

Global ICT Summit 2008

# Policy Innovation Toward the Future Network Society

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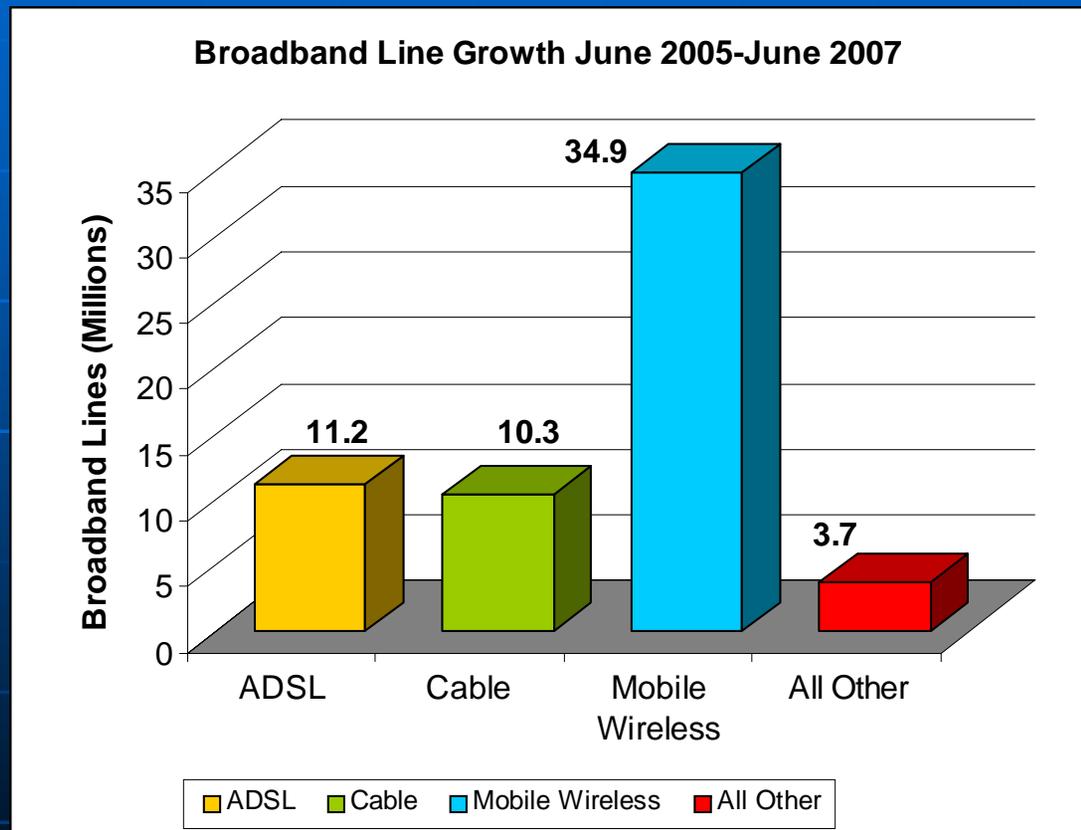


# Wireless Broadband and New Technologies

*"The other promising new broadband technology is wireless. The spectrum that allows for wireless technology is a limited resource . . . [a]nd a wise use of that spectrum is to help our economy grow, and help with the quality of life of our people."*

- President George W. Bush, June 24, 2004

- The Administration has made additional radio spectrum available for wireless broadband technologies:
  - Advanced Wireless Services ("3G")
  - Ultra-Wideband
  - 5 GHz Spectrum
  - 70/80/90 GHz
  - 700 MHz Auction



Source: FCC *High-Speed Service for Internet Access: Status as of June 30, 2007*

# Recent Auction History

## Advanced Wireless Services (AWS)-I (FCC Auction 66; Aug. 9-Sept. 18, 2006)

- 90 MHz of spectrum in 1710-1755 (federal) and 2110-2155 MHz bands (non-federal).
- Could be used for any wireless service consistent with fixed/mobile allocations, licensed under flexible market-oriented rules (Part 27).
- \$13.7 billion in net winning bids; 104 winning bidders won 1,087 licenses.
- Pursuant to Commercial Spectrum Enhancement Act, federal government users are to be reimbursed for relocation-related costs by Spectrum Relocation Fund. NTIA overseeing relocation efforts.

