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Wireless *Carterfone*
A LONG OVERDUE POLICY PROMOTING CONSUMER CHOICE AND COMPETITION

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Abstract

Wireless carriers in the United States operate as regulated common carriers when providing basic telecommunications services, such as voice telephone service, text messaging and speed dialing to services and content. Remarkably, stakeholders debate whether this clear cut regulatory status requires wireless carriers to provide service to any compatible handset, subject to a certification process to ensure that such use will not harm carrier networks.

Thirty-nine years ago the Federal Communications Commission (FCC) established its Carterfone policy establishing such a right for wireline subscribers. Consumers now take for granted the right to purchase their choice of telephones and other devices (e.g., computer modems, answering machines) and to attach them to wireline networks without carrier-imposed limitations. After announcing its Carterfone policy, the FCC identified ample consumer benefits and applied this fundamental right in several instances so that consumers can freely use their handsets to access services, applications and content. This fundamental right has accrued unquestionable benefits to consumers and the national economy.

Wireless operators have vigorously opposed efforts to convince the FCC that it should establish a wireless Carterfone policy. Opponents claim that Carterfone offered an industry-specific remedy to a monopoly environment where the Bell System controlled both the manufacture and distribution of telephones and telephone service. They assert that the lack of such vertical integration and the existence of robust competition in the wireless marketplace obviate the need for rules requiring carriers to unlock the handsets they sell and to open their networks for access by any compatible handset.

This paper explains why wireless Carterfone policy constitutes a long overdue policy response to carrier practices that often have nothing to do with protecting their networks from technical harm or other legitimate network management needs. For example, blocking the implementation of wireless Carterfone enables carriers to continue locking subscribers into two-year service contracts with substantial penalties for early termination. In exchange for the service commitment, consumers acquire a carrier-subsidized handset, but they also consent to carrier-imposed restrictions on the use of the handset they bought, including the ability to access telecommunications and content services of competitors even after the carrier has recouped its subsidy.

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This analysis explains how wireless carriers benefit financially by avoiding Carterfone obligations and refutes the rationales and justifications for this behavior. The paper also demonstrates that the FCC has ample statutory authority to apply wireless Carterfone policy based on the largely ignored fact that when wireless cellular telephone companies provide telecommunications service, they remain subject to most common carrier regulations regardless of the fact that they also may offer less regulated information services. Finally, this report explains that wireless carriers must comply with public interest regulatory mandates even though they might conflict with carriers' preferred business plans. The Commission has undertaken a number of analogous initiatives to protect consumers from mandatory bundling arrangements, such as its 2005 order mandating alternatives to cable set-top box leasing, which underscore the continued importance of Carterfone principles to protecting the public interest.

Contents

I. Introduction

Thirty-nine years ago the FCC rejected claims made by wireline carriers that they could not possibly separate the installation of premises wiring, telephone handset leasing, and telephone service. The carriers stated that mandating this separation would harm the companies' personnel and facilities. The FCC's *Carterfone* policy[1] established the right of wireline telephone subscribers to buy telephones and other devices and to attach them to any carrier network, subject to a straightforward certification process to ensure technical compatibility.[2] Since 1968, the FCC has extended the *Carterfone* policy to other instances where consumers should have the opportunity to access and choose only the equipment, services and content they need and want (see examples in Section IV below).

Remarkably the FCC has not established a wireless *Carterfone* policy on its own initiative or in response to an invitation to do so by interested parties such as Skype,[3] a provider of Internet telephone services, and Google.[4] This reticence to act has generated regulatory uncertainty and has frustrated numerous business ventures wanting to offer new and innovative services that consumers would be able to access from unlocked handsets. The FCC's hands-off approach may have made sense when cellular radiotelephone carriers primarily supplemented wireline services and offered voice and text messaging services in a marketplace with six or more facilities-based competitors. However, the wireless industry has become significantly more concentrated[5] and wireless networking has become a viable alternative to wireline services and serves as a key medium for accessing a broad array of information, communications and entertainment (ICE) services,[6] including ones reached by abbreviated dialing, i.e., "short-code" access to content and services.

As wireless ventures plan and install next generation networks (NGNs),[7] these carriers expect to offer a diverse array of ICE services, including broadband Internet access, free from regulatory responsibilities that still apply to wireless telecommunications services.[8] Most wireless carrier managers reject the need for government to establish consumer safeguards, including policies that would require wireless carriers to deviate from their preferred business plans by having to decouple the sale of handsets to subscribers with the delivery of services. While some carriers now appear to embrace some aspects of a wireless *Carterfone* policy,[9] their lack of specificity, the absence of enforceable commitments, reports of ongoing blocking[10] and newfound enthusiasm despite previously fierce opposition necessitate official action by the FCC.

For example, before announcing its own Open Development Initiative, Verizon Wireless took great exception to the FCC's open access initiative last year, which imposed the obligation to give consumers the choice to connect any safe device and use any application as a condition on the 22 MHz C Block licenses that will be auctioned early this year.[11] However, these "open access" conditions will apply to only one set of licenses and not to commercial wireless services in general.

This paper concludes that the public interest requires that wireless subscribers have the right to attach any technically compatible handset to wireless networks, just as wireline subscribers have done for almost forty years. This paper will explain why wireless carriers do not want to comply with *Carterfone* rules and will refute their reasons for noncompliance. The paper concludes that the rising importance of wireless networking for most ICE services and growing consumer disenchantment with carrier-imposed restrictions on handset versatility[12] should motivate the FCC to apply *Carterfone* policies to wireless handset sales.

II. Wireless *Carterfone*: A Long Overdue Policy Response

Wireless carriers have avoided the duty to decouple their delivery of telephone service from their sale of handsets largely because most wireless consumers have not fully appreciated the consequences of this arrangement, and the FCC has ignored the issue. One commentator has suggested that the Commission has simply not moved beyond its outdated "infant industry" approach to encouraging wireless telephone deployment and affordability.[13] The carriers have successfully touted the benefits accruing from subscriber opportunities to use increasingly sophisticated handsets at subsidized sale prices to access a blend of ICE

services. But in exchange for accepting a two year service contract subject to a significant penalty for early termination, subscribers also agree to significant limitations on the versatility and functionality of the handset they own.[14]

Even though wireless subscribers own the handsets they use to access network services, carriers control and limit the handsets in several, increasingly significant and frustrating ways:

- Locking handsets so that subscribers cannot access competitor networks (by frequency, transmission format, firmware or software); in the U.S. carriers even lock handsets designed to allow multiple carrier access by changing an easily inserted Subscriber Identity Module ("SIM");
- Disabling handset functions, e.g., bluetooth, Wi-Fi access, Internet browsers, GPS services, and email clients;
- Specifying formats for accessing memory, e.g., music, ringtones, and photos;
- Creating "walled garden" access to favored video content of affiliates and partners;
- Using proprietary, non-standard interfaces making it difficult for third parties to develop compatible applications and content; and
- Using firmware "upgrades" to "brick," i.e., render inoperative, the handset or alternatively disable third party firmware and software.

Cellular service subscribers increasingly recognize how carrier-mandated limitations on handsets have little to do with legitimate network management and customer service objectives.[15] When handsets provided access primarily to voice telephone calls, text messaging, and ringtones, subscribers may have ignored limitations that blocked access to more sophisticated functions and to third party software, applications, or content. Only recently have cellphone subscribers begun to identify the foregone or limited options resulting from this decision. For example, a significant percentage of Apple iPhone purchasers[16] have risked loss of warranty coverage and the possibility of "bricking" their handset – turning it into an expensive paper weight – to evade limitations on which wireless carrier, software, applications, and content iPhone subscribers can access.

As a result of the FCC's *Carterfone* decision and subsequent orders, wireline telecommunications services have no direct coupling or linkage with subscribers' acquisition of telephone handsets and other devices, such as facsimile machines, modems and personal computers. Pre-*Carterfone,* telephone companies bundled telephone handset rentals, customer premises inside wiring installation, and maintenance and telephone service. Consumers had no way of knowing the actual cost of each category, nor could they opt out and procure and use their own telephone equipment and premises wiring. When the FCC ordered the unbundling of telephone service from wiring and accessing devices, a competitive market evolved for both the installation of premises wiring and for devices that attach to telecommunications networks.[17] Consumers now take for granted the legally enforceable right to possess and connect their own telephone, PC or other device to wired telecommunications networks.

The FCC never has stated that its *Carterfone* policy applies equally to wireless carriers when providing telecommunications services. Absent such an affirmative declaration by the FCC, most consumers accept the default option of buying handsets from wireless carriers and "big box" store agents at the same time as consumers acquire or renew cellular telephone service.[18] Wireless carriers currently offer no discount service plans for subscribers who bring their own handset and do not trigger any subsidy requirement (which in economic terms is effectively an installment purchase of the device, with payments included in the monthly service fee). Without such a discount on the monthly service fee, consumers have no incentive to make do with an older handset, or to comparison shop separately for a device, in exchange for cheaper telecommunications services rates. Accordingly consumers regularly renew service at the same time as they replace their handsets, and the contract for such bundled service includes language permitting the carrier to disable equipment features and limit the manner in which subscribers access third party content, services, and applications.

