Why Growing Up is Hard to Do

**The "Quarter-life Crisis" of the Digital Revolution in the Transition from a
Public Switched Telephone Network to a Public Digital Communications Network**

**The Challenge of Defining the Social Responsibilities of a 21st Century
Communications Network in a Progressive, Democratic, Capitalist Nation**

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The means of communications are one of the most important infrastructures in any society because they support the flow of commerce and ideas. In the information age, they may be **the** most important infrastructure. For at least half a millennium, as new technologies transformed the means of communications, democratic societies examined how they were helping or hindering in the accomplishment of broader social goals and, where need be, established obligations to advance toward those goals.

Slide 1: I analyze policy in four realms of social order, each of which has a structure of institutions to accomplish its goals that deeply affects and is deeply affected by the means of communications.

Slide 2: The digital communications revolution is going through a quaterlife crisis – that painful period when adolescence ends and adult responsibilities must be shouldered. Here the maturation challenges are the social goals of the Public Switched Telephone Network (PSTN) that it is being asked to fulfill.

Slide 3: The obligations that the PSTN was asked to shoulder did not grow from the PSTN itself, they came from society and were imposed when the PSTN became the primary means of communications.

Non-discriminatory interconnection and carriage are grounded in 17th century common law. Intellectual property protection, free speech, privacy and personal security are found in the late 18th century U.S. Constitution. Public subsidies to ensure access to the means of communications and commerce were evident in support for the post office and post roads in the early nineteenth century and the land grants to railroads in the mid-19th century.

In the late 19th and early 20th centuries, as huge corporations became the primary organizational form in the economy, it was no longer possible to rely on common law and general statute to ensure that the means of communications were serving higher social purposes, so specific legislation was enacted to do so. Between 1900 and 1910, state and federal regulatory oversight was implemented on telephony to ensure the new communications network lived up to the key social values.

The hallmark of a progressive society is to continually raise the standard as technology advances and that is what happened over the course of the 20th century.   The Communications Act of 1934 was devilishly clever and pragmatic in setting the goal – "to make available, so far as possible, to all people of the United States, a rapid efficient, nationwide and world-wide wire and radio communications service with adequate facilities are reasonable charges." What is considered rapid, efficient, adequate and reasonable evolves over time and this applies to both wireline and wireless networks.

As we now transition from a public switched telephone network to a public digital communications network, a progressive society does not abandon its traditional values; it finds ways to ensure that society rises to a higher level of achievement.

This is the big moment in the quarterlife crisis of the digital revolution. How it meets it maturation challenges will determine how well it advances the values we have held dear for centuries.

Slide 4: Each of the social obligations needs to have a specific legal basis, but the form of regulation necessary remains to be determined in part because each is grounded in a different realm of society, but also because each of the challenges affects the Internet at a different layer. Therefore, it is entirely reasonable and possible that different regulatory approaches will be best suited to address different social obligations.
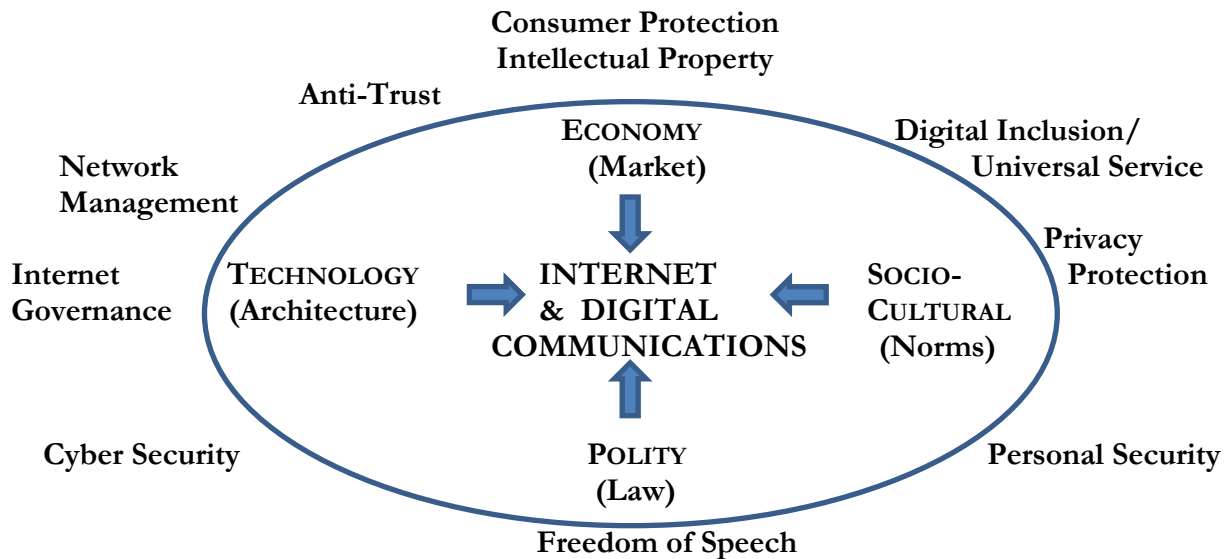
Slide 5: The extremes of command and control regulation and self-regulation on are but two possibilities in an increasingly rich set of regulatory tools.   Command and control has become too politicized and starved of resources to be effective, and it is generally ill-suited to deal with dynamic, diverse industries. While self-regulation has worked well at waist of the hour-glass, where technical matters are dealt with by technicians, it has benefited from public policy declarations of public purposes. Self-regulation has been an abysmal failure in dealing with the challenges that arise from the other realms of society.

