

Senator Klobuchar's QFRs
"An Examination of Competition in the Wireless Market"

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The Justice Department's filing to the FCC about mobile spectrum last April raised concerns about the potential risk of market leaders acquiring spectrum for the "foreclosure value" as opposed to "use value." Can there be economic benefits for firms to buy up a limited resource, such as spectrum, in order to prevent a rival from obtaining this scarce resource?

America's wireless rests on the effective optimization of one asset above all: spectrum. The US has taken advantage of technologies to improve the utilization of spectrum, but relying on efficiency enhancement alone is not enough. The supply of spectrum is fixed, and it needs to be allocated and utilized more efficiently.

A suboptimal approach to spectrum management may "satisfice" for the moment, but it is not strategic for the long term. The US faces an exploding demand for mobile data, cellular telephony on licensed spectrum, and a range of devices needing unlicensed spectrum. This situation of squandered spectrum is a great concern to the nation and a threat to future economic growth and global competitiveness. Citing the National Telecommunications and Information Administration's Office of Spectrum Management, the President's Council on Advisors for Science and Technology explains the situation.

Federal agencies have exclusive use of 18.1% (629 MHz) of the frequencies between 225 and 3700 MHz (traditionally referred to as the "beachfront frequencies"), while non-Federal users have exclusive licenses to 30.4% (1058 MHz). The remaining 51.5% is shared, with Federal use primary and private sector use secondary. Approximately 80% of the shared allocation—or 40% of the total—have a "dominant" Federal use (e.g., radar, aeronautical telemetry) that under the current coordination regime effectively precludes substantial commercial use of those bands. In other words, nearly 60% of the beachfront frequencies are predominantly allocated to Federal uses.¹

President Obama has taken a number of actions on this issue. He deserves commendation for his important and forward-looking leadership in 2010 to require that a combined 500 MHz of federal and non-federal spectrum be shared or relinquished by 2020. His Wireless Innovation and Infrastructure Initiative² described freeing spectrum through incentive auctions. The President has wisely recognized that there isn't a simple solution to spectrum management, and auctions and

¹ President's Council on Advisors for Science and Technology, "Realizing the Full Potential of Government-held Spectrum to Spur Economic Growth," July 2012.

http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf; Karl Nebbia, Director, NTIA Office of Spectrum Management, presentation to the Commerce Spectrum Management Advisory Committee (CSMAC), Dec. 9, 2009.

² White House Press Office, Presidential Memorandum, "President Obama Details Plan to Win the Future through Expanded Wireless Access", Feb 10, 2011. <http://www.whitehouse.gov/the-press-office/2011/02/10/president-obama-details-plan-win-future-through-expanded-wireless-access>

sharing are only two tools in the toolkit. It is a testament to his leadership that he would make such an effort, the political rewards of which will come after his presidency.

Federal spectrum holdings are assigned to some 60 federal agencies which don't necessarily have the information or incentives to steward their use of the resource. Given the importance of spectrum to the nation's economic health and security, a rational spectrum policy to recover unused and underutilized spectrum is in order. A Consumer Electronics Association study suggests there is a \$1 trillion business opportunity in converting some \$62 billion worth of spectrum. Mobile telephony is just one of many areas where high value use can be substituted for low value use, bringing greater efficiency and economic welfare.

The key theoretical notion underpinning the relinquishing of spectrum is that federal agencies procure their other resources through the market and competitive processes. There is no justification that spectrum, one of the most valuable inputs, should not be part of that process. The academic theory introduced by Herzel, formalized by Coase, and demonstrated successively with auctions, is that those who value spectrum most will pay the most for it and thereby put it to the most productive use.

The question speaks to whether a party would "stockpile" spectrum for the future. As for as hoarding and stockpiling, we can see that some government agencies are doing that at present. Given that they don't need to operate in a real market, they have that ability.

As for private actors in the US, it is also theoretically possible that they could buy spectrum as a means to foreclose competitors. However the prospect is expensive and difficult. For one buying an asset to have it on the shelf is not a wise decision for a mobile operator. Markets and investors will punish operators if they don't put their assets to use. Furthermore, it is difficult to justify shareholders why such an action is desirable. If it is in fact a gambit to foreclose spectrum, it will be very difficult to keep it a secret. So an operator faces a number of risks to implement a theoretically beneficial, but unproven strategy. Dr. Leslie Katz, former Chief Economist of the FCC, explains this in a paper "Economic Analysis of the Proposals That Would Restrict Participation in the Spectrum Auction".³

That being said, I know of a case in a European country where spectrum was attempted to be foreclosed. In this instance there was a state owned incumbent and a new entrant which the regulator was attempting to give a "leg up" in the auction—a bad idea. In this case, the new entrant (as it was given the ability to purchase spectrum at a lower rate than the incumbent) attempted to purchase spectrum and hoard it for future.

This effort for incentive auctions in the US should be applauded, but the original good idea has been marred in a few recent occasions. It is not possible to have a pure, bona fide incentive auction if arbitrary and capricious conditions are added to the auction (not allowing certain players to bid, restricting participating etc). Such practices distort the information and incentives of the agencies that are foregoing the spectrum. Without having a true reflection of the market

³ <http://apps.fcc.gov/ecfs/document/view?id=7520944358>

value or the buyers interested in the spectrum, agencies can't get a clear sense of the value they are relinquishing and what returns they can expect in future. The spectrum auction has to be held in good faith and with transparency in order to work.