THE V-CHIP DEBATE: CONTENT FILTERING FROM TELEVISION TO THE INTERNET

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INTRODUCTION

The V-Chip and the Jurisprudence of Ratings

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There's something that was and remains politically mesmerizing about the idea of the V-chip, a magic wafer or combination of wires and plastic that would help salve consciences, allow public responsibility to be satisfied, resurrect parenthood, and urge provenders of programming to be more forthcoming as to the content and impact of the material they purvey. The V-chip, or the concept of the chip, seemed to hit the marketplace of competing ideologies at a moment when legislators and decision makers in Canada, the United States, and elsewhere have had a real political need for this device, some because of the actual addition it could make in the architecture of program choice and screening, and some because of the expedient opportunity the technology presented to permit the inference that government was acting in a way that dealt with important cultural questions in the society. Its genesis was in Canada, but it was the kind of idea that mushroomed and spread throughout the world. The introduction of the V-chip, in a fascinating but subtle way, has been a time for revisiting, in a new guise, the protracted, perpetual analysis of the proper role of government, if any, in establishing cultural norms and protecting them from corrosion.

The V-chip, in its basic form, is specific to television and is part of a very long series of discussions about whether television (or broadcasting generally) deserves some special attention in terms of its accessibility to children, its particular power to affect conduct, and its invasiveness. But as this notion of filtering and labeling has caught the imagination of the regulator, the legislator, and all those who wish to consider new ways to alter bargaining over imagery in society, the very *idea* of the chip or its equivalent is now moving across technologies. The Federal Communications Commission, having found the broadcasting industry rating system "acceptable," might require the installation of a V-chip or its

equivalent in computers (jurisdictionally because of their capacity to receive television signals) with implications for Internet screening and labeling.[1] The 1996 Telecommunications Act in the U.S. requires that manufacturers of "any apparatus" designed to receive television signals include the V-chip, and FCC officials have argued that computers, because they can be used to receive such signals, are potentially covered. The very request sent chills through the computer industry: "This could be a veiled attempt to back-door measures like the [Communications Decency Act]. Most computers are accepting video, and the distinction between what is going to be video for broadcast and video for the Internet is getting increasingly slim," David Banisar, an attorney at the Electronic Privacy Information Center in Washington, argued.

Within broadcasting, the V-chip approach may spread from the filtering of violent and indecent programming to filtering of advertisements of alcohol (or tobacco in some countries), to filtering of other kinds of messages that are unwanted or filterable because of political content.[2] Labeling and rating schemes proliferate: they are not only the province of motion pictures and now broadcasting. The video game industry and the music industry have responded to legislative pressure within the United States to develop labeling and rating methods of their own. One of the most important current discussions involves the development of PICS or the Platform for Internet Content Selection, a vigorous and still controversial approach to assuring a multiplicity of voluntary ratings and an architecture said to be free of government involvement.[3] School boards and libraries adopt policies that incorporate voluntary rating schemes into official regulation of access. Senator John McCain has introduced legislation, likely to be enacted, that conditions the receipt of federal subsidies on the adoption, by libraries, of particular kinds of filtering systems. Litigation over the use of awkward and relatively crude filtering software by libraries is already a First Amendment growth area. Communities design criminal ordinances that use government sanctions to enforce these restless labels. The concept of the V-chip is moving geographically as well. Its roots in Canada and the United States are discussed extensively in this book, but the V-chip is the subject of analysis in Australia, in Europe, and throughout the world.

The V-chip is the occasion for continuation of the debate about violence and sexual practices in society and how representations on television relate to those practices. As the essays in this book indicate, interpretations of the results of research on these questions vary wildly: there are those who think the connection is adequately demonstrated and those who think it is not proved sufficiently to justify government intervention. The V-chip's introduction is an occasion, as well, for a discussion, sometimes forced and artificial, about the role of parents in controlling the flow of images. There seems to be hardly any research on the specific and relevant relationship between parent (or caretaker) and child, and child and television set, yet speeches proliferate about the extent to which this device will enhance the parental or caretaking role. The technology's enthusiasts believe or claim to believe that the V-chip "empowers" parents, to use the term of the 1996 U.S. Telecommunications Act. There is no question that the technology has its doubters, both as to its inherent contribution, its neutrality and relationship to censorship, and to the plausibility of its implementation. Among these are skeptics who believe that the V-chip has merely allowed legislators and policymakers to *appear* to be addressing a problem of

imagery and society while, in fact, nothing was done with respect to that virtually intractable issue. This skepticism is oddly reinforced by industry reports, based on early experiences with on-screen television labeling, that viewers seem indifferent to the labels, by and large, and their arrival, though much debated and heralded, has been a virtual non-event.

While the initial concept of the V-chip was simple, its flow into the public realm has raised so many extraordinary questions that the introduction and production of the chip can serve as a case study in problems of law and public policy. Here are a few of the questions that have emerged: What relationship between government and the image-producing industries can be characterized (for constitutional and other reasons) as voluntary as opposed to coercive? What role should governments learning from the U.S. experience play in terms of encouraging adoption of similar labeling schemes? If images are to be evaluated, who should do the evaluation—the producers, the distributors, or "objective" third parties? What role can a monitoring board play and how should such a board be composed? In a society barraged by images, how feasibly can rating or labeling systems emerge and be satisfactory? In television, should a rating system be scene by scene, program by program, series by series, or channel by channel? Indeed, how much information about content can be effectively redacted and communicated? As news becomes a forum for the salacious, is there diminishing integrity—in terms of cultural impact—to a system that exempts news (and sports) from labeling requirements? There are semiotic questions about the nature of the logos, the on-screen signals used to alert viewers: What kind of label or logo informs, and what kind persuades? What kind of logo is neutral and what kind carries its own shame-bearing or moral judgment? What kind of logo has a boomerang effect and attracts, as opposed to informs and repels, audiences for which it is to serve as a warning? What relationship is enshrined in the architecture of labeling between the industry that produces the images and the government that regulates them (how centralized or how distributed should the process of evaluation be)? What guarantees of integrity are there to the evaluative or rating process? What mode of assessment is there to evaluate whether the experiment is "successful"? What difference does it make how quickly or slowly there is V-chip penetration of households? What research should policy-makers require to enable them to adopt or transform a framework for labeling and rating? Many of these questions, though hardly all, are addressed in the essays in this book.

How a government introduces or furthers a technology of filtering is also worthy of study. This book includes essays that contrast the very different approaches in Canada and the United States in terms of the role of regulatory agency, industry, and government. These differences reflect political traditions and may demonstrate substantial distinctions in constitutional standards. Such a study of comparative processes—how different political and industrial systems evaluate these labels and mechanisms—ought to be of significance to the European Union, the United Kingdom, and other entities studying rating arrangements.

The V-chip experience is also intriguing as an exercise in cross-national regulatory influence. It is interesting to think of the impact of policy making in the United States on policy making elsewhere, particularly in Canada, especially at a time when globalization, wrapped in trade considerations, leads to a leveling of regulatory approaches. A principal

motivation for this book has been to feature the Canadian processes—largely because of the origins of the technology in Canada—and to place them in the context of the very substantial industrial and governmental discussions that have now occurred in the United States as a consequence. In various ways, it is the reverse or mutual influence that is worth examining as well. The Canadian attitude was a more or less rational exploration of alternatives and the testing of alternatives; the United States approach involved the search for a political consensus and its wholesale implementation. The question then became whether the U.S. solution would (partly because of the complexities of transborder flow of entertainment programming and the dominance of the American industry) come to reshape the Canadian debate or the other way around. American advocacy groups, seeking what they perceived as a better outcome from the legislation, sought the disclosure of more information in ratings systems, an outcome that approached the Canadian system.

No matter what the solution to the debate over the V-chip, at bottom, the public outcry, intensive as it seems, generally glides over the basic concerns about modern culture, modern mores, and the impact of the influx of images. The V-chip exists largely because of unease about aspects of modernity—fixations on sex and violence, the loss of traditional kinds of literacy and the leveling of cultures. In this sense, the V-chip is an American-type solution to issues increasingly debated globally. It is a technical solution to a preoccupation with violence and indecency, a substitute for insignificantly addressed concerns about fundamental trends in the way children are acculturated. The overarching, almost religious questions are reflected only indirectly in the many studies of violence and media, including those in this book. These studies cannot satisfactorily rehearse the question of whether images on television affect behavior, or which images on television, in motion pictures, or on the Internet affect behavior in what ways. Scholarship, like the chip itself, tweaks culture at the margin, providing a filter, not a dam to modernity.

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In Canada, in the mid-1990s, a youngish scientist named Tim Collings wrote a short paper on a technology that, quite simply, permitted information about a program to stream down a vertical blanking interval and trigger a mechanism in the television set—preset by its owner—to block unwanted programs. Originally, the "V" stood for Viewer: a chip to give the viewer a choice. The very first transformation in this debate was over the meaning of the V: it has moved from Viewer, in Canada, to Violence in the United States (and, somewhat mysteriously, into Sex or Indecency). The Canadian Radio-television and Telecommunications Commission (CRTC) sought, systematically, to determine the best possible and most efficient means of classifying program content and conveying that classification to viewers. Industry and citizens together made decisions about what questions would be asked about a program—the subject matter of the information to be gathered—and the way in which that information should be conveyed.

An account of the contrasting processes of policy development is the subject of the first section of this book. Al MacKay, who was instrumental in providing assistance to government and industry, summarizes the history of the Canadian debate and provides a context for the various Canadian developments. An essay by Stephen McDowell, a political scientist, seeks to explore the contrast between the Canadian and U.S. experiences. As the

essays by MacKay and McDowell indicate, in Canada there was a relatively open process of determining how the chip would be implemented, with relatively intimate, simultaneous, and cooperative discussion between regulator and industry. Furthermore, there was a period of experimentation, conducted under the supervision of the regulators. In the United States, because of the design of the 1996 Telecommunications Act and the supposed implications of the First Amendment, it fell almost purely to the entertainment industry to fashion the implementation of the device, at least in the first instance. Only if the U.S. industry developed an unacceptable approach would there be a government-appointed commission that might develop alternatives. This method, the result of political compromise and special U.S. constitutional considerations, had a profound impact on the initial industry offering and the process of debate that ensued. In the end, the paths seem to have converged; but that, too, is illuminating.

A dramatic "second act" in the United States debate provides insight into interest group politics and the competition between industry-legislator alliances and legislator-community group alliances. In the U.S., in contradistinction to Canada, the initial industry-originated plan led to well-coordinated objections by public interest organizations.[4] Advocacy group protest against the industry system proposed in early 1997 (see Appendix) led to changes that—depending on the critic—may or not have significance in the long run.[5] Heated discussion resulted in a revised system (also included in the Appendix), that added disclosure of content to the basic industry version of the Motion Picture Association of America classification system (a system that is largely age-based). Under the scheme, a three-year trial of a system would supplement age-based classifications with a V, S, L, or D rating, denoting violence, sexual content, coarse language, or suggestive dialogue, respectively. Further, children's shows that contain aggressive combat-style violence would carry an FV for Fantasy Violence (see Appendix). As a central element of the negotiated settlement between the industry and the advocacy groups (an agreement that NBC did not then join), key members of Congress were to agree to a three-year moratorium on legislation relating to television content.[6] Jack Valenti, the president of the MPAA and the central person negotiating the agreement, applauded this arrangement. He was candid in a vintage-Valenti way: "The purpose of doing a ratings system in the first place was to shut off this tidal wave of criticism. The gain, the singular gain, is that for three years we will keep the jaguars and bobcats off our backs, and have a period of legislative peace and perhaps a diminishing of carping and criticism in the marketplace." But in a press conference condemning the agreement, Senators Joseph I. Lieberman and Samuel Brownback opposed the moratorium. "Television content is the issue, not whether or not parents are provided with warning labels on bad programs," said Brownback. Acquiescence in the "voluntary" ratings approach scotched the snake of government intervention but did not kill it.

It is hard to know how to read the aggregated results of industry proposal, group advocacy, and industry change in Canada and the United States. There were many, including many in the creative community in Hollywood, who criticized the industry solution as compromising free speech values. In November 1996, for example, the Caucus for Producers, Writers and Directors proposed a ratings system similar to the one finally proposed by networks other than NBC. A year later, in November 1997, the Caucus, after

inner turmoil, publicly voiced its opposition to the new television content ratings system and reversed its earlier position: "We actively oppose any interference with creative rights, whether it is the U.S. government, studios, networks or special interest groups," the Caucus said in an advertisement that appeared in trade papers as it applauded NBC's refusal to adopt the content ratings system. "We are appalled by the politically motivated tactics of legislators urging the FCC to reject the license renewals of television stations not using the new ratings system."

Other critics claimed that the industry had too much control over the U.S. rating system. Under its first proposal, the implementation would be wholly within industry hands and would be designed to interfere least with the marketability of the industry's products. The summer 1997 revision adjusted membership on a "monitoring board" to assure representation from groups other than the networks and producers of programming. No matter how much debate there was over the content of the labels, the size of their display on-screen, the number of seconds they would appear, and other details of hand-to-hand combat, the suspicion lingered that the whole exercise was merely a gambit, the minimum concession by industry necessary to avoid a renewal of attempts at government content regulation and the appropriate level of official noise to demonstrate concern while avoiding intervention in the economic activity of major constituents. Insufferably mild an intervention for some, the American scheme, even in its indirect mode, constituted censorship and government mind control for others. The ratings system, and the legislation that brought it about, could, with some winks, be viewed as a good faith effort to meet a public need, or, on the other hand, as a brilliant preemption of legislation that might more effectively and dangerously intervene and impose binding moral standards.

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A strong motivation for this book is that the V-chip phenomenon, trivial as it may be on the surface, masks important developments in the very conceptualization of speech in society. The ratings debate highlights a theoretically changed relationship between listener and speaker, one in which the viewer or listener is seemingly empowered. The place of the V-chip in this debate is increasingly important; indeed, it may be argued that the V-chip's contribution to legal argumentation may be greater than its ultimate contribution to the relationship between children and imagery. Already, the United States Supreme Court has used the V-chip and related ratings approaches as one reason to hold unconstitutional the Communications Decency Act (on the ground that a less restrictive alternative might be available for achieving the desired speech-infringing result).[7] The president of the United States has pointed to the V-chip or other built-in rating technologies as a key to the design of a deregulated Internet.

Speech rights have had an interesting cycle of use in the United States. Articulated as the domain of crusading pamphleteers, they have become, especially in the decisions of the 1980s and 1990s, a shield for the major enterprises of entertainment: the rights of broadcasters, the rights of program suppliers, the rights of cable operators.[8] The V-chip debate involves a slight tectonic shift to a once-articulated right of the listener to obtain information. Whether there is actually such a shift in rights or in the transfer of information and how important it is, requires a better understanding of differences across

media—television, film, music recordings, the Internet, and motion pictures. Much of the free speech law in the United States is medium specific, with special cases for film, newspapers, television, music, and other carriers of culture. In this book, there is some effort to identify, at least historically, patterns of rating, labeling, censoring, and channeling that have been tied to specific media.

Examining the V-chip in theory means differentiating among various approaches to providing information to the listener. One approach is *information labeling*: requiring that distributors or producers of information place, in a cognizable way, indicators of the information. Some restrict the term "ratings" to a specialized form of labeling in which legal consequences attend the judgments the labels signify. In the V-chip context, however, "ratings" refers to the specific case where a labeling system is embedded in a compelled technology with a device to block, as desired, the labeled programs. In this book, different authors use the terms in different ways, often interchangeably. *Channeling* involves government requirements that programs in specified categories (indecent or violent, for example) be distributed only on certain specified carriers or at designated times.[9] The 1992 Cable Television Act required channeling of certain indecent programming to a specific, segregated channel, a requirement found unconstitutional in the *Denver Area* case.[10] *Blocking or censoring*, in comparison, involves government prohibitions on programming content.

As can be seen, labeling and rating schemes, as well as channeling proposals, are often welcome alternatives to the more onerous interventions such as blocking or censoring which implicate free speech concerns. Indeed, it is this quality of the V-chip that makes it so immediately embraceable, the quality that appeals to legislators who wish to appear to be doing something, to courts, which seek alternatives that are not so onerous, and to networks which seek to fend off criticism by adopting the mildest possible interventions.

These basic distinctions give rise to others and, as a result, when there are labeling or rating efforts, much more needs to be explored. One might ask whether the context of the ratings is so coercive that it amounts to a ban; whether disclosures necessary for a viewer's access to restricted channels unduly invade privacy; whether the evaluation—the determination of a rating or label—should be undertaken by the producer or whether there should be, for the particular segment of the media, centralized labeling. As implemented in the United States, the V-chip's significance depends on the dominant role of the producer or network, as with the role of the MPAA in film. Richard Mosk's short essay, recounting the practice of the Motion Picture Association of America, is helpful in describing the process. This is, as mentioned above, differently constructed in the approach of the PICS consortium. The U.S. V-chip system makes it less likely that there will be effective competition in the market for classifications. The industry determines hegemonically what ratings are embedded in the program; licensees therefore are not common carriers obliged to carry all possible ratings or even a representative bouquet.

Further questions deal with implementation: there may be different modes for reviewing the initial label or rating and determining consistency. The V-chip assumes that over time almost all television sets will be fitted with the technology. But in the shorter term, this will hardly be the case. Ratings systems will exist, then, independent of the V-chip technology. In addition, there are delicate questions about what program

offerings should be covered by a rating system, news being the most important candidate for exclusion (and news and sports are both excluded under the U.S. plan). There is no question that news can be violent—there are those who believe that the primary *modus operandi* of the "late news" on American stations at 10:00 or 11:00 P.M. is to instill and build on the fears of the viewing public. And, if news is excluded, there is the question of which programs, particularly those that are of the new "real life" genre or tabloid television can be characterized as "news." It would be ironic but predictable to see violence and sexual innuendo come, even more, to shape news programming as a result of its exemption from a ratings scheme.

The Canadian discussion was far more deliberative on how detailed ratings would be (how sensitive to distinctions, how sensitive to context, how sensitive to program section). These were ultimately the questions debated by U.S. advocacy groups who successfully obtained modifications that made the American system more like the Canadian one. But the final criteria for disclosure may not be the most relevant factors in shaping the behavior of those watching television and providing suitable information about content. Little is known about whether one system of labeling or ratings, rather than another, may have an impact on the competitive structure of the media (facilitating entry by allowing freer play for violent and indecent programming or making entry more difficult by removing threats of competition based on "programming for the bottom").

Globally, another area of future inquiry is the standard, under constitutions or doctrines that approach constitutional status, of the validity or desirability of rating, labeling, or channeling systems. There is now quite a lot of writing about the applicability of the First Amendment of the United States Constitution to these systems.[11] A rather difficult aspect of that debate is the complicated, jurisprudentially brutal relationship between legislation or threatened legislation and private industry action, the coercive aspect of what is called, in the United States, jawboning. It was precisely the threat of legislation that called forth the "voluntary" action of the industry to develop a rating scheme, and, as indicated above, the U.S. industry extracted a moratorium on legislation (or even the serious discussion of legislation) as part of the deal for accepting the V-chip.[12] The U.S. Telecommunications Act of 1996 (set forth, in relevant part in the Appendix) was carefully drafted to respect an imaginary line between unconstitutional coercion and acceptably coerced voluntariness. Thus are raised fundamental free speech questions about the way in which government interacts with industry. The manner of adoption of voluntary rating schemes suggests a massive, moderately undisciplined, virtually unreviewable relationship between government officials and a particular set of industrial speakers. How does society place some bounds, rules, sense of appropriateness to the range of this swing between "voluntariness" and coercion? The new telecommunications law is part of a jurisprudence of jawboning: an interrelationship between the force of government and the self-regulation of industry. A pattern is developing in which more explicit steps in the dance of force versus voluntariness takes place. The ratings law is a useful moment for discussing changed modes of discourse between government and industry.[13]

All rating schemes, and all public policy discussions about them, bear within them some assumptions about the relationship of label to viewer or listener. I have already referred to what might be called the semiotics of ratings. How are ratings perceived by the

consumer? What differences are there among the various industries that have tried or are trying ratings in terms of the nature of communication? The reader of this book should pay attention to the physicality of the labels, their drama or lack of drama, whether they are designed to communicate to the parent or to the child. We know very little about the connection between the physical placing of the label on the package (the screen, the compact disk container, the videotape box) and the interconnection between label and blocking device. There are practical questions about the shape and impact of the logo used as part of the rating system, how long it is on the screen, and the relationship between on-screen warnings and the reputed built-in screening capacity of the V-chip. In the future, it will be useful to know what observed relationship there is between ratings—information—and behavioral consequences. We need to examine, more carefully, the assumptions about human behavior that underlie the ratings schemes and how valid they are. Some symbols, in some industries, such as portions of the video game industry, seem almost designed to attract as well as inform the consumer.

The development of a labeling or rating system means that there will be a kind of "common law" of ratings, or different common laws depending on the industry. If ratings or labels are not arbitrary, rules will emerge. They may not be articulated in a published document or reduced to a code, but these rules will exist and be known to producers (this is somewhat the case today with respect to films). Such a common law would indicate to producers exactly what conduct or display would receive what kind of label or rating. Over time, such common law will surely evolve, with finely drawn distractions concerning dress, vocabulary, presentation of body. It would be interesting to determine how one would go about constructing or reconstructing that common law, determining what standards emerge, are articulated, become practices within companies.[14] One possibility is that the emerged common law will depend on the structure of the industry. An industry dominated by two or three providers may internalize a ratings scheme in a specific and documented form more rationally than an industry where there are many independents and constant testing of the limits and meaning of the ratings scheme. It would be useful to know whether there are studies within any industry that try to codify accumulated practices, as Llewellyn and Hoebel did with Native American determinations in their book, *The Cheyenne Way*.

As I suggested earlier, the V-chip contributes to the way in which speech is defined and defended in modern society. One can say that labeling and rating systems mandate speech about speech. They do not seek to change speech, but, like content descriptors on packages of food, only provide a sense of what the consumer is to receive. "This is a simple matter of truth-in-labeling," Senator Dan Coats of Indiana is quoted as having said. "We don't want Hollywood telling parents what is age-appropriate. We just want Hollywood telling parents what is in their shows." On the one hand, that is naive: just as information on a package is designed to alter eating behavior (and the very things that are supposed to be listed are probably clues to public attitudes), so the information on a rating or label is designed to influence what people see or hear. On the other hand, one can think about the change in speech doctrine, alluded to earlier, in terms of a shift toward the listener, a peculiar rebirth of the Jerome Barron theories imbedded in the Supreme Court's decision in *Red Lion*.[15] The idea here is that the "listener's right" cannot be fully implemented unless the listener knows, in advance, what is about to come into his ken. If the listener selects,

if the listener affirmatively chooses (as is the case in pay television), the information requirement is less pressing. But even there, the government's power to require information to assist the listener to be a better consumer may be what is at stake. And in a world where listeners are atomized while speakers tend to be corporate, the corrective role for government may be growing.[16]

Another way to think about the change will be treated in what might be called the "open" versus "closed" terrain of speech.[17] Under this theory, there is more government interest and more government activity in speech that is broadly open to public view and display. Speech that follows channels that are narrow, selective, chosen, often bilateral, are not considered so much in need of or so much warranting regulation. The impulse toward ratings would, under this mode of thinking, be more intense for broadcast television than for cable, more for basic tier or "free" cable channels than for pay channels. Ratings or labels are more important where the speech that is ordinarily called entertainment is not specifically the subject of contract or a careful degree of choice. Here the theory does not turn on whether or not children are listening and watching, but on the method by which information reaches a household.

A third way to think about the increased emphasis on ratings and labeling alternatives is that we are witnessing a kind of "tobaccoization" of certain kinds of speech. Speech is treated as a public health question, and statutory findings and government statements concerning indecent and violent speech and images trace the rhetoric or regulation with respect to smoking (and alcohol). Until recently, not much had been written about a "public health" exception to the First Amendment and other speech standards, but that is an area that deserves more attention than could be provided in this book.[18]

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This book is a collection of essays designed to touch on many of the questions discussed in this introduction. The book begins with essays on the regulatory history by Al MacKay and Stephen McDowell, tracing the U.S. and Canadian experiences. Andrea Millwood Hargrave, a British lawyer who has had experience in administering program standards in the United Kingdom, introduces examples from European and British perspectives. Marjorie Heins, director of the Art Censorship program of the American Civil Liberties Union, casts a skeptical eye on the entire enterprise of regulating content to protect young people from the harms of certain kinds of television content. Professor Balkin develops an important theory of information and its filters, information, as it were, about information. Donald Roberts attempts to draw distinctions between rating systems and labeling systems and builds on his own experience constructing a system for video games. Professor C. Dianne Martin very specifically alludes to that system and the choices made by the Recreational Software Advisory Council. Professor James Hamilton analyzes the relationship between government legislation and private incentives to portray or submerge depictions of violence. In separate chapters, Daniel Weitzner and Jonathan Weinberg discuss the opportunities, implications, and shortcomings of proposed "empowerment" technologies or filtering systems as means of addressing public concerns about content on the Internet.

The V-chip exists within a history of rating and labeling systems, ranging from comic

strips to motion pictures and encompassing voluntary and mandatory solutions. The book cannot cover all of this history, but Richard Mosk, who heads the administration of the rating system of the Motion Picture Association of America provides a description of that process for purposes of comparison. An essay by Professor Jack Balkin deals with ways in which the existence of filtering technology has led to a reconceptualization of free speech issues. The book includes two additional reports: a five-country study by Joel Federman specially updated for this book, and *The UCLA Television Violence Report (1996),* by the UCLA Center for Communication Policy.

Many of the significant issues in the debate are not front and center in this book because they are the subject of so much discussion elsewhere. One such question is the constitutionality, under the U.S. Constitution, of the congressional action that led to the V-chip. What has been interesting is how popular it has been to contend that the statue was of questionable constitutionality at the same time that most of the industry conformed to it. All networks agreed to ratings, even though NBC earned the badge of outsider or champion of broadcaster freedom for not agreeing to the last jot and title of the final arrangements. This is a book more about law than it is about accepted ideas of psychology. Therefore, the thicket of actual harms—whether violence or sexually explicit programming actually causes harms to young people—is left for the thriving debate of others.

The V-chip, as it turns out, may not have a great impact on the quality of society in the ways that are intended. The broadcasters who are preparing for its implementation have indicated that they do not believe, based on early returns, that rating and labeling systems are effective in "empowering" parents or saving the souls of their children. Still, the V-chip is a phenomenon. It is cause for rethinking the regulation of speech, for revisiting issues of imagery and society and for reinventing a relationship between parent and child. Not bad for a simple chip and a mass of labels.

Notes

1. The general rulemaking of the Federal Communications Commission is to be found at "In the Matter of Technical Requirements to Enable Blocking of Video Programming based on Program Ratings; Implementation of Sections 551(c), (d) and (e) of the Telecommunications Act of 1996," 12 FCC Rcd 15573 (September 26, 1997). Paragraph 22 discusses the possibility of extension of ratings to "any receiver meeting the screen size requirements . . . [including] any computer that is sold with TV receiver capability and a monitor that has a viewable picture size of 13 inches or larger." On March 12, 1998, the FCC found acceptable the industry video programming rating system.
2. *See* Mark Steyn, *TV Cynics zap Clinton's Cure-all The V-Chip, the In-home Censor, Is Coming Soon to Small Screens in the* U.S., SUNDAY TELEGRAPH, Mar. 3, 1996, at 24. *Meeting the New Chip on the Block: And Imagine the Joy of Watching Television without the Dross*, THE GUARDIAN, Mar. 19, 1996, at 16; Reference to President Clinton and B-chip; Frank Rich, The V-Chip G-String, N.Y. TIMES, Feb. 28, 1996, at A17; Roger Simon, Skip Chips to Stop Violence; The Problem's Not In the Set, THE SUN (BALTIMORE), July 16, 1995, at 2A; Hearings on "Music Violence: How Does It Affect Our Youth? An Examination of the Impact of Violent Music Lyrics on Youth Behavior and Well-Being in the District of Columbia and Across the Nation" Before the Subcomm. on Oversight of Gov't Management, Restructuring, and the Dist. of Columbia, 105th Cong. (1997) (statement of Hilary Rosen, President and Chief Executive Officer, Recording Indus. Assoc. of Am.).
3. See C. Dianne Martin, "An Alternative to Government Regulation and Censorship: Content Advisory Systems for Interactive Media" (in this volume).
4. An example of the reaction to the initial rating system is the response of Mark Honig, of the Parents Television Council in Los Angeles. According to Honig, at the time,

> if we're going to have a rating system, it has to be content based. As everyone has been pointing out, and as the debate has been shaped from time eternity, this industry rating system is too vague. It doesn't give parents enough information. It doesn't tell them exactly what to expect to find on a TV show.
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> We did a ratings study. We looked at the first two weeks of the rating system, and we found that more than three-fifths of prime time programming is thrown into this black hole that they call TV-PG. Well, that's included stuff from "Promise Land," one of the most family friendly shows on television that had no sexual dialogue, no violence of any extreme nature, and no vulgar language. That got a PG.
>
> You tune in a hour and a half later to an ABC show called Spin City, where you heard the "A" word twice, you heard the "B" word once, and you had dialogue centering on men downloading naked pictures of Amish women on the Internet. That got the same rating. That's too confusing to parents. They don't know from one show to another what to expect. (CNN Talkback Live, February 27, 1997, Transcript # 97022700V14)

During her testimony before Congress on the initial network ratings system, in February 1997, Joan Dykstra, National PTA President, stated that the National PTA was requesting,

> 1. A v-chip band that is broad enough that would allow parents to receive more than one rating system. Although this issue is covered [*sic*] another set of regulatory proceedings, it is complementary to the amount of information that parents have access to in determining their watching venue.
>
> 2. A rating icon on the screen that is larger, more prominently placed on the screen, and appears more frequently during the course of the program.
>
> 3. A rating board that is independent of the industry and the FCC, and that the board include parents. Currently, the industry rates itself, which is a conflict of interest. The producers could hardly be an impartial audience, or capable of providing consistent and impartial information.
>
> Lastly, in this current period when is FCC is requesting comments to aid its decision-making responsibilities, and the industry is seeking public opinions itself, the National PTA recommends that the industry work with parents and advocacy organizations to fund an independent research study comparing their age-based system with a content-based system, such as HBO's to determine which better meets the needs of parents. After the study is conducted, the various stakeholders in this issue should convene to review the study and make final recommendations to the FCC based on the study results.

5. The opposition came from public interest groups linked both to liberal and conservative causes. Andrea Sheldon, Executive Director of the Traditional Values Coalition, testifying before the Senate Commerce, Science and Transportation Committee on the initial television ratings system in February 1997 complained that TV-PG shows had nearly as many obscenities as TV-14. "Receiving the TV-PG rating were 'Wings,' 'Friends,' 'Beverly Hills 90210,' and 'Savannah' all featuring pre-marital sex, sex with various partners and sex with no commitment. In addition, all of this took place during the family hour. I doubt that many parents would consider these situations acceptable for a 14 year old. . . . Obviously, we need a rating system which is content-specific. Television viewers have a right to know what is coming into their homes. And parents should know this in advance."
6. According to Rosalyn Weinman, head of Standards and Practices at the network, NBC decided not to add content-based labels because "we do not believe that they add any level of information to parents when they want to make decisions for their children. We believe quite the contrary that the content labels add nothing other than misconceptions and confusion to a system that was working and working well."
7. *Denver Area Educ. Telecomms. Consortium v. FCC*, 116 S. Ct. 2374, 1996 U.S. LEXIS 4261, at *53.
8. *Turner Broad. Sys., Inc. v. FCC*, 117 S. Ct. 1174 (1997)
9. Professor Kevin Saunders of the University of Oklahoma School of Law has called for channeling of violent programming. In testimony before the Senate Committee on Commerce, Science and Transportation on February 27, 1997, Professor Saunders said that "the V-chip only allows parents to counter the effects of violent images within their own children. Parents cannot protect their children from the children of other parents who are not so vigilant. . . . If someone else's child becomes violent, he or she does not do violence only to himself or herself. Your child may be the victim of that violence. Parents do have legitimate concerns over limiting the access of all children to violent images. Channeling of violent television into hours when children are not likely to be in the audience will address those concerns."
10. *Denver Area*, 116 S. Ct. 2374, 1996 U.S. LEXIS 4261, *at* *12–19.

