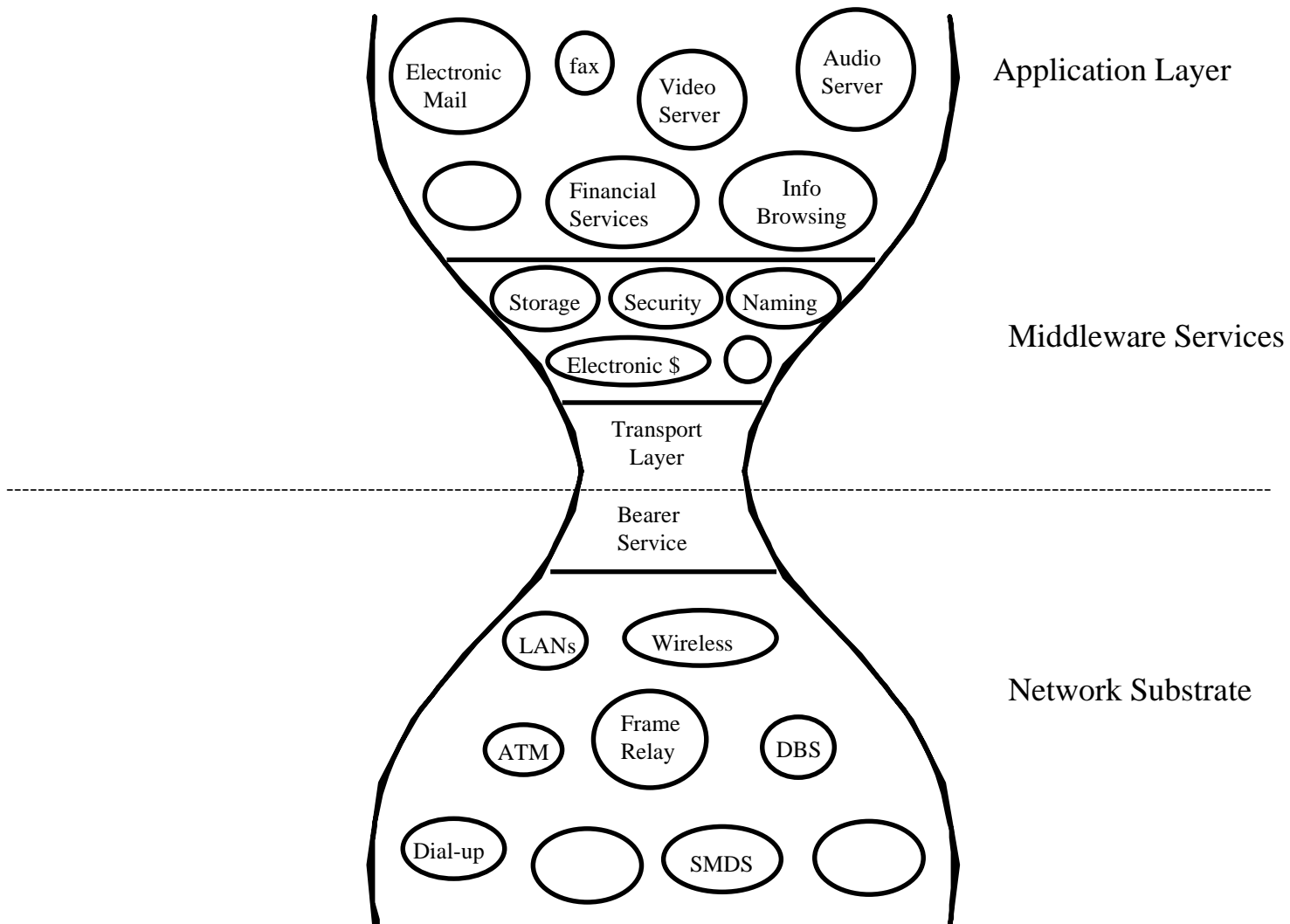
Goals of Regulation

- Traditional static goals
 - Ensure widespread access to affordable service
 - Promote economic development/growth
 - Limit suppliers' exercise of market power
 - Emulate the results of competition:
 - efficient pricing
 - new services
- Current dynamic goals
 - Help genuine competition to emerge
 - Encourage rapid introduction of new technologies
 - Encourage rapid widespread availability of new services

