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LPFM:

THE THREAT TO CONSUMER WELFARE

by

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I. INTRODUCTION

The National Association of Broadcasters ("NAB") has asked us to comment on and supply an economic analysis of the Federal Communications Commission's ("FCC's") NPRM, *In the Matter of Creation of a Low Power Radio Service.*[1] In reviewing the NPRM, we have been struck by the virtual absence of any systematic cost/benefit analysis to identify the economic tradeoffs creation of the new service will entail and to support the Commission's proposal to authorize the operation of new low-power FM radio stations ("LPFM"). Economic cost/benefit analysis generally supplies an appropriate analytical framework for prudent public policymaking. Rational decision-making usually entails specific identification of the beneficial and adverse consequences of a particular course of action and comparison of (any) net benefits with relevant costs in terms of foregone use of required resources. Failure to weigh adequately any adverse consequences of a particular course of action is likely to lead to imprudent decisions gauged in terms of the efficiency and equity of resulting outcomes.

In this comment, we briefly review the Commission's articulated rationale for authorizing the new service and identify its shortcomings as a critical (*i.e.*, analytically incisive) assessment of the pros and cons of authorizing new LPFM stations. We outline a more suitable analytical framework for policy evaluation, one grounded in the realities of current radio

[1] MM Docket No. 99-25, adopted: January 28, 1999; released February 3, 1999.

broadcast industry operations and the economics of radio program production and supply. We then undertake to provide a more realistic (*i.e.*, economically informed) assessment of LPFM's costs and benefits and its likely beneficial and adverse consequences. This analysis provides the economic basis for our conclusion that the consequences of authorizing the new service will likely prove adverse on net and, therefore, that authorizing the new service would constitute an uneconomic decision by the Commission. In particular, we think there are strong economic grounds to conclude that LPFM will result in: (1) degradation of the service offered by full-service stations with harm to consumers; (2) minimal if any incremental benefits from new services; and (3) an administrative drain on the Commission's scarce resources as it attempts to police the new small stations' operations to protect against signal interference and to address the multitude of difficulties the new, uneconomic stations are likely to confront and look to the Commission to remedy.

This would certainly not represent the first time the Commission has engaged in the pursuit of an economically ill-advised radio broadcast initiative on the basis of a faulty, Panglossian analysis.[2] One need search no farther than the Commission's widely denounced Docket 80-90 rulemaking for a striking and closely analogous example of precisely this type of decision failure. As we shall see, the Commission subsequently sought to implement a variety of remedies in an attempt to undo the harms inflicted by its ill-advised Docket 80-90 decision. In the instant setting, the Commission can avoid the need for subsequent remedial action by not inflicting harm at the outset.

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[2] *The American Heritage Dictionary* (Second College Edition) defines "Panglossian" as "blindly expecting a favorable outcome or naively dwelling on hopeful aspects."

II. THE COMMISSION'S FLAWED ANALYSIS

In its NPRM, the Commission does not undertake a careful assessment of the likely beneficial and adverse consequences of a decision to authorize LPFM service. Instead, its analysis of putative benefits consists of little more than conjectures about what kinds of programming might conceivably be delivered via the new stations. These claims are subjected to no critical assessment regarding their credibility, economic feasibility or realism. They are simply accepted as posited, notwithstanding the virtual complete absence of evidence to support their credibility — indeed, the ready basis for skepticism about them given the realities of broadcast operations and program production and supply.

At the same time, the Commission affords only minimal consideration of the potential adverse consequences of affording full-service stations different degrees of protection from interference.[3] There is basically no attempt to assess the adverse effects of greater signal interference on the ability of existing full-service stations to meet their public-interest obligations in terms of their geographic coverage and program quality. In his critical dissent,[4] Commissioner Furchtgott-Roth has noted the potential for *consumer* harm that will result from listeners' being unable to listen to existing full-service stations due to interference.

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[3] *Op cit.*, Section IIIE.

[4] *See Dissenting Statement of Commission Harold W. Furchtgott-Roth* (January 28, 1999). "There is a severe incursion on the rights of current license-holders, as well as on the value of their licenses, which will be drastically undercut in the market if these proposals are adopted. This proposal also potentially impairs the ability of current licensees to serve their listeners, who must not be forgotten; while new people may be able to broadcast, others may lose their ability to receive and listen to existing stations due to interference."

Loss of listening options (indeed, likely a *net* loss given the "white-out" effects of interference) is one type of harm potentially produced by operation of new, low-power stations, but there are likely to be other types of adverse consequences for consumers as well. The operation of new stations will have adverse economic as well as adverse technical consequences for existing stations and will thus affect the *quality* of the programming undertaken by existing stations, including, relevantly, the amount of *local service* programming produced. This effect is likely to be particularly pronounced in small markets where opportunities for economizing through consolidation are limited. Thus, even consumers whose ability to receive existing stations is only modestly impaired by signal interference will, nevertheless, suffer adverse consequences as a result of declines in the quality of programming they are still able to receive. These potential consumer harms are not identified or evaluated by the Commission and thus do not figure in its calculus of costs and benefits.

