

# Zeroing in on the U.S. digital one-ders: incentive auctions, cable digitization, and basic tier encryption

Since the 2010 National Broadband Plan, the FCC has sought to convert little used TV spectrum to broadband usage. Last month Congress gave the FCC authority to conduct incentive auctions. Broadcasters can, but don't have to, sell their underutilized spectrum and keep some of the proceeds. Meanwhile, customer demand continues to fuel the cable industry's migration to full digital systems, freeing bandwidth on the cable plant for faster broadband internet and other advanced cable services. To that end, the FCC appears likely to allow cable operators to fully encrypt their digital channel line-ups. Taken together, these actions signal another phase in the digital transition. The U.S. "digital dividend"? More regulation.

## Incentive auction legislation

In February, as part of a bill to extend payroll tax benefits, Congress granted the FCC authority to conduct voluntary incentive auctions.<sup>1</sup> The FCC will conduct two-sided auctions of previously assigned (yet underutilized) TV spectrum. Broadcasters can voluntarily sell their spectrum back to the FCC. The FCC will then, in turn, auction the freed spectrum, putting the bandwidth to new uses – namely more wireless spectrum for broadband.

Participation in the incentive auctions is voluntary – broadcasters will not be forced to vacate their spectrum. Instead, they can decide whether it is more profitable to sell their spectrum and exit the business. Less dramatically, a broadcaster can put its own spectrum up for bid and agree to find a broadcast partner to share the latter's 6 megahertz of channel capacity. If each uses 3 MHz, they can both still broadcast high definition signals and pocket some of the proceeds of the first broadcaster's sale. Broadcasters who elect to share channel capacity retain their call letters and channel guide numbers, even though they will be mapped to the old number (as digital stations are today). Remaining broadcasters will also be repacked to clear swaths of spectrum for wireless. Congress set aside money from the auctions for this transition.

The legislation has been criticized by broadband proponents as insufficiently aggressive in reallocating TV spectrum, which is lightly used given the 85+ % of U.S. households that receive broadcast TV via cable or satellite and do not depend on over-the-air transmissions. The National Broadband Plan projected that the FCC could reallocate approximately 120 MHz of broadcast spectrum for mobile broadband use. The legislation results in an incentive auction that will likely yield only 60-80 MHz. The shortfall comes about because of statutory language obtained by the National Association of Broadcasters to protect stations close to the Canadian and Mexican borders.

Another complication: broadcasters obtained a promise in the law that if they participate, their service areas won't shrink.<sup>2</sup> This places an additional engineering hurdle on FCC auction planners and creates a nurturing environment for endless administrative disputes over whether a broadcaster has lost part of its territory.

Given President Obama's desire to obtain an additional 500 MHz for wireless broadband, the new authority is a good start – especially for a Congress that has passed few consensus bills in this Session – but not as good as it could be. Meanwhile, the FCC will need to adopt auction rules to meet all the statutory requirements, a heavy burden given the law's restrictions.

## Increased digitization of cable

As with wireless broadband, consumer demand is pushing cable operators to retrofit their "spectrum", that is the 750 MHz or so of capacity on a modern cable system. To do that, cable operators need to clear channels used for linear video channels to be redeployed for cable modem broadband service. The solution is to digitize the remaining 6 MHz analog program services to free up space. At this point, cable providers are offering some digital channels in most of their systems. For instance, it's been true for decades that a 6 MHz channel that carries CNN in analog can be converted to up to 10 digital channels. This is how systems that used to be 78 channels are now 300 to 400 channels. But many systems remain hybrids – some analog channels, some digital simulcasts of those

channels, even some high definition versions of the same channels.

Operators were reluctant to go all-digital because of the legacy analog TV sets in subscribers' homes. So long as their signals were in analog, the customer could "plug and play", without the need for a set-top box or digital adapter. That convenience made cable an easy solution when over the air broadcasters went all-digital in 2009. Cable subscribers did not need to have any additional boxes – as over-the-air customers did – to view broadcast signals.

