

Old Wires → Old Rules New Wires → New Rules

Presentation to the Public Utilities Research Center
2005 PURC Fall Roundtable
October 19, 2005
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Disclaimer

Dr. Jamison has asked us to be provocative. To that end, the statements, assertions, and fabrications contained herein may be outrageous and therefore do not necessarily represent the official policy position of Verizon.

You want choices. And Bell's got 'em.

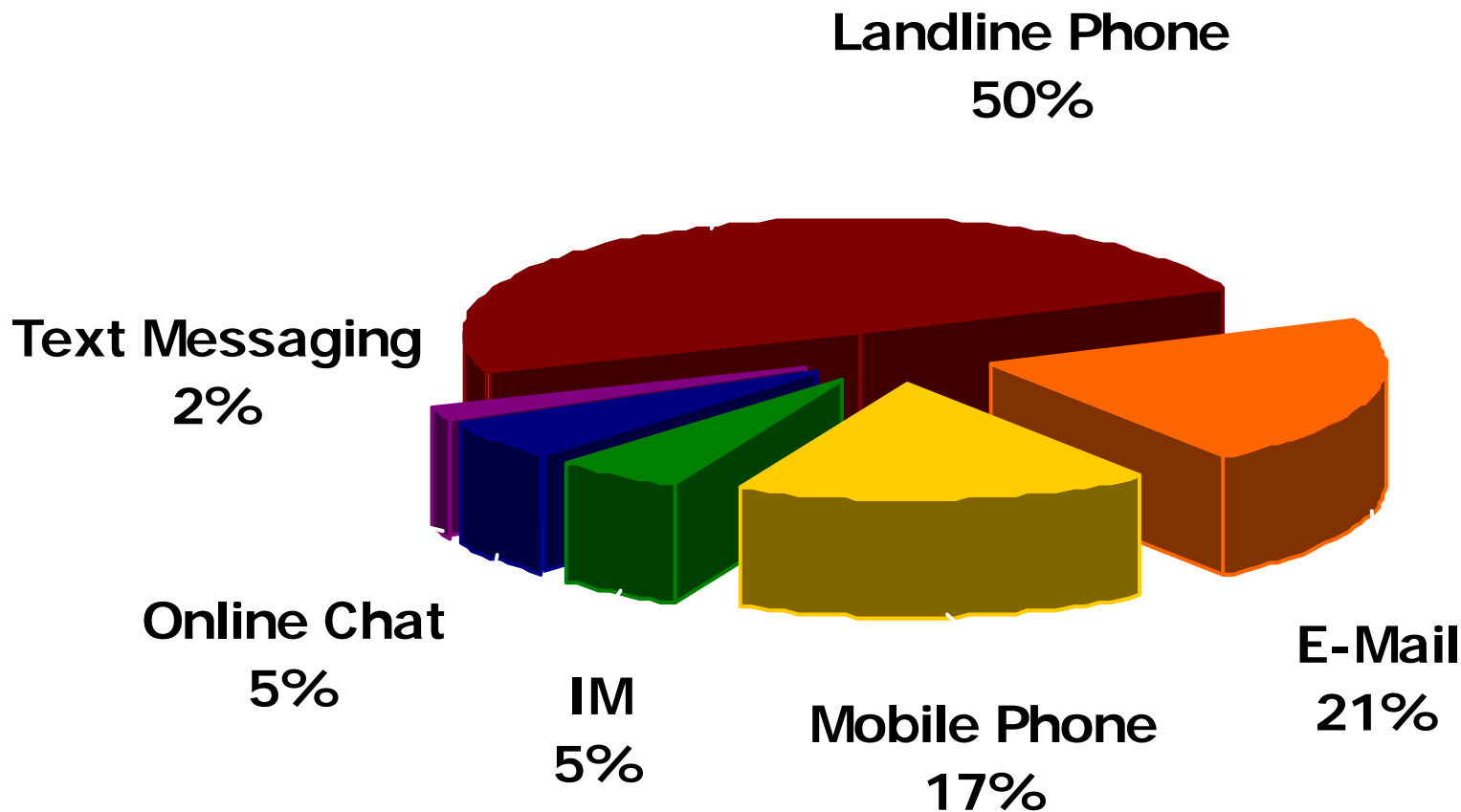


AT&T print ad circa 1977

The World Has Changed

- Consumers and businesses want more than just a colorful telephone
 - Broadband data access
 - Converged voice services
 - Robust, reliable communications
 - One bill from one provider
 - Choice of providers
- Broadband is the enabler for a variety of “new world” IP-enabled services