III. Why Do Wireless Carriers Oppose Further Extension of *Carterfone* Principles?

Wireless carriers oppose the implementation of *Carterfone* policies for three simple reasons:

1) Increased subscriber freedom to attach devices to wireless networks would reinforce the FCC's ongoing statutory obligation to enforce conventional telecommunications service rules on carriers that successfully have avoided the rules;

2) Wireless carriers have determined that the financial benefits of locking subscribers into two year service commitments exceed the cost of subsidizing handset sales; and

3) Locking and limiting subsidized handsets helps carriers foreclose subscriber access to services, content and applications available from third parties that make no financial contribution to the wireless carrier and possibly compete with services offered by the carrier.

A. Wireless Carriers Operate as Common Carriers When Providing Telephone Services

Wireless carriers would like consumers and the FCC to ignore the simple fact that carriers providing Commercial Mobile Radio Service (CMRS),[19] the classification used by the FCC to identify cellular radiotelephone carriers' telecommunications service, remain subject to regulation contained in Title II of the Communications Act.[20] CMRS operators do enjoy regulatory forbearance of some specified regulations, e.g., the need to file tariffs that establish the terms and conditions for service. However, for regulation not explicitly removed, CMRS carriers must comply with Title II regulatory requirements, and the FCC can forbear from applying any of the remaining regulations only upon determining that consumers will remain protected against unreasonable and discriminatory service and that the public interest supports forbearance.[21] Put another way, CMRS operators do not avoid most basic common carrier responsibilities simply because they provide wireless services, subject to partial regulatory forbearance.

When CMRS operators offer subscribers a combination of telecommunications and lightly regulated information services, such as broadband Internet access,[22] the latter group of services does not supersede ongoing telecommunications service regulation. The combination of regulatory classifications has the potential to cause uncertainty about how far the common carrier designation extends, but it does not eliminate the lawful application of such regulation.

Despite the clear applicability of Title II regulation and the occasional acknowledgment by the FCC that such regulation still applies,[23] regulatory uncertainty supports carrier efforts to evade government oversight. The Commission has contributed to the confusion by expressing a preference for making either/or regulatory classifications of services that combine telecommunications and information services.[24] The Commission strongly prefers to shoehorn any and all converged services into the lightly regulated information services "safe harbor,"[25] including wireless broadband Internet access. With rare exception, the FCC appears reluctant to hold CMRS operators to the still applicable Title II requirements, despite having not undertaken the public interest examination necessary to forbear officially from regulating.

Notwithstanding significant regulatory forbearance, CMRS operators still retain their common carrier status and core obligation to provide the public with access to other carriers. This interconnection obligation includes the requirement that carriers provide the public with E-911 access via any wireless handset regardless whether the carrier sold the handset and whether it currently provides service to the caller. Wireless carrier also must provide the public with wireless-to-wireline network access, i.e., access to the conventional wired public switched telephone network (PSTN), as well as the duty to provide subscribers with "roaming" access to other wireless carriers when a subscriber travels outside his or her home network area.[26]

CMRS operators do not have unlimited and unconditional authority to determine whether and how their subscribers can access other networks and end users. While the FCC has forborne from regulating the price of access and some terms and conditions for service, the Commission cannot abandon its regulatory responsibility to ensure that CMRS operators provide access and interconnection on a fair and nondiscriminatory basis. For example, a CMRS operator must provide its subscribers with access to the network services of other carriers operating in locations where the CMRS operator does not. The FCC recently reiterated that the common carrier responsibilities still borne by CMRS operators include the unconditional duty to provide access to "the facilities of another CMRS provider with which the subscriber has no direct pre-existing service or financial relationship to place an outgoing call, to receive and incoming call, or to continue an in-progress call."[27]

B. Wireless Carriers Financially Benefit from Bundling Handset Sales and Telephone Service

It should come as no surprise that because wireless carriers do not operate as charities they have calculated the costs and benefits of every marketing strategy. Accordingly the carriers have determined that subsidizing the cost of handsets provides greater financial benefits than the cost of the subsidy. Providing consumers with devices using cutting edge technologies enhances the likelihood that subscribers will remain loyal to the carrier and will use the new handset to access services that will increase the carrier's revenues. In light of declining Average Return per User (ARPU) for basic services,[28] a wireless carrier has a keen interest in offering new services and thwarting subscriber access to alternatives available from ventures that have no obligation to share revenues with the carrier.

Bundling handset sales with two year service commitments forecloses development of a market for used handsets, or for handsets having unconditional access to third party sources of content and services. Subscribers opting to continue using a previously purchased handset, or to acquire one outside the carrier's subsidized channel of distribution, accrue no cost savings despite reducing the carrier's customer acquisition costs. Wireless carriers do not offer a lower monthly service rate for existing or prospective customers who trigger no handset subsidy burden. Whether by explicit agreement or "consciously parallel" conduct, all wireless carriers have agreed not to compete for the most price sensitive consumer who would gladly give up cutting edge technologies in exchange for lower monthly service rates. The FCC has ample regulatory authority to foreclose wireless carriers from imposing terms that all but mandate the bundling of handset sales and wireless service.

C. The FCC Has Continued to Uphold and Extend its Carterphone Policy

Opponents to a wireless *Carterfone* policy frame their reasons primarily on technical and economic policy grounds without acknowledging the financial upside accruing to carriers. For example, Robert Hahn, Robert Litan and Hal Singer[29] claim that *Carterfone* policy made economic sense only in a vertically integrated, uncompetitive wireline marketplace. They assert that proponents should bear the burden of proof that market failure exists and that regulation will do more good than harm. These authors and other opponents of wireless *Carterfone* seek to frame the debate in macro-economic terms, such as the overall impact on carrier incentives to invest in facility upgrades, the need to conserve spectrum, the duty to cooperate with law enforcement officials to protect homeland security, and the greater complexity in wireless networking compared to the wireline telephone infrastructure.

Whether by design or coincidence, opponents to wireless *Carterfone* ignore the consumer and public interest benefits that would accrue if the FCC implemented a handset unbundling policy. CMRS operators can extract greater profits by denying subscribers *Carterfone* device attachment freedom. As currently constituted, the marketplace does not punish any single carrier for engaging in such practices because even at the conclusion of a two-year service contract subscribers cannot yet migrate to a carrier with more liberal device attachment and network access policies, or to a discounted service for subscribers who activate or extend service without a handset subsidy.

The four major CMRS operators and the few remaining regional carriers offer roughly the same service terms and conditions on a "take it or leave it" basis and do not vary significantly on a continuum from most restrictive to least restrictive in terms of device attachment freedom. Likewise no carrier offers a cheaper rate plan for subscribers extending service without purchasing a new subsidized handset. Thus, it is an overstatement to suggest that current CMRS marketplace currently operates in robustly "competitive process in which independent developers, content owners, hardware vendors and networks vie to discover preferred packages and pricing."[30]

1. The FCC Has Applied the *Carterfone* Right to Attach Equipment Outside Telephony Markets Well After 1968.

For its part the FCC views *Carterfone* as a major catalyst for lower consumer prices, greater competition, and enhanced service options.[31] *Carterfone* makes it clear that "[c]ustomers have the right to use common carrier telecommunications services in any way that is privately beneficial, so long as it is not publicly harmful."[32]

In 1998 the FCC extended its *Carterfone* policy to cable television when it recognized the right of consumers to use cable-ready televisions and to buy set-top converters, in lieu of the sole option of leasing one from their cable television provider.[33] The Commission explicitly linked this consumer right to attach navigation devices with its previously articulated *Carterfone* policy:

> Subscribers have the right to attach any compatible navigation device to a multi-channel video programming system. We conclude that the core requirement, to make possible the commercial availability of equipment to [multi-channel video programming distributor] MVPD subscribers, is similar to the *Carterfone* principle adopted by the Commission in the telephone environment. The *Carterfone* "right to attach" principle is that devices that do not adversely affect the network may be attached to the network.[34]

The FCC also stated that it could and should extend its *Carterfone* policy to other technologies and service markets[35] despite the likelihood that non-telephone networks raise possibly more complex operational matters than telephone network attachments:

> The parallel to the telephone has limitations. When customer ownership of telephone CPE became available, the telephone network was effectively a national monopoly. Well developed technical standards existed throughout an almost ubiquitous network. CPE compatible with the telephone network was part of this environment. In contrast, cable networks do not reflect universal attributes, and have substantially different designs. Nor do satellite systems share commonality beyond the most basic elements. . . . This *Order* seeks to accommodate these differences from the telephone model.[36]

The Commission's extension of its *Carterfone* policy to MVPD network attachment contradicts wireless *Carterfone* opponents who claim that the policy only could only apply to a monopoly operating in a vertically integrated wireline telephone environment.

2. Open Platform Access in a Portion of the 700 MHz Frequency Band

Recently the FCC recognized the public interest benefits accruing from applying wireless *Carterfone* policy when establishing operational rules for a portion of quite valuable reallocated spectrum available for next generation wireless services.[37] The FCC established an "Open Platform" requirement for a 22 MHz block of choice "beachfront" 700 MHz spectrum that will be made available for auction this year as part of the conversion from analog to digital broadcast television that is scheduled to be completed by February 17, 2009.