11. *See, e.g.*,Marci A. Hamilton, *Reconceptualizing Ratings: From Censorship to Marketplace*, 15 CARD. ARTS & ENT. L.J. 403 (1997); Matthew L. Spitzer, *An Introduction to the Law and Economics of the V-Chip*, 15 CARD. ARTS & ENT. L.J. 429 (1997); Howard M. Wasserman, Comment, *Second-best Solution: The First Amendment, Broadcast Indecency, and the V*-Chip, 91 NW. U. L. REV. 1190 (1997); J. M. Balkin, *Media Filters, The V-Chip, and the Foundation of Broadcast Regulation*, 45 DUKE L.J. 1131 (1996); Steven D. Feldman, Note, The V-Chip: Protecting Children from Violence Or Doing Violence to the Constitution?, 39 How. L.J. 587 (1996); David V. Scott, *The V-Chip Debate: Blocking Television, Sex, Violence, and the First Amendment*, 16 LOY. L.A. ENT. L.J. 741 (1996).
12. In February 1997, when opposition to the networks initial ratings submission was accelerating, Senators Hollings and Dorgan introduced legislation that would impose a "safe-harbor" limit on TV violence limiting such programming to specific late night hours.
13. In a letter to NBC head Bob Wright, after NBC refused to be part of the industry compromise, Senator John McCain promised to use law and regulation to pressure NBC into adopting the new ratings system, perhaps by compelling the dissenting network to run only family friendly fare in primetime. McCain was also thought to be urging the Federal Communications Commission to consider the network's practice during renewal for NBC's 11 station licenses if they didn't fall in line. As Jeff Greenfield said, on ABC's Nightline, putting a question to Senator McCain, "I can't think of a more direct use of government power than the chairman of the Commerce Committee telling prospective FCC commissioners he wants NBC's licenses looked at very carefully because they won't adopt this ratings system. How in heaven's name is that voluntary?" Senator McCain answered as follows: "Because when the affiliates sign voluntarily a piece of paper that they will act in the public interest, that's what has motivated the FCC to force them to show children's educational programming and other kinds of programming and if they're not acting in the public interest, then it's the FCC's obligation, not right, but obligation to determine that. And I believe that by refusing to provide parents with the information that they need, then they may not be acting in the public interest." When Greenfield asked, "Can we not concede or agree that that is at least a very powerful use of a high government official's power?" McCain responded "I think it's a use of my obligation to see that the broadcasters live up to their obligation, which they freely entered into when they said they would act in the public interest in return for obtaining billions of dollars of taxpayer owned assets" (ABC *Nightline*, October 17, 1997, Transcript # 97101701-j07).
14. In an interview with ABC, producer Dick Wolf of *Law and Order* gave this example: "It can get really crazy. We had one show where the opening was a woman who was found naked in a 60 story office building elevator vent. The standards called and said it's not acceptable. I said but she's faced down in the elevator. Well, you see too much of her breast. And I said well how could I prevent something like this happening in the future? She said, choose smaller breasted actresses." In the same program, Roland McFarland, head of the Standards and Practices Department at Fox Network said, "I suppose the question would be okay, so I've got four damns and a hell, you know, is that the tilt factor as far as the language is concerned? A kiss wouldn't necessarily, we wouldn't consider that as, a take down on a couch, not necessarily so. If there's a bed scene and a slip dropped, maybe" (ABC *Nightline*, October 17, 1997, Transcript # 97101701-j07).
15. *Red Lion Broad. Co. v. FCC*, 395 U.S. 367 (1969).
16. Jack Balkin discusses other limitations on the government's power to mandate labels on speech in his essay "Media Filters and the V-Chip" (in this volume).
17. Monroe E. Price, *Free Expression and Digital Dreams: The Open and Closed Terrain of Speech*, 22 CRITICAL INQUIRY 64 (1995).
18. *See, e.g.*, Martin H. Redish, *Tobacco Advertising and the First Amendment*, 81 IOWA L. REV. 589 (1996); Halberg, Note & Comment, *Butt Out: An Analysis of the FDA's Proposed Restrictions On Cigarette Advertising Under the Commercial-Speech Doctrine*, 29 LOY. L.A. L. REV. 1219 (1996); Rachel N. Pine, *Abortion Counselling and the First Amendment: Open Questions After Webster*, 15 AM. J.L. & MED. 189 (1989); Kenneth L. Polin, *Argument for the Ban of Tobacco Advertising: A First Amendment Analysis*, 17 HOFSTRA L. REV. 99 (1988).

Associated Press

...cued in Ahmedabad.

...students raced behi... ...de it out just as the four-story ... building, less than a year old, ...bled from front to back with a ...underous roar. Others — she is not sure how many — escaped as well.

"But many of the children behind me were trapped," she said. "It was very dusty and I couldn't see. But I clearly heard one girl's voice crying out, and my friend Priyanka was left behind."

Friday afternoon, rescuers saved five of the students, who managed to survive because pillars kept the roof from flattening them. "We heard children crying, 'Please save us,'" said D. K. Mishra, a doctor with the

Continued on Page 6

...He sa... ...hoped to ... Israeli elec... Mr. Barak's ... ...Sharon of the right-wing Likud Party, who has a strong lead in the polls.

"Mr. Sharon — when he comes, if he will come, I don't know, this is not our business — then if he wants to continue, welcome," Mr. Qurei said in answer to a question.

In the language and spirit of their vague joint announcement, however, Israeli and Palestinian officials suggested that they were on the verge of a breakthrough on which only this

Continued on Page 6

...till b... ...mishing over ... ...space.

And next week, Mr. Bush wil... ...out a carefully planned agenda ... help the neediest Americans through religious organizations. He also plans to unveil part of his prescription drug program.

"We were all raised by mothers who told us we had one chance to make a first impression," said Senator Christopher J. Dodd, a Connecticut Democrat, echoing many of his colleagues. "The first few days are certainly encouraging. And a first impression can last you awhile."

In an unexpected turn that was not of Mr. Bush's making, the new president was helped immensely on Thursday when Alan Greenspan, the Federal Reserve Board chairman, validated the thrust of his economic program in Congressional testimony.

"Talk about a windfall, he got a gigantic break with Greenspan's testimony," said Senator Joseph R. Biden Jr., a Delaware Democrat. "Why God is so good to Republicans is beyond me."

Mr. Bush's success is partly the result of his aides' intensely examining previous transitions, scouring the

Continued on Page 15

Violence Finds a Niche in Children's Cartoons

By JIM RUTENBERG

A pug-nosed thug kicks in an elderly storekeeper's face. Then he punches a young heroine in the eye and cracks her in the small of the back with a heavy bar stool. Her limp frame collapses to the ground as he stands over her with his gun drawn and pointed at her head.

Two young boys are in a fistfight on a moving boxcar. A friend tries to intervene. But an older and very respected boy advises: let the fight continue. Sometimes, he says, friends need to bare fists in order to strengthen the bonds of friendship. They resume.

A little girl karate-kicks another little girl so hard that she flies through the air. Her head smashes into a cement post. She is knocked cold.

Scenes from the latest R-rated thrillers or video games? Actually, these are moments culled from a wave of fast-action Japanese-style animation television shows that now fill much of the children's programming schedules of three outlets — the WB and Fox broadcast networks and the Cartoon Network on cable.

The success of the "Pokémon" cartoon show jumpstarted the genre two years ago and then others upped the ante in violence. The shows fulfill the need for inexpensive programming and address a growing interest in marketing shows and products more narrowly to American boys, who have grown up with video games and remote controls. Many of the shows are imported directly from Japan, where the public's tolerance for blood and guts on TV has traditionally been much higher than it is in the United States.

The WB Network

Girls do battle on "Cardcaptors," a cartoon series produced in Japan.

Their spread has come despite threats from Congress that it would try to limit children's exposure to media violence through legislation. Yet, unlike past cartoon trends that brought more violence to the television screen, the genre's growth has drawn very little attention from parents and media watchdog groups. Researchers and some industry executives say this is a a result of evolving theories on the impact of cartoon violence on children and an overall desensitization to it among parents.

Network executives who show the new-style cartoons say no extra scrutiny is necessary. Cartoon violence, they argue, is nearly as old as television itself. And they point out that many of the series now appearing in the United States have been shown in Japan for many years with no ill effect.

"The fascinating thing to me is to consider that these cartoons are made and air in a country with one of the lowest rates of violence in the world," said Mike Lazzo, senior vice president for programming and production at the Cartoon Network.

The violence in the new shows often goes well beyond the antics in such enduringly popular shows as "Roadrunner" and "Tom and Jerry." At any given moment buildings explode, fists fly, weapons are bran-

Continued on Page 16

...n Rearview Mirror, a Wistful Gaze at the Olds

SUPER 88, 1957

TORONADO, 1966

...02

...GG

...4 — A man might ...dillac, people used ...smobile. ...ne and dressed up ...k prosperous, the ...umbling chunk of ... with less flash than ... than a Chevrolet or ...r, a shift boss's car, ...dest Americans can ...espectability to the ...e Masonic lodge. ... by General Motors executives to do away with the name brand after 103 years and nearly 10 million Oldsmobiles will, in time, remove the Olds from Middle America's garages and circular driveways. But the Olds will motor forever through the heartland, the Deep South and other places where people love their cars the way they love their children, even if the only key they turn is in their memories.

In Wichita, Kan., Walter Rathke might never have made it to the altar had he not bought an Olds, because the brakes on his old Chevy were so bad that he kept running right past his sweetheart's home. If he had not bought a like-new Oldsmobile in 1948, he wonders, would he still be circling that block?

Here in Kansas City, John Massman, who builds bridges, drove an Olds so he could keep the respect of his workers. No man, Mr. Massman said, will break his back so his boss can drive a Continental.

In Millport, Ala., a 1955 rose and ivory Oldsmobile 88 raised Sonny Brewer's father up to the respectability he thought he deserved. More than a half-century later, Mr. Brewer recalls seeing his father strike a man in the face at the side of the road, just because that man almost dented his pride and joy.

And in Beaverton, Ore., a self-proclaimed

Continued on Page 14

Experts Try to Make Missile Shield Plan Palatable to China

By ERIK ECKHOLM

BEIJING, Jan. 27 — With President Bush dead set on building a national missile defense, American and Chinese military experts have begun exploring ways to make such a shield more palatable to China and say a compromise, though extremely difficult, might be possible.

American plans for a missile shield have stirred opposition in capitals across the globe, but China's resistance may be the most intractable. If the Bush administration does push ahead with its plans — and it has given every sign that it will — China's objections loom as a stiff foreign policy challenge.

A way out of the impasse might be found, military experts say, but it will require near-heretical political steps by leaders in Washington and Beijing. Without some accommodation, experts and Chinese officials warn, the American shield could poison relations, set off a dangerous arms race across Asia and even raise the chances of a war.

Up to now, American officials have said the proposed defenses are intended to counter only smaller powers like Iran and North Korea while offering little more than assurances that a missile shield is not aimed at stifling China.

But Chinese leaders are acutely aware that any working system may effectively neutralize their bantam

Continued on Page 4

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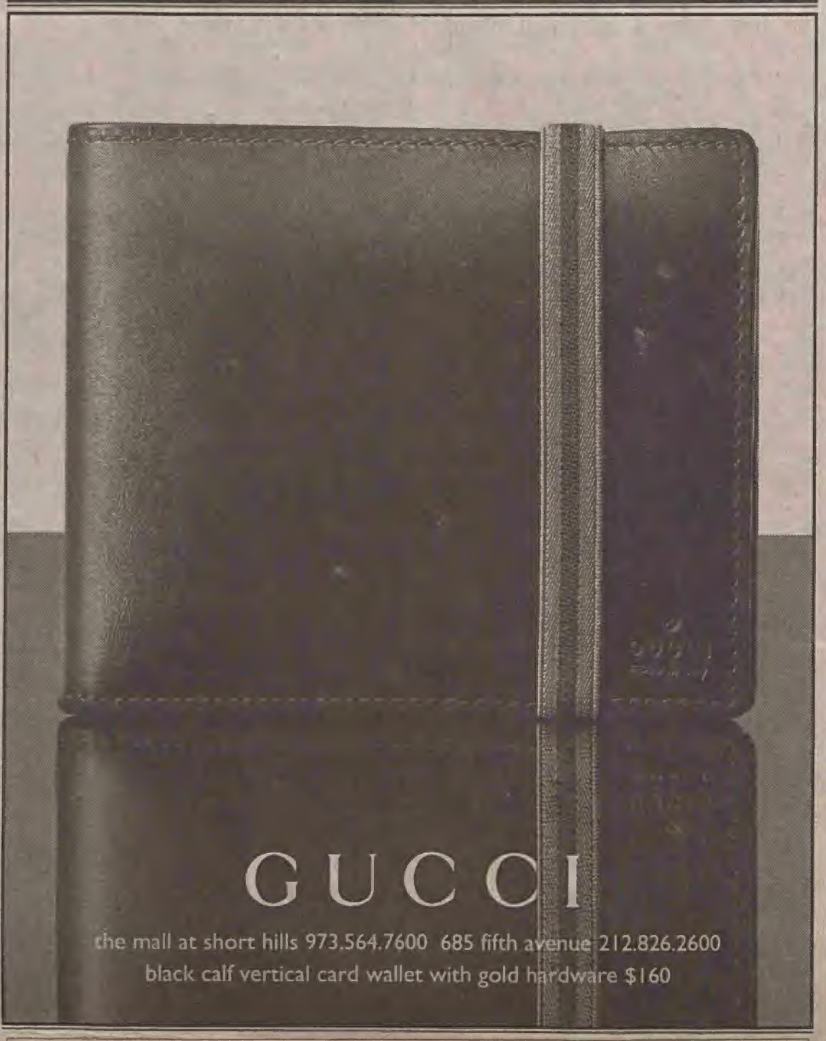

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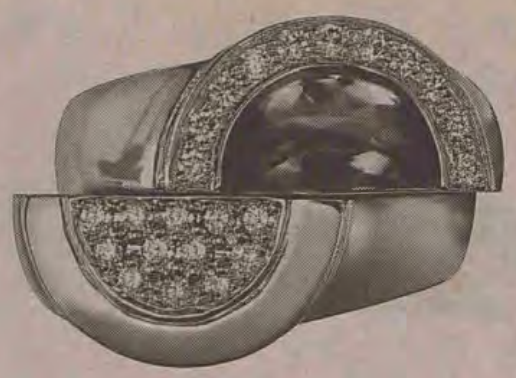

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Violence Finds a Niche on Television Cartoon Programs for Children

Continued From Page 1

Images from the WB Network

In "Cardcaptors," left, and other Japanese "anime" cartoons, heroes and villains alike are often children involved in graphic violence. "Batman Beyond," produced in the United States but inspired by Japanese anime, contains some of the most vivid fight scenes on children's television.

dished, characters die. Fighting can be constant.

On "Dragon Ball Z," the Cartoon Network's most popular Japanese-style program, watched on average in more than a million households, Cell, an evil emperor, is approached by a cowering television news correspondent. He knocks the correspondent onto his back and then kicks him so hard that the man flies across a field head first into rocks, presumably dead.

In a recent episode of "Digimon," Fox's most successful Japanese-style program, an evil character, Apocolymon, attacks the young heroes with razors. At one point, he uses a blast of energy to make their bodies disintegrate.

The style of the Japanese cartoons, called "anime," is influencing domestic animators, whose new cartoons are often no less violent than — and stylistically similar to — the cartoons imported from Japan.

The WB's "Batman Beyond," produced in the United States but influenced by Japanese animation, has some of the most vivid fight scenes in children's television. In an episode that was shown on Thursday, the hero, Batman, strangled a villain with two halves of a broken pole until he went lifeless.

The spread of the cartoons has been swift. Until two years ago, there was barely a trace of anime programs on children's television beyond a scattered few that had been purchased in syndication and shown on independent television stations. Though "Mighty Morphin Power Rangers," a Fox program that caused a parental outcry over violence in the early 1990's, was still going relatively strong, there was an overall trend toward more benign programming in children's TV, like "Goosebumps," based on the R. L. Stine books, on Fox.

Now, on any given day, anime-style programs may hold the majority of the time slots on the after-school and Saturday morning schedules of the WB and the Cartoon Network, both units of AOL Time Warner, and Fox, which is owned by the News Corporation. All three entered the children's market in the 1990's,

Unhappy before, parents seem less inclined to protest this time around.

focusing on boys to differentiate themselves from the established programmers like Nickelodeon, ABC and CBS.

By last fall, about a dozen Japanese anime programs were being shown on Fox, the WB and Cartoon Network, some more frequently than others. Fox, for instance, sometimes schedules "Digimon" marathons during its Saturday morning cartoon block. The WB shows "Pokémon" three times on some Saturdays.

"Pokémon," inspired by the Nintendo video game, is considered the major catalyst for the genre. Introduced in America by the distribution and production company 4Kids Entertainment in 1998, it immediately became the No. 1 children's show in syndication. Noticing its success in syndication, the WB bought the licensing rights and began showing it in February 1999. It promptly became the most popular program in all of children's TV.

"Pokémon" is action-packed, though it is, in fact, considered benign next to others of the genre, which encompasses material ranging from explicit, adult-oriented shows with sex and violence to entertainment suitable for the youngest viewers. But "Pokémon" caught competitors' attention not only for its huge ratings, but for its relatively low price tag, a trademark of the cartoons imported from Japan.

An average "Pokémon" episode costs about $100,000; the average cost of an original episode of an American-made cartoon is estimated to be about $500,000. Considering that the children's TV ad market has been soft for more than a year — and is expected to get softer still — that difference in price is worth a lot.

Anime cartoons are so much cheaper because they are more simply animated than their American cousins — their halting style requires fewer actual drawings per episode. Further, most anime programs have already been produced for Japanese television, which takes the burden of the initial production costs off of the domestic network that buys it.

The low cost and high ratings of "Pokémon," especially among boys, were exactly what the WB, Fox and Cartoon Network were looking for. The anime shows fit not only their ratings needs but also those of increasingly niche-oriented advertisers hoping to sell boys on action figures — many based on the anime programs themselves — cereals and snack foods.

The anime programs' success with boys is attributed by programmers to their mirroring of Japanese video games, in which enemies are vanquished one after another in sometimes graphic detail. For that reason, most anime shows are given either the Y7 TV rating — not recommended for children under 7 — or the Y7FV rating, for extreme violence.

"We have to look at today's kids," said Joel Andryc, executive vice president for children's programming at Fox. "They've grown up on the video games, they've grown up on Sega and PlayStation. And a lot of the video games they've grown up with are produced by the Japanese. They don't give a second thought to this kind of animation."

Mr. Andryc and Donna Friedman, senior vice president of Kids WB, both said the anime programs offered much beyond video-game-style action and low price tags.

Both pointed out that programs' episodes often feature good-versus-evil battles in which honor-bound child warriors emerge victorious. Conflicts are resolved and characters emerge with lessons learned. Selfishness is punished. Loyalty is rewarded.

"The kids can relate to these characters," Mr. Andryc said. "They see how someone can empower themselves and fight a monster and save the world."

Still, the genre is considered so violent by Nickelodeon that it refuses to show any of its programs. "It's more violence for violence's sake than I've ever seen," said Cyma Zarghami, Nickelodeon's executive vice president and general manager.

Considering how much fighting the new cartoons contain, they have drawn surprisingly little criticism from parents' groups.

Amy Aidman, research director for the Center for Media Education, a children's research and advocacy group, said one reason could be that general views on television violence have changed from absolute opposition to all fighting to an understanding that there are different messages in different kinds of fighting — and not all of them are bad.

TV executives say the new shows have much to offer beyond action.

"Not all violence is equal, and not all fighting is equal," she said. "You have to break it down. Who are the heroes? Is aggressive behavior being re-enforced?"

Although "Pokémon" is heavy with fighting, she said, it also offers children an empowering story line — the heroes generally come out on top and when they do not, they persevere and strive to do so the next time.

Others wondered if the nation's tolerance for violence has grown since the early 1990's, when "Mighty Morphin Power Rangers" sparked loud protest from parent's groups.

"Parents are desensitized," said George Gerbner, dean emeritus of the Annenberg School of Communications at the University of Pennsylvania. "They are used to it — they themselves have grown up with it."

There is disagreement within the television industry over whether anime, like "Power Rangers," will fade in popularity or remain a regular staple of children's TV. Most people said they expected the trend to recede at least to some degree.

Jon Mandel, the co-managing director at MediaCom, a media services agency owned by the Grey Global Group, and a longtime observer of children's television trends, said he thought the anime trend was about midway through its life cycle.

"It's one of those classic things where the coolest kid in a schoolyard likes something and other kids follow and eventually the programmers follow," he said. "But then it gets to the point where even the nerd gets into it, and then the cool kids have to move on to something else."

Donated Blood Needs Filtering, el Advises

an. 27 (AP) — d require ered o ral

We mourn the loss

of our dear colleague

COAST TO THE SA

Bush's Transition Is Largely a Success, All Agree

Continued From Page 1

historical record for gestures and timetables — and even interviewing important players from past administrations.

For all the respectful reviews, the new administration is barely in its infancy and its political execution has not been flawless. Mr. Bush's selection of former Senator John Ashcroft as attorney general enraged Democrats and many interest groups, who criticized Mr. Ashcroft as too conservative. Though Mr. Ashcroft is expected to be confirmed, even many Republicans questioned why Mr. Bush picked a fight with Democrats still smarting from his excruciatingly close victory.

"There are missteps that will haunt him," said Richard B. Shenkman, a presidential historian. "He campaigned as a uniter, not a divider, then he goes ahead with the Ashcroft nomination."

And while Mr. Bush's move on his first full day in office to deny aid to overseas groups that provide abortion counseling was celebrated by conservatives, it distracted from his theme of the week, education. (One White House official said the move was deliberate, because if Mr. Bush had not acted "there would have been a rising chorus from the right.")

Another reality, if no surprise, is that Mr. Bush has not tackled many of the most nettlesome issues. And with one ill-considered remark or misstep, the successful efforts by the president thus far could unravel.

But when Mr. Bush did run into trouble by selecting Linda Chavez as labor secretary, he moved quickly to accept her withdrawal and selected Elaine L. Chao, who is likely to be confirmed by the Senate next week.

Despite his misgivings, Mr. Shenkman said that over all this transition has been the smoothest since Ronald Reagan arrived here two decades ago. "Hats off to George W.," he said.

White House officials said they began painstaking preparations for the first two weeks of the new presidency immediately after New Year's and had a day-by-day plan in place by Jan. 8.

In a demonstration of the impor-[illegible]nce Mr. Bush's aides placed on his [illegible]but, Karl Rove, the president's [illegible]ior adviser, s[illegible]d that in Decem-[illegible]the [illegible]d detailed brief-[illegible]inning of every [illegible]ohn F. Kenne-[illegible]ed such facts [illegible] of Congress [illegible]th his first [illegible] the presi-

Paul Hosefros/The New York Times

President Bush has placed significant emphasis on meeting with members of Congress during his first days in office. He spoke with reporters before meeting with leaders from both parties last week at the White House.

The president's team works hard to make a good first impression.

Congress. They said he also set an example by incessantly writing thank-you cards to people with whom he met with the first week.

This attention to detail impressed some lawmakers in this city of egos, who said they were pleased to get their calls returned by Mr. Card and other top officials who barely knew their new telephone numbers. "A quick response on calls may not seem like a lot," Senator Dodd said, "but it is."

Mr. Bush also placed significant emphasis on meeting with members of Congress.

"I guess the biggest, most pleasant surprise, if you'd call it that, was how receptive members of Congress are to come here to the White House to talk about how we can work together," Mr. Bush said on Friday. "I think we've met with 90 members of Congress here in the first week." About a third of them were Democrats.

White House officials and advisers said Mr. Bush would lay out proposals next week for helping the needy. [illegible]Monday, they said, he will an-[illegible] the opening of an administra-[illegible] to promote the further [illegible]ith-based organiza-[illegible] financed social [illegible] likely to an-[illegible]ory board on [illegible]mith, the [illegible]ho

immediate mechanism to get prescription drugs to poor Americans in the interim before there are changes in Medicare to make them available to everyone.

By contrast, Mr. Clinton's transition eight years ago was especially sloppy. In his first days, he found himself mired in a firestorm over gays in the military, an issue that plagued his first term. He was also distracted by severe difficulties in settling on appointees, like an attorney general.

A top aide to Mr. Clinton said of the new president: "It's hard walking into the place on Day 1 and pulling it off. They did a lot better than we did. It's pretty impressive."

Four years before Mr. Clinton took office, President George Bush acknowledged at the end of his first week that there had been "ripples" of trouble. He was less aggressive than his son has been in pressing forward on an agenda. And there were flare-ups over how his administration planned to handle the savings and loan debacle, and over the abortion views of Mr. Bush's choice to run the department of health and human services, Dr. Louis W. Sullivan.

John H. Sununu, who was then the White House chief of staff, said at the time, "Probably the most important thing we did not do well was that we could have had more discipline in the packaging of the message."

In 1980, Ronald Reagan won plaudits for a relatively peaceful transition, but even he found himself under attack in the first week from conservatives who objected to his selection of appointees whom th[illegible] did not deem sufficiently conse[illegible] like Donald T. Regan as se[illegible] the treasury and Samuel [illegible]as housing secretary.

But in Mr. Rea[illegible] there was nothi[illegible] Jimmy C[illegible]

Most of all, politicians gave credit to Mr. Bush for surrounding himself with advisers and aides who have vast Washington experience, beginning with the vice president, Dick Cheney, who was chief of staff for former President Gerald R. Ford, a member of the House and, later, a secretary of defense. Mr. Card was a deputy chief of staff for Mr. Bush's father.

"President Bush has put together a pretty seasoned team around him — if you add their years in Washington, you get a century's worth of experience," said Senator Byron L. Dorgan, a North Dakota Democrat. "So his first few days in office have been largely free from controversy."

Although Mr. Bush has benefited from seasoned Washington hands, White House aides said that the officials who had the largest role in stage-managing the agenda for his first days were two of the president's confidants from Texas: Mr. Rove, who developed the central strategy, and Karen P. Hughes, Mr. Bush's counselor, who was responsible for message development.

Robert M. Teeter, who ran the elder President Bush's transition, also praised the new president for skillfully playing on low expectations for his debut.

"If you go out and make a lot of overblown assertions about what you're going to do," Mr. Teeter said, "you're just setting yourself up."

In First Radio Address, Bush Softens on School Vouchers

By FRANK BRUNI

WASHINGTON, Jan. 27 — In the first weekly radio address of his presidency, George W. Bush signaled anew today that he might be willing to budge on the most contentious dimension of his education plan: federally financed vouchers that students in failing public schools could use at private institutions.

Mr. Bush cast that idea as an effort to give "better options" to the parents of students in schools where student performance was consistently poor. But he then immediately acknowledged that there were "some honest differences of opinion in Congress about what form these options should take."

"Others suggest different approaches," Mr. Bush said, "and I'm willing to listen."

The White House

President Bush taping his address yesterday in the Oval Office.

Those remarks were the latest in a bevy of indications from Mr. Bush and officials in his administration over the first week of his presidency that he was not willing to have his education initiatives live or die by the outcome of a heated debate over vouchers, a word that Mr. Bush never uses.

But Mr. Bush said today that he would not compromise on the guiding principle of his plan.

"Children and parents who have had only bad choices need better choices, and it is my duty as president to help them," he said.

In delivering the radio address, which aides said he intended to do every week, Mr. Bush was continuing an intermittent tradition among presidents over the last three decades.

His predecessor, President Bill Clinton, relished the opportunity to talk directly to Americans without any editing or interruption by reporters or commentators.

The radio address was the cause of one of President Ronald Reagan's most embarrassing public moments. As he prepared for a live broadcast in 1984, he joked into an open microphone that he had outlawed Russia and "the bombing begins in five minutes."

Mr. Bush taped today's radio remarks at about 8:45 a.m. in the Oval Office, aides said. The remarks were broadcast at 10:06 a.m., lasted about five minutes and dwelled entirely on the theme that the Bush administration had chosen for his first week in office: improving education. Discussing that goal, Mr. Bush expressed concern for minority and underprivileged children.

"Our country must offer every child, no matter what his or her background or accent, a fair start in life, with a quality education," Mr. Bush said.

He also presented the issue as one of bipartisan concern and bipartisan agreement, which is one reason that Mr. Bush, elected by the narrowest of margins in the Electoral College, made it the focus of his first week.

"No one is content with the status quo," Mr. Bush said. "Most are open to new ideas. Everyone agrees at least that the problems are serious and action is urgently needed."

In the customary response to the president's address, the House minority leader, Representative Richard A. Gephardt, Democrat of Missouri, talked just as emphatically about the need for bipartisan cooperation, saying loudly that Democrats wanted it.

But Mr. Gephardt's remarks included hints of where that comity might fray. He called for passage of a particular bill to overhaul campaign finance laws that President Bush opposes. He warned against a tax cut as sweeping as the one that Mr. Bush has proposed.

Additionally, Mr. Gephardt said, "We believe that vouchers, which are in President Bush's plan, do not further the plan for improving public schools."

OpenCable Set-top Box Architecture for Multimedia Delivery - Part I

Until recently, cable systems delivered only high-quality analog television signals consisting of local broadcast signals and premium television programming, using proprietary equipment at the cable system headend and at the subscriber's home. Unfortunately, equipment designed for one system often will not work in another system. With advances in video compression technology, and subsequent Moving Pictures Experts Group (MPEG) standardization, some cable systems are delivering digital services in addition to analog programming. But again, the equipment being used (hybrid set-top boxes (STBs) with analog and digital video capability) is proprietary in design and often cannot be used in other cable systems. Proprietary designs do not allow equipment portability from one cable system to another and, because of this, consumers may not see the benefit in owning their own terminal equipment. Proprietary designs also inhibit multi-vendor participation in equipment design and manufacture; multi-vendor participation brings about innovation in a competitive marketplace, and without that innovation, the cable industry stands to lose business to their competition.

Cable operators have long realized the advantages of open systems and of advanced digital technologies. CableLabs, as the cable industry's R&D consortium, has as one of it's objectives to serve as an incubator of new technology. With that goal in mind, the cable industry began an initiative to standardize digital cable terminal devices. Known as OpenCable™, that initiative's primary objective is to standardize equipment functionality and interfaces, and related components and equipment used in the cable plant.

Another objective is to standardize delivery signal components in order to attain interoperable digital STBs and other advanced digital devices manufactured by multiple vendors. These devices would be capable of delivering digital video, data and interactive services to a television set. The capability also may be built into consumer electronics devices, such as digital television receivers.

In the traditional business model, cable operators lease STBs to those cable subscribers who wish to receive scrambled services, who have a very limited choice of equipment and, if they move from one service area to another, must obtain a STB from the operator serving their new area of residence. However, if specifications for signal component delivery and customer premises equipment (CPE) are standardized, that would enable multiple vendors to manufacture STBs and sell them at retail. Multiple vendor participation would create a wide choice of equipment, varying in features and functions, offering consumers the ability to buy the STB of their choice at a competitive price. The end result would be a proliferation of innovation in equipment.

In the cable plant (a generic architecture diagram is shown in Figure 1), signal content (video, Internet, and other data)—both external and local—is interfaced at the headend. Headend equipment processes those signals and delivers them via a hybrid-fiber/coax (HFC) cable network. The external contents consist of direct feed (via coaxial or optical fiber), off-air or terrestrial signals, and satellite distributed signals. Signals sent from terrestrial broadcast (direct or off-air) networks are usually in the clear. Signals sent from premium content producers are distributed via satellite or direct media, and are usually transmitted in encrypted form along with a conditional access (CA) system. All network distributed signals are demodulated to baseband signals and then de-encrypted. Signals containing premium content need to be re-encrypted by the encryption method used by each cable system headend (selected by the operator) before being modulated over a RF carrier and transmitted over the cable network.

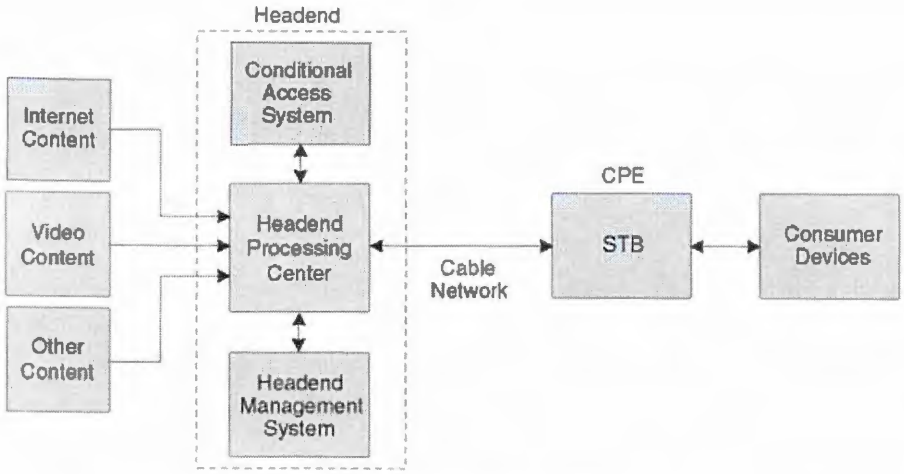

Figure 1. Cable Plant Generic Architecture

Analog television programs are categorized into service tiers (e.g., basic, enhanced basic, premium, pay-per-view (PPV), etc.). Basic services consist of clear channels, which do not require a STB for viewing; enhanced basic services also do not require a STB for viewing—in each case, only a cable-ready TV is required. Higher service categories (e.g., premium and PPV channels) need a STB for viewing. Premium service includes all basic channels, enhanced services, plus some additional channels. STBs are authorized from the headend to descramble additional channels and PPV channels. A STB, when authorized from the headend, demodulates and descrambles (if necessary) user-selected channels. The baseband signal then remodulates a channel 3 or 4 carrier before sending it to a coaxial connector—to view this signal, a TV must be connected to the STB's coaxial connector and tuned to channel 3 or 4. In this case, channels are selected by the STB tuner and not the TV tuner. In a hybrid system, where both analog and digital services are available, a hybrid STB with digital decoding capability (MP@ML per MPEG-2 standard) is necessary to view digital channels. Video and audio signals are compressed and encrypted. To view digital PPV channels, the STB has to be authorized to de-encrypt the signals. Access control and de-encryption subsystems are embedded inside the STB.