Slide 6: I believe participatory regulation and crowd sourcing enforcement are different, better approaches to deal with many of the social obligations of the public digital communications network, but alternative regulatory approaches will work better, be credible and gain legitimacy **only** if they are carefully crafted to be transparent, promote participation, and deliver compliance (rather than enforcement).
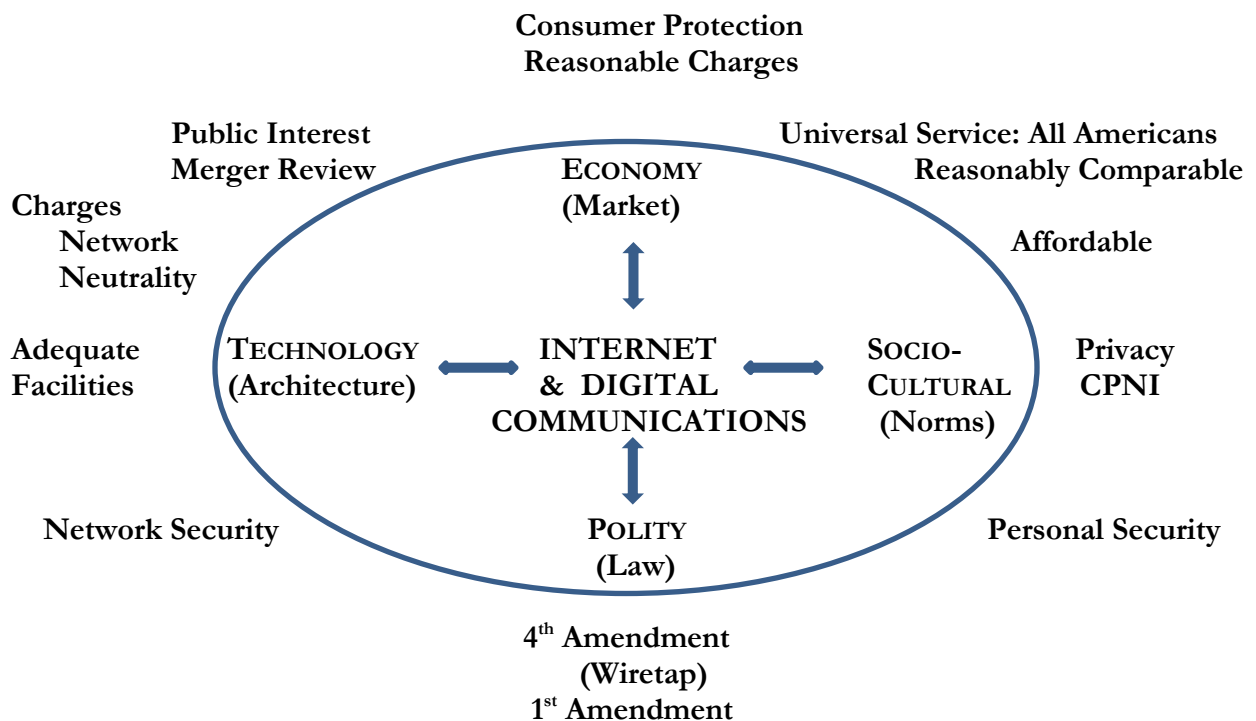
SLIDE 1:
THE NATURE AND VALUE OF INSTITUTIONS IN THE REALMS OF SOCIAL ORDER