The winning bidder must allow consumers to use the handset of their choice and download and use any applications, subject to certain reasonable network management conditions that allow the licensee to protect the network from harm:

> Although we generally prefer to rely on marketplace forces as the most efficient mechanism for fostering competition, we conclude that the 700 MHz spectrum provides an important opportunity to apply requirements for open platforms for devices and applications for the benefit of consumers, without unduly burdening existing services and markets. For the reasons described below, we determine that for one commercial spectrum block in the 700 MHz Band -- the Upper 700 MHz Band C Block -- we will require licensees to allow customers, device manufacturers, third-party application developers, and others to use or develop the devices and applications of their choice, subject to certain conditions.[38]

IV. FCC Initiatives to Protect Consumers From Mandatory Bundling Arrangements

On several occasions the FCC has established rules for other media designed to protect consumers from incurring higher costs and less flexibility when attaching equipment and when accessing content and carrier services. At both the supplier and end user levels, the Commission has implemented safeguards that restrict or eliminate requirements that consumers have to pay for services, equipment and content that they do not want or need as a condition precedent for access to desired services and content.

A. On the Supply Side

The FCC, on it own initiative and to implement a statute, has established operating rules that limit how carriers package services. The Commission also has imposed restrictions on what contractual service terms carriers can impose that have the effect of locking in consumers and foreclosing their ability to take service from a competitor. On the supply side, the FCC requires CMRS providers, to allow departing subscribers the opportunity to retain their telephone number when changing carriers. Such local number portability (LNP)[39] promotes competition by eliminating a disincentive to switch between carriers. Local number portability, as discussed below, requires carriers to cooperate on the basis of telephone numbers that the carriers control and assign. The FCC also promotes consumer access to diverse video content by foreclosing ventures that provide both content and content delivery from stifling competition through exclusive dealing arrangements. Additionally the Commission has imposed a number of service obligations on Voice over the Internet Protocol providers to ensure that these operators offer essential telephone services.

1. Local Number Portability

The FCC has recognized that if wireless consumers cannot retain a previously assigned telephone number when shifting their business to another carrier, many consumers might refrain from pursuing even a lower cost or better suited service arrangement.[40] The Commission requires both wireline[41] and wireless carriers[42] to provide consumers with LNP to promote competition and to eliminate the potential for lock-in resulting from consumer reluctance to change carriers if the shift entails assignment of a new telephone number.

Compulsory LNP requires carriers to coordinate the assignment of telephone numbers and their association with a specific subscriber. While carriers surely would prefer to use the loss of existing telephone numbers to deter customers from migrating to another carrier, the FCC requires carriers to cooperate in transferring a previously assigned telephone number to the replacement carrier. LNP demonstrates that Congress and the FCC will not always allow carriers unilaterally to establish the terms and conditions under which subscribers access service, particularly since the carriers' business strategies might motivate them to deem unnecessary or infeasible network access arrangements that promote competition and enhance consumer welfare.

2. Promoting Competition in Video Program Distribution

The FCC has articulated a longstanding concern about vertical integration[43] by video content creators and distributors in light of the likelihood for harm to consumers. Because cable television companies and their corporate affiliates generate the vast majority of desired video content and control the major medium for distributing the content, the FCC has expressed concern that cable companies can stifle competition, extract rates above competitive levels from subscribers, favor affiliated content providers, and retard development of new content sources. This concern for the consumer and determination of market failure juxtaposes with the Commission's lack of concern with similarly integrated providers of CMRS, despite documented proof that cellular telephone companies have blocked access to competitive services in favor of their own affiliated services.[44]

The FCC recently released a Report & Order[45] that extends the ban of exclusive contracts between vertically integrated programmers and cable operators to October 5, 2012.[46] The Commission determined that vertically integrated programmers still have the ability[47] and the incentive[48] to favor operators with whom they have a corporate affiliation over competitors.[49] In light of the FCC's determination that vertically integrated ventures still control, "must see" content, for which no viable substitute exists,[50] the Commission retained the prohibition against exclusive content distribution contracts from ventures that vertically integrate content production and distribution to consumers.

The FCC recognizes that vertical integration in video content creation and distribution requires regulatory intervention. CMRS operators operate in a similarly integrated mode. The top two CMRS carriers, AT&T and Verizon, control 53.4% of the wireless market[51] and are owned by the ventures that have substantial market share in broadband wireline access, e.g., Digital Subscriber Line (DSL)[52] and fiber optic cable links, and wireline telephone service. In addition to the possible market power accruing from a commanding share of the wireless industry, AT&T/Verizon, in conjunction with many other wireless carriers, vertically integrate by securing exclusive content distribution rights for carriage via their wireless networks. They horizontally integrate[53] by bundling triple-play[54] and quadruple-play service packages[55] combining wireless service with wireline telephony, Internet access, and wireline video program access.

As the Internet increasingly becomes the focal point and preferred medium for all ICE services, ventures such as AT&T and Verizon have great opportunities to leverage their size, vertical integration, and horizontal integration to offer facilities-based, competitive alternatives to incumbent providers such as cable television operators. But on the other hand, AT&T and Verizon currently face none of the structural safeguards that the FCC has placed on vertically integrated cable television ventures. Nothing prevents any CMRS operator, including AT&T and Verizon, from engaging in the anticompetitive practices that the Commission seeks to prevent in the cable television marketplace, a plausible outcome in light of strong incentives for major telephone companies to find and dominate new markets to compensate for declining revenues from core telephony markets. The FCC apparently assumes that having four CMRS operators in a market would prevent any single carrier, or group of colluding carriers from harming consumers by favoring owned or affiliated content providers. Likewise the FCC appears unconcerned about the ability of companies having dominant market share in CMRS, broadband Internet access **and** wireline telephony to leverage bundled service packages into market dominance in most ICE markets (and particularly in their home wireline markets).

3. Public Interest Obligations Imposed on Voice over the Internet Protocol (VoIP) Providers

Ostensibly to serve the public interest, the FCC has imposed a number of service obligations on VoIP providers that use software to provide telephone services via broadband information services. The Commission's regulatory burdens make VoIP service more like conventional telephony, at the expense of reducing VoIP's competitive cost advantage.[56] VoIP service providers, which offer subscribers telephone calling access to the conventional wireline public switched telephone network (PSTN), must reconfigure their service to provide wiretapping capabilities to law enforcement authorities,[57] caller location identification and emergency 911 access[58] and service to disabled users.[59] Despite extensive rhetoric about

refraining from imposing regulation on both emerging technologies and competitive services,[60] the FCC chose not to allow the marketplace to determine whether considerable service discounts available from VoIP service providers outweigh the greater risk in an emergency and greater inconvenience for some users.

The FCC has imposed costly market countervailing public interest obligations on VoIP operators because the Commission believes inadequate public access issues warrant speedy administrative remedies. VoIP service providers must reconfigure their networks to provide additional types of services and access that they had not contemplated or wished to provide. Regardless whether VoIP operators consider their services the functional alternative to existing wireline or wireless services, the FCC has imposed a number of requirements that force closer equivalency. The Commission made no assessment of the financial costs incurred by VoIP providers, or the potential adverse impact on competition and service rates borne by the public. It appears that the FCC elevated public interest concerns over its general predisposition not to fetter with regulatory burdens market entrants having minor market share. Such intervention must have occurred because the Commission identified several instances of market failure (i.e., the inability of market forces to generate outcomes the Commission consider essential to serve the public interest). Thus, VoIP service providers had to adjust their business plans to accommodate the FCC's regulatory requirements.

B. On the Demand Side: Preventing Purchases of Unwanted Content and Compulsory Equipment Leases

At the end user level, the FCC has established several safeguards designed to help consumers avoid having to pay for content they do not want, or equipment they do not need. The safeguards include preventing cable television operators from requiring consumers to subscribe to one or more tiers of service before qualifying for the opportunity to access desired content such as a premium movie channel. The FCC also requires cable operators to provide service to subscribers who have television sets that can perform content descrambling and other security functions via the insertion of a computer chip card in lieu of using a leased set-top converter. The Commission also works to ease a technology transition that requires the acquisition of new equipment (e.g., digital cellphones to replace analog handsets), or the installation of a new converter (e.g., retrofitting analog televisions so that they can display digital signals).

1. Prohibiting Mandatory Cable Tier "Buy Throughs"

Section 3 of the 1992 Cable Act[61] prohibits cable television companies, operating in a market without effective competition, from requiring subscribers to "buy through"[62] intermediate tiers of programming in order to have the opportunity to access desired content positioned in a higher service tier. This means that consumers do not have to subscribe to so-called enhanced basic services, which bundle a variety of cable television programming, before securing the opportunity to view content offered on a per view, or per channel basis, such as individual premium channels like Home Box Office.

The Commission also has explored the prospect of allowing consumers to select content on an à la carte, network-by-network basis in lieu of service tiers that contain many channels of content, some of which individual consumers may not want. In a stunning reversal of its previous research and analysis, the FCC now asserts that à la carte access to cable television networks could save many consumers money and would not result in a reduction of television viewership. The Commission released a Further Report on the Packaging and Sale of Video Programming Services to the Public[63] to reexamine the conclusions and underlying assumptions of the earlier Media Bureau report on à la carte channel access submitted to Congress in November 2004.[64] The Commission reported that previous calculations of per channel cable television costs failed to net out the cost of broadcast stations and accordingly overstated costs by as much as 50 percent.