The NPRM does remark one potentially adverse effect on full-service stations: an adverse impact on the ability (and, we would argue, economic incentive) of full-service stations to implement digital upgrades to help them withstand competition from new satellite DARS and Internet offerings. Current plans for in-band, on-channel digital radio rest on current interference standards. Degradation of current standards will, at a minimum, require modifications in these plans and may well thwart effective digitization efforts.[5] In addition to

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[5] In arguing that the impact of LPFM service on IBOC DAB should be assessed before LPFM service is authorized to ensure that the system's performance is not jeopardized, DRE notes that:

> The fundamental laws of physics cannot be denied; additional energy in the spectrum will create measurable interference. Just as with an IBOC system

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questions of technical viability, there is also an issue of economic incentive: Can investments in digital upgrades be economically justified given reductions in the prospective payoff as audience reach is impaired by LPFM station operations?

The LPFM proceeding primarily appears to represent an attempt by the Commission to respond to a particular set of *supply-side* interests — *viz.*, petitioners for (the right to supply) the new service.[6] The Commission states its belief that new LPFM stations "would provide a low-cost means" of providing service.[7] As we presently explain, this "belief" is contradicted by both economic and technical considerations that strongly suggest that the new stations would both constitute a very high-cost means of supplying service to the public and also be positioned to provide programming of only very low quality.

The petitioners want to be broadcasters and so the Commission obligingly defines the public interest as, in part, embodying the satisfaction of this "demand."[8] The Communications Act, of course, simply directs the Commission to undertake to provide an efficient nationwide

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> where some deleterious effects of the additional energy within the spectrum will be measurable, likewise LPFM will have some impact accordingly.

See Comments of Digital Radio Express, Inc., MM Docket 9925 (March 17, 1999), p. 2.

[6] The Commission defines among its goals to "foster opportunities for new radio broadcast ownership." *See* NPRM, ¶ 1.

[7] *Ibid.*

[8] At various points in the NPRM, reference is made to the demand for new licenses, but in economic terms demand usually implies or references a willingness to pay. No such demonstration of demand has been authenticated by the Commission; indeed, petitioners have apparently uniformly expressed opposition to use of auctions to assign licenses in the event they are authorized. Expressions of interest in the new service reportedly were themselves in large part the result of the FCC's own solicitations and efforts to enlist interest.

radio service. The end of production is consumption, not production; the relevant policy question is whether the new service will improve or, as we think more likely, detract from benefits *derived by the public* from radio broadcasting. While the Commission is anxious to foster new opportunities for station ownership, it evidences little awareness of, let alone concern for, the adverse economic impacts the new service may well inflict on the operations of existing stations and current station owners. This is precisely the kind of myopic bias that led to the disastrous Docket 80-90 decision.

On the benefit side, the FCC subjects claims of benefits from the new service to no substantive critical analysis (including their potential realization through alternative means). As previously noted, the Commission simply fails to consider any adverse external effects the new service may have on the outputs of existing stations and the utility consumers derive therefrom. As we later note, the Commission's stated view that the new service provides an economical means of expanding local service is strongly belied by the technical and economic realities of broadcast operations. These considerations have, as we note, been frequently referenced by the Commission itself in the past and, indeed, cited by the Commission to justify particular policy courses it judged were prudent to pursue to buttress local radio broadcast operations in the wake of Docket 80-90.

If, to minimize adverse consequences, the Commission affords full-service stations current levels of protection against signal interference, the NPRM indicates that the new service will not amount to much since few new stations will be permitted to operate in large markets where the bulk of the listening audience resides. It is apparently only through concededly non-

trivial degradation of the quality of existing stations' service that a significant number of new stations can be authorized.

In the case of AM radio, the repeated authorization of new lower classes of stations certainly responded to demands for expanded ownership. But it did so with the adverse consequence of sacrifices in signal integrity, the resulting creation of a service with a great deal of interference, a great deal of attendant consumer frustration and the great majority of stations scratching out a meager existence, barely and sometimes not able to make an economic go of it.[9] While not as severe, FM radio has suffered a similar fate as new service classes have been authorized. Now at a time when traditional radio is confronted with the greatest challenges (*viz.*, satellite offerings with hundreds of options and Internet offerings with *thousands* of options) in its illustrious history — a history that includes surviving a signal innovation called television — the Commission has proposed a new service that, in our view, promises little payoff in gross terms and the likelihood of harm on net.

III. ANALYTICAL FRAME

As is thus readily apparent, the Commission's NPRM at best rests on a most informal and incomplete reckoning of costs and benefits. It takes petitioners at their word and fails to subject their claims of benefits to any critical assessment in terms of economic feasibility or efficiency. At the same time, it fails to consider highly probable *adverse* impacts on the operations of existing full-service stations. Even were harms to the public from technical (signal

[9] These "dire circumstances" eventually led the Commission and Congress to relax restrictions on multiple station ownership — a salutary step that permitted realization of significant operating economies and program investment synergies.

interference) externalities negligible — a factual premise that the NAB's technical analysis discloses is questionable — service afforded to the public by full-service stations would still likely be adversely affected by the operation of new low-power stations.[10] Declines in anticipated audience size will reduce the magnitude of program investments that can be economically rationalized and thus the quality of the programming supplied. This would be true regardless of whether audience losses stemmed from interference or diversion or, as seems likely, both. Far from presenting greater local service, the likely effect of the Commission's proposal will be to undermine the economic ability of existing full-service stations to meet the needs of local audiences.