Traditional Telephony Is a Shrinking Slice of the Total Communications Pie



Consumers freely substitute one technology for another

% of total daily MOU for North American consumer. Weighted average of 2004 data from Forrester.

New World of Telecommunications

- In the last 5 years, the world has changed, and the change will be even more dramatic over the next 5 years
 - Mobile transition – voice and broadband
 - Broadband Internet transition
 - Fiber, DSL, Cable, Mobile and Fixed Wireless
 - Intelligent devices vs. intelligent core
 - Convergence – services, devices, and networks
- Consumers in control
 - Bundles, alternatives, hyper-competition
 - Prices are stable (or lower) & values higher

Major Paradigm Shifts Are Redefining The Telecommunications Market

- The **Wireless** Paradigm
 - Anytime/anywhere/high bandwidth connectivity
 - Lifestyle/business personalization
 - “On-net/off-net” vs “Local/LD” pricing
 - Consumer electronics lifecycle for handsets are shorter than traditional telco product lifecycles
- The **IP** Paradigm
 - Universal connectivity and standards
 - Greater control by users at the “edge”
 - Voice as an IP application vs basic service
 - Value creation through broad-based investment
- The **Broadband** Paradigm (wireline and wireless)
 - Accelerates and intensifies the impact of wireless and IP
 - Extends high-capacity capabilities from hubs to endpoints
 - Drives interactive applications and services that deliver excitement and productivity
 - Convergence

Transformation of the Wireline Network

Traditional Network

- **Circuit Switched**
- **Low Speed Transmission**
- **Narrowband Access**
- **Central Control**
- **Separate Voice and Data**
- **Telephony Vertical Services**
- **Private Dedicated Networks**

Emerging Network

- **Packet Routed/Switched**
- **High Speed Transmission**
- **High Bandwidth Access**
- **Distributed Control**
- **Integrated Voice and Data**
- **Integrated Vertical Services**
- **Virtual Private Networks**

Circuit Switching vs. Packet Switching

Circuit Switching:

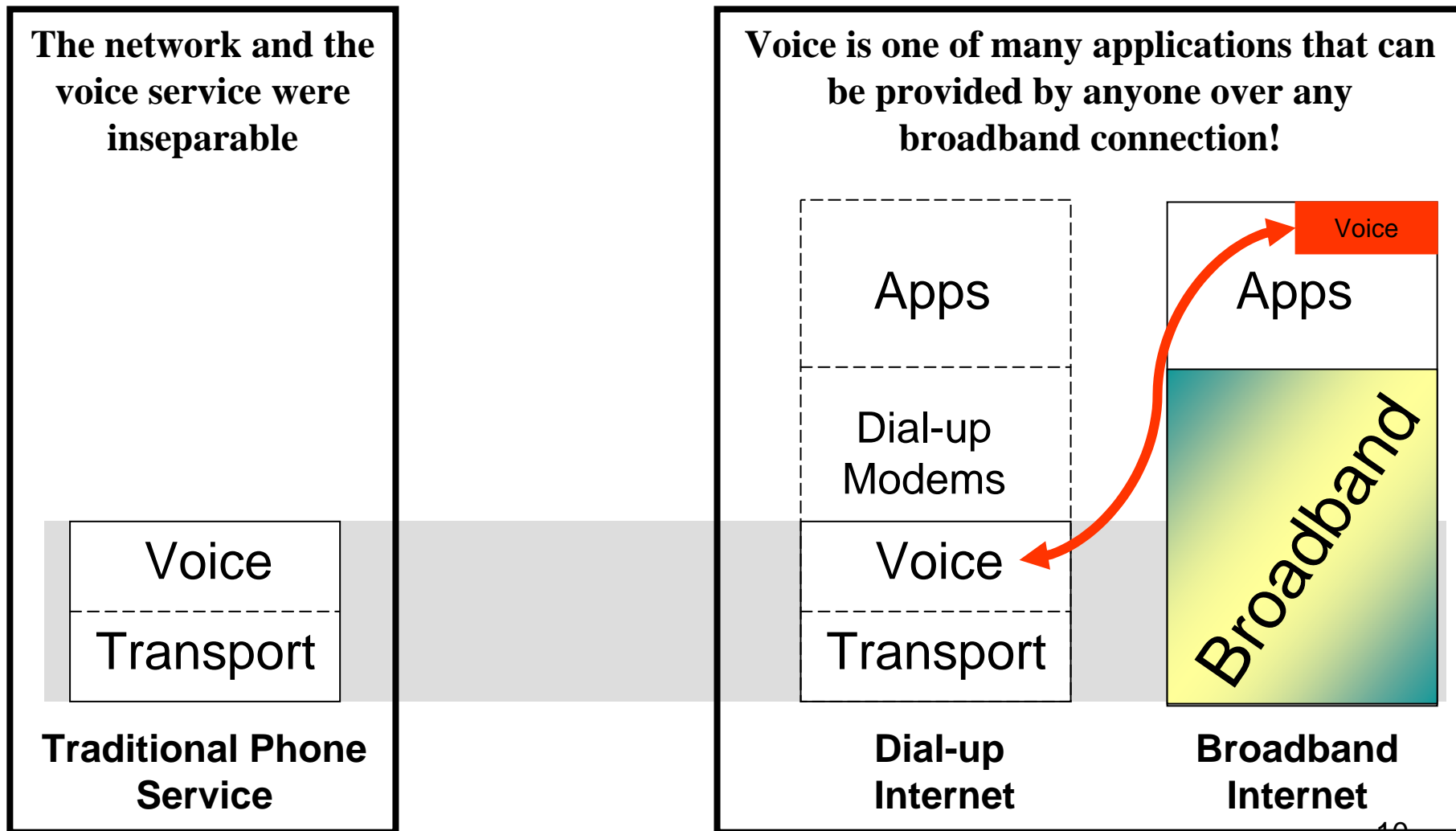
- Centralized switching intelligence
- Dumb endpoints
- Connection-oriented (point-to-point)
- Connections “nailed up” even if no traffic
- All calls “on-net”
- Endpoint locations well known
- Location-based numbering (NPA-NXX)
- LATAs/Rate Centers
- Quality of Service (QoS) guarantees

Packet Switching:

- Distributed intelligence
- Smart endpoints
- Connectionless (many routes)
- Traffic shares connections
- On-net and off-net calls
- Endpoint locations indeterminate
- Global IP addressing
- No boundaries
- “Best efforts”

Broadband & VoIP Change Telecom Model

Verizon, Vonage and others offer applications that ride on a broadband connection



Technology Differences → Policy Problems

Traditional Telephone

- Location
 - Customers locations were known
 - Service providers had physical presence in town/state/country
- Mobility
 - Customer's locations were fixed and did not change
- One Service
 - Network operator provided voice service
 - Voice was the primary service
 - Voice calls could easily be identified, tracked, measured & monitored

VoIP

- Location
 - Service providers and end users can be located anywhere
 - Service providers do not need to know where their customers are physically located
- Mobility
 - Customers can use their service from any broadband connection anywhere
 - home, office, hotel, Starbucks, etc...
- Convergence
 - Broadband provider may be unaware of voice service
 - Voice is one of many services riding over the same broadband connection
 - Voice packets are indistinguishable from the rest (web, email, instant messaging, etc.)

