COMMUNICATIONS
FORUM

The Telecommunication Policy of the Bush Administration

May 3, 1990

Seminar Notes

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

COMMUNICATIONS FORUM

The Telecommunication Policy of the Bush Administration

May 3, 1990

Seminar Notes

David Wood, M.I.T., Organizer

Kenneth W. Bleakley, State Department

William F. Maher, NTIA

Lee McKnight, M.I.T.

Antonio J. J. Botelho, Rapporteur

This session of the MIT Communications Forum explores the elements which constitute the telecommunications policy of the Bush administration. Enough time has passed to consider that a policy has emerged and enough time to make corrections in its course.

The first speaker is Kenneth **Bleakley**, Senior Foreign Service Officer, currently Senior Deputy Coordinator and Director for International Communications and Information Policy. **Bleakley** states that communications is a prime policy area of the 1990s. He says that the administration has a major policy of support for the U.S. communications industry in its broadest sense as well as its applications. But there is also a foreign policy interest in communications. Communications policy for the State Department has four goals: 1-advance U.S. foreign policy goals; 2-advance U.S. agenda on trade; 3-enhance effectiveness of international organization activities; and 4-expand private sector participation in the previous goals.

There are several objectives to each of these goals. To advance U.S. foreign policy goals a first objective is to support the spread of democracy and private enterprise in Eastern Europe. A broad program of action in this direction seeks to promote the development in Easter Europe of basic management techniques and an appreciation of how markets work, as a well as an emphasis on the technical side of building a communications infrastructure, which is incredibly out of date. The main switching system for Budapest dates back to the 1920s! The next objective is to engage in bilateral and multilateral talks to promote the free flow of information. This revolves mainly around spectrum management, with talks underway with Canada and Mexico. There are also development strategy for talks with Eastern Europe in close cooperation with NTIA and the FCC to be able to provide assistance to developing nations in spectrum management. The next is to manage TV and cable issues with respect to Cuba and Vietnam, specifically TV Martí and related issues of interference and the embargo impact on Cuba and Vietnam. A final objective is to support developing countries efforts to enhance their economic growth through the development of national communications infrastructure. Access to communications is a fundamental human right. This area will require a tremendous amount of effort and the development of complex financial strategies involving the World Bank and the private sector. The figures are astounding: the global communications industry represents $ 500 billion a year and estimates put the market at close to a trillion by the end of the century. The optimistic projections about what the developing world might hope to receive in order to maintain its present service is on the order of $ 20 billion, while the other half of the wolrd's population in the developed world will spend the remaining $ 480 billion per year. Projecting that over the decade it is easy to see the schism and its implication for human values, humanitarian concerns, and national interest. A specific goal is support for the U.S. Telecom Training Institute (USTTI), which

brings to the U. S. people from around the world to be trained in telecommunications. An innovative part has been the use of Worldnet in cooperation with private sector for interactive training seminars.

Today the agenda for advancing economic and trade goals is large. Europe 1992 is just upon us and will create a new market with unexpected characteristics, further more complicated by the unification of both Germanies. At the other side of the world the Asia-Pacific Economic Coordination Group will have a major impact in vast markets and activities, headed of course by Japan. Finally, the North American market, in a loose sense, will have a great impact on future developments. The US-Canada trade pact is beginning to show its first fruits and much remains to be done with Mexico. So there will be roughly three equal powers in the world: Europe, North America and Asia. We are leaving out the Soviet Union, which in the economic sense will not be as much of a factor in the next 15-20 years, though it will still be politically important.

