The February 2009 Digital Television Transition: The State of Digital Readiness in the U.S.

October 2008

nielsen

Introduction

All full-power U.S. television stations are required to discontinue use of their analog signals and operate in a digital-only environment effective February 17, 2009. The Digital Television (DTV) Transition will free up analog frequencies for public safety communications and advanced wireless services, while enabling improved television picture and sound quality.

Nielsen is uniquely positioned to provide the industry with ongoing insight about digital readiness in the U.S. In addition to providing estimates of unready households at the national level and in local markets, we have conducted special analyses to illustrate the characteristics of unready homes, as well as changes in media and viewing behavior that can potentially occur as households become ready for the transition.

This is the second in a series of reports that Nielsen is providing leading up to the transition deadline. This report has the following sections:

- Updated readiness estimates for Total U.S. and local market households
- New characteristics of Completely Unready households by income, education and occupation
- Updated estimates of how much viewing would be lost if the DTV Transition occurred *today*
- A profile of the typical Unready Set–its location and usage
- An analysis of how homes are becoming ready for the DTV Transition and how their media and viewing behavior changes as a result

Our definitions for the readiness status of sets and households are as follows:

- **Ready Set** – a television set that is connected to a cable service, satellite service, or a digital converter box, or a television set that has an internal digital tuner
- **Unready Set** – a television set that does not meet the above conditions and is therefore not capable of receiving digital broadcast television signals
- **Completely Ready Household** – a household that has all Ready Sets
- **Partially Unready Household** – a household that has at least one Ready Set and at least one Unready Set
- **Completely Unready Household** – a household that has all Unready Sets

Some highlights of our findings, as of September 1, 2008, include:

- 8.4% of U.S. households are Completely Unready for the DTV Transition, down from 9.8% as of May 1, 2008.
- 11.0% of U.S. households are Partially Unready for the DTV Transition, down from 11.9% as of May 1, 2008.
- Compared with the Total U.S., Completely Unready homes over-index on the following characteristics:
  - Total annual household income is under $25,000 per year–these homes make up 43.7% of all Completely Unready households, while they make up only 21.1% of all households in the U.S.
  - Head of Household has less than a High School diploma–these homes make up 21.8% of all Completely Unready households, while they make up only 13.9% of all households in the U.S.
  - Head of Household works in a Blue Collar occupation–these homes make up 37.3% of all Completely Unready Households, while they make up only 26.0% of all households in the U.S.
- For sets that were Unready in March 2008 and became Ready by August 2008, the most popular action for getting ready was replacement or removal of the set altogether.
- For those that did not replace or remove their set, opting for an external digital converter box was the next most popular method for getting ready.

The Digital Readiness of Total U.S. and Local Market Households

Update on Digital Readiness of Total U.S. Households

Table 1 shows how the readiness of U.S. households has changed in the past five months. The percentage of U.S. households that are Completed Unready for the DTV Transition has declined steadily since May 2008, when it was 9.8%. According to Nielsen's National television ratings panel as of September 1, 2008, 8.4% of U.S. households are Completely Unready, and 11.0% of U.S. households are Partially Unready. Furthermore, 11.5% of all television sets in the U.S. are Unready Sets, down from 13.1% as of May 1, 2008 (not shown).

Table 1. *Percentage of U.S. Households that are Completely Ready, Partially Unready and Completely Unready*

Date	% of HHs that are Completely Ready	% of HHs that are Partially Unready	% of HHs that are Completely Unready
May 1, 2008	78.3%	11.9%	9.8%
June 1, 2008	78.6%	11.8%	9.6%
July 1, 2008	79.1%	11.6%	9.3%
August 1, 2008	79.7%	11.4%	8.9%
September 1, 2008	80.6%	11.0%	8.4%

Source: National sample as of September 1, 2008

Digital Readiness of Households in Local Markets

Households in each of Nielsen's 56 local LPM and Set Meter markets have shown a wide range of digital readiness over the past few months. Tables 2 and 3 show the current ten most digitally ready Local People Meter (LPM) and Set Meter markets and ten least digitally LPM and Set Meter markets, ranked by the penetration of Completely Unready households within the Designated Market Area (DMA)®.

The rates at which the most unready markets are preparing for the DTV Transition vary quite a bit. For example, the Minneapolis-St. Paul DMA had 17.0% Completely Unready households as of May 1, 2008; this number is now 12.0% as of September 1, 2008 – an improvement of 5.0 points. However, the Houston DMA had 17.1% Completely Unready households as of May 1, 2008, a figure that is now 15.8% as of September 1, 2008 – a much smaller improvement of 1.3 points.