## 700 MHz Auction (FCC Auction 73; Jan. 24-March 18, 2008)

- 62 MHz of spectrum auctioned in 698-806 MHz band (i.e. television broadcasting).
- Licenses include mix of geographic service area licenses and spectrum block sizes, with one block that includes an "open platform" requirement (C-Block); and one block to be used for a public/private partnership for public safety uses (D-Block).
- \$18.96 billion in net winning bids - Largest Auction in FCC History; 101 Bidders won 1090 licenses; 72 bidders (675 licenses) are new entrants.

# Transition to Digital Television

## U.S. Television Market

- Total U.S. households: 114 million (CEA)
- Average Televisions per U.S. household: 2.6 (CEA)
- Television Reception Methods (January 2008) (CEA)
  - Cable Households: 62%
  - Satellite Households: 27%
  - Over-the-Air Households: 18%
- 210 U.S. Designated Market Areas (television markets) (Nielsen)
  - Largest: New York, New York (7.4 million TV homes)
  - Smallest: Glendive, Montana (3,940 TV homes)
- TV broadcast stations (FCC)
  - Full-Power Commercial Stations: 1,378
  - Full-Power Noncommercial, Educational Stations: 380
  - Class A, Low Power, and Translator Stations: 3,370

## DTV Legislative History

- Telecommunications Act of 1996: Established basic framework by which the FCC would issue licenses to offer advanced television service (§366 added to Communications Act of 1934).
- Balanced Budget Act of 1997: Specified that no analog license may be renewed beyond 12/31/06, except in local markets with limited DTV service.
- Deficit Reduction Act of 2005: Set firm date of Feb. 17, 2009 for digital transition by full-power television stations; established Digital-to-Analog Converter Box Coupon Program; established programs to assist Low Power, Class A, and Translator Stations.



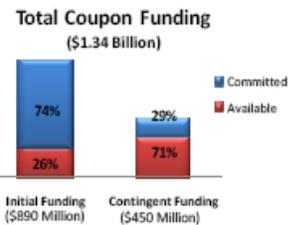
# Transition to Digital Television

PUBLIC INFORMATION

## TV CONVERTER BOX COUPON PROGRAM WEEKLY STATUS UPDATE \*

Wednesday, September 24, 2008- 4:00PM EDT

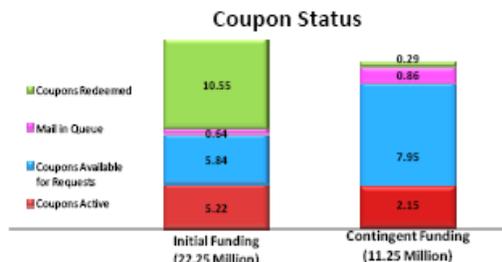
Households Approved	15,082,959
Coupons Requested+	28,255,862
Coupons Mailed+	28,735,008
Coupons Expired	8,531,411
Coupons Redeemed+	10,839,358
Coupons Active+	7,384,237
Total Funds Committed-	\$788,452,794
Total Funds Available+**	\$551,547,206
Funds Settled+**	\$415,372,476
Average Daily Orders YTD	105,823
Average Daily Orders Last 30 Days	111,662
Average Daily Orders Last Week	114,065
Redemption Rate	49.5%
Retailers/Locations	2,383 / 29,528
Phone/Online Retailers	13 / 36
Converters/Pass-through	165 / 89



\*Data thru 9/23/08

+includes Initial & Contingent

\*\*includes redemptions <\$40 & Funds returned from un-redeemed & expired coupons



## FCC

- Broadcasters (e.g. facilities; channel assignments; consumer education)
- Cable & Satellite Services (e.g. carriage; consumer education)
- Television Manufacturers (e.g. TVs must include digital tuners after 3/1/07)
- Television Retailers (e.g. labeling)
- Wilmington, NC Test Pilot (Sept. 8, 2008)