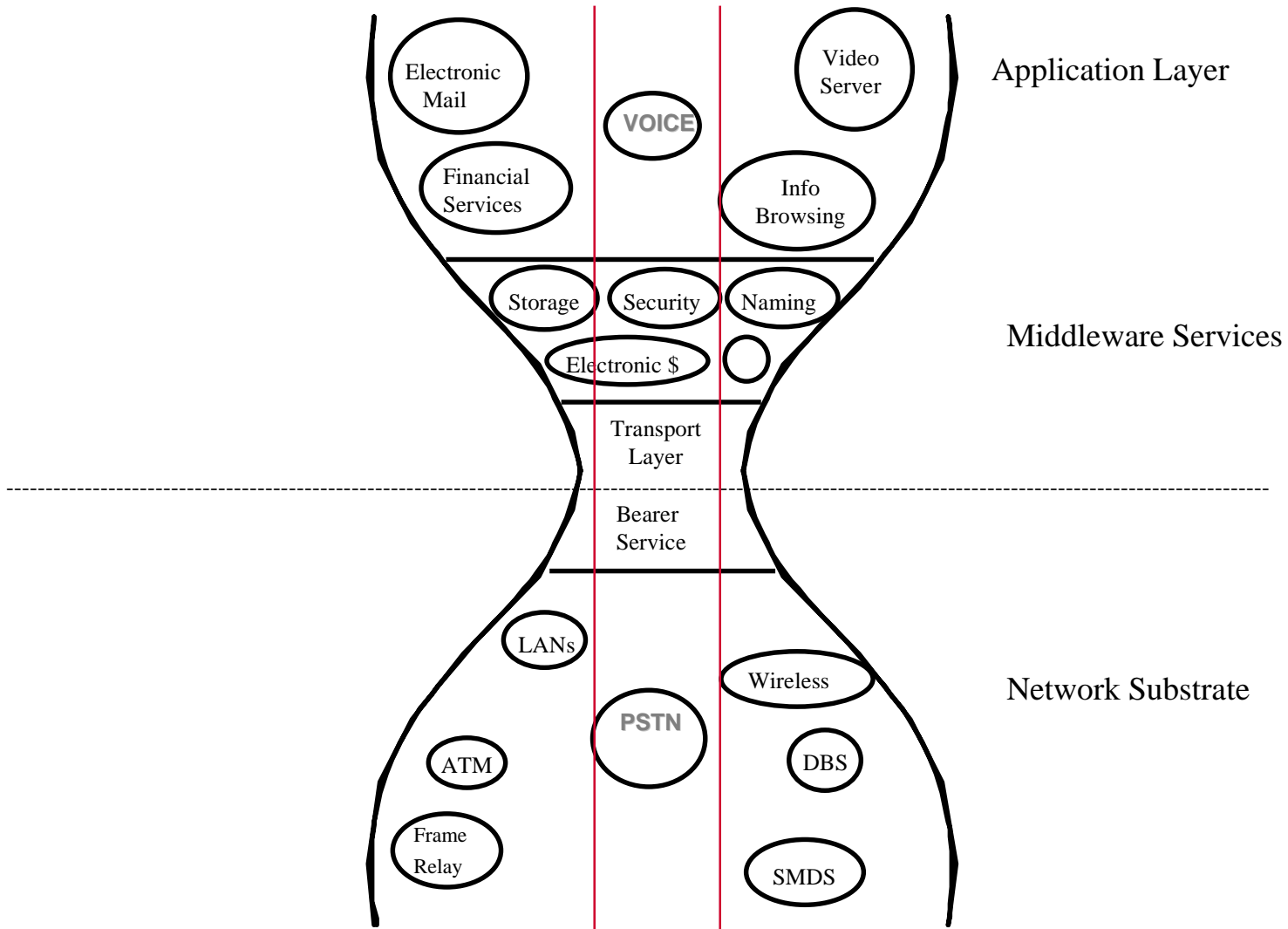
How does the Internet differ from telephony?

- Telephony has been provided by vertically integrated companies who own and operate the network and provide all the services they choose to offer
- The Internet is a set of interconnected networks and computers using the IP protocol
- Many companies specialise in certain aspects of the business
- Users deal with internet service providers, application service providers, portals, content providers, each other, . . .
- Each may be paid separately, by the user or by third parties, or by the sale of information, or by exposure time and screen space
- Services are provided across the internet, almost independently of national and network ownership boundaries

Internet Architecture



PSTN Structure



Impact of the Internet on Telecommunications

- Internet users demand new capabilities from the PSTN
 - Call duration changes, higher quality circuits are demanded
 - Traffic patterns change (ISP dial-up and bypass)
- Internet applications compete with PSTN services (direct substitution)
 - Voice over IP, fax over IP, new kinds of call-back
- Internet applications can supersede PSTN services
 - video over IP, multicasting and streaming media, personalisation
 - shared data and Ecommerce

Regulatory Options

- Economic regulation of ISPs
 - Retail price controls
 - who could they be applied to?
 - How would services be defined?
 - Each service is multi-dimensional and has many participants
 - Freeserve/Altavista model competing with AOL model
 - ISP to ISP dealing
 - Large ISPs peer with each other, but typically treat smaller ISPs as customers and require payment
 - Quality varies too
- Conduct regulation
 - Could require openness and interoperability at the application layer
 - AOL instant messaging example
 - Could require full disclosure of privacy, security policies etc.

Potential for unanticipated consequences

- Economic regulation of ISPs
 - Retail price controls
 - Could result in application provision by different entities
 - Could have consequences for service availability
 - ISP to ISP dealing
 - Hard to monitor conduct: policing more difficult than with PSTN interconnection agreements
 - No standardised costing methods or standardised service
- Conduct regulation
 - Could require openness and interoperability at the application layer
 - Hard to manage with dynamic technologies
 - Hard to enforce if provided across national boundaries
 - Could require full disclosure of privacy, security policies etc.
 - Can kill beneficial services: e.g. UK based Thomas the Tank Engine site

Conclusion

- The Internet threatens the traditional regulatory framework
- There may be a need to manage emerging dominant players
 - AOL, Worldcom-Sprint . . .
- More complex to regulate the Internet than the PSTN
- Internet applications may reduce the need to regulate the PSTN
 - PSTN providers lose monopoly power over long distance calls etc.
 - PSTN network loses importance to the nation as data network grows around it
- A multinational approach may be the only way forwards if regulation is needed