

**COMMISSION AUTHORIZED**

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, DC 20554**

In the Matter of )  
 )  
Advanced Television Systems ) MM Docket No. 87-268  
and Their Impact upon the ) FCC 92-438  
Existing Television Broadcast )  
Service )

Comment of the Staff of  
The Bureau of Economics of  
the Federal Trade Commission\*

February 8, 1993

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\* This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Commission or those of any individual Commissioner. Inquiries regarding this comment should be directed to Laurence Schumann (202-326-3359) of the FTC's Bureau of Economics.

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I. Introduction

The staff of the Bureau of Economics of the Federal Trade Commission (FTC) appreciates this opportunity to submit a comment in response to the Federal Communications Commission's (FCC's) Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rule Making (Memorandum).<sup>1</sup> The Memorandum contains certain final rules and decisions concerning the

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<sup>1</sup> Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rule Making, FCC 92-438, MM Docket No. 87-268, October 16, 1992.

implementation of advanced television (ATV) in this country.<sup>2</sup> In addition, the Memorandum solicits comment on certain proposed rules and other aspects relating to the implementation of ATV. Among these other aspects of ATV implementation is a request for comment on whether there is any need to require that television manufacturers produce receivers capable of receiving television signals transmitted under both the current NTSC standard<sup>3</sup> and the soon-to-be-adopted ATV standard during the transition period prior to full conversion to ATV.

Our analysis, which is based on economic efficiency considerations, suggests that requiring television manufacturers to produce "dual-mode" television receivers capable of both NTSC and ATV reception during the period prior to full conversion to ATV is most likely undesirable.<sup>4</sup> Such a requirement may harm consumers by limiting their choices and forcing them to purchase equipment that they would not otherwise choose to purchase.

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<sup>2</sup> These rules were issued after consideration of certain petitions for reconsideration and/or clarification, as well as comments and reply comments submitted in response to the Second Report and Order/Further Notice of Proposed Rule Making, 7 FCC Rcd. 3340 (1992).

<sup>3</sup> NTSC refers to the National Television Systems Committee, which was established in 1940 to develop technical standards for television broadcasts.

<sup>4</sup> This comment is based on positive economic analysis and therefore does not explicitly address normative concerns falling outside the scope of such an analysis. These and other concerns not explicitly addressed in this comment should be considered separately.

In the Memorandum, the FCC expresses concern that the dual-mode requirement not "overly or prematurely burden consumers."<sup>5</sup> This concern for consumer welfare is consistent with views previously expressed by the FCC supporting a market-oriented, consumer-welfare approach to certain regulatory issues.<sup>6</sup> If such an approach is to be taken with this issue, then, before adopting a dual-mode requirement, it would be necessary to identify some source of market failure that would prevent television manufacturers from producing the types of television sets demanded by consumers. Our analysis suggests that the existence of such a market failure appears unlikely.

## II. Expertise of the Staff of the Federal Trade Commission

The FTC is an independent regulatory agency responsible for maintaining competition and safeguarding the interests of consumers.<sup>7</sup> In response to requests by federal, state, and local

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<sup>5</sup> Memorandum, supra note 1, p. 61.

<sup>6</sup> For example, in Policies Regarding Detrimental Effects of Proposed New Broadcast Stations on Existing Stations (3 FCC Rec. 638 (1988)), the FCC announced that economic harm to existing stations would no longer be considered relevant to the decision to grant a license to a new station. In National Association of Broadcasters v. FCC, 740 F.2d 1190 (D.C. Cir. 1984), this consumer-welfare principle was applied to issues involving competition among different methods of signal transmission. The decision, supporting the FCC position, declared, "... existing systems [of broadcasting] ... have no entitlement that permits them to deflect competitive pressure from innovative and effective technology." Id., at 1198.