As for the goal of enhancing the effectiveness of international telecommunications organizations a major objective is the support of international standard setting. Recently T1, the US standard setting group, gathered the world's standard setting groups (ETSI from Europe, TTC from Japan, and the ITU at the international level) to discuss how they might support ITU in the pursuit of global standards. The system could in fact make use of modern telecommunication technology to streamline its mountains of paper. The ITU is taking a bold step coming out the plenipotentiary conference in Nice last year; they have organized a high level committee, some 21 nations selected from the members of the ITU to engage in a precedent setting review of how the ITU, the oldest of the international bodies, does business. This might lead to innovative ways at approaching other technical bodies of the UN family. The importance assigned by the US to such action is expressed in the assigning of U.S. leadership to a seasoned ambassador with great experience in international organizations. The next goal is to seek an appropriately balanced role for the ITU in telecommunications development activities, walking a very narrow path. Developing nations are making great demands on ITU for technical assistance. While the US applauds ITU's efforts to become more deeply involved in telecommunications development, at the same time it should first do the job for which it was created, namely to be the world's leader for technical standard setting. What the ITU cannot become is another aid agency, it must rather play a proper role by serving as catalyst for development on the one hand but at the same time not losing sight of its primary function of global standards setting.

Another objective here is a continuing role for the private sector through the ITU. The Center for Telecommunications Development has over the past years attempted with increasing

success to develop specific assistance projects for the developing world in collaboration with the private sector, both financial and technical. The private sector will have to have a dominant role in the telecommunications development of the third world. Finally, preparations are under way for the World Administrative Radio Conferences (WARC) in 1992 and 1993, mainly in relation to Mobile WARC in 1992. A final objective in this category is to ensure the vitality of INTELSAT and IMMARSAT while promoting competition. The policy is to support separate satellite systems. Intelsat is already taking a more aggressive competitive attitude, although there remain unresolved issues.

Under the final goal of expanding private sector activities in all of the above categories, a major objective is to continue support to privatization and the support for an appropriate role for the regulatory authorities. The policy is to support the provision of communication services via the private sector under proper regulatory supervision.

The next speaker is William **Maher**, Associate Administrator for Program Development, National Telecommunications and Information Administration (NTIA). Maher previously worked for the FCC and at Bell Labs.

Maher first acknowledges that the development of telecommunication policy in the Federal government is a very complex process, "sprawling" is probably the best word for it. The policy process is made in a number of institutions. For example, although President Bush appointed 4 of the 5 FCC commissioners, the FCC, with primary rule making and authority over telecommunications, is an independent agency which directly reports to Congress. Congress is today very interested in the area because of its international competitiveness aspects and also because of a great deal of "grass roots" interest in telecommunications, primarily in the cable TV area (rates for cable, etc.). The judiciary also has a major role, Judge Greene as well as Circuit Courts of Appeals which reviews the decisions of both the FCC and Judge Greene.

Within the executive branch, there is coordination between the State Department, Commerce Department and FCC. And yet, even in this branch there is more input from: NTIA (headed by an Assistant Secretary of Commerce and charged with the design of policy recommendations for the Secretary of Commerce and management of federal uses of electromagnetic spectrum), Department of Defense and Transportation department which are large users. Moreover the Executive Office of the President, the Office of Management and Budget, and the United States Trade Representative have interest in telecommunications policy. This reveals the complexity in making policy. The main agencies are FCC, NTIA and Department of Commerce. NTIA also files for the Administration in FCC proceedings and does background studies (Telecom 2000).

Maher next gives a sketch of the Administration's general economic policy related to the specific area of telecommunications. The Administration's general economic policy goals are basically: 1- determining what are the proper governmental actions to support competition; 2- opening markets overseas and at home; 3- economic growth; and 4-the global competitiveness of the United States. The real issue in policy terms is what governmental actions are necessary to implement these goals. For example, the loosening of export controls to the Eastern bloc will favorably impact some telecommunications equipment manufacturers. A major philosophical controversy in this policy area is between the concept of "free markets" versus "industrial policy."

Maher goes onto focus on the role of markets and industrial policy in the broad area of telecommunications. The historical paradigm in the area has been a dichotomy between promoting competition and promoting centralized planning. Telecom policy over the last 25 years has centered on a reliance on competition, also characterized by an intense questioning of the role of central monopoly planning by the government, telephone companies, or other media with market power (e.g. TV networks in early seventies). US telecommunications traditionally had been the archetypical example of centralized planing, in the guise of the Bell system and government oversight. The problem has been what the relative levels of rate and quality really were: what standards? At what cost? But the benefits of competition are quite well documented, particularly in the equipment and information services markets. The fruits of competition are: lower prices, more rapid innovation and diversity of choice.

