
United States 2008 wireless spectrum auction

The **United States 700 MHz FCC wireless spectrum auction**, officially known as **Auction 73**,^[1] was started by the Federal Communications Commission (FCC) on January 24, 2008 for the rights to operate the 700 MHz frequency band in the United States. The details of process were the subject of debate among several telecommunications companies, including Verizon Wireless, AT&T, as well as the Internet company Google. Much of the debate swirled around the "open access" requirements set down by the Second Report and Order released by the FCC determining the process and rules for the auction. All bidding was required by law to commence by January 28.^[2]

Overview

The last transmissions by the incumbent television broadcasters using this spectrum ceased on June 12, 2009 except for LPTV (Low Power TV) stations, which can stay on the air with an analog signal until the winning bidders start operations. Full power TV stations ceased analog broadcasting on June 12, 2009.

Original usage

The 700 MHz spectrum was previously used for analog television broadcasting, specifically UHF channels 52 through 69. The FCC has ruled that the switch to digital television has made these frequencies no longer necessary for broadcasters, due to the improved spectral efficiency of digital broadcasts.^[3] Thus, all broadcasters will be required to move to channels 2 through 51 as part of the digital TV transition. This reallocation is an ongoing effort; the lower channels of the band, 52 through 59, have been used considerably more for analog and digital broadcasts than the upper channels, 60 through 69, which have been largely abandoned.

Some of the 700 MHz spectrum was already auctioned in Auctions 44 and 49. Channels 54, 55 and 59 were sold and in some areas are already being used for broadcasting and Internet access. For example Qualcomm MediaFLO in 2007 started using Channel 55 for broadcasting TV to cell phones in New York City, San Diego and elsewhere.^[4]

Auction rules and process

For the 700-MHz auction, the FCC designed a new multi-round process that limits the number of package bids that each bidder can submit (12 items and 12 package bids) and the prices at which they can be submitted, provides computationally intensive feedback prices similar to the pricing approach.^[5] This package bidding process (which is often referred to as combinatorial auctions) was the first of its kind to be used by the FCC in an actual auction. Bidders were allowed to bid on individual licenses or on an all-or-nothing bid which could be done up to twelve packages, which the bidder determined at any point in the auction. Doing the auction this way allowed the bidder to avoid the exposure problem when licenses are complements. The provisional winning bids are the set of consistent bids that maximize total revenues. The 700 MHz auction represented a good test-case for package bidding for two reasons. First, the 700 MHz auction only involves 12 licenses: 2 bands (one 10 MHz and one 20 MHz) in each of the 6 regions.^[6] Secondly, prospective bidders had expressed interest in alternative packaging because some Internet service providers had different needs and the flexibility would benefit them. The FCC issued Public Notice DA00-1486 adopted and described the package bidding rules for the 700 MHz auction.

The FCC's original proposal allowed only nine package bids: the six 30 MHz regional bids and three nationwide bids (10, 20, or 30 MHz). Although these nine packages were consistent with the expressed desires or many prospective bidders, others felt that the nine packages were too restrictive. The activity rule is unchanged, aside from a new definition of activity and a lower activity requirement of 50%. A bidder must be active on 50% of its current eligibility or its eligibility in the next round will be reduced to two times its activity. Bids made in different rounds were treated as mutually exclusive and a bidder wishing to add a license or package to its provisional winnings must renew the provisional winning bids in the current round.

The FCC placed important rules on public safety for the auction. 20 MHz of the valuable 700 MHz spectrum were set aside for the creation of a public/private partnership that will eventually roll out to a new nationwide broadband network tailored to the requirements of public safety. The FCC offered the commercial licensee extra spectrum adjacent to the public safety block that the licensee can use as it wants. The licensee is allowed to use whatever bandwidth that is available on the public safety side of the network to offer data services of their own.^[7]

Google involvement

In an effort to encourage Network neutrality, groups such as Public Knowledge, MoveOn.org, Media Access Project, along with individuals such as Craigslist founder Craig Newmark, and Stanford Law professor Lawrence Lessig appealed to the Federal Communications Commission to make the newly freed airways open access to the public.^[8]

Prior to the bidding process, Google asked that the spectrum be free to lease wholesale and the devices operating under the spectrum be open. Currently many providers such as Verizon and AT&T use technological measures to block external applications. In return Google guaranteed a minimum bid of \$4.6 billion. Google's specific requests were the adoption of certain policies

- Open applications: Consumers should be able to download and utilize any software applications, content, or services they desire;
- Open devices: Consumers should be able to utilize a handheld communications device with whatever wireless network they prefer;
- Open services: Third parties (resellers) should be able to acquire wireless services from a 700 MHz licensee on a wholesale basis, based on reasonably nondiscriminatory commercial terms; and
- Open networks: Third parties (like internet service providers) should be able to interconnect at any technically feasible point in a 700 MHz licensee's wireless network.^[9]