Among the ten most prepared markets, the largest decrease in the penetration of unready homes is found in the Ft. Myers-Naples DMA. As of May 1, 2008, 4.4% of all homes in the market were Completely Unready. That number has decreased by almost half, making up only 2.4% of the DMA as of September 1, 2008.

Taking all 56 LPM and Set Meter markets into account, the greatest decrease of Completely Unready homes between

Table 2. *Ten highest penetrations of Completely Unready households among 56 LPM and Set Meter markets*

Local Market	% of HHs that are Completely Unready as of 9/1/08	Rank 9/1/08	% of HHs that are Completely Unready as of 5/1/08	Rank 5/1/08
HOUSTON	15.8%	1	17.1%	4
DALLAS-FT. WORTH	14.3%	2	15.3%	6
TULSA	14.1%	3	14.1%	10
SALT LAKE CITY	13.4%	4	18.0%	2
MILWAUKEE	13.3%	5	18.4%	1
ALBUQUERQUE-SANTA FE	12.7%	6	14.1%	9
MINNEAPOLIS-ST. PAUL	12.0%	7	17.0%	5
AUSTIN	11.6%	8	11.2%	18
LOS ANGELES	11.6%	9	13.4%	12
MEMPHIS, TN	11.6%	10	10.9%	21

Source: LPM and Set Meter samples as of September 1, 2008

Table 3. *Ten lowest penetrations of Completely Unready households among 56 LPM and Set Meter markets*

Local Market	% of HHs that are Completely Unready as of 9/1/08	Rank 9/1/08	% of HHs that are Completely Unready as of 5/1/08	Rank 5/1/08
FT. MYERS-NAPLES	2.4%	1	4.4%	5
HARTFORD & NEW HAVEN	2.6%	2	2.9%	1
WEST PALM BEACH-FT. PIERCE	3.2%	3	4.2%	4
ATLANTA	3.3%	4	4.0%	3
PHILADELPHIA	3.7%	5	5.4%	8
NEW YORK	3.7%	6	3.8%	2
BOSTON (MANCHESTER)	4.2%	7	4.6%	6
MIAMI-FT. LAUDERDALE	4.6%	8	7.3%	15
CHARLOTTE	4.9%	9	4.6%	7
PROVIDENCE-NEW BEDFORD	5.1%	10	6.9%	11

Source: LPM and Set Meter samples as of September 1, 2008

May 2008 and September 2008 occurred in the Nashville DMA (not shown), which improved from 10.9% of households being Completely Unready to 5.8%.

For more information on the readiness status of local markets, Nielsen provides monthly readiness reports for all LPM and Set Meter markets. Please contact your Nielsen representative for these reports.

Characteristics of Completely Unready Households by Income, Education and Occupation

The report released in May regarding the digital readiness of U.S. households examined the characteristics of Completely Unready households by age, race, and ethnicity of the head of household. This report confirmed that the demographic groups that were most unprepared for the DTV Transition were Black, Hispanic, as well as younger households.

This report offers further insight into the characteristics of Completely Unready homes by looking at annual income level, head of household education level, and head of household occupation.

Tables 4, 5 and 6 provide side-by-side comparisons of the penetrations of various levels of annual income, education level and occupation for Total U.S. and for Completely Unready households.

Table 4. *Distribution of annual income level in Completely Unready households and Total U.S. households*

Household Characteristic	% of Completely Unready HHs	% of Total U.S. HHs	Index
Household Annual Income Level: <$25,000	43.7%	21.1%	207
Household Annual Income Level: $25,000 to $49,999	31.8%	31.1%	102
Household Annual Income Level: $50,000 to $74,999	13.9%	18.0%	77
Household Annual Income Level: >$75,000	10.6%	29.8%	36

Source: LPM and Set Meter samples as of September 1, 2008

For annual income level, households with a total annual income under $25,000 would be most impacted if the DTV Transition occurred today. Although they make up 21.1% of the Total U.S., these households currently make up 43.7% of Completely Unready U.S. households.

Table 5. *Distribution of Head of Household education level in Completely Unready households and Total U.S. households*

Household Characteristic	% of Completely Unready HHs	% of Total U.S. HHs	Index
Head-of-Household Education Level: No School / Some School	21.8%	13.9%	157
Head-of-Household Education Level: High School Graduate	23.5%	30.3%	78
Head-of-Household Education Level: Some College	32.9%	27.9%	118
Head-of-Household Education Level: College Graduate or Higher	21.8%	27.9%	78

Source: LPM and Set Meter samples as of September 1, 2008

The percentage of Completely Unready households in which the Head of Household is not a High School graduate is currently 21.8%, a penetration that is one and a half times greater than that of the penetration of these households in the Total U.S.

