

Digital TV Transition 2009: Learning from Wilmington, NC

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December 12, 2008
The Economics of the Digital TV Transition
Columbia Institute for Tele-Information (CITI)

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Agenda

Key findings

Barclays Capital and our interest in the Digital TV Transition

Our Research in Wilmington

Potential implications for the national transition in February

Key findings

1. Barclays Capital has made investment recommendations in several companies based on the transition, but most players are so large relative to the impact of this one-off event that the effect is not material
2. Robust demand for converters may exceed NTIA coupon program
3. Digital over-the-air (OTA) reception concerns are well-founded in our view
4. Consumer confusion and frustration is mounting and customer service options are limited

Agenda

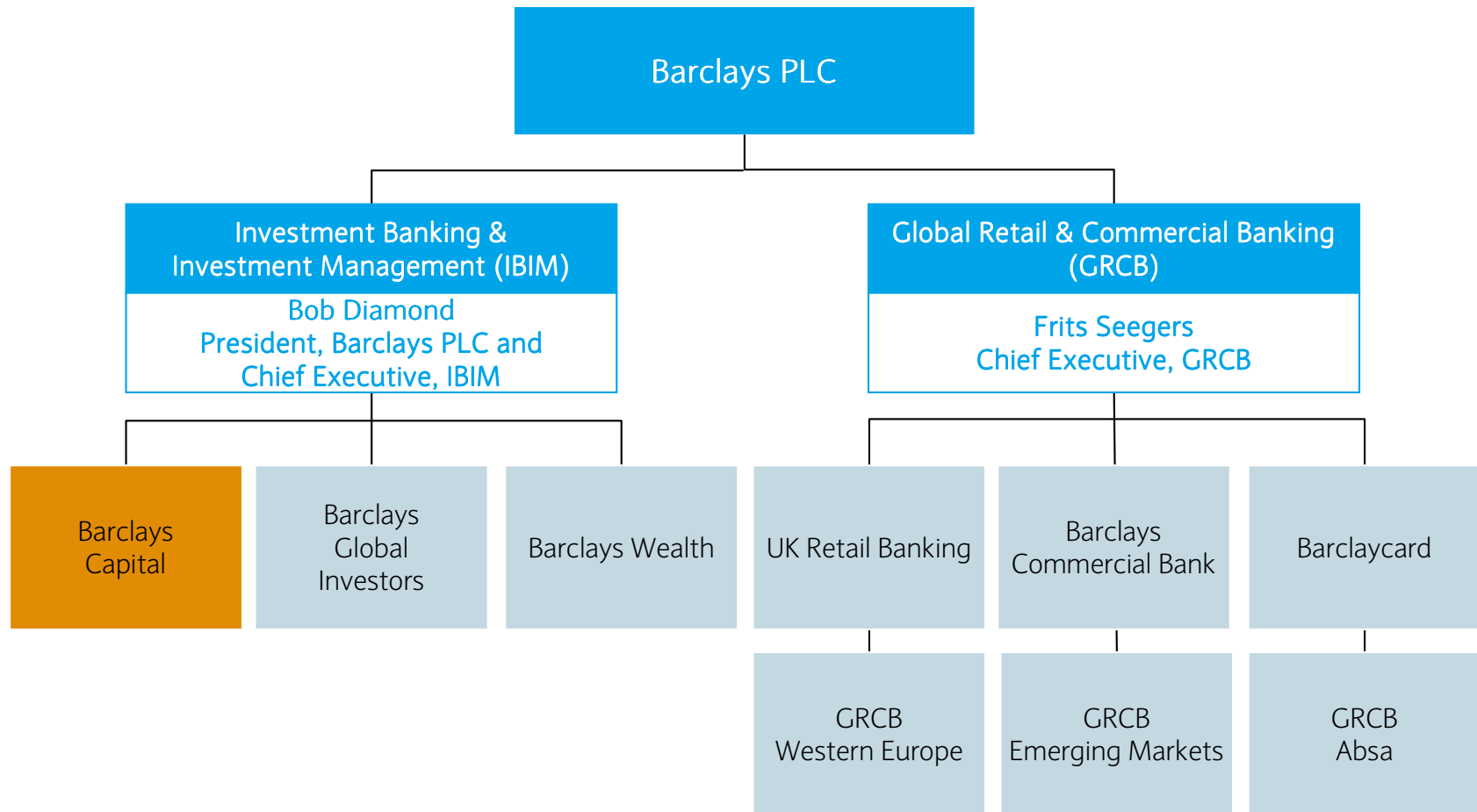
Key findings

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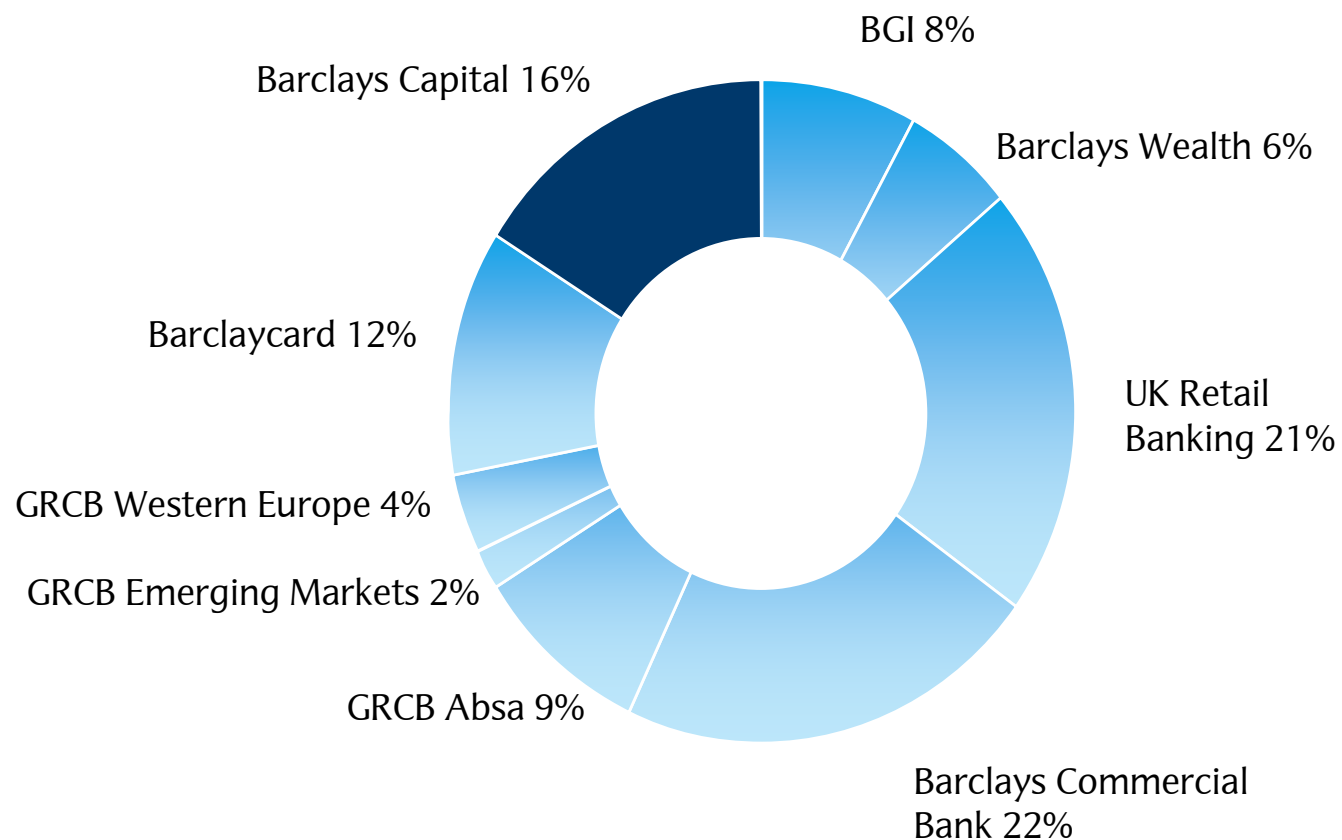
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Potential implications for the national transition in February

Barclays Group overview



Revenue by Business Unit



H1 2008 PBT split by business. Excludes head office loss.

Source: Barclays Capital

Role of “Sell Side” Equity Research

- Our clients are mainly investors such as hedge funds, mutual funds, pensions and other large institutional investors
- Our *fundamental research* is the more familiar kind where our analysts make investment recommendations for specific equities (stocks) and sectors