It is fair to say that centralized management either by regulatory directive or through exercise of market power by a large company is not necessarily inducive to rapid innovation or other benefits. The Bell system experience in the switching field illustrates this point: the Bell decision in the early 1970s to leapfrog technology with the introduction of its ESS switch ran into difficulties when customers, particularly in the PBX market, turned to Japanese companies that produced almost as reliable but significantly cheaper switching systems. In the late seventies, the Bell system run into a similar problem when Northern Telecom judged the market better than ATT, by introducing the digital DMS digital switch. One of the reasons commonly cited for these competitive misses is that the large centralized somnolent Bell system marketing people did not anticipate the kinds of market demand out there. There are situations when centralized planning is advantageous. For example, substantial economies of scale and economies of scope should encourage the growth of large providers. Contrast with the computer industry, subjected to competitive market forces: unfettered entry, no rate regulation. Although IBM is a major force, the industry offers a wide variety of products and services. Yet innovation and product development here is not

the kind of centralized large private sector kind of Bell Labs. The rigors of competition in the computer industry have served its customers well.

All this is important because the central policy choice in telecommunications is a choice that remains throughout the Bush administration, both domestically and internationally. This is particularly interesting in relation to the discussion of telecommunications as a piece of the nation's infrastructure. NTIA has more than a passing interest in this vision. NTIA's Notice of Inquiry, released in January, resulted in 126 comments totalling almost 8,000 pages. Several comments have warned against too much government involvement. On the other hand MIT exhorts the Administration to develop a specific infrastructure in telecommunications, through cooperation between government and private sector. The pleading correctly asks that the real question is: what form should this cooperation take? Interestingly though, in several respects the Administration is already following MIT's advice. The administration has backed measures to provide incentives for more R&D spending through R&D tax credits, has supported a cut in the effective capital gain tax rate, has worked with Commerce on relaxing anti-trust legislation on cooperative R&D, and is easing export restrictions on high-tech items. Other long term key initiatives supported by the Administration are: educational incentives to encourage seniors to pursue careers in math and science, alternative certification for math and science teachers; quality and efficiency have been given high priority in the work place and in the manufacturing process (streamlining OSHA procedures for example).

Maher concluded that in some areas there will still be outstanding policy debates revolving around the problem of when should government insert itself in product development and when should it get out of the way? The major government initiative should be to provide incentives for private sector development and reduce government involvement where necessary, and when in doubt to err on the side of competition. NTIA will, among other things, continue to explore the proper role of the government and how government involvement should occur in this field.

The next speaker is Lee **McKnight**, project coordinator, M.I.T Broadband Policy Project, Center for Technology Policy and Industrial Development, M.I.T. The objective is to stir up the debate by focusing on the progress and problems of telecommunications policy in the Bush administration.

McKnight begins with an enumeration of the elements of progress. There has been more cooperative and better coordinated policy development among the principle agencies (NTIA, State Department, and FCC; also Department of Justice, NIST, NSF, and DARPA) which are staffed by competent individuals and seek a broader dialogue with private sector. NTIA's recent filing on

infrastructure development is parallelled by FCC proceedings and State Department work at international level, showing that the social and educational benefits of infrastructure development are recognized. Furthermore, reform of national and international standard-setting is being studied; the need for reform is already well-recognized by State, NTIA, and NIST, as well as by the private sector.

As for the problems, **McKnight** cites the continuing decline of competitiveness of U.S. telecommunications industry, as reflected in the growing trade deficit. Fragmentation of industry (and policy) makes coordination of infrastructure development exceedingly difficult. A case in point is HDTV, where it would have been very helpful had greater coordination existed in the mid 1980s. A final problem is that open standards processes may permit capture by well-funded and strategically adept firms, breaking down possibilities for industry cooperation in support of national interest.

A resulting development is the Bush administration confusion on the federal role in facilitating cooperation and competition to enhance economic growth which: 1-handicaps U.S. industry; 2- limits the availability of services; and 3-permits foreign governments, de facto, to control U.S. markets. It is easy for cooperation to be labeled as central planning, a perverse situation, and bad for the future of the U.S. telecommunications industry.