Factors to Consider

- Broadband networks will be key to the continued growth of the Internet and the global economy - and to the participation of many in the future economy
- Being able to communicate not only *what* you want and in *what form* but *where and when* will drive the continued integration of networks – wireline, wireless, and broadband
- Networks of all kinds - seamlessly interconnected - will be important to serving the needs of the economy and consumers.

More Factors To Consider

- The Internet has penetrated far faster into global society than is commonly realized
 - It is the common communications platform
 - It has already changed attitudes and markets
- Consumers demand convenience in every product and service
 - Bundling of products and services builds on this trend
 - Price sometimes a secondary concern
- Consumers are very informed and savvy - the Internet has helped equalize the market dynamics
 - In fact, consumers may now be in control much more so than companies
- Companies will need flexibility, the ability to brand, the ability to “move on the fly” in order to compete

Regulation in the New World

- In today's changed world, consumers have many communications choices -- the last mile has many lanes
- Not only is there competition among telecom providers, there is robust competition among telecom technologies and platforms
- Competition in wireless, cable, and satellite television has thrived in a lightly regulated environment in the U.S., creating new choices and services for consumers
- Regulators can stimulate economic growth, create jobs, and bring greater value to consumers by lightly regulating new services in emerging markets

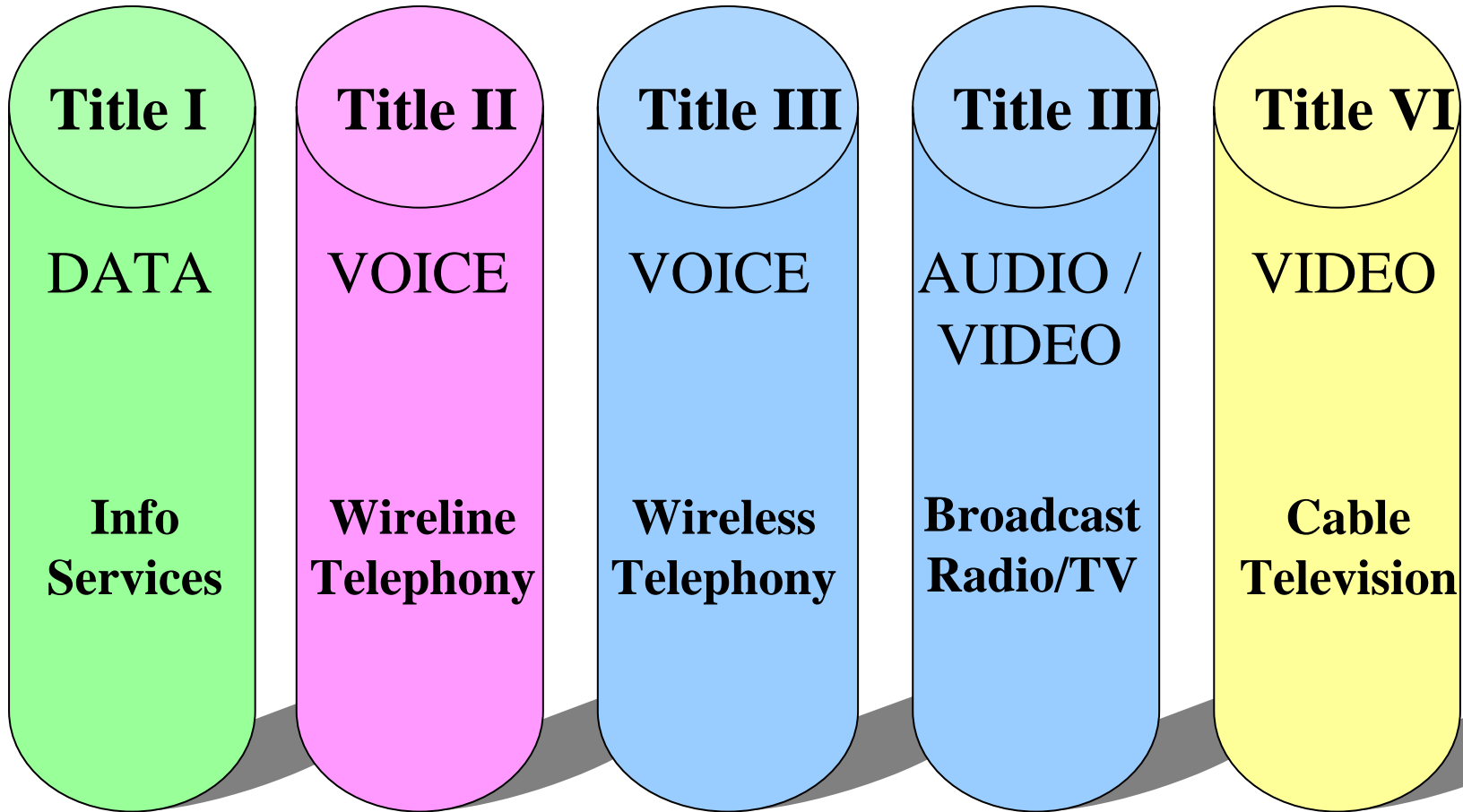
What Can Regulators Do?