- Our *non-fundamental research* (e.g., this study) looks at broader trends to improve the quality of fundamental research and to create baskets of securities that let investors buy (or short) a trend rather than buy (or short) the affected stocks.

Some questions our clients are asking about the Digital TV Transition

What is the demand for converter boxes?

- Which manufacturers will benefit?
- Which component suppliers will benefit?

What is the demand for antennas?

- Indoor antennas – who benefits from their manufacture, sales, and service?
- Outdoor antennas – who benefits from their manufacture, sales, and service?

How many over-the-air only households will switch to pay-TV and what will they pay?
Can they be served profitably? What about OTA TVs in Pay-TV households?

What will be the effect on broadcasters?

=====

We are *not* primarily interested in public policy, but the potential problems we have uncovered as part of our study are such that we are making our work available to the public free of charge

Our approach

Created a detailed model to test the effect of different assumptions on the answers our clients wanted, build a base case, a bull case, and a bear case

Interviewed consumers and retailers in Wilmington, NC, prior to its becoming the first-in-the-nation to end analog OTA TV

Published “*Digital TV Transition 2009: Disruption for Consumers, Gains for Targeted Players*” on September 8th. 2008, to coincide with the end of analog broadcasts in Wilmington



Followed the news from Wilmington and public announcements from local Pay-TV providers

Published “*Digital TV Transition 2009 II: Learning from Wilmington, NC,*” on November 24, 2008