To assess the impact of the proposed new service, it is worthwhile to begin by stepping back and contemplating the economic structure, behavior and performance of the radio broadcast industry. By setting the industry context, one can then undertake to analyze what kinds of effects implementation of the Commission's proposal is likely to have on the industry's ability to meet consumers' preferences.

Radio broadcasting is, of course, generally regarded as a highly competitive industry with large numbers of stations competing throughout the country, highly diverse programming

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[10] The technical study undertaken for the NAB discloses that the Commission's premise that receiver technology has improved to the point where interference protections can be relaxed with no loss of service is not at all well-founded and, in fact, contradicted by evidence from a well designed and carefully executed experiment. Given the current state of receiver technology, debilitating interference from LPFM stations is very much an issue, one whose import thus needs to be carefully assessed. The NAB technical study indicates that relaxation of current signal integrity protection standards to permit LPFM operations will significantly reduce the potential audiences of full-service stations, and that in some cases, even if current standards are honored, harmful interference will occur the closer new stations are permitted to

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and a peerless record of community service and public interest programming to meet local needs.[11] Evidence adduced by economist Mark Fratrik in Attachment B of the NAB's filing ("Format Availability After Consolidation") discloses that the diversity of radio programming formats, construed both broadly and narrowly, has grown significantly in recent years. This increase has occurred notwithstanding the high levels of diversity (as well as choice within given formats) that have historically characterized the radio industry. The increase confirms the view that restrictions on multiple station ownership were constraining broadcasters' ability to realize available operating economies and productive synergies and predictions that reform of these regulations would enhance the quality and quantity of consumer listening alternatives.

Fratrik finds that the number of broadly measured, "general" program formats had increased to an average of ten per market by 1998, and that a more narrow measure of "specific" format availability had increased to an average of nearly 15 by 1998. Either of these

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operate to existing ones. *See* Carl T. Jones Corp., *FM Receiver Interference Test Results Report* (July 1999).

[11] In *The Invisible Resource* (Resources for the Future, Inc. by the Johns Hopkins Press, Baltimore and London, 1971, at 358), Professor Harvey J. Levin concludes that:

> The American Broadcaster operates in a market heavily influenced by regulatory policies of the FCC. Managerial ingenuity in program innovation, production, distribution, and financing operates within a range delimited by external conditions imposed largely by the Commission through its licensing-allocation function. Limitations are placed on the broadcaster's permissible signal power, and length of his broadcast day, the location of his spectrum and his base of operations, and the maximum number of rivals against whom he must compete....*[The industry] has in general behaved as a competitive industry should, both in regard to the secular behavior of its rates of return, aggregate investment, and profit margins, and in the pattern of new station entry over time.* (Emphasis added.)

indices supplies a conservative measure of diversity with a focus on type of musical or general program content (*viz.*, news/talk) as against a more refined characterization of differentiated program content and customization to address the specific tastes of local audiences. Format categorizations, even more narrowly drawn ones, still supply fairly crude measures of programming diversity. Local stations strive mightily to differentiate their offerings in a multitude of different ways not easily embodied in a simple diversity measure.[12] Notwithstanding these caveats, radio programming is still properly characterized as highly diverse even according to these types of simple summary measures. Listeners in medium-to-large markets (where most reside) have dozens of different formats from which to choose. Even listeners in smaller markets have a great deal of choice from among *locally broadcast* formats and an even larger number of choices when the availability of distant signals is factored into the number of supply alternatives.

As we remark presently, variations in the economic profitability of different classes of stations can largely be accounted for in terms of the audience-producing characteristics of the disparate station classes. While the large, high-power stations do well and medium-power stations now do better as a result of the Commission's and Congress' economically enlightened relaxation of constraints on multiple station ownership, many smaller stations operate on very close margins.[13]

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[12] The primary way in which stations customize their local offerings is precisely to identify and address the kind of local interests the Commission perceives as the role for LPFM offerings. As we argue, LPFM offerings can thus be expected to *undermine* the efforts of local full-service stations to serve as an effective voice for local communities of interest.

[13] *See* NAB, *1992 Radio Financial Report*. As we have noted, reform of economically counterproductive restrictions on multiple station ownership has evidently improved the

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Among the principal conclusions we drew in our major 1995 study of the radio industry were the following:[14]

- Local radio markets are highly competitive, providing listeners with a broad array of program choices and advertisers with an effective means of reaching target audiences.

- As competition in radio broadcasting (and related markets) has intensified through the years, station operators have adapted by economizing on programming costs, personnel expenditures and other variable inputs, often substituting satellite program feed for locally originated programming. Joint operation of multiple stations has also provided an important means of achieving cost economies.

