

Digital TV in the US: 2009 Deadline Creates Windfall For Cable, Satellite and Telco Providers

A newly-enacted plan for the transition from analog to digital TV broadcasting in the United States will be a windfall for pay TV providers, prompting millions of households currently served only by free analog broadcasts to finally subscribe to multichannel service from cable, satellite and telecom companies such as Comcast, Time Warner Cable, DirecTV, EchoStar, Verizon and AT&T. By the time analog transmissions end in February 2009, Strategy Analytics projects that 66 percent of all homes will use at least one digital TV service, up from only 50 percent penetration today. Cable operators are especially likely to benefit from this transition, with penetration of digital service rising from 45 percent of all cable customers today to nearly 75 percent by the end of 2010. This report reviews the critical elements of the new US digital TV transition plan, and considers its impact on companies delivering pay and free TV services via cable, satellite and other infrastructure. It also forecasts the number of households using each type of service over the next five years.

March 2006

Market Forecast

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Contents

1	<u>INTRODUCTION</u>	5
2	<u>KEY POINT CONCLUSIONS</u>	6
3	<u>FEBRUARY 2009: A NEW DEADLINE FOR DTV</u>	8
3.1	REGULATORY BACKGROUND	8
4	<u>ISSUES FOR BROADCASTERS AND CABLE TV OPERATORS</u>	10
4.1	DIGITAL MUST-CARRY	10
4.2	DIGITAL DOWNCONVERSION	10
5	<u>MANAGING THE SWITCH FOR BROADCAST-ONLY VIEWERS</u>	13
5.1	HARDWARE SUBSIDIES	13
6	<u>IMPACT OF THE DTV TRANSITION PLAN</u>	15
6.1	THE DEADLINE WILL SPEED CABLE'S MIGRATION TO DIGITAL	15
6.2	DIGITAL SIMULCASTING AND CABLE-READY TVs	15
6.3	SATELLITE AND TELCO TV PROVIDERS WILL ALSO BENEFIT	16
6.4	NEW OPTIONS FOR TERRESTRIAL BROADCASTING	16
7	<u>DTV FORECAST AND ASSUMPTIONS</u>	18
7.1	CABLE	19
7.2	SATELLITE	19
7.3	TELCO/IPTV	19
7.4	TERRESTRIAL	20

List of Exhibits

Exhibit 1	The 2009 Deadline Will Boost Penetration for All Types of DTV	6
Exhibit 2	Digital Receiver Sales Will Soar Over the Next Five Years	9
Exhibit 3	Analog Customers Still Make Up Most of Cable's Base	11
Exhibit 4	Households Receiving Analog Broadcasts Only Will Decline as 2009 Nears	13
Exhibit 5	95 Million Homes Will Use Digital TV by 2010	18
Exhibit 6	Many Homes Receiving DTTV Will Also Use Pay Providers	21

1 Introduction

On February 8, 2006 President Bush signed legislation that establishes a firm deadline for ending analog terrestrial TV broadcasts in the United States.

The new plan for transitioning the US to an all-digital broadcasting environment will replace an earlier, more flexible plan adopted in the late 1990s as part of broader effort to de-regulate the telecommunications industries. (For a full account of the original transition plan and subsequent regulatory moves, please see **“The Transition to Digital Television: FCC Mandates and Market Evolution,”** a Broadband Media & Communications Strategies report published in September 2004.)

