

# We Did a Great Thing!

## The Consumer Products Prospective

15<sup>th</sup> Anniversary Grand Alliance

May 10, 2008 – WDC

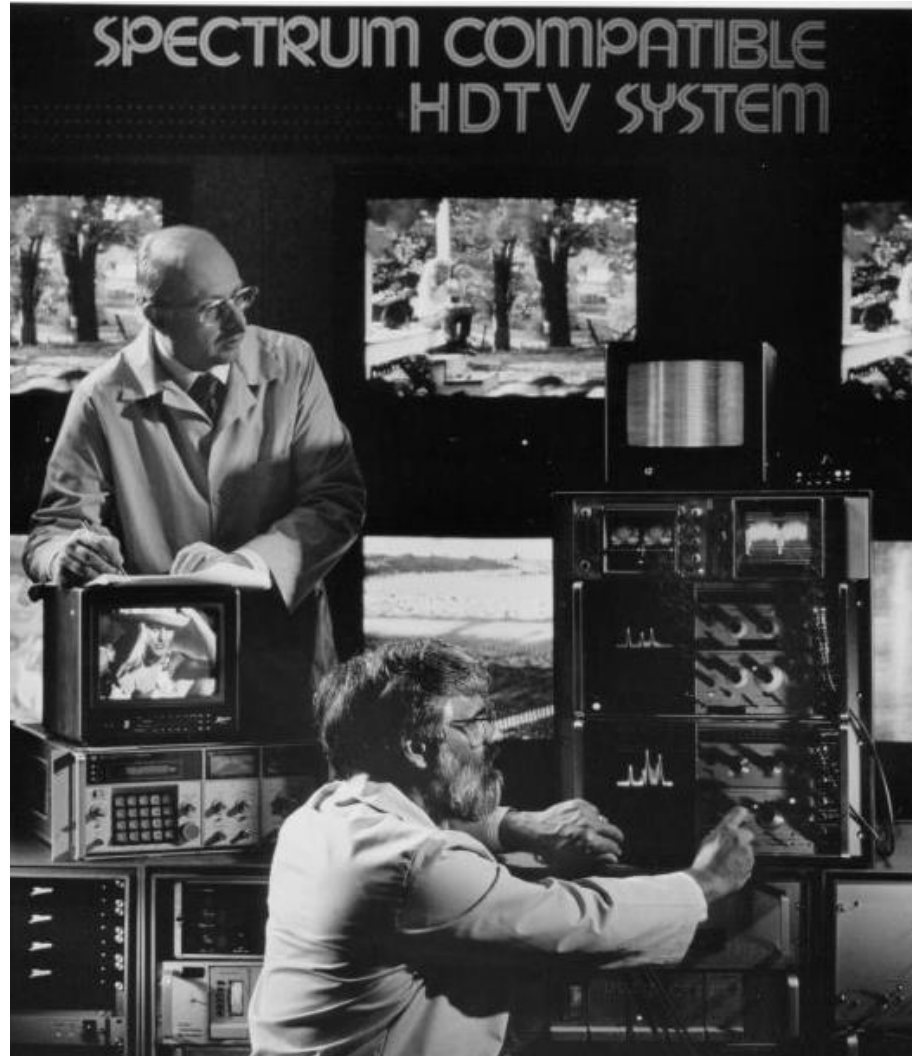
Wayne Luplow, Zenith Electronics

- With Help from the CEA



# How Did it all Begin?

In **1988**, Zenith showed the world how to use the “Taboo” channels for establishing an Advanced TV System  
- a hybrid analog/digital transmission



