ECONOMISTS INCORPORATED

A brief analysis of policy and litigation

ECONOMISTS INK

Spring/Summer 1997

THE FUTURE OF TELEVISION

The emergence of digital technologies raises the question of whether television broadcasting, obviously a successful medium in the analog world, can continue to succeed in the digital world, and if so in what form. There are many candidate media that might become the dominant means of distributing video entertainment after current analog stations leave the air. These include DTV, MMDS, LMDS, 38-Ghz services, DVD, GEO Ku-band or Ka-band satellites, and perhaps LEOs such as Iridium or Teledesic. An understanding of successful media must encompass supply and demand factors. Technology provides us with a set of feasible media forms, and economic analysis can assess their costs. Further, economic outcomes feed back on R&D incentives. That is the supply side. On the demand side there are three forces. First, in the television industry, government is paramount. Through regulation and legislation, the government defines and constrains what the television market is permitted to provide. Second, advertisers and merchandisers have well-understood demands for audiences of various types and sizes. Finally, there is consumer demand itself—the willingness of consumers to pay for new media services and forms.

Broadcast communications can take various forms, each dictated by the technology of the medium and each influencing the content of the message. In order to be successful, a transmission medium must perform a given function more cheaply or with higher quality than alternative media or (because of its form) offer an opportunity for the transmission of more valuable content. This distinction is illustrated by the success of television in the radio age. Television, on one level, is nothing but radio with (costly) pictures. Television succeeded only by adding new features that increased its value to consumers (or, in principle, to advertisers) in line with its added cost.

The costs of television, radio and other media are significantly affected by certain economic features. Television and radio are both public goods in their transmission as well as in their content. This gives them tremendous economic advantage over print media and networks like the Internet in reaching large audiences for the sale of advertising. In print media the public good (the message) is conveyed by means of a private good (the book, magazine, or newspaper).

A number of key economic forces affect the success of new media. As a result of economies of scale as well as other factors such as network effects, path dependency and first mover advantages, it is likely that the very best ideas do not get implemented all the time, or even most of the time, or as soon as they could be. This notion is very worrisome to new media entrepreneurs. But there is almost nothing that can be done about it. Government interventions in such matters as standard-setting tend to make matters worse, not better, because the government has no better clue to the right outcome than the market, and because government "solutions" are much harder to change than market outcomes.

Uncertainty over the development of new digital media (and their impact on television) cannot be resolved until the creative community discovers the

ALSO IN THIS ISSUE

form(s) that make(s) sense of that media; yet the new medium itself continues to evolve so rapidly that there is little time to explore its potential. A key perspective on form and content is interface design. To take an analogy, the World Wide Web and the modern browser are chiefly responsible for the growth in demand for Internet services. Yet these revolutionary inventions added nothing whatever to the functions performed by the Internet; they merely made it sufficiently easier to use that within a few years tens of millions began to use it.

The future is not just a question of technology and economics; there are other factors. The most important is government regulation, which despite recent reforms continues to pick commercial winners and losers, and to tax winners. Government has the potential to derail the evolutionary process, but also to stimulate ground-breaking new technologies. In recent years the FCC has made much more bandwidth available for use by broadcast media, mostly through auctions. The auctioned spectrum, however, generally is restricted in its uses.

There are many futures for broadcast television. A marketplace determination of the best digital medium to transmit video entertainment to the home is not guaranteed to produce an optimal choice. But government intervention through the establishment of compulsory standards and limitations on the uses to which spectrum rights can be put probably guarantee that the optimal result will not be achieved.

EI President Bruce M. Owen has written books and articles on media economics. This article is based on research for a book on media convergence, to be published by Harvard University Press in 1998.

FERC'S REJECTION OF THE PRIMERGY MERGER

In May 1997 the Federal Energy Regulatory Commission (FERC) concluded for the first time that a proposed merger between two electric utilities would be anticompetitive even though the merged company was required to supply open access transmission service to wholesale competitors. The merger of Northern States Power (NSP) and Wisconsin Electric Power (WEPCO), the largest utilities in Minnesota and Wisconsin, to form Primergy Corporation was abandoned two days after FERC's decision.