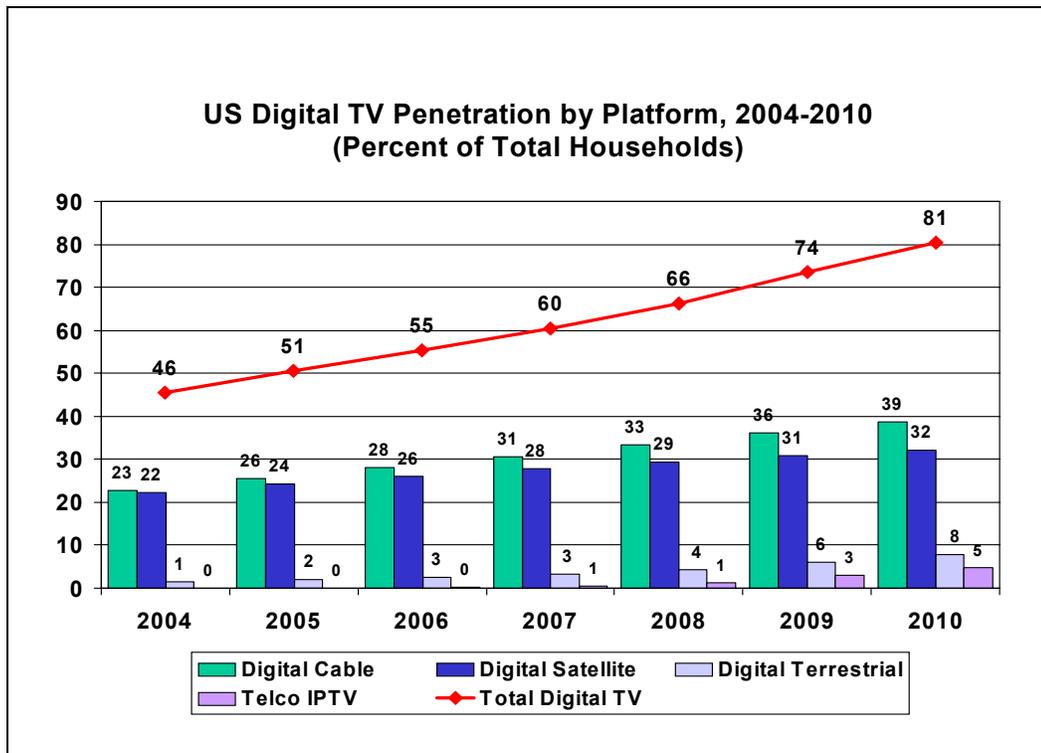
Despite widespread availability of high-definition digital TV programming and rising adoption of digital TV hardware in the US, demand from politicians and industry for a nearer, clearer digital deadline grew throughout 2005, as differing plans made their way through both houses of Congress.

This report reviews the critical elements of the new US digital TV transition plan, and considers its impact on companies delivering pay and free TV services via cable, satellite and other infrastructure. It also forecasts the number of households using each type of service over the next five years. Strategy Analytics customers seeking more detailed statistics and projections for subscribers, household penetration and market share for DTV in the US and Canada covered should consult **“Digital TV Subscriber Market Forecast Data – North America,”** a forecast data table published by Broadband Media & Communications in February 2005.

2 Key Point Conclusions

- The new February 2009 deadline for the transition from analog to digital TV broadcasting will be a windfall for pay TV providers in the US, prompting millions of households currently served only by free analog broadcasts to finally subscribe to multichannel service from cable, satellite and telecom companies.
- The deadline will spur another 20 million US households to adopt some form of digital TV over the next three years. By the time analog transmissions end in February 2009, Strategy Analytics projects that 66 percent of all homes will use at least one digital service, up from only 50 percent penetration today (see Exhibit 1).

Exhibit 1 The 2009 Deadline Will Boost Penetration for All Types of DTV



Source: Strategy Analytics, 2006

- Cable operators are especially likely to benefit from this transition. Having a firm DTV deadline in place will sharply accelerate the industry's migration to an all-digital platform. Penetration of digital service will grow from only 45 percent of all cable customers today to nearly 75 percent by 2010. To maximize the opportunity that the deadline offers, cable's marketing strategy and pricing structure for digital cable should change to address customers that have not used pay TV in the past. This means pricing digital service at much lower rates than those available today, as well as offering bundled service packages of TV, broadband Internet access and Internet telephony.
- The digital deadline will also spur additional adoption of satellite and telco-delivered TV as the deadline approaches, but not on the same scale as for cable, which will draw upon its huge base of analog customers.
- The demise of analog broadcasting could leave millions of consumers without access to TV immediately after the switch-off. The transition plan includes subsidies designed to help analog broadcast-only households buy digital adapters for existing TV sets. While we believe that the \$1.5 billion budgeted for these subsidies will be enough to cover homes still relying exclusively on analog broadcast TV by