Agenda

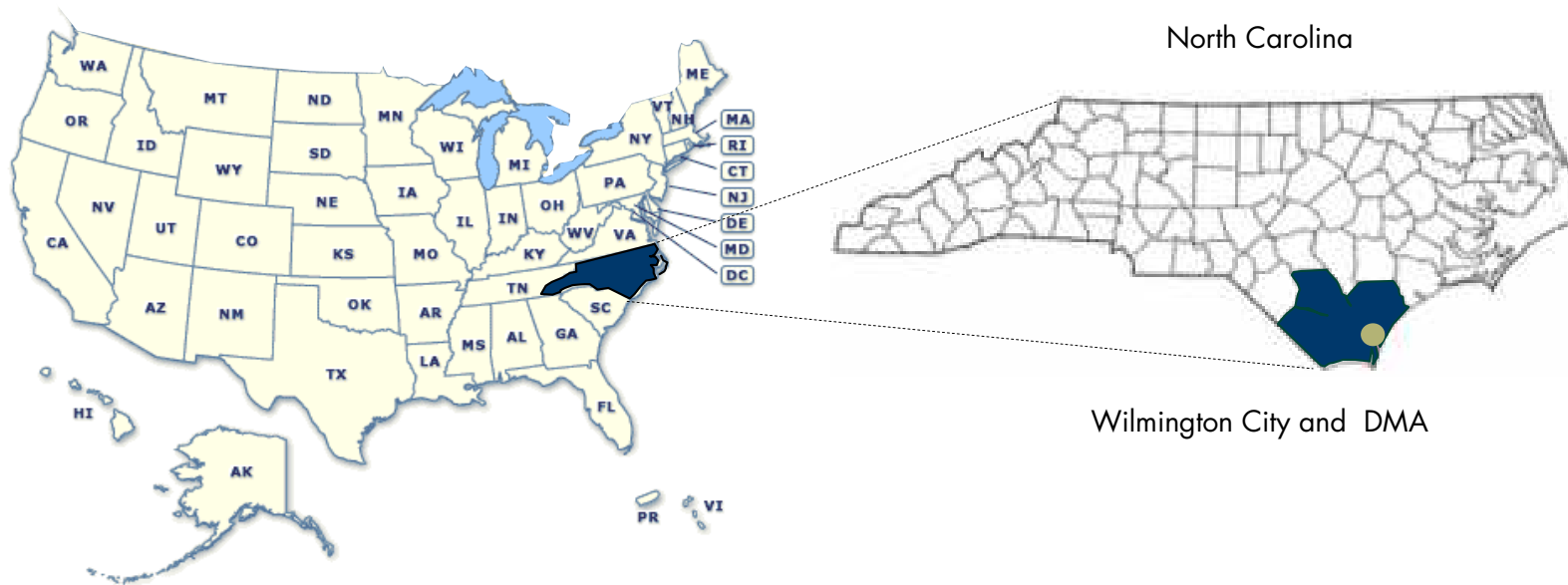
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Wilmington, NC, information



Two market studies:

- 1) Channel checks, store visits, and in-store interviews in June, 2008
- 2) Close analysis of all public data from US government and interested parties since Sept 8

Source: Barclays Capital

Wilmington, NC, information (cont'd)

Demographics

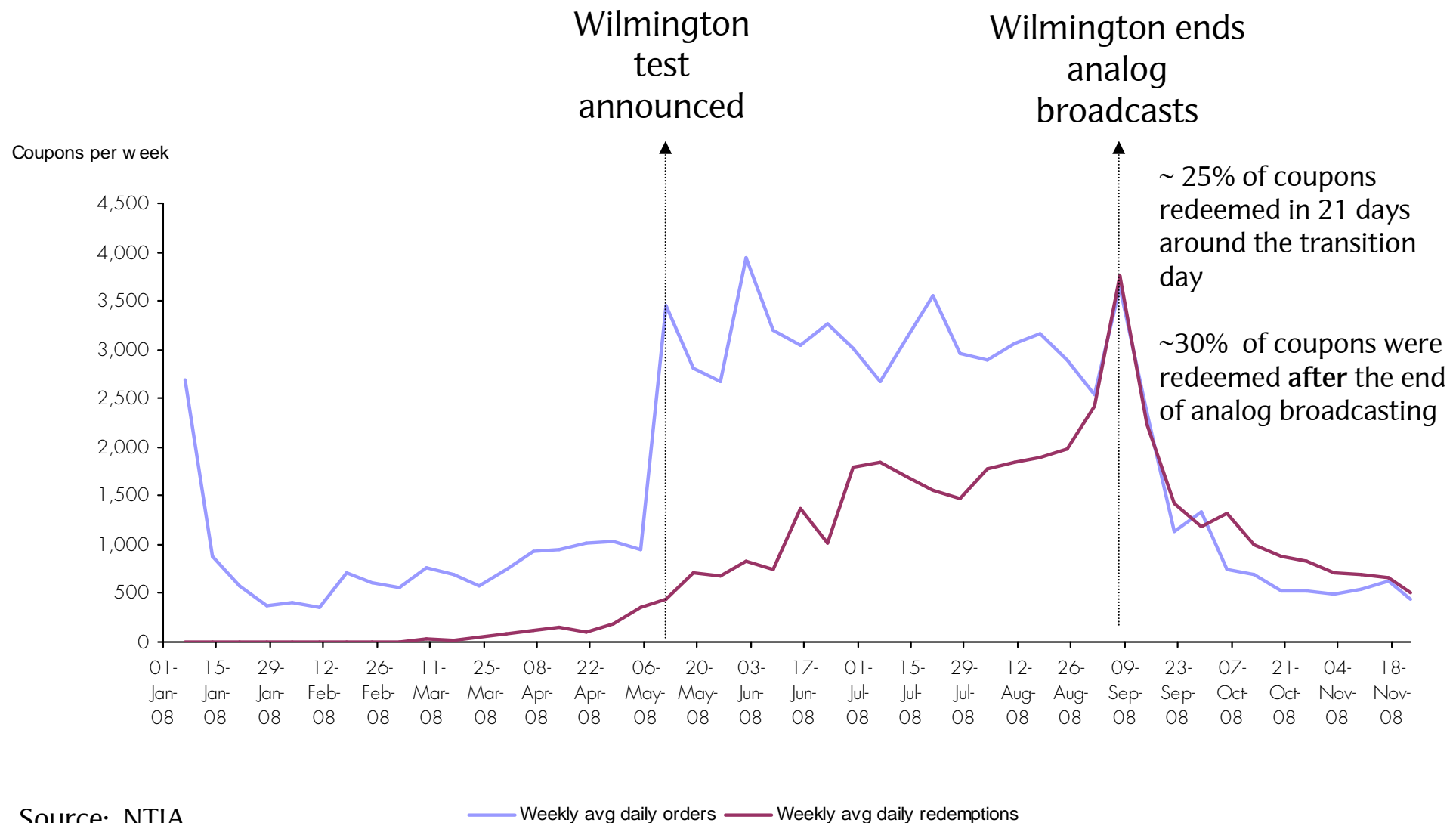
| | |
|--------------------------|----------|
| Population | 413,724 |
| Density/square mile | 110 |
| Area (square miles) | 3,736 |
| Avg household size | 2.42 |
| Poverty rate | 15.2% |
| Percent of US pop | 0.14% |
| Avg HH disposable income | \$44,741 |
| Income percent of US avg | 83% |