<u>Realms of Social Order</u>

	Technology	Economy	Socio-Cultural	Polity
<u>Institutional Elements</u>				
Value Created	Comfort/ Security	Well-being Equity	Fulfillment Dignity Self-awareness	Freedom, Autonomy Agency
Affected Activity	Movement	Exchange	Self-Expression Creation of Meaning	Speech, Mobilization
Progress	Expanding the range of things that humans can do by reducing constraints	Improving material well-being & distributing it justly.	Enabling fulfillment & character development, connectedness; Enhancing the ability to self-consciously produce the cultural artifacts that create the shared meaning	Expanding the sphere of freedom; Increasing individual autonomy/ action and facilitating its translation to collective authority.
Roles Governed	Inhabitant/ User	Consumer/ Producer	Person/ Member	Citizen/ People
Modality of Regulation	Architecture	Rules of	Norms – Meaning Governance	Law
Nature of Constraint	Physical	Monetary	Opprobrium	Sanction
Timing of Constraint	Before	During	Before/After	After
Enforcement Agent	Builder/ Operator	Seller/Buyer	Peers	Police/Courts

SLIDE 2:
THE MATURATION CHALLENGES CONFRONTING THE DIGITAL REVOLUTION

Consumer Protection
Intellectual Property

Anti-Trust

Network
Management

Internet
Governance

Cyber Security

ECONOMY
(Market)

TECHNOLOGY
(Architecture)

INTERNET
& DIGITAL
COMMUNICATIONS

SOCIO-
CULTURAL
(Norms)

POLITY
(Law)

Digital Inclusion/
Universal Service
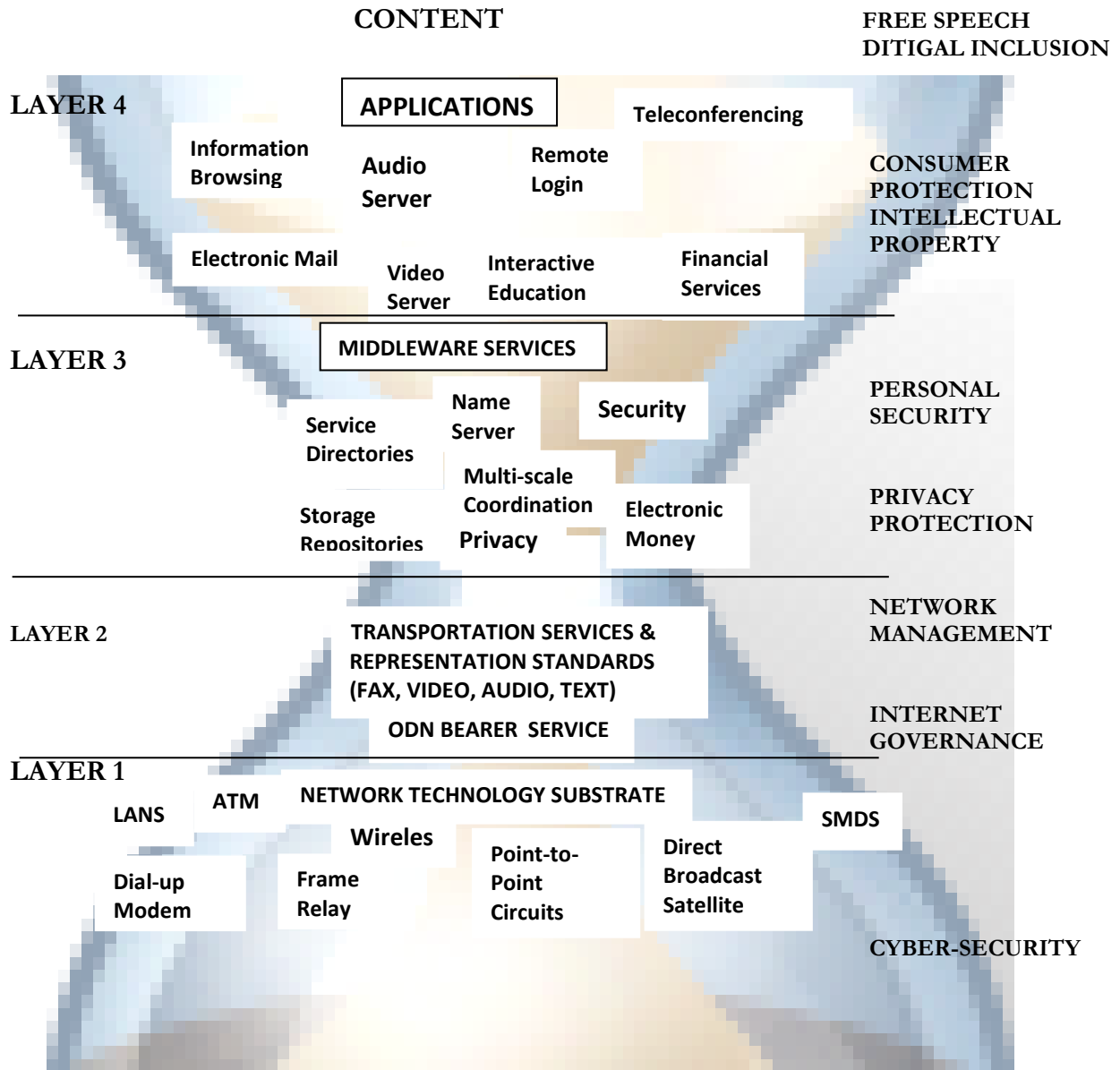
Privacy
Protection

