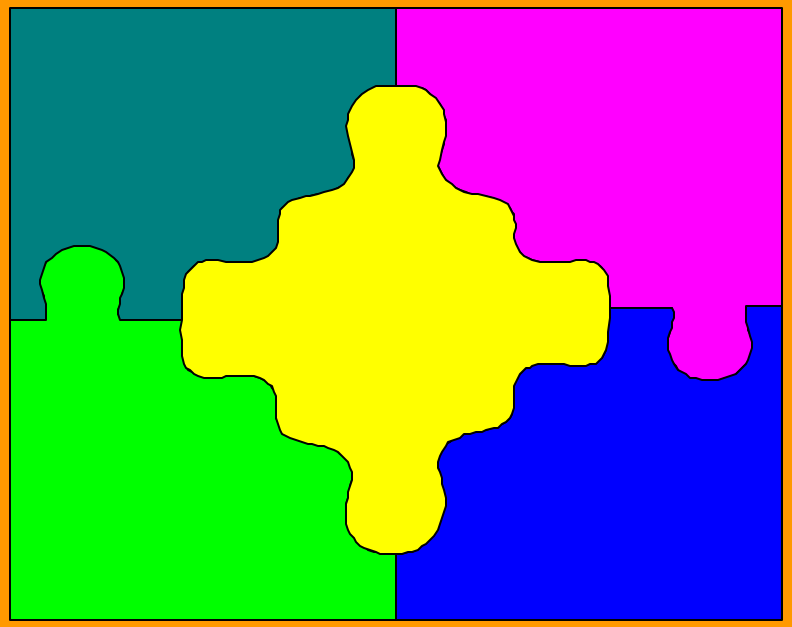
Appropriate Regulatory Policy in an IP World



Regulate or Not?

- The FCC uses the distinction between Information and Telecommunications to determine if a service should be regulated.

Interconnection and Financial Obligations

Title II

Common Carriage: Rate Regulation (except for CMRS), Interconnection Regulation, and USF.

Telecommunications Wireline and CMRS

Telecommunications

All telecommunications carriers have the responsibility to interconnect.
LECs are required to be compensated or to compensate other carriers when interconnecting.

Title I

Overall FCC Authority

Information Service Providers

Title VI

Limited Rate Regulation and No Interconnection Regulation

Not Telecommunicatons CATV

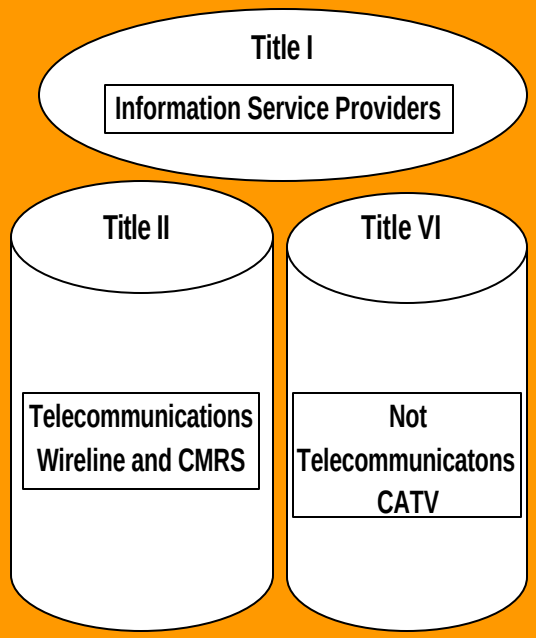
Information Service

- **The FCC has chosen to forbear from enforcing financial and interconnection obligations.**

The standard for defining Telecommunications must change

- The FCC has used the “change in form” standard to determine if a service is information or telecommunications.
- But, all digital transmissions involve a “change in form” of the original signal.
- Therefore, the “change in form” standard should be abandoned and a new standard developed.