TV-related data

| | |
|--------------------------------|---------|
| TV households | 180,000 |
| Pay TV penetration | 93% |
| DMA rank | 135 |
| Broadcasters | 4 |
| Cable providers | 6 |
| OTA-only households | 12,600 |
| Coupons ordered (as of 11/11) | 25,000 |
| Coupons redeemed (as of 11/11) | 17,000 |

Source: Census Bureau, NTIA, Nielsen, and Barclays Capital

Coupon redemptions (i.e., sales of converters) in Wilmington were concentrated in a short period



Source: NTIA



Some findings from our qualitative research

- 17% of the people we interviewed on the street expressed anger at the transition in general. Our survey did not ask any questions about this
- The small sample of people we found who had already bought and were using converters had lost one (of four) channels and were ok with that
- The FCC lavished resources on Wilmington (i.e. every big retailer was visited by a team from the FCC) but retailers routinely were mistaken about important aspects of the transition in stores we visited
- Awareness and community involvement were high

Source: Barclays Capital survey, June 2008

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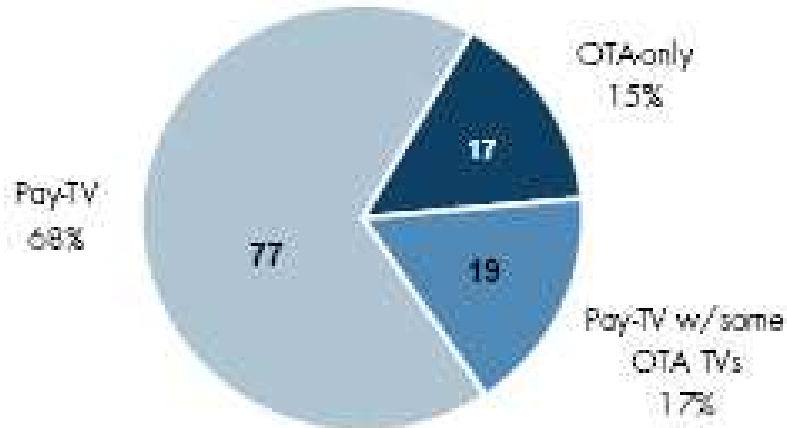
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US TV Universe used in our models

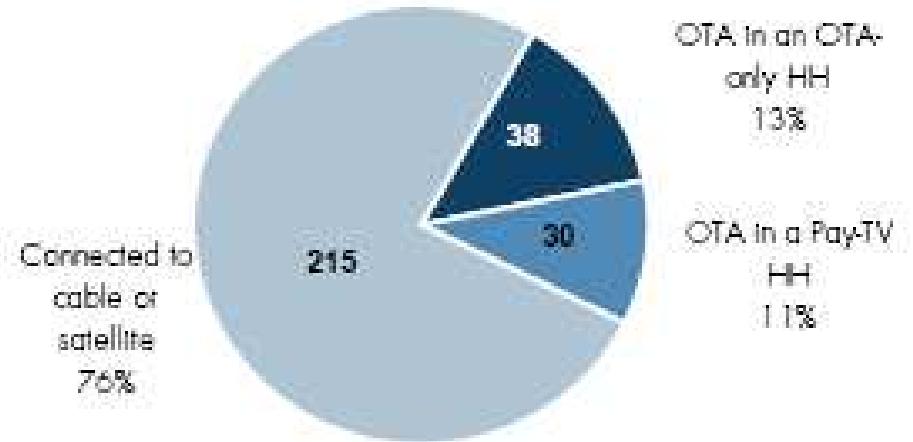
Pay TV –only
 Pay TV with some OTA TVs
 Over-the-air (OTA) only