- First challenge is to stimulate innovation, choice for consumers
 - Regulation leads to “least common denominator” service
- Regulators no longer overseeing mature technology/industry
- No economic/rate regulation for IP services and underlying broadband networks
 - Stimulate investment, risk taking, innovation
 - Traditional regulatory approach would stifle investment, risk taking, technology advancements, differentiation
 - Potential of IP services still far from developed
- Allowing IP services and broadband networks to grow will achieve key goals
 - More consumer choice
 - More consumer control
 - Improved service
 - Jobs/GDP growth
 - Studies by Chamber of Commerce show GDP growth of \$640 billion over the next five years and more than 300,000 jobs

Need For A New Communications Policy

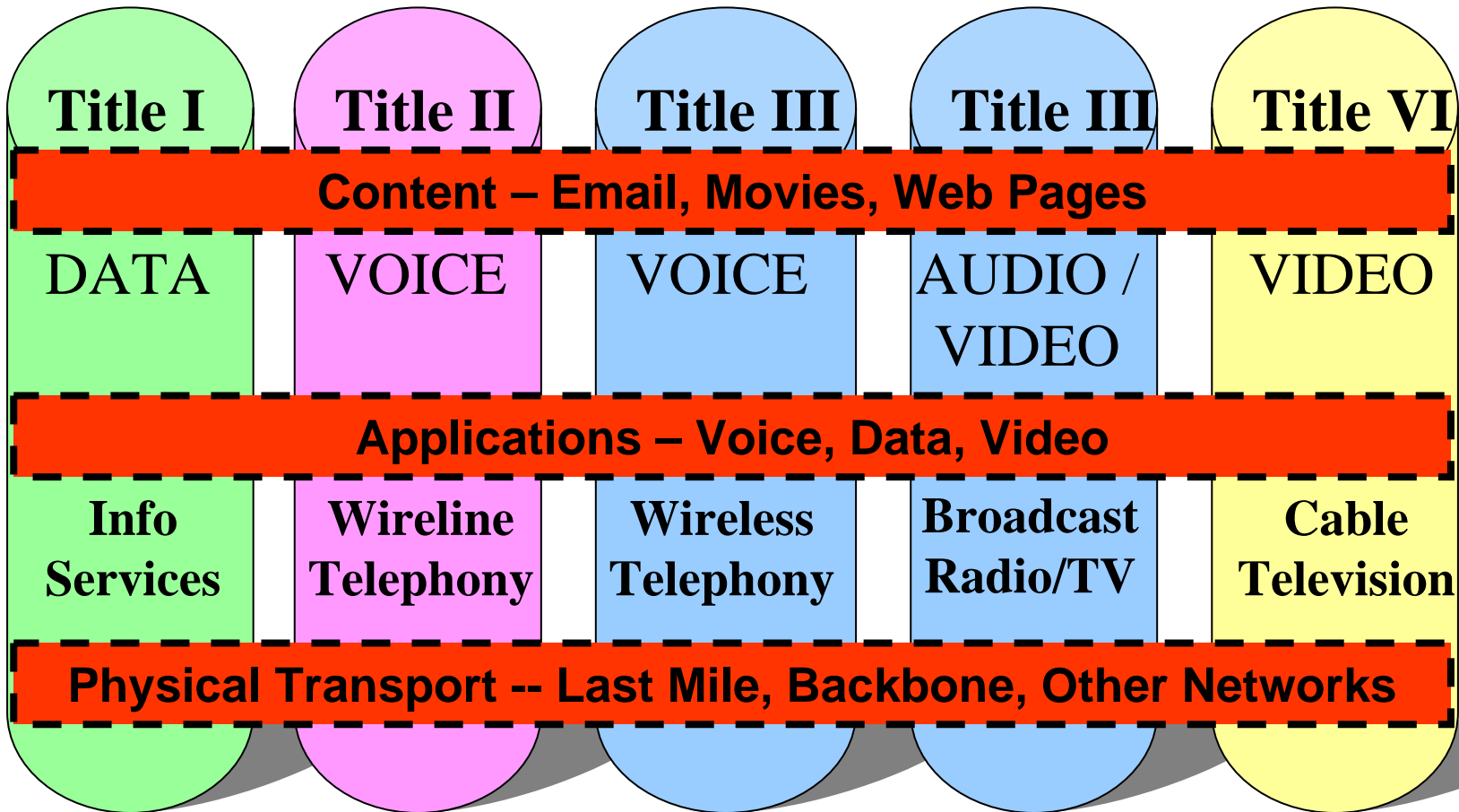
- The 1996 Telecom Act presumed that competition would come mainly from within the traditional telephone industry
- What we've seen is that it actually comes from new platforms, like wireless and cable
- Telecommunications industry today more closely resembles other technology-intensive industries → competition comes from innovation and investment rather than regulation