In addition to being subject to review by the federal antitrust agencies, electric utility mergers require approval by FERC. FERC took over two years evaluating each of three large mergers proposed in the late 1980s, but approved several mergers in 1993-1995 without careful investigation of competitive effects. A majority at FERC apparently believed that a utility merger would not reduce competition in wholesale electric power as long as the merged firm agreed to provide open access service over its combined transmission system for a single cost-based price.

In 1995, however, Commissioners Hoecker and Massey began calling for a review of FERC's merger policy, and in December 1996 FERC issued a policy statement adopting the federal antitrust agencies' *Merger Guidelines* as the framework for evaluating competitive effects. After intervenors and FERC trial staff identified adverse effects the Primergy merger would have on competition, followed by an administrative law judge's decision giving the merger a clean bill of health, the Commission's decision was anticipated as an important policy test.

The FERC proceeding on Primergy focused on market power over wholesale electric power delivered to buyers in eastern Wisconsin and the Michigan Upper Peninsula, an area known as WUMS. WUMS is bordered on the north and east by the Great Lakes and electric power imports from the west and south are subject to transmission constraints. WEPCO owns half the generating capacity in WUMS and a majority of the transmission facilities within WUMS that are used to import power. NSP is the largest generator in Minnesota and western Wisconsin and also owns the facilities that must be used to transmit low-cost power from Minnesota, the Dakotas and Canada to WUMS. The central competitive concern was that Primergy

would have the ability and incentive to use its control over generation and transmission to raise the prices of electric power delivered to buyers in WUMS.

FERC's decision relies on a comparison of market shares and Herfindahl-Hirschman concentration indexes (HHIs) to the thresholds in the *Merger Guidelines* as well as an evaluation of entry conditions. The merger would have resulted in market shares of 42 to 47 percent for Primergy and increased the HHIs by 312 to 832 to levels between 1,917 and 2,684. Though FERC relied on HHIs, it rejected concerns about collusion or other parallel behavior involving Primergy and Commonwealth Edison, the largest generator in the upper midwest and the owner of all transmission facilities leading to WUMS from the south.

In FERC's analysis, the Primergy merger would have increased concentration for electric power delivered to buyers in WUMS because of the way in which access to scarce transmission capacity is rationed under FERC regulation. The merger would have given Primergy priority to use a portion of the WUMS import capability that neither NSP nor WEPCO would have had absent the merger, resulting in a larger market share for Primergy than the combined shares of the merging parties.

FERC's analysis of market shares and HHIs does not consider the competitive role of NSP's generating capacity in supplying the WUMS market. Furthermore, one of the intervenors' major concerns was that, by virtue of the complex properties of electric transmission systems and Primergy's substantial ownership of both generation and transmission, Primergy would have been able to reduce total WUMS import capability and adversely affect the amount and terms of transmission service available to competing suppliers trying to reach the WUMS market from the west. FERC rejected these arguments, which challenged its assumption that regulations imposed on transmission in 1996 eliminate such "vertical" market power.

In contrast to FERC's analysis, the Primergy applicants used a computer simulation model to predict the effect of the merger on energy prices. FERC rejected the applicant's claims that the model was superior to a traditional structural analysis, made a structural analysis unnecessary, and demonstrated that the merger would not significantly raise prices. Instead, FERC accepted testimony that the model was flawed and did not provide reliable evidence. At the same time, FERC emphasized that properly structured and tested computer simulation models could be useful in future analyses of market power. Because data on supply and demand conditions in the electric power industry are unusually abundant, traditional structural analyses of market power are likely to be supplemented increasingly with computer simulation analyses.

Testimony on the anticompetitive effects of the Primergy merger by Senior Vice President Mark W. Frankena and Vice President John R. Morris is extensively cited in FERC's decision (79 FERC ¶61,158 (1997)). EI analyzed the merger on behalf of investor-owned, municipal, and cooperative utilities, industrial users, and ratepayers.

