
Epilogue: Communications policy in crisis

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One effect of the explosive growth of new communications technologies over the past twenty years has been a rather dramatic disruption of established business practices in the industry. Technological change has also made obsolete the 1934 Communications Act which established the Federal Communications Commission (FCC) and the basic principles of telecommunications and spectrum regulation in the United States. Communications lawyers and lobbyists are delighted, and very busy. Scholars in the field of communications policy relish the opportunity to witness and analyze history in the making.

But others are not so pleased. The FCC and communications subcommittees in the Senate and House are frustrated by the hectic rush to put out regulatory fires without the time to put the technological, regulatory, and social needs in perspective and develop an integrated legislative response. Industry executives are nearly paralyzed because the regulatory uncertainty makes long-term planning very difficult. At the same time, both European and Asian nations are redoubling efforts and investment in communications technologies at home and, where it is not expressly forbidden, buying a controlling interest in strategic chunks of the American communications infrastructure.

To understand the crisis and the current needs for communications policy research, it may be helpful briefly to review a timeline of technological innovations in communications. The fundamental technology of high speed printing was perfected in the early 1830s and the corresponding business practices and economics of the newspaper, magazine, and book industries have been relatively stable for the last century and a half. After a wild period of competitive telephony, the basic technological and regulatory architecture of the American telephone system was crystalized by the Kingsbury Commitment of 1912 and the near-monopoly of AT&T. Radio broadcasting was initiated in

the early 1920s and television broadcasting in the late 1940s under a principle of minimal regulatory constraint and licensed access to the spectrum by a mixture of commercial and educational entities. Once established, each of these industries defined a unique and fundamentally non-competing marketplace for its services. The technology in each case was mature and stable. Because of limited entry of competitors due to a reinforcing mixture of regulatory, spectrum, and scale-economy factors, these industries grew to be quite profitable with returns on investment well above the overall industrial average.

THE INDUSTRIAL CRISIS

By the 1970s, the growth of cable TV, satellite communication, and high-speed computing began to disrupt the existing structure. The first effect of these new technologies was to begin to break down the long-standing barriers to competitive entry within industry sectors. New companies aggressively sought regulatory approval to connect with the existing telephone network and to compete with it first for specialized services and shortly thereafter for traditional long-distance carriage. Cable companies got their start by simply carrying over-the-air TV signals to neighboring communities unable to receive regular broadcasts because of distance or geography. But in the late 1970s they discovered that they could receive national programming by satellite and compete virtually head-to-head with over-the-air broadcasting. The second level effect was a gradual blurring of the boundaries between what were previously non-competitive industries. At the moment, for example, the telephone industry is aggressively pursuing regulatory approval to carry television programming and compete directly with cable and broadcast television.

Firms have adopted a variety of strategies for coping with the new competitive threats and opportunities. Some have turned to government and lobbied for protection from competition. Some have opted for the traditional strategy of buying out competitors and pursuing significant vertical and/or horizontal integration. Others have invested in developing a competitive advantage through proprietary technology. Still others have adopted a wait-and-see or mixed strategy. Each industrial sector – broadcasting, publishing, and telecommunications – is still thriving and quite profitable. But it is increasingly recognized that in ten to twenty years these industries will be transformed and integrated into a single all-electronic, all-digital broadband network, in effect, an ‘information fabric’ for the switched delivery of voice, text, high

resolution graphics, and high resolution video. These changes will also draw a significant portion of the computer industry into the fray.

INTERNATIONAL ISSUES

As part of the general trend toward an integrated global economy, advanced communications is a focal point of international economic competition and strategic trade disputes. For example, trade in services including telecommunications services were once the focus of the Uruguay Round of GATT multilateral trade liberalization negotiations. The foreign policy and social impact of global communication is also substantial. Given the fast-paced integration of Germany and the European Community and the fragmentation of the Soviet bloc, US participation and goals in international organizations must be reassessed. The roles in the global information economy of various international organizations as well as regional standards agencies (not to mention global/multinational/local corporations and private standards alliances) are all being questioned. Getting the international communications policymaking process right for the 1990s is a significant challenge and would certainly benefit from independent academic research on these critical issues.

THE KEY COMMUNICATIONS POLICY ISSUES FOR THE 1990s

The following are some of the key underlying communications policy issues that dominate the 1990s. This list, by its nature, can be neither exhaustive nor very well developed. My purpose is only to outline some of the most pressing problems with an eye to how research in these areas could enhance our ability to take advantage of what the new technologies might offer. The list is for the United States but, as we have seen in this volume, the issues have a way of quickly crossing national boundaries. In a real sense this is a world agenda, reflecting common problems.

Deregulation

The Kingsbury Commitment self-destructed on January 1, 1984. Legally, this was a modification of a 1950s antitrust judgment against AT&T. But in reality, it was the most dramatic of about a dozen changes in the technical and regulatory architecture of the American telephone

network made over the span of two decades. The parallel deregulation of broadcasting is more complex and less dramatic but equally important. The justification for regulation in both cases was the natural monopoly (and limited spectrum) character of the dominant technologies. New competing delivery systems and the need for interconnection, made 'free market competition' a newly viable alternative to constraints of traditional bureaucratic regulatory structures. The difficulty is that we now have a fast-evolving network architecture and no architect. Furthermore, many elements of the network, such as the local exchange carriers and cable providers, effectively are still local monopolies which will require some regulatory oversight. It is critically important that independent, carefully conducted academic research on the costs and benefits of alternative regulatory strategies be made available to industry and government.