- Local stations play a vital role in the life of the communities they serve, providing an important forum for discussion of significant issues of public importance, a productive catalyst for organization of community affairs, local charities and social action, and an effective vehicle for dissemination of many different types of information of interest to diverse groups within the local community.

- Any increase in the number of competing stations will necessarily compel additional efforts to economize on programming costs as audiences are further divided. Lacking adequate alternatives, communities will inevitably suffer some degradation in the local community services they currently receive to the detriment of the local community's ability to thrive and cohere as a special place.[15]

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economic lot of many stations, enabling them to economize on costs and operate more effectively.

[14] *See* John Haring and Harry M. Shooshan, *Local Perspectives on Localism in Broadcasting and the Adverse Impact of Satellite DARS*, a study prepared for the National Association of Broadcasters (Strategic Policy Research, September 15, 1995).

[15] Our earlier study focused on the impact of satellite DARS on traditional radio broadcasting. Its basic conclusions about the effects of increased station numbers do not depend on the particular source of greater numbers, although the nature of the relevant economic tradeoffs is affected. In our earlier study, we identified the clear tension between any benefits of a new *national* radio service derived from additional choice among or within homogeneous and geographically undifferentiated program formats, on the one hand, and the benefits of *local* broadcast services oriented around the lives of a very large number of diverse, individual communities, on the other. In the instant case, the tradeoff is between benefits of full-service local stations and any putative benefits of LPFM stations.

The difficult straits in which radio broadcasters often find themselves navigating have frequently been noted by the Commission and have motivated several important policy initiatives designed to strengthen the industry and enable it to economize on costs and operate more effectively to meet consumer needs. In 1992, Commissioner Duggan, remarking the 40 percent increase in station numbers since 1975, the "serious competition" radio faced from rival delivery systems and the fundamental and adverse changes in the radio industry's economics, claimed that there were important implications for the public interest:

> Broadcast stations that can't stay above water economically can't serve their communities. Broadcasters have always borne a fundamental obligation to provide service in the public interest. Most have borne that obligation quite well, despite occasional adversity. But the FCC and the nation cannot expect broadcasters to fulfill that obligation if the structure and economics of the industry don't permit it.[16]

Former FCC Chairman Quello, noting the increase in the number of radio stations during his tenure at the Commission from 7,640 in 1974 to 11,397 in 1993, argued that this tremendous growth had a downside: "It created an industry struggling economically and many stations going silent for financial reasons."[17]

In entertaining the merits of proposals for a freeze limiting the allocation of more licenses, Quello described the industry's difficulties and the dilemma for public policy:

> I'm afraid that in the FCC's quest for competition and diversity, we have oversaturated the market with radio stations to the point that one half cannot support themselves . . . . For its part, *government must realize that business realities are an important component of the public interest.* I am not suggesting that the

[16] "Localism Tied to the Tracks?," remarks of Erwin S. Duggan, FCC, before the Mississippi Association of Broadcasters (June 27, 1992).

[17] Remarks by Chairman James H. Quello, before the NAB/RAB National Association of Broadcasters Convention (April 19, 1993).

> demands of commerce are the only or the determining factors defining the public interest — far from it. But we must acknowledge that broadcasters cannot do their best to serve their communities if the government does not understand their problems.[18]

In recent years, the government has, at least heretofore, evidenced greater understanding of the difficult challenges the radio industry confronts in meeting its public interest obligations and taken some steps to enable the industry to cope better with those challenges. These steps only came after an industry low point had been reached in Docket 80-90 which, according to then-Chairman Quello, "led to such a proliferation of stations that for many it created only the opportunity to go broke." [19]

When we conducted field interviews with radio station managers as part of our 1995 study, they uniformly referred to the disastrous effects of the Commission's Docket 80-90 decision.[20] They viewed that proceeding as the proverbial straw that broke the camel's back. Their argument was that station economics had so devolved with the competition of new stations and alternative media that it had become all but impossible to undertake significant efforts to address local programming needs effectively. In their view, the FCC, while nominally favoring localism, had created an industry structure in which stations had been reduced to the bare minimum in terms of local programming efforts. Their frequently voiced view was that the Commission's policies were, in reality, destroying localism by compelling stations to forego locally produced programming for economic reasons.

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[18] *Ibid.*, emphasis added.

[19] *Ibid.*

[20] *Op cit.*

During the 1990s, the Commission did take some significant steps to address the radio industry's difficulties in significant part derived from previous ill-conceived decisions by the Commission itself. It permitted many AM broadcasters to migrate their operations to the expanded 1605-1705 band with preferences allotted to relocations reducing signal interference.[21] The Commission made the reduction of signal interference in the AM band, where previous decisions had greatly compromised signal integrity, a high priority.