The FCC also abrogated its previous finding that à la carte would cause consumers to watch nearly 25 percent less television, resulting in over two fewer hours of television consumption per day. The Further Report stated there was no reason to believe that viewers would watch less video programming than they

do today simply because they could choose the channels they find most interesting. The Further Report states that "many consumers could be better under an à la carte model."[65]

2. Mandating an Alternative to Set Top Box Leasing

The FCC also has established rules designed to enable cable television subscribers to access content via "cable ready" television sets[66] without the expense of having to pay cable operators additional fees to lease a device, known as a set-top converter, that provides necessary signal descrambling functions. The FCC generally prohibits cable television companies from offering set-top converters that combine security functions, (i.e., descrambling), and other features, such as channel selection and navigation, electronic program guides, and pay-per-view (on-demand) access to content. The prohibition prevents cable companies from executing business plans that would greatly increase profits by requiring that all subscribers lease set-top boxes.[67] CableCards, which subscribers can insert into most recent vintage television sets,[68] provide consumers with a cheaper, though probably less profitable alternative to set top boxes.

3. Avoiding "Flash Cut" Equipment Obsolescence

a) Analog Cell Phones

The FCC has retained the requirement that CMRS operators continue to provide analog radiotelephone service, based largely on the goal of not forcing wireless subscribers to replace functional handsets that operate in the analog mode, or to deprive service to subscribers in remote areas where analog transmissions offer better signal penetration.[69] CMRS operators want to operate entirely in digital modes that promote spectrum efficiency and the ability to accommodate more subscribers. Notwithstanding compelling business and operational justifications, including the fact that for several years all new handsets offer subscribers the ability to access digital services,[70] the Commission established a five year transition period leading to the termination of the analog service requirement.[71]

b) Easing the Financial Consequences from the Complete Conversion to Digital Broadcast Television

The FCC also has undertaken a number of initiatives to ensure that owners of analog television sets can continue to view video content even after all television broadcasters must migrate to digital service. First, the Commission postponed the deadline for the conversion to digital service as a result of slower than anticipated consumer migration to more expensive digital television sets. Second, the Commission and the Commerce Department developed a subsidy program whereby every household in the United States can receive two $40 coupons for use in buying a converter that will enable the use of analog television sets to display broadcast digital content. Third, the FCC, on its own accord and through television set retailers, broadcasters, and cable systems authorized a campaign to alert consumers to the future migration to digital broadcast television. Lastly, the Commission has proposed to require cable television operators to convert digital video content back into analog so that subscribers can continue to use television sets lacking the subsidized digital converter.

(i) Informing the Public

After granting several extensions of time for broadcasters to continue transmitting in an analog format, the FCC now faces a congressionally-mandated February 17, 2009 deadline for the complete migration to digital transmission.[72] The Commission recently established frequency band allocation and auctioning rules for the vacated broadcast UHF television spectrum in the 700 MHz band that is expected to generate several billion dollars when auctioned off for additional wireless services.[73] The FCC now recognizes the need to inform the public that conventional analog television sets will not receive digital transmissions without a digital-to-analog converter, or a subscription to an MVPD such as a cable television operator. To support this goal of letting the general public know of the impending change, the FCC initiated a Notice of Proposed Rulemaking that seeks comment on potential DTV consumer education initiatives.[74] The NPRM

proposes to require broadcasters, MVPDs, retailers and manufacturers to publicize the digital transition in addition to efforts by the FCC.

The FCC's proposed education campaign has six elements largely designed to notify consumers of the change and what it entails. The Commission proposes to require television broadcast licensees to conduct on-air consumer education efforts including public service announcements. Additionally, the FCC would require all MVPDs to include periodic notices about the transition in customer bills, and asks how these notices should be conveyed to customers who rely on electronic or automatic billing. The Commission also proposes to require all manufacturers of "television receivers or related devices" (e.g., set top converters and digital video recorders), to include transition information with the devices. The Commission already requires that all new television sets be equipped with a DTV over-the-air tuner whether or not they include a soon-to-be-obsolete analog tuner. Another proposed initiative would require that the FCC work with the National Telecommunications and Information Administration to require retailers to participate in a program that offers consumers access to government subsidized converter boxes.[75] The FCC also advises to require the "Partners" listed on the Commission's DTV.gov page to report their consumer outreach efforts.

(ii) Must Carry Conversion of Digital Signals to Analog

Even as the FCC strives to achieve the complete conversion to digital television, the Commission has proposed to require cable operators to continue delivering analog signals of broadcast stations after the February 17, 2009 conversion deadline.[76] In assessing the post digital conversion, must-carry obligations of cable operators,[77] the Commission considers it in the public interest for cable operators to downconvert must-carry broadcast station content:

> we propose that cable operators must comply with this "viewability" provision and ensure that cable subscribers with analog television sets are able to continue to view all must-carry stations after the end of the DTV transition by either: (1) carrying the digital signal in analog format, or (2) carrying the signal only in digital format, provided that all subscribers have the necessary equipment to view the broadcast content. In the absence of such a requirement, analog cable subscribers (currently about 50% of all cable subscribers, or approximately 32 million house holds) would no longer be able to view commercial must-carry stations or non-commercial stations after February 17, 2009. We believe such an outcome would adversely impact the DTV transition and would unduly burden millions of consumers.[78]

On the other hand the Commission reiterated that cable operators must not downgrade high definition broadcast retransmissions.[79]

Over many years the FCC has upheld consumer freedom by imposing operational burdens on operators to sustain the continuing viability of analog cellphones and television sets, and to enable consumers to maximize the utility of equipment they already own. Despite technological innovations supporting new and arguably better digital services, the Commission has respected the option for consumers to delay having to replace or supplement already owned equipment. The FCC has supported the right of consumers to decide whether to extend the useable life of equipment and to expand the functions performed by already owned devices in lieu of having to buy or lease more expensive new equipment.

V. Conclusions and Recommendations

CMRS subscribers have begun to recognize that their handsets offer access to a variety of advanced ICE services in addition to telephone calls and short text messages. On one hand, CMRS operators want to stimulate subscriber interest in, and willingness to pay for next generation network services and features. But on the other hand the carriers want to limit access so that subscribers cannot use options available from unaffiliated ventures who do not share revenues with the carrier providing the telecommunications

transmission link. CMRS operators appear content to risk retarding demand for next generation services in exchange for the greater likelihood that they can capture most revenues accruing from these services.

CMRS operators that limit, block, and disable some new features available from handsets or available via enhanced access to the Internet reduce the scope, reach, and versatility of services available to consumers. These carriers have concluded that in light of the FCC's inaction and apparent indifference, CMRS providers can limit consumer options that surely would accrue – options that would be "privately beneficial without being publicly detrimental."[80] Limiting, blocking, and disabling handset access to the plethora of existing and prospective services bolsters carriers' revenue streams by foreclosing competitive alternatives in ways that constitute "an unwarranted interference with a person's use of their telephone,"[81] an outcome appellate courts will not tolerate,[82] nor should the FCC.

If the FCC adopts a wireless *Carterfone* policy, the Commission will enhance the likelihood that wireless subscribers can exploit the powerful interactive features available via most cellular radiotelephone handsets. Free of carrier restrictions, wireless subscribers can pay for and enjoy an ever-increasing array of services accessible via their telephone handsets. These multi-faceted devices have the capability of offering tetherless options for accessing the variety of services already available to wireline telephone handset users plus many more services that can take advantage of handset video screens, e.g., Internet World Wide Web sites. While CMRS operators want a captive subscriber base that pays both for wireless minutes and for media content and applications, the wireless *Carterfone* policy surely would stimulate more network usage, even as it accrues public dividends by stimulating competition for value-adding content services. The current walled garden access to content and limitations on subscribers' use of their handsets thwarts development of value-added content services and creates disincentives for subscribers to make more calls.

Already some purchasers of Apple iPhones and other cell phones have resorted to "self help" tactics to eliminate manufacturer or carrier-imposed limitations on their handsets' versatility, features, and access to third party applications and content. Rather than all but criminalize such tactics, the FCC should establish a handset technical certification process that makes it possible for any handset, operating in the proper format and frequency, to access any carriers' network. At the very least the Commission should expressly adopt a wireless *Carterfone* policy that forecloses CMRS operators from imposing handset restrictions based on theoretical rationales, novel economic constructs, invocations of national security, explanations about the need to manage spectrum, and unjustified concern about the "technical integrity" of their networks.

Rather than wait for a consumer revolt, the FCC could open a wireless *Carterfone* rulemaking that would place the burden on carriers to explain why their subscribers should not have the same handset attachment rights as wireline subscribers have enjoyed for thirty-nine years. The FCC's proposed wireless *Carterfone* policy should state explicitly that:

1) CMRS subscribers have the right to attach any handset that complies with standards designed to protect CMRS networks from technical harm; CMRS operators should bear the burden of proving that a particular handset would cause technical harm and therefore should not receive FCC certification;

2) CMRS subscribers have the right to use their handsets to access any service, software, application and content available by subscriber imputed commands or instructions; The FCC should expressly state that CMRS operators should have a common carrier duty, pursuant to Title II of the Communications Act, to receive, switch, route and transmit such subscriber keyed commands or instructions; and

3) Suppliers of software, applications, services and content accessible via CMRS network have the right to offer them to CMRS subscribers subject to a reasonable determination by CMRS carriers that such access will not cause technical harm to the carriers' networks; The FCC should reserve the right to mediate and resolve disputes over technical compatibility of any software, applications, services, and content accessible via a CMRS carrier network.