<sup>7</sup> 15 U.S.C. sections 41-59.

government bodies, the staff of the FTC often analyzes regulatory or legislative proposals that may affect competition or the efficiency of the economy. In the course of this work, as well as in antitrust and consumer protection research, nonpublic investigations, and litigation, the staff applies established principles and recent developments in economic theory to competition and consumer protection issues. The FTC staff has previously submitted comments to the FCC on matters concerning the allocation of spectrum in general, and on ATV in particular.<sup>8</sup>

### III. The Effects of Requiring Dual-Mode Reception

#### A. Introduction

The FCC asks for comment on "whether there is any necessity to exercise [the FCC's] authority under the All Channel Receiver Act to require manufacturers to produce receivers capable of both NTSC

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<sup>8</sup> See the Comment of the Staff of the Bureau of Economics of the Federal Trade Commission, Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, Docket No. 87-268 (January 31, 1992). Also see Comments of the Staff of the Bureau of Economics of the Federal Trade Commission, Advanced Television Systems and Their Impact on the Existing Television Broadcast Service, Review of Technical and Operational Requirements: Part 73-E, Television Broadcast Stations, Reevaluation of the UHF Television Channel and Distance Separation Requirements of Part 73 of the Commission's Rules, MM Docket No. 87-268 (September 1, 1988); Comments of the Staff of the Bureau of Economics and San Francisco Regional Office of the Federal Trade Commission, Amendment of the Commission's Rules With Regard to the Establishment and Regulation of New Digital Audio Radio Service, GEN Docket No. 90-357 (January 25, 1991); Comments of the Staff of the Bureau of Economics of the Federal Trade Commission, Amendment of Part 74 of the Commission's Rules Concerning FM Translator Stations, Docket No. 88-140 (August 15, 1988); Reply Comments of the Staff of the Bureau of Economics of the Federal Trade Commission, Revision of Radio Rules and Policies, MM Docket No. 91-140 (September 5, 1991).

and ATV reception and on what the cost to consumers of such a requirement would be."<sup>9</sup> The issue was raised in this proceeding by Future Images Today (FIT). FIT has proposed an ATV system that could be received on conventional NTSC receivers, and argues that the FCC is required by the All Channel Receiver Act to adopt a system like the one it proposes.<sup>10</sup>

In asking for comment on this issue, the FCC observes that certain manufacturers believe that, as a practical matter, ATV receivers produced in the transition period will be dual mode anyway,<sup>11</sup> and that there is "no precise evidence" about the relative costs of dual mode receivers.<sup>12</sup> Moreover, with regard to a dual-mode requirement, the FCC is concerned that it "not

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<sup>9</sup> Memorandum, p. 7.

<sup>10</sup> As discussed by the FCC, "[t]he All Channel Receiver Act does not preclude selection of a broadcast transmission system that requires new receivers. It also does not mandate the manufacture of dual-mode receivers." [Memorandum, p. 61]. Nonetheless, the All Channel Receiver Act does give the FCC the authority to require that all television sets be capable of receiving all television channels. Current FCC rules implementing the All Channel Receiver Act prohibit shipment in interstate commerce of television receivers that are not "capable of adequately receiving all channels" allocated to television broadcasting. 47 U.S.C. § 303(s), 47 C.F.R. §15.117. These rules were adopted in order to ensure that all television sets could receive both VHF and UHF broadcasts, and could be modified, if viewed as necessary by the FCC, should the FCC decide that a dual-mode ATV/NTSC requirement is not necessary.

<sup>11</sup> The FCC cites comments by both Zenith and Sony. See Memorandum, p.61, footnote 311.

<sup>12</sup> Costs of ATV receivers are still difficult to estimate. There is some evidence that the cost of adding NTSC capability to ATV receivers could be \$50 to \$100, and the cost of adding an ATV "downconverter" to an NTSC receiver could be about \$200 by the end of the conversion period. See Memorandum, pp. 37-40.

establish manufacturing requirements that may overly or prematurely burden consumers."

From the viewpoint of economic efficiency, a dual-mode receiver requirement could be justified only if it could be demonstrated that some market failure would prevent the production and distribution of television receivers that consumers demand. The FCC's other actions in this proceeding have already set a timetable for the full conversion of broadcast signals from NTSC to ATV. Consumers' interests can best be served by permitting the production of different types of television receivers, so that consumers can choose for themselves the equipment that they prefer for viewing ATV broadcasts.

