

A GENERAL MODEL OF A
UNIVERSAL, OPEN, AND MULTI-FUNCTIONAL
BROADBAND ELECTRONIC CARRIER SYSTEM*

Governed by Public Interest Objectives and Requirements

Value of Study

There have been many general studies of broadband "cable television" development. But none has provided a general model of the operational and economic potentials of a universal, open system. Rand, Sloan, Little, Mitre, Stanford, etc. have evaluated specific aspects of cable's capabilities or its relationships to broadcasting and other media. None has constructed a practicable general model for development by public interest criteria.

Purpose and Benefits

A general model with specific technical, economic and regulatory parameters will provide public-policy makers as well as the general public with definable objectives for broadband communications development governed solely by standards of the public interest.

Such a model would serve three principal benefits:

1. Define optimum requirements and standards of all broadband cable systems:
 - a. Establish goals and criteria for new systems.
 - b. Guide the transition of existing systems to more progressive and advanced systems.
 - c. Avoid constraints in the terms of current franchising and regulation of cable television which might obstruct beneficial evolutionary developments.
2. Provide guidance for federal, state and local policy-makers in the planning and evaluation of standards for franchises and certification, specifically by identifying and evaluating system parameters and their principal and operational and structural alternatives.
3. Provide development guidelines to the two interdependent industries whose products, markets, volume and profits depend upon the capabilities and scale of the broadband cable carrier systems, namely:
 - .. the hardware and equipment industries (especially terminal "interconnect" equipment and attachments)
 - .. the software arts and industries whose potentials for cable development of new services and markets are as yet unrealized.

Public Interest Objectives of System Design

- 1) Connect and interconnect every home, business, public and private institution; interconnect ("network") local systems by metropolitan areas, states, regions and nationally.
- 2) Provide leased channel-time and facilities on reasonable notice to every producer, distributor and marketer of communications content and services, of all categories and formats, for either sponsor or subscriber payment.
- 3) Accelerate the inherent capabilities of "cable television"* broadband carriage for selective interconnection of multi-format input and output terminals ("interconnects") for live or delayed display, reproduction, storage, retrieval, and data processing; supplement but not replace present systems of television and radio broadcasting, telephony, microwave, print and data carriage. The model will be based upon state-of-the-art technology and procurable hardware and equipment.
- 4) Relay FCC-approved TV and radio stations either on a separate CATV cable or on channels leased to an independent "head-end" supplier. The objective is to exempt the system from Federal jurisdiction over anything but broadcast signals and other interstate carriage.
- 5) With adequate capacity available upon reasonable notice, no control by government over communication content will be required. The communicator alone will be liable for adjudicably illegal content such as fraud, defamation and obscenity.
- 6) Generate profits from operating revenues (including return on capital) solely from leasing channel time and facilities plus nominal (if any) subscriber fees. It is assumed that there would be no direct government control over rates provided they are non-discriminatory within valid categories of usage.
- 7) Maintain the system at standards of the current state-of-the-art and procurable hardware, consistent with economic returns on capital.

The study will also identify and evaluate by public interest criteria the significant technical, economic, structural and regulatory alternatives including present communications media systems.

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*Note: The terms "broadband"... "cable television"... "carrier systems" are employed for a carrier/distribution system with video-grade capacity and capability for switching/addressing. Bi-directional capability for voice and data-grade signals would permit transactional uses such as pay programming by-the-unit, retailing, banking and credit, interactive instruction, etc. The carrier may be broadband radiation (microwave or broadcast), wires or cable, fiber optics, etc., singly or in combination.

COLLATERAL ASSUMPTIONS

- a. The population of the area of operations will govern economies of scale both to software and program suppliers as well as to the franchise operator(s). The range may be from 100-250,000 homes and establishments in the area, representing a single, or several interconnected, franchise areas.
- b. The objective of universal connection may be sought by providing a terminal in every home and establishment at no , or nominal, cost. The terminal would carry all non-broadcast services including pay-cable (and possibly public and educational stations by cable links). Terminal signals may be fed into conventional receivers on unused channels or through a coaxial switch giving subscribers the option of cable signals or his own antenna. Subject to determination of FCC regulatory jurisdiction, subscribers may optionally pay for authorized local broadcast signals either on a separate cable or on a band of channels leased by an independent head-end operator. Construction and installation on a 100% connection basis would be phased by logical community and marketing areas within a time-frame determined by investment and logistic considerations.

PUBLIC INTEREST POLICIES FOR THE COMMUNICATIONS MEDIA

A. Premises

1. The functions of communications and the communications media are indispensable to our goals for personal and social self-fulfillment within a society dedicated to
 - ..maximum individual freedom governed by justice and compassion,
 - ..self-government by a fully informed citizenry, and
 - ..evolving institutions, arts, sciences, and professions; prompt utilization of the highest attainable levels of technology, economic and regulative organization which best advance these potentials.
2. The paramount objective of public policy for communications is to protect and promote the rights, freedom, and ability of every person to transmit and receive messages of any legal content to and from any other person or entity, in any medium, including the right to offer the content service for voluntary purchase.
3. This objective demands absolute equality of opportunity of access by content producers and marketers to media carrier, terminal, hardware and support services.
4. The principal constraints and suppressions of communications rights and freedoms of content has been created by vertical integration among carrier, terminal, interconnection and hardware systems and their engagement in content. In the telecommunications media, rights of entry are nearly extinguished by contrived shortages of channels and bureaucratic obstacles; there are no enforceable rights of access (with rare exceptions such as Fairness, etc.). In newspapers and national magazines, entry has become an unaffordable economic risk and rights of access have been denied de jure.

Most carrier systems function most efficiently as local if not regional and national monopolies. Proprietary hardware systems have many oligopoly characteristics. To both of these industries, control over content has powerful if not irresistible advantages which anti-trust and First Amendment enforcement is unable to restrain. Similarly, producers and marketers of software and content are motivated to avoid competition by alliances or mergers with monopoly carriers or hardware suppliers with exclusive advantages based on patents or industry agreements.
5. The Constitutions of the U.S. and of the states, as implemented by legislation, regulated by agencies, and interpreted by the courts, do not safeguard these personal and social objectives. (First Amendment vs. U.N. Declaration of Human Rights, for example.) New public policies are demanded to cope with the technology and economics of modern media.

B. A Draft Statement of
Public Policies for the Telecommunications Media

1. Access and use of, media carriers, interconnections, hardware and terminal facilities must be available to everyone at non-discriminatory terms. The only valid exceptions are adjudicably illegal content (such as defamation, fraud, obscenity, etc.) The goal is to create a market and audience for communications content services governed solely by pure and uninhibited competition for the public's attention and expenditures.
2. Carriers and hardware suppliers must be prohibited from engaging in content. All vertical integration among the functional communications systems must be prohibited and divested. To guarantee open access, all communications carriers systems including electronic, postal, wholesale/retail news dealers and carriers, should be phased into regulation by common carrier principles.
3. All horizontal integration within an end-use or geographical market on a scale which offers incentives for anti-competitive behavior must be prohibited and divested.
4. Where private capital is unable or unwilling to construct, improve, and operate communications carrier systems to their fullest technical and economic capabilities then public resources and capital must be invested or public credit pledged. Communications carriers and support technology should benefit from the same public investments as have goods and personnel carriers such as the highway, waterway, rail and air carrier systems.
5. A governing principle of institutional re-alignment and regulatory policy should be to insure that the systems, both public and private, have the greatest possible built-in incentives to advance public objectives and interests, and disincentives to obstruct them.