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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Amendment of the Commission's
Rules to Establish New Personal
Communications Services

) GEN Docket No. 90-314
) ET Docket No. 92-100
)
) RM-7140, RM-7175, RM-7617,
) RM-7618, RM-7760, RM-7782,
) RM-7860, RM-7977, RM-7978,
) RM-7979, RM-7980
)
) PP-35 through PP-40, PP-79
) through PP-85

COMMENTS OF COMCAST PCS COMMUNICATIONS, INC.

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November 9, 1992

Of 4

SUMMARY

Comcast PCS Communications, Inc. ("Comcast") urges the Federal Communications Commission (the "Commission") to continue its pro-competitive policies by seizing the opportunity presented in this proceeding to introduce meaningful competition to the local telephone company monopoly. Wireless communications can provide consumers with a viable alternative to existing local exchange service. The joint operation of non-wireline affiliated cellular radio, personal communications services ("PCS") and broadband transport networks within the relevant service markets is essential to the near-term development of vigorous local exchange competition.

The analysis in the Notice assumes that PCS will compete only with cellular service. However, the possibilities of PCS should not be limited by a narrow conception of two-way mobile communications. Indeed, the integration of PCS with non-wireline cellular and broadband networks, such as cable networks or the networks of alternative access providers, is the nation's best opportunity for rapid development of PCS.

This opportunity will not be realized, however, if local exchange carriers ("LECs") and their affiliated cellular radio service providers are eligible to hold PCS licenses in their landline franchised service markets during

the initial deployment of PCS. LEC provision of PCS will encourage their anticompetitive use of essential facilities to dominate PCS as they have the cellular radio industry. Consequently, the Commission must prohibit the LECs from holding PCS licenses within their landline service markets for a reasonable period.

To promote the development of wireless alternatives to the local exchange, Comcast urges the licensing of LATA-sized PCS markets with four licensees per LATA, each licensee having 20 MHz of spectrum. LATA-sized PCS markets will facilitate competition with the LECs because these markets approximate established telecommunications traffic patterns.

Comcast supports the award of PCS licenses through a modified lottery that requires substantial threshold showings of adequate financial and technical capabilities during the application stage. These requirements, along with construction timetables and limits on the ability to transfer PCS licenses, should reduce the chances that speculative filers will overwhelm the agency's processes.

Comcast believes that PCS services will be both private and common carriage, and that therefore, it is not necessary for the Commission to settle upon a regulatory classification now.

Finally, Comcast supports the Commission's conclusions regarding the need for high quality, ubiquitous

interconnection that is cost-based, unbundled and made available a timely basis. The ready availability of LEC interconnection is critical to the development of PCS. Therefore, it is essential that LECs are initially restricted from holding PCS licenses within their franchised service territory. This policy will encourage LECs to develop valuable interconnection capabilities for all PCS providers. Careful monitoring of LEC provision of interconnection is essential to the development of PCS.

TABLE OF CONTENTS

	Page
SUMMARY	i
I. INTRODUCTION	1
A. Comcast Corporation is a Leader in Developing Telecommunications	1
B. PCS Services Will Advance Significantly the Development of Competition in the Local Loop . . .	5
II. PCS LICENSE ELIGIBILITY	8
A. Non-wireline Affiliated Cellular Radio Service Providers Should be Eligible to Hold PCS Licenses within their Cellular Service Markets	8
B. Initially, LECs and Their Affiliated Cellular Radio Service Providers Should Not be Eligible to Hold PCS Licenses within their Landline Franchised Service Markets	12
III. SPECTRUM ASSIGNMENT	17
A. Authorization of Four PCS Providers per LATA and Assignment of 20 MHz of Spectrum to each Provider Will Foster Competition, Innovation and Spectrum Efficiency	17
1. Licensing Four PCS Providers per LATA Will Heighten Competition and Permit More Entities to Develop PCS	18
2. Granting 20 MHz of Spectrum per Licensee Will Promote Innovation and Competitive Services and Will Encourage Spectrum Efficiency . . .	19
B. The Commission Should Permit Intersystem Operability and Spectrum Swaps	21
IV. PCS SERVICE AREAS	23
A. LATA-Sized PCS Licenses Would Best Effectuate Commission Goals	23
B. The Commission Should Reject the Option of a National PCS License	24