EPA'S PROPOSED AIR STANDARD WOULD DO MORE HARM THAN GOOD

The U.S. Environmental Protection Agency's (EPA) proposed revision to its National Ambient Air Quality Standard (NAAQS) for ozone has sparked heated debate. By EPA's own estimates, the costs of *partially* attaining the standard (between $600 million and $6.3 billion per year) exceed the health and welfare benefits (between $0.0 and $2.1 billion per year). Both literally and figuratively, however, EPA's estimates are only part of the story. The *full* costs of implementation could exceed $80 billion per year, and the rule would actually have a negative impact on public health.

Ozone is a gas that occurs naturally in the earth's atmosphere. It is also created when sunlight reacts with nitrogen oxides and volatile organic compounds. Tropospheric (ground-level) ozone is the primary constituent of urban smog and is associated with respiratory problems, particularly in sensitive indi-

viduals. Ozone (in the troposphere as well as the stratosphere) is also credited with reducing the harmful effects of ultraviolet rays.

EPA believes its responsibility for setting standards that protect public health and welfare preclude it from considering the costs of implementing those standards. Yet, the agency recognizes that its mandate requires it to make a policy judgment, not to eliminate all health risks. Analysis of a prospective regulation's benefits and costs simply asks the logical question of whether the action will do more good than harm, and is essential for making a sound policy judgment.

Even if one were to accept EPA's interpretation of the Clean Air Act, EPA appears to have ignored significant public health and welfare considerations. For example, EPA's own analysis (not considered in developing its revisions to the NAAQS) suggests that the harmful effects of increased exposure to ultraviolet radiation could dwarf the benefits EPA attributes to the proposed standard. The proposed change in the ozone standard could result in hundreds of new cases of fatal skin cancers, and thousands of new cases of non-melanoma skin cancers and cataracts, each year. The net effect of the proposal would be to induce 25 to 50 more fatalities (associated with melanoma skin cancers) each year. Using EPA approaches to value these deaths and the non-fatal health effects, the negative health impacts from this proposal would exceed EPA's best estimate of the positive health effects by over $300 million per year.

EPA has a responsibility under the Clean Air Act to protect public health and welfare, but this ill-advised rule will do neither.

When the costs of EPA's proposal are considered, the negative impact on public health is even more dramatic. Implementation of the far-reaching ozone rule would impose significant costs, causing goods and services to be more expensive and disposable family income to decline. If, as recent studies suggest, poverty is more important than air quality as a risk factor for asthma, the rule, which is intended to decrease respiratory symptoms associated with asthma and other diseases, may increase the very disease it is purportedly targeted at improving. Even without this direct link between poor living conditions and asthma, it is widely recognized that, as family incomes rise, health improves. Studies linking income and mortality find that every $9-12 million decline in income induces one statistical death. Thus the partial compliance costs EPA estimates would, by reducing discretionary income, imply an increase in mortality of 50 to 700 deaths each year. If the estimate of the full costs is accurate, the rule could result in an increase of more than 7,000 deaths per year.

EPA has a responsibility under the Clean Air Act to protect public health and welfare. Even EPA's optimistic estimates suggest that the proposal will result in small changes in health for a small population of sensitive individuals. The vast majority of the population will experience no change in health. It is more likely that the proposal will actually harm public health by increasing risks associated with ultraviolet radiation. When the costs of the proposal are considered, the likely harm to public health is even more evident.

EPA is pushing ahead with the ozone standards without support from its scientific advisors and without an adequate analysis of its benefits or costs. Moreover, it has ignored alternative approaches, such as issuing public health advisories, as recommended by its scientific advisory committee, that could achieve the same public health benefits. EPA should not proceed with this rule unless it can provide better justification that further restricting ground-level ozone will do more good than harm.

Vice President and Director of Environmental Analysis Susan E. Dudley prepared comments on EPA's ozone NAAQS for the Regulatory Analysis Program at the Center for Study of Public Choice at George Mason University. She has recently testified before the U.S. Senate and published articles in the WALL STREET JOURNAL *and* RISK ANALYSIS *on these proposed standards.*