The FCC recognizes that Title II regulations provide essential safeguards where the lack of competition and evidence of market power currently foreclose deregulation:

> many of the obligations that Title II imposes on carriers . . . foster the open and interconnected nature of our communications system, and thus promote competitive market conditions. [83]

Title II regulatory oversight remains an essential public safeguard for telecommunications services, including ones provided by CMRS carriers.

The fact that CMRS carriers also offer information services, engage in some degree of competition, and subsidize the handsets they sell to subscribers has no impact on the FCC's statutory obligation to subject CMRS telecommunications services to common carrier regulation. Likewise the FCC can impose regulatory requirements that serve the public interest even though they do not fully jibe with wireless carriers' business strategies. The Commission does not confiscate regulated carrier property when it imposes requirements that might reduce carrier revenues, or prevent them from maximizing profits. As this paper has documented, ample justification and precedent exist for the FCC to mandate obligations that are in the best interest of the general public. Having failed to require that CMRS operators comply with their common carrier obligations, vis-a-vis the rights and options of subscriber handset use, the FCC belatedly should articulate and enforce a coherent and effective wireless *Carterfone* policy.

Endnotes

[1] Use of the Carterfone Device in Message Toll Telephone Service, 13 FCC 2d 420 (1968), *recon. denied,* 14 FCC 2d 571 (1968); *see also*, Telerent Leasing Corp., 45 FCC 2d 204 (1974), *aff'd sub nom.* North Carolina Utilities Commission v. FCC, 537 F.2d 787 (4th Cir. 1976), *cert. denied,* 429 U.S. 1027 (1976); Mebane Home Telephone Co., 53 FCC 2d 473 (1975), *aff'd sub nom.* Mebane Home Telephone Co. v. FCC, 535 F.2d 1324 (D.C. Cir. 1976); Public Utility Comm'n of Texas v. FCC, 886 F. 2d 1325 (D.C. Cir. 1989) (noting long established FCC policy that carriers and non-carriers alike have a federal right to interconnect to the public telephone network in ways that are privately beneficial if they are not publicly detrimental).Previous FCC opposition to this principle failed to pass muster with a reviewing court that interpreted the Communications Act as mandating the right of consumers to attach equipment to the network in ways that were privately beneficial but not publicly harmful. Hush-A-Phone Corp. v. U.S., 238 F. 2d 266 (D.C. Cir. 1956).

[2] "Part 68 of the FCC rules (47 C.F.R. Part 68) governs the direct connection of Terminal Equipment (TE) to the Public Switched Telephone Network (PSTN), and to wireline carrier-owned facilities used to provide private line services. Part 68 also contains rules concerning Hearing Aid Compatibility and Volume Control (HAC/VC) for telephones, dialing frequency for automated dialing machines, source identification for fax transmissions, and technical criteria for inside wiring." Federal Communications Commission, Part 68 Home Page, available at: http://www.fcc.gov/wcb/iatd/part_68.html. *See also*, Detariffing the Installation and Maintenance of Inside Wiring, Second Report and Order, 51 Fed. Reg. 8498 (Mar. 12, 1986), *recon*., 1 FCC Rcd. 1190 (1986), *further recon*., 3 FCC Rcd 1719 (1988), *partially remanded sub nom.* National Association of Regulatory Utility Commissioners v. FCC, 880 F.2d 422 (D.C.Cir.1989); *on remand*, Detariffing the Installation and Maintenance of Inside Wiring, Second Further Notice of Proposed Rulemaking, 5 FCC Rcd. 3407 (1990), *partially modified*, 7 FCC Rcd. 1334 (1992).

[3] Skype Communications S.A.R.L., Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, submitted Feb. 20, 2007; available at: http://download.skype.com/share/skype_fcc_200702.pdf.

[4]Google's interest in wireless net neutrality appears to stem from its possible interest in using wireless spectrum and offering a wireless handset to promote greater access to its Internet services. *See* Google Public Policy Blog, Network Neutrality; available at: http://googlepublicpolicy.blogspot.com/search/label/Net%20Neutrality.

[5] The top four cellular telephone carriers in the United States have a combined market share of 88.1 percent. Leslie Cauley, *AT&T Eager to Wield Its Weapon*, USA TODAY (May 21, 2007)(displaying statistics compiled by Forrester Research); available at: http://www.usatoday.com/tech/wireless/2007-05-21-at&t-iphone_N.htm.

[6] "Few doubt that the future of telecommunications will rely mostly on broadband and wireless technologies. Wireless and broadband technologies are transforming the telecommunications market, offering users ubiquitous access to voice, data, and internet services. The number of mobile subscribers has already surpassed that of end-user switched access lines served by local exchange carriers." National Regulatory Research Institute, Methods for Analyzing the Effects of Broadband and Wireless Services on Competition in Local Telephony, Project Announcement; available at: http://www.nrri.ohio-state.edu/current-projects/telecommunications/methods-for-analyzing-the-impact-of-broadband-and-wireless-services-on/.

[7] *See* International Telecommunication Union, What *Rules for IP-enabled NGNs?*, Workshop, March 23-24, 2006; world wide web; available at: http://www.itu.int/osg/spu/ngn/event-march-2006.phtml; *see also*, International Telecommunication Union, *Background Sources on Delivery of Digital Content*, world wide web; available at http://www.itu.int/osg/spu/stn/digitalcontent/resources_topics.html; Organ-ization for Economic Co-Operation and Development, Directorate for Science Technology and Industry, *Next Generation Networks: Evolution and Policy Considerations*, OECD Foresight Forum, (October 3, 2006); world wide web; available at: http://www.oecd.org/document/12/0,3343,en_2649_34225_37392780_1_1_1_1,00.html.

[8] Title II of the Communications Act, as amended, 47 U.S.C. §201 *et. seq.* (2007) requires providers of basic telecommunications services to operate on a nondiscriminatory basis, providing services on just and reasonable charges and also subject to numerous entry regulations, tariffing, interconnection, and operating requirements.

[9] *See, e.g.,* Verizon Wireless, Verizon Wireless To Introduce 'Any Apps, Any Device' Option for Customers in 2008 (Nov. 27, 2008); available at: http://news.vzw.com/news/2007/11/pr2007-11-27.html.

[10] "Even as the wireless industry spreads a new gospel about opening mobile-phone networks to outside devices and applications, some of the biggest U.S. carriers are blocking new services that would compete with their own." Bruce Meyerson, *Not on Our Network, You Don't*, BUSINESSWEEK, p. 34 (Dec. 24, 2007).

[11] "Verizon's position is that the Federal Communications Commission should not impose 'open access' conditions on the 700 MHz spectrum. The record compiled at the FCC does not justify these conditions." Verizon Policy Blog, *700 MHz Statement* (July 26, 2007); available at: http://policyblog.verizon.com/PolicyBlog/Blogs/policyblog/DavidFish9/337/700MHz-statement.aspx. Verizon filed suit, but withdrew its petition to vacate the FCC's decision and to enjoin the Commission from pursuing its open access initiative. *See* Cellco Partnership d/b/a Verizon Wireless v. Federal Communications Commission, Petition for Review, Case No. 07-1359 (filed Sep. 10, 2007); available at: http://www.freepress.net/docs/vzw_appeal_700_petition.pdf. *See also*, Link Hoewing, *The Hype in the Skype Petition*, Verizon Policy Blog (May 9, 2007); available at: http://policyblog.verizon.com/PolicyBlog/Blogs/policyblog/LinkHoewing9/294/The-Hype-in-the-Skype-Petition.aspx.

[12] "Increasingly, phone handsets are as much a window into online lives as our computers are, storing text, email messages, music, and even video for us. With phones becoming more complex and expensive, the concept that consumers have to throw those experiences away if they want to change their carrier is as absurd as forcing them to throw away their computer if they change Internet provider. And consumers are smart enough to know this." Carl Howe, *Seeking Alpha, Time for Wireless Carriers to 'Unlock' Customer Handsets*, (Dec. 7, 2006); available at: http://seekingalpha.com/article/21976-time-for-wireless-carriers-to-unlock-customer-handsets.

[13] Tim Wu, "Wireless Net Neutrality: Cellular *Carterfone* and Consumer Choice in Mobile Broadband," New America Foundation Working Paper #17 (February 2007), available at: http://www.newamerica.net/files/WorkingPaper17_WirelessNetNeutrality_Wu.pdf.

[14] "A shortsighted and often just plain stupid federal government has allowed itself to be bullied and fooled by a handful of big wireless phone operators for decades now. And the result has been a mobile phone system that is the direct opposite of the PC model. It severely limits consumer choice, stifles innovation, crushes entrepreneurship, and has made the U.S. the laughingstock of the mobile-technology world, just as the cellphone is morphing into a powerful hand-held computer… That's why I refer to the big cellphone carriers as the 'Soviet ministries.' Like the old bureaucracies of communism, they sit athwart the market,

breaking the link between the producers of goods and services and the people who use them." Walt Mossberg, *Free My Phone*, All Things Digital Blog, (Oct. 21, 2007); available at: http://mossblog.allthingsd.com/20071021/free-my-phone/.

[15] "Cellphones and cellphone services made news with amazing frequency, making it clear that this service-we-love-to-hate is still in its crude Neanderthal age… No matter how depressed you get about the state of the world, you have to have faith in one thing: when things swing out of control, the public has a way of setting things straight… [T]he latest public pushback concerns evil cellphone-carrier greediness." David Pogue, Pogue's Posts Blog, *The Year of the Cellphone* (Dec. 13, 2007); available at: http://pogue.blogs.nytimes.com/2007/12/13/the-year-of-the-cellphone/.