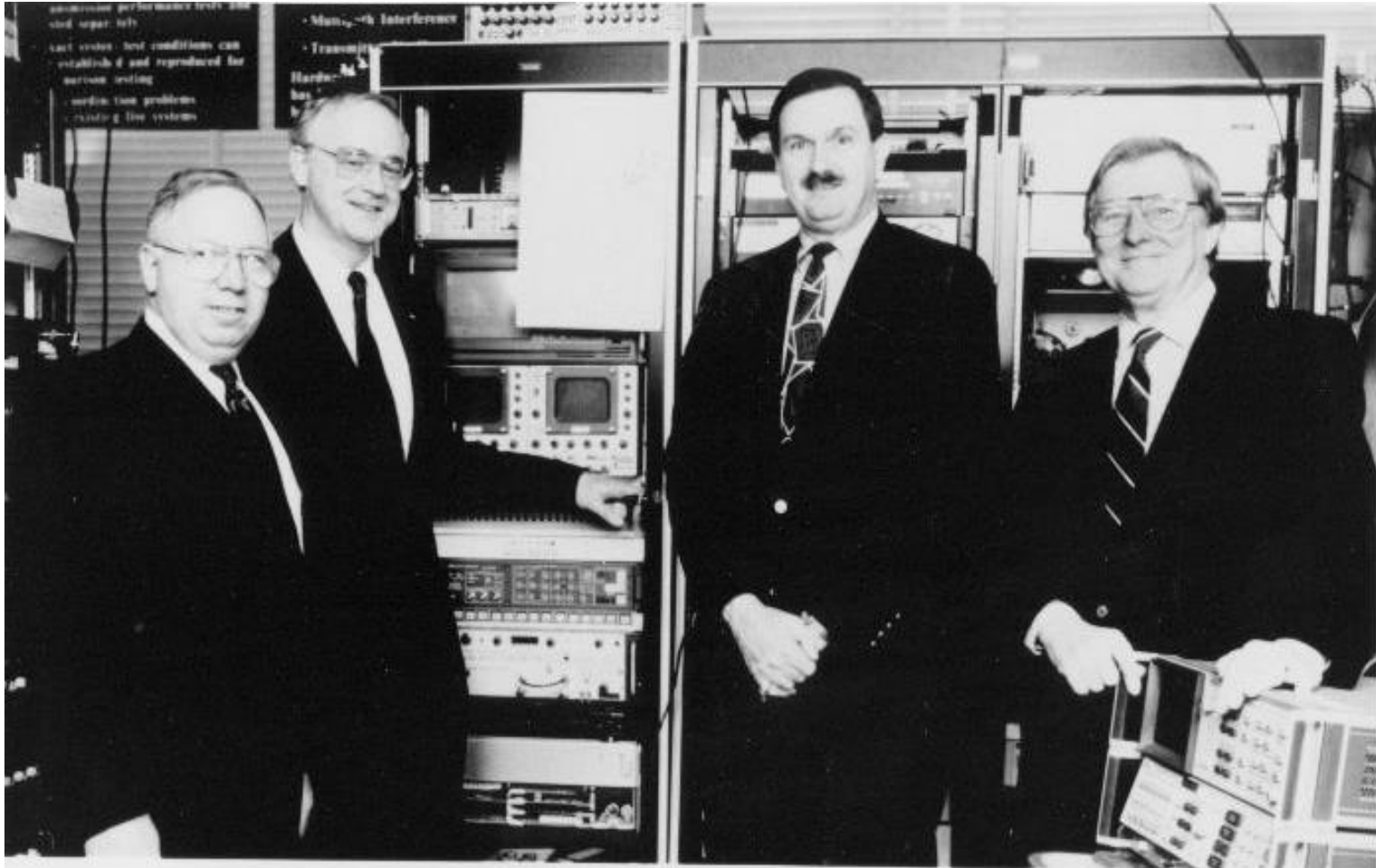
Wayne Luplow

Rich Citta

# Advanced Television Research Consortium

- Michael Sherlock – NBC
- Peter Bingham – NA Philips

- Jim Carnes - Sarnoff
- Joe Donahue - Thomson

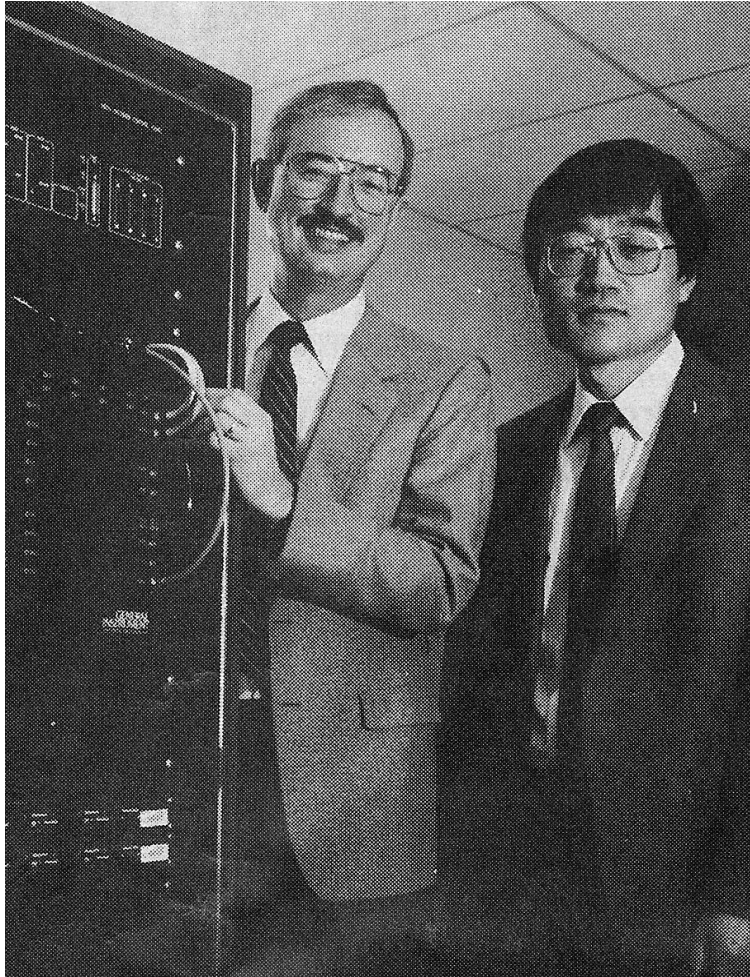


# Advanced Television Research Consortium

- Carlo Basile – NA Philips
- Glenn Reitmeier - Sarnoff



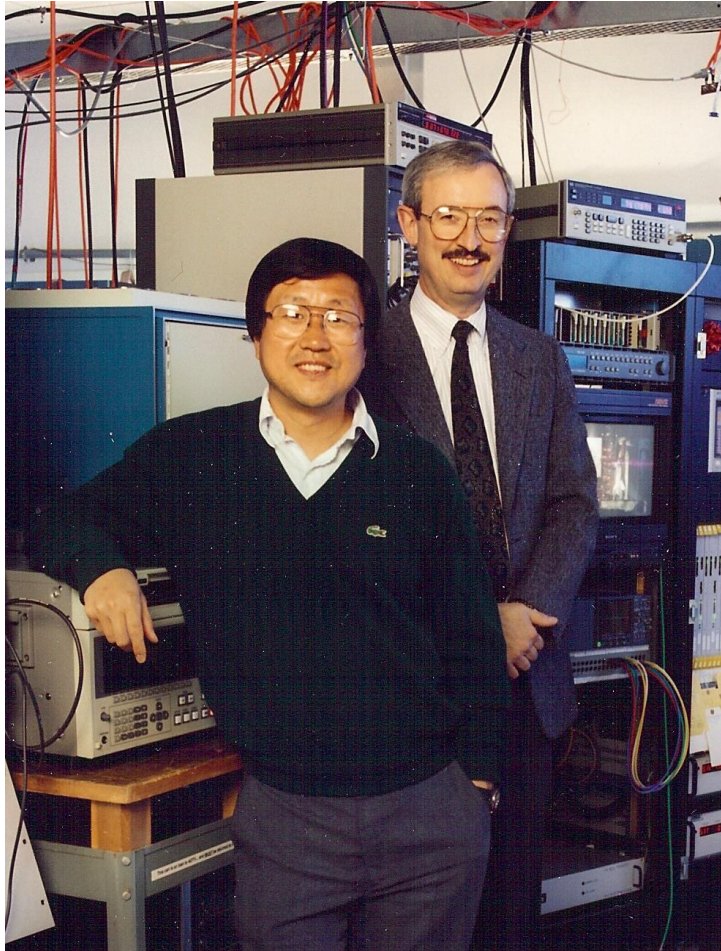
# GI: the first All Digital HDTV system



Bob Rast

Woo Paik

# MIT and GI pooled resources



Bob Rast, GI

Prof. Jae Lim, MIT

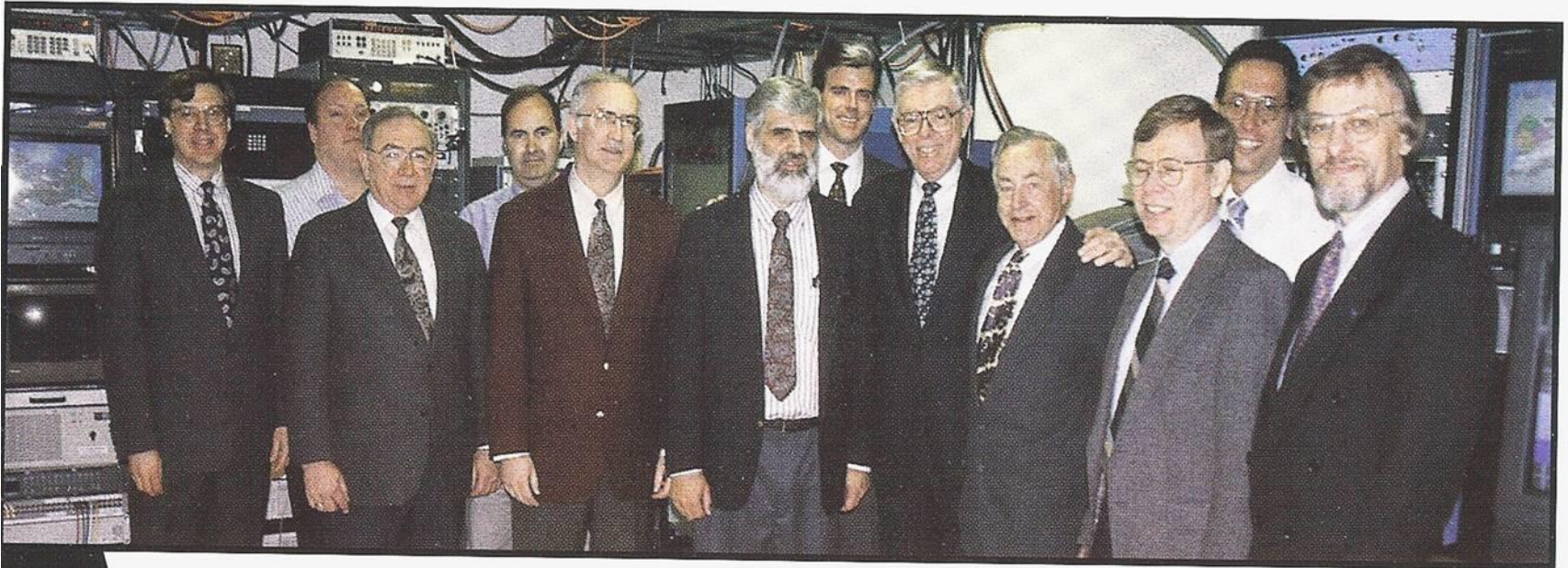
# Hardware was constructed by the Grand Alliance members





# and integrated by the GA team

## *digital* HDTV Grand Alliance System



April 19, 1995 — In the ATTC laboratory, with the *digital* HDTV Grand Alliance System (l-r): Peter Fannon (ATTC), Gary Zimmerman (AT&T), Victor D'Alessandro (Sarnoff), Brian James (CableLabs), Thomas Gurley (ATTC), Richard Citta (Zenith), Paul Misener (ACATS), Richard Wiley (Chairman, ACATS), Charles Rhodes (ATTC), William O'Grady (Philips), Robert Densler (Zenith), Alan Godber (ATTC)

# End of Successful Testing

**July 1995**, GA members and Test Lab members celebrate successful conclusion of testing.



# FCC Adopts GA/ACATS/ATSC DTV Standard!

December 24, 1996



Just the beginning!

**“It’s the end of the beginning, and  
the beginning of an era.”**

**— Dr. Joe Flaherty  
October 8, 1997**

**“HDTV is an idea  
whose time is passed.”**

**– Andrew Lippman, MIT  
Dec. 12, 1995**

# THE WALL STREET JOURNAL.

*Hype Definition: Waiting for  
HDTV? Don't Go Dumping Your Old  
Set Just Yet*  
**September 12, 1997**

**“HDTV is going to be the  
consumer’s national  
standard and desire.”**

**– Gary Shapiro, CEA  
1997**

**Consumers satisfied with  
analog TV changed their mind  
after viewing HDTV, remarking  
that the “picture came to life.”**