## NTIA's Coupon Program

- Two \$40 Coupons per Household
- Coupon-Eligible Converter Boxes
- Retailers Certification
- Consumer Education – OTA households
- Consumer Options
  - Purchase TV with Digital Tuner
  - Subscriber to cable, satellite or other pay service
  - Purchase Converter Box to connect to analog television set
- Status: Over 15 million households have requested more than 28 million coupons

# Transition to Digital Television

## Benefits of Digital Television

- Improved quality pictures and surround sound
- Television signal virtually free of interference
- Frees scarce, valuable broadcast spectrum for public safety interoperable communications; new advanced wireless services
- Broadcasters have flexibility to offer high-definition or multiple standard definition ("multicasting") service, interactive video and data services (e.g. enhanced closed-captioning).

## DTV Consumer Statistics

- More than 85 million DTV products have been sold since their introduction in 1998. (CEA)
- Half of all U.S. households have a digital television. (Informationweek.com)
- Ownership of HD-sets has risen from 14% of TV homes in 2006 to 20% in 2007, and 28% today. By 2009, 38% are expected to own HD-sets (Knowledgenetworks)
- More than 47 million American households will be paying for some type of HDTV service by the end of 2008; within 5 years, that total could rise to 103 million (Broadband Daily)
- As of May 2008, more than 65 percent of U.S. homes receive digital cable and satellite combined, receiving nearly 160 channels. In addition, 25% and 35% of homes DVR and video-on-demand respectively (Nielson)

# U.S. Wireless Trends

- As of Dec. 2007, there were more than 255 million wireless subscribers in the U.S., est. 84 percent of the U.S. population, an increase of 22 million above the previous year. (CTIA)
- Minutes used exceeded 2 trillion in 2007, up 18% over 2006. (CTIA)
- Wireless data revenues exceeded \$23 billion in 2007, representing 17% of total carrier revenues, an increase of 53% over the previous year. (CTIA)
- Americans sent and received 1.6 billion text message per day in 2007, an increase of 157% over the previous year. (CTIA)
- More than 95% of the U.S. population lives in areas with at least 3 competing mobile telephone carriers, more than 94 percent with at least 4 competing carriers, and more than 50% with at least 5 competing operators. (FCC)
- There are more than 620 unique wireless devices for sale to consumers in the U.S., including 16 with Wi-Fi capability. (CTIA)
- Mobile wireless high-speed lines grew from 379,536 in June 2005 to 35,305,253 in June 2007, an increase of 9,202%. (FCC)
- Fixed Wireless high-speed lines grew from 208,695 in June 2005 to 586,141 in June 2007, an increase of 181%. (FCC)
- The wireless industry's 6-month incremental capital expenditures in operational systems was \$9.71 billion for the first half of 2007 (excluding auction payments; total cumulative capital expenditures through mid-2007 exceeded \$233 billion (excluding auction payments). (CTIA)

## Anywhere, any time

2

Use of mobile phone or PDA to do the following by age group, %, 2007

	18-29	30-49	50-64	65+
Send or receive text messages	85	65	38	11
Take a picture	82	64	42	22
Play a game	47	29	13	6
Play music	38	16	5	2
Record a video	34	19	8	3
Access the internet	31	22	10	6
Send or receive e-mail	28	21	12	6
Send or receive instant messages	26	18	11	7
Watch a video	19	11	4	2
At least one of these activities	96	85	63	36

Source: Pew Research Centre

# U.S. Telecommunications Policies

## Broadband Deployment

*"This country needs a national goal for broadband technology . . . universal, affordable access for broadband technology by 2007."*  
- President George W. Bush, March 26, 2004

- Incentives for Wireless Broadband
  - Private Investment
  - Technological Innovation
  - Competition