[16] "Of the 1.4 million iPhones sold so far (of which 1,119,000 were sold in the quarter ending Sept. 30), [Apple Chief Operating Office Timothy] Cook estimated that 250,000 were sold to people who wanted to unlock them from the AT&T network and use them with another carrier." Saul Hansell, *Apple: $100 Million Spent on Potential iBricks*, NEW YORK TIMES, Technology, Bits Blog Site,(Oct. 22, 2007); available at: http://bits.blogs.nytimes.com/tag/iphone/.

"You bought the iPhone, you paid for it, but now Apple is telling you how you have to use it, and if you don't do things the way they say, they're going to lock it. Turn it into a useless 'brick' Is this any way to treat a customer? Apparently, it's the Steve Jobs way. But some iPhone users are mad as heck, and they're not going to take it anymore." Alexander Wolfe, *Apple Users Talking Class-Action Lawsuit Over iPhone Locking*, Wolfe's Den Blog; available at: http://www.informationweek.com/blog/main/archives/2007/09/iphone_users_ta.html.

[17] "The benefits of competition have been observed in a great variety of markets through centuries of experience. We ourselves have observed such tangible benefits in telecommunications equipment markets after our Carterfone decision effectively opened such markets to competition. In Docket No. 20003-a broad fact-finding inquiry into the economic implications and relationships arising from regulatory policies and pricing practices for telecommunications services and facilities subject to competition-we concluded that 'consumer inter-connection has benefited the general public by speeding innovation and meeting needs that were unmet prior to the introduction of customer provided equipment.'" MTS and WATS Market Structure, CC Docket No. 78-72, Report and Third Supplemental Notice of Inquiry and Proposed Rulemaking, ¶106 (1980) (citing Economic Implications and Interrelationships Arising From Policies and Practices Relating to Customer Interconnection, Jurisdictional Separations and Rate Structures, Docket No. 20003, Second Report, 75 FCC 2d 506, 562 (1980).

[18] "The carrier retail channel still accounts for the large majority of wireless sales; however, the distribution support provided by indirect channel partners keeps getting stronger… Verizon Wireless has been shifting focus to its own retail outlets that account for 65% of new sales." A. Greengart and B. Akyuz, Current Analysis, Consumer Handsets, Mobile Devices--U.S., 2-3 (2006); available at: http://www.currentanalysis.com/k/files/CurrentAnalysis-MA569.pdf.

[19] The Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, 107 Stat. 312, amended section 332 of the Communications Act of 1934, to create the CMRS carrier category. The law defines CMRS as "any mobile service…that is provided for profit and makes interconnected service available (A) to the public or (B) to such classes of eligible users as to be effectively available to a substantial portion of the public." 47 U.S.C. § 332(d)(1).

[20] 47 U.S.C. §201 et seq. (2006).

[21] "A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this chapter, except for such provisions of subchapter II of this chapter as the Commission may specify by regulation as inapplicable to that service or person. In prescribing or amending any such regulation, the Commission may not specify any provision of section 201, 202, or 208 of this title, and may specify any other provision only if the Commission determines that— (i) enforcement of such provision is not necessary in order to ensure that the charges, practices, classifications, or regulations for or in connection with that service are just and reasonable and are not unjustly or unreasonably discriminatory; (ii) enforcement of such provision is not necessary for the protection of consumers; and (iii) specifying such provision is consistent with the public interest." 47 U.S.C. §332(c)(1)(A)i-iii. *See also* 47 U.S.C. §160(a)(establishing similar forbearance criteria for other telecommunications service providers).

[22] *See* Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, Declaratory Ruling, WT Docket No. 07-53, FCC 07-30 (rel. March 23, 2007); available at: http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-07-30A1.pdf.

[23] *See, e.g.*, Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, Report and Order and Further Notice of Proposed Rulemaking, WT Docket No. 05-265, FCC 07-143 (Rel. Aug. 16, 2007); available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2007/db0816/FCC-07-143A1.pdf.

[24] The FCC interprets the Telecommunications Act of 1996 to create mutual exclusivity between telecommunications services, subject to Title II common carrier regulation, and information services, subject to limited regulation available under Title I. "Congress intended the categories of 'telecommunications service' and 'information service' to be mutually exclusive." Federal-State Joint Board On Universal Service, CC Docket No. 96-45, Report to Congress, 13 FCC Rcd. 11501, 13 FCC Rcd. 11830, n. 79 (1998). "Based on our analysis of the statutory definitions, we conclude that an approach in which "telecommunications" and "information service" are mutually exclusive categories is most faithful to both the 1996 Act and the policy goals of competition, deregulation, and universal service." Id. 13FCC Rcd. at 11530 (1998).

[25] A safe harbor constitutes "[a]n area or means of protection [or a] provision (as in a statute or regulation) that affords protection from liability or penalty." BLACK'S LAW DICTIONARY (8th ed. 2004).

[26] Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, Report and Order and Further Notice of Proposed Rulemaking, WT Docket No. 05-265, FCC 07-143 (Rel. Aug. 16, 2007); available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2007/db0816/FCC-07-143A1.pdf.

[27] *Id*. at ¶5.

[28] "Mobile operators may experience substantial decline in ARPU in developed countries, as voice prices decrease, non-voice services fail to capture consumers' interest, and mobile phones lose their fashionable image, according to a forthcoming report, The Future of the Global Wireless Industry: scenarios for 2007–12, to be published by Analysys." Desire Athow, Declining ARPU Corners Mobile Operators, Technology Watch Blog (June 5, 2007); available at http://blog.itproportal.com/?p=720.

[29] Robert W. Hahn, Robert E. Litan and Hal J. Singer, *The Economics of "Wireless Net Neutrality,"* AEI-Brookings Joint Center for Regulatory Studies, Related Pub. 07-10 (April, 2007) 1 JOURNAL OF COMPETITION LAW AND ECONOMICS, 53 (2007); available at:
http://jcle.oxfordjournals.org/cgi/reprint/nhm015v1.pdf and
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=983111.

[30] Thomas Hazlett, *How the 'walled garden' promotes innovation*, FT.com (Sept 25, 2007); available at: http://www.msnbc.msn.com/id/20976213/.

[31] "As a result of Carterfone and other Commission actions, ownership of telephones moved from the network operator to the consumer. As a result, the choice of features and functions incorporated into a telephone has increased substantially, while the cost of equipment has decreased." Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, CS Docket No. 97-80, Report and Order, 13 FCC Rcd. 14775, 14780 (1998).

"Over the last several decades, some of the most important issues raised before this Commission have concerned the introduction of competition in the provision of telecommunications equipment and services. In the customer premises equipment (CPE) market, competition was fostered by a series of regulatory and judicial actions, beginning with the Hush-a-Phone and Carterfone decisions, continuing with the equipment registration program, and culminating in the Second Computer Inquiry decision. As a result of these decisions and the responses of businesses and customers to the new opportunities for the provision of CPE, competition in the CPE marketplace is now well established." GTE Sprint Communications Corporation, US Telecom, Inc., Allnet Communications Services, Inc., and United States Transmission Systems, Inc., Joint Petition for Expedited Rulemaking, CC Docket No. 85-348, Notice of Proposed Rulemaking, FCC 85-604, 1985 WL 260270.

[32] Revisions to Price Cap Rules for AT&T, CC Docket No. 93-197, Notice of Proposed Rulemaking, 8 FCC Rcd. 5205, *3 (1993)(West pagination).

[33] Implementation of Section 304 of the Telecommunications Act of 1996, Report and Order, 13 FCC Rcd. 14775 (1998), *on recon*., 14 FCC Rcd. 7596 (1999), *rev. den*., General Instrument Corp. v. F.C.C., 213 F.3d 724 (D.C. Cir. 2000). Section 629 of the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat 56 (1996), *codified at*, 47 U.S.C. § 549 instructs the FCC to "adopt regulations to assure the

commercial availability, to consumers…of…equipment used...to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor."

[34] *Id*. 13 FCC Rcd. at 14778. "The competitive market for consumer equipment in the telephone context provides the model of a market we have sought to emulate in this proceeding.[FN16] Previously, consumers leased telephones from their service provider and no marketplace existed for those wishing to purchase their own phone. The *Carterfone* decision allowed consumers to connect CPE to the telephone network if the connections did not cause harm. As a result of *Carterfone* and other Commission actions, ownership of telephones moved from the network operator to the consumer. As a result, the choice of features and functions incorporated into a telephone has increased substantially, while the cost of equipment has decreased." *Id*. 13 FCC Rcd. at 14780.

[35] "Following the *Carterfone* principle adopted in the telephone context would allow subscribers the option of owning their own navigation devices and would facilitate the commercial availability of equipment." Id. 13 FCC Rcd. at 14786. "We propose to adopt the basic principle that equipment that is not part of a MVPD's network distribution plant may be acquired by subscribers and attached to the network, limited only by the requirement that any such equipment attached to a MVPD's network not cause it any harm. This basic principle parallels that adopted in the telephone context by the Commission's Carterfone and subsequent decisions -- devices that do not adversely affect the network and are privately beneficial without being publicly detrimental, may be attached to the network.." Implementation of Section 304 of the Telecommunications Act of 1996, Notice of Proposed Rulemaking, 12 FCC Rcd. 5639, 5645 (1997).