Table 6. *Distribution of Head of Household occupation in Completely Unready households and Total U.S. households*

Household Characteristic	% of Completely Unready HHs	% of Total U.S. HHs	Index
Head-of-Household Occupation: White Collar	34.1%	40.6%	84
Head-of-Household Occupation: Blue Collar	37.3%	26.0%	143
Head-of-Household Occupation: Not Working	28.6%	33.4%	86

Source: LPM and Set Meter samples as of September 1, 2008

When looking at the readiness status of households based on the Occupation of Head of Household, households in which the Head of the Household is employed in a "Blue Collar" occupation would be the most impacted if the DTV Transition occurred today.

Analysis of Viewing to Unready Sets

This section provides a set-level analysis of current viewing levels to Ready Sets and Unready Sets. The purpose of this set-level analysis is to understand the amount of viewing that would be lost if the DTV Transition occurred *today* and, as a result, Unready Sets could no longer receive broadcast television signals.

As we get closer to the DTV Transition date, we expect that households will upgrade their television equipment at an accelerated rate. This analysis does not suggest that television viewing next February will be impacted to the same degree as it would be if the transition occurred today. Nonetheless, this provides relevant insight on today's state of readiness that can inform actions of television programmers, distributors and others involved in the DTV Transition.

Update on English-Language and Spanish-Language Broadcast Network Viewing

This section looks at primetime ratings of individual broadcast networks coming from Unready Sets and the contribution of Unready Set viewing to total network audience levels. These ratings are summarized into two groups: English-language broadcast networks and Spanish-language broadcast networks. The analysis focuses on broadcast network viewing only because Unready Sets are, by definition, sets that can receive over-the-air programming only.

It is important to note that some of this viewing to Unready Sets is taking place in Partially Unready households; it is likely that after February 17, 2009, this viewing would switch over to a Ready Set already present in the household, or the Unready Set(s) would be properly upgraded by the household.

Table 7. *Ratings (Average Audience %) to Ready Sets and Unready Sets in primetime to English-language broadcast networks combined and Spanish-language broadcast networks combined and % of ratings to Unready Sets*

April 2008	Set Digital Readiness Status	P 2+	C 2-11	T 12-17	P 18+	P 18-34	P 35-54	P 55+
English-language Broadcast Networks*	Ready Sets	11.2	3.4	4.4	13.4	7.5	13.4	19.1
	Unready Sets	2.3	1.1	1.8	2.6	1.7	2.6	3.3
	% of ratings to Unready Sets	17.0%	24.2%	29.4%	16.1%	18.8%	16.3%	14.8%
Spanish-language Broadcast Networks**	Ready Sets	1.3	1.1	0.9	1.4	1.8	1.3	1.1
	Unready Sets	0.5	0.5	0.4	0.5	0.7	0.5	0.2
	% of ratings to Unready Sets	26.8%	32.5%	29.3%	25.7%	28.8%	27.4%	17.4%

Source: National sample during April 2008

* Networks included: ABC, CBS, NBC, FOX, PAX, MNTV, CW, PBS

** Networks included: UNIVISION, TELEMUNDO, TELEFUTURA, AZTECA, MTV TR3S

Table 8. *Ratings (Average Audience %) to Ready Sets and Unready Sets in primetime to English-language broadcast networks combined and Spanish-language broadcast networks combined and % of ratings to Unready Sets*

August 2008	Set Digital Readiness Status	P 2+	C 2-11	T 12-17	P 18+	P 18-34	P 35-54	P 55+
English-language Broadcast Networks*	Ready Sets	10.3	3.6	4.5	12.2	7.0	12.0	17.5
	Unready Sets	1.8	1.0	1.2	2.0	1.5	2.0	2.7
	% of ratings to Unready Sets	15.0%	21.0%	21.3%	14.3%	17.4%	14.1%	13.2%
	Change Since April 2008	**-2.0**	**-3.2**	**-8.1**	**-1.8**	**-1.4**	**-2.2**	**-1.6**
Spanish-language Broadcast Networks**	Ready Sets	1.2	1.0	0.9	1.3	1.8	1.2	1.0
	Unready Sets	0.4	0.5	0.4	0.4	0.6	0.5	0.2
	% of ratings to Unready Sets	26.4%	33.3%	30.0%	25.1%	25.7%	28.0%	19.1%
	Change Since April 2008	**-0.4**	**+0.8**	**+0.7**	**-0.6**	**-3.1**	**+0.6**	**+1.7**