V.	MODIFIED LOTTERIES ARE THE BEST AVAILABLE MECHANISM FOR AWARDING PCS LICENSES	25
VI.	POST-GRANT CONSTRUCTION, TRANSFER AND RENEWAL OF LICENSES	30
	A. The Commission Should Adopt Strict Construction Timetables and Impose Stringent Conditions on Transfer of PCS Licenses	30
	B. A Fifteen Year License Term with a Significant Renewal Expectancy Would Promote the Public Interest	31
VII.	REGULATORY STATUS OF PCS	33
	A. The Nature of Particular PCS Services Should Dictate its Treatment as Private or Common Carriage	33
	B. Cost-Based and Unbundled Interconnection with the Public Switched Network Is Essential for PCS	36
VIII.	TECHNICAL STANDARDS	38
	A. Standards and Standards Setting Bodies	38
	B. Protection of Fixed Microwave Operations	39
	C. Power and Antenna Height Limits	40
	D. Coordination Distance	41
	E. License Modifications	41
IX.	CONCLUSION	43
	APPENDIX	44

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COMMENTS OF COMCAST PCS COMMUNICATIONS, INC.

Comcast PCS Communications, Inc. ("Comcast"),^{1/} by its attorneys, hereby submits its comments on the Federal Communications Commission's (the "Commission") Notice of Proposed Rulemaking regarding the Amendment of the Commission's Rules to Establish New Personal Communications Services, 7 FCC Rcd 5676 (1992) (the "Notice").^{2/}

I. INTRODUCTION

A. Comcast Corporation is a Leader in Developing Telecommunications

Comcast Corporation is a diversified telecommunications company holding interests in cable television, wireless telecommunications and alternative access providers. Three

^{1/} Comcast is a wholly-owned subsidiary of Comcast Corporation.

^{2/} These comments discuss the regulatory, technical and legal issues surrounding the Commission's 2 GHz PCS allocation.

decades ago Comcast Corporation entered the telecommunications industry through its investment in, construction and operation of cable television facilities. Since constructing its first system in the 1960's, Comcast Corporation has grown to become the fourth largest cable company in the United States, currently providing service to more than 2.8 million subscribers. Comcast Corporation is a cable industry leader in the use of fiber optics and the development of new services such as "video on demand". Cable Vision magazine recently awarded its 1992 Innovator Award for Technology to Comcast Corporation in recognition of its leadership role in the industry.

In keeping with the entrepreneurial spirit that fostered its cable growth, Comcast Corporation has entered another developing communications business, cellular radio. Comcast Cellular Communications, Inc., is now the fifth largest non-Bell Operating Company ("BOC") controlled cellular operator in the United States, serving a population of over 7.3 million. Among other advances, the cellular division is pioneering the integration of cellular and local alternative access facilities through its offering of QuickLink™, a service that permits cellular customers direct access to their company's private branch exchange ("PBX") without interconnection through local exchange carrier ("LEC") facilities.

Comcast Corporation's commitment to the integration of new communications technologies and the provision of viable, low-cost competition to existing networks is further evidenced by its recent investment in Eastern Telelogic Corporation, a Philadelphia alternative access provider. In the United Kingdom, Comcast Corporation's affiliate, Cable London, serves both residential and business customers. Cable London offers both broadband cable services and direct competition to the local exchange monopoly through the integration of fiber optic/coaxial cable plant and fiber optic twisted pair plant.

The decade of the 1990's has brought yet another opportunity for Comcast to play a significant role leading the development of a new communications business, personal communications services ("PCS"). PCS offers an opportunity to combine cable and cellular technologies, a role for which Comcast is uniquely suited, with state of the art technology operating at 2 GHz. When integrated, these technologies will result in untethered, moderately priced voice and data services on a mass scale. Comcast believes that the effective utilization of existing broadband cable and non-wireline cellular networks is essential to achieving this vision.

Armed with its PCS experimental licenses, Comcast has been and will continue to be committed to the development

and implementation of PCS. Comcast has already forged alliances with Motorola, Inc. and General Instrument to produce the equipment necessary to achieve the cable/PCS interface and the cable/cellular interface which are integral to the introduction and operation of an efficient and competitive PCS service.