Old Wires → Old Rules



Traditional regulation yields vertical “stove pipes”

New Wires → New Rules



Today's IP-enabled world doesn't fit in the old artificial regulatory silos

Policy Implications

- Telecom has become naturally competitive due to convergence and substitution between competing modes of communication
- Internet access is rapidly migrating to broadband
 - Mass market internet is here
 - Broadband access growing rapidly and will soon surpass dial-up
- Consumers have variety of electronic communication tools to choose from
 - Long Distance usage is suffering from massive substitution, affecting IXCs and also LECs who lose access revenue
- Voice telephony is migrating to wireless and broadband
 - Digital Cellular, small phones, long battery life, competitive pricing
 - Voice over IP will challenge existing wireline telephone providers

Market dynamics have major implications for policy makers and regulators

What Should The New Rules Be?

- Promoting broadband infrastructure investment should be number one priority
 - **U.S. lagging some countries in BB deployment**
- Regulations designed for monopoly environments are harmful in a competitive environment where consumers can choose among many application providers
 - **Different rules for different technologies essentially providing the same service make for unnecessary barriers**
- Market, press, political and other forces should cause all players in the end-to-end Internet value chain to cooperate, but in the event of non-correcting market failures, government should be prepared to act
 - **Connectivity principles work well for the internet, why not for telephony?**

No anticipatory regulation – it just doesn't work

Other Issues Facing Regulators

- Video franchising
 - Cable companies offering VoIP → No franchise
 - Telcos offering video → Must franchise
 - For VZ, it's a time-to-market issue, not the 5%
- Municipal broadband / Wi-Fi networks
 - Local governments should tread carefully – track record is not good
 - Why be 3rd or 4th entrant in a metropolitan market?
 - Better to address computer literacy and availability first
 - VZ does NOT support a ban on muni networks, we just want them to do their homework first
- “Hard-to-serve” markets
 - Multiple dwelling units (MDUs) require custom network engineering and cooperation of landlords
 - VZ deploying a variety of wireless and wireline plus wireless options to serve rural markets with broadband