[36] Implementation of Section 304 of the Telecommunications Act of 1996, Report and Order, 13 FCC Rcd. at 14780.

[37] Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, Second Report and Order, FCC 07-132, 2007 WL 2301743 (rel. Aug. 10, 2007). *See also*, "*Ex Parte* Comments of the Public Interest Spectrum Coalition," Service Rules for the 698-746, 747-762 and 777-792 Bands, WT Docket 06-150 (April 5, 2007), available at http://www.newamerica.net/files/700%20MHz%20NN%20Comments.pdf.

[38] *Id*. at *60 (West pagination).

[39] "Local number portability (LNP) refers to the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers when switching from one telecommunications carrier to another. Thus, subscribers can port [i.e., interconnect and hand off traffic] numbers between two CMRS carriers (intramodal porting) or between a CMRS and wireline carrier (intermodal porting)." Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Eleventh Report, 21 FCC Rcd. 10947, 11005 (2006).

[40] "The ability of end users to retain their telephone numbers when changing service providers gives customers flexibility in the quality, price, and variety of telecommunications services they can choose to purchase. Number portability promotes competition between telecommunications service providers by, among other things, allowing customers to respond to price and service changes without changing their telephone numbers. The resulting competition will benefit all users of telecommunications services. Indeed, competition should foster lower local telephone prices and, consequently, stimulate demand for telecommunications services and increase economic growth." Telephone Number Portability, CC Docket No. 95-116, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352, 8368 (1996).

[41] Section 251(2) of the Communications Act of 1934, as amended, 47 U.S.C. § 251(b)(2). requires each local exchange carrier to provide number portability specified as: "The duty to provide, to the extent technically feasible, number portability in accordance with requirements prescribed by the Commission."

[42] The FCC required CMRS carriers operating in the largest 100 metropolitan statistical areas (MSAs) to offer number portability upon request from a competing carrier by November 24, 2003, having previously extended the deadline by several years. Telephone Number Portability, CC Docket No. 95-116, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352 (1996), First Memorandum Opinion and Order on Reconsideration, 12 FCC Rcd 7236 (1997), Telephone Number Portability, Cellular Telecommunication and Industry Association's Petition for Forbearance from Commercial Mobile Radio Services Number Portability Obligations, WT Docket No. 98-229, Memorandum Opinion and Order, 14 FCC Rcd 3092 (1999), Verizon Wireless Petition for Partial Forbearance from the Commercial Mobile Radio Services Number Portability Obligation, CC Docket No.

95-116, Memorandum Opinion and Order, 17 FCC Rcd. 14972 (2002) (2002 Forbearance Order); Telephone Number Portability - Carrier Requests for Clarification of Wireless - Wireless Porting Issues, CC Docket No. 95-116, Memorandum Opinion and Order, 18 FCC Rcd. 20971 (2003). See also, 47 C.F.R §52.31(a).

[43] Vertical integration refers to the combination of separate market activities by a single enterprise. For example, the major cable television companies own ventures creating video programming as well as the ventures that distribute such content to consumers. "Vertical relationships may have beneficial effects, or they may deter competitive entry in the video marketplace and/or limit the diversity of programming." Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Twelfth Annual Report, 21 FCC Rcd. 2503, 2575 (2006). "Beneficial effects can include efficiencies in the production, distribution, and marketing of video programming, and providing incentives to expand channel capacity and create new programming by lowering the risks associated with program production ventures." Id. at n. 565. "Possible detrimental effects can include unfair methods of competition, discriminatory conduct, and exclusive contracts that are the result of coercive activity." Id. at n. 566.

[44] Wu, "Wireless Net Neutrality: Cellular *Carterfone* and Consumer Choice in Mobile Broadband,"*supra note 13*, at pp. 9-11.

[45] Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628(c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition, MB Docket No. 07-29, Report and Order (rel. Oct. 1, 2007), available at: http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-07-169A1.doc.

[46] "[W]e find that the exclusive contract prohibition continues to be necessary to preserve and protect competition and diversity in the distribution of video programming, and accordingly, retain it again for five years, until October 5, 2012." *Id*. at ¶1.

[47] "What is most significant to our analysis is not the percentage of total available programming that is vertically integrated with cable operators, but rather the popularity of the programming that is vertically integrated and how the inability of competitive MVPDs to access this programming will affect the preservation and protection of competition in the video distribution marketplace. While there has been a decrease since 2002 in the percentage of the most popular programming networks that are vertically integrated, we find that the four largest cable MSOs (Comcast, Time Warner, Cox, and Cablevision) still have an interest in six of the Top 20 satellite-delivered networks as ranked by subscribership, seven of the Top 20 satellite-delivered networks as ranked by prime time ratings, almost half of all RSNs, popular subscription premium networks, such as HBO and Cinemax, and video-on-demand (VOD) networks, such as iN DEMAND." *Id*. at ¶37.

[48] "An exclusive arrangement between a cable-affiliated programmer and its affiliated cable operator will reduce the number of platforms distributing the cable-affiliated programming network and thus the total number of subscribers to the network. This results in a reduction in potential advertising or subscription revenues that would otherwise be available to the network. In the long term, however, the cable-affiliated programmer would gain from an increased number of subscribers as customers switch to the affiliated cable distribution service in order to receive the exclusive programming. Thus, an exclusive contract is a kind of "investment," in which an initial loss of profits from programming is incurred in order to achieve higher profits later from increased cable distribution. This type of arrangement is most profitable when the costs of the investment are low and its benefits are high." *Id*. at ¶44.

[49] "We find that access to vertically integrated programming is essential for new entrants in the video marketplace to compete effectively. If the programming offered by a competitive MVPD lacks 'must have' programming that is offered by the incumbent cable operator, subscribers will be less likely to switch to the competitive MVPD. We give little weight to the claims by cable operators that recent entrants, such as telephone companies, have not experienced 'any trouble' to date in acquiring access to satellite-delivered vertically integrated programming." *Id*. at ¶41.

[50] "[W]e conclude that there are no good substitutes for some satellite-delivered vertically integrated programming and that such programming therefore remains necessary for viable competition in the video distribution market." *Id*. at ¶29.

[51] Leslie Cauley, AT&T eager to wield its iWeapon, USA TODAY (May 21, 2007)(displaying statistics compiled by Forrester Research); available at: http://www.usatoday.com/tech/wireless/2007-05-21-at&t-iphone_N.htm. The top four carriers control 88.1 percent of the wireless telecommunications market.

[52] Digital Subscriber Links provide Internet access via the copper wires initially used solely to provide narrowband telephone service. Telephone companies retrofit the wires to provide medium speed broadband services by expanding the available bandwidth by about 1500 kiloHertz. The FCC provides the following definition: "Digital Subscriber Line is a technology for bringing high-speed and high-bandwidth, which is directly proportional to the amount of data transmitted or received per unit time, information to homes and small businesses over ordinary copper telephone lines already installed in hundreds of millions of homes and businesses worldwide. With DSL, consumers and businesses take advantage of having a dedicated, always-on connection to the Internet." Federal Communications Commission, FCC Consumer Facts, Broadband Access for Consumers, available at: http://www.fcc.gov/cgb/consumerfacts/dsl2.html.

[53] Horizontal integration occurs when a single company develops, or acquires firms offering the capability of providing, two or more services that may compete in the same relevant market. For example a major newspaper chain may diversify by developing cable television programming or acquire companies that produce such content. Horizontal integration also covers situations where a venture acquires an existing or potential competitor. While such a combination might reduce existing or potential competition, the FCC believes that the merger can diversify available content so that the acquiring firm can offer new, niche programming. "With respect to horizontal integration of a major and emerging television network, the merger should have little or no adverse effect on competition or pricing in the market for television network advertising, since major and emerging networks compete in different strategic groups. To the extent that the emerging network continues to offer programming following the merger that targets niche or special interest audiences, then the welfare of viewers of both mass audience and niche programming should not be adversely affected by the merger and may indeed be advanced by the resulting efficiencies." Amendment of Section 73.658(G) of the Commission's Rules - The Dual Network Rule, MM Docket No. 00-108, Report and Order, 16 FCC Rcd. 11114, 11125 (2001).

[54] "[T]raditional phone companies that are primed to offer a 'triple play' of voice, high-speed Internet access, and video services over their respective networks." Exclusive Service Contracts for Provision of Video Services in Multiple Dwelling Units and Other Real Estate Developments, Notice of Proposed Rule Making, 22 FCC Rcd. 5935, 5938 (2007).

[55] The quadruple play refers to the combination of "video, broadband Internet access, VoIP and wireless service..." AT&T Inc. and Bellsouth Corporation, Application for Transfer of Control, Memorandum Opinion and Order, 22 FCC Rcd. 5662, 5735 (2007).

[56] See Rob Frieden, Neither Fish Nor Fowl: New Strategies for Selective Regulation of Information Services, J. TELECOMM. & HIGH TECH. L. (publication pending); available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1004100.

[57] Communications Assistance for Law Enforcement Act and Broadband Access And Services, ET Docket No. 04-295, RM-10865, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd. 14989, 15001 (2005)(citations omitted), aff'd. American Council on Education v. FCC, 451 F.3d 226 (D.C. Cir. 2006).