Comcast has shared its PCS test results with cable and cellular industry committees in anticipation that this knowledge will assist others in developing PCS. Additionally, based on its significant PCS experimentation, Comcast set forth its vision in a PCS pioneer preference request filed with the Commission on May 4, 1992. On June 25, 1992, Comcast filed a supplement to its pioneer preference application that demonstrated the combination of cellular and cable will accelerate the deployment of affordable, widely available PCS to residential and business customers.^{3/}

Comcast also has demonstrated the integral role that PCS can and should play in achieving the overarching goal of providing choice to the American consumer. On September 10,

^{3/} See Request for Award of Pioneer Preference filed by Comcast on May 4, 1992, and Supplement to Application for Pioneer Preference for Personal Communications Services of Comcast PCS Communications, Inc., filed on June 25, 1992. Comcast's preference application will remain pending with the Commission until decisions regarding preference grants are made final. See Rules to Establish New Personal Communications Services, FCC 92-467, released November 6, 1992.

1992 Comcast connected a five-way trans-Atlantic conference call linking three cities using wired and wireless technologies operated by Comcast Corporation's cellular and personal communications systems, fiber optics operated by Eastern TeleLogic Corporation and the fiber optic/coaxial cable plant and fiber optic twisted pair plant both operated by Comcast's affiliate, Cable London^{4/}. No LEC facilities were employed in this call. This demonstration is evidence of the possibilities of 2 GHz spectrum, when used in conjunction with existing non-LEC communications plant, to offer consumers access to a high quality competitive alternative to the LECs' local loop monopoly. Chairman Sikes has remarked that Comcast's call "showed that, in the final analysis, it is not going to be essential to use the local phone network to participate fully in information exchange."^{5/} Comcast's innovative work has served, and will continue to serve, as a catalyst in the PCS field.

B. PCS Services Will Advance Significantly the Development of Competition in the Local Loop

The allocation and licensing of 2 GHz spectrum will create the opportunity for development of a competitive alternative to telephone company control of local

4/ See infra Appendix for press releases.

5/ Remarks of Chairman Alfred C. Sikes before the Annual Business Week Symposium on Information Highways on September 16, 1992, "The Future of Interactive Communications".

communications in our nation's telecommunications infrastructure.^{6/} If the Commission embraces this challenge, consumers and users of telecommunications will benefit through reduced prices and increased choice of service providers, services and technological innovation. In Comcast's judgment, the licensing of 2 GHz spectrum presents the most promising opportunity for the emergence of competition in the local loop.

The Commission's most successful pro-competitive policies of the last twenty years have shared two basic characteristics: first, a proclivity to favor open entry, and second, a willingness to impose necessary restrictions on the dominant provider that possesses the incentive and ability to undermine competition. Comcast believes that these precepts apply with great force in the context of spectrum-based services like PCS.

In spectrum-based services, the Commission's allocation, eligibility and service rules dictate: (1) how the service will evolve over time; (2) how much intra- and inter-modal competition will occur; (3) how much

^{6/} Despite the fact that the introduction of competition in telecommunications in the United States started long before it did in other nations, the United States has fallen behind in its efforts. For instance, there is now actual local loop competition in the United Kingdom, competition in which Comcast's affiliate, Cable London, is a major participant. PCS is the most likely means for such competition to develop in the United States in the foreseeable future.

compatibility and connectivity exists with present services and carriers; (4) the cost of providing service; and (5) even the design of a provider's network architecture.

An example of how the Commission's policies and rules can affect the evolution of services is found in the Commission's use of the LEC set aside to award cellular markets. In the early 1980s, the Commission decided to establish 734 metropolitan and rural service areas or markets while, at the same time, setting aside for the LECs large contiguous markets co-extensive with their landline facilities.^{7/} In the ensuing years, the markets for non-wireline cellular service providers were combined in order to compete with LEC-operated wireline systems.^{8/} Comcast concurs in the Commission view that the facts and terms of LEC participation have resulted in consolidation in the market. Further, the facts and terms of LEC participation have hampered cellular's evolution. The LEC headstart over new entrepreneurs, and LEC control of interconnection and ownership of competing contiguous markets all promoted dramatic consolidation. If the Commission is to avoid these mistakes, it must base its policies on a full understanding

7/ See Notice, 7 FCC Rcd at 5699. See also infra Section IV addressing PCS market size.

8/ Id.

of the possibilities of technology and the importance of its policy prescriptions for the development of PCS.^{9/}

II. PCS LICENSE ELIGIBILITY

A. Non-wireline Affiliated Cellular Radio Service Providers Should be Eligible to Hold PCS Licenses within their Cellular Service Markets

The Notice requests comment on the competitive impact of allowing cellular operators to acquire PCS spectrum in markets in which they already provide cellular service.^{10/} The competitive impact of non-wireline and wireline cellular participation in PCS require separate analysis; competition can be advanced with co-located non-wireline cellular participation in PCS but, to the extent that the wireline operator is co-extensive with the LEC, the prospects for PCS are diminished if the wireline cellular entity expands into PCS.