The OpenCable project is working to standardize interfaces so that STBs (or other terminal devices) can be designed and manufactured by multiple vendors, yet still interoperate. In order to design interoperable and portable devices, the device's network and output interfaces will have to be standardized and specified. The minimal functional requirements for STBs will have to be specified to leave room for creativity in hardware and software design, future enhancements, and add-on features.

Since a major portion of cable systems' revenue derives from the delivery of premium content, access control of all digital channels (with the exception of clear channels) and individual services (if a channel carries more than one service) are of prime concern to cable operators. A digital STB, with its counterpart at the cable system headend, should be able to control delivery of the channels and services delivered through individual STBs.

Traditionally, cable system headends used analog scrambling systems. When digital services were added to existing analog services, a number of systems (cable headends) introduced a hybrid STB (in their customers' homes) with analog and digital descrambling capabilities to manage both types of services. Replacing them with new systems would engender high costs for cable operators. To preserve their investments, these legacy digital systems will have to be supported by the OpenCable system—an important requirement in creating the OpenCable specifications. The legacy systems use one of two encryption methods: the Digi-cipher system designed by General Instrument (GI), or the Power Key system created by Scientific-Atlanta (SA). In designing an interoperable and portable STB, it would be simpler not to have to support an existing legacy system. However, to meet the FCC requirements of

retail availability and portability, as well as to preserve existing digital delivery systems, the cable industry has come up with a novel idea—to de-couple the security module from the STB. This point-of-deployment (POD) security module is a type of PCMCIA smart card. The security module and the STB each will have either a male or female PCMCIA connector. When snapped together, the connectors will provide the required connectivity between the STB and the POD module. De-coupling the security module will add an additional advantage in that it is renewable. If, for some reason (e.g., security break-in, future enhancements, or expansion of security system, etc.), the card needs to be replaced, the STB or other "host" device will not be affected.

STBs will be portable from system to system. However, PODs will not be portable—when a STB is deployed in a service area, a POD module compatible with the new system will be needed to de-encrypt digital signals. It will be possible for consumers to purchase STBs, but POD modules will be available from their local cable operator when they request encrypted service.

A POD module is completely dependent upon the CA system used in the headend. If the headend currently uses, for example, SA's Power Key CA and encryption system to support existing STBs, the same CA and encryption system will have to be used with the POD module. If an OpenCable-compliant STB is deployed in that service area, a POD compatible with the Power Key system has to be used to view premium channels. Similarly, if a headend currently uses GI's Digi-cipher CA and encryption system, the OpenCable-compliant STB will require a Digi-cipher-compatible POD.

OpenCable is not restricted to using only GI's and SA's CA and encryption systems; it is designed to use systems from other vendors as well. A large number of cable systems have not yet rolled out digital services and are awaiting the availability of OpenCable-compliant STBs. These systems will have no digital CA and encryption system legacy issues, and will be able to utilize CA and encryption systems from any vendor. Of course, the POD module from the respective CA system supplier will be required for use in their service area.

The host/POD interface needs to be specified in designing a portable and interoperable STB. This is needed in addition to a network interface (OCI-N) and an interface with home digital appliances, such as a digital TV and a digital VCR. These interfaces are shown in Figure 2, where OCI-N is the network interface, C1 is the output interface, and C2 is the host/POD interface. OpenCable has prepared specifications for these interfaces, in addition to functional requirements for the STB. These are the major documents needed to design portable and interoperable STBs compliant with OpenCable specifications. The functional requirements are written for a baseline STB; manufacturers may add other features in designing a STB with added functions.

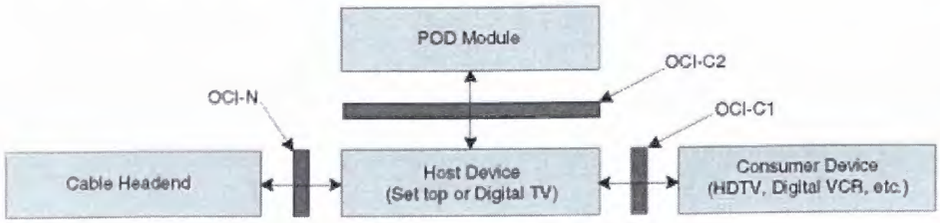

Figure 2. OpenCable Set-top Box (STB) Interfaces

Information Superhighway and the Reinvention of Television. Center for Media Education.

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The American media system stands on the threshold of a new era. A high-capacity, high-speed national "superhighway" will be built within the next decade, using fiber optic and other new technologies. The Clinton Administration is pushing for accelerated development of next telecommunications system, as part of its economic stimulus package. Billions of dollars will be earmarked for the rapid construction of the national information highway, which is expected to be a boon to the economy, offering new jobs and keeping the U.S. competitive with the rest of the world.

This new system will dramatically alter the way all businesses and institutions conduct their work. It will change how television programming is produced and distributed, and what choices viewers have. Existing communications media -- telephone, computer, television, and VCR -- will converge into a single medium, capable of transmitting and receiving enormous amounts of information. Hundreds and eventually thousands of interactive programming and information services will be flowing into U.S. homes and businesses.

The actual character of this brave new world however, will be shaped less by the technology itself than by economic and policy structures that govern it. The decisions made in the next few years will be pivotal, affecting the nature of television and telecommunications services for decades to come.

Ultimately, these choices will alter the ways that future generations of Americans come to interact with and understand the world. Public consciousness will almost literally be rewired.

It is the ideal moment for the Clinton Administration and Congress to develop a more public-spirited vision for the next media system. If the right decisions are made, these powerful technologies could be harnessed to tackle many of the nation's most critical problems. What is needed is a policy framework as visionary as the new electronic technology itself -- one that asserts a fresh public purpose within a framework of vigorous market competition. As Professor Jay Blumler has urged, telecommunications policy must shift "from managing and regulating scarcity to protecting and promoting potential."

The quid pro quo of the Communications Act of 1934 -- which grants broadcasters the exclusive right to use the public's airwaves in return for their service as public trustees - must be reformulated for the fiber optic age. In return for government subsidies, tax breaks, and legal privileges needed to build the new information highway, the proprietors and major commercial users of the emerging communications system must give due consideration to the public. The federal government, while it still retains bargaining leverage, must negotiate a new legal structure of reciprocity to serve public needs that the market will not.

The opportunities for revitalizing democracy and developing a more socially constructive brand of television are great, if federal policymakers dare to think boldly, creatively, and experimentally. In addition to ensuring fairness in the commercial marketplace, it is imperative that the federal government help create a vigorous new public sector in the telecommunications system -- one that honors and promotes diversity in ways that the current television system does not.

However, if bold steps are not taken soon, the new electronic superhighway will intensify, not ameliorate,

the current deficiencies of television and other mass media. And once new investment begins, this trend will be virtually irreversible. The abundant channel capacity and interactive capability of fiber and other new technologies will no doubt expand the number of telecommunications services. But, as history has shown time and again, the unfettered marketplace will not produce a telecommunications system which adequately serves the full spectrum of society's needs.

As we've seen in the current media system, much of the excellent television programming which has been aimed at education, civic participation, and theater has not been able to survive the fierce gales of marketplace competition. Commercial imperatives too often favor the sensational, the immediate, and the superficial. A highly commercialized milieu will not provide sustenance to national political life or promote community development. Nor will it serve those sectors of the population whose demographic profiles are unattractive to advertisers and pay-per-view providers. We need federal policies that intelligently shape the structure of the telecommunications marketplace to ensure the most robust, open competition while also supporting a well-funded postPBS system of noncommercial television.

POLICY GOALS

Three broad policy goals must be addressed if the public is going to be well-served by the telecommunications system of the future.

1. The First Amendment rights of citizen-viewers must be fully restored.

The paradox of modem mass media is that free speech rights originally intended for individuals and the community are becoming the exclusive private property of business entities. At the same time, public forums -- open spaces accessible to strangers who have an opportunity both to speak and respond to each other -- are becoming less and less available to citizens as we evolve into a society dependent on access to telecommunications technologies.

Despite pockets of spirited public dialogue heard during the 1992 Presidential campaign, the various media industries have little enduring institutional interest in maintaining public forums. They have shown a greater interest in privatizing and controlling channels of communication for strictly business purposes. Broadcasters have successfully challenged the Fairness Doctrine, long criticized for reducing the amount of their saleable airtime. The cable industry has fought to emasculate the leased access provisions of the 1984 Cable Act, which might otherwise have been a vehicle for fresh video programming. Prodigy subscribers who protested rate hikes were banned from the electronic bulletin board on which the issue was being discussed. And Tune Warner, in its recent constitutional challenge to the 1992 Cable Act, shows that it regards the First Amendment chiefly as a business weapon to be used in defending its market access.

Even as channels of communication have been expanding through new technologies such as cable and satellite, the control of the media system has tightened significantly, with disturbing implications. As Michael N. Garin and Thomas A. Redmond recently observed:

The consolidation in the media and entertainment industry in the 1980s was not a temporary stage, but the beginning of a sweeping trend that will result in an industry dominated by several large, vertically integrated media giants with vast resources and worldwide interests.

The transition to newer forms of telecommunications technologies offers an historic opportunity to restore to millions of citizenviewers some measure of First Amendment rights which proprietors of media systems have always enjoyed. Technologically, it is entirely feasible to find niches in the fiber system for a wide diversity of expression -- political, cultural, religious, artistic -- provided federal policy makes this a priority. By facilitating new noncommercial channels, greater viewer access and genuine competition, Congress can give vital new meaning to First Amendment principles in telecommunications.

2. The telecommunications system of the 21st Century must be designed to facilitate full participation by the nation's civic sector.

If given a platform from which to communicate, the energetic, resourceful constituencies of the nation's civic sector could greatly rejuvenate our troubled democratic culture. This nonprofit sector is the very portrait of American pluralism: educators, writers, artists, civic leaders, volunteers, citizenadvocates, trade unionists, religious organizations, self-help groups, independent producers, distributors, access stations, and dozens of others.

The nonprofit community must be given the opportunity and resources to become active players in this new communications environment. Such participation is essential if nonprofits are to take on the responsibility for providing many vital services traditionally delivered by government entities, as David Osborne and Ted Gaebler argue in their influential book, Reinventing Government. But while elaborate plans have been drawn up for designing the vast private sector of the future communications infrastructure, very little thought has gone into developing the public or "civic sector" of the system.

A top priority of telecommunications policy in the Clinton Administration should be the establishment of an administratively sound, well-funded system of public telecommunications entities -- from local civic networks to national systems eventually linked to global partners. Just as we have established public libraries and public highways, we will need to create public arenas, or "electronic commons" in the media landscape.

A vibrant telecommunications civic sector could serve as a counterbalance to the commercial forces of the media market-place. It could address a number of critical societal needs which have not been well-served by the existing media system and are unlikely to be addressed effectively by future market-driven services. The most urgent needs are to:

Strengthen community life. If the undeniable power of television were better deployed in communities, it could do a great deal to enhance community identity, participation, and responsibility. Programming that can serve the community has long suffered at the hands of national programmers beholden to advertisers. Air time has been too valuable and production costs too expensive (relative to other commercial uses) to develop substantive, original programs of local interest. Local programming has too often been limited to prosaic, low-budget productions shown on cable access channels. Given the proper structure and funding, a new genre of local video communication could be developed which would serve educators, parents, business people, artists, activists, and other regional community leaders.

Support and nurture families. Telecommunications could offer a rich array of services and programs designed to support and sustain families -- from "parenting channels" to noncommercial children's channels. These new services must be both affordable and accessible for all children and families. They must also be free of excessive commercialism. The next generation of children will not acquire the personal values or educational skills they need if the electronic media insist on regarding them primarily as passive, easily manipulated consumers.

Invigorate the democratic process. Fiber optics and other new technologies promise rich possibilities for direct citizencandidate and citizen-to-citizen dialogue. Many new formats and services could be employed to revitalize citizen participation in government, both locally and nationally. These could include electronic town meetings, interactive video and computer bulletin boards, affinity group programming g, channels that serve as "video publishers" for independent producers, and similar, innovations that commercial media interests are unlikely to find lucrative enough to initiative themselves.

Facilitate participation by all segments of our society. The full range of our nation's ethnic and cultural traditions has never been presented on television. Minority programming is usually confined to conventional commercial formats that filter and distort the authentic voices of those cultures. Our nation is enriched -- as a culture and as a democracy -- by hearing from the unheard voices in its midst. If the emerging telecommunications infrastructure fails to give access to such voices, despite its vast channel capacity, it will be failing to live up to its real promise.

3. Federal policymakers must ensure a truly open and competitive telecommunications marketplace.

The new media marketplace must be structured in as open, fair, and competitive a fashion as possible.

The importance of aggressive federal supervision of the marketplace is confirmed by the anticompetitive history of modern communications. This history is one of rival industries creating artificial barriers, the better to secure long-term marketplace advantages and thwart broader competition. The preferred tools are regulatory policy, technology, and sheer market dominance through vertical integration. This venerable dynamic is likely to plague the fiber optic marketplace as well. Already the largest media companies are entering into strategic alliances in order to pre-emptively dominate envisioned TV markets and erect de facto barriers to access.

Benign neglect of economic concentration in the media is a formula for an eventual political backlash, similar to the recent revolt of cable consumers. Yet by the time that a crisis point is reached, policies which could structurally reform the marketplace are politically impossible: huge investments will have been made, business acquisitions consummated, and patterns of business activity established. The only available policy remedies, at that point, are likely to be ineffectual.

Because we are entering a new era of technological change, no media industry or faction is "entitled" to anything; more enlightened long-term political choices can still be made. It is essential, for example, that the next generation of fiber optic telecommunications networks be designated as common carriers, offering fair, non-discriminatory access to all comers, at just and reasonable prices. The companies which own the networks must not be permitted to own video programming in competition with other programmers. The temptation to discriminate against their competitors or cross-subsidize their own video networks with revenues from other lines of business would simply be too great. Without an absolute separation between conduit and content, monitoring for abuses would be extremely difficult. Even rigorous regulatory safeguards would probably be skirted or subverted, and consumers would pay the price.

Policymakers must also recognize that the convergence of onceseparate media industries will only sanctify and accelerate the media's ongoing vertical integration. This inexorable trend, absent federal intervention, will result in even fewer and less accountable companies possessing even more concentrated economic power (with less interest in risk-taking programming). Although fiber's boosters argue that the new infrastructure will unleash a riotous diversity of free expression, this myth will never become a reality as long as the medium is dominated by major media corporations determined to insulate themselves from meaningful competition.

The history of cable is instructive in this regard. The "blue skies" promises of limitless capacity made by cable boosters in the 1970s turned out to be so much hype. As a dwindling number of companies came to control the leading cable networks, the industrial fashioned a controlled marketplace of truncated variety offering generically similar fare and broadcast reruns. Thus the familiar complaint, despite the availability of 30 or more channels, that "there's nothing on tonight."

Policymakers must recognize that the free market model is not truly operative here. Because the various electronic media are interlinked in a daisy chain of marketing "windows" for the same programming (movie theatres--pay cable channels--broadcast/cable networks--videocassette--foreign release), the respective media do not necessarily compete against each other. Economically, they tend to complement each other and foster homogeneous programming that can sell in as many media windows as possible. Thus the existence of a limited competition marketplace will not yield even a close approximation of the classic "free marketplace of ideas." Nor is the kind of limited program "choice" offered by the TV media in any way equivalent to the diverse kinds of expression that we witness in American pluralism and, indeed, in daily human experience. The new telecommunications infrastructure must serve as an instrument to liberate and re-invent contemporary television. But this will first require fresh, imaginative federal policy.

Formulating a New Vision

The most formidable challenge to designing a telecommunications system with bold public purpose may be our imaginations. As long as advertiser driven entertainment programming is the primary model for television, other innovative uses of video programming and information services will be overlooked. There are obviously many administrative, financial and political challenges to be overcome. But the first priority is the desire to pursue this vision, and to join in common cause with others who share this fundamental concern.

At the very least, a new policy framework for the emerging telecommunications infrastructure should provide for:

Universal service -- guaranteeing free or affordable access for all citizens to basic services, including news, public affairs, health, education, and electoral information.

National public networks -- providing a range of noncommercial programs and services, including news, documentaries, and children's programming.

Local and state information networks -- serving educational, governmental, health, and social service needs (including local and state versions of C-SPAN).

Multicultural programming initiatives -- encouraging authentic expression of our nation's divers ethnic and cultural traditions.

New funding sources and mechanisms -- facilitating the production and distribution of the widest range of programming and information.

Financing could come from any variety of fees on the commercial system: spectrum fees, bandwidth fees, excise taxes on VCRs, income-tax checkoffs, special taxes on fiber optics bills, a tax on advertising revenues. One of the least intrusive policy options would be a nonprofit rate structure similar to nonprofit postal rates, to provide a fair and workable system of nondiscriminatory access. Each fee system has its own political implications, which would need careful consideration. Yet the basic idea that commercial users of the telecommunications infrastructure have an identifiable quid pro quo with the government, as an agent for the public, is a sturdy principle.

Recovering a sense of common public purpose is one of the most urgent national challenges of the 1990s. Our economy, educational system, communities, civic dialogue, democratic participation and moral values: each will be profoundly affected by the telecommunications infrastructure we create for the next century. While there is still time, we must develop a national vision for telecommunications which embraces and promotes the values we hold dear in our society.

Center for Media Education (CME)

The Center for Media Education (CME) is a nonprofit 501 (c)(3) organization founded in 1991. CME's mission is to promote the democratic potential of the electronic media through public education, research, policy analysis, and outreach to the press.

CME's Information Infrastructure Project is dedicated to fostering a public interest vision for the information superhighway of the 21st century, and educating the public, the nonprofit community, and the press about the critical public policy choices that will shape the media system.

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May 27, 1999

THE WALL STREET JOURNAL INTERACTIVE EDITION.

Tech Center

Companies Battle for Beachhead As Televisions Become Gateways

By EVAN RAMSTAD
Staff Reporter of THE WALL STREET JOURNAL

Television makers, cable systems and satellite-programming providers are at war over the next big **digital** land-grab, and the battleground is your television set.

Each wants to control the first picture you see when you turn on your next-generation **digital** TV. That image is critical turf in television's long-awaited metamorphosis from a boob tube into a gateway to the Internet and interactive services.

Already several players have established interactive-TV beachheads, in the form of on-screen program **guides** that pop up automatically when you push POWER on the remote. The **guides**, grids showing what's on around the clock, could evolve into menus for future interactive-TV functions such as music, news headlines, shopping or Internet access.

TiVo's onscreen program listings

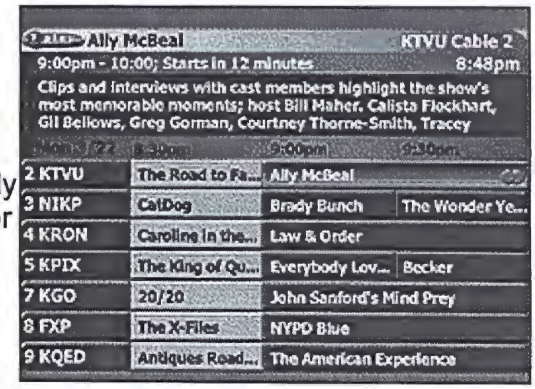
The betting is that one day the viewing **guide** will be to the TV what Yahoo! and other Internet "portal" sites have become to the personal computer -- a powerful position from which to direct Internet traffic, sell ads and provide other gatekeeping services. It's a position that Microsoft Corp. and America Online Inc. also are staking out.

Unlike the crude **guides** that have been running on hotel TV sets for years, and even the scrolling grids on certain cable channels, the newest generation of viewing **guides** would pop up on the TV screen first thing, no matter which channel had been tuned in the night before. If all the features manufacturers hope to offer actually become available, the **guides** could make their predecessors look as outdated as a game of Pong.

With twice as many TV sets as personal computers in U.S. households, the **guides** represent an enticing new frontier for TV makers. Sharp Corp. and Thomson Multimedia, a unit of French holding company Thomson SA, already are starting to ship televisions loaded with software for enhanced on-screen viewing **guides** that appear as soon as the set is turned on. New models on

the way from Sony Corp. and Zenith Electronics Corp. also include **guides**, but not the kind that come on automatically.

These **guides** will work only if cable-TV companies relay data about times and channels over their cable systems. But cable-TV companies seem increasingly unlikely to do that. Lusting for their own control over the revenue from interactive-TV services, they are backing on-screen **guides** that equipment makers are starting to load into the cable boxes that go on top of TV sets.

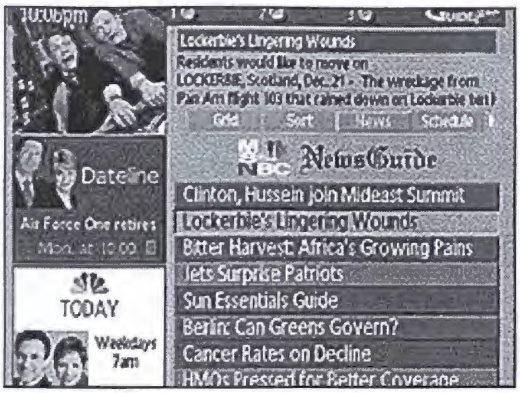


Replay Networks' onscreen program guide

And there is more competition from another corner. Two California firms, Replay Networks Inc., of Mountain View, and TiVo Inc., of Sunnyvale, make a new kind of video recorder that uses a hard drive instead of cassette tapes. The hard drive constantly records what the TV is tuned to, allowing viewers to replay, pause for a run to the refrigerator and pick up where they left off. The hard-drive video recorders, which are starting to hit stores now, provide their own on-screen program **guides**, which pop up in the coveted initial screen.

Smack in the middle of the fray is tiny Gemstar International Group Ltd., a Pasadena, Calif., company with about $125 million in annual revenue. Gemstar is best known as the creator of VCR Plus, a software package that helped technology-challenged people program their VCRs using numbers printed in newspaper and magazine TV listings. From there, it was a short leap into the on-screen **guide** business. Gemstar now is a major seller of on-screen viewing **guides** -- under the name **Guide** Plus -- to set-top box makers.

Gemstar is playing all sides in the game. In 1994, Gemstar signed a critical licensing agreement with Thomson related to its RCA **digital** receivers for satellite TV. Now Thomson is putting the Gemstar **guide** in regular RCA TVs, too. (Thomson SA owns 7% of Gemstar.) Gemstar also licenses its technology to about a dozen other major TV makers and even to Microsoft, which uses **Guide** Plus in its set-top WebTV boxes. Just this week, Gemstar signed a licensing pact with AOL for use in an interactive service it is planning to offer via television sets.



Gemstar's onscreen program listing

The deals could put Gemstar in a pivotal role for TVs, similar to the one Internet search engines fill for computers. "The opportunity for [Gemstar] is to act, similar to a Web portal, as a toll-taker as they send customer leads to merchants and programmers," says Michael Graham, a BancBoston Robertson Stephens analyst in San Francisco.

Until then, Gemstar is paying broadcasters. It pays TV stations to transmit the data for its **Guide** Plus viewing **guide** the same way the stations relay closed-captioning -- in the millisecond pauses that are part of the TV broadcast signal. Cable companies end up relaying the Gemstar data for free, because under federal "must-carry" rules they must relay each broadcaster's entire broadcast signal. As the Federal Communications Commission reconsiders its rules at the dawn of **digital** broadcasting, the cable companies are lobbying the FCC to reconsider that requirement.

Gemstar has a back-up plan. It is considering using two-way paging networks to communicate with TVs and already has formed an alliance with Paging Networks Inc., of Dallas, one of the nation's largest paging-service providers. Meanwhile, Gemstar is lobbying the FCC to leave the must-carry rules in place.

All the while, Gemstar has been battling competitors in court. Its main rival is TV **Guide** Inc., a joint venture of News Corp. and AT&T Corp.'s TCI Cable. TV **Guide** sells its own on-screen **guide** to equipment makers and produces the TV **Guide** cable channel. It has filed a patent lawsuit against Gemstar in federal court in Tulsa, Okla., which Gemstar is contesting. Meanwhile, Gemstar has traded patent suits with three set-top box makers. The disputes have been consolidated in Atlanta federal court.

TV Guide's onscreen program guide

Henry Yuen, Gemstar's founder and chief executive, says he isn't worried that Gemstar's growing power will put it at odds with customers, the way Microsoft's power put it at cross purposes with PC makers. "I don't believe we will be viewed negatively, because TV needs this feature," he says. "To make the screen **guide** better takes a lot of money and the return is nebulous for a single company." Still, he concedes, "we are sometimes misunderstood."

A few TV makers are hedging their bets. Sony is taking preliminary steps toward possibly developing its own **guide**. And Sharp is limiting

Gemstar's role in its **digital** models. Says Frank DeMartin, director of advanced TV product-planning at Sharp's U.S. subsidiary, "There's a reluctance to accept that some external company is going to control what goes on inside our TV."

A few years ago, Gemstar's on-screen **guides** would have added about $100 to the cost of a new set. But as a result of declining prices for components, Gemstar's on-screen **guide** adds only about $15 to the cost of making a TV -- a figure easily absorbed in price tags of $500 or more, which the models will carry initially.

This year, for the first time, Gemstar's **Guide** Plus will include space for two advertisements on the screen, next to the schedule grid. Television Data Network, a joint venture of Gemstar, Thomson and General Electric Co.'s NBC unit, is selling the ads.

How ready are viewers to use the on-screen **guides**? Already, Gemstar has retreated from some more fanciful features for **Guide** Plus, such as automatically sorting the program grid by putting most-frequently watched channels first. Consumers told Gemstar to keep the grid consistent. "We don't want to hear 'This is good, but, boy, is it complex,' " Mr. Yuen says. "That is the death sentence to us."

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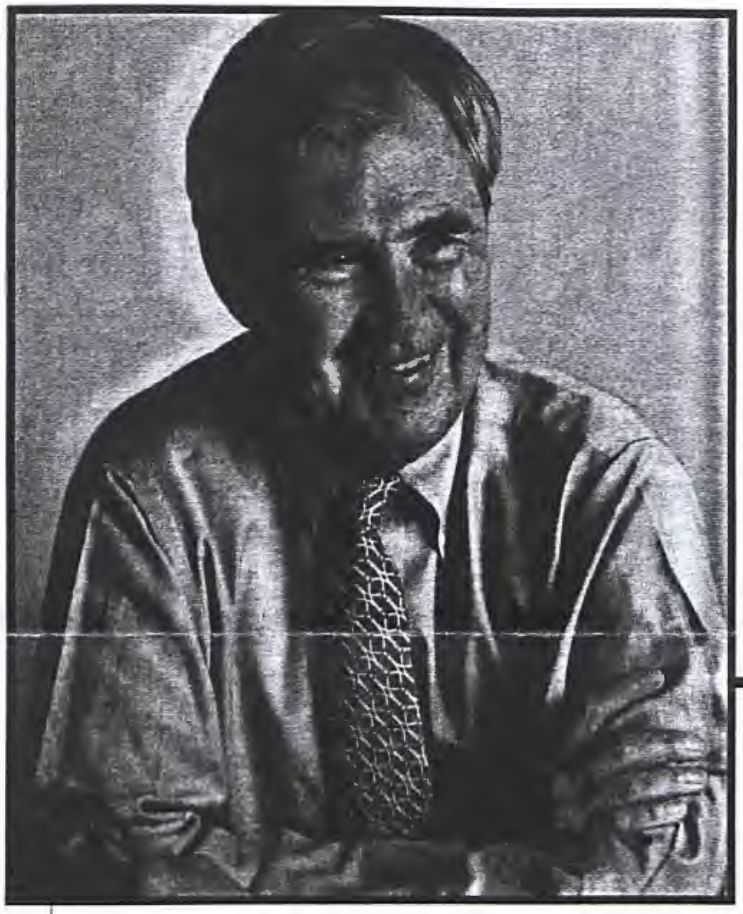

AMOS B. HOSTETTER

Leadership With Grace

The man who set the gold standard in public service
is also one of cable's most interesting success stories

BY HARVEY SOLOMON

The lanky young cable operator approached the podium, walking past rows of citizens, town council members and other community leaders in a Boston area suburb. The noisy room was typical of the franchising wars of the early 1980s, when companies like TelePrompTer, Time Inc., Warner Cable and Cablevision Systems competed fiercely to wire the nation's big cities and their suburbs.

Amos Hostetter, founder and president of Boston-based Continental Cablevision, was ready for this meeting. He and his colleagues had worked for months crunching numbers, attending meetings and canvassing civic groups and town agencies, reviewing their proposal to wire the town. Now it all came down to this crucial final hearing before the vote.

Hostetter began speaking, quietly but forcefully, about his company. He emphasized its local roots, exemplary customer service and a commitment to local programming that had won Continental more ACE awards than any other cable operator.

Hostetter deftly deflated a competitor's more-is-better strategy, explaining that the ultimate costs to subscribers of its dual cable proposal would far outweigh the benefits. He suggested that a better indicator of a company's commitment might be its participation in the town's franchising process, a nod to his hard-working team that had never missed an advisory committee meeting over many months. He closed not with a flourish but a simple promise, saying that if Continental was successful and anyone encountered a problem with the system, they could phone. "My number's in the book," he said, referring not to Continental's business listing but his own personal one in the Boston white pages.

"He's got a demeanor about him that's hard to describe," says longtime friend Brian Lamb, chairman and CEO of C-SPAN. "He's got a great confidence about himself, so that when you talk to him, you're confident that this is the right way to go. He creates in people the desire to do the right thing. He never asks for things, he's never up to anything that you can't recognize is right in front of your face. His word is his bond."

His presentation that night was vintage Hostetter: no bells, no whistles and certainly no B.S. While his upper-class, Amherst and Harvard background couldn't have been more different from the folks representing that blue collar town, he connected with them on a personal, one-on-one level, and brought the franchise home.

Amos B. Hostetter has shown a similar ability throughout his career, convincing disparate audiences at every level: investment bankers hesitant in cable's early years to back a risky new business; federal officials intent on regulation; or fellow operators hesitant to join his public service crusades on behalf of organizations like C-SPAN and Cable in the Classroom. He emerged as one of the industry's most respected and effective spokespeople, not only by his eloquence but an innate ability to listen to, react and read the people around him.

"He's a very shrewd observer," says communications consultant Clay Whitehead, who met Hostetter during the early '70s copyright debates when he served as director of the executive branch's Office of Telecommunications Policy. "Often when government gets into these kinds of disputes between industries you get people who only see one side of the coin. Amos sees both sides. He understands the politics, the psychology and what is going on on both sides of the table."

Hostetter with C-SPAN founder and president Brian Lamb not far from the network's headquarters in Washington

Hostetter's leadership was critical during the early 1990s, when rate regulations and stiff financial restrictions on leveraged transactions brought cable industry growth to a near stand-still.

Backed by his company's sterling reputation for customer service and his own commitment to public affairs, Hostetter was the industry's most effective spokesperson. "At a time when people questioned some of our manners and tactics, Amos walked through our industry with such grace that he elevated us all," says Leo Hindery, president and CEO of AT&T Broadband & Internet Services. "It was a difficult time emotionally and financially, but Amos never lost that grace that is so much a part of him. We needed it then and we need it today."

Hostetter was working in investment banking when he met broker and cable industry pioneer Bill Daniels in 1962. Both were assisting with a system acquisition in Keane, N.H. Not long after that meeting, Hostetter decided to become an operator himself. In 1963, he convinced

Spotlight

AMOS B. HOSTETTER

Born:

Jan. 12, 1937
New York, N.Y.

Most Widely Known As:

Cable pioneer who established the industry's gold standard in customer service and community affairs

Contributions:

Eloquent industry spokesman; was instrumental in the development of public affairs initiatives, particularly C-SPAN, Cable in the Classroom and the Kaitz Foundation

1999
Cable Hall of Fame

Spencer Kaitz, founder, Walter Kaitz Foundation; Leo Hindery, president, AT&T Broadband & Internet Services; John Saeman, chairman, Medallion Enterprises LLC; and Hostetter at last year's Hall of Fame awards dinner

Harvard classmate Irv Grousbeck to join him, and the two pored over U.S. broadcast signal maps to find markets that might be receptive to cable systems. Grousbeck visited several small Ohio towns before settling on Tiffin and Fostoria. The partners later moved there, personifying what would become a Continental Cablevision trademark: decentralized management that sought to make decisions as close to the customer as possible.

Continental's initial growth came through winning rural and suburban franchises. The company designed and constructed more than 90 percent of the systems it operated and later accelerated its growth through acquisitions, including the systems owned by McClatchy Newspapers, the Providence Journal Co. and American Cablesystems.

While subscriber ranks swelled, Hostetter maintained his individualistic, iconoclastic appr ,ach. He kept the company private, buying back a stake previously sold to Dow Jones. Grousbeck left in 1980 to teach at Harvard (and now teaches at Stanford). Continental never abandoned its guiding principles of decentralized management.

After maintaining Continental's fiercely independent status for more than 30 years, Hostetter engineered its 1996 sale to MediaOne for $11.7 billion. It made him one of America's richest men and turned 80 of his long-term employees into millionaires, but after MediaOne went back on its pledge not to move its headquarters from Boston to Denver, Hostetter quit in anger. "I did business until I was 61 years old on a handshake and my word," he told a friend. "It took me until this to be undone by it. I was so angry I was cross-eyed."