Households in the US (millions)



TVs in the US (millions)



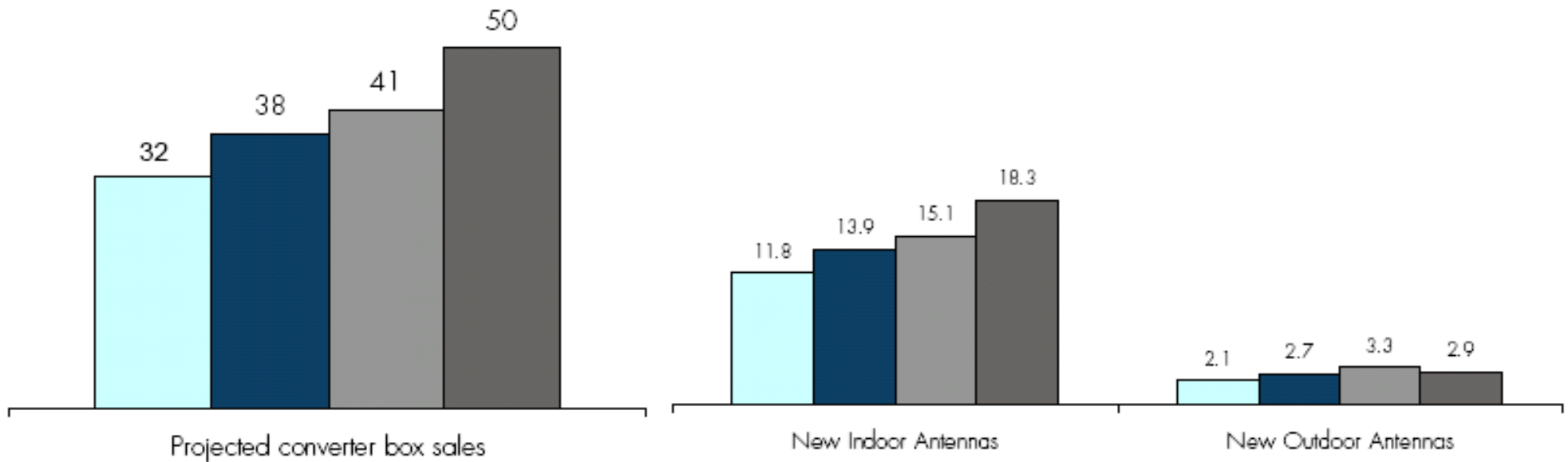
Source: FCC, NEA, CEA, Nielsen, and Barclays Capital estimates

Finding #1: Robust demand for converter boxes and antennas

- Sept bear case
- Sept base case
- Sept bull case
- Revised projection based on Wilmington data