The Notice assumes that PCS will be essentially a competitive alternative to cellular radio; however, PCS may be something quite different. PCS will not simply be cellular operating on a different set of frequencies. For residential users, PCS will pick up where cordless and portable phones leave off by offering, for the first time,

^{9/} In the markets in which the LEC is the franchised telephone service provider, the dangers of allowing LEC-affiliated cellular operators to be PCS licensees are substantial. See infra pages 11-15.

^{10/} 7 FCC Rcd at 5703.

truly untethered communications capabilities. In addition, PCS can offer consumers more than simple mobility; if interconnected with other networks, it will provide residential customers with the first opportunity of choice in local telephone services -- a choice that is not otherwise available today.

Although PCS will compete with an array of mobile services including cellular, Specialized Mobile Radio ("SMR"), Enhanced Specialized Mobile Radio ("ESMR"), and mobile data networks, it also has the potential to "become a full fledged competitor to wireline services."^{11/} PCS can develop into an alternative telephone network carrying voice and data where low-power utilization and broad availability of service will allow these applications to take root.

The Notice overlooks the differences between, and different incentives of, non-wireline cellular and LEC-affiliated wireline cellular operators. The Notice also ignores the ground breaking work of Comcast and its PCS experiments that demonstrate the complementary nature of cellular and PCS and the ability to provide customers with a choice of cost effective and reliable services based upon the customer's location and preferences.^{12/}

11/ Notice, 7 FCC Rcd at 5705.

12/ The Notice correctly states that joint operation of cellular and PCS by a single firm would lead to greater productive efficiencies. See 7 FCC Rcd at 5702.

As Comcast's September 10, 1992 call demonstrates, alternative networks, operating together, present the first meaningful opportunity for competition in the local loop since the beginning of this century. As proposed by Comcast in its PCS pioneer preference request, the integration of PCS with non-wireline cellular and broadband networks, such as cable networks, or for that matter the networks of alternative access providers, offers the promise of true local exchange competition.

Comcast has the expertise to provide local exchange-type services. However, Comcast and other non-wireline operators lack the spectrum to provide services that are competitive alternatives to the LEC monopolies. Cellular was designed and built to serve high speed vehicles. PCS will be designed and built to serve people, not vehicles. These key differences will prevent cellular operators from providing moderately priced mass market services within their existing spectrum allocations.

Other factors also would thwart a cellular operator's ability to provide PCS within the existing spectrum allocation. For example, a cellular operator's continuing obligation to provide service to AMPS compatible subscriber handsets even after digital technology is deployed. This obligation requires that some bandwidth be set aside for this purpose. Although this requirement will diminish as

older subscriber sets are replaced with newer sets, it is likely that a frequency set aside will be required into the next century because: 1) it is entirely possible that smaller cellular systems will not upgrade to digital technology; and 2) in order to provide roaming service, all cellular systems will maintain some AMPS capacity. Finally, cellular providers will require additional spectrum to provide PCS because of the demands of new services such as mobile data.

Non-wireline cellular operators working as or with PCS licensees have an important, and perhaps essential, role to play in establishing local exchange competition.^{13/} Unlike wireline cellular operators, non-wireline operators have no wireline telephone monopoly affiliate to protect. Similarly, in markets where a wireline cellular operator's telco affiliate does not also provide local telephone service, the cellular operator should be eligible to apply for a PCS license.

In sum, the Commission has an unparalleled opportunity to create competition where none currently exists. To do

^{13/} Non-wireline cellular operators might have posed a potent competitive threat to the local exchange except for their total dependence upon the LEC for local interconnection services at rates that have not been cost-based and the Commission's wireline set-aside which insulated LECs from costly hearings, lotteries and acquisitions.

so, it must adopt eligibility rules for PCS that make this prospect more, rather than less, likely.