#### B. Background

Under the final rules contained in the Memorandum, full conversion to an ATV system will be required fifteen years after "the effective date of ATV system selection or an ATV Allotment Table, whichever is later."<sup>13</sup> Existing broadcasters will be required to apply for and construct an ATV facility during the first six years of this fifteen-year transition period. One year after the application/construction period ends (i.e., seven years into the transition period), 50 percent of all ATV broadcasts will be required to be simulcast on NTSC systems. Two years thereafter (nine years into the transition period) 100 percent of all ATV broadcasts will be required to be simulcast on NTSC systems. Six

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<sup>13</sup> Memorandum, p. 4. The selection of an ATV standard is expected sometime in 1993.

years later, the fifteen-year transition to ATV will be complete and all NTSC broadcasting will cease.

The purpose of the simulcast requirement is to "help ensure that consumers are not prematurely deprived of the benefits of existing television receivers... [and to] protect consumer investment in NTSC."<sup>14</sup> In addition, by permitting consumers to view ATV programming on NTSC equipment, simulcasting may be beneficial to consumers who do not sufficiently value ATV broadcasts to justify the purchase of an ATV receiver. When such consumers purchase new television sets during the fifteen year transition to ATV, some may prefer, absent a dual-mode production requirement, to buy an NTSC television and later (once NTSC simulcasts cease) buy a downconverter to transform ATV signals to NTSC signals.

### C. Analysis

Absent market failure, television manufacturers have strong incentives to produce the types of receivers demanded by consumers. Given that the FCC has already mandated that broadcasters convert to ATV transmissions according to a set fifteen-year timetable (at which time NTSC broadcasts will no longer be permitted), consumers will have a strong incentive to invest in ATV compatible equipment.<sup>15</sup> As noted above by the FCC,<sup>16</sup> some television

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<sup>14</sup> "Broadcast Services; Advanced Television Systems," Federal Register 57, No. 219 (Thursday, November 12, 1992), p. 53593.

<sup>15</sup> ATV compatible equipment might include not only ATV receivers, but also downconverters that allow ATV broadcasts to be viewed on NTSC television sets.



manufacturers believe that during the transition period prior to full ATV conversion, ATV television sets will be dual-mode even absent any such requirement. Compelling dual-mode NTSC/ATV receivers, therefore, seems an unnecessary means of ensuring that consumers are able to buy television sets that can receive both NTSC and ATV signals.<sup>17</sup> Moreover, the regulation could hurt some consumers by eliminating options that would otherwise be available to them.

Absent a dual-mode requirement, television manufacturers might produce separate single-mode NTSC and ATV sets during the transition period. Should the FCC require that televisions manufactured during the fifteen year ATV transition period be capable of both NTSC and ATV reception, the FCC might reduce consumer welfare by forcing consumers who would otherwise choose NTSC-only equipment to also purchase ATV equipment. Further, with a dual-mode requirement, some consumers who might prefer to

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<sup>16</sup>(...continued)

<sup>16</sup> See footnote 11 above and the related discussion in the text.

<sup>17</sup> Allowing consumers to continue to buy NTSC sets will provide valuable information on whether or not the mandatory conversion to strictly ATV transmissions is serving consumers' interests. If large numbers of consumers voluntarily buy NTSC sets with downconverters, notwithstanding the availability of ATV broadcasts and ATV receivers, this would suggest that for these consumers the benefits of ATV reception does not cover the associated costs. This information would be most useful during the reviews of the simulcast and conversion deadlines scheduled for the years 1999, 2002, and 2008 (see Memorandum, pp. 4-5). The FCC's plan to periodically review the conversion deadlines indicates a recognition of the importance of a flexible approach to regulation in this matter.

purchase just ATV equipment would be forced to purchase unwanted NTSC equipment.

One would expect that the transition from NTSC broadcasting to ATV broadcasting will not be accomplished at a uniform rate across the host of individual television stations throughout the country. Some broadcasters might face financing delays or construction delays, while still other broadcasters might install new ATV facilities relatively quickly. Similarly, all or most broadcasters in some areas of the country may have fully operational ATV systems during periods in which other metropolitan areas have very few operational ATV systems. Consumers in areas with a large number of ATV broadcasters might place relatively less value on NTSC equipment than consumers in areas with fewer ATV systems in operation. Should the FCC require that manufacturers produce televisions that are capable of both NTSC and ATV reception, the FCC might force some consumers in the former group to pay for NTSC equipment that they otherwise would not purchase.