With digital sets commonplace and at price points that make replacement likely, some operators are taking their entire systems digital. Eliminating the analog channels frees bandwidth to provide faster broadband speeds as well as advanced cable services such as video-on-demand and HD channels. Digital sets can be plug-and-play, too, at least for any unencrypted signals.

According to research firm SNL Kagan, the industry-wide transition is "a relatively long process," and we are still "very early in this process." Cablevision and Comcast appear furthest along in the digital transition, having moved more systems entirely digital. One technique these operators are employing is switched digital – only delivering the channels that subscribers are actually watching rather than carrying all 300 channels in linear form.

Some analysts question whether cable operators will have incentives to switch their entire systems to digital once they have freed up sufficient bandwidth. The extra cost of taking the last analog channels digital may simply not be worth it. One incentive to make the switch is...

### **Encryption of basic cable**

Cable operators that completely digitize systems would prefer to encrypt all services. Current FCC policy says that basic service – the tier that simulcasts over-the-air broadcast signals – must remain unencrypted. This policy goes back to 1992, when the FCC wanted to keep basic rates low (they remain regulated in some

communities); the cost of a box would have increased the low rate. With a digital TV, customers can still plug-and-play the basic tier – no box required – though the expanded tier of cable networks (most customers subscribe to this) requires a box on many systems.

The FCC has allowed encryption on a case-by-case waiver basis. Based on the success of such waivers, including notably Cablevision's experience in New York, the FCC is poised to allow all operators who digitize their systems the right to encrypt the basic tier. Cable operators will, however, have to ensure that customers who depend on an unencrypted basic tier are not left in the dark – the FCC may require operators to provide low cost digital set-top boxes or Cable CARDS for TVs hooked up to TiVo-like devices.

Encryption is desirable to prevent video theft and to discourage hackers who use the unencrypted signal to steal internet service. Encryption also introduces efficiencies in cable installations and disconnections. Without encryption, cable operators have to send technicians out to connect and disconnect customers. With encryption, operators can connect and disconnect customers remotely and skip the truck roll. 99.5% of Cablevision disconnections in New York City are now performed remotely. Operators argue fewer service calls also means less trucks on the road and consequently less air pollution.

So who is against encryption? Over-the-top-companies, like Boxee, that mold unencrypted basic service with an internet-based on-demand and other nonbroadcast video package. Getting broadcast signals integrated into products like Boxee's Box is essential because major sports events, news programming, and top-rated TV broadcast series are not widely available on line. Furthermore, the current version of the Box doesn't have a Cable CARD slot to work around the issue.

In sum, like the technology itself, the 2009 U.S. broadcast digital transition was only the first sequence of a long string of ones and zeros.

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**German perspective**

Auctions of broadcast spectrum as well as the digitalization of cable networks are also hot topics in **Germany**. Basic encryption in cable was deemed a means for the two leading groups of private broadcasters to align their interest against smaller channels, and has thus been under competition scrutiny for years. This has only recently seen a dramatic turn when Liberty Global committed to abandon the encryption of basic (“free TV”) channels on its network to achieve merger approval for the acquisition of Kabel BW, creating the second largest cable operator in the country. On spectrum, Germany already completed the analog switch-off and auctioned the respective “digital dividend” for broadband uses, so there is no more room to further incentivize the abandoning of analog frequencies. Asking broadcasters to give up digital terrestrial spectrum, by contrast, would likely only work in exchange for granting a must carry status on cable.

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<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, H.R. 3630, 112th Cong. (2012).

<sup>2</sup> Service area means the area that a broadcast station or other transmission covers via radio waves. It is generally the area in which a station’s signal strength is sufficient for most receivers to decode it, however this also depends on interference from other stations.

<sup>3</sup> Basic Service Tier Encryption, FCC Docket No. 11-153, Notice of Proposed Rulemaking, 26 FCC Rcd. 14870 (Oct. 14, 2011).