**–CEA Focus Groups, January 1999**



**“HDTV is doing great. We used to joke that it stood for ‘high dollar, tiny volume’.... It ain’t tiny anymore.”**

**–Josh Bernoff  
September 6, 2004, AdWeek**

# The New York Times

*Digital TV Era Still Remains  
Out of Reach*  
**August 07, 2000**



February 8, 2006

# February 18, 2009!

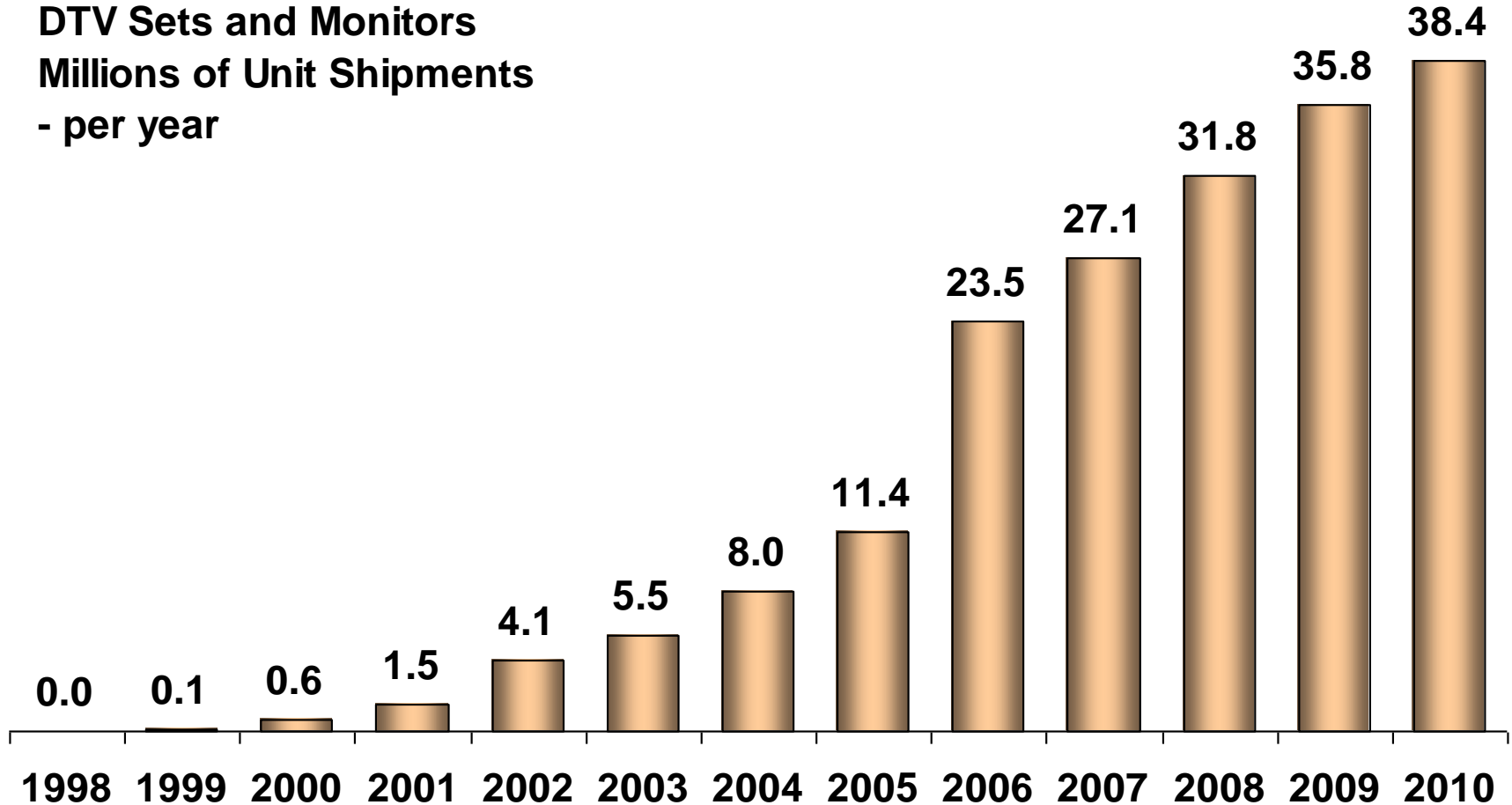
## The End of Analog

## Beginning of All Digital

In the United States

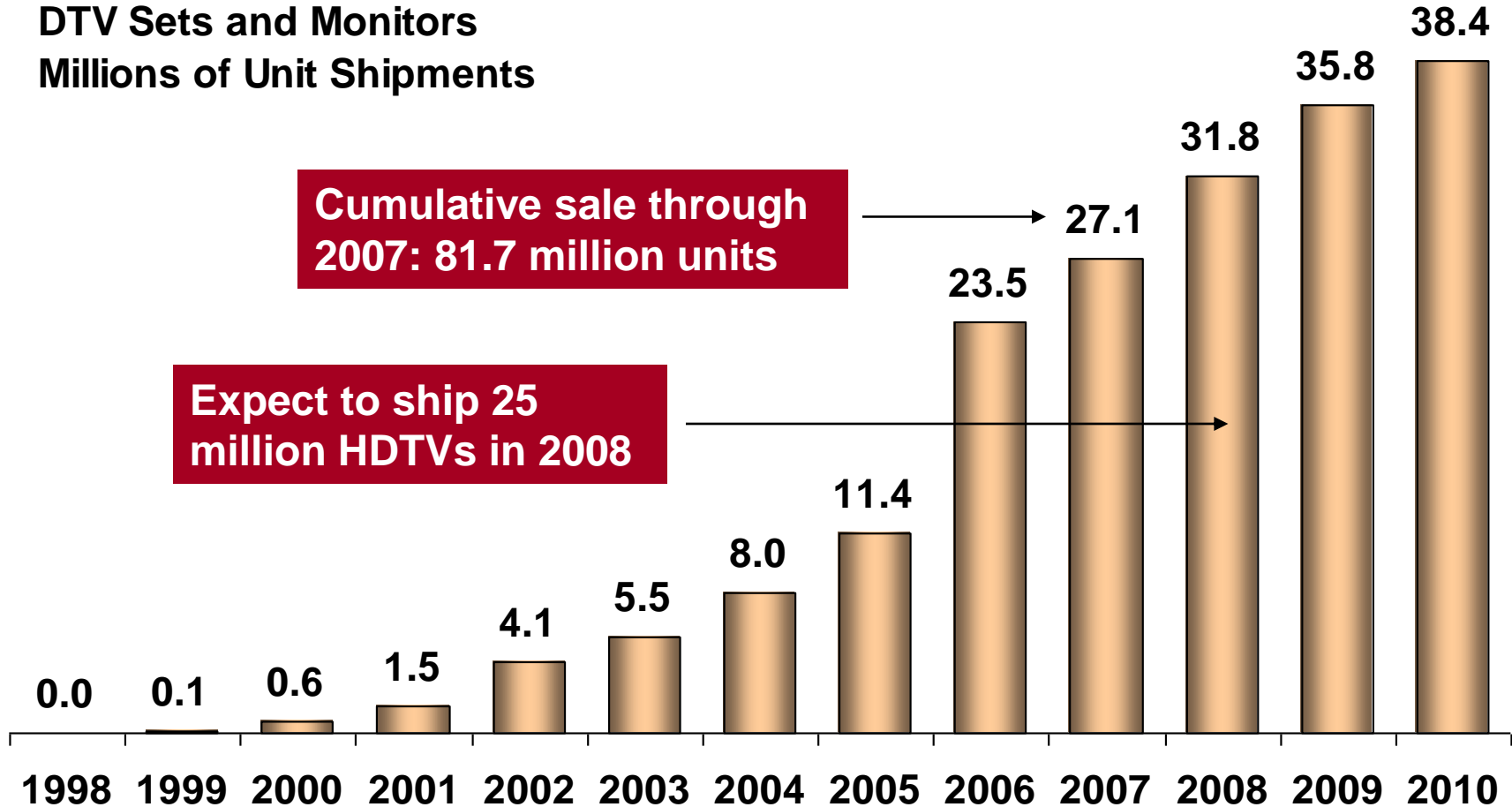
# Historic DTV Sales

DTV Sets and Monitors  