The Commission's and Congress' decisions to permit increases in both national and local ownership of radio stations represented a very important step to help radio stations survive in an increasingly competitive environment.[22] Relaxation of ownership restraints permitted station operators to economize on costs of station administration and operation through realization of available economies of scale. More effective sharing of resources has enabled stations to operate more economically and address local needs more effectively.[23]

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[21] *See* FCC, *In Re AM Broadcasters' Relocation to the Expanded 1605-1705 Band: Review of the Technical Assignment Criteria for the AM Broadcast Service*, MM Docket No. 87-267, 6 FCC Rcd 6273 (1991).

[22] *See* FCC, *In Re Revision of Radio Rules and Policies*, MM Docket No. 91-140 (April 10, 1992); and *Telecommunications Act of 1996*, §§ 202 (a)(b), Publ. L. No. 104-104, 1996 U.S.C.C.A.N. (110 Stat. 56).

[23] A nice concrete illustration of this point is supplied by the increased investments in local programming resources that have occurred in many local markets *as a result* of the relaxation of ownership limits. As firms increased their *scale* of operations in a given market — by increasing the number of stations they operate — they could, as in the specific case of one Utah broadcast group, rationalize hiring a full-time news director and a full-time sports director. This kind of resource commitment was simply infeasible when the payoff in terms of added listeners was smaller at a smaller scale of operations. Limiting scale is counter-productive in terms of the fostering such investments. At small scales of operation, limited scale is a problem, not a solution.

To justify its relaxation of the multiple station ownership rules, the Commission specifically noted two marketplace trends: (1) increases in the numbers of both radio and non-radio competitors; and (2) "serious economic stress" with "small stations in particular ... operating near the margin of viability for years."[24] The Commission explicitly remarked that "in response to intense inter- and intra-industry competition, radio station programming has become *increasingly diverse and targeted,*"[25] and that "with this increased diversity has come a degree of market fragmentation that has dramatically changed financial conditions for the radio industry."[26] As the Commission noted, "the overall industry figures mask the fact that the outlook for *small stations*, which comprise the bulk of the radio industry, is particularly bleak."[27] In the Commission's view, "the industry's ability to function in the 'public interest, convenience and necessity' is fundamentally premised on its economic viability."[28]

It is against this background that the proposed introduction of LPFM service needs to be considered. Whatever its own merits,[29] LPFM clearly represents a step backwards in terms of the problems faced by traditional radio stations. It portends more signal interference rather than less and it will inhibit full-service stations' ability to exploit economies of scale to lower costs and enhance economic productivity. The result will be a more tenuous technical and

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[24] *See op cit.*, ¶ 2.

[25] *See op cit.*, ¶ 5 (emphasis added).

[26] *See op cit.*, ¶ 6.

[27] *See op cit.*, ¶ 9.

[28] *See op cit.*, ¶ 10.

[29] Obviously it is difficult to fathom how *very small* LPFM stations can be reasonably expected to make a meaningful contribution to consumer welfare. The economically sound

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economic base of operations and consequent threat to licensees' ability to meet their public interest responsibilities.

Consider a simple example that illustrates the kinds of impacts LPFM can be expected to produce. One of the staples of local radio is broadcast of local high school sports. From our interviews, we gather than it is common practice for a small, local radio station to economize by simply sending one of its regular on-air personalities to cover a local sports event. The extra costs associated with such a broadcast thus basically consist of those associated with the remote hook-up, and these may vary depending on the distances involved (*viz.,* "away" games may be more expensive).

Why should a station bear these extra expenses? Presumably because it expects that the value of the extra listeners it will attract by carrying the event to make it economically worthwhile to incur the extra costs. The extra listeners may be drawn to the event itself or may be drawn to the station's other programming given the good will the station builds by being a "good citizen" and playing an integral role in the collective life of the local community.[30]

We should make it clear that none of the amounts of money typically involved in this type of circumstance are large; they are "small change" and dwarfed by corporate standards, but they are *the reality* of local radio. LPFM has been characterized as "microradio," but trad-

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logic that underpins the Commission's relaxation of counterproductive rules on multiple station ownership thus implies that LPFM stations will fail to contribute to the public interest.

[30] Several of the stations whose managers we interviewed actually sponsor athletic and academic awards dinners and scholarships to build a strong local community identity and support community cohesion.

itional radio is itself in the vast majority of cases "microradio," serving the local communities whose interests it is their mandate to address. The Commission has referenced the potential of LPFM stations to address "narrow" interests and preferences (including local school sports), but current local stations are themselves barely able to make a go of this type of programming, notwithstanding more favorable economics reflecting a more economic scale of operations. The basic problem for local programming is not lack of means of delivery, but lack of economic means of support. Should a station spend $25 or $50 or $100 to broadcast a high school basketball game? To do so, it needs to sell an equivalent amount of additional advertising.

If the audience a station can expect to attract is dwindling because the local station's signal is no longer receivable in some areas on account of increases in signal interference or because of the proliferation (cacaphony) of voices available via other means, the amount of home-team sports broadcast can likewise be expected to dwindle. That will thwart localism and frustrate the utilization of local broadcasting to promote community enlightenment and cohesion.