The result of the auction was that Google was outbid by others in the auction, triggering the open platform restrictions Google had asked for without having to actually purchase any licenses.^[10] Google was actively involved in the bidding process although it had no intentions of actually winning any licenses. The reason for this was that it could push up the price of the bidding process in order to reach the us\$ 4.6B reserve price, therefore triggering the open source restrictions listed above. Had Google not been actively involved in the bidding process, it would have made sense for businesses to suppress their bidding strategies in order to trigger a new auction without the restrictions imposed by Google and the FCC.^[10] Google's upfront payment of \$287,371,000 in order to participate in the bidding process was largely recovered after the auction since it had not actually purchased any licenses. Despite this, Google ended paying interest costs on which resulted in an estimated loss of 13 million dollars.^[10]

The FCC ruled in favor of Google's requests.^[11] Only two of the four requirements were put in place, open applications and open devices.^[12] Google had wanted the purchaser to allow 'rental' of the blocks to different providers.

In retaliation, Verizon filed a lawsuit against the Federal Communications Commission to remove the provisions Google had asked for. Verizon called the rules "arbitrary and capricious, unsupported by substantial evidence and otherwise contrary to law."^[13]

Lawsuits

After the open access rules were implemented, Verizon Wireless filed suit against the FCC on September 13, 2007, seeking to have the rules dismissed on the grounds that the open access requirement "violates the U.S. Constitution, violates the Administrative Procedures Act ... and is arbitrary, capricious, unsupported by the substantial evidence and otherwise contrary to law."^[14] On October 23, Verizon chose to drop the lawsuit after losing its appeal for a speedy resolution on October 3. However, the CTIA stepped in to challenge the same regulations in a lawsuit filed the same day.^[15] On November 13, 2008, the CTIA dropped its lawsuit against the FCC.^[16]

Auction

The auction divided UHF spectrum into 5 blocks:^[17]

- Block A: 12 MHz bandwidth (698–704 and 728–734 MHz)
- Block B: 12 MHz bandwidth (704–710 and 734–740 MHz)
- Block C: 22 MHz bandwidth (746–757 and 776–787 MHz)
- Block D: 10 MHz bandwidth (758–763 and 788–793 MHz)
- Block E: 6 MHz bandwidth (722–728 MHz)

The FCC placed very detailed rules about the process of this auction of the 698–806 MHz part of the wireless spectrum. Bids were anonymous and designed to promote competition. The aggregate reserve price for all Block C licenses was approximately \$4.6 billion.^[18] The aggregate reserve price for all 5 blocks being auctioned in Auction 73 was just over \$10 billion.^[18]

Results of the auction

Auction 73 generally went as planned by telecommunications analysts. In total, Auction 73 raised \$19.592 billion. Notably, Verizon Wireless and AT&T Mobility together accounted for \$16.3 billion of the total revenue. Of the 214 approved applicants, 101 successfully purchased at least one license. Despite their heavy involvement with the auction, Google did not purchase any licenses. However, Google did place the minimum bid on Block C licenses in order to ensure that the license would be required to be open-access.^[19]

The results for each of the five blocks:

- Block A – Verizon Wireless and U.S. Cellular both bought 25 licenses each. In this block, Verizon targeted urban areas, while U.S. Cellular bought licenses primarily in the northern portion of the U.S. Cavalier Telephone and CenturyTel also bought 23 and 21 licenses, respectively.^[19]
- Block B – AT&T Mobility was the biggest buyer in the B block, with 227 licenses totaling \$6.6 billion. U.S. Cellular and Verizon bought 127 and 77 licenses, respectively. AT&T Mobility and Verizon Wireless bought licenses around the country, while U.S. Cellular continued with its strategy to buy licenses in northern regions.^[19]
- Block C – Of the 10 licenses in the C Block, Verizon Wireless bought the 7 that cover the contiguous 48 states (and Hawaii). Those seven licenses cost Verizon roughly \$4.7 Billion. Of the other three, Triad Broadcasting bought the two covering the Alaska, Puerto Rico and the U.S. Virgin Islands, while Small Ventures USA L.P. bought the one covering the Gulf of Mexico.^[19]
- Block D – Amid some controversy, no licenses were sold in Block D because the reserve price was not met.^[20] The FCC had set the reserve price on the spectrum at \$1.3 billion, but the highest bidder (Qualcomm) only bid \$472 million.^[21] This piece of spectrum remains unsold and has not been scheduled for another auction.^[22]
- Block E – EchoStar spent \$711 million to purchase 168 of the 176 available Block E licenses. This block, made up of unpaired spectrum, will likely be used to stream television shows. Qualcomm also bought 5 licenses.^[19]

After the end of Auction 73, there remained some licenses that either went unsold or were defaulted on by the winning bidder from Blocks A and B. A new auction, Auction 92, was held on July 19, 2011 to sell the 700 MHz band licenses that were still available. The auction closed on July 28, 2011,^[23] with 7 bidders having won 16 licenses worth \$19.8 million.

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External links

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