Millions of Unit Shipments  
- per year



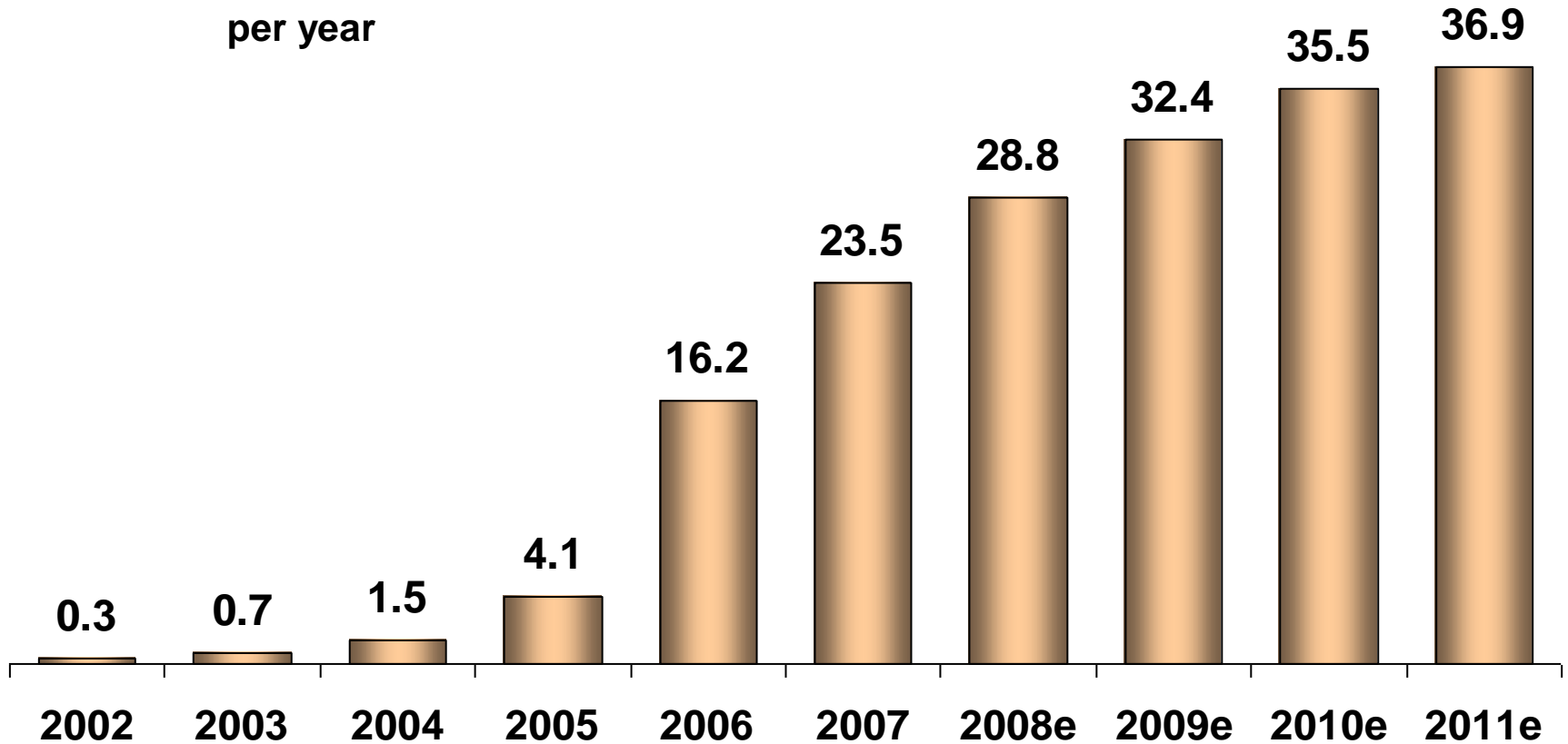
# Buying More Digital

DTV Sets and Monitors  
Millions of Unit Shipments



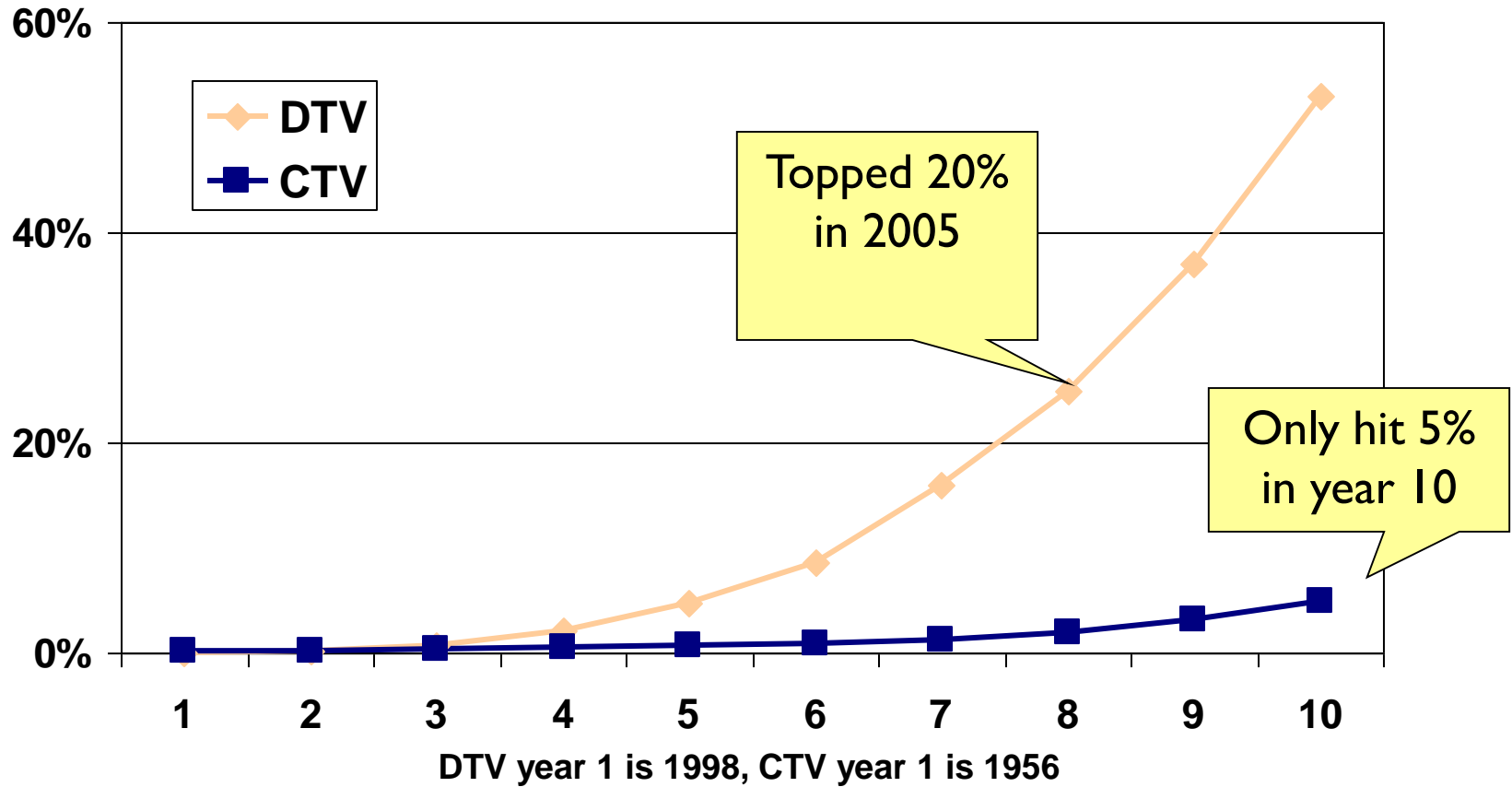
# ATSC Integrated Sets

Millions of Unit Shipments  
per year



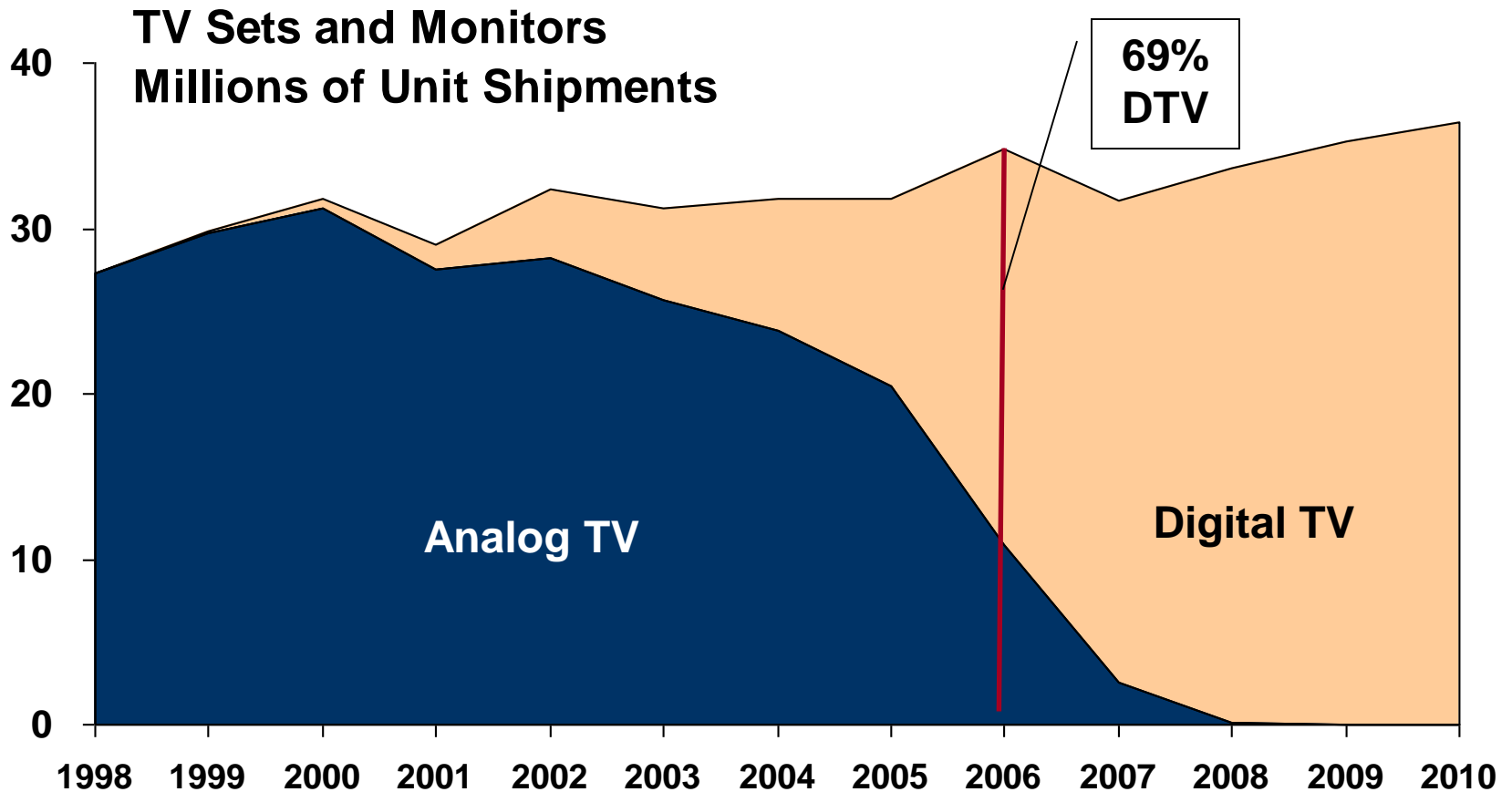
# DTV vs. Color TV Penetration

Includes Sets and Monitors





# Digital Surpassing Analog



# 1999 - FIRST INTEGRATED HDTV – 64W - \$15,000



- 100 Y 1000 Display Panel
- All Format D/D Converter
- 3D YC Color Filter and Back Light Exposure
- White Level Compression
- Three 5" CRTs with Digital Convergence
- Color Corrected HDTV Lamp System
- 805 Stereo and Dolby Digital™ (Dolby)
- 22 Wicks of Active Power
- 82 Features including EZ Surround™ Volume Limiter
- Wired-Board Remote with LED Backlight
- ATSC/MPEG-2/H-FC
- Guide Plus™™ Gold Program Guide
- MO-DBS Ready (10-pin BNC)
- 21-AV JACK, including DVB-H-Res Compliant
- Power In, also 2-Video In & 1-Video Out, AV, SPDIF and Front Input Jacks
- Screen Protector Included