Technology necessitates changes in policy



- Technology has now broken the link between the physical medium and the service.
- For example, Quality of Service (QoS) enabled IP multimedia applications can be carried on any[1] physical medium.
- Regulatory decisions can no longer be based on the classification of the physical medium.

[1]Any medium that supports the throughput requirements.

Answer: "Layered" Approach to Regulation

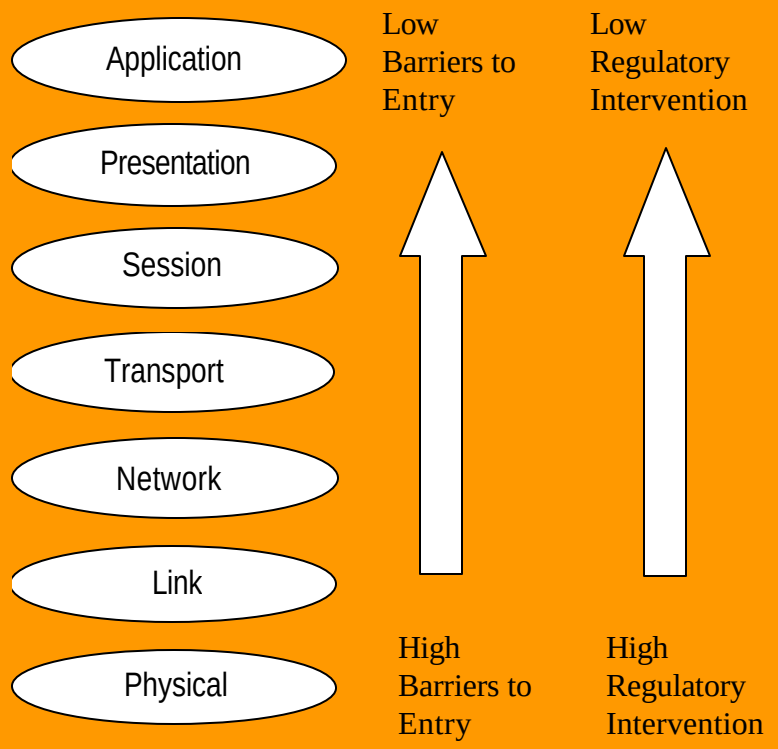
- Clarifies the distinction between telecommunications and information services.
- Separates the physical medium from the service.
- Achieve economic and social goals by
  - ensuring universal service in rural areas, and
  - protecting public safety and national security.

Structure for a Comprehensive Policy

OSI Stack	Name
7	Application
6	Presentation
5	Session
4	Transport
3	Network
2	Data Link/Link
1	Physical

- Network functionality is defined in terms of "layers."
- Network functionality can be identified with any technology, e.g. wireless, wireline, cable, IP or TDM.

"Layers" approach to regulatory oversight



- Generally, higher protocol layers are associated with lower barriers to entry.
- An exception is when carriers bundle layers, which creates market power, e.g. wholesale backbone providers.

Move from "Silo" to "Layered" Regulation

Current

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Proposed

Application Layers
Layer 6, 7 and Content
Lightly Regulated

Logical Layers
Layer 3, 4, or 5
Interconnection Rate Regulation

Physical Layers
Layer 1, 2 and Facility
Interconnection Rate Regulation and Infrastructure-based USF

Bundled Layers Provided by a Single Service Provider
Interoperability and Interconnection Rate Regulation

Social regulation related to public safety and national security is necessary for all layers.

Appropriate "Layered" Regulation for an IP world

- Similar levels of regulation should be imposed on all providers of telecommunications services defined by functionality in layers 1 through 5.
- Interconnection regulation should be most forceful when
  - high barriers to entry, and/or
  - concentration of market power, especially affordable access to backbone services.
- High cost support in rural areas should be targeted to infrastructure layers 1 and 2. Ultimately USF must be shifted from supported services to supported infrastructure.
- At all layers, regulatory oversight should be sufficient to ensure public safety and national security.