Personal Security

Freedom of Speech

SLIDE 3:
MAPPING THE SOCIAL RESPONSIBILITIES OF THE PUBLIC SWITCHED TELEPHONE NETWORK ONTO THE PUBLIC DIGITAL COMMUNICATIONS NETWORK

Consumer Protection
Reasonable Charges

Public Interest
Merger Review

Charges
Network
Neutrality

Adequate
Facilities

Network Security

ECONOMY
(Market)

TECHNOLOGY
(Architecture)

INTERNET
& DIGITAL
COMMUNICATIONS

SOCIO-
CULTURAL
(Norms)

POLITY
(Law)

Universal Service: All Americans
Reasonably Comparable

Affordable

Privacy
CPNI

Personal Security

4th Amendment
(Wiretap)
1st Amendment

THE INTERNET

THE MATURATION CHALLENGES

CONTENT

FREE SPEECH
DITIGAL INCLUSION

LAYER 4

APPLICATIONS

Teleconferencing

Information Browsing

Audio Server

Remote Login

CONSUMER PROTECTION
INTELLECTUAL PROPERTY

Electronic Mail

Video Server

Interactive Education

Financial Services

LAYER 3

MIDDLEWARE SERVICES

Name Server

Security

PERSONAL SECURITY

Service Directories

Multi-scale Coordination

Electronic Money

PRIVACY PROTECTION

Storage Repositories

Privacy

LAYER 2

NETWORK MANAGEMENT

TRANSPORTATION SERVICES & REPRESENTATION STANDARDS (FAX, VIDEO, AUDIO, TEXT)