What are the solutions? First, the Bush administration must recognize the need for a federal role in infrastructure development. An example is the DRAM case. As the price of DRAMS fell by 50% supporters of free market cherished this proof that it really works. However, within a week of U.S. Memories going under, and "coincidentally," MITI and Japanese firms announced that they were cutting production by 30%, and again "coincidentally," prices have risen. **McKnight** argues that the federal government does have a role to play, not in centralized planning, but more of a "cheerleading" role encouraging cooperation and development of the national telecommunications infrastructure, a facilitating role. In a wide range of sectors, from machine tools to microelectronics to scientific instruments the share of the United States in global exports has declined roughly by 25% over the last decade or so. The interrelationship between U.S. telecommunications, computer, consumer electronics, semiconductor, and other electronic industries must be recognized as well as their competitiveness problems.

What is to be done? According to **McKnight** a first measure is to encourage industry to launch broadband pilot projects. This is partially based on the observation of how the Federal Republic of Germany developed the cable network. Today, cable penetration is over 30% whereas 8 years ago it was non-existent. He supports government partial support of some of the related R&D. Japan has

a plan for Hi-Vision cities and Hi-Vision communities which encompass direct broadcast satellite HDTV services. It is sure that the range of broadband services will be vast, but to determine what these services will be is hard before anybody makes the investment. The Europeans have project RACE and the Japanese have another project called Teletopia, to wire eight or more cities with optical fibers to deliver a great many services. This is be followed by an increase in federal support for education and pre-competitive research and development of generic telecommunications technologies (e.g. digital switching, optoelectronics, displays, signal processing, etc.). If we think that we have investment problems now, we have to look at the fact that Japanese per capita investment is twice that of the U.S. Finally, the administration should increase monitoring and awareness of telecommunications and technology policy programs of other nations.

McKnight notes that since the HDTV debate was launched, a promising start has been made to form a Committee for Open High Resolution Systems (COHRS) on the basis of cross-industry consensus, with its members coming from a broad array of industrial and service sectors with an interest in HDTV. The role of the group is to develop cross-industry consensus standards. Another idea that McKnight suggests could be developed is based on the realization of the growing gap in telecommunications investment between the third world and the developed nations. Amongst the mechanisms proposed, one favored by developing nations, is shifting separation fees in international calls in favor of developing nations telecommunications, from 50/50 to 51/49 with the extra 1% being used to increase telecommunications efficiency in developing nations. Of course AT&T and MCI do not think that is a good idea, and U.S. government fears the diversion of the money to other general uses than telecommunications. Thus a tax on international telephone traffic could be channeled to an institution such as the World Bank, in consultation with the ITU's Center for Telecommunications Development, as a pool for investment in telecommunications development in developing nations. Rough calculations are that such a fund, at wholesale prices, could generate up to $ 500 million a year.

Question & Answer

Bleakley absolutely agrees with **McKnight** in respect to international monitoring, given that the amount of activities at the international level is staggering and thus hard to monitor. Government should increase funding for these activities abroad. As for shifting revenues, there are funds that are not currently tapped, but there is a need to find further revenues to finance telecommunications development in third world. **Maher** adds that the problem of the lack of resources is complicated by the lack of experts abroad who correctly understand and capable of explaining in international negotiations the way the U.S. domestic market was

opened. In relation to **McKnight**'s argument about per capita investment in telecommunications in Japan, there are problems with the data because it is not clear whether all the private investment for intracorporate networks is counted. NTIA's infrastructure study will further explore some of these figures. In relation to the telecommunications trade deficit, Commerce figures indicate a decline, albeit the deficit is still high, at about $ 2 billion. AT&T points out that much of the trade deficit is in the lowest end of equipment, customer premise equipment, and that the U.S. is running a significant trade surplus in the most sophisticated telecommunications switching equipment. There is a lot of work within telecommunication to get government just out of the industry. The "cheerleading" function referred to by Dr. McKnight is not congenial to the Bush administration, because there are real world problems to be dealt with: the FCC is working on price caps regulation, and together with NTIA is wrestling with cable regulation. "Cheerleading" is fine, but the most important thing is to fix the system. In contrast with the German cable experience cited by Dr. McKnight, in the U.S. cable penetration increased by 35% simply through deregulation by the 1984 Cable Act.