Now with his AT&T alliance to purchase MediaOne, Hostetter has returned triumphant. "Nice guys don't always finish last. They can come back and finish first, and maybe that's the lesson of the AT&T deal," says Jim Robbins, president and CEO of Cox Communications, who worked at Continental from 1974 to 1979.

A firm believer in a company's obligation to give back to its community, Hostetter has exerted a powerful influence in the board rooms of cable's public affairs initiatives. "He's able to keep all the players and all the strong egos at the table," says Bobbi Kamil, who served as the first president of Cable in the Classroom. "He is so generous of his time, which was what it took to get something like this going.

"When people aren't sure about whether or not they should join, they can't very well look Amos in the face and say no."

Although the MediaOne fracas sidelined him from cable's day-to-day activities for more than a year, Hostetter has reveled in the opportunity to spend more time with his wife and three children, the oldest of whom just turned 13. "I've never been so wrong about so many things," he said with a laugh about his parental duties. A recent birthday party for his youngest found a bemused Hostetter surrounded by pirates running around his house with swords and eye patches.

"He creates in people **the desire to do the right thing."**

—Brian Lamb, C-SPAN

Hostetter contributes generously but anonymously to a number of charitable and educational organizations. "In the last year and a half, my energies have been focused largely on several non-profits that mean a lot to me, and I'm trying to learn and excel at the business of philanthropy," he says. "All of our philanthropy has been anonymous and I'd like it to continue that way."

With Hostetter reentering the industry as non-executive vice chairman of AT&T Broadband & Internet Services, it's plain that many of his peers are quietly gratified, not only at his victory in regaining his company, but at their industry's reunion with one of its most effective leaders.

"Role model isn't a phrase you should ascribe to people easily," Hindery says, "but it's one that is easily ascribed to him."

"He's a wise and loyal friend," adds C-SPAN's Lamb. "That's the best way I can describe him, and to tell you the truth, I don't know what else matters."

Harvey Solomon

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Music

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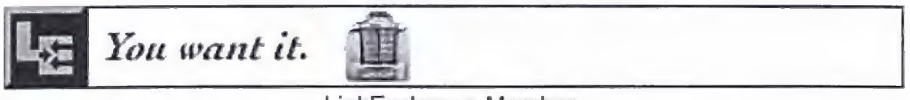

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WebTV Deal Adds Satellite Video Service

By James Niccolai

LAS VEGAS – WebTV Networks has added digital satellite television programming to its Internet television service, thanks to a deal announced here Thursday with EchoStar Communications.

By mid-year the companies plan to start selling a new type of set-top box that includes a satellite receiver, allowing users to view programs from EchoStar's North American satellite broadcast network, and also to access WebTV's Internet TV service.

The set-top box, which will be priced at $499, contains an 8G-byte hard drive capable of storing up to eight hours of digital video. This will provide users with enhanced viewing features such as the ability to pause a program for up to half an hour during transmission, and eventually the ability to record movies for viewing offline.

"We view this receiver as the first of a new breed of products that will define 21st century television viewing," Steve Perlman, president of WebTV, said at a press conference here.

Initially, users will access WebTV's Internet service through a telephone line much as they do today. But during the course of 1999 the service will allow users to download Web content using the broadband satellite network that delivers the TV programming.

This will allow them to download video games and other content far more quickly than current modems allow, Perlman said. Later in the year the companies also plan to add support for the MP3 audio format, allowing users to download music from the Web, store it on the hard drive and play it back offline, he said.

"I think it's a great win for WebTV," said Seamus McAteer, an analyst for Web technology strategies with Jupiter Communications.

The deal with EchoStar will allow the Microsoft (MSFT) subsidiary to compete more effectively with firms like Tivo and Replay Networks, which are showing products here at the show that also

provide users with VCR-like functionality over their TV viewing, McAteer said.

The ability to record videos – as opposed to just pause them during viewing – will be added later in 1999 via a downloadable software upgrade, Perlman said. Jupiter's McAteer said the delay may be because WebTV must first assure broadcasters that the recording capabilities won't lead to copyright violations.

"If you can download a digital quality movie to a hard disk as easily as that, you could be sitting there burning new disks in your home and distributing them to China and all over the place," McAteer said.

Current plans call for the service to be offered only in North America. WebTV's Internet TV service is also available in Japan and in Europe, and as EchoStar expands its broadcast service into those markets Perlman said the satellite-enhanced WebTV service will follow.

Besides the set-top box, users will have to pay around $20 for EchoStar's monthly satellite service, as well as $24.95 for WebTV's Internet TV service, Perlman said.

WebTV currently has 700,000 subscribers, Perlman said, 500,000 of which were added in 1998. 71 percent of its customers don't own a PC, and the average age of a WebTV subscriber is 43 – higher than the age of the average PC user, he said.

James Niccolai writes for the IDG News Service.

More Technology News

Searching for an IPO (May 03, 1999)

Thompson Unveils Portable MP3 Player (May 03, 1999)

Microsoft Releases Windows 2000 Beta (Apr 29, 1999)

Microsoft Forms Streaming Media Division (Apr 28, 1999)

Microsoft Buys Audio Software for Windows CE (Apr 27, 1999)

Headlines from CNN Interactive

Mentioned in this article

PEOPLE
Steve Perlman Co-founder and President , WebTV Networks

COMPANIES
WebTV Networks Mountain View, CA
Microsoft (MSFT) Redmond, WA

Overview and History
Company News
Investor Relations
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- **EchoStar Technologies Corporation™ (ETC)** designs, manufactures and distributes DBS set-top boxes, antennas and other digital equipment for DISH Network and various international customers that include ExpressVu Canada and Telefonica's Via Digital system in Spain. ETC also provides uplink center design, construction oversight and project integration services for customers internationally.
- **EchoStar International Corporation** offers satellite solutions throughout Europe, Africa, the Middle East, Australia and Asia from its headquarters in Almelo, the Netherlands. EchoStar International's support includes: hardware design and manufacturing, software implementation (a member of the DVB Group in Geneva), as well as global marketing, distribution and service.

Click Here to see Echostar's Orbital Fleet.

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"Marketing Violence to Children"

A Statement by William J. Bennett,
Co-director of Empower America
and former Secretary of Education

Delivered before the Senate Committee on Commerce

May 4, 1999

Washington, D.C.

Mr. Chairman and Members of the Committee:

Thank you, Senator Brownback, for inviting me to testify today. For several years you have been studying the relationship between our coarsened popular culture and youth violence. As a government official and private citizen, I have been doing the same thing. Now more than ever, we have good reason to pursue this matter.

Most of you know that I am a conservative Republican, which I have been for 13 years. But I was also proud to be a Democrat for 22 years. And one of the things proud Democrats do is read the New Republic. I still read the New Republic occasionally and want to commend an article in its most recent issue by Greg Easterbrook.

Here are the first two paragraphs of the article, which talk about the 1996 slasher/so-called "ironic-comedy" movie, Scream. The movie was produced by Disney's Miramax division. Easterbrook writes:

> Millions of teens have seen the 1996 movie Scream, a box-office and home-rental hit. Critics adored the film. The Washington Post declared that it "deftly mixes irony, self-reference, and social wry commentary." The Los Angeles Times hailed it as "a bravura, provocative send-up." Scream opens with a scene in which a teenage girl is forced to watch her jock boyfriend tortured

> and then disemboweled by two fellow students who, it will eventually be learned, want revenge on anyone from high school who crossed them. After jock boy's stomach is shown cut open and he dies screaming, the killers stab and torture the girl, then cut her throat and hang her body from a tree so that Mom can discover it when she drives up. A dozen students and teachers are graphically butchered in the film, while the characters make running jokes about murder. At one point, a boy tells a big-breasted friend she'd better be careful because the stacked girls always get it in horror films. In the next scene, she's grabbed, stabbed through the breasts, and murdered.... The movie builds to a finale in which one of the killers announces that he and his accomplice started off by murdering strangers but then realized it was a lot more fun to kill their friends.

Mr. Easterbrook goes on to write:

> Now that two Colorado high schoolers have murdered twelve classmates and a teacher – often, it appears, first taunting their pleading victims, just like celebrity stars do in the movies! – some commentators have dismissed the role of violence in the images shown to the young ... But mass murders by the young, once phenomenally rare, are suddenly on the increase. Can it be coincidence that this increase is happening at the same time that Hollywood has begun to market the notion that mass murder is fun?

Mr. Easterbrook's question is a very good one. According to several accounts, Dylan Klebold and Eric Harris enjoyed killing their classmates and teacher. They laughed and hollered, said one survivor, "like it was, like, exciting."

According to media reports, it turns out that Klebold and Harris were fans, even devotees, of a lot in our popular culture. Classmates have said that they listened to, among others, the shock rocker Marilyn Manson, who refers to himself as the "God of F***." Manson recently said that "the end of the world is all we have to look forward to – I'm just pushing the fast-forward button and letting you enjoy the ride." People like Manson do not simply rise by themselves out of America's basements; they are bankrolled by some of America's oldest and most respected corporations.

Mr. Chairman, let me here recall a story that I think bears on the subject of today's hearing. In 1995, when Seagram Co. purchased a 50 percent stake in Interscope Records, which included Manson's albums, Edgar Bronfman Jr., the president and CEO of Seagram, called me to request a meeting. I agreed to it, and in January 1996, Bronfman flew to Washington.

Bronfman's purpose was to allay my concerns and to preempt criticisms by me and my colleagues Sen. Joseph Lieberman (D-Conn.) and C. DeLores

Tucker of the National Political Congress of Black Women regarding Seagram's purchase. During the meeting, he told me the deal he was making with Interscope would allow him to refuse to distribute music he deemed inappropriate. Bronfman assured me that there were "lines we will not cross," that Seagram would not profit by disseminating objectionable music. "Watch us and judge us," Bronfman said.

I took him at his word. I praised his willingness to make normative judgments and to conclude that some music was beyond the pale. It turns out, however, that either his word that day was no good or his definition of objectionable music is far different from mine. Consider these words from Marilyn Manson's song "Irresponsible Hate Anthem": "Hey, victim, should I black your eyes again?/ Hey, victim,/You were the one who put the stick in my hand/I am the ism, my hate's a prism/Let's just kill everyone and let your God sort them out/F***, it, F*** it, F*** it, F***/ Everybody's someone else's nigger .../I wasn't born with enough middle fingers." One of the photos on Manson's Antichrist Superstar album pictures Manson's genitals hooked up to a hose which drains into the mouths of two men, kneeling, zombie-like, on either side of him. Antichrist Superstar did not disappoint Mr. Bronfman; it rose to Number 3 on the Billboard Album Survey.

Seagram, as an industry leader and self-professed setter of standards, should stop its support of lyrics that are unworthy of human consumption. Your colleague Sen. Lieberman and I have written letters to Seagram's board of directors and to major stockholders, urging them to use their influence to clean up the music that Seagram distributes. And I have asked Bronfman to publicly debate these issues, in Los Angeles, in New York, anywhere. But so far, all we have heard from one of the world's largest communications corporations and its board is the Sound of Silence.

This is one of the things you should continue to debate: what effect does the popular culture have on the young. In Plato's Republic, Socrates said that "musical training is a more potent instrument than any other, because rhythm and harmony find their way into the inward places of the soul, on which they mightily fasten, imparting grace." Rhythm and harmony are still fastening themselves on to children's souls; today, however, much of the music they listen to is imparting mournfulness, darkness, despair, a sense of death.

****

Mr. Chairman, the events in Littleton were catastrophic for the Columbine students and their families. And it was a horrible moment for this country not just because what happened was so terrible but because it raises questions about key parts of American life. This is a moment that demands hard questions about schools, about parenting, about guns, and about the entertainment industry.

Although today's hearing focuses on the latter, let me say a word about the gun issue and how it relates to what we are talking about. My view on this is that if somebody is a pro-gun ideologue and says "we can't talk about guns in this issue," they do not have much to contribute to this discussion. Similarly, if some shameless Hollywood ideologue says "we can't talk about the influence of movies or television on this," they do not have much to contribute either. In the matter of the protection of our children, nothing should be off-limits. The issue, obviously, involves a bundle of things. We

should talk about all of them.

Most of us already know that too many of our movies, television shows, music songs, and video games are filled with trash: grisly murder scenes, dismemberment and disembowelment, nonstop profanity, rape and torture scenarios. The relevant questions are: Does it matter and, if it does, how much and what can we do about it?

Almost no one, except for a few blinded by financial stakes, thinks that the popular culture is not having a coarsening effect on our kids. The evidence, empirical and anecdotal, is overwhelming. It is clear, abundant, and it is common-sensical. You will hear some of it today.

Now for some kids – a small percentage – movies, music, television, the Internet make no difference in their lives; they simply are not affected by the stuff. For most kids, however, the popular culture works as a coarsener, desensitizer, and dehumanizer. That is why most parents, although they are not alarmed or revolting in the streets, are deeply worried. They feel as if they are swimming upstream, fighting against faceless television, movie, and music executives who are fighting against them. This is a very serious problem. We should study it and find out more about it.

But another difficulty is in the very small percentage of kids who are, for all intents and purposes, taken over by the popular culture. Who see the violent movies as a game plan. Who hear the dark, pounding music as a hymn. Who are basically severed and metaphysically separated from their parents, families, and communities. Who begin, as Eric Harris and Dylan Klebold did, to live in a dark parallel universe.

Obviously, this is not simply the work of producers or advertisers. But it may be partly the product of their work. If they believe it is not, then the Edgar Bronfmans, Howard Stringers, Michael Eisners, and Oliver Stones of the world should explain why. As you well know, Senators, this is something they have been unwilling to do. Recall when the tobacco executives were called to testify before Congress and then bombarded with questions about nicotine and other poisonous additives. That was more than a public hearing; it was a public shaming.

The same thing, in my opinion, should happen with the bigshots from Hollywood and Madison Avenue. (My hunch is that they will ignore you as they did today.) But here are a few questions you might ask them if they do show up:

> Was the scene showing human brains splattered on the car seat a necessary part of your artistic statement? What was the point of including lyrics about child murder and molestation?
>
> Do you understand the difference between gratuitous violence that simply titillates and violence that serves a purpose in telling a larger story? Can you distinguish between Casino and MacBeth, between The Basketball Diaries and Braveheart?
>
> Who came up with the marketing term "tweens" – referring to kids between age eight and 12 – and what exactly are you aiming at them?

How much money are you spending on targeting young adolescent males? Do you use violence as a "hook"? Have you conducted in-depth market research on whether blood and gore appeal to younger audiences?

If so, do you need to do this? Can you make your money in a less destructive way? Or is this cultural pollution absolutely necessary? Is this predatory capitalism worthy of your corporation's name?

Are you at least ashamed when you aim to corner the youth market with images of senseless violence and sex?

I will repeat what I have previously said several times before: I am a virtual absolutist on the First Amendment. All of us have a right to make, produce, and sell almost anything we want. But the more important question, at least morally and constitutionally, is not so different from the one asked of gun manufacturers. Should you develop, market, promote, and sell something regardless of how degrading or destructive it is?

If we ask the gun manufacturers to regulate themselves responsibly, which we do (and much more), then at least we should ask the entertainment industry to act responsibly (better than trying to regulate them from Washington). We should ask them what they are doing and why they are doing it. Again, I urge you to take that action. There are some "gun nuts" in the country, of course; now is an appropriate time to uncover the country's "filth nuts." Some will go on to say that as a percentage of all movies, music, and television, the destructive trash is only a small part. I would respond to this claim by pointing out that the gun folks retort is that only a small percentage of guns are used illegally.

Finally, let me defuse in advance one of my critic's arguments -- that we are focusing on the wrong problem when we talk about popular culture since other countries, like Japan, consume the same movies and music that we do but are among the most peaceful nations on earth. Professor Daniel Polsby wrote an article in the Atlantic Monthly in which he made the following point: If firearms increase violence and crime, then the rates of violence and crime in Switzerland, New Zealand, and Israel should be higher since their "number of firearms per civilian household is comparable to that in the United States."

The point -- and fact -- is that we are a complicated country. We are different in many ways from other countries. Our violence is one of those differences. While we are the greatest country in the world, we are also one of its most coarse and most violent. That is not something to celebrate. It is a shame, and needs to be treated that way. By parents, by Congress, and by the entertainment industry.

Mr. Chairman, thank you very much for the opportunity to testify. I look forward to answering questions from members of the committee.

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Blue Skies and Strange Bedfellows: the Discourse of Cable Television[1]

by Thomas Streeter

(from Lynn Spigel and Michael Curtin, eds., The Revolution wasn't Televised: Sixties Television and Social Conflict, Routledge,1997, pp. 221-242).

I. Introduction: The Discourse of the New Technologies

> *[T]he stage is being set for a communications revolution . . . audio, video, and fascimile transmissions . . . will provide newspapers, mail service, banking and shopping facilities, data from libraries and other storage centers, school curricula and other forms of information too numerous to specify. In short, every home and office will contain a communications center of a breadth and flexibility to influence every aspect of private and community life.*[2]

The preceding passage was published in The Nation, not in the last few years, but in 1970. The wondrous new technology that was supposed to bring about this communications revolution was not the information superhighway, but cable television. The author went on to argue that government should make a "commitment for an electronic highway system to facilitate the exchange of information and ideas."[3]

This chapter looks at what I will call "the discourse of the new technologies," a pattern of talk common in the policy-making arena in the late 1960s and early 1970s and remarkably similar to much of the recent talk about "the information superhighway." This discourse flowed from an odd alliance of groups: 1960s media activists, traditional liberal groups, industry lobbyists, and Republican technocrats all made their contributions. As a result, government television policy was subtly transformed, and beginning in 1970, the FCC reversed its attitude towards cable, turning the industry from a regulatory outcast into a protected element of the media system.

"Discourse," it should be pointed out, is not debate. The talk about cable, this chapter will show, was characterized by a systematic avoidance of central issues and assumptions and by a pattern of unequal

power in the discussion and its outcomes; the discourse of the new technologies was shaped not so much by full fledged debate as by a lack of it. By the same token, the argument here is not simply that debate was suppressed by a conspiracy, or that the policy process was captured by an interest group. The discourse of the new technologies was what Foucault might call a discursive practice, that is, a collective habit of talk, action, and interpretation embedded in historical context that establishes and enacts relations of power and resistance. The discourse had a kind of life of its own; it was not only shaped by but also itself shaped economic and social forces.

In particular, the discourse had the specific effect of systematically drawing attention away from political differences and creating a terrain for collective action that simultaneously obscured underlying conflicts. The form of the discourse--its particular mixture of themes, blind spots, and gaps--made possible an odd alliance between the CATV industry, certain professional groups, and some liberal progressive organizations. The discourse thus made possible some major actions in the policy arena, actions that simple self-interest would not warrant. Diverse viewpoints were united around a shared sense of awe and excitement; maybe the new technologies were good, maybe they were bad, but in any case they inspired a sense of urgency, of possibility, and of a need for action, for response.

The goals, interests, and philosophies of the many contributors to the discourse of the new technologies were widely varied, sometimes to the point of being mutually antagonistic. The participants in the alliance did not understand it as such, however, as a compromise between groups with different but overlapping interests; rather, they saw it as a solid consensus, as what one policy activist dubbed "a great and growing body of impartial, expert opinion." The new discursive field thus helped create a sense of expert consensus, of unity and coherence where in fact there was a variety of conflicting motivations, attitudes, and opinions.

II. "An Ever Expanding Chorus of Expert Opinion"

Cable began around 1950 as Community Antenna Television (CATV), a service providing improved television signal reception in remote areas. Over the years, CATV helped fill in the gaps in the ragged periphery of a system dominated at the center by the three television networks, which distributed their signals nationwide via coaxial cable and microwave relay to broadcast transmitters in local communities. One of the grand paradoxes of American broadcast regulation is that it rests on the fiction that local broadcasters control the system. Consequently, the Federal Communications Commission (FCC) can only directly regulate local transmitters, not the more powerful network organizations; local broadcasters are thus subject to a great deal of attention and regulatory tinkering. When the tiny but growing CATV industry set off a squabble in the broadcast system's periphery by threatening the profits of small local broadcasters, the broadcasters used their inordinate importance with the FCC to generate a set of regulations that effectively halted CATV's growth. By the mid-1960s, CATV was thus locked out of television's economic mother lode, the top 100 markets. CATV operators conducted a strident campaign to remove the restrictions, but to no avail, largely because they had little support outside their own ranks. The struggle between CATV operators and local broadcasters, for the most part, was seen as a minor affair, of interest only to industry insiders--until the late 1960s, when the climate of opinion began to change.

In what one contemporary writer described as "an ever expanding chorus of expert opinion," a new, hopeful view of cable television echoed throughout the policy arena in the late 1960s and early 1970s, appearing in numerous articles, studies, hearings, and journalistic publications.[4] One important galvanizing force in this development was the Rand Corporation, which began research on "cable

television issues" in 1969, with support from, among others, the Ford Foundation. Rand published more than a dozen reports on the topic over the next three years. The Alfred P. Sloan Foundation established a Commission on Cable Communications in the spring of 1970, which solicited over fifteen studies and produced a book length report.[5] The fever went beyond the foundations, however. Articles appeared in The New York Times and Saturday Review. The influential British weekly, The Economist became a regular advocate of the new vision. And a major article appeared in The Nation in the Spring of 1970, later to be published in expanded form as a book called The Wired Nation.[6] Numerous progressive groups such as the ADA and the ACLU became interested and began making contributions to cable policy proceedings, as well. While there are important differences in many of these texts, they all share a sense of urgency, a sense of activism, and a sense of working against stifling and powerful conservative forces. Cable had captured the imagination, not just of those traditionally concerned with television regulation, but of what seemed to be an entire cross-section of the U.S. policy-making community.

Significantly, however, the sense of "an ever expanding chorus of expert opinion," was not based on any explicit, thoroughly worked-out theory that can be located in a single statement or document. Rather, instances of the discourse were typically invoked in passing, as introductory or concluding passages to otherwise more concrete and specific arguments, policy recommendations, and research reports. For example, in 1968 an Advisory Task Force on CATV and Telecommunications for the city of New York published a report that was, for the most part, relatively brief and pragmatic. It recommended the introduction of state-of-the-art cable systems for each borough of the City, with rates and programming regulated, but not absolutely determined, by guidelines established by the city council. Most of its fifty pages referred to the specific details of the situation in New York. But the report concluded with the following passage:

> *The promise of cable television remains a glittering one . . . Those who own these electronic circuits will one day be the ones who will bring to the public much of its entertainment and news and information, and will supply the communications link for much of the city's banking, merchandising, and other commercial activities. With a proper master plan these conduits can at the same time be made to serve the City's social, cultural, and educational needs.*[7]

It was this kind of passage that filtered most widely into policy debates at large, not the report's data, analyses, and recommendations. The references to "next generation" high-capacity, two-way cable systems, to satellites, to systems that combined voice, computer, and television signals all on the same wire, to the generally "glittering promise" of this new dazzling technology--these were the particulars of the New York City Report that found their way into discussions in the FCC, the Rand corporation, and the elite popular press. The concrete, detailed recommendations of the Report, on the other hand, were in the long run probably less important; they served more to provide an aura of expertise and professional legitimacy than they did to actually influence concrete policy decisions. Paradoxically, therefore, the specific details of the New York Report served largely as window dressing, while its vague speculations had a very concrete impact that went far beyond the borders of New York City. And this pattern was repeated in numerous other studies, books, and reports of the period. The frequent incantation of the themes of the discourse in policy debates created a sense of consensus, a "common sense" of the day, without that sensibility ever being worked out in detail.

The key themes and gaps of the discourse, however, can be reconstructed. In general, it was an example of what James Carey and John Quirk call "the rhetoric of the electrical sublime," a discourse which has resurfaced at regular intervals throughout American history ever since the development of the telegraph, which expresses a quasi-religious faith in the power of new technologies to overcome social and material constraints.[8] In the late 1960s, the theme of technological revolution frequently took the form

of a claim that "[n]ew technology is transforming the realm of communication."[9] Almost as frequently, however, it was also suggested that the revolution would embrace, not just the realm of communications technology, but all of society. A report filed with the FCC in 1969, for example, stated that the "mushrooming growth in available information is bringing about a revolution in communications which will produce a profound change in the way society is structured and in the way we live."[10] The idea was that technological progress in the field of telecommunications, particularly the growing use of communications satellites, the increasing involvement of computers in data transmission, and the increasing capacity of broadband coaxial cable transmission techniques were not isolated developments or mere continuations in the technological evolution of communications systems, but were all part of a revolutionary development comparable to that brought about by print, or by the industrial revolution.

The theme of autonomous technology is clearly evident in these passages. For example, the report of the influential Sloan Commission on Cable Communications, published in 1971, opens with this typical passage: "Spreading quietly into every corner of the United States--slowly and unevenly and yet with its own air of inevitability--is a new communications technology."[11] Cable television was something that could have an important impact upon society, and it thus called for a response on the part of society; it was something to which society could respond and act upon, but that was itself outside society, an autonomous entity that had simply appeared on the scene as the result of scientific and technical research. As Raymond Williams has shown, this assumption of autonomous technology is characteristic of much thought about television and society, and constitutes a false abstraction of technologies out of their social and cultural context.[12]

The terminological shift from "CATV" to "cable" that occurred during this period usefully indicates the discursive tendency to abstract complex issues into a simple, autonomous "technology." Before the late 1960s, the term "community antenna television" or CATV was dominant. The industry's trade magazine, for example, was titled CATV. This reflected an understanding of CATV as a service, an alternative method of program delivery. The coaxial cables, signal amplifiers, and other bits of equipment used by the CATV operators were just variations on the technologies used throughout the television industry. CATV was thus generally thought of as simply an alternate route, a slightly different combination of wires and transmitters for delivering television signals. But by 1970 all reference to the kind of service began to be dropped and to be replaced by the name of a piece of hardware. "CATV" became "cable."[13] FCC reports, Congressional hearings and the like were peppered with references to the "new technology" of "cable."

Cable, however, was neither "new" nor best described as a "technology." For one, "cable" had been in existence since the late 1940s under the name of CATV. Furthermore, the practice of distributing television signals by wire grew up along side television itself, and has actually been central to what we call "broadcast" television all along: the lifeblood of American television, the network programs, were distributed on a coaxial cable network owned by AT&T in the 1950s and 1960s.[14] At the time when cable was most consistently interpreted as a "new technology" by the policy community, therefore, it was arguably no more "new" than it had been since the beginning of television in the late 1940s.

The trait most often invoked as justification for the description of cable as "revolutionary" was similar to the arguments made today on behalf of the information superhighway: an increase in maximum channel carrying capacity. It was frequently pointed out that recent developments had expanded the carrying capacity of coaxial cable to twenty and more television channels, substantially more than could be carried over the air (given the existing allocations). Based on this increased capacity, former CBS news president Fred Friendly claimed that the coaxial cable was "a true turnpike, as geometrically enlarged in capacity as a sixty-lane thruway would be over the old unpaved Boston Post Road."[15] Similarly, FCC Commissioner Nicholas Johnson argued that comparing coaxial cable to a telephone wire was like

"comparing Niagara Falls to a garden hose."[16]

The increase in channel capacity obviously did represent a technological development. However, it was arguably only an evolutionary development, not revolutionary. It had been going on throughout the period when people were content with the word "CATV." Why not speak of a cable revolution when the channel capacity more than doubled from 3 to 8 in the 1950s, or from 8 to 12 in the first half of the 1960s? And why focus on the particular piece of hardware called cable, rather than one of the many other, equally necessary kinds of hardware, such as microwave relay? After all, both antennas and cables were necessary to the operation of both "broadcast" and "community antenna" television. Why draw so much attention to the different ways that individual television sets were linked to the broadcasting system--in one case radio waves, in the other, wires--when in both cases, the links to individual television sets were themselves connected to another set of links, the network web? The network system made television what it was, and it was constructed out of a massive, complex framework of coaxial cable and microwave relay that connected both the local wires and the local radio waves into the sources of national program distribution. But this fact was brushed aside, and the shift from radio waves to wires on the local level came to stand for a transformation of the system itself.

The argument tended to be that the system suffered from a clogged bottleneck on the local level, and the high channel capacity of broadband coaxial cable was a means to remove that obstacle. This was a dubious claim. The most telling evidence against the "local bottleneck" argument was the fact that in the late 1960s nearly two thirds of the allocated UHF broadcast frequencies across the country were left unused (a situation that continues to this day). At the time, Richard Posner argued that, since broadcasting over the air costs roughly the same as "cablecasting," the unused UHF airspace suggested that the problem of broadcasting was that the market was thin, not that access was limited.[17] The larger point is, however, not that a technical mistake was made, or that the evidence was not carefully considered. In the overall pattern of events, it becomes clear that careful consideration of such detailed arguments was obviously not the issue; the gaps and contradictions in the scenario of a cable television revolution were easily brushed aside by all the talk about the utopian possibilities for progress through new technology.

This complex set of historical and economic circumstances, however, was thoroughly obscured as CATV was abstracted in discourse into a simple "new technology," something that was outside society. Precisely because of that abstraction, moreover, it became possible to speak of cable, not as an embodiment of social contradictions and dilemmas, but as a solution to them. Cable came to be associated with the utopian vision of a "wired nation." Cable, it was frequently intoned, was the next step toward a "single, unified system of electronic communications."[18] This theme had many variations: it was also described as the "wired city scenario," or associated with talk of "a nationwide integrated telecommunications grid."

The utopian strain in the discourse is evident in frequent suggestions that problems of the present could be transcended with the help of new communications technologies, particularly in so far as they embodied the utopian dream of the wired nation. One of the key themes was a belief that telecommunications "can play a . . . fundamental role in achieving understanding and harmonizing conflict among modern societies dominated by diversity, mobility, and the claims of social justice."[19] The fragmentation and unrest of contemporary society, in other words, could be transcended by means of telecommunication systems. One major report argued for exploring "the constructive possibilities for the use of television to help overcome some of the problems of urban ghetto dwellers. Isolated rural people such as the inhabitants of Indian reservations could benefit from similar undertakings."[20] Prof. Don Le Duc suggested that cable television could satisfy the complaints about the lack of broadcast objectivity and bring an end to the attacks of community groups on broadcast licensees that were occurring at the time. On a broader level, he argued, in a cabled society,

> *members of the audience would no longer be simply the passive recipients of mass communications messages but would participate actively in their selection and dissemination. . . . Thus, direct feedback could well result in the reversal of the traditional roles of mass communications, making the communicator little more than a common carrier in a communications process controlled by each individual subscriber. In such a humanized atmosphere broad governmental control may no longer be necessary, except perhaps for the type of supervision of rates and service exercised over other private communications carriers.*[21]

Cable, in other words, had the potential to rehumanize a dehumanized society, to eliminate the existing bureaucratic restrictions of government regulation common to the industrial world, and to empower the currently powerless public. Thus, on the level of discourse, not only were the historic complexities and dilemmas of the situation sublimated away into the abstraction of technology, but that abstraction in turn came to be represented as the solution to those dilemmas.

III. Origins of the Discourse

At first glance, the enthusiasm for the discourse of the new technologies seemed to spring from a cross-section of the political spectrum. It was not, however, a true cross-section. While on its fringes this group may have bled off in either direction, at its core, it encompassed neither the openly revolutionary parts of the then-active New Left, nor the mainstream of the Republican Party. Rather, it was in some ways a New Deal coalition, made up of professional groups, corporations and their intellectual allies, and progressive political groups seeking ways to foster social change by working "within the system." It is possible to locate five key centers of enthusiasm for the discourse of the new technologies: a collection of progressives interested in fostering more democratic forms of communication, the cable operators themselves, a group of economists concerned with regulatory problems, liberal elites interested in fostering alternatives to the existing commercial television system, and a group of influential policymakers centered around Eugene Rostow interested in centralizing the management of the telecommunications system within a government agency.

A. Progressives and Media Activists

A faith in new technology has been a recurring theme on the American left at various points throughout this century. In the 1930s, for example, some of Roosevelt's New Dealers rallied around the Tenessee Valley Authority and other big engineering projects as harbingers of a harmonious, equitable future achieved through science and technology. By the 1960s, however, the association between big science and utopian futures had largely disappeared on the left. Much of the 1960s counterculture was in various ways altogether anti-technological, being formed around what Andrew Ross has called the "technology of folklore," an amalgam of preindustrialist, agrarianist, and related values.[22] But there was a strain that saw in technology neither a utopian harmony nor a demonized uniformity, but the promise of an anarchic excess. One source of this vision was the musical avant garde. Composer John Cage, for example, associated technology, not with impersonality, regularity, efficiency, and uniformity, but with "heterogeneity, randomness, and plenitude."[23] Another source, of course, was Marchall McLuhan, with his mixture of iconoclastic and euphorically utopian treatments of electronic technologies. These trends, combined with notions of grassroots political organizing current among the 1960s counterculture, fed into the alternative video movement, which advocated for and experimented with new, inexpensive, and portable video technologies as a democratic alternative to big, corporate media. [24]

Few, if any of the alternative video activists had any direct influence on the policymaking processes of the late 1960s and early 1970s.[25] But some of the spirit and a few of the ideas (especially "cable access") probably informed the efforts of those who did contribute. Certainly, the progressive spirit of many of those who gave voice to the discourse of the new technologies is evident on close readings of some of the most influential texts of the era. While introductory paragraphs and chapters were often filled with unadulterated examples of the discourse of the new technologies, long passages were often devoted to cautionary warnings about the coming new media. "Cable television offers vast potential for social good," the message seemed to be, "but that potential will be realized only if we act now." These were not mere apologists for special business interests, nor were they blind technology enthusiasts. They were groups, which, for various reasons, wanted to "work within the system" to accomplish democratic social change within the framework of the dominant power structures of society. The new interest in cable television seemed to provide a grand opportunity for such change.