ODN BEARER SERVICE

INTERNET GOVERNANCE

LAYER 1

NETWORK TECHNOLOGY SUBSTRATE

LANS   **ATM**

Wireles

SMDS

Dial-up Modem

Frame Relay

Point-to-Point Circuits

Direct Broadcast Satellite

CYBER-SECURITY
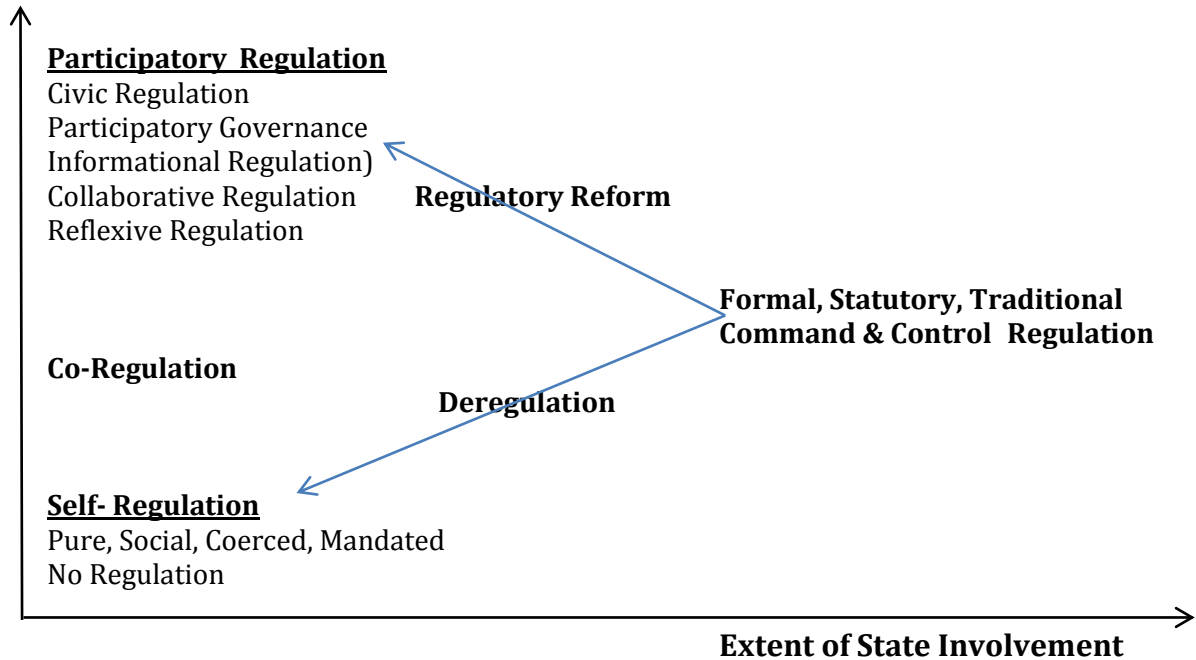
Source: National Research Council, *Realizing the Information Future* (Washington, D. C.: National Academy Press, 1994), p. 3.

SLIDE 5: ALTERNATIVE APPROACHES TO REGULATION ALONG TWO DIMENSIONS

Extent of Civil Society Participation

Participatory Regulation
Civic Regulation
Participatory Governance
Informational Regulation)
Collaborative Regulation
Reflexive Regulation

Regulatory Reform

Formal, Statutory, Traditional Command & Control Regulation

Co-Regulation

Deregulation

Self- Regulation
Pure, Social, Coerced, Mandated
No Regulation

Extent of State Involvement

SLIDE 6:
ATTRIBUTES OF AN EFFECTIVE ALTERNATIVE REGULATION STRUCTURE

Legal Clarity	Transparency/Openness	Participation	Desired Results
Relationship to government	Clarity of Purpose	Public Awareness	External
Formal	Dialogue	Rights - Redress	Credibility
Sponsored	Consensus	Public consultation	Legitimacy
Recognized	Informing policy process	Inclusiveness	Effectiveness
Status of Decisions	Influencing decisions	Access	Efficiency
Safe Harbor	Planning	Representativeness	Adaptability
Reg.-Neg.	Implementation	Organization of groups	Flexibility
Sponsored	Monitoring and evaluation	Resources	Internal
Recognized	Data gathering and analysis	Expertise	Building Trust
Preferred	Clarity of Process/Rules	Role of independents	Shared Knowledge
Advisory	Governance	Adequacy of Resources	& Expertise
Informal	Convening	Overall	Culture of
Bully Pulpit- Nudge	Decision rules	For NGOs	Cooperation &
Procurement	Voting	Industry Coverage	Leadership
R&D	Unanimity (Veto)	Achieve Critical Mass	
	Super Majority	Avoid "Capture" &	
	Majority	Ballot packing	
	Non-Voting		
	Rough Consensus		
	Right of Appeal, Dissent		
	Scope of "Authority"		
	Rules only		
	Review of operations &		
	& goals		

Compliance > Enforcement
Accountability
Fairness
Speed
Appropriateness
Complaint and Audit
Adequacy of Resources