The first question asks where will be the cable and telecommunications industry 5-10 years from now after ISDN is out and running. **Maher** suggests that it will be a real mix as it is now. Cable will not go away because of its sunken investment, although NTIA through its filings has supported entry by other competitive facilities providers. He expects that broadband ISDN should be deployed rapidly. **Bleakley** adds that Japanese without having yet resolved the economic feasibility of broadband ISDN, they are moving in and the European sentiment seems to be moving much in the same direction.

The following question deals with the area of intellectual property as the frontiers between computers and telecommunications come down: 1- EC evolving directive on ownership of software and copyright seems to involve a bias in the direction of large companies; 2- does the administration have a position about patenting software? **Bleakley** answers that the Economic Business Bureau at State has prime responsibility on intellectual property matters, but in general State has been pushing for both OECD and EEC to become much more active in the field of protection, as a backlash from developing nations begin to emerge since they feel that software protection will work to their disadvantage, which is not the case. With respect to the EC directive, State is currently studying it intensively. **Maher** adds that there is not a specific administration position on software protection. **McKnight** mentions that there is some grass roots opposition to overprotection. **Bleakley** reminds that a tremendous problem will emerge in Eastern Europe which has survived largely copying western technology. **Maher** adds that a bright spot in trade picture is that the U.S. does well in exporting TV programs and movies. For movie providers the main issue in telecommunication is piracy of programming.

The next question asks what is the role of the common citizen in the formulation of the telecommunications policy in the nineties, especially in cable? **Maher** responds that there are many concerns on the part of the Administration and Congress with cable. The question is what is the proper balance of government intervention in the industry. Related questions are: what are reasonable rates? should competition be the way to control price increases? should some form of limited regulation be employed? The question is rephrased to ask whether in the US the public rights of access to media. **Maher** says that the Cable act has clear provisions for that and there is no interest in changing it. The Administration is also looking into what universal telephone service should be like for the average consumer.

The next comments refers to a puzzle that **McKnight** seems to imply -- that the problem is not to get technology but to get it out to people. There are two issues: 1- problem with regulatory logjam there is a lot of conflicting regulation, but the real problem is at the state level where state regulators main interest is to keep costs down to protect the taxpayer, which is in opposition to the idea of investing in the network; 2- the real problem is to get the RBOCs, which have the money, to invest in infrastructure. **McKnight** says that the U.S still has a very strong R&D capability in switching. The real agenda for broadband pilot projects is not just to test a new technology but to coordinate that technology with product development and development of services, as well as getting around the legal and regulatory roadblocks which now prevent debate beyond the cable/telecom lines. Cabling a whole city nowadays for broadband ISDN is impossible given the regulatory constraints involved. **Maher** adds that the Cable act prohibits, in most cases, cable/telephone company cross ownership. In relation to state/federal regulation, the federal role was growing until 1986 when the Supreme Court interpreted the 1932 Communications Act and cut back the growth of Federal role in federal-state regulation. The key here is cooperation. At the state level one question is what special groups should be subsidized. States have also become very innovative in different types of regulatory structures, having moved quicker than the federal government into incentive regulation, which rewards telephone companies for being more efficient.

The final question is about the dichotomy competition/central planning. Given that RBOCs are persistent in gaining access to markets in which they control bottleneck facilities, there is a hobsian choice: 1- there is continued restriction for competing in those markets; 2- their operations in these markets are micro-managed to prevent anti-competitive abuses. **Maher**'s reply is that the point on the bottleneck is very good. In fact, the response of federal and state regulators has been to avoid micro-management through so-called "border patrol" regulation. The challenge there is to devise regulation that will not be anti-competitive

activities stemming from the bottleneck (e.g. registration).