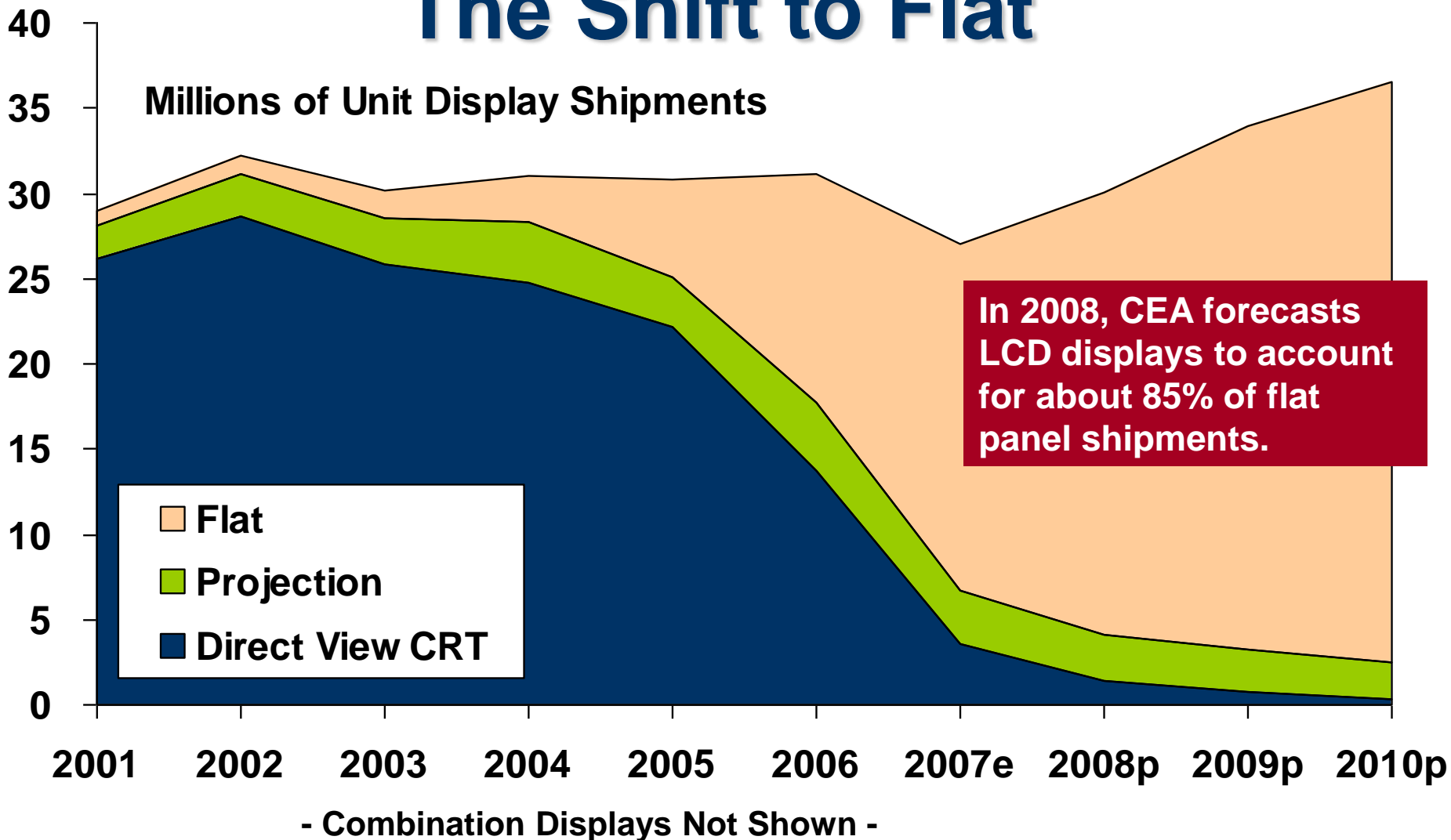


# 2008 - INTEGRATED HDTV RECEIVERS - \$200- \$3,500



# The Shift to Flat

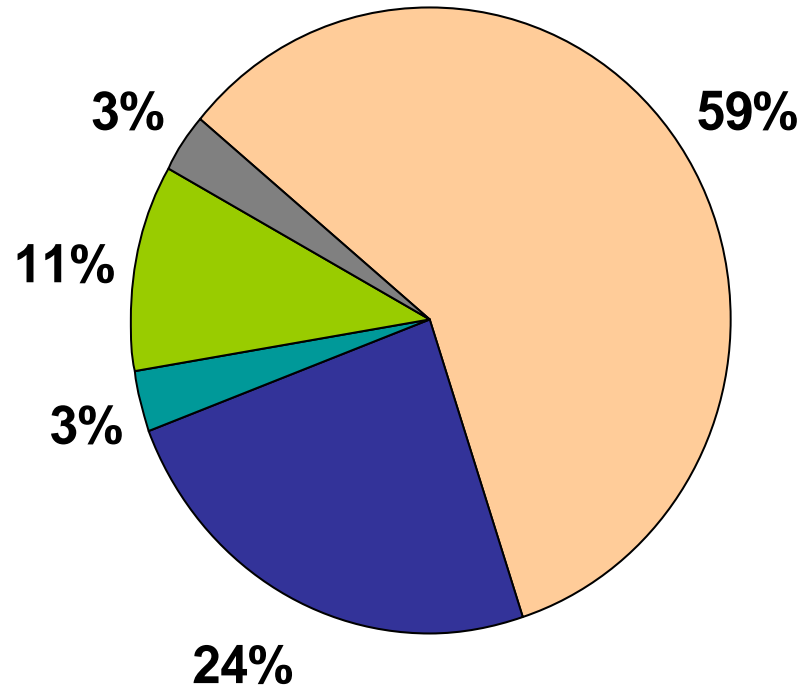
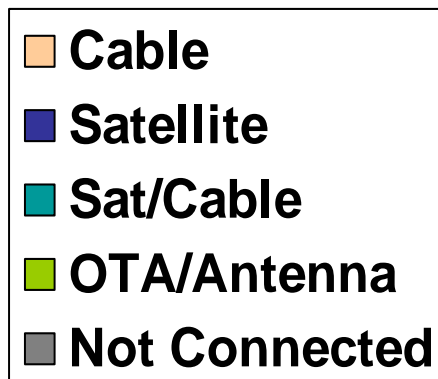
Millions of Unit Display Shipments



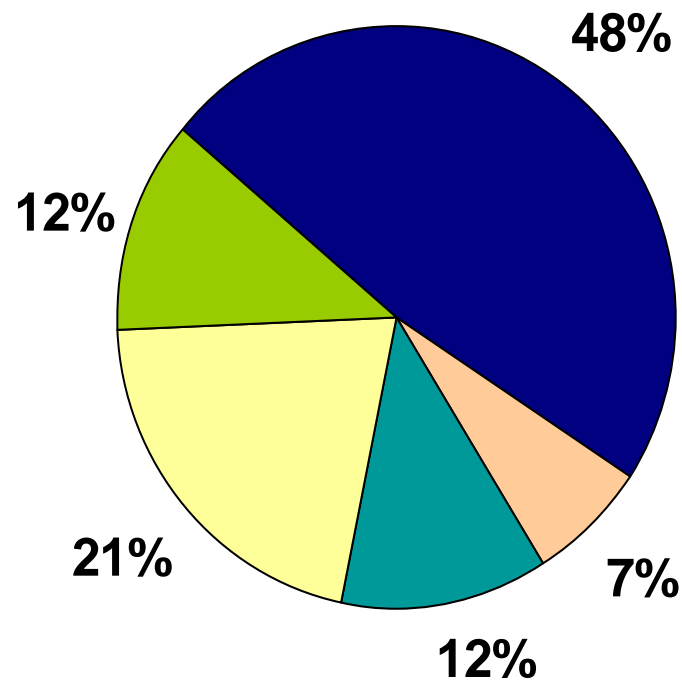
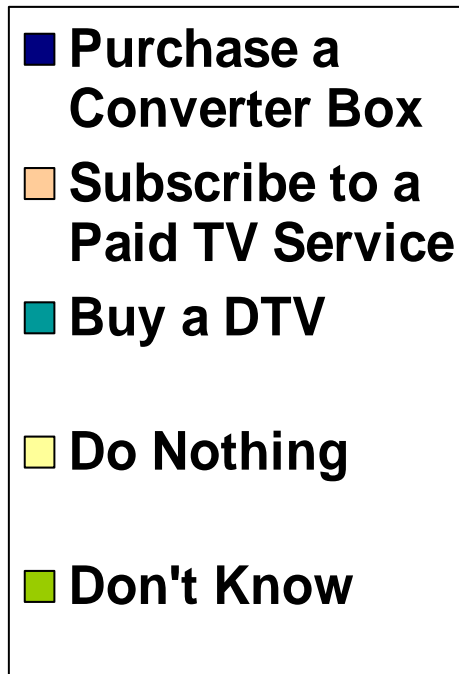
In 2008, CEA forecasts LCD displays to account for about 85% of flat panel shipments.