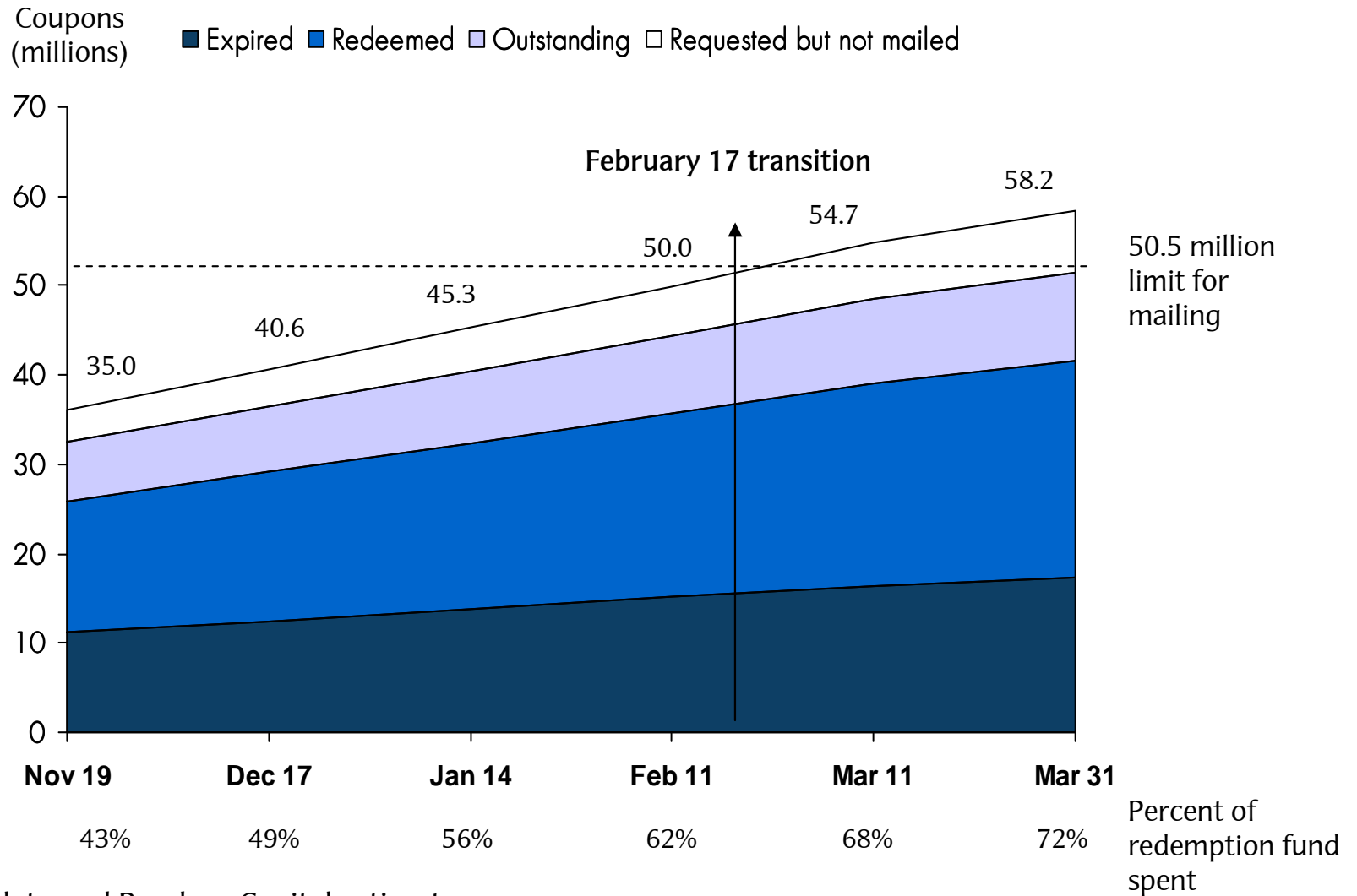
Converter demand scenarios (Millions)

Antenna demand scenarios (Millions)



Source: Barclays Capital estimates

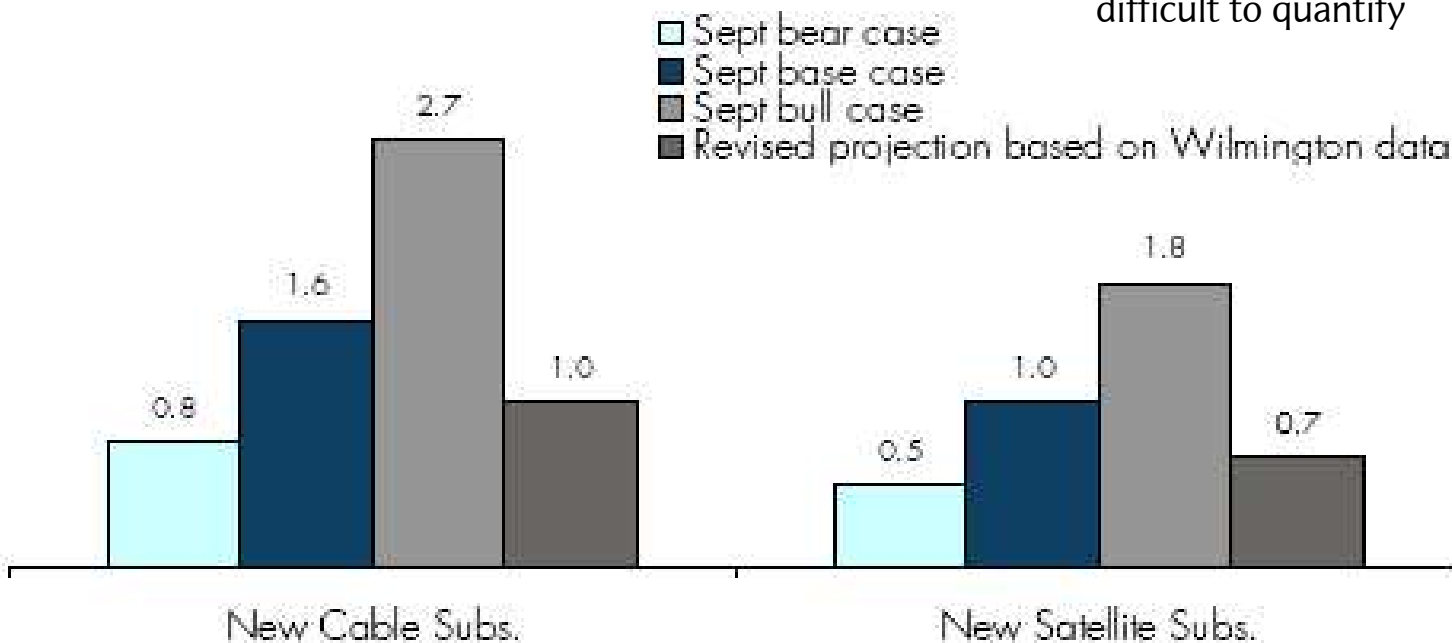
The NTIA coupon program may have funding issues in February with demand at the levels we project