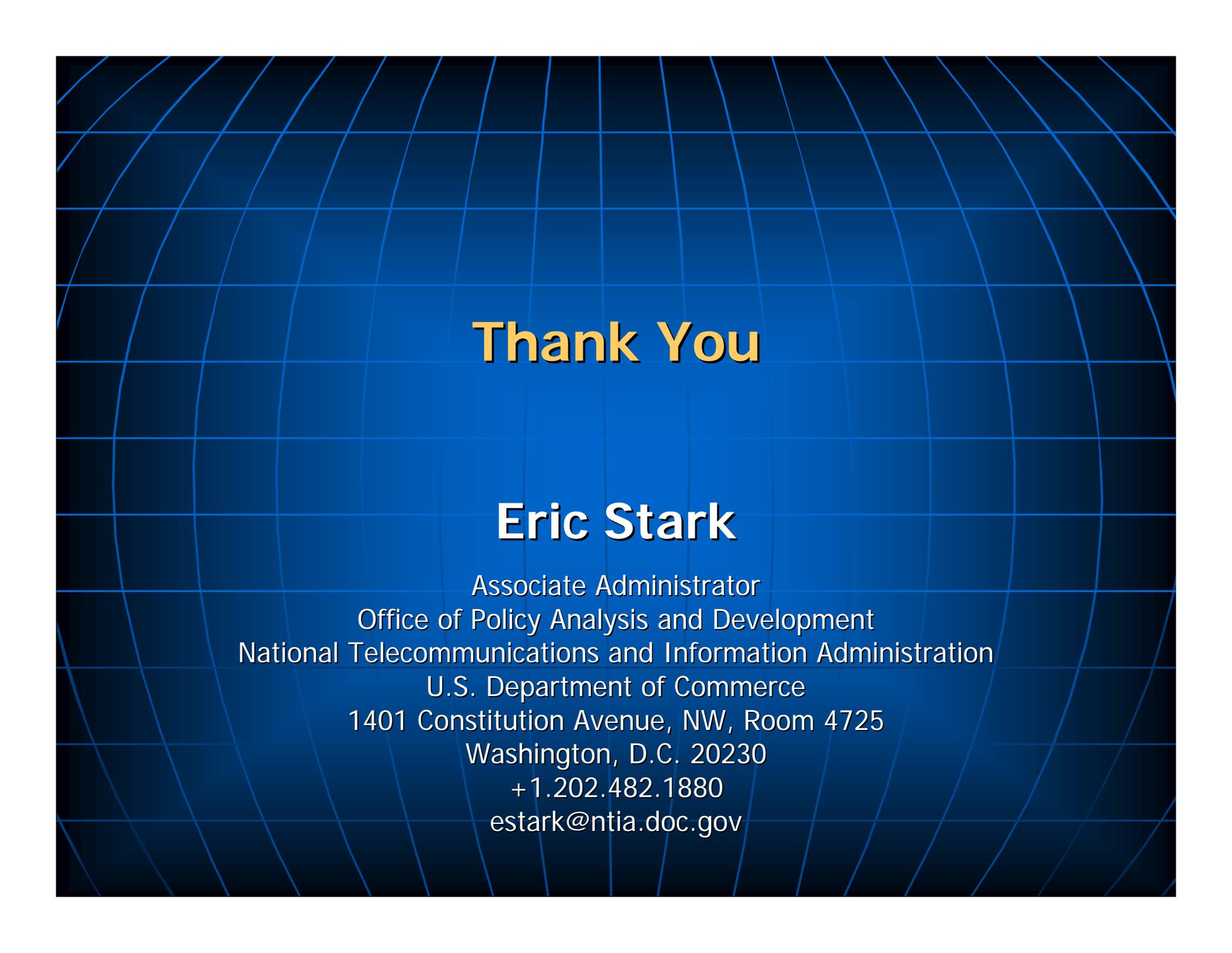
## Spectrum Management

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- 21<sup>st</sup> Century Spectrum Policy Initiative
  - Spectrum Management Improvements
  - Efficiencies in Federal Spectrum Use
  - Economic Incentives in Federal Spectrum Use

## Telecommunications Principles

- Government should avoid overly restrictive regulation that can't keep pace with technological change.
- Competitive pressures – not new regulation – provide the most effective discipline on broadband providers. Providers know that consumers who can't get the service they want will go elsewhere.
- Providers should disclose their management practices to consumers; an educated consumer is an empowered consumer; transparency promotes competition.
- Incentives must remain in place for new Internet capacity; the ability of providers to price and/or manage networks should not be limited.



**Thank You**

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