Source: National sample during August 2008

* Networks included: ABC, CBS, NBC, FOX, PAX, MNTV, CW, PBS

** Networks included: UNIVISION, TELEMUNDO, TELEFUTURA, AZTECA, MTV TR3S

Table 7 above shows the percentages of the primetime broadcast network rating going to Unready Sets during April 2008, data which were shared in our previous May report.

These numbers have been updated to show the change, if any, of the viewing percentages going to Unready Sets–Table 8 displays the same information four months later.

The portion of Persons 2+ viewing to English-language Broadcast Networks on Unready Sets has declined 2.0 percentage points from April 2008, now representing 15.0% of total viewing during primetime. The portion of Persons 2+ viewing to Spanish-language Broadcast Networks has also declined slightly, now at 26.4% of total viewing in primetime during August 2008 versus 26.8% in April 2008.

The greatest contribution of viewing to Unready Sets still lies with children and teenage viewers. Viewing to an Unready Set accounted for more than 20% of their total viewing during prime-time in August 2008. Of the two groups of broadcast networks, the data show that Spanish-language broadcast networks would still be impacted more, if the DTV Transition took place today.

Characteristics of the Unready Set

This section provides a description of the typical Unready Set in the U.S. Currently, Total U.S. households have an average of 2.6 television sets within the home. As we get closer to the DTV Transition deadline, households may or may not choose to upgrade their Unready Sets for television viewing. In fact, it is expected that some sets will not become Ready, but will be retained for other uses, such as video games, playback, or internet.

Location of Unready Sets within the Household

Currently, all Nielsen samples collect information on the location of each television set within the household by room description. Table 9 compares the percentages of all Unready Sets and all Sets by room location.

Table 9. *Location of Unready Sets compared to location of all Sets in Total U.S. households*

Location of Television Set within ALL homes	% of Unready Sets	% of Total U.S. Sets	Index
Living Room	25.4%	33.7%	75
Family Room	3.5%	5.6%	62
Master Bedroom	19.0%	22.2%	85
Other Bedroom	30.5%	20.7%	147
Kitchen	8.0%	4.3%	187
Other Location*	13.7%	13.6%	101

Source: National sample as of September 1, 2008

* 'Other Location' includes Basement, Detached Building, Dining Room, Garage, Office, Patio, and Other

The data show that Unready Sets are typically located in bedrooms other than the master bedroom. Additionally, Unready Sets are more likely to be located in the kitchen– although Unready Sets located here make up 8.0% of all Unready Sets, this number is almost double the percentage of sets typically located in the kitchen.

Unready Sets without Tuning

The previous section showed that Unready Sets are typically not located in primary viewing sites of the home. Therefore, it makes sense that Unready Sets would be used for purposes other than viewing live television, such as for video game consoles, DVD players, VCRs and computers.

In fact, we know that some Unready Sets are currently not used for live television viewing at all. Table 10 breaks out the percentages of Unready Sets in the U.S. that had no tuning to television programming throughout the Total Day (M-Su 6a-6a) during August 2008.

Table 10. *Percentage of Unready Sets that receive no tuning to regular television programming in Total U.S. households*

Total # of Unready Sets	# of Unready Sets with no tuning	Percentage
2738	668	24.4%

Source: National sample during August 2008

Clearly, a large number of Unready Sets have already been set aside for usage outside of viewing television. These television sets are not expected to be upgraded for the transition and should make up the vast majority of those left Unready after February 2009.

How Sets Become Digitally Ready

This section provides a special analysis of the characteristics of sets that were Unready in March 2008, but became Ready by August 2008. The purpose of this analysis is to understand how homes are getting ready and how this transition impacts their general viewing patterns.

Changes in Media Status

As homes make the transition, Nielsen is keeping track of how their television reception changes. Homes have several options for getting ready: purchasing a digital converter box, subscribing to cable or satellite, or replacing or removing the Unready Set altogether.

Table 11 shows our results from a special unified study. This unified study isolates television sets in Nielsen's Total U.S. sample that were Unready on March 2, 2008 and became Ready by August 31, 2008. This study did not differentiate between the type of household in which the set resided, either Completely Unready or Partially Unready, but simply shows how sets are being transitioned. The corresponding data show how often each of the preparation methods were used to transition the sets.