Source: NTIA data and Barclays Capital estimates

Finding #2: No bonanza for Pay-TV providers

Pay TV scenarios (Millions)

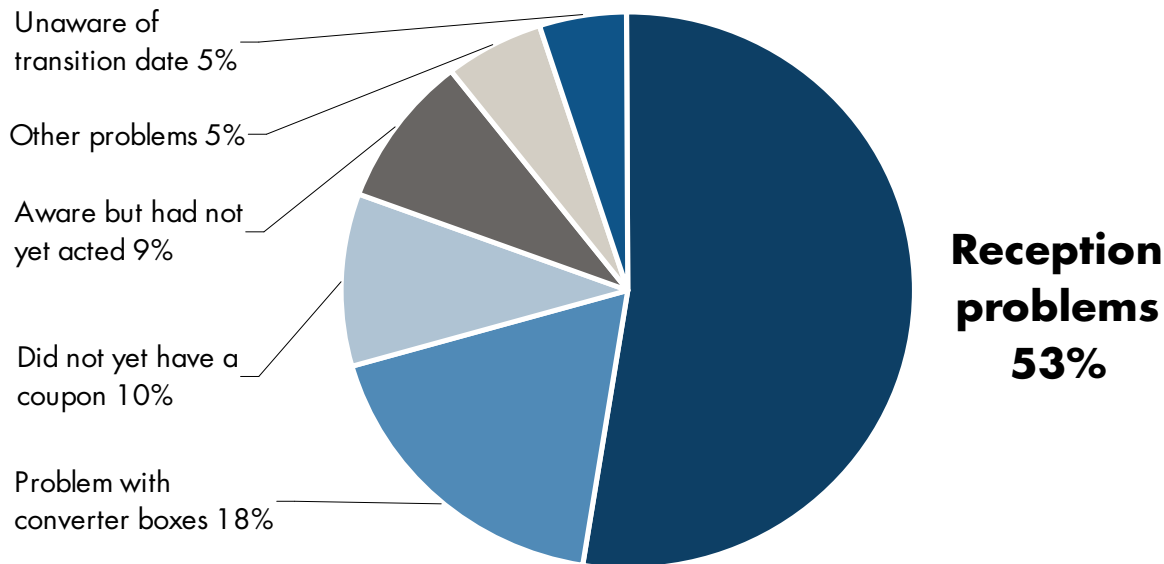


- Valuation of 1.7 million new subs = \$3.7 billion
- Adding lifeline subs is a more or less breakeven proposition
- Operational disruption and unforeseen capital expenses are risks that are difficult to quantify