Ralph Lee Smith's The Wired Nation (1972) is the most important example of this pattern. Originally published in the left magazine The Nation, Smith's tract, while full of glowing rhetoric about cable's promise, was also a polemic for certain political goals. Smith warned against economic concentration, cross-ownership, and local monopolies in the cable industry. He foresaw the possibility of mediocre, network-style programming patterns being repeated instead of the diverse and community-oriented programming for which he hoped. He warned against the narrow and purely economic industry interests that were already beginning to define the future structure of cable television.[26] These negative possibilities, however, did not dampen his enthusiasm. Instead, they led to his call for a combination of grass-roots community action and a state-controlled regulatory structure which would limit rates and prohibit cable operators from controlling program content.

Smith's sentiments were shared by other liberal groups such as the Americans for Democratic Action and the American Civil Liberties Union, both of which he drew on for support. The arguments of the ADA in favor of Congressional intervention in cable television are illustrative. The ADA saw the cable issue as an opportunity for us "to regain our constitutional heritage of freedoms of communication."[27] The ADA urged immediate action to prevent "special economic interests" from taking control of cable TV: "Our growth, urbanization, and industrialization have now substituted mass circulation, advertising-supported, print and electronic media for the community media of person-to-person speech, assembly, and print. Personal two-way dialogue has been supplanted by one-way 'broadcasting' to mass 'audiences.' Active participation in communications has become passive reception."[28] The ADA, as this passage shows, obviously did not suffer from a naive faith in technology. The cable issue, for the ADA, was an opportunity to pursue non-technological legislative goals, not a chance to celebrate technology as a value in and of itself. And yet, the contribution of the ADA probably had effects quite different from those intended. The ADA's concrete legislative goals--a rewrite of the 1934 Communications Act that would foster a unified, national common carrier broadband network including television--were never given much serious attention. The fact that the ADA had lent its voice to the debate, however, resonated, thus lending weight to the overall momentum of the discourse.

B. Cable Operators: the Discourse as a Competitive Strategy

One driving force behind the discourse of the new technologies came from a very different perspective: cable operators used it as a strategy in the small-market television battle with broadcasters, particularly as that struggle was carried out through the FCC. By describing their businesses, not as a mere ancillary community service, but as new technology, the cable operators could gain new leverage against their commercial opposition, the broadcasters. In 1966, one of the earliest attempts to shift the terminology from "CATV" to "cable television" came when some cable operators, eager to establish themselves as program providers, moved to change the name of the National Community Antenna Association to the

National Cable Television Association.[29]

But it wasn't until 2 or 3 years later that the industry began to regularly draw on the discourse of the new technologies to promote their designs. A classic example can be found in the 1969 Congressional testimony of Irving B. Kahn, the President of the country's then-largest cable operator and a leading spokesman for CATV (who, within months of this testimony, would be sentenced to prison for bribing city officials during a cable franchise negotiation).[30] Kahn's testimony was for the most part standard salesmanship on behalf of removing the regulatory restrictions on CATV--cable provided a needed service, it did not threaten the broadcasters, cable had been mistreated by the FCC, and so on. All this was accompanied by a wealth of anecdotal evidence and some skillful rhetoric designed to portray cable as a misunderstood underdog. He concluded his prepared remarks, however, with a new twist. "There is one thing," he argued,

> *that cannot be ignored. And that is the great and growing body of competent, impartial opinion--from scientists, writers and journalists, members of the Government, businessmen, economists, and others--that stresses the great potential of CATV if it is permitted to test its wings in an open, competitive, climate.*[31]

From Kahn's perspective, his appeal to expert authority was, perhaps, just one more rhetorical device. But it would not have been an effective one a few years earlier. His reference to a "great and growing body of impartial opinion" only made sense because of the recent talk of new technologies. By the early 1970s, when this particular way of speaking about new technologies would reach a fevered pitch, it was familiar enough to the industry to have earned a label in the trade jargon: the "blue sky scenario."

The invocation of the discourse of new technologies by cable operators, however, is not enough to account for the intensity and pervasiveness that came to characterize talk about the "wired nation" by the early 1970s. The glib, pragmatic style characteristic of business people and the trade press that serves them, moreover, does not lend itself to the abstract flights of social prediction characteristic of the discourse. The blue sky scenario, as it appeared in the trade press, usually seemed to have a slightly sarcastic inflection to it, and in any case seemed more to connote astounding profits than astounding social transformations. Whether "CATV" or "cable," the basic point was to make money. The cable operators, therefore, may have set the ball rolling, but the impulses that really gave the discursive transformation its decisive momentum had to come from somewhere else.

C. The Search for an Alternative Broadcast System: Economists and Liberal Elites

One pattern common to most of the various streams of thought that fed the rise of the discourse of the new technologies was that they interpreted the strains, struggles, and problems of the existing American television system to be the product, not of growing pains, but of fundamental structural flaws. In several different elite circles, television was no longer seen as an infant institution, and its flaws were no longer interpreted as temporary foibles, amenable to correction within the existing overall structure. People in positions of authority and power were beginning to seek solutions to television's failings, not in adjustments to the existing system, but in alternatives to the system itself.

One of these calls for an alternative came from the groups that sponsored the Carnegie Commission on Educational Television. While the Carnegie Commission did not address the issue of CATV or invoke the discourse of the new technologies in any direct way, it did help introduce the idea of considering a fundamentally different kind of television, structured in a radically different way and conceived at the

national level. "[T]his is a proposal," the Commission argued, "not for small adjustments or patchwork changes, but for a comprehensive system that . . . will become a new and fundamental institution in American culture. . . . different from any now in existence."[32] The important contribution of the Carnegie Commission to the discourse, therefore, was a shift in emphasis from "small adjustments and changes" to the creation of "a comprehensive system" through relatively radical restructuring.

At roughly the same time, another call for alternatives appeared in a very different environment. This was the work of several economists who argued that the existing television structure "unnaturally" restricted economic competition and program diversity. A completely different structure, they went on to say, might eliminate the problem. Probably the earliest comprehensive published example of this argument, titled "A Proposal for Wired City Television" by Harold Barnett and Edward Greenberg, appeared in the winter of 1968, but, as the authors suggest, the argument had been current among members of the RAND corporation, certain FCC commissioners, and others of the policymaking elite for some time before that.[33] The article takes as given the inadequacies of the existing television system such as lack of diversity. The reason for the inadequacy, however, was that,

> *there are too few television signals being delivered to homes. . . . If more channels were available and the expense for transmitting and network connection of programs were less, and correspondingly more dollars were available for creating programs, then the number of programs and their diversity and range would be greater.*[34]

The solution to this channel bottleneck, the article went on to say, was "wired city television," WCTV for short, a system of television signal distribution based on high-capacity wires instead of radio transmission.

IV. The Flowering of the Discourse: The Release of the Rostow Report

In May of 1969, less than 6 months after "A Proposal for Wired City Television" was published, one of its coauthors, Harold Barnett, testified before a House subcommittee. Barnett, after arguing in favor of CATV, said,

> *Far more exciting than the actual accomplishments of infant CATV is the promise and potential of the wired city and Nation. The promise has significance of the order of magnitude of the Nation's two, already existing wire grids--telephone and electricity--or of the automobile highway grid.*[35]

Barnett had tapped into the technological utopianism that was sweeping cable policy at the time. He argued not just for a "wired city"--a relatively specific alternative to local broadcast transmitters--but for a Wired Nation--a vision of and about the future. He elevated his proposal from a relatively concrete and technical argument to a visionary one.

Barnett, however, was just following in the footsteps of others who had testified at the same hearings--most notably, Eugene Rostow--and of many of his colleagues in the policymaking community. The disparate streams of thought fed by the CATV operators, economists like Barnett, and by the liberal groups who had created the Carnegie Commission were all coming together in a complex unity. The repeated incantations of the Wired Nation vision, coupled to vague but grand gestures towards a portentous future, were fusing the mixed bag of interests, visions, and concepts behind cable in such a

way as to give the impression of "a rising chorus of expert opinion."

In this context, a series of seminal blue ribbon reports began to surface that crystallized the discourse of the new technologies, giving it a level of legitimacy and respectability rare in broadcast policy debates. One of these was the New York City Report mentioned above. Another, conducted more or less contemporaneously, was the report of the President's Task Force on Communications Policy headed by Eugene Rostow. This report recommended the creation of a new government agency to coordinate telecommunications technologies because of their awe-inspiring strategic and social importance, and saw cable television as an excellent site for exactly the kind of "technological and business developments plus regulatory policy" that the Report advocated for the communications industry overall.[36]

The argument advanced by the Report was essentially identical to Barnett and Greenberg's: the problems of television--lack of diversity, network dominance, lack of socially responsible programming--could be resolved by the high channel capacity of cable television technology, which would overcome the bottleneck supposedly inherent in over-the-air television. The Report went beyond Barnett and Greenberg, however, in a few areas. It vaguely but enthusiastically suggested that cable television, by allowing minorities and disaffected groups an outlet to express themselves and to communicate with the nation, might reduce their feelings of alienation from American society and thus help solve the "problem" of the social unrest that was sweeping American society in 1968, particularly the unrest in black ghettoes. The Report also argued for an enhanced role for the federal government as a coordinator of the introduction of cable as a nationwide medium.

V. The Discourse's Contradictory Unity

On close inspection, the goals of the Rand Corporation, Irving Kahn, the ADA, and Ralph Lee Smith were all quite distinct from one another. Yet at the time, these differences were often obscured by a sense of unity. As one book of the time put it,

> *An almost religious faith in cable television has sprung up in the United States. It has been taken up by organizations of blacks, of consumers and of educational broadcasters, by the Rand Corporation, the Ford Foundation, the American Civil Liberties Union, the electronics industry, the Americans for Democratic Action, the government of New York City, and--a tentative convert--the Federal Communications Commission. The faith is religious in that it begins with something that was once despised--a crude makeshift way of bringing television to remote areas--and sees it transformed over the opposition of powerful enemies into the cure for the ills of modern urban American society.*[37]

What motivated these diverse groups to respond at all? The cable industry's motivations were obvious, as were those of the electronics industry which stood to benefit from a growing cable industry. But the link between cable and many of the rest of the participants' interests were less obvious. Why was cable a "challenge" for so many rather than another new commercial enterprise? In particular, why did the limitations in the situation generate passion in the progressive groups rather than pessimism?

The answer lies in part in the structure of the discourse itself. One of the most important themes in the discourse was the transcendence of individual needs and differences through a rational process of society-wide linking and coordination, driven by a neutral, autonomous technology. The notion of a transcendant, utopian unification, coupled to the strategic ambiguities about politics and economics discussed above, resulted in a Janus-faced discursive structure, capable of being interpreted in several

different ways while at the same time concealing those differences. Each group could "read" the discourse as embodying their own interests, while at the same time ignoring the substantial differences between themselves and the others who gave voice to the same language.

Thus, in spite of major differences in political and economic goals, taken together, the chorus of voices did create the impression of religious faith Maddox was describing. Few individual texts or voices produced the discourse of the new technologies in a pure, unadulterated form; few did not qualify it with their own particular concerns. The discourse, however, provided the ground on which the different groups stood, the frame within which their individual enunciations resonated and had an effect. Each group, in pursuing its own goals, sought strength in associating itself with the growing chorus in favor of change. The discourse thus served as a binding, unifying force.

The way that these various voices and the forces that motivated them merged in the policy arena can not be fully understood in terms of mutual advantage. The interests of participants in the policy process frequently were not served, particularly over the long term. This is particularly true of progressive groups, but many businesses--such as many financial interests who invested in cable in the early 1970s--also lost money through an over-enthusiasm for the discourse. While the discourse by no means eliminated the powers of the various interest groups involved, then, it did have its own specific conditions and effects; the discourse, once set in motion, took on a life of its own. It not only provided a site for the merger of forces through mutual advantage, it fueled that merger, and once in motion, turned around and transformed the forces that had given birth to it. The discourse, in sum, worked to refract the goals of many of those that originally contributed to it, leading to effects quite other than those envisioned.

The transformatory action of the discourse is most evident in the case of the progressive groups. On the one hand, they were not blinded by the discourse in a simple way. The ADA, the ACLU, Fred Friendly, and Ralph Lee Smith, for example, were all quite aware of the narrow-minded commercial interests that were behind the current expansion of cable, of the many factors that could inhibit the hoped for rosy future of the "new technology." To a large degree, it was precisely those factors to which these progressive liberals were reacting. They hoped to fend off these negative possibilities by influencing cable television policy. The irony of the situation, however, was that it was in part their efforts that set loose the very commercial forces they were trying to resist; their enthusiastic participation in the policy proceedings lent a great deal of force to the general sense of an expert, impartial, opinion in favor of cable liberation.

VI. Reregulation and the Cable Disappointment

Because of the discourse of the new technologies, the FCC eventually changed its policy towards CATV from one of restriction to one of encouragement. By 1971, the reconceptualization of "CATV" as "cable" had made it increasingly difficult to speak of cable as merely a marginal enterprise that concerned the FCC only in so far as it threatened local broadcasters. The reconceptualization, combined with unrelenting pressure from lobbying cable operators and their financial backers, therefore, made it only a matter of time before new rules were drawn up. The watershed development in the FCC's reversal was the 1972 Third Report and Order, which allowed cable operators access to major markets.

The Third Report and Order alone, as it turned out, was not enough to ensure cable's success. Throughout the rest of the 1970s the FCC and the courts entered a period best called "reregulation," during which they frequently revised, relaxed, rescinded, and otherwise altered the set of regulations governing cable television. The details of the history of cable regulation in the 1970s are complex, and seem to represent a great deal of confusion and vacillation on the part of the FCC. Significantly,

however, while the FCC's vacillations in the mid-1960s had had the net effect of retarding cable's growth, the vacillations of the 1970s had the general effect of gradually bringing the regulatory structure into line with the economic needs of growing corporate ventures into cable. The FCC in the 1970s, in sum, finally did come to consider cable's development a reasonable goal of regulation. The logic governing the rule changes of the 1970s was one that classified the growth and expansion of cable as a natural and valuable element of "progress." Cable's dramatic expansion, when it finally did occur, would not have been possible without that logic.

Cable has brought change. The roughly 60% of the audience that subscribes has more channels, and channel surfers can now easily hop between the right-wing social conservatism of the Family Channel and the sexual liberalism of a Dr. Ruth Westheimer--perhaps not the best that has been thought and said in either camp, but at least a range of values much broader than was ever common on the politically timid big three networks. But if the discourse of the new technologies had any meaning at all, it was that the hoped-for changes would mark a dramatic departure from the existing system, and that the changes would be technology-driven; neither of these assertions adequately describes what happened. Cable has not revolutionized the basic corporate structure of television. It has been integrated within it.

The discourse of the new technologies suggested that cable could empower the currently passive audience, and eliminate the "one way" quality of television, principally through public access channels and "two way" or "interactive" cable technologies that allowed the audience to communicate with programmers. Yet the only serious effort to develop two-way cable, Warner-Amex's QUBE, was abandoned in 1984 and the numerous promises of interactive systems in franchise agreements were all dropped in renegotiation.[38] Public access channels have been more successful, but suffer from lack of funding, inadequate equipment, and cable company resistance. Certainly, the dream of a cable system in which "members of the audience would no longer be simply the passive recipients of mass communications messages but would participate actively in their selection and dissemination" is hardly less a fantasy now than it was in 1972.

Whatever new diversity in video content exists, furthermore, is less the product of technology than of the fact that, by the mid-1970s, the library of available commercial film and videotaped programs, including old movies and reruns, had grown dramatically. With the increase in supply came a predictable decrease in price. Filling a schedule with material became a much less expensive proposition than it had been in the early days of television.[39] Hence, the overwhelming bulk of the programming available is programming that has been or would be available elsewhere: almost all of the old and new films that make up so much of cable's programming have already played in theaters, and much of the remaining programming consists of reruns of network television programs. Even the more original cable services, such as CNN or MTV, tend to program for the same mass audiences that the broadcast networks have traditionally sought, and minority tastes are once again underrepresented. The discourse's predictions of abundant, diverse programming for all have not been fully realized.

The industry, finally, has hardly shifted from a condition of closed monopoly to one of wide-open competition. Today, most of the pre-1972 players in the cable industry are gone or absorbed (e.g., Teleprompter) and the key players in recent years bear names familiar from other contexts (Time, Hearst, CBS, Paramount, Warner, Westinghouse). The few new names that did emerge have gradually shed their entrepreneurial roots and have become increasingly corporate in their approach.[40] The Cable Communications Policy Act of 1984 gave cable operators a legal monopoly on the local level and prohibited cities from regulating content and subscription fees.[41] Concurrently, dominance of the industry by a shrinking number of large corporations has steadily increased for the last twenty years.[42] The industry is now an oligopoly dominated by five, six, or seven conglomerates replacing the previous oligopoly of the three major networks. Perhaps this is an improvement, but it is clearly not the dramatic sort of improvement predicted by the discourse of the new technologies.

VII. Conclusion: A Word to the Wired

Today, we are in the midst of another wave of technological utopianism, this time associated with the so-called "information superhighway." Cable has been redefined as a just another despised old technology, supposedly due for replacement by some mix of desktop computers, digital video, fiber optic cables. Interactivity is again a popular buzzword. George Gilder, a "futurist," recently wrote that, with the help of "interactive" television, "the human spirit--emancipated and thus allowed to reach its rarest talents and aspirations--will continue to amaze the world with heroic surprises."[43] The Clinton Administration's "Information Infrastructure Task Force" enthuses,

> *The National Information Infrastructure promises to extend the power of the human imagination to new frontiers . . . Through the NII the arts and the humanities will play a vital role in creating a new sense of citizenship and community, in strengthening our schools and offering exciting challenges to our children, and in creating new industries and works of art and scholarship yet unimagined. . . . The NII will bring new opportunities and resources to our nation's disadvantaged youth, allowing them to share their ideas, thoughts and creative energies, and to make new links with other young people throughout the nation. . . . The NII can give all Americans, of all races, ages and locations, their cultural birthright: access to the highest quality thought and art of this and prior generations.*[44]

High hopes of interactivity, technological plenitude, and the transcendance of social problems via new technologies once again abound.

Of course, there are plenty of cautionary warnings, and doubts about the direction of developments in the current environment. The cable industry's recent promise of "500 channel" systems is probably more often criticized than lauded. The business press is peppered with worries about thin consumer interest and exorbitant costs. And a loud chorus of computer professionals and enthusiasts associated with organizations like Computer Professionals for Social Responsibility, the libertarian Electronic Frontier Foundation (EFF), and Wired magazine, have sounded warnings about privacy, industry concentration, advertising, and the likely limitation of the new technologies to passive entertainment purposes.

But almost identical warnings were sounded during cable's blue sky era, particularly by individuals like Ralph Lee Smith and organizations like the ADA and the ACLU. The problem is not that no one sees difficulties this time around, but that so many approach those difficulties by way of a discourse of inevitable technological progress, technology-driven revolution, and technological transcendance of economic, social, and political constraints.

For example, in an oft-cited essay, EFF co-founder Mitchell Kapor wrote that the "true promise of this technology" will be a,

> *National Information Infrastructure that promotes grass-roots democracy, diversity of users and manufacturers, true communications among the people, and all the dazzling goodies of home shopping, movies on demand, teleconferencing, and cheap, instant databases.*[45]

Video, for example, will "at last become a people's medium" because desktop video will spark "a revolution . . . enabling the creators of video content to produce high-quality professional video for a fraction of the cost just a decade ago." The development of much of this, he argues, is inevitable:

> *No matter how it's delivered or what it carries, that bandwidth will increase is a given for*

> *every channel. Movies, shopping, libraries, e-mail, education - everything you've heard advertised - will sooner rather than later find its digital way down the wires. Everything will come in small bits on large platters. We don't have to choose this - it will happen.*[46]

Of course, Kapor is quick to note that,

> *crucial doubts remain . . . Users may have indirect, or limited control over when, what, why, and from whom they get information and to whom they send it. That's the broadcast model today, and it seems to breed consumerism, passivity, crassness, and mediocrity.*[47]

He goes on to propose a "Jeffersonian" policy emphasis on openness of access, distribution, and structure, and cautions against many of the plans being hyped by today's corporations. The technology is coming and its potentials are enormous, the argument goes, so we must act to take advantage of the opportunities now or all will be lost.

Kapor is a thoughtful and interesting contributor to the contemporary debate with proposals that are worth considering seriously. The point is, however, technology doesn't "promise" anything, technological developments do not just "happen" without someone choosing them, and today's technologies are not revolutionary; they are simply part of the same gradual, evolutionary development of technologies that has marked the last several centuries. (Why is desktop video any more "revolutionary" than super eight cameras, videotape, the original reel-to-reel video portapaks, video cassettes, and the numerous other improvements in low-cost visual media of the last forty years?) Kapor, by lending his sincere and authoritative voice to the generally awestruck sense of inevitable technological revolution, may simply be helping to create the conditions for strategic government intervention and industry realignments on behalf of exactly those centralized, advertising-dominated, media systems he cautions us against.

The problems of privacy, equitable access, freedom of expression, of centralization, and so on that are raised in the context of information superhighways are of a part with the larger problems of social justice that face our society as a whole. The economic, social, and political constraints that have limited democracy and freedom in the past are exactly that: economic, social, and political constraints. The constraints were not caused by old technological limits nor can they be eliminated by new technologies; they were caused by relations between people, and can be overcome only by changing relations between people.

At a minimum, the early history of cable provides a cautionary tale about the dangers and blind spots of a discourse of autonomous technology and technological determinism. On the level of public debate, the cable fable is a story of repeated utopian high hopes followed by repeated disappointments. Cable was to be interactive; instead it is just as one-way as its predecessors. Cable was to end television oligopoly; instead it has merely provided an arena for the formation of a new oligopoly. Cable was to cure social ills; instead it at best distracts from those ills. And so on.

On the level of the media industries, however, the pattern was not a roller coaster of high hopes and disappointments, but a process of gradual, if occasionally halting, growth and integration of cable into the American corporate system of electronic media and communications technologies. The back and forth motion between high hopes and disappointments served the industry well; it loosened the regulatory framework at strategic moments, allowing cable to be gradually ratcheted into its place between the usually calcified, tightly joined elements of the corporate industrial system.

It is important to note that the industry which benefited from the policy debate did not simply

manipulate the debate towards its own ends; it was not just a case of the public interest being overwhelmed by the power of big business. Cable was brought into the regulatory fold in the early 1970s not simply because an industrial elite demanded it, but because a coalition of groups, some with goals quite at odds with those of corporate management, cajoled the FCC into action through a collective public argument that coalesced around the discourse of the new technologies. The hopes for diversity, democracy, and cultural expression embodied in the discourse of the new technologies may have been naive, but they were rarely cynical; they were largely fueled by genuine social and political concerns.

So the danger today is not only that short-term corporate interests will dominate over the hopes of the visionaries. The danger is also that the visionaries' efforts will ultimately contribute to the reproduction of the limiting social structures that they dream of overthrowing. Clearly, the policy debate of the late 1960s served large corporations much more effectively than it did the social and democratic ambitions that helped generate the debate. If the lessons of the past are not heeded, this time might not be different.

Notes

[1]Most of this chapter is derived from Thomas Streeter, "The Cable Fable Revisited: Discourse, Policy, and the Making of Cable Television," Critical Studies in Mass Communication, June 1987, pp. 174-200. Many parts have been reorganized, updated, and expanded, and some parts of the original have been ommitted.

[2]Ralph Lee Smith, "The Wired Nation," Nation, May 18, 1970, p. 582.

[3]Smith, 1970, p. 602.

[4]Don R. Le Duc, Cable Television and the FCC: A Crisis in Media Control, Philadelphia: Temple University Press, 1973, p. 5.

[5]Sloan Foundation, On the Cable: The Television of Abundance, New York: McGraw-Hill, 1971, p. vii.

[6]Smith, 1970, pp. 582-606; Ralph Lee Smith, The Wired Nation--Cable TV: The Electronic Communications Highway, New York: Harper & Row, 1972.

[7]New York City, Mayor's Task Force on Communications Policy, Final Report, Washington, D.C.: U.S. Government Printing Office, 1967, pp. v-vi.

[8]James W. Carey and and James J. Quirk, "The Mythos of the Electronic Revolution," American Scholar, Part I: Vol. 39, No. 1, 1970, pp. 219-241; Part II: Vol. 39, No. 2, 1970, pp. 395-424.

[9]President's Task Force on Communications Policy, Final Report, Washington D.C.: U.S. Government Printing Office, 1968, p. 4.

[10]Electronic Industries Association, The Future of Broadband Communication, F.C.C. Docket 18397, October, 1969, pt. 5, p. 23, quoted in Le Duc, 1973, p. 37.

[11]Sloan Foundation, 1971, p. 1

[12]Raymond Williams, Television: Technology and Cultural Form, New York: Schocken, 1977, pp. 10-14.

[13]The Reader's Guide to Periodical Literature of 1969 lists eight articles under the subject heading CATV, two with references in their title to "cable," six with references to "CATV." In 1970, there were four articles with titles referring to "CATV," and three with "cable." By 1971, the balance had reversed: only five article titles referred to "CATV," while ten referred to "cable." It wasn't until the late 1970s that Reader's Guide reversed the priority of its subject headings, listing "see cable television" under CATV rather than the other way around. By that time, the vast majority of the articles listed under CATV referred to "cable." The trade journal CATV changed its name to Vue at the end of 1976.

[14]Over the years, AT&T gradually replaced its national coaxial system with microwave relays, and then began to use satellites to distribute programs to affiliates.

[15]Fred Friendly, "Asleep at the Switch of the Wired City," Saturday Review, October 10, 1970, p. 58.

[16]Friendly, 1970, p. 58.

[17]Richard Posner, "The Appropriate Scope of Regulation in the Cable Television Industry," Bell Journal of Economics and Management Science, No. 3, 1972, pp. 102-103.

[18]Smith, 1972, p. 9.

[19]President's Task Force, 1968, Ch. 1, p. 5.

[20]President's Task Force, 1968, Ch. 1, p. 16.

[21]Le Duc, 1973, pp. 14-16.

[22]Andrew Ross, Strange Weather: Culture, Science, and Technology in the Age of Limits, New York: Verso, 1991, p. 88.

[23]Kathleen Woodward, "Art and Technics: John Cage, Electronics, and World Improvement," in Kathleen Woodward (ed.) The Myths of Information: Technology and Postindustrial Culture, Madison, Wisconsin: Coda Press, 1980, p. 176.

[24]The classic statement of the alternative video ethos is Michael Shamberg, Guerrilla Television, New York: Holt, Rinehart and Winston, 1971.

[25]Barry Orton, email message to author, October 24, 1994.

[26]Smith, 1972, pp. 90-94.

[27]U.S. House of Representatives, Regulation of Community Antenna Television Systems--1969, Washington, D.C.: U.S. Government Printing Office, 1971, p. 388.

(Hereinafter cited as U.S., 1969).

[28]U.S., 1969, pp. 383-384, original emphasis.

[29]Patrick R. Parsons, "Defining Cable Television: Structuration and Public Policy," Journal of Communication, Spring 1989, v. 39 n. 2, p. 10-26; p. 23.

[30]Peter W. Bernstein, "The Rise, Fall, and Rise of Irving Kahn," Fortune, July 28, 1980, p. 58.

[31]U.S., 1969, p. 44.

[32]Carnegie Commission for Educational Television, Public TV: A Program for Action, New York: Harper & Row, 1967, p. 75.

[33]Harold Barnett, and Edward Greenberg, "On the Economics of Wired City Television," American Economic Review, Vol. 50 (June 1968), pp. 238-275.

[34]Barnett and Greenberg, pp. 217-218.

[35]U.S., 1969, p. 211.

[36]President's Task Force, 1968, p. 183.

[37]Brenda Maddox, Beyond Babel: New Directions in Communications, Boston: Beacon Press, 1974, p. 145.

[38]Les Brown (ed.), Channels of Communications: The Essential 1985 Field Guide to the Electronic Media, p. 24.

[39]Don R. Le Duc, "Deregulation and the Dream of Diversity." Journal of Communication Vol. 32, No. 4, (Autumn 1982), p. 164-178.

[40]For example, in the mid-1980s Ted Turner, who had been heavily mythologized in the press for his swashbuckling, entrepreneurial approach, sought to vertically integrate his operations by buying the MGM/United Artists library of films; in turn, the high cost of the purchase forced him to sell a large portion of his company's stock to a coalition of fourteen of the nation's largest cable operators, further integrating the industry as a whole while reducing his individual control. Al Delugach, "Turner to Keep Control of Firm with $550-Million Bailout Deal," Los Angeles Times, January 23, 1987, Business Section, Part 4, p. 1.

[41]Title VI of the Amended Communications Act of 1934, 47 U.S.C. SS601 (1984).

[42]The six largest MSOs (Tele-Communications Inc., Liberty Media, Time Warner, Viacom, Cablevision Systems, and Comcast) together serve almost half of all cable subscribers and are also heavily involved in programming. TCI, for example, has a stake in Turner and Discovery. Turner, in turn, controls Turner Network, CNN, Headline News, and Superstation TBS. Viacom has substantial interests in MTV, Nickelodeon, VH-1, Showtime, The Movie Channel, and Lifetime. Many of these relations are sealed with corporate interlocks: John D. Malone, for example, doubles as TCI president and Liberty Media chairman and six of the 15 directors of Turner Broadcasting System represent part-owners Time Warner and TCI. And

predictably, cable has become increasingly intertwined with media interests in general: Capital Cities/ABC Inc. has dominant interests in ESPN and shares Lifetime with Viacom and Hearst Corp. Kathryn Harris, "Reordering The Cable Universe," Los Angeles Times, Business; Part D; Page 1; Column 3, July 25, 1993.

[43]"What if they're right?" The Economist, February 12, 1994, p. 3.

[44]Committee on Applications and Technology of the Information Infrastructure Task Force, draft report: The Information Infrastructure: Reaching Society's Goals, NIST Special Publication 868, Sept. 7, 1994, p. 196.

[45]Mitchell Kapor, "Where is the Digital Highway Really Heading?: The Case for A Jeffersonian Information Policy," Wired, Vol 1., No. 3, July/August, 1993, pp. 53-59, p. 94.

[46]Kapor, 1993, p. 55.

[47]Kapor, 1993, pp. 53-54.

Digital Convergence and its Consequences

Milton L. Mueller

Convergence, the digital takeover of communication and information, produces a new kind of interchangeability and interconnectedness among different media forms. The rise of digital media results in:

- the coming together, in a single application or service, of information content from telephony, sound broadcasting, television, motion pictures, photography, printed text publishing, and electronic money;
- a growing degree of overlap in the functions that can be performed by different telecommunications networks; and
- a growth in the interactivity and interoperability and of different networks and information appliances in the home and the office.

The idea of convergence has been coming in and out of fashion for more than two decades. The process can be cast in religious terms. A band of early prophets set out a vision. Afterwards, a succession of messiah—technologies appeared that promised to realize the great vision. But, as we shall see, several of the messiah-technologies were crucified and failed to rise from the dead. Even so, one cannot discount the possibility that TCP/IP does indeed represent the Coming.

In this paper, I shall develop a long-term view of the convergence process. In the first part, I identify two of the prerequisites for digital convergence:

1. A technological revolution in processing power; and
2. A process of converging on common standards

In the second part, I explore the impact of convergence on market structure and business models.

Some historical background

The proposition that all modes of communication and information will converge into a digital nexus has been circulating for about twenty-five years. One of the earliest expressions of the idea came from Nicholas Negroponte, a technologist and founder of MIT's Media Lab. (Brand 1987, 10) In 1978, he used three overlapping circles to represent the technologies of computing, printing, and broadcasting. The most rapid growth and innovation, he argued, could be found in the area where the three intersected. Negroponte had overlooked the telephone system, but simultaneously, telecommunications analysts were developing their own language of merging technologies. (Farber and Baran 1977) Harvard's Anthony Oettinger, coined the ugly neologism "compunications" to express the growing overlap of computing and telecommunications. (Oettinger, Berman, and Read, 1977) French writers Nora and Minc independently came up with the more graceful "telematique" to express the same idea. (Nora and Minc, 1980) Neither term ever quite caught on, and to this day the world is still struggling with awkward combinations of terms such as "telecommunications," "information" and "computing" to label the basic technology of the information economy.

Does the Internet, then, constitute the ultimate realization of the prophets' vision? To answer this question we need to delve more deeply into some of the technological and social drivers of the process.

Drivers of Convergence

Convergence as analyzed here is a combination of two factors: technological improvements in processing power, and the adoption of common protocols and standards.

Technological drivers

To some, the term *convergence* suggests a marriage or a coming together of different technologies or industries. That image is a misleading one. Convergence is really a takeover of all forms of media by *one* technology: digital computers, a technological system with solid-state integrated circuits (ICs) at its core, supplemented by photonic components (lasers and optical fibers) and applications of mathematical information theory. The ability of digital systems to handle multimedia content at lower and lower costs is a product of exponential progress in the processing power and memory of ICs. This, in turn, depends on the ability to increase the density of transistors on a single IC chip.