There were 583 television sets in the National sample that qualified for inclusion in this unified analysis. These sets were Unready for the DTV Transition on March 2, 2008, meaning they were only capable of viewing analog broadcast television, and they were not connected to cable, satellite, or an external digital converter box. As of August 31, 2008, these same 583 sets had either made the change and were deemed digitally Ready or were removed from use.

The data show that removal or replacement of the set is the most popular course of action to take for Unready Sets. For homes that did not remove or replace the Unready Set, purchasing a digital converter box was the next most popular way to convert the set.

This is not too surprising. As we saw in a previous section, unready homes tend to have below average income; therefore, these homeowners would most likely not choose not to commit to a monthly cable or satellite expense.

Changes in Total Viewing

Just as a home's media technology can change as they get ready, the transition could also impact the total amount of time the average household spends viewing television in general. Table 12 on the next page isolates the same group of television sets as in the previous section—those sets in the Total U.S. sample that were Unready during the week ending March 2, 2008 and were Ready during the week ending August 31, 2008. The data show changes in viewing behavior between these two weeks by reporting the total viewing minutes, as well as viewing amounts to English-language and Spanish-language broadcast stations.

The data show a clear increase in the amount of time spent viewing television after making the change. The Total Viewing Minutes to all qualifying television sets in the Total U.S. unified study increased 19.3%.

Table 11. *Percentages of transition method within Total U.S. households for television sets that were Unready on March 2, 2008 and Ready on August 31,2008*

Unified Household Group	Unready on March 2, 2008	Digitally Ready on August 31, 2008			
	Total # of sets	Cable	Satellite	Digital Converter Box	Removed / Replaced
Total U.S. Television Households	583	23.2%	13.7%	25.2%	37.9%

Source: Unified National sample for March 2, 2008 and August 31, 2008

Table 12. *Percentage difference of viewing after transition on television sets that were Unready during the entire week of February 25 through March 2, 2008 and Ready during the entire week of August 25 through August 31, 2008*

Network/Station	% Difference After Transition
English-Language Broadcast Networks	-47.8%
Spanish-Language Broadcast Networks	-28.9%
Total Television Viewing	+19.3%

Source: Unified National sample during the two weeks

Shifts in Share of Viewing

Not only does preparing for the DTV Transition impact time spent viewing, but it could also impact the share of viewing to certain types of television networks. Because some television consumers will opt for a cable or satellite service as their method of getting sets ready for the DTV Transition, this analysis will show that the broadcast share of viewing for converted television sets may be affected. With some homes upgrading to cable or satellite and thus having more channels available, a change in viewing behavior will likely occur after the transition.

Tables 13 again isolates the same group of television sets as in the previous sections – those sets in the Total U.S. sample that were Unready during the week ending March 2, 2008 and were Ready during the week ending August 31, 2008. The data show any shifts in viewing behavior between these two weeks by reporting the share of viewing to various groups of broadcast stations and cable networks.

Table 13. *Share of viewing before and after transition on television sets in Total U.S. households that were Unready during the entire week of February 25 through March 2, 2008 and Ready during the entire week of August 25 through August 31, 2008*

Network/Station	Share of Viewing Before Transition	Share of Viewing After Transition
English-Language Broadcast Networks	93.1%	40.8%
Spanish-Language Broadcast Networks	6.9%	4.1%
English-Language Cable Networks	0.0%	54.4%
Spanish-Language Cable Networks	0.0%	0.5%
Video-On-Demand	0.0%	0.2%

Source: Unified National sample during the two weeks

It is important to point out that the sample used here does include those television sets that have become ready without access to cable or satellite services – Table 11 states that around 25% of the unified sample fall into this category. In spite of this, the shift of the viewing share to cable networks is quite dramatic, taking the majority of total viewing time after transitioning the set to Ready.

This could be attributed to the substantially larger variety of sources that are currently offered to television viewers compared to any other network type listed in this analysis. Also, a new viewer of cable might spend more time exploring their choices than those viewers with long-time access to the cable networks.

As we get closer to the DTV Transition date, it is expected that households will upgrade their television equipment at an accelerated rate. To date, the percentages of Completely Unready households have been declining at a muted rate, but should decline at an accelerated rate as we approach February 17, 2009.

Nielsen will continue to provide insight about the digital readiness of U.S. households and viewing to Unready Sets in order to prepare television programmers, distributors and others involved in the DTV Transition.

####