IV. COSTS AND BENEFITS

We now turn to a critical assessment of costs and benefits. To begin we focus on the economic "facts of life" that govern commercial radio broadcast operations. Authorization of LPFM service will not result in repeal of these facts; it will rather result in their operation with a vengeance. Radio stations vary considerably in authorized power, service range and length of broadcast day. These differences affect stations' comparative economic performance and produce productivity differentials that have usually been capitalized in trading prices when stations change hands. A commercial radio license that affords its holder the right to broadcast

a high-powered signal on a full-time basis with a high degree of protection against interference is able to produce audience exposures more economically than stations that do not operate with such advantages. Such a station can usually operate more profitably because of this productivity differential.

Average area coverage increases approximately in proportion to the *square* of the radius miles a station's signal travels. Bigger, more powerful stations are thus able to achieve substantial economies of larger-scale operations, in part, by spreading fixed costs of signal distribution over larger audiences. Their higher power authorizations enable them to reach a larger *potential* audience (including the important mobile listening audience not available to LPFM stations), and they are able to attract a larger share of their larger potential audiences because they are in a position to rationalize greater investments in higher quality programming.

Commercial radio operations rely on sales of advertising exposures as their revenue source; public radio stations also benefit from larger audiences as these supply a larger pool of potential contributors of funding to offset costs of station operation and programming. There are huge economies of scale in program production,[31] and greater investments in programming can produce higher quality programs.[32] This implies that stations with larger potential audiences will, other factors the same, operate at a dual advantage: being in a position to spread

[31] "First-copy" costs are fixed and are thus spread/divided among listeners as audience size increases.

[32] For such larger investments to be economically warranted, higher quality programs must attract audiences of larger size given broadcasting's reliance on advertiser/listener support.

programming costs over larger audiences and to rationalize greater investments in higher quality programs that will attract larger audiences.

LPFM stations, contrary to the Commission's stated "beliefs," actually represent quite *uneconomic* means of distributing broadcast programming and would provide only the most meager of economic foundations for program funding — it is called "*broad*casting" for a reason. A program or facility that costs, say, $1,000 to produce or purchase implies a per-listener cost of 10 cents for a station that attracts an audience of 10,000 listeners, but a per-listener cost of $10 for a station with an audience of only 100. The costs of LPFM stations would be spread over audiences of only very limited size. Their operation would cause interference, thereby *reducing* service where interference prevented effective signal reception and *increasing* the per unit costs of full-service stations unable to realize economies of larger-scale operations to as great an extent as prior to initiation of LPFM service.[33]

The fact that LPFM stations represent a very costly means of delivering a broadcast signal (in terms of the technically redundant facilities that are deployed to deliver a single signal and the interference-related waste that inheres in a policy of spectrum Balkanization) does not necessarily imply that LPFM service could not conceivably be efficient under any circumstances. Production of the Rolls Royce automobile is highly costly as the methods adopted for manufacture largely entail the sacrifice of the very large economies of large-scale, mechanized production realized in the manufacture of, say, a Ford Escort. Some people are willing to pay the higher costs entailed in the manufacture of a Rolls Royce. And these higher

costs may embody the most economically efficient production techniques for manufacturing a luxury car on a limited production run.

Similarly, if the goal is to deliver a message/signal to a small (geographically concentrated) group of people, a high-powered signal with wide-area coverage may not be the efficient solution. But a low-power alternative, nevertheless, does entail higher production costs (just as the Rolls Royce), and the question of efficiency turns, in part, on whether the value of what is produced at higher costs is worth the higher costs, including the opportunity costs of foregone programming (of higher quality) available on a more widespread basis (because there is less interference). The problem with LPFM is that it is very unlikely to be the broadcast equivalent of a Rolls Royce, but rather of very limited value. Given the small audiences individual LPFM stations can anticipate, their local programming is likely to be of very low quality, at the same time their operation degrades the quality of the local programming full-service stations can offer. LPFM stations' efforts to address the preferences of local communities will founder on account of their minimal scale, while they simultaneously undermine the efforts of more plausibly scaled, full-service stations to address local needs. Empowering a low-power station to meet a local need carries a cost in terms of reducing the ability of full-service stations' ability to meet local needs.[34]

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[33] LPFM would not constitute a "Pareto-optimal" change in economic terms—it is not a matter of gains with no losses, but rather of (possible) gains for some at the expense of losses for others.

[34] The Commission evidently envisions that small-scale operations will be able to address distinct programming needs of local "sub-populations" of listeners (*viz.*, *e.g.*, local ethnic sub-populations). This presumes that worthwhile programming can be produced at a

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cost that can be recovered through delivery of/to very small audiences. Our field experience (in the central valley of California) suggests that demands for this type of programming are more plausibly addressed by regional station operations that can aggregate ethnic audiences scattered over a region, rather than concentrated in one place. Thus the particular program interests of the Portuguese and Hispanic sub-populations in the central valley of California are effectively being addressed by local radio stations there, precisely because the stations possess *sufficient reach* to assemble an aggregate audience that makes this type of programming economic to supply. Stations constrained in their ability to aggregate sufficient audiences will lack the ability to address the needs of those audiences. Note that it was precisely the ability to aggregate minority audiences on a national basis that proponents of satellite DARS cited as the basis for that service's ability to address tastes for ethnic programming. Consider the following statements contained in various representations by satellite DARS proponents to the Commission:

> [T]errestrial stations do not provide narrowcast programming for economic reasons (i.e., the audience within the coverage area of any given terrestrial station is too small for narrowcasting to be economically viable), digital terrestrial radio stations would be in no better position to offer such programming. However, such specialized, narrowcast programming could be provided, quite profitably, by a satellite radio system because its broad coverage would enable it to reach an audience that is widely scattered, but in the aggregate is large enough to support such programming. [*Reply Comments of Satellite CD Radio, Inc.,* Gen. Docket No. 90-357, January 8, 1991, at 5-6.
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> The proposed services [satellite DARS] is uniquely situated to meet the needs of ethic and cultural audiences, which can be accommodated efficiently only through the economies achieved by nationwide service. [*Comments of Satellite CD Ratio, Inc.*, In the Matter of Amendment of the Commission's Rules with Regard to the Establishment and Regulation of New Digital Audio Radio Services, Gen. Docket No. 90-357, January 29, 1993, at 3.]
>
> [S]atellite DARS will promote diversity of radio programming. By virtue of the medium's reach, satellite DARS providers can aggregate relatively small, dispersed ethnic, cultural and other 'niche' audiences that go unserved in today's radio market. [*Comments of CD Radio*, In the Matter of Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHZ Frequency Band, Gen. Docket No. 90-357, September 15, 1995, at 48.]
>
> NAB also argues that even if niche programming is needed, satellite DARS licensees may not follow through with their plans to provide such programming. On the contrary, satellite DARS will target niche audiences that can only be served on an aggregated, nationwide basis. [*Reply Comments of CD Radio*, In

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Radio listeners literally "pay" attention — audience exposures are what commercial broadcasters sell to advertisers. The attention paid to an LPFM station can only be relatively small, given the small potential audience size. But small audiences limit economically rational or feasible investments in programming — a dollar more invested in programming produces only a small increment in actual audience given a limited potential audience to start with. So LPFM stations can be expected to attract comparatively smaller portions of small potential audiences, for the same reasons that large stations attract comparatively larger portions of large potential audiences. The larger station has a greater economic incentive to invest in programming given the larger payoff in audience size (and advertising revenues) and is, thus, likely to attract an even larger audience than its larger area coverage would suggest. The small station's small potential audience thus limits its *programming's* likely competitiveness.

The issue posed in this proceeding has been a recurring one in the history of broadcasting. The distribution of broadcast services in the U.S. reflects the primacy FCC spectrum management has given to the concept of local service. The FCC has sought to

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the Matter of Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHZ Frequency Band, Gen. Docket No. 90-357, October 13, 1995, at 13.]

Satellite DARS may also be able to foster niche programming because it can aggregate small, nationally dispersed listener groups that local radio could not profitably serve. [*Report and Order*, In the Matter of Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHZ Frequency Band, Gen. Docket No. 90-357, March 3, 1997, at 14 (citing *CD Radio Comments*, at 48; *Direct Satellite Broadcasting Corp. Comments*, at 25).]

promote local service in radio by dividing the radio spectrum in a manner consistent with the operation of local radio stations in many communities.

In the early days of radio, there was a perceived tension between affording listeners (particularly those in rural areas) with effective radio service and promoting *local* services that necessarily entailed sacrifices in the ability to provide effective service to less-populated regions of the country. Over time that tension was resolved largely in favor of promoting local services.

That policy was, for the most part, successful for two reasons: (1) economic growth and development made it possible for more local communities to support their own broadcast station operations; and (2) various ways were found to share programming costs and enable realization of economies of scale in program production consistent with, indeed, largely *complementary to*, provision of significant amounts of local programming.

After the advent of television, radio came increasingly to rely on recorded music (produced for direct sale to consumers and thus promoted through broadcast on radio) as a primary programming source. That reliance obviously continues to the present day, but has increasingly been supplemented by various kinds of syndicated programming. Locally oriented programming is used to fill the gaps around such syndicated fare. As we have noted, the economic ability of local stations to undertake local programming has been repeatedly subjected to "body blows" that have divided available audiences to a point where often only minimal investments can now be economically supported. In this regard consolidation of station ownership, carrying with it the potential for greater resource sharing and the ability to rationalize larger program investments, has proven highly beneficial. Note well that the main

reason this reform "worked" is precisely the same reason that *consumer* benefits from LPFM are highly unlikely to materialize. Where fixed costs loom large, small scale is not a strength but a disability.

A station's economic scale of operations is affected both by technical parameters of the broadcast "machine" it operates and the competitive economic environment in which it operates. The premise of the Commission's LPFM proposal is that the operative constraint on very "narrowcast" *broad*cast operations is primarily technical – analogous to the constraints on local broadcast operations imposed by the need to supply "clear channels" to reach rural listeners in the early days of radio. That is a false premise: In today's operating environment, the constraint on narrowcast programming is primarily economic rather than technical.