[58] IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers, WC Docket Nos. 04-36, 05-196, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245 (2005), aff'd, Nuvio Corp. v. FCC, 473 F.3d 302 (D.C. Cir. 2006).

[59] IP-Enabled Services, WC Docket No. 04-36, Implementation of Sections 255 and 251(A)(2) of the Communications Act Of 1934, as Enacted by the Telecommunications Act of 1996: Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment By Persons With Disabilities, Docket No. WT 96-198, FCC 07-110, 2007 WL 1744291 (rel. June 15, 2007).

[60] For example, the FCC classified wireless broadband Internet access as a lightly regulated information service: "[W]e find that classifying wireless broadband Internet access service as an information service furthers the goals of sections 7 and 230(b)(2) of the Communications Act, and section 706 of the Telecommunications Act of 1996. As noted above, wireless broadband Internet access technologies continue to evolve at a rapid pace. Through this classification, we provide the regulatory certainty needed to help spur growth and deployment of these services. Particularly, the regulatory certainty we provide through this classification will encourage broadband deployment in rural and underserved areas, where wireless broadband may be the most efficient broadband option. Additionally, we believe that wireless broadband Internet access service can provide an important homeland security function by creating redundancy in our nation's communications infrastructure." Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, 22 FCC Rcd. 5901, 5911 (2007).

Section 706 of the Telecommunications Act of 1976, Pub.L. 104-104, Title VII, § 706, Feb. 8, 1996, 110 Stat. 153, as amended Pub.L. 107-110, § 1076(gg), Jan. 8, 2002, 115 Stat. 2093, requires "[t]he Commission and each State commission with regulatory jurisdiction over telecommunications services . . . [to] encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment." Section 706(c)(1) defines advanced telecommunications capability "without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." *See also* 47 U.S.C. § 157; 47 U.S.C. § 230(b)(2) (stating that it is the policy of the United States "to preserve the vibrant and competitive free market that presently exists for the Internet").

[61] Public Law, 102-385, 106 Stat. 1460, *codified at* 47 U.S.C. § 543(80(A). "A cable operator may not require the subscription to any tier other than the basic service tier required by paragraph (7) as a condition of access to video programming offered on a per channel or per program basis. A cable operator may not discriminate between subscribers to the basic service tier and other subscribers with regard to the rates charged for video programming offered on a per channel or per program basis."

[62] "The tier buy-through prohibition of the 1992 Cable Act prohibits cable operators from requiring subscribers to purchase a particular service tier, other than the basic service tier, in order to obtain access to video programming offered on a per-channel or per-program basis." Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation Buy-Through Prohibition, Third Order on Reconsideration, 9 FCC Rcd. 4316, ¶25 (1994). See also, Federal Communications Commission, Fact Sheet, Consumer Options for Selecting Cable Channels and the Tier Buy-Through Prohibition, (Feb. 2003); available at: http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-231469A1.pdf.

[63] Federal Communications Commission, Further Report on the Packaging and Sale of Video Programming Services to the Public (Feb. 9, 2006); available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-263740A1.pdf [hereinafter cited as FCC Revised A la Carte Study].

[64] Federal Communications Commission, Report on the Packaging and Sale of Video Programming Services to the Public (November 18, 2004); available at: http://www.ncta.com/ContentView.aspx?hiddenavlink=true&type=reltyp1&contentid=401. *Cf.* Further Report on the Packaging and Sale of Video Programming Services to the Public (Feb. 9, 2006); available at: http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-263740A1.pdf.

[65] FCC Revised A la Carte Study at ¶3.

[66] Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, CS Docket No. 97-80, Second Report and Order, 20 FCC Rcd. 6794 (2005).

[67] "At the heart of a robust retail market for navigation devices is the reliance of cable operators on the same security technology and conditional access interface that consumer electronics manufacturers must rely on in developing competitive navigation devices. We conclude that a software-oriented conditional access solution may provide a 'common reliance' standard capable of both reducing the costs for set-top boxes and adding significantly to the options that equipment manufacturers now have in using the CableCARD. In balancing our specific statutory requirement to assure commercial availability of navigation devices and our general obligation to facilitate and promote the DTV transition, we conclude that a further extension of the effective date of the prohibition on integrated devices will permit the development of the statutorily required competitive market for navigation devices, with the potential benefit of reducing costs to consumers." *Id.* 20 FCC Rcd. at 6807-08.

[68] "[A] CableCARD . . . plugs into a slot in a host navigation device, permitting the device to perform both the security and non-security functions." Charter Communications, Inc. v. Federal Communications Commission, 460 F.3d 31, 34 (D.C. Cir. 2006) available at: http://www.cesweb.org/shared_files/edm/2006/govalert/DCCircuitAdvanceNewhousevFCCOrder081806.pdf. [hereinafter cited as CableCard Affirmance].

[69] Year 2000 Biennial Regulatory Review -- Amendment of Part 22 of the Commission's Rules to Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service and Other Commercial Mobile Radio Services, WT Docket No. 01-108, Report and Order, 17 FCC Rcd 18401, (2002)[hereinafter cited as Analog Sunset Order], Order on Reconsideration, 19 FCC Rcd 3239 (2004).

[70] In similar fashion CMRS operators limit the type of handsets they will allow subscribers to use. While CMRS subscribers may acquire handsets from alternative outlets any compatible device must have the same access limitations as would exist in CMRS operator sold handsets.
[71] "[E]liminating the [analog service] rule immediately without a reasonable transition period would be extremely disruptive to certain consumers, particularly those with hearing disabilities as well as emergency-only consumers, who currently continue to rely on the availability of analog service and lack digital alternatives. Accordingly, we modify our rules requiring application of the analog compatibility standard to include a sunset period of five years, during which time we anticipate that problems regarding access will likely be resolved." Analog Sunset Order, 17 FCC Rcd. at 18406.
[72] Deficit Reduction Act of 2005, Pub. L. No. 109-171, Title III, §§ 3002(a), 3003, 3004, 120 Stat. 21, 22 ("A full-power television broadcast license that authorizes analog television service may not be renewed to authorize such service for a period that extends beyond February 17, 2009."). *See also* 47 U.S.C. § 337(e) and 47 U.S.C. § 309(j)(14). *See also*, Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, MB Docket No. 07-91, Report and Order, FCC 07-228 (rel. Dec. 31, 2007); available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-228A1.doc.
[73] *See* Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, Second Report and Order, FCC 07-132 (rel. Aug. 10, 2007); available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-132A1.doc.
[74] DTV Consumer Education Initiative, MB Docket No. 07-148, Notice of Proposed Rulemaking, FCC 07-128 (rel. July 30, 2007); available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-128A1.doc.
[75] *See* Department of Commerce, National Telecommunications and Information Administration, Rules to Implement and Administer a Coupon Program for Digital-to-Analog Converter Boxes, Docket Number: 0612242667-7051-01 Final Rule, 47 C.F.R. 301, 72 Fed. Reg. No. 50, 12097(March 15, 2007); available at: http://www.ntia.doc.gov/ntiahome/frnotices/2007/DTVCouponFinalRule_031207.pdf. *See* also, Media Release, Commerce Department Issues Final Rule To Launch Digital-to-Analog Converter Box Coupon Program (March 12, 2007) (announcing a program granting all U.S. households access to two $40 coupons that can be used toward the purchase of digital-to-analog converter boxes Starting January 2008); available at: http://www.ntia.doc.gov/ntiahome/press/2007/DTVfinalrule_031207.htm.
[76] Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules, CS Docket No. 98-120, Second Further Notice Of Proposed Rulemaking, FCC 07-71 (rel. May 4, 2007); available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-71A1.doc[hereinafter cited as DTV Must Carry 2d FNPRM.
[77] Section 614(b)(4)(B) of the Communications Act of 1934, *codified at*, 47 U.S.C. § 534(b)(4)(B), directs the FCC to revise the mandatory signal carriage rules to reflect changes necessitated by the transition from analog to digital broadcasting.
[78] DTV Must Carry 2d FNPRM at ¶4.
[79] "The prohibition against material degradation ensures that cable subscribers who invest in a HDTV are not denied the ability to view broadcast signals transmitted in this improved format." DTV Must Carry 2d FNPRM at ¶5.
[80] "The intervenors' tariffs [prohibiting the use of plastic device to enhance privacy and low volume conversations], under the Commission's decision, are in unwarranted interference with the telephone subscriber's right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental." 238 F.2d 266, 269 (D.C. Cir. 1956).
[81] Cellnet Communications, Inc. v. Federal Communications Commission, 149 F.3d 429 (6th Cir. 1998) (affirming the FCC's to eliminate resale provisions, because elimination of such requirement does not upset customers' rights to use their telephones).
[82] *See supra*, n.1.
[83] Petition of the Embarq Local Operating Companies for Forbearance Under 47 U.S.C. § 160(C) From Application of Computer Inquiry and Certain Title II Common-Carriage Requirements Petition of the Frontier and Citizens ILECs for Forbearance Under Section 47 U.S.C. § 160(C) From Title II and Computer Inquiry Rules With Respect to Their Broadband Services, WC 06-147, Memorandum Opinion and Order, FCC 07-184, 2007 WL 3119515, ¶60 (rel. Oct. 24, 2007)(granting substantial forbearance relief regarding existing packet-switched broadband telecommunications services and optical transmission services, but refusing to abandon Title II regulation in general).