Moore's law

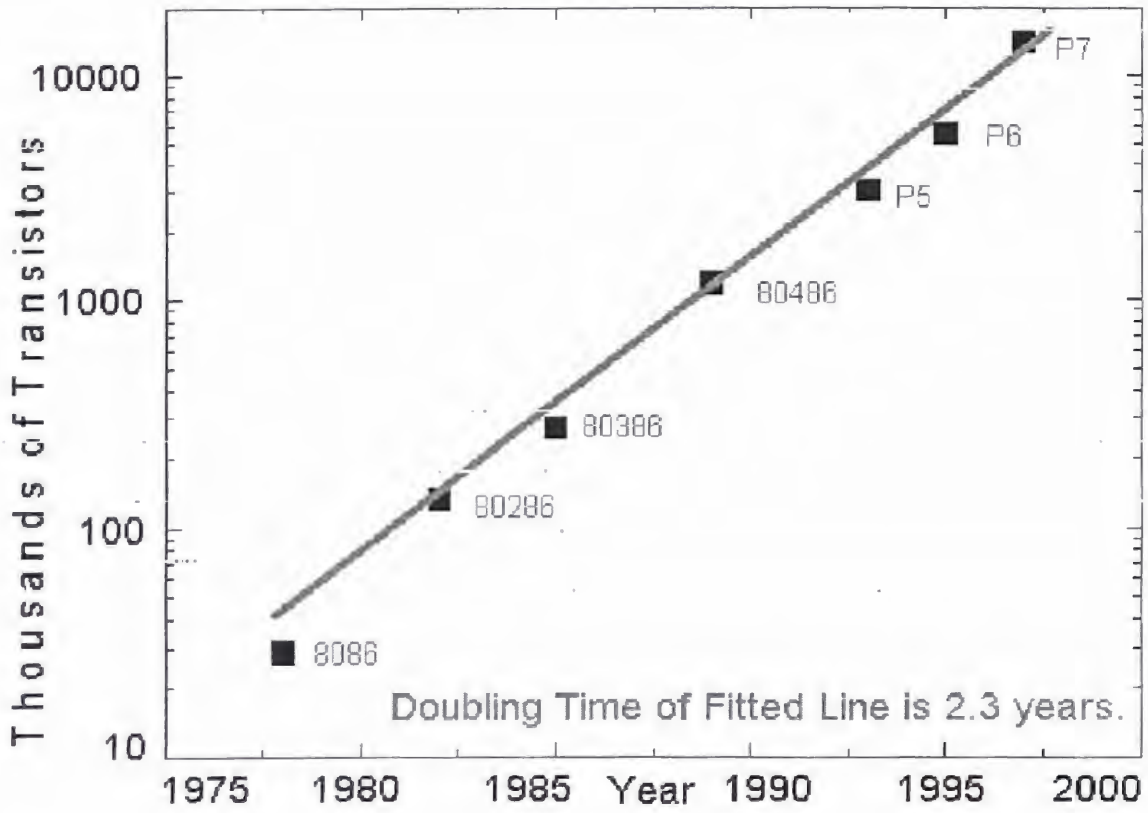
The first integrated circuits were fabricated in 1960. In 1971, the Intel Corporation created the first microprocessor by placing an entire computer central processing unit on a single silicon chip the size of a fingernail. From 1960 until today, the transistor density of a single IC chip has doubled approximately every two years. This phenomenon was first identified by Gordon Moore of Intel in 1968, and became known as "Moore's law."[1] A corollary of Moore's law states that the cost of an IC is approximately proportional to the square root of IC complexity, which means that the cost of carrying out any particular task with ICs will be cut in half about once every two years. (Figure 1)

The link between the progress of media convergence and advances in integrated circuitry is well established in the literature. (Gilder 1994; Midwinter 1995; Yoffie 1997) The spreading applications of ICs are not responses to a world of digital content and networks. On the contrary, content and networks have gone digital in order to avail themselves of the power of ICs. For example, most of the recent advances in digital video were not possible until a frame of digitized video could be stored on a single chip. (Midwinter 1994, 29) The Internet's ability to deliver voice and video signals to PC users required upgrades in the processing speed and memory of a typical PC and increases in the bandwidth and processing speed of the network and its routers. Likewise, the addition of data screens to mobile telephones, and the adoption of CD-ROMs as a common storage medium for PC data, recorded music, and movies, both stem from a common root: lower priced and more powerful computer and laser components. The pace of convergence has thus been largely determined by the operation of Moore's law.

The Billion Transistor Chip

Moore's law has held true for thirty-five years. But how much longer will the semiconductor industry be able to sustain that rate of progress? The most conservative estimates project that the rate of improvement will begin to level off around 2005. (Hutcheson and Hutcheson 1996) Moore himself predicts that advances in circuit complexity will begin to bump up against physical limits around the year 2010. (Moore 1996) Some technologists, however, believe that current rates of change may continue

Figure 1
Growth of Transistor Density on Chips



even longer if transistors operated by a single electron, which exist already in the laboratory, can be successfully commercialized.

Whichever forecast turns out to be correct, the technological progress supporting digital convergence still has a long way to go. In a recent interview, Gordon Moore stated:

> Even with the level of technology we can extrapolate fairly easily--a few more generations--we can imagine putting a billion transistors on a chip. A billion transistors is mind-boggling. Our most advanced chips in design today will have less than 10 million transistors. So, we're talking about a hundred times the complexity of today's chips. Exploiting that level of technology...could keep us busy for a century. (Moore 1997)

Semiconductor industry expert Michael Slater provides a more specific assessment of the capabilities of a billion-transistor chip:

> A single such chip could have dozens of processors, each with several times the complexity of today's most advanced devices, plus several megabytes of cache for each. Running at several gigahertz, the chip could include a video and 3D graphics system, peripheral controllers, a network interface modem, and so forth. A system could be built with everything in the fastest workstation today, including memory, in a single chip. A $10 microcontroller will be faster than the fastest microprocessor today and have a full set of peripherals. (Slater 1997)

With that many transistors on a chip, a desktop computer will be able to store an entire copy of a high-definition movie in RAM and manipulate it in real time. In effect, video content will be moved about and manipulated as easily as e-mail is today.

Coordination and Standardization

But raw technological power is only part of the convergence story. Often overlooked is the fact that digital convergence also implies a process of settling upon common protocols and technical standards for data interchanges. This is a predominantly socio-economic process, not a technical one. It involves the coordinated adoption of compatible technology platforms by a critical mass of producers and consumers. That process is affected by network externalities and product life-cycles. So, in many ways, the progress of digital convergence is a story of the rise and fall of specific standards that were designed to bring together various media forms. And as economic theory on standardization has demonstrated, such processes are path-dependent, and may be "tipped" into one of various possible equilibria by chance events.

ISDN

Many observers — especially the telephone companies who had developed it — thought that the ISDN standard was going to be the incarnation of convergence. ISDN was developed by the ITU starting in the late 1970s, and released as a mature standard in the first half of the 1980s. In promoting ISDN, telephone companies used the same promise of voice and data integration, including hints of the eventual inclusion of video.

But of course ISDN never took hold. The telephone companies priced it as a premium service and did not commit themselves to a wholesale upgrade of their networks. Implementation was complex, and in the US, where data communication was most developed in the 1980s, the AT&T divestiture's fragmentation of the operating companies made the costs of cooperation higher and thus the development of different "flavors" of ISDN inevitable. One obvious limitation on the success of ISDN is that most consumers simply didn't know what it was supposed to do for them. In the 1980s, many

data communication applications generally were built around proprietary equipment and protocols, such as IBM's SNA standard. There was still a lack of integration at the corporate and product development levels between telephone companies and computer companies. ISDN was no match for open standards, such as the IEEE's Ethernet, that could be directly managed and implemented by companies building LANs, rather than acquired from a third-party vendor.

Ethernet

Indeed, the tremendous success of Ethernet demonstrated that open, non-proprietary standards enjoyed key advantages in the marketplace. Although it was inferior to the proprietary token-ring standard in purely technical ways, it nevertheless gave buyers more security and lower prices. Its initial success was reinforced as network designers and implementers became more familiar and comfortable with its features, leading to a bigger market, lower prices, more product development and diversity. One of the key factors is that a very large portion of intra-organizational networking has evolved as *private* networks; i.e., networks that were put together on a decentralized basis by the users themselves, not as large-scale service offered by a public carrier. This meant that compatibility and convergence had to take shape as bottom-up processes, rather than being imposed from the top down.

SONET/SDH, and Frame Relay/SMDS

The cost of bandwidth over long distances creates very powerful economic incentives for most private and public networks to "converge" all forms of traffic onto high-speed backbones. The Synchronous Optical Network (SONET) standard (known as SDH in Europe) is a time-division multiplexing technique developed by long distance carriers to combine many channels of voice traffic onto a single, high-bandwidth link. But it is a digital standard, so that data traffic can also be mixed into the bitstream. The problem is that it must first be fitted into the 64 kbps channel standard developed for voice traffic. In general, circuit-switching and time-divison multiplexing are less efficient ways of carrying data traffic, which is bursty rather than continuous and may require greater bandwidth than a single voice channel.

Thus throughout most of the 1990s, high speed voice-oriented backbones often used different standards to the data backbones in corporate and telephone company networks, which were more likely to be based on data-oriented standards such as frame relay. Furthermore, these data-oriented standards were designed to have limited functionality. They were not designed to be broad-based convergence technologies.

TCP/IP

The Internet protocol suite (TCP/IP) was designed to support *internetworking*. This means that it permits the interconnection of multiple networks that use different hardware and communication conventions. TCP/IP is a form of packet-based data communications, which routes small chunks of data from one machine to another based on address information carried in the packet. By the early 1990s, TCP/IP had begun to emerge as a very powerful solution to the data communication problems posed by the world of heterogeneous standards and equipment used in private networks. Like Ethernet, it was an open, non-proprietary standard.

The basic technology of TCP/IP has survived almost two decades of exponential growth. During the past three years, TCP/IP has become the "protocol of convergence" for many companies and services. Internet telephony, and the streaming of video and audio on the Internet, is now commonplace, although the quality of service offered rarely

matches that offered by networks based on more traditional standards. One of the weaknesses of IP is in the area of mobile communications.

Asynchronous Transfer Mode

Asynchronous Transfer Mode (ATM) was the telephone companies' response to the rise of the Internet. It attempted to combine the benefits of the circuit-switched telephone networks (dedicated connections, guaranteed quality of service) with the benefits of a packet-based communication standard (which used bandwidth more efficiently). Unlike TCP/IP, ATM fits all data into a uniform packet size (known as a cell) and uses statistical multiplexing over virtual circuits. The uniform packet size makes it easier for ATM to provide isochronous services, such as voice or video, that do not tolerate delay.

ATM can carry TCP/IP traffic, but one must chop up TCP/IP packets and fit them into a series of ATM cells. Carriers in the United States have recently begun to offer ATM backbone services.

From the above one can begin to appreciate the complexity of converging real standards and equipment. In fact, a given user may employ many of these standards simultaneously. An Ethernet Local Area Network can be connected to the Internet via a ATM Wide Area Network, and once on the Internet may end up running over a SONET link. The most significant question is whether any one of these standards, most notably ATM or an improved TCP/IP, can eventually handle all the different service qualities and features that a given user might demand.

Digital Media Market Structure

The business implications of digital convergence are profound. The economic organization of some of the world's largest, fastest-growing industries is being transformed. No one can predict precisely what shape this transformation will take. Nevertheless, some vital aspects of a significant change in market structure are already visible.

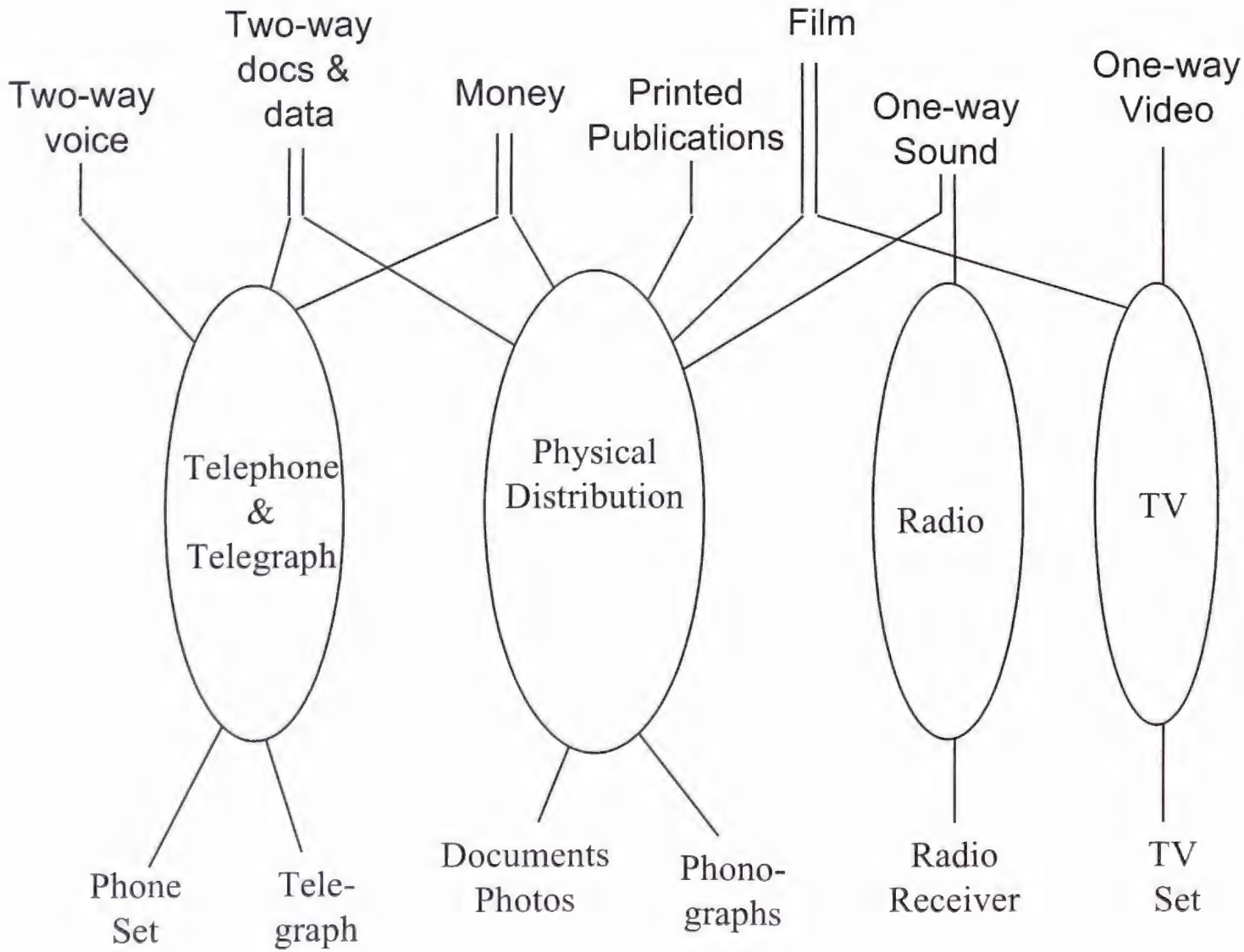
Twenty years ago, most people thought that digitalization would lead to a gigantic consolidation and merger of all media infrastructures into one vertically integrated monopoly. The "electronic nightmare" scenario projected that media would converge into a horrifying combination of the post office, Microsoft, broadcast networks, and the telephone company. (Wicklein 1980; Pool 1983)

In fact, something much closer to the opposite is happening. Cheap, abundant processing power is promoting disintegration and specialization along the communications value chain. In computers, telecommunications, and broadcasting, successful firms are moving away from end-to-end, vertical integration to focus on specialized, horizontal segments of the market. Devices, distribution channels, and applications are becoming more diverse and specialized as well as more interoperable. The result is not a "unification" of broadcasting, computing, and telecommunications, but a completely new media ecology. This section identifies some of the key features of this change.

The Vertical Structure of Analogue Media

Prior to digitalization, different electronic communication services formed discrete chains of components that restricted distinct kinds of communication and content to specific distribution networks and terminals. In many cases, especially the telephone and telegraph systems, the supplying firm was vertically integrated over the entire chain. Even when the supplying firm itself was not vertically integrated over the entire

Figure 2: Vertical Structure of Media in 1950



component chain, the vertical structure was maintained by technological barriers that prevented information from being easily transferred from one system to another.

Figure 2 illustrates the situation around 1950, at the dawn of the age of semiconductors. Telephony, telegraphy, broadcasting, motion pictures, publishing, money, and documents were all vertically integrated chains linking a specific kind of content, distribution network, and terminal. There were some cross-linkages between these vertical chains, especially in the transmission segment. But for the most part they operated as separate systems. In telephone communication a single, vertically integrated monopoly supplied end-to-end service. Documents, data, money, financial transactions, and publications were largely restricted to the media of printed paper and physical distribution via a monopoly post office. The telegraph provided an important link between the worlds of telecommunication and print/paper, but telegraph transmissions relied on manual input, which severely limited their capacity. There were no credit cards and very limited forms of electronic funds transfer. (McKenney, Copeland, and Mason, 1995) Broadcast receivers and playback systems for recorded sound were also discrete technological systems.

The real source of the vertical structure was *not* the content-carrier segment of the chain. Television and radio broadcast signals, voice signals, photographs, and text could all be converted into analogue electronic signals and carried by trunk telecommunication networks. The segregation of services took place primarily at the *input and output terminal*. Final distribution to users involved application-specific devices that could neither communicate with devices from other content-carrier chains, nor convert information into and out of other formats.

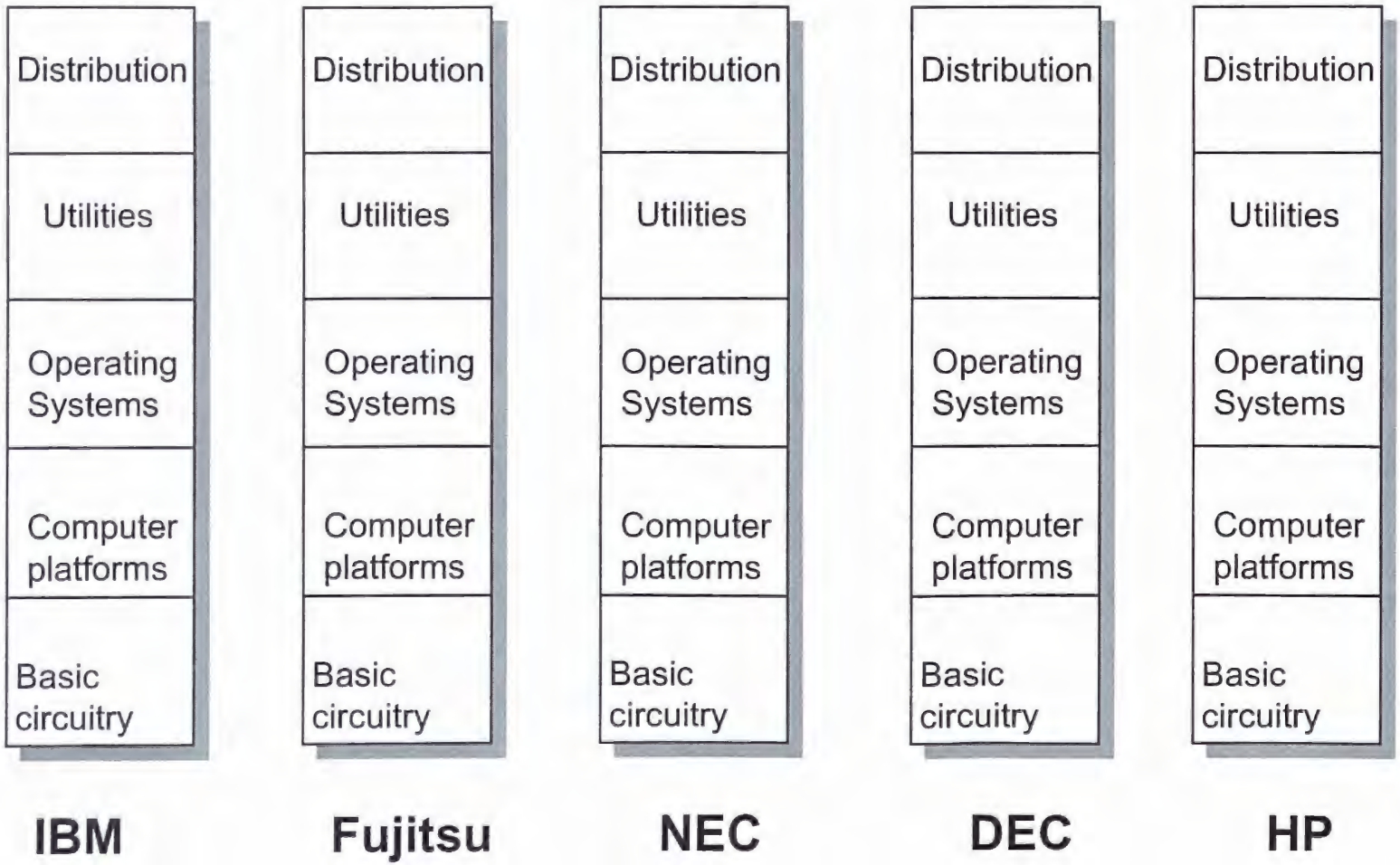
Thus, convergence was limited by the limited processing power of end-user terminals. Compared to today, the technology that was needed to generate, process, convert, store and retrieve signals automatically was delicate, primitive, and expensive. It was, therefore, concentrated in organizations remote from the user, so that economies could be made and technical standards could be tightly controlled. It was also not standardized across media.

Personal Computers and the Horizontal Shift

The early computer industry adopted this vertical structure. Until the late 1970s, it consisted of a few large, vertically integrated manufacturers. Each manufacturer designed its own system around a proprietary architecture. They often developed and produced their own semiconductor devices for memory and processing, and employed their own applications software. Manufacturers also directly controlled the sales and distribution of their machines. The vertical structure is represented in Figure 3.

By the late 1970s, rapidly developing microprocessor technology put all the basic processing functions of a computer on a single chip. Computers began to be assembled around a microprocessor, supplemented by readily available components such as memory chips, I/O controllers, disc drives, and peripherals. IBM's introduction of the PC in 1981 inadvertently reinforced this modular approach to computer manufacture, and ultimately led to the destruction of the vertical structure in computer manufacturing. Because of the competitive threat represented by Apple Computer and other microcomputer manufacturers, IBM needed to enter the market quickly. It therefore abandoned its normal procedures, which relied on methodical, in-house development of a closed, proprietary architecture. Instead, IBM introduced an open architecture and off-the-shelf components, and held very little intellectual property protection over the result. As a result, the product and its architecture were easily imitated. (Grindley 1995)

Figure 3
Vertical Integration of Computer Market, 1980
(Source: Grindley, 1995)



The result is now apparent to all. With the exception of Apple, the entire personal computer industry standardized around the IBM PC system architecture. Clone manufacturers took over 75-80 per cent of the PC market. Their competition and rapid innovations created constant pressure to lower prices and improve features. A new, more specialized industry structure emerged, characterized by competition between firms with strong positions in one of five horizontal segments of production. These five segments are: 1) microprocessors; 2) manufacture of computer platforms; 3) Operating systems software (both client and server side); 4) Applications software; and 5) Distribution. (Figure 4)

Vertical links between one or two of these segments remain. Microsoft, for example, has leveraged its strength in operating systems to take over the lion's share of the applications software market. IBM still has significant positions in four of the segments, and its acquisition of Lotus in 1995 extended its position in applications software. Even so, market share is usually won or lost on the basis of competitiveness in horizontal segments. IBM PCs, for example, generally use Intel microprocessors. The strongest positions (e.g., those of Microsoft, Intel, Compaq) have generally been achieved precisely because the supplier specialized in one horizontal segment and did not try to extend that control too far up or down the value chain. End-to-end vertical integration has been almost entirely banished from the marketplace. The decline of Apple Computer's market share, its alliance with IBM and its licensing of independent manufacturers in the 1990s, represent the final stages of this transition.

The Building Blocks of Digital Media

The pattern experienced by the computer industry in the 1980s is now spreading throughout the telecommunication and media industries. The vertical structures represented in Figure 2 are breaking down on a global scale. The process is driven by the growing power of microprocessors and a shift in the distribution of information processing and storage power toward the end user, which leads to more open standards and interfaces across horizontal segments. The vertical segmentation of media is being replaced by a converged digital media market composed of five distinct horizontal segments. Following a model suggested by Bane et al (1995), these segments can be defined as 1) Content creation and production; 2) Service packaging; 3) Carriage; 4) Software; and 5) Equipment. The new situation is represented schematically in Figures 5 and 6. Figure 5 shows the partial convergence that existed about 1990, and Figure 6 provides a simplified diagram of the horizontal segments of a fully converged market.

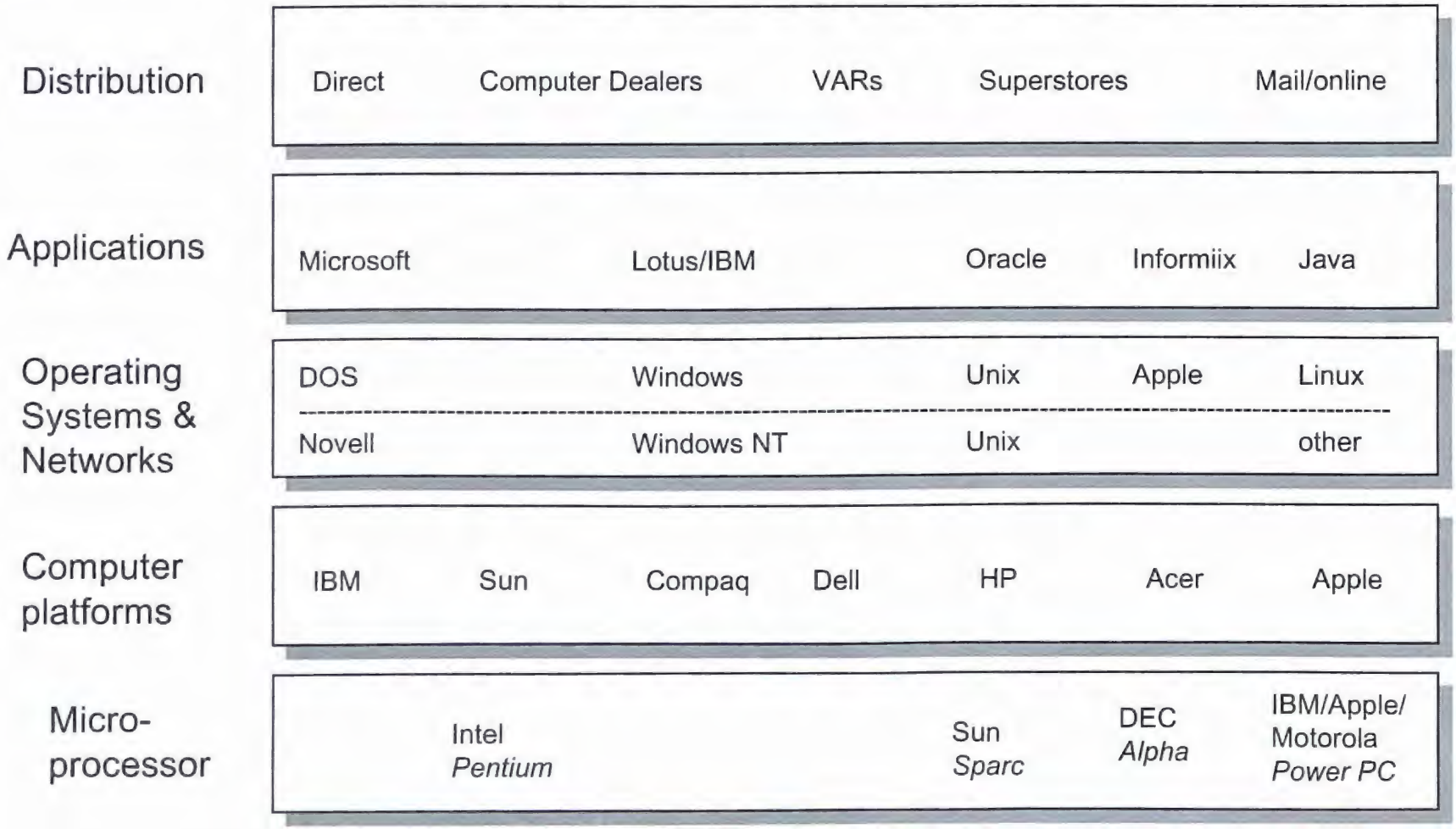
Content refers to the creation and production of symbolic material that has been encoded in a particular format. Motion pictures, television programming, newspaper articles, book manuscripts, recorded music, and the information on a Web site are all examples of *content*. So are human speech and money. In general, content refers to material that consumers value in and of itself, either for its entertainment value or for its educational, news, or exchange value.

Packaging refers to the intermediary function wherein different types of content and/or software are assembled into a product or service bundle. Packagers reduce search costs for consumers and also provide a quality control and assurance function.

Carriage refers to the business of distributing or transporting information. Telephone transmission networks, cable TV systems, or, more generically, optical fibre, co-axial copper cable, communication via radio frequencies, or vehicular transportation are examples of different types of carriage.

Equipment manufacturing refers to hardware devices that enable telecommunication and information processing. This includes the consumer products

Figure 4
Computer Industry Market Structure by 1995



Source: Grindley, 1995

Figure 5
Digital Convergence at 1993

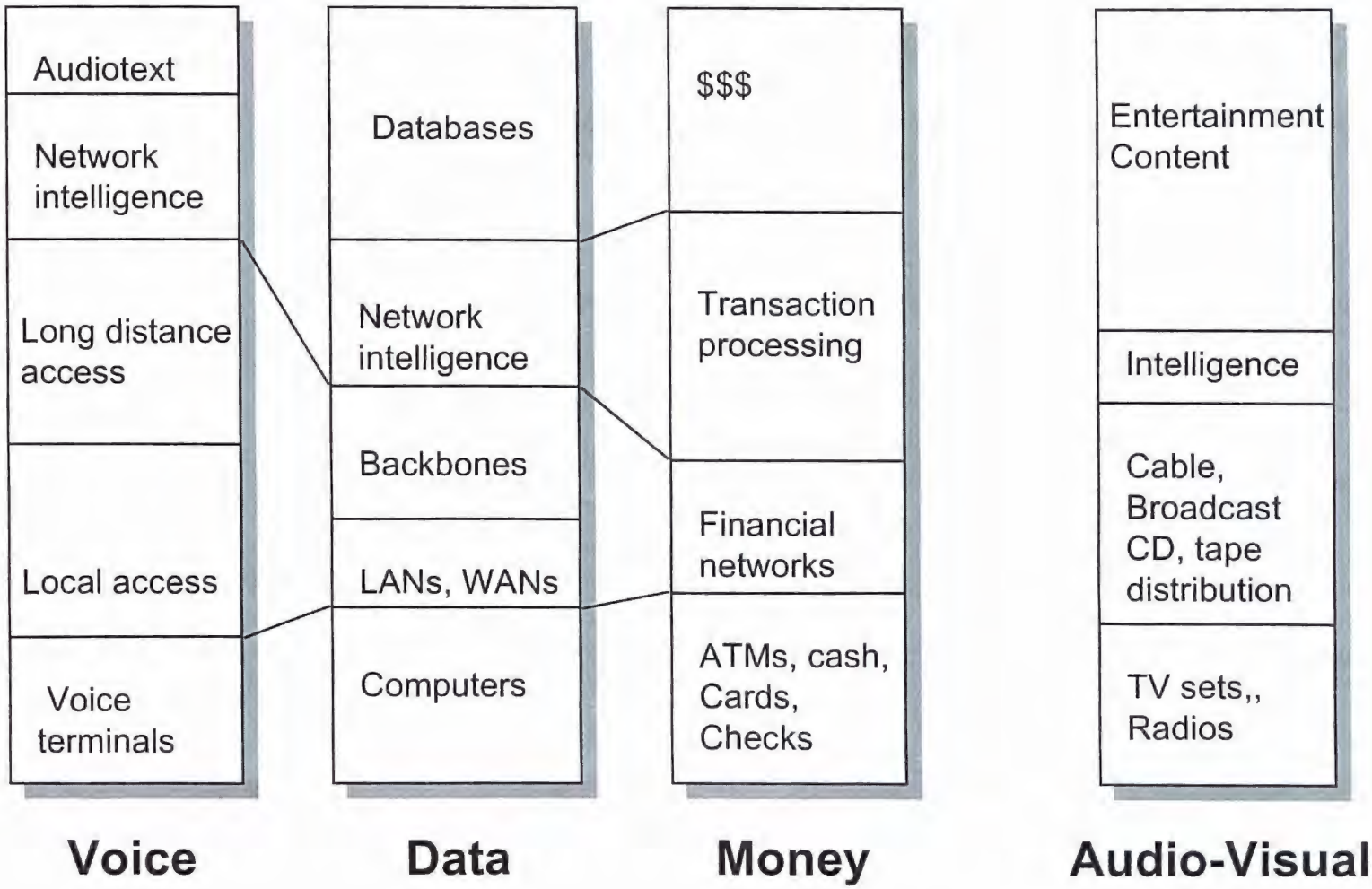
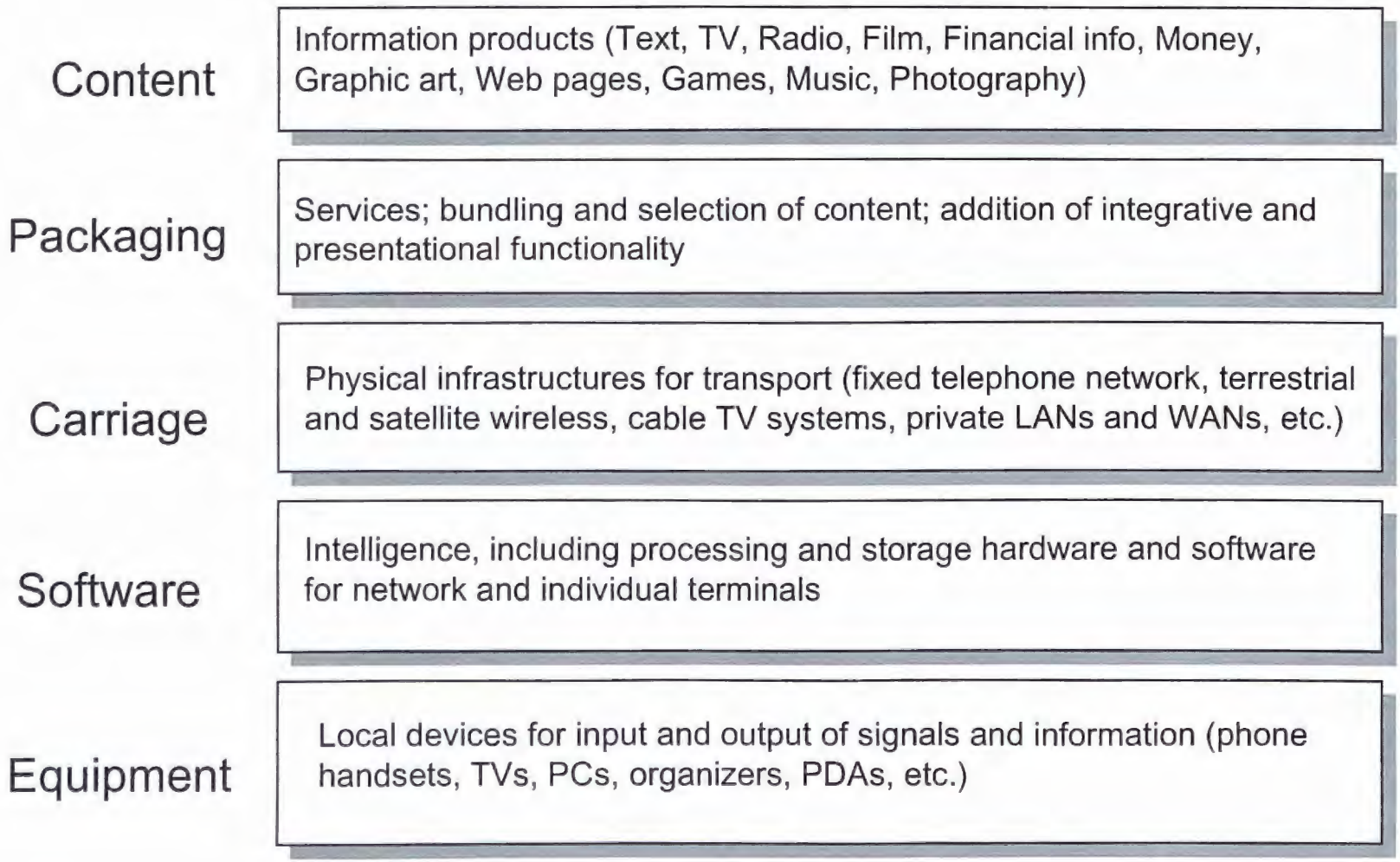


Figure 6
Horizontal Segments of a Converged Media Environment



Source: Bane, Bradley, and Collis, 1995

that allow users to transmit, receive, and display signals, such as telephone handsets, television sets, fax machines, desktop PCs, pagers, and satellite dishes. It also includes intermediate goods that go into the construction of a network, such as switches and routers, multiplexers, modems, and so on.