Absent market failure, economic efficiency and consumer-welfare considerations would not support eliminating options that consumers might desire. Although economists have identified certain market failures that can impede the transition from an older technological standard to a newer one,<sup>18</sup> the FCC's announced

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<sup>18</sup> See, for example, Besen and Johnson, Compatibility Standards, Competition, and Innovation in the Broadcasting Industry, RAND Publication No. R-3453-NSF (November 1986); Farrell and Saloner, "Standardization, Compatibility and Innovation," RAND Journal of Economics 16 (1985), 70-83; Katz and Shapiro, "Network Externalities, Competition, and Compatibility," (continued...)

commitment to full conversion will make such potential problems irrelevant in this case.<sup>19</sup> Based on the FCC's action to date, market failure would likely not prevent the adoption of ATV because regulation, rather than the market, would be imposing the new standard.

Given the FCC's commitment to full ATV conversion, consumer demand for ATV-compatible receivers will be created. Depending on the configuration of consumer preferences, this demand will call forth the production of some as-yet unknown mix of ATV-only, (convertible) NTSC, and dual-mode receivers. Under a consumer welfare standard, requiring that only dual-mode receivers be produced during the transition period would be justified only if a

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<sup>18</sup>(...continued)

American Economic Review 75 (1985) 424-440; "Product Compatibility Choice in a Market with Technological Progress," Oxford Economic Papers 38 (1986) 146-165; and "Technology Adoption in the Presence of Network Externalities," Journal of Political Economy 94 (1986) 822-841. These theoretical analyses, and their relevance to policy-makers, are discussed in the FTC's Digital Audio Radio Services comment, supra note 8.

<sup>19</sup> These forms of market failures result from uncertainty over whether a new standard will be accepted by consumers and manufacturers. For example, early adopters of a new technology might risk losing their investment if acceptance of the new technology is not widespread, i.e., they risk being "stranded" with a low-valued technology unless other consumers make the same choice (e.g., consumers that purchased Beta format VCRs may have been "stranded"). Such risks may lead consumers to defer adopting a new technology until the choices of other consumers are known. If enough potential buyers act this way, such "excess inertia" may prevent the adoption of an efficient technology even though consumers might be better-off if it were adopted. Such potential market failures are not relevant here because the FCC is imposing the new standard and, ultimately, eliminating the old NTSC standard. Thus, by imposing a single, specific broadcast standard, the FCC eliminates any uncertainty with regard to which broadcast standard consumers, broadcasters, and television manufacturers might choose.

sufficient number of consumers valued dual-mode receivers by more than their production cost so as to justify their production, but manufacturers ignored or disregarded these preferences.<sup>20</sup> This seems to us unlikely. We are not aware of any reason why television manufacturers would pass up the opportunity to profit by selling receivers to consumers who wish to buy them. Accordingly, current information would not appear to justify imposing a dual-mode receiver requirement.

## V. Conclusion

Our analysis suggests that requiring production of dual-mode television receivers will not serve consumers' interests. This requirement may restrict consumers' choices and may force some consumers to purchase certain types of equipment that they otherwise would not voluntarily choose to purchase.

Once the transition to ATV begins, demand for NTSC-only or ATV-only receivers might be so low that only dual-mode television sets will be manufactured. Nonetheless, the demand for single-mode NTSC or ATV receivers may be sufficient to allow manufacturers to

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<sup>20</sup> Problems could arise, at least initially, if some consumers are unaware of the FCC's timetable for the transition to ATV. Such consumers, for example, might, on account of their ignorance concerning the transition, purchase NTSC-only equipment when, if they were fully informed, they would prefer dual-mode equipment. Such potential problems notwithstanding, the manufacturers of ATV and dual-mode television sets and television broadcasters will have very strong financial incentives to ensure that consumers are fully informed. If the FCC is concerned about harm to uninformed consumers, steps to disseminate and/or disclose information concerning the transition would be preferable to actions that would limit the choices available to all consumers.

profitably sell these types of receivers. Since the levels of future demand for dual-mode and single-mode NTSC and ATV receivers are unknown, the interests of both consumers and manufacturers will best be served by allowing all of these products to be produced.