Source: Barclays Capital estimates

Finding #3: Digital reception is a serious problem

Breakdown of calls to the FCC



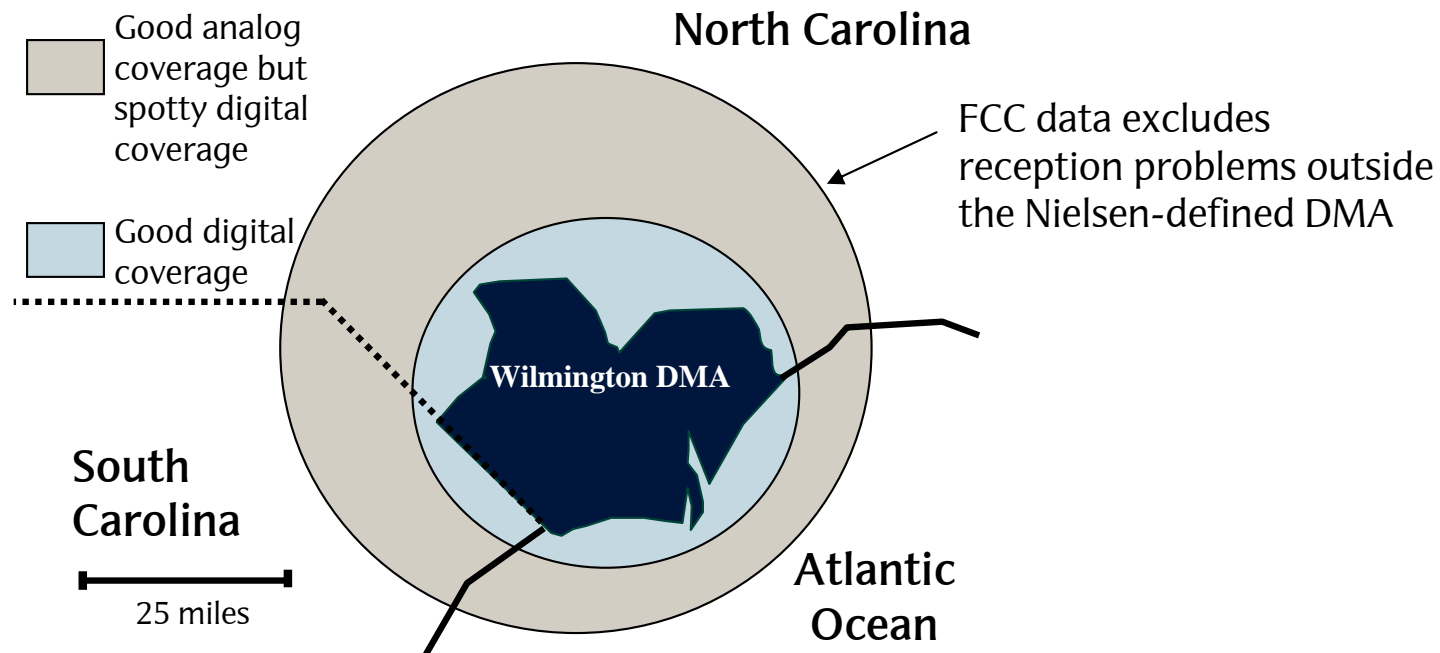
Wilmington was supposed to be a layup

- It is physically small
- It is flat
- It lacks tall buildings
- It has an unusually low number of OTA-only households

Does not include calls made to first responders, local TV stations, city halls, etc

Source: FCC and Barclays Capital

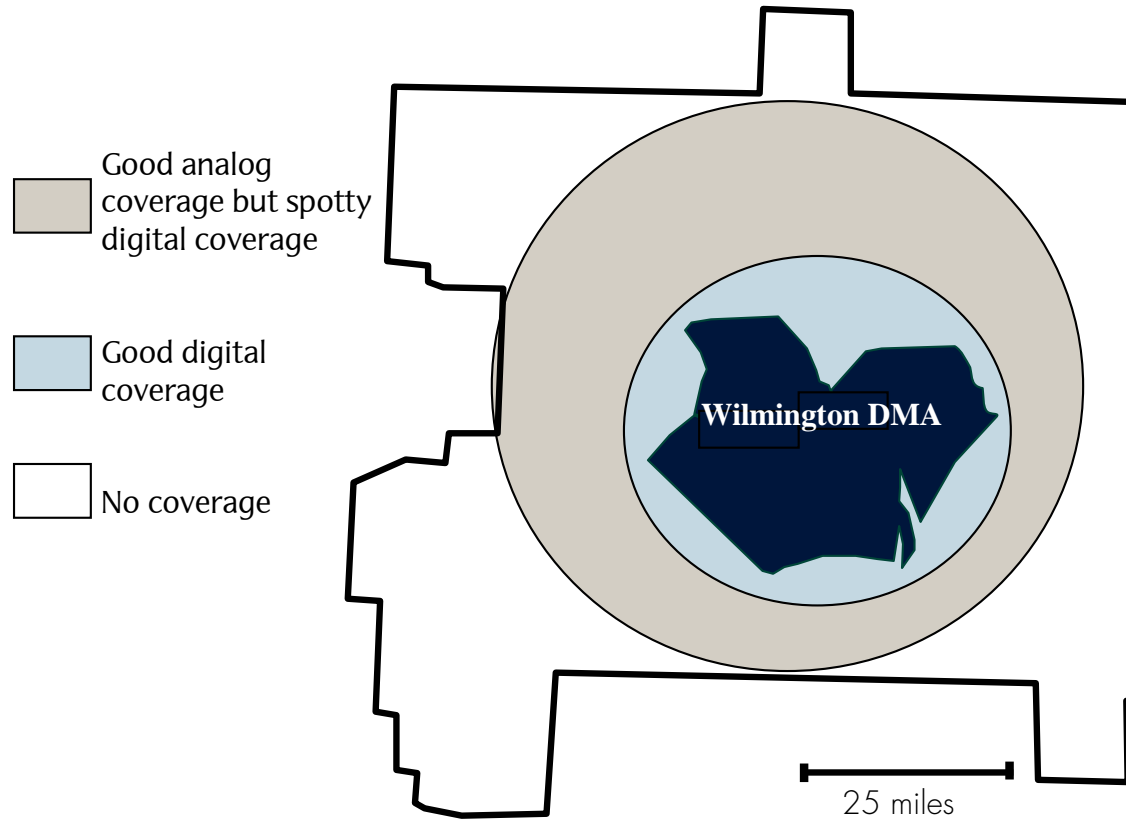
The digital footprint covers a smaller area that the older analog signals did



Source: FCC and Barclays Capital

DMA with similar populations cover larger areas

Amarillo, TX DMA superimposed on Wilmington DMA



Source: FCC, Nielsen, Barclays Capital

Finding #4: Consumer confusion is mounting and customer service options are limited

Calls recorded

| Call type | First 24 hours | | First week | |
|-------------------------|----------------|---------------------|-------------|---------------------|
| | Wilmington | National equivalent | Wilmington | National equivalent |
| Poor reception | 367 | 460,789 | 960 | 1,205,333 |
| Converter box problem | 202 | 253,120 | 329 | 413,078 |
| Other technical problem | 250 | 313,387 | 100 | 125,556 |
| Other | 142 | 178,038 | 539 | 676,744 |
| Total | 960 | 1,205,333 | 1928 | 2,420,711 |

Source: FCC , newspaper reports, and Barclay Capital estimates

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2-Neutral - sector coverage universe fundamentals are steady, neither improving nor deteriorating.

3-Negative - sector coverage universe fundamentals are deteriorating.

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