Software, the stored instructions that manipulate or process information in a particular way, is an essential element of the model. Software markets are often bundled with equipment, but nevertheless represent a distinct product. Desktop applications, switching, routing and network management protocols, browser software, information storage and retrieval protocols, multiplexing and signal compression, search engines, and transaction processing are all examples of software. Software is an input that is present throughout the communication chain, but it is also a discrete market.

Economic Aspects of Horizontalization

According to traditional natural monopoly theory, monopoly and concentration are products of economies of scale and scope in supply. Digital technology, however, massively increases the economies of scale and scope that can be achieved in the switching, transmission, and storage and duplication of content. Why, then, has the rise of digital media radically undermined monopoly and vertical integration instead of reinforcing it? There are two reasons. One is that mass-produced digital intelligence reduces the social cost of multiple, heterogeneous networks and systems. Or, to put it differently, it radically undermines the advantages of vertical integration. The other reason is that the declining price of intelligence has brought the capital investments needed to acquire it well within the budget constraints of ordinary firms and households. Reducing the capital intensity of intelligence also reduces the importance of building large-scale organizations that can share its costs among many users. Both of these points are elaborated below.

Vertical integration undermined

In the old market structure, the five building blocks of the communications value chain were mostly vertically integrated around specific media. A typical broadcaster, for example, produced most of its own content, assembled outsourced content into a service package, and owned and operated its signal transmitter. Although vertical integration did not extend all the way to the end user's receiving equipment, this gap was filled by rigid government regulations confining transmissions to specific frequency bands and locations and controlling the characteristics of broadcast terminals. Likewise, telecommunication companies manufactured the terminal; built, owned, and operated the carriage network; and centrally controlled and managed the network intelligence. Service packages and specialized applications of network capabilities were developed internally by the telecommunication companies.

To understand the new structure of media it is first necessary to understand what sustained the old one. The vertical, monopolistic form of communication media was basically a product of the high price of intelligence. In the era of electromechanical telephone switching, for example, increases in the scale of the network placed heavy demands on network intelligence. Additional information processing power could only be purchased with disproportional inputs of capital and labor. Increases in the size and complexity of telephone switching offices beyond a certain point created major diseconomies of growth. (Mueller 1989) Under these conditions, any attempt to interconnect multiple, competing networks, or to support heterogeneous forms of terminal equipment, added greatly to the expense of the network. More diversity and complexity meant disproportionate increases in the physical facilities and labor resources needed to run the system.

The viability of competition in telecommunication can be directly related to technological changes that reduced the price of processing power. With electromechanical technology there was only two ways to have competing telephone systems and, at the same time, allow all telephone users to be able to call each other. One was to let some users rent two access lines and telephone sets (demand-side duplication). The other was to require the competing systems to interconnect. The latter option (supply-side duplication) was as expensive as the first, for it created a duplicate trunk network, greatly enlarged the size and complexity of the switchboards, and also required major increases in the size of central offices' staff. (Mueller 1997, 136)

In digital electronic networks, interconnection of additional networks requires more intelligence, but only a little more hardware and very little additional labor. The complex exchanges of information required to interconnect independently managed networks can be achieved rapidly and automatically, through software protocols. Processing power acts as a direct substitute for the duplication of physical facilities and labor.

Reduced capital intensity

When intelligence is very expensive, it must be shared among multiple users. Its application must be conserved, restricted to the most important functions. The capital investment it represents can only come from a large organization and can only be recovered by spreading its costs across a significant portion of the population. When intelligence is abundant, sharing economies become less important; control and convenience rise in significance. As high levels of processing power come within the budget constraint of households and businesses, there is greater economic tolerance of diversity, duplication, and "waste" for the sake of convenience, customization, and control. It is the same in other industries. From the standpoint of simple sharing economies, for example, a public bus or train is always more efficient than a private automobile. But the wealthier a society becomes, the more its consumers purchase automobiles and avoid public transport.

The structural consequences of the declining price of intelligence can be summarized as follows.

- There is greater *fungibility* among the different components of the communication chain. That is, an end user or service provider can more easily mix and match a product or service from one horizontal segment with the products and services from any other segment to configure a communication service. Weaker vertical links among specific applications means that competition is more focused on achieving market share in specific horizontal segments of the chain.
- As the price of intelligence drops, it becomes more evenly distributed throughout the chain. Terminal equipment, once the "dumbest" part of the communication chain, has become vastly more intelligent. The concentration of intelligence in central switching offices and bureaucratic management hierarchies has gradually eroded. Instead, end users have asserted ownership and control over terminals and on-premises networks.
- There is *divergence,* not convergence, in each horizontal segment. The horizontal shift is naturally accompanied by a growth of specialization and diversity in the market as a whole. A standard feature of intense competition is that it forces competitors to differentiate their products and services. The market becomes more responsive to slight variations in demand. This trend is evident in all five segments.

In data terminals there are still mainframes and PCs, but there are also smart cards, notebooks, palmtops, organizers, and PDAs. Telephones and pagers come in all shapes and sizes, representing different ways of handling technical and economic tradeoffs between cost, bandwidth, portability, quality, mobility, and power utilization. There is greater differentiation of audiovisual playback devices, ranging from the tiny, portable car TV to the gigantic home projection screen.

In carriage, digital convergence has made different kinds of networks better substitutes for each other. But we do not see the carriage market collapsing into a single infrastructure; rather, competing infrastructures are proliferating, each targeted at a range of applications in which it holds a competitive advantage, and often working in a complementary fashion with other infrastructures. Thus, there are new fixed local networks; private LANs and WANs; many new public wireless local networks; multiple trunk networks for long distance; new, redundant cables for international communication; simultaneous growth of satellite and cable alternatives to terrestrial broadcasting; and so on.

In content production the same growth of diversity is present. A standard result of economic analysis was that the mass-oriented, "lowest common denominator" quality of television and radio programming was a function of limitations on the number of channels and the broadcast medium's reliance on advertising support. (Owen and Wildman, 1994) Digital, interactive media are overcoming both limitations. Video, on-line, and audio content can increasingly be ordered and paid for on a transactional basis, and need not be supported solely by advertising. And the number of channels is increasing. The overall market for content, therefore, is beginning to look as diverse and fragmented as the market for printed publications. The market for service packagers and software is also increasingly diverse and specialized.

The Progress of Disintegration

The vertical structure of the telecommunications industry first began to disintegrate thirty years ago. The first step was the detachment of terminal equipment markets from the market for network services. This process was driven by the desire of electronic equipment manufacturers and users to pry open markets that were foreclosed by telephone companies' monopoly control of the access infrastructure. The creation of a standardized interface between the public network and the customer's equipment facilitated end user ownership of telephone handsets and PBXs, and promoted freer competition in terminal equipment markets. The rise of competition in long distance markets in the USA eventually led to an attempt to create an analogous standardized interface between local and long distance segments of the network. Without electronic switching intelligence, this would have been economically intractable. Another important development was the emergence of a distinction between the physical network and network intelligence in the form of "value-added services." This distinction had its roots in the emergence of computer networks that employed the telephone network for carriage but "added value" in the form of processing or storage. (Brock 1994, 94)

Despite this trend away from vertical integration, the prospect of converging telecommunication and audiovisual media in the early 1990s was interpreted by many businesses and analysts as an opportunity for telephone and cable companies to reassert the old vertical structure. (OECD, 1992; Oftel, 1995) Telephone companies,

threatened with competition in their traditional markets, began to view broadband networks offering interactive entertainment as the key to their future growth. Thus, in the US, local exchange companies (LECs), frustrated with the line of business restrictions left over from the AT&T divestiture, began to lobby for authorization to carry video signals to consumers. In 1992 the FCC authorized LEC entry into a limited form of video distribution. A series of alliances and proposed mergers between US telephone and cable TV companies quickly followed. (Southwest Bell acquired two cable systems in the District of Columbia; US West acquired 25 percent of Time-Warner Entertainment; Bell Atlantic tried, but ultimately failed, to merge with cable giant TCI. Later a variety of interactive TV consortia were formed: *americast*, a partnership of Walt Disney Co., Ameritech, BellSouth, GTE Corp., SBC Communications, and SNET; Tele-TV, a consortium of Bell Atlantic, Nynex, and Pacific Telesis.) Concerned about telephone company threats to their business, American cable companies developed their own interactive TV trials. In both cases, the approach to convergence was based on the idea of proprietary standards and set-top boxes, and service packages under the end-to-end control of large-scale networks. The telephone company, it was thought, would become a cable TV broadcaster with better networking technology.

The trend became global. In Australia, Telecom announced in mid-1993 its intention to aggressively develop a fixed broadband network to deliver motion pictures, multimedia, and interactive services to the home. (Lindsay, 1993, 1-2) British Telecom (BT) also began to position itself as a "multimedia" company. In 1994 Hong Kong Telecom announced the creation of its new Interactive Multimedia Services (IMS). The company hoped that IMS would make what was once just a telephone company into a movie rental store, a financial service provider, an electronic shopping mall, and an on-line school and library. Hong Kong Telecom's IMS initiative was, therefore, typical of the response of incumbent telephone monopolies in liberalizing markets throughout the world.

These initiatives approached convergence as a blending of the telecommunications and audiovisual industries. But the incursions of these two industries into each others' turf has been minimal and mostly unsuccessful. George Gilder was correct to deride these efforts as "a convergence of corpses." (Gilder, 1994, 12) Beginning in late 1995, announcements of closure, delay, or drastic scaling back of various interactive TV and VOD plans became common. One reason was that the central office computers, software, and network upgrades required to support interactive TV proved to be too expensive. (Collier, 1996) The real nail in the coffin, however, was the rise of the Internet. Suddenly, without any warning to the slow-moving cable and telephone giants, the Internet was actually bringing to market many of the interactive multimedia capabilities the telephone and cable companies had been promising. The Internet's rapid diffusion could be directly attributed to its features of decentralized innovation, open, non-proprietary standards and the absence of end-to-end integration. The modular, horizontally organized Internet market thoroughly undermined the fundamental assumptions of the telco-cable approach to interactive media development.

In 1996 telephone companies, including Hong Kong Telecom IMS, stampeded into the Internet Service Provider (ISP) market, often achieving great success. Cable TV companies kept pace by developing cable modems that would allow cable customers to gain high-speed access to the Internet. (Weinschenk 1996) Whether they knew it or not, these changes amounted to a strategic repositioning away from vertical integration towards their horizontal strengths in carriage. AT&T's 1998 acquisition of the large cable television company TCI was primarily in that vein too: an attempt to acquire the missing

local distribution network that would allow it to bypass local telephone companies and reach the customer directly with carriage services.

Almost all of the merger activity that has taken place in the United States since the passage of the 1996 Telecommunications Act has been in horizontal segments of the market. Radio and TV broadcasting chains have acquired other radio and TV broadcasters; telephone companies have acquired other telephone companies (The Bell Atlantic-Nynex merger, the Pacific Telesis-Southwestern Bell merger, the BT-MCI merger); content giants have acquired other content originators (Time-Warner's acquisition Turner Broadcasting). At the same time, there is dramatic evidence of the failure of vertically-oriented approaches to convergence and consolidation. No major mergers between telephone company giants and cable multiple system operators have succeeded. AT&T's self-divestiture of Lucent and NCR established clear separations between its business lines in computer manufacturing and services, telecommunication service, and equipment manufacturing. Attempts by consumer electronics hardware manufacturers SONY and Matsushita to integrate backwards into content were expensive failures. (Bane et al, 1995) IBM's acquisitions of telephone equipment maker Rolm and Satellite Business Systems were equally unsuccessful.

Internet as Digital Media Prototype

A convergent media market structure already exists in the Internet. Worldwide, the Internet industry is beginning to experiment with a fully converged environment in which television sets, telephones, and various digital devices besides PCs can be used to access and navigate the 'Net. This, of course, is what convergence is all about--and there is no doubt that the meeting point for this change will be the Internet rather than traditional cable TV or voice telephone systems. Thus, the Internet must be viewed as a bandwidth-constrained, administratively immature version of the fully digital media of the future. It represents the future of broadcasting and telecommunications as well as the future of networked computing. As such, its economic features offer important insights into the market structures and policy problems created by digital convergence.

Key features of market structure include the following:

Multimedia Capability.

The Internet can carry and deliver all modes of content on an interactive basis. Old distinctions between publishing, broadcasting, and telecommunications have already lost their meaning on the Internet. The segmentation of voice, video, and data traffic is also undermined, although not abolished. The Internet currently offers access to news content, mail and document distribution, financial services, photos and graphics, various forms of electronic commerce and digital money, games, real-time voice and music clips, and even some limited clips of real-time video. In addition, it has created new forms of media such as chat rooms, MUDs, search engines, and browsers.

The Internet's multimedia capabilities are still limited by congestion, low-bandwidth access to residences, and the presence of older chipsets in many home and office computers. Over time, however, new administrative arrangements, better pricing mechanisms, the expanding power of ICs, and equipment upgrades will reduce these barriers.

Disintegration.

The Internet is largely disintegrated in structure. TCP/IP, the protocol on which it is based, is an open, non-proprietary standard. There are clear demarcations between the markets for terminal equipment, browser software, local carriage, backbone carriage,

service packagers, and content producers. Suppliers concentrate on maximizing their competence and market share in one or two of these horizontal segments of the market.

The environment of vertical disintegration has a powerful impact on the flexibility of service configuration and the possibilities for service innovation. Packagers and intermediaries can "mix and match" service components to create a product. Internet services may be advertising supported, subscription-based, free, pay per view, or a combination of these options; their delivery architecture includes both "pull" and "push" interfaces. The old broadcast-telecommunication categories are totally irrelevant in this environment.

An important corollary of disintegration is that end-users in businesses and residences can assert ownership over terminal equipment, in-premises distribution, content, and software interfaces. Service providers must compete not only with other service providers, but with equipment manufacturers. The consumer can control when to lease and when to buy. This creates further pressure toward open, "plug and play" standards and a disintegrated value chain. (Yoffie 1997)

A Borderless Market

The falling cost of bandwidth and processing power makes national boundaries increasingly irrelevant in determining the features of digital media. Unlike traditional telephony, there is no "distance premium" on the Internet and no regulatory regime, like the international settlements system, that makes data movements pay special taxes for crossing international borders. Multimedia content can be distributed globally and, via electronic commerce, services and products can be consumed from any point. It will become increasingly difficult--and counterproductive--for governments to monitor and control the movement of bits. A regime of increasingly free trade in information and telecommunication services and content seems inevitable.

When entire motion pictures can be transmitted in encrypted form over international lines in a few seconds, and when Internet users can experience or download pictures, music or videos hosted on computers far outside their home country's jurisdiction, the concept of broadcasting laws and regulations that restrict ownership to nationals or prescribe the kind of content that people can view within the country cannot survive for long.

A multimedia capability. A horizontal, specialized industry structure. Open entry. A transnational market. These four features represent the clear direction of digital media services. They are not unique to the Internet but are logical consequences of the declining cost of processing power, the victory of open over closed standards in computers and networking, and the growth in the size and scope of the market.

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Contents

Blue Skies and Strange Bedfellows: the Discourse of Cable Television[1]

by Thomas Streeter

(from Lynn Spigel and Michael Curtin, eds., The Revolution wasn't Televised: Sixties Television and Social Conflict, Routledge,1997, pp. 221-242).

I. Introduction: The Discourse of the New Technologies

> *[T]he stage is being set for a communications revolution . . . audio, video, and fascimile transmissions . . . will provide newspapers, mail service, banking and shopping facilities, data from libraries and other storage centers, school curricula and other forms of information too numerous to specify. In short, every home and office will contain a communications center of a breadth and flexibility to influence every aspect of private and community life.*[2]

The preceding passage was published in The Nation, not in the last few years, but in 1970. The wondrous new technology that was supposed to bring about this communications revolution was not the information superhighway, but cable television. The author went on to argue that government should make a "commitment for an electronic highway system to facilitate the exchange of information and ideas."[3]

This chapter looks at what I will call "the discourse of the new technologies," a pattern of talk common in the policy-making arena in the late 1960s and early 1970s and remarkably similar to much of the recent talk about "the information superhighway." This discourse flowed from an odd alliance of groups: 1960s media activists, traditional liberal groups, industry lobbyists, and Republican technocrats all made their contributions. As a result, government television policy was subtly transformed, and beginning in 1970, the FCC reversed its attitude towards cable, turning the industry from a regulatory outcast into a protected element of the media system.

"Discourse," it should be pointed out, is not debate. The talk about cable, this chapter will show, was characterized by a systematic avoidance of central issues and assumptions and by a pattern of unequal

power in the discussion and its outcomes; the discourse of the new technologies was shaped not so much by full fledged debate as by a lack of it. By the same token, the argument here is not simply that debate was suppressed by a conspiracy, or that the policy process was captured by an interest group. The discourse of the new technologies was what Foucault might call a discursive practice, that is, a collective habit of talk, action, and interpretation embedded in historical context that establishes and enacts relations of power and resistance. The discourse had a kind of life of its own; it was not only shaped by but also itself shaped economic and social forces.

In particular, the discourse had the specific effect of systematically drawing attention away from political differences and creating a terrain for collective action that simultaneously obscured underlying conflicts. The form of the discourse--its particular mixture of themes, blind spots, and gaps--made possible an odd alliance between the CATV industry, certain professional groups, and some liberal progressive organizations. The discourse thus made possible some major actions in the policy arena, actions that simple self-interest would not warrant. Diverse viewpoints were united around a shared sense of awe and excitement; maybe the new technologies were good, maybe they were bad, but in any case they inspired a sense of urgency, of possibility, and of a need for action, for response.

The goals, interests, and philosophies of the many contributors to the discourse of the new technologies were widely varied, sometimes to the point of being mutually antagonistic. The participants in the alliance did not understand it as such, however, as a compromise between groups with different but overlapping interests; rather, they saw it as a solid consensus, as what one policy activist dubbed "a great and growing body of impartial, expert opinion." The new discursive field thus helped create a sense of expert consensus, of unity and coherence where in fact there was a variety of conflicting motivations, attitudes, and opinions.

II. "An Ever Expanding Chorus of Expert Opinion"

Cable began around 1950 as Community Antenna Television (CATV), a service providing improved television signal reception in remote areas. Over the years, CATV helped fill in the gaps in the ragged periphery of a system dominated at the center by the three television networks, which distributed their signals nationwide via coaxial cable and microwave relay to broadcast transmitters in local communities. One of the grand paradoxes of American broadcast regulation is that it rests on the fiction that local broadcasters control the system. Consequently, the Federal Communications Commission (FCC) can only directly regulate local transmitters, not the more powerful network organizations; local broadcasters are thus subject to a great deal of attention and regulatory tinkering. When the tiny but growing CATV industry set off a squabble in the broadcast system's periphery by threatening the profits of small local broadcasters, the broadcasters used their inordinate importance with the FCC to generate a set of regulations that effectively halted CATV's growth. By the mid-1960s, CATV was thus locked out of television's economic mother lode, the top 100 markets. CATV operators conducted a strident campaign to remove the restrictions, but to no avail, largely because they had little support outside their own ranks. The struggle between CATV operators and local broadcasters, for the most part, was seen as a minor affair, of interest only to industry insiders--until the late 1960s, when the climate of opinion began to change.

In what one contemporary writer described as "an ever expanding chorus of expert opinion," a new, hopeful view of cable television echoed throughout the policy arena in the late 1960s and early 1970s, appearing in numerous articles, studies, hearings, and journalistic publications.[4] One important galvanizing force in this development was the Rand Corporation, which began research on "cable

television issues" in 1969, with support from, among others, the Ford Foundation. Rand published more than a dozen reports on the topic over the next three years. The Alfred P. Sloan Foundation established a Commission on Cable Communications in the spring of 1970, which solicited over fifteen studies and produced a book length report.[5] The fever went beyond the foundations, however. Articles appeared in The New York Times and Saturday Review. The influential British weekly, The Economist became a regular advocate of the new vision. And a major article appeared in The Nation in the Spring of 1970, later to be published in expanded form as a book called The Wired Nation.[6] Numerous progressive groups such as the ADA and the ACLU became interested and began making contributions to cable policy proceedings, as well. While there are important differences in many of these texts, they all share a sense of urgency, a sense of activism, and a sense of working against stifling and powerful conservative forces. Cable had captured the imagination, not just of those traditionally concerned with television regulation, but of what seemed to be an entire cross-section of the U.S. policy-making community.

Significantly, however, the sense of "an ever expanding chorus of expert opinion," was not based on any explicit, thoroughly worked-out theory that can be located in a single statement or document. Rather, instances of the discourse were typically invoked in passing, as introductory or concluding passages to otherwise more concrete and specific arguments, policy recommendations, and research reports. For example, in 1968 an Advisory Task Force on CATV and Telecommunications for the city of New York published a report that was, for the most part, relatively brief and pragmatic. It recommended the introduction of state-of-the-art cable systems for each borough of the City, with rates and programming regulated, but not absolutely determined, by guidelines established by the city council. Most of its fifty pages referred to the specific details of the situation in New York. But the report concluded with the following passage:

> *The promise of cable television remains a glittering one . . . Those who own these electronic circuits will one day be the ones who will bring to the public much of its entertainment and news and information, and will supply the communications link for much of the city's banking, merchandising, and other commercial activities. With a proper master plan these conduits can at the same time be made to serve the City's social, cultural, and educational needs.*[7]

It was this kind of passage that filtered most widely into policy debates at large, not the report's data, analyses, and recommendations. The references to "next generation" high-capacity, two-way cable systems, to satellites, to systems that combined voice, computer, and television signals all on the same wire, to the generally "glittering promise" of this new dazzling technology--these were the particulars of the New York City Report that found their way into discussions in the FCC, the Rand corporation, and the elite popular press. The concrete, detailed recommendations of the Report, on the other hand, were in the long run probably less important; they served more to provide an aura of expertise and professional legitimacy than they did to actually influence concrete policy decisions. Paradoxically, therefore, the specific details of the New York Report served largely as window dressing, while its vague speculations had a very concrete impact that went far beyond the borders of New York City. And this pattern was repeated in numerous other studies, books, and reports of the period. The frequent incantation of the themes of the discourse in policy debates created a sense of consensus, a "common sense" of the day, without that sensibility ever being worked out in detail.

The key themes and gaps of the discourse, however, can be reconstructed. In general, it was an example of what James Carey and John Quirk call "the rhetoric of the electrical sublime," a discourse which has resurfaced at regular intervals throughout American history ever since the development of the telegraph, which expresses a quasi-religious faith in the power of new technologies to overcome social and material constraints.[8] In the late 1960s, the theme of technological revolution frequently took the form

of a claim that "[n]ew technology is transforming the realm of communication."[9] Almost as frequently, however, it was also suggested that the revolution would embrace, not just the realm of communications technology, but all of society. A report filed with the FCC in 1969, for example, stated that the "mushrooming growth in available information is bringing about a revolution in communications which will produce a profound change in the way society is structured and in the way we live."[10] The idea was that technological progress in the field of telecommunications, particularly the growing use of communications satellites, the increasing involvement of computers in data transmission, and the increasing capacity of broadband coaxial cable transmission techniques were not isolated developments or mere continuations in the technological evolution of communications systems, but were all part of a revolutionary development comparable to that brought about by print, or by the industrial revolution.

The theme of autonomous technology is clearly evident in these passages. For example, the report of the influential Sloan Commission on Cable Communications, published in 1971, opens with this typical passage: "Spreading quietly into every corner of the United States--slowly and unevenly and yet with its own air of inevitability--is a new communications technology."[11] Cable television was something that could have an important impact upon society, and it thus called for a response on the part of society; it was something to which society could respond and act upon, but that was itself outside society, an autonomous entity that had simply appeared on the scene as the result of scientific and technical research. As Raymond Williams has shown, this assumption of autonomous technology is characteristic of much thought about television and society, and constitutes a false abstraction of technologies out of their social and cultural context.[12]

The terminological shift from "CATV" to "cable" that occurred during this period usefully indicates the discursive tendency to abstract complex issues into a simple, autonomous "technology." Before the late 1960s, the term "community antenna television" or CATV was dominant. The industry's trade magazine, for example, was titled CATV. This reflected an understanding of CATV as a service, an alternative method of program delivery. The coaxial cables, signal amplifiers, and other bits of equipment used by the CATV operators were just variations on the technologies used throughout the television industry. CATV was thus generally thought of as simply an alternate route, a slightly different combination of wires and transmitters for delivering television signals. But by 1970 all reference to the kind of service began to be dropped and to be replaced by the name of a piece of hardware. "CATV" became "cable."[13] FCC reports, Congressional hearings and the like were peppered with references to the "new technology" of "cable."

Cable, however, was neither "new" nor best described as a "technology." For one, "cable" had been in existence since the late 1940s under the name of CATV. Furthermore, the practice of distributing television signals by wire grew up along side television itself, and has actually been central to what we call "broadcast" television all along: the lifeblood of American television, the network programs, were distributed on a coaxial cable network owned by AT&T in the 1950s and 1960s.[14] At the time when cable was most consistently interpreted as a "new technology" by the policy community, therefore, it was arguably no more "new" than it had been since the beginning of television in the late 1940s.

The trait most often invoked as justification for the description of cable as "revolutionary" was similar to the arguments made today on behalf of the information superhighway: an increase in maximum channel carrying capacity. It was frequently pointed out that recent developments had expanded the carrying capacity of coaxial cable to twenty and more television channels, substantially more than could be carried over the air (given the existing allocations). Based on this increased capacity, former CBS news president Fred Friendly claimed that the coaxial cable was "a true turnpike, as geometrically enlarged in capacity as a sixty-lane thruway would be over the old unpaved Boston Post Road."[15] Similarly, FCC Commissioner Nicholas Johnson argued that comparing coaxial cable to a telephone wire was like

"comparing Niagara Falls to a garden hose."[16]

The increase in channel capacity obviously did represent a technological development. However, it was arguably only an evolutionary development, not revolutionary. It had been going on throughout the period when people were content with the word "CATV." Why not speak of a cable revolution when the channel capacity more than doubled from 3 to 8 in the 1950s, or from 8 to 12 in the first half of the 1960s? And why focus on the particular piece of hardware called cable, rather than one of the many other, equally necessary kinds of hardware, such as microwave relay? After all, both antennas and cables were necessary to the operation of both "broadcast" and "community antenna" television. Why draw so much attention to the different ways that individual television sets were linked to the broadcasting system--in one case radio waves, in the other, wires--when in both cases, the links to individual television sets were themselves connected to another set of links, the network web? The network system made television what it was, and it was constructed out of a massive, complex framework of coaxial cable and microwave relay that connected both the local wires and the local radio waves into the sources of national program distribution. But this fact was brushed aside, and the shift from radio waves to wires on the local level came to stand for a transformation of the system itself.

The argument tended to be that the system suffered from a clogged bottleneck on the local level, and the high channel capacity of broadband coaxial cable was a means to remove that obstacle. This was a dubious claim. The most telling evidence against the "local bottleneck" argument was the fact that in the late 1960s nearly two thirds of the allocated UHF broadcast frequencies across the country were left unused (a situation that continues to this day). At the time, Richard Posner argued that, since broadcasting over the air costs roughly the same as "cablecasting," the unused UHF airspace suggested that the problem of broadcasting was that the market was thin, not that access was limited.[17] The larger point is, however, not that a technical mistake was made, or that the evidence was not carefully considered. In the overall pattern of events, it becomes clear that careful consideration of such detailed arguments was obviously not the issue; the gaps and contradictions in the scenario of a cable television revolution were easily brushed aside by all the talk about the utopian possibilities for progress through new technology.

This complex set of historical and economic circumstances, however, was thoroughly obscured as CATV was abstracted in discourse into a simple "new technology," something that was outside society. Precisely because of that abstraction, moreover, it became possible to speak of cable, not as an embodiment of social contradictions and dilemmas, but as a solution to them. Cable came to be associated with the utopian vision of a "wired nation." Cable, it was frequently intoned, was the next step toward a "single, unified system of electronic communications."[18] This theme had many variations: it was also described as the "wired city scenario," or associated with talk of "a nationwide integrated telecommunications grid."

The utopian strain in the discourse is evident in frequent suggestions that problems of the present could be transcended with the help of new communications technologies, particularly in so far as they embodied the utopian dream of the wired nation. One of the key themes was a belief that telecommunications "can play a . . . fundamental role in achieving understanding and harmonizing conflict among modern societies dominated by diversity, mobility, and the claims of social justice."[19] The fragmentation and unrest of contemporary society, in other words, could be transcended by means of telecommunication systems. One major report argued for exploring "the constructive possibilities for the use of television to help overcome some of the problems of urban ghetto dwellers. Isolated rural people such as the inhabitants of Indian reservations could benefit from similar undertakings."[20] Prof. Don Le Duc suggested that cable television could satisfy the complaints about the lack of broadcast objectivity and bring an end to the attacks of community groups on broadcast licensees that were occurring at the time. On a broader level, he argued, in a cabled society,

> *members of the audience would no longer be simply the passive recipients of mass communications messages but would participate actively in their selection and dissemination. . . . Thus, direct feedback could well result in the reversal of the traditional roles of mass communications, making the communicator little more than a common carrier in a communications process controlled by each individual subscriber. In such a humanized atmosphere broad governmental control may no longer be necessary, except perhaps for the type of supervision of rates and service exercised over other private communications carriers.*[21]

Cable, in other words, had the potential to rehumanize a dehumanized society, to eliminate the existing bureaucratic restrictions of government regulation common to the industrial world, and to empower the currently powerless public. Thus, on the level of discourse, not only were the historic complexities and dilemmas of the situation sublimated away into the abstraction of technology, but that abstraction in turn came to be represented as the solution to those dilemmas.