# U.S. TV Reception Profile

Percentage of U.S. Households



# Actions Antenna Only Consumers Expect to Take due to the Transition



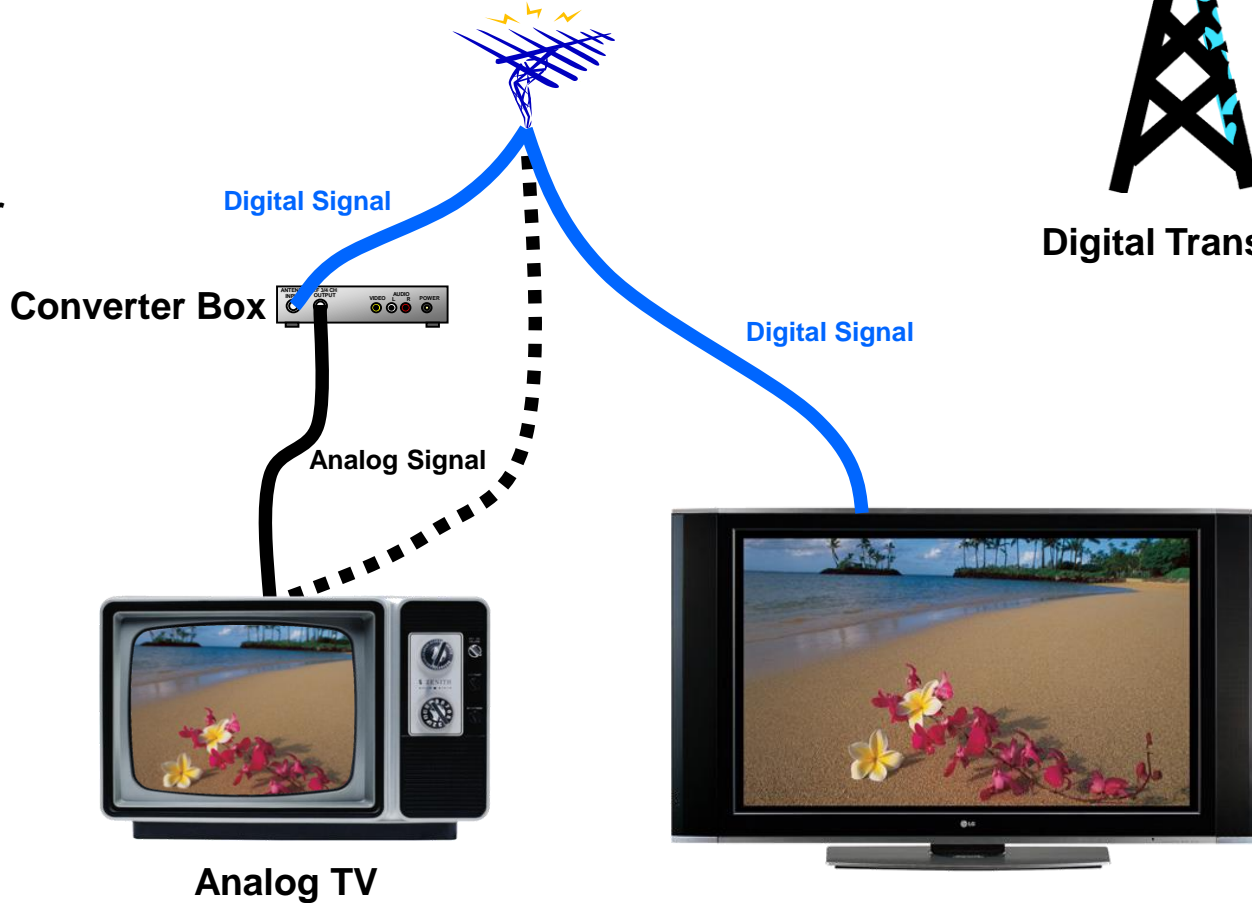
25 – 30 Million Converter Boxes will be  
needed in the U.S. in the next 12 Months

Government-led D>A Converter-Box  
program

CECBs = Coupon Eligible Converter Boxes

# DTV Converter Box

Enables Analog TVs to work after Analog (NTSC) Signal is turned off





# DTV Converter Box

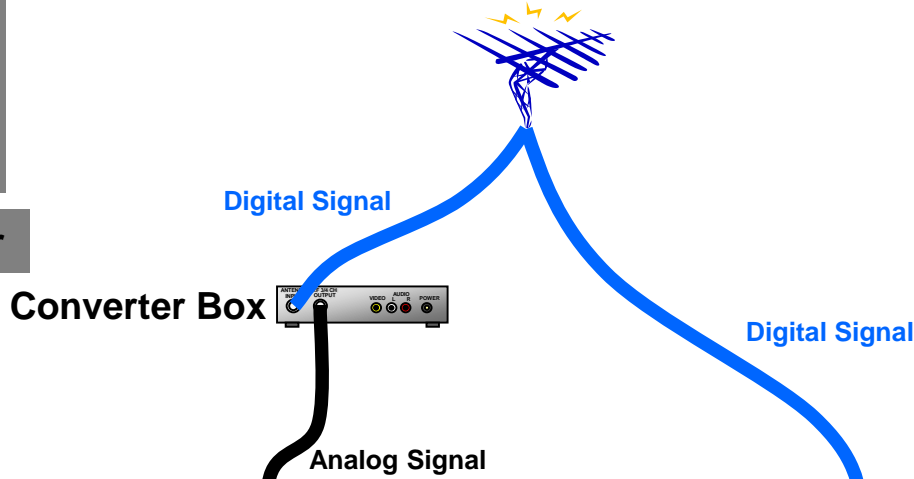
Enables Analog TVs to work after Analog (NTSC) Signal is turned off



Analog Transmitter



Digital Transmitter



Analog TV



HDTV

# CECB Current Status

- 12.7M coupons requested
- Coupons worth \$40 each – two per HH
- 7.7M mailed out
- 1.5 M redeemed (est.)
- retail cost of converters: \$40 - \$60
- ~ 80 models listed on NTIA website

<https://www.dtv2009.gov/>

**February 17, 2009**

**End of Analog TV  
Broadcasting  
[283 Days from today]**

**Dawn of the ALL-DIGITAL  
Broadcast Age**

# We can be proud of what we have accomplished!

- **Technology has led the way**
  - **Technology that has met the demands of the Consumer Marketplace**
  - **1000's of Engineers (many in this room) have led the way with VISION and PERFORMANCE**

**I am pleased to share this technology  
“Success Story” with you, and proud to have  
been a part of it!**

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