The constraint on broadcast of a local high school sports event is less that the coverage area of local radio stations is too *large* to warrant coverage of an event of more narrow interest than it is that not enough revenue can be produced to cover costs of broadcasting the event given a limited anticipated audience. The economics of local station operations in extremely competitive operating environments (loads of other radio stations, competition from other media (like the Internet) affording access to large numbers of radio-station substitutes and near-radio-station substitutes, other close substitute sources of musical entertainment, *etc.*) simply do not supply much of a foundation for narrowcast programs. If the issue is, as we think it is, that local radio stations are already often *too small* to support much narrowcast programming, how does the creation of *even smaller* stations supply a remedy? LPFM stations could only anticipate even smaller audiences given their limited area coverage and thus an even less plausible basis for recovery of costs.

The hidden (and wholly unrealistic) premise underlying the Commission's proposal is that programming costs are nil as are economies of scale in program production/distribution. In the "small" world of local radio, the amounts of money involved in program production are indeed often quite small in absolute terms, but everything is relative. Production costs are small, but so are the prospective advertising revenues (or listener support). The issue is one of costs relative to revenues and the ability to spread costs over sufficiently large audiences to render operations economically viable. "Sub-local" stations can be expected to be even less viable as they will be able to *reach* only small potential audiences and will *attract* even smaller audiences given their inability to support even the most meager local programming fare.

Finally, the FCC's NPRM discloses that, unless the signal integrity of existing stations is significantly compromised, there is little basis for anticipation of benefits from new LPFM stations simply because they will be relatively few in number. In urban areas, where the Commission touts the prospects for very "narrowcast" programming to particular population subgroups, the number of LPFM stations will be minimal.[35] In rural areas where there is potentially more "room" for LPFM stations, the technical constraints may be less severe. But it is in precisely these areas where the existing full-service stations are most hard-pressed to carve out an existence. Indeed, the reason there are fewer stations there again has less to do with technical authorization of fewer stations than it does the absence of an adequate economic

[35] We also note that the FCC fails to assess the extent to which program preferences of such subgroups are already met by traditional full-service stations and, prospectively, by satellite DARS offerings which have promised substantial specialization in terms of ethnically-oriented offerings. Internet offerings (chat/discussion groups, community bulletin boards, *etc.*) are another source of information about narrowly focused interests.

foundation to support the operation of a larger number of stations. The lack of economic foundation is the reason for fewer stations.

V. CONCLUSION

Management of radio spectrum use to prevent productivity-debilitating signal interference is the FCC's bedrock responsibility; indeed, prevention of signal interference is the Commission's primary *raison d'être.* Regulatory decisions about the allocation of spectrum for economically and technically conflicting purposes necessarily entail economic tradeoffs. In this type of situation, responsible spectrum management by the government requires a careful assessment and balancing of relevant tradeoffs to maximize benefits to the public through allocation of different kinds of spectrum operating rights.

In terms of *consumer* utility, operation of LPFM stations will ostensibly produce benefits in the form of (very) "narrowcast" programming. But because there are large economies of scale in the production (and distribution) of broadcast programming and because the economic scale of LPFM stations' operations is, by the very nature of their conception, quite limited, the narrowcast programming of such stations is likely to be of low-quality and limited value. The capacity to realize potential economies will necessarily be highly constrained. Indeed, in the case of some types of narrowcast programming (*e.g.,* ethnic programming), the incremental value is likely to be quite small given the availability of alternative means — satellite DARS, the Internet and traditional radio, all better positioned to exploit the available economies of scale in program production and tap audiences of adequate size.

At the same time, the operation of LPFM stations will predictably *reduce* consumer utility in two ways: (1) their operations will cause signal interference and "white-out" reception of the signals of traditional full-service stations; and (2) audience losses caused by interference-induced losses of reception capability plus diversion to LPFM stations will reduce the economic feasibility of investments in local service programming by full-service stations. Consumers will be less able to receive local radio stations and there will likely be some degradation in the local programming that stations are economically empowered to supply. The precise amount of such degradation will depend on the specific deployment of the new stations.

The Commission's proposal fundamentally rests on a faulty economic premise, *viz.*, that economies of scale in (local) program production are not just minimal, but, for all intents and purposes, nil. Thus, the Commission perceives no contradiction in the idea of *broadcasting to very narrow* "audiences" perhaps more readily communicated with via alternative means. The Commission apparently believes that the value of programming founded on very limited-size audiences is worth significant consumer harm in the form of losses of reception of full-service stations — stations whose scale of operations affords greater opportunities to exploit non-trivial economies of scale in production of local programming by addressing larger audiences. Effective exploitation of these economic comparative advantages would be thwarted by the operation of LPFM stations.

In our view, the Commission's assessment of benefits and costs, resting on a faulty premise, is flawed and just the opposite of the truth of the matter.

CERTIFICATE OF SERVICE

I, Angela Barber, Legal Secretary for the National Association of Broadcasters, hereby certify that a true and correct copy of the foregoing Comments of the National Association of Broadcasters was sent this 2nd day of August, 1999, by first-class mail, postage prepaid, to the following:

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