Spectrum regulation

The more efficient use of the spectrum, the effective use of higher frequencies within the electromagnetic spectrum, and the refinement of electronic and optical cable technologies may mean that the era of spectrum scarcity has passed. But that does not translate into a complete free-for-all of unregulated spectrum use. The flexible and efficient allocation of spectrum at a time when many new services are being proposed and old ones being reorganized will require a major effort of technologically sophisticated policy research.

Rate regulation

Because monopoly provision of communications services will no doubt be with us for some time, advanced procedures such as 'price-cap' regulatory structures will need to be explored and researched, so that the monopoly components of the communications architecture can keep up with the fast pace of technological advance in the non-regulated sectors.

Content regulation

There was a time, some years ago, when several prominent scholars speculated that content regulation would no longer be necessary because enhanced technology and new competition would make the need for such delicate matters as the FCC's Fairness and Equal Time Doctrines a thing of the past. We have moved, however, in quite the opposite

direction. With enhanced information and entertainment services in telecommunications, state and federal regulators are forced to confront content limitations in telephony and other media. Because of continued problems of competition and monopoly control in the domain of broadcasting and electronic publishing, we find that content regulation is still a very active and important area. It is complicated further now by issues of intellectual property protection. In each case, policy research requires a thorough understanding of the changing character of the electronic storage, switching, and transmission technologies.

Equity issues

There is growing concern that if we are not careful, the fast pace of technological change in the information and communications industries may leave a large stratum of our society isolated from the electronic flow of information. The principles of universal service, information access, and an open marketplace of ideas may be lost in the complexities of inter-industry negotiations. It is an especially appropriate research focus for academic work.

Privacy and security issues

The pervasiveness of electronic communications and the interoperability of digital networks raise new questions about the balance of citizen privacy concerns and an efficient, convenient, and secure network for communications and economic transactions. The capacity of advanced systems to encrypt successfully electronic data transmissions will probably solve part of the problem. More difficult policy questions will concern rights of access to the accumulating economic databases, which are a by-product of electronic transactions, and protections against misuse.

Education and training

In an integrated global economy characterized by a continuous communications flow and capital mobility, the relative skill level (and motivation) of workers becomes a paramount determinant of economic performance. The quality of life and standard of living is also of course affected by education and job satisfaction. Communication and information technologies and services may enhance the quality and extend the availability of educational services. But numerous policy issues must be addressed to realize these possibilities.

Industrial rivalries

The pattern of recent years has been for interested corporations and industry associations to fund economic and policy research in an effort to win a favorable regulatory ruling or to win a debate in a technical standards forum. That will and should continue. But the need for independent, academically grounded research of significant scale and scope should provide additional and non-adversarial input into the technology policy and standards negotiations processes.

Free markets versus core infrastructure

One view, most often expressed by economists, is that the development of new communications technologies and services is best left to the private sector without any involvement of government agencies in an attempt to 'pick winners' or determine an 'industrial policy.' It is an important argument and has characterized the American policy in this area for many years.

The difficulty is that the free market ideology applies most appropriately to competitive commodity markets. The nature of the integrated network and the increasing importance of generic digital imaging and communications technologies requires a fundamental rethinking of these issues. The electronic network is the core infrastructure of the information economy. The natural concern of the government with the postal and transportation infrastructure as necessary to commerce becomes increasingly appropriately applied to communications. There were few objections when the 1934 Communications Act restricted the foreign ownership of the American broadcasting and telecommunications infrastructure. How these principles should be applied to the newly evolving technologies is a difficult question.

THE CHANGING FUNCTIONS OF COMMUNICATIONS MEDIA

The transition from separate industries of telecommunications, computing, broadcasting, and publishing into an integrated digital network will need to draw on more than the fields of policy, economics, and technologically focused research. This transition is not like the shift from black and white to color broadcasting in which the basic functions and social role of television remained unchanging while the technology advanced. In this case, how the media will be used for home shopping,

two-way and interactive video communications, computer intensive education, distance education, as well as the human complexities of networked MIS and CAD-CAM in the commercial world, present very difficult problems for human factors and psychologically grounded research. Videophone and videotex are examples of very promising technologies which ran into insurmountable human factors and marketing problems. What is needed is more than narrowly focused, proprietary, product testing. The industry could benefit greatly from a significant scale, academic, public research program on the human factors and human use issues of advanced imaging and communications systems.

INTERNATIONAL CONCERNS

Finally, I note that each of the above issues is intertwined with questions of national economic productivity, equitable trade relationships, and the global balance of power. If current trends continue, the United States and some other established industrial economies may well find themselves in the position of an underdeveloped colony, exporting raw materials and importing manufactured ones. Advanced electronics and communications clearly will affect economic competitiveness and international trade. The content of international communication including, for example, telephone conversations, Hollywood films, television news, and business and consumer information services, may also affect the emerging global networked society. Questions of international scope represent an important element of a coordinated research effort in advanced communications technology and policy.

This volume draws together the perspectives and experience of a mixture of academic researchers and industry experts. There is a shared sense of crisis and of opportunity. It is fitting, perhaps, that we conclude with an agenda for further research.