III. Origins of the Discourse

At first glance, the enthusiasm for the discourse of the new technologies seemed to spring from a cross-section of the political spectrum. It was not, however, a true cross-section. While on its fringes this group may have bled off in either direction, at its core, it encompassed neither the openly revolutionary parts of the then-active New Left, nor the mainstream of the Republican Party. Rather, it was in some ways a New Deal coalition, made up of professional groups, corporations and their intellectual allies, and progressive political groups seeking ways to foster social change by working "within the system." It is possible to locate five key centers of enthusiasm for the discourse of the new technologies: a collection of progressives interested in fostering more democratic forms of communication, the cable operators themselves, a group of economists concerned with regulatory problems, liberal elites interested in fostering alternatives to the existing commercial television system, and a group of influential policymakers centered around Eugene Rostow interested in centralizing the management of the telecommunications system within a government agency.

A. Progressives and Media Activists

A faith in new technology has been a recurring theme on the American left at various points throughout this century. In the 1930s, for example, some of Roosevelt's New Dealers rallied around the Tenessee Valley Authority and other big engineering projects as harbingers of a harmonious, equitable future achieved through science and technology. By the 1960s, however, the association between big science and utopian futures had largely disappeared on the left. Much of the 1960s counterculture was in various ways altogether anti-technological, being formed around what Andrew Ross has called the "technology of folklore," an amalgam of preindustrialist, agrarianist, and related values.[22] But there was a strain that saw in technology neither a utopian harmony nor a demonized uniformity, but the promise of an anarchic excess. One source of this vision was the musical avant garde. Composer John Cage, for example, associated technology, not with impersonality, regularity, efficiency, and uniformity, but with "heterogeneity, randomness, and plenitude."[23] Another source, of course, was Marchall McLuhan, with his mixture of iconoclastic and euphorically utopian treatments of electronic technologies. These trends, combined with notions of grassroots political organizing current among the 1960s counterculture, fed into the alternative video movement, which advocated for and experimented with new, inexpensive, and portable video technologies as a democratic alternative to big, corporate media. [24]

Few, if any of the alternative video activists had any direct influence on the policymaking processes of the late 1960s and early 1970s.[25] But some of the spirit and a few of the ideas (especially "cable access") probably informed the efforts of those who did contribute. Certainly, the progressive spirit of many of those who gave voice to the discourse of the new technologies is evident on close readings of some of the most influential texts of the era. While introductory paragraphs and chapters were often filled with unadulterated examples of the discourse of the new technologies, long passages were often devoted to cautionary warnings about the coming new media. "Cable television offers vast potential for social good," the message seemed to be, "but that potential will be realized only if we act now." These were not mere apologists for special business interests, nor were they blind technology enthusiasts. They were groups, which, for various reasons, wanted to "work within the system" to accomplish democratic social change within the framework of the dominant power structures of society. The new interest in cable television seemed to provide a grand opportunity for such change.

Ralph Lee Smith's The Wired Nation (1972) is the most important example of this pattern. Originally published in the left magazine The Nation, Smith's tract, while full of glowing rhetoric about cable's promise, was also a polemic for certain political goals. Smith warned against economic concentration, cross-ownership, and local monopolies in the cable industry. He foresaw the possibility of mediocre, network-style programming patterns being repeated instead of the diverse and community-oriented programming for which he hoped. He warned against the narrow and purely economic industry interests that were already beginning to define the future structure of cable television.[26] These negative possibilities, however, did not dampen his enthusiasm. Instead, they led to his call for a combination of grass-roots community action and a state-controlled regulatory structure which would limit rates and prohibit cable operators from controlling program content.

Smith's sentiments were shared by other liberal groups such as the Americans for Democratic Action and the American Civil Liberties Union, both of which he drew on for support. The arguments of the ADA in favor of Congressional intervention in cable television are illustrative. The ADA saw the cable issue as an opportunity for us "to regain our constitutional heritage of freedoms of communication."[27] The ADA urged immediate action to prevent "special economic interests" from taking control of cable TV: "Our growth, urbanization, and industrialization have now substituted mass circulation, advertising-supported, print and electronic media for the community media of person-to-person speech, assembly, and print. Personal two-way dialogue has been supplanted by one-way 'broadcasting' to mass 'audiences.' Active participation in communications has become passive reception."[28] The ADA, as this passage shows, obviously did not suffer from a naive faith in technology. The cable issue, for the ADA, was an opportunity to pursue non-technological legislative goals, not a chance to celebrate technology as a value in and of itself. And yet, the contribution of the ADA probably had effects quite different from those intended. The ADA's concrete legislative goals--a rewrite of the 1934 Communications Act that would foster a unified, national common carrier broadband network including television--were never given much serious attention. The fact that the ADA had lent its voice to the debate, however, resonated, thus lending weight to the overall momentum of the discourse.

B. Cable Operators: the Discourse as a Competitive Strategy

One driving force behind the discourse of the new technologies came from a very different perspective: cable operators used it as a strategy in the small-market television battle with broadcasters, particularly as that struggle was carried out through the FCC. By describing their businesses, not as a mere ancillary community service, but as new technology, the cable operators could gain new leverage against their commercial opposition, the broadcasters. In 1966, one of the earliest attempts to shift the terminology from "CATV" to "cable television" came when some cable operators, eager to establish themselves as program providers, moved to change the name of the National Community Antenna Association to the

National Cable Television Association.[29]

But it wasn't until 2 or 3 years later that the industry began to regularly draw on the discourse of the new technologies to promote their designs. A classic example can be found in the 1969 Congressional testimony of Irving B. Kahn, the President of the country's then-largest cable operator and a leading spokesman for CATV (who, within months of this testimony, would be sentenced to prison for bribing city officials during a cable franchise negotiation).[30] Kahn's testimony was for the most part standard salesmanship on behalf of removing the regulatory restrictions on CATV--cable provided a needed service, it did not threaten the broadcasters, cable had been mistreated by the FCC, and so on. All this was accompanied by a wealth of anecdotal evidence and some skillful rhetoric designed to portray cable as a misunderstood underdog. He concluded his prepared remarks, however, with a new twist. "There is one thing," he argued,

> *that cannot be ignored. And that is the great and growing body of competent, impartial opinion--from scientists, writers and journalists, members of the Government, businessmen, economists, and others--that stresses the great potential of CATV if it is permitted to test its wings in an open, competitive, climate.*[31]

From Kahn's perspective, his appeal to expert authority was, perhaps, just one more rhetorical device. But it would not have been an effective one a few years earlier. His reference to a "great and growing body of impartial opinion" only made sense because of the recent talk of new technologies. By the early 1970s, when this particular way of speaking about new technologies would reach a fevered pitch, it was familiar enough to the industry to have earned a label in the trade jargon: the "blue sky scenario."

The invocation of the discourse of new technologies by cable operators, however, is not enough to account for the intensity and pervasiveness that came to characterize talk about the "wired nation" by the early 1970s. The glib, pragmatic style characteristic of business people and the trade press that serves them, moreover, does not lend itself to the abstract flights of social prediction characteristic of the discourse. The blue sky scenario, as it appeared in the trade press, usually seemed to have a slightly sarcastic inflection to it, and in any case seemed more to connote astounding profits than astounding social transformations. Whether "CATV" or "cable," the basic point was to make money. The cable operators, therefore, may have set the ball rolling, but the impulses that really gave the discursive transformation its decisive momentum had to come from somewhere else.

C. The Search for an Alternative Broadcast System: Economists and Liberal Elites

One pattern common to most of the various streams of thought that fed the rise of the discourse of the new technologies was that they interpreted the strains, struggles, and problems of the existing American television system to be the product, not of growing pains, but of fundamental structural flaws. In several different elite circles, television was no longer seen as an infant institution, and its flaws were no longer interpreted as temporary foibles, amenable to correction within the existing overall structure. People in positions of authority and power were beginning to seek solutions to television's failings, not in adjustments to the existing system, but in alternatives to the system itself.

One of these calls for an alternative came from the groups that sponsored the Carnegie Commission on Educational Television. While the Carnegie Commission did not address the issue of CATV or invoke the discourse of the new technologies in any direct way, it did help introduce the idea of considering a fundamentally different kind of television, structured in a radically different way and conceived at the

national level. "[T]his is a proposal," the Commission argued, "not for small adjustments or patchwork changes, but for a comprehensive system that . . . will become a new and fundamental institution in American culture. . . . different from any now in existence."[32] The important contribution of the Carnegie Commission to the discourse, therefore, was a shift in emphasis from "small adjustments and changes" to the creation of "a comprehensive system" through relatively radical restructuring.

At roughly the same time, another call for alternatives appeared in a very different environment. This was the work of several economists who argued that the existing television structure "unnaturally" restricted economic competition and program diversity. A completely different structure, they went on to say, might eliminate the problem. Probably the earliest comprehensive published example of this argument, titled "A Proposal for Wired City Television" by Harold Barnett and Edward Greenberg, appeared in the winter of 1968, but, as the authors suggest, the argument had been current among members of the RAND corporation, certain FCC commissioners, and others of the policymaking elite for some time before that.[33] The article takes as given the inadequacies of the existing television system such as lack of diversity. The reason for the inadequacy, however, was that,

> *there are too few television signals being delivered to homes. . . . If more channels were available and the expense for transmitting and network connection of programs were less, and correspondingly more dollars were available for creating programs, then the number of programs and their diversity and range would be greater.*[34]

The solution to this channel bottleneck, the article went on to say, was "wired city television," WCTV for short, a system of television signal distribution based on high-capacity wires instead of radio transmission.

IV. The Flowering of the Discourse: The Release of the Rostow Report

In May of 1969, less than 6 months after "A Proposal for Wired City Television" was published, one of its coauthors, Harold Barnett, testified before a House subcommittee. Barnett, after arguing in favor of CATV, said,

> *Far more exciting than the actual accomplishments of infant CATV is the promise and potential of the wired city and Nation. The promise has significance of the order of magnitude of the Nation's two, already existing wire grids--telephone and electricity--or of the automobile highway grid.*[35]

Barnett had tapped into the technological utopianism that was sweeping cable policy at the time. He argued not just for a "wired city"--a relatively specific alternative to local broadcast transmitters--but for a Wired Nation--a vision of and about the future. He elevated his proposal from a relatively concrete and technical argument to a visionary one.

Barnett, however, was just following in the footsteps of others who had testified at the same hearings--most notably, Eugene Rostow--and of many of his colleagues in the policymaking community. The disparate streams of thought fed by the CATV operators, economists like Barnett, and by the liberal groups who had created the Carnegie Commission were all coming together in a complex unity. The repeated incantations of the Wired Nation vision, coupled to vague but grand gestures towards a portentous future, were fusing the mixed bag of interests, visions, and concepts behind cable in such a

way as to give the impression of "a rising chorus of expert opinion."

In this context, a series of seminal blue ribbon reports began to surface that crystallized the discourse of the new technologies, giving it a level of legitimacy and respectability rare in broadcast policy debates. One of these was the New York City Report mentioned above. Another, conducted more or less contemporaneously, was the report of the President's Task Force on Communications Policy headed by Eugene Rostow. This report recommended the creation of a new government agency to coordinate telecommunications technologies because of their awe-inspiring strategic and social importance, and saw cable television as an excellent site for exactly the kind of "technological and business developments plus regulatory policy" that the Report advocated for the communications industry overall.[36]

The argument advanced by the Report was essentially identical to Barnett and Greenberg's: the problems of television--lack of diversity, network dominance, lack of socially responsible programming--could be resolved by the high channel capacity of cable television technology, which would overcome the bottleneck supposedly inherent in over-the-air television. The Report went beyond Barnett and Greenberg, however, in a few areas. It vaguely but enthusiastically suggested that cable television, by allowing minorities and disaffected groups an outlet to express themselves and to communicate with the nation, might reduce their feelings of alienation from American society and thus help solve the "problem" of the social unrest that was sweeping American society in 1968, particularly the unrest in black ghettoes. The Report also argued for an enhanced role for the federal government as a coordinator of the introduction of cable as a nationwide medium.

V. The Discourse's Contradictory Unity

On close inspection, the goals of the Rand Corporation, Irving Kahn, the ADA, and Ralph Lee Smith were all quite distinct from one another. Yet at the time, these differences were often obscured by a sense of unity. As one book of the time put it,

> *An almost religious faith in cable television has sprung up in the United States. It has been taken up by organizations of blacks, of consumers and of educational broadcasters, by the Rand Corporation, the Ford Foundation, the American Civil Liberties Union, the electronics industry, the Americans for Democratic Action, the government of New York City, and--a tentative convert--the Federal Communications Commission. The faith is religious in that it begins with something that was once despised--a crude makeshift way of bringing television to remote areas--and sees it transformed over the opposition of powerful enemies into the cure for the ills of modern urban American society.*[37]

What motivated these diverse groups to respond at all? The cable industry's motivations were obvious, as were those of the electronics industry which stood to benefit from a growing cable industry. But the link between cable and many of the rest of the participants' interests were less obvious. Why was cable a "challenge" for so many rather than another new commercial enterprise? In particular, why did the limitations in the situation generate passion in the progressive groups rather than pessimism?

The answer lies in part in the structure of the discourse itself. One of the most important themes in the discourse was the transcendence of individual needs and differences through a rational process of society-wide linking and coordination, driven by a neutral, autonomous technology. The notion of a transcendant, utopian unification, coupled to the strategic ambiguities about politics and economics discussed above, resulted in a Janus-faced discursive structure, capable of being interpreted in several

different ways while at the same time concealing those differences. Each group could "read" the discourse as embodying their own interests, while at the same time ignoring the substantial differences between themselves and the others who gave voice to the same language.

Thus, in spite of major differences in political and economic goals, taken together, the chorus of voices did create the impression of religious faith Maddox was describing. Few individual texts or voices produced the discourse of the new technologies in a pure, unadulterated form; few did not qualify it with their own particular concerns. The discourse, however, provided the ground on which the different groups stood, the frame within which their individual enunciations resonated and had an effect. Each group, in pursuing its own goals, sought strength in associating itself with the growing chorus in favor of change. The discourse thus served as a binding, unifying force.

The way that these various voices and the forces that motivated them merged in the policy arena can not be fully understood in terms of mutual advantage. The interests of participants in the policy process frequently were not served, particularly over the long term. This is particularly true of progressive groups, but many businesses--such as many financial interests who invested in cable in the early 1970s--also lost money through an over-enthusiasm for the discourse. While the discourse by no means eliminated the powers of the various interest groups involved, then, it did have its own specific conditions and effects; the discourse, once set in motion, took on a life of its own. It not only provided a site for the merger of forces through mutual advantage, it fueled that merger, and once in motion, turned around and transformed the forces that had given birth to it. The discourse, in sum, worked to refract the goals of many of those that originally contributed to it, leading to effects quite other than those envisioned.

The transformatory action of the discourse is most evident in the case of the progressive groups. On the one hand, they were not blinded by the discourse in a simple way. The ADA, the ACLU, Fred Friendly, and Ralph Lee Smith, for example, were all quite aware of the narrow-minded commercial interests that were behind the current expansion of cable, of the many factors that could inhibit the hoped for rosy future of the "new technology." To a large degree, it was precisely those factors to which these progressive liberals were reacting. They hoped to fend off these negative possibilities by influencing cable television policy. The irony of the situation, however, was that it was in part their efforts that set loose the very commercial forces they were trying to resist; their enthusiastic participation in the policy proceedings lent a great deal of force to the general sense of an expert, impartial, opinion in favor of cable liberation.

VI. Reregulation and the Cable Disappointment

Because of the discourse of the new technologies, the FCC eventually changed its policy towards CATV from one of restriction to one of encouragement. By 1971, the reconceptualization of "CATV" as "cable" had made it increasingly difficult to speak of cable as merely a marginal enterprise that concerned the FCC only in so far as it threatened local broadcasters. The reconceptualization, combined with unrelenting pressure from lobbying cable operators and their financial backers, therefore, made it only a matter of time before new rules were drawn up. The watershed development in the FCC's reversal was the 1972 Third Report and Order, which allowed cable operators access to major markets.

The Third Report and Order alone, as it turned out, was not enough to ensure cable's success. Throughout the rest of the 1970s the FCC and the courts entered a period best called "reregulation," during which they frequently revised, relaxed, rescinded, and otherwise altered the set of regulations governing cable television. The details of the history of cable regulation in the 1970s are complex, and seem to represent a great deal of confusion and vacillation on the part of the FCC. Significantly,

however, while the FCC's vacillations in the mid-1960s had had the net effect of retarding cable's growth, the vacillations of the 1970s had the general effect of gradually bringing the regulatory structure into line with the economic needs of growing corporate ventures into cable. The FCC in the 1970s, in sum, finally did come to consider cable's development a reasonable goal of regulation. The logic governing the rule changes of the 1970s was one that classified the growth and expansion of cable as a natural and valuable element of "progress." Cable's dramatic expansion, when it finally did occur, would not have been possible without that logic.

Cable has brought change. The roughly 60% of the audience that subscribes has more channels, and channel surfers can now easily hop between the right-wing social conservatism of the Family Channel and the sexual liberalism of a Dr. Ruth Westheimer--perhaps not the best that has been thought and said in either camp, but at least a range of values much broader than was ever common on the politically timid big three networks. But if the discourse of the new technologies had any meaning at all, it was that the hoped-for changes would mark a dramatic departure from the existing system, and that the changes would be technology-driven; neither of these assertions adequately describes what happened. Cable has not revolutionized the basic corporate structure of television. It has been integrated within it.

The discourse of the new technologies suggested that cable could empower the currently passive audience, and eliminate the "one way" quality of television, principally through public access channels and "two way" or "interactive" cable technologies that allowed the audience to communicate with programmers. Yet the only serious effort to develop two-way cable, Warner-Amex's QUBE, was abandoned in 1984 and the numerous promises of interactive systems in franchise agreements were all dropped in renegotiation.[38] Public access channels have been more successful, but suffer from lack of funding, inadequate equipment, and cable company resistance. Certainly, the dream of a cable system in which "members of the audience would no longer be simply the passive recipients of mass communications messages but would participate actively in their selection and dissemination" is hardly less a fantasy now than it was in 1972.

Whatever new diversity in video content exists, furthermore, is less the product of technology than of the fact that, by the mid-1970s, the library of available commercial film and videotaped programs, including old movies and reruns, had grown dramatically. With the increase in supply came a predictable decrease in price. Filling a schedule with material became a much less expensive proposition than it had been in the early days of television.[39] Hence, the overwhelming bulk of the programming available is programming that has been or would be available elsewhere: almost all of the old and new films that make up so much of cable's programming have already played in theaters, and much of the remaining programming consists of reruns of network television programs. Even the more original cable services, such as CNN or MTV, tend to program for the same mass audiences that the broadcast networks have traditionally sought, and minority tastes are once again underrepresented. The discourse's predictions of abundant, diverse programming for all have not been fully realized.

The industry, finally, has hardly shifted from a condition of closed monopoly to one of wide-open competition. Today, most of the pre-1972 players in the cable industry are gone or absorbed (e.g., Teleprompter) and the key players in recent years bear names familiar from other contexts (Time, Hearst, CBS, Paramount, Warner, Westinghouse). The few new names that did emerge have gradually shed their entrepreneurial roots and have become increasingly corporate in their approach.[40] The Cable Communications Policy Act of 1984 gave cable operators a legal monopoly on the local level and prohibited cities from regulating content and subscription fees.[41] Concurrently, dominance of the industry by a shrinking number of large corporations has steadily increased for the last twenty years.[42] The industry is now an oligopoly dominated by five, six, or seven conglomerates replacing the previous oligopoly of the three major networks. Perhaps this is an improvement, but it is clearly not the dramatic sort of improvement predicted by the discourse of the new technologies.

VII. Conclusion: A Word to the Wired

Today, we are in the midst of another wave of technological utopianism, this time associated with the so-called "information superhighway." Cable has been redefined as a just another despised old technology, supposedly due for replacement by some mix of desktop computers, digital video, fiber optic cables. Interactivity is again a popular buzzword. George Gilder, a "futurist," recently wrote that, with the help of "interactive" television, "the human spirit--emancipated and thus allowed to reach its rarest talents and aspirations--will continue to amaze the world with heroic surprises."[43] The Clinton Administration's "Information Infrastructure Task Force" enthuses,

> *The National Information Infrastructure promises to extend the power of the human imagination to new frontiers . . . Through the NII the arts and the humanities will play a vital role in creating a new sense of citizenship and community, in strengthening our schools and offering exciting challenges to our children, and in creating new industries and works of art and scholarship yet unimagined. . . . The NII will bring new opportunities and resources to our nation's disadvantaged youth, allowing them to share their ideas, thoughts and creative energies, and to make new links with other young people throughout the nation. . . . The NII can give all Americans, of all races, ages and locations, their cultural birthright: access to the highest quality thought and art of this and prior generations.*[44]

High hopes of interactivity, technological plenitude, and the transcendance of social problems via new technologies once again abound.

Of course, there are plenty of cautionary warnings, and doubts about the direction of developments in the current environment. The cable industry's recent promise of "500 channel" systems is probably more often criticized than lauded. The business press is peppered with worries about thin consumer interest and exorbitant costs. And a loud chorus of computer professionals and enthusiasts associated with organizations like Computer Professionals for Social Responsibility, the libertarian Electronic Frontier Foundation (EFF), and Wired magazine, have sounded warnings about privacy, industry concentration, advertising, and the likely limitation of the new technologies to passive entertainment purposes.

But almost identical warnings were sounded during cable's blue sky era, particularly by individuals like Ralph Lee Smith and organizations like the ADA and the ACLU. The problem is not that no one sees difficulties this time around, but that so many approach those difficulties by way of a discourse of inevitable technological progress, technology-driven revolution, and technological transcendance of economic, social, and political constraints.

For example, in an oft-cited essay, EFF co-founder Mitchell Kapor wrote that the "true promise of this technology" will be a,

> *National Information Infrastructure that promotes grass-roots democracy, diversity of users and manufacturers, true communications among the people, and all the dazzling goodies of home shopping, movies on demand, teleconferencing, and cheap, instant databases.*[45]

Video, for example, will "at last become a people's medium" because desktop video will spark "a revolution . . . enabling the creators of video content to produce high-quality professional video for a fraction of the cost just a decade ago." The development of much of this, he argues, is inevitable:

> *No matter how it's delivered or what it carries, that bandwidth will increase is a given for*

> *every channel. Movies, shopping, libraries, e-mail, education - everything you've heard advertised - will sooner rather than later find its digital way down the wires. Everything will come in small bits on large platters. We don't have to choose this - it will happen.*[46]

Of course, Kapor is quick to note that,

> *crucial doubts remain . . . Users may have indirect, or limited control over when, what, why, and from whom they get information and to whom they send it. That's the broadcast model today, and it seems to breed consumerism, passivity, crassness, and mediocrity.*[47]

He goes on to propose a "Jeffersonian" policy emphasis on openness of access, distribution, and structure, and cautions against many of the plans being hyped by today's corporations. The technology is coming and its potentials are enormous, the argument goes, so we must act to take advantage of the opportunities now or all will be lost.

Kapor is a thoughtful and interesting contributor to the contemporary debate with proposals that are worth considering seriously. The point is, however, technology doesn't "promise" anything, technological developments do not just "happen" without someone choosing them, and today's technologies are not revolutionary; they are simply part of the same gradual, evolutionary development of technologies that has marked the last several centuries. (Why is desktop video any more "revolutionary" than super eight cameras, videotape, the original reel-to-reel video portapaks, video cassettes, and the numerous other improvements in low-cost visual media of the last forty years?) Kapor, by lending his sincere and authoritative voice to the generally awestruck sense of inevitable technological revolution, may simply be helping to create the conditions for strategic government intervention and industry realignments on behalf of exactly those centralized, advertising-dominated, media systems he cautions us against.

The problems of privacy, equitable access, freedom of expression, of centralization, and so on that are raised in the context of information superhighways are of a part with the larger problems of social justice that face our society as a whole. The economic, social, and political constraints that have limited democracy and freedom in the past are exactly that: economic, social, and political constraints. The constraints were not caused by old technological limits nor can they be eliminated by new technologies; they were caused by relations between people, and can be overcome only by changing relations between people.

At a minimum, the early history of cable provides a cautionary tale about the dangers and blind spots of a discourse of autonomous technology and technological determinism. On the level of public debate, the cable fable is a story of repeated utopian high hopes followed by repeated disappointments. Cable was to be interactive; instead it is just as one-way as its predecessors. Cable was to end television oligopoly; instead it has merely provided an arena for the formation of a new oligopoly. Cable was to cure social ills; instead it at best distracts from those ills. And so on.

On the level of the media industries, however, the pattern was not a roller coaster of high hopes and disappointments, but a process of gradual, if occasionally halting, growth and integration of cable into the American corporate system of electronic media and communications technologies. The back and forth motion between high hopes and disappointments served the industry well; it loosened the regulatory framework at strategic moments, allowing cable to be gradually ratcheted into its place between the usually calcified, tightly joined elements of the corporate industrial system.

It is important to note that the industry which benefited from the policy debate did not simply

manipulate the debate towards its own ends; it was not just a case of the public interest being overwhelmed by the power of big business. Cable was brought into the regulatory fold in the early 1970s not simply because an industrial elite demanded it, but because a coalition of groups, some with goals quite at odds with those of corporate management, cajoled the FCC into action through a collective public argument that coalesced around the discourse of the new technologies. The hopes for diversity, democracy, and cultural expression embodied in the discourse of the new technologies may have been naive, but they were rarely cynical; they were largely fueled by genuine social and political concerns.

So the danger today is not only that short-term corporate interests will dominate over the hopes of the visionaries. The danger is also that the visionaries' efforts will ultimately contribute to the reproduction of the limiting social structures that they dream of overthrowing. Clearly, the policy debate of the late 1960s served large corporations much more effectively than it did the social and democratic ambitions that helped generate the debate. If the lessons of the past are not heeded, this time might not be different.

Notes

[1]Most of this chapter is derived from Thomas Streeter, "The Cable Fable Revisited: Discourse, Policy, and the Making of Cable Television," Critical Studies in Mass Communication, June 1987, pp. 174-200. Many parts have been reorganized, updated, and expanded, and some parts of the original have been ommitted.

[2]Ralph Lee Smith, "The Wired Nation," Nation, May 18, 1970, p. 582.

[3]Smith, 1970, p. 602.

[4]Don R. Le Duc, Cable Television and the FCC: A Crisis in Media Control, Philadelphia: Temple University Press, 1973, p. 5.

[5]Sloan Foundation, On the Cable: The Television of Abundance, New York: McGraw-Hill, 1971, p. vii.

[6]Smith, 1970, pp. 582-606; Ralph Lee Smith, The Wired Nation--Cable TV: The Electronic Communications Highway, New York: Harper & Row, 1972.

[7]New York City, Mayor's Task Force on Communications Policy, Final Report, Washington, D.C.: U.S. Government Printing Office, 1967, pp. v-vi.

[8]James W. Carey and and James J. Quirk, "The Mythos of the Electronic Revolution," American Scholar, Part I: Vol. 39, No. 1, 1970, pp. 219-241; Part II: Vol. 39, No. 2, 1970, pp. 395-424.

[9]President's Task Force on Communications Policy, Final Report, Washington D.C.: U.S. Government Printing Office, 1968, p. 4.

[10]Electronic Industries Association, The Future of Broadband Communication, F.C.C. Docket 18397, October, 1969, pt. 5, p. 23, quoted in Le Duc, 1973, p. 37.

[11]Sloan Foundation, 1971, p. 1

[12]Raymond Williams, Television: Technology and Cultural Form, New York: Schocken, 1977, pp. 10-14.

[13]The Reader's Guide to Periodical Literature of 1969 lists eight articles under the subject heading CATV, two with references in their title to "cable," six with references to "CATV." In 1970, there were four articles with titles referring to "CATV," and three with "cable." By 1971, the balance had reversed: only five article titles referred to "CATV," while ten referred to "cable." It wasn't until the late 1970s that Reader's Guide reversed the priority of its subject headings, listing "see cable television" under CATV rather than the other way around. By that time, the vast majority of the articles listed under CATV referred to "cable." The trade journal CATV changed its name to Vue at the end of 1976.

[14]Over the years, AT&T gradually replaced its national coaxial system with microwave relays, and then began to use satellites to distribute programs to affiliates.

[15]Fred Friendly, "Asleep at the Switch of the Wired City," Saturday Review, October 10, 1970, p. 58.

[16]Friendly, 1970, p. 58.

[17]Richard Posner, "The Appropriate Scope of Regulation in the Cable Television Industry," Bell Journal of Economics and Management Science, No. 3, 1972, pp. 102-103.

[18]Smith, 1972, p. 9.

[19]President's Task Force, 1968, Ch. 1, p. 5.

[20]President's Task Force, 1968, Ch. 1, p. 16.

[21]Le Duc, 1973, pp. 14-16.

[22]Andrew Ross, Strange Weather: Culture, Science, and Technology in the Age of Limits, New York: Verso, 1991, p. 88.

[23]Kathleen Woodward, "Art and Technics: John Cage, Electronics, and World Improvement," in Kathleen Woodward (ed.) The Myths of Information: Technology and Postindustrial Culture, Madison, Wisconsin: Coda Press, 1980, p. 176.

[24]The classic statement of the alternative video ethos is Michael Shamberg, Guerrilla Television, New York: Holt, Rinehart and Winston, 1971.

[25]Barry Orton, email message to author, October 24, 1994.

[26]Smith, 1972, pp. 90-94.

[27]U.S. House of Representatives, Regulation of Community Antenna Television Systems--1969, Washington, D.C.: U.S. Government Printing Office, 1971, p. 388.

(Hereinafter cited as U.S., 1969).

[28]U.S., 1969, pp. 383-384, original emphasis.

[29]Patrick R. Parsons, "Defining Cable Television: Structuration and Public Policy," Journal of Communication, Spring 1989, v. 39 n. 2, p. 10-26; p. 23.

[30]Peter W. Bernstein, "The Rise, Fall, and Rise of Irving Kahn," Fortune, July 28, 1980, p. 58.

[31]U.S., 1969, p. 44.

[32]Carnegie Commission for Educational Television, Public TV: A Program for Action, New York: Harper & Row, 1967, p. 75.

[33]Harold Barnett, and Edward Greenberg, "On the Economics of Wired City Television," American Economic Review, Vol. 50 (June 1968), pp. 238-275.

[34]Barnett and Greenberg, pp. 217-218.

[35]U.S., 1969, p. 211.

[36]President's Task Force, 1968, p. 183.

[37]Brenda Maddox, Beyond Babel: New Directions in Communications, Boston: Beacon Press, 1974, p. 145.

[38]Les Brown (ed.), Channels of Communications: The Essential 1985 Field Guide to the Electronic Media, p. 24.

[39]Don R. Le Duc, "Deregulation and the Dream of Diversity." Journal of Communication Vol. 32, No. 4, (Autumn 1982), p. 164-178.

[40]For example, in the mid-1980s Ted Turner, who had been heavily mythologized in the press for his swashbuckling, entrepreneurial approach, sought to vertically integrate his operations by buying the MGM/United Artists library of films; in turn, the high cost of the purchase forced him to sell a large portion of his company's stock to a coalition of fourteen of the nation's largest cable operators, further integrating the industry as a whole while reducing his individual control. Al Delugach, "Turner to Keep Control of Firm with $550-Million Bailout Deal," Los Angeles Times, January 23, 1987, Business Section, Part 4, p. 1.

[41]Title VI of the Amended Communications Act of 1934, 47 U.S.C. SS601 (1984).

[42]The six largest MSOs (Tele-Communications Inc., Liberty Media, Time Warner, Viacom, Cablevision Systems, and Comcast) together serve almost half of all cable subscribers and are also heavily involved in programming. TCI, for example, has a stake in Turner and Discovery. Turner, in turn, controls Turner Network, CNN, Headline News, and Superstation TBS. Viacom has substantial interests in MTV, Nickelodeon, VH-1, Showtime, The Movie Channel, and Lifetime. Many of these relations are sealed with corporate interlocks: John D. Malone, for example, doubles as TCI president and Liberty Media chairman and six of the 15 directors of Turner Broadcasting System represent part-owners Time Warner and TCI. And

predictably, cable has become increasingly intertwined with media interests in general: Capital Cities/ABC Inc. has dominant interests in ESPN and shares Lifetime with Viacom and Hearst Corp. Kathryn Harris, "Reordering The Cable Universe," Los Angeles Times, Business; Part D; Page 1; Column 3, July 25, 1993.

[43]"What if they're right?" The Economist, February 12, 1994, p. 3.

[44]Committee on Applications and Technology of the Information Infrastructure Task Force, draft report: The Information Infrastructure: Reaching Society's Goals, NIST Special Publication 868, Sept. 7, 1994, p. 196.

[45]Mitchell Kapor, "Where is the Digital Highway Really Heading?: The Case for A Jeffersonian Information Policy," Wired, Vol 1., No. 3, July/August, 1993, pp. 53-59, p. 94.

[46]Kapor, 1993, p. 55.

[47]Kapor, 1993, pp. 53-54.