B. Initially, LECs and Their Affiliated Cellular Radio Service Providers Should Not be Eligible to Hold PCS Licenses within their Landline Franchised Service Markets

The Commission should reject the Notice's tentative conclusion that "there is a strong case for allowing LECs to provide PCS within their respective service areas."^{14/} There is no evidence to support this conclusion. Indeed, the evolution in cellular suggests, rather, that the Commission should prevent LECs from holding PCS authorizations in the market areas where they and their wireline cellular radio affiliate offer service.^{15/} LECs have a clear vested interest in maintaining control of a local exchange characterized by bottleneck facilities and functions. In the past, manifestations of this vested interest have included abusive marketing practices, predatory pricing and cross-subsidization.^{16/}

14/ Notice, 7 FCC Rcd at 5705.

15/ Comcast proposes no restriction on wireline cellular eligibility for PCS spectrum where neither that cellular provider nor any of its affiliates is the local telephone company.

16/ The Notice observes that landline LEC participation in PCS may lead to more "PCS friendly" design architecture. In the cellular context, a full blown LEC licensing set aside did not create friendly interconnection architectures, as the Commission's series of interconnection policy statements attests. Indeed, nearly a decade after the Commission

(continued...)

Whether or not such conduct will recur, permitting LECs to hold PCS licenses will necessarily reduce the spectrum available to PCS providers who might otherwise compete with the LECs' local exchange offerings. If LECs are PCS licensees, they would naturally direct development of these services as complements to, and not competition with, landline telephony service.

Prohibiting LECs from also being co-located PCS licensees would not, moreover, eliminate their role in the development of PCS. Rather, the proposed restrictions would encourage the LECs to focus on providing essential services and facilities to multiple competitive PCS providers. The provision of features, functions and facilities for PCS providers will be new profit centers for the LECs. ^{17/}

A policy of foreclosing an incumbent from acquiring communications facilities or spectrum when such an action would not promote competition is not new. In its recent ruling on "video dial tone," for example, the Commission

^{16/} (...continued)
established its wireline set aside, these carriers and their wireline affiliates who control numbering resources apparently continue to deny other radio common carriers fair and reasonable access to NXX codes, despite longstanding Commission policy requiring them to do so. See Letter from Richard M. Firestone, Chief, Common Carrier Bureau, Federal Communications Commission to Mr. Thomas Saunders, Vice President, Bell Communications Research, June 21, 1991.

^{17/} This role is integral to PCS and is one that will only be effective if LECs have no stake in furthering their PCS profitability at the expense of others.

prohibited LECs from acquiring cable systems.^{18/} The Commission reasoned that permitting the LEC to provide "video dial tone" services in competition with the existing cable operator would enhance competition, but that LEC acquisition of an existing in-market cable operators would not.^{19/}

The Commission also concluded recently that its pro-competitive aims would not be achieved by permitting cable operators to apply for "wireless cable" licenses within their cable markets.^{20/} The Commission reasoned that wireless cable competes directly with cable and allowing cable operators to become wireless cable licensees would not enhance the prospects of head-to-head wireless cable/cable competition. The same restriction now applies to cable operator ownership of satellite master antenna television ("SMATV"). Section 11(a) of the Cable Television Consumer

18/ See Telephone Company - Cable Television Cross-Ownership Rules, CC Docket No. 87-266, FCC 92-327, 71 RR 2d 70 (1992); see also Telephone Company - Cable Television Cross-Ownership Rules, Memorandum Opinion and Order on Reconsideration, 7 FCC Rcd 5069 (released August 14, 1992).

19/ 71 RR 2d at 96-97.

20/ See Amendments of Parts 21, 43, 74, 78 and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, Report and Order, 5 FCC Rcd 6410 (October 1990); Second Report and Order, 6 FCC Rcd 6792 (October 1991).

Protection and Competition Act of 1992 amends Section 613 of the Communications Act to prohibit cable operators from offering SMATV service in any portion of the area served by the cable operator's system.^{21/}

The case for prohibiting LECs from providing PCS within their landline exchange areas is even stronger than in these examples. Many PCS providers will be heavily dependent upon the LEC's bottleneck for essential facilities, advanced intelligent network functions and interconnection to the public switched telephone network to offer their services.

The LEC in-market advantage is enormous. LECs have ubiquitous in-place facilities, access to all telephone customers, proprietary information regarding network usage of these customers and control over the distribution and assignment of telephone numbers. As a result of prior regulatory decisions, they now also dominate the cellular radio communications market on both the wireline and non-wireline side. A LEC's ability to manipulate this broad customer and facilities base is great. Thus, the Commission must be vigilant to ensure that LECs cannot engage in undue discrimination and cross-subsidy to foreclose competition from PCS providers.

^{21/} See Cable Act of 1992, § 11(a); 47 U.S.C. § 613 (as amended).

The ban on in-market LEC participation in PCS should continue until local loop competition takes root. Comcast suggests that an "effective competition" test be applied. For example, once competitive PCS local loop services are available to 50% of the residences in the relevant licensing area and at least 15% subscribe to PCS services, or any other wireline alternate access services, the LEC could begin to provide PCS via available PCS spectrum as outlined below. Alternatively, the Commission could consider permitting LECs to obtain PCS authorizations within their local loop markets after an established period of time. The British Government has imposed such a restriction on British Telecom's ("BT") provision of cable and other similar services. The Government has prevented BT from providing entertainment services for ten years, unless after seven years the Government finds that competition would be enhanced if they removed the restriction.^{22/}

In any event, there should be no spectrum set aside for the LEC either at the outset of the allocation and licensing process or thereafter. Once effective local competition is established, LECs should be permitted to participate in PCS through license acquisition and joint ventures, subject to the ownership rules that the Commission ultimately adopts.

^{22/} "Competition and Choice: Telecommunications Policy for 1990s", Publication of the British Government Department of Trade and Industry, ¶ 5.7 (March 1991).

III. SPECTRUM ASSIGNMENT

A. Authorization of Four PCS Providers per LATA and Assignment of 20 MHz of Spectrum to each Provider Will Foster Competition, Innovation and Spectrum Efficiency

The Commission should assign spectrum to the maximum feasible number of PCS providers within each LATA.^{23/} The Commission must ensure that enough providers are authorized per LATA for PCS to become the competitively provided, widely available service envisioned and to permit different market opportunities to come to fruition. Because no one can predict all the forms that PCS may take, licensing multiple providers enhances the potential for the creation of diverse services. The amount of spectrum assigned to each service provider should foster the flexibility to innovate and compete while avoiding spectrum inefficiency. Comcast proposes authorizing four PCS providers per LATA and assigning 20 MHz to each provider. Comcast also recommends that the Commission create a spectrum reserve with an additional 20 MHz of PCS spectrum. This spectrum reserve would be available for expansion of existing services,

^{23/} As further described in Section IV of these comments, Comcast supports the licensing of LATA-sized PCS markets.

spectrum constrained licensees^{24/} and/or other licensed services.^{25/}

1. Licensing Four PCS Providers per LATA will Heighten Competition and Permit More Entities to Develop PCS

The Notice proposes licensing at least three service providers per market "to ensure a wide and rich range of PCS services that meet consumer needs at reasonable prices".^{26/} These goals would be better met by licensing four providers per LATA. The proposed spectrum allocation for PCS licensed services can support four providers, if state of the art digital technologies are used.

By authorizing four providers per LATA, more entities with genuine and demonstrated interest in PCS will have the chance to develop services. Because increased competition serves the public interest, the Commission should license more, rather than fewer, entrants in each service area.

The authorization of four providers per LATA will significantly increase the chance that communities throughout the nation will have access to the numerous possible configurations of PCS. In the initial deployment stage of PCS, it is unlikely that a single PCS provider will

24/ See infra p. 20.

25/ Once effective competition exists, this additional spectrum should be made available by lottery to the LECs and others.

26/ Notice, 7 FCC Rcd at 5690.

offer all the services that have been identified as "members" of the PCS family. Consequently, the prospects for a greater breadth of services will be enhanced if there are more providers per LATA.

Licensing four PCS providers in each market also will help to create a formidable array of wireless alternatives to both the local exchange and mobile communications services. Finally, the presence of four PCS licensees per market will enhance existing mobile services, offer local exchange price and service competition and benefit consumers.

2. Granting 20 MHz of Spectrum per Licensee Will Promote Innovation and Competitive Services and Will Encourage Spectrum Efficiency

Comcast recommends that the Commission initially grant each PCS licensee 20 MHz of spectrum because nearly all existing and foreseeable digital mobile technologies can function efficiently within 20 MHz blocks. Spectrum blocks of 20 MHz will be sufficient to allow PCS licensees to deploy their services, and potential access to spectrum from the spectrum reserve along with spectrum sharing technologies will allow licensees to expand their systems over time.

The Commission's proposal for larger spectrum blocks would not encourage efficient spectrum use or the continued development of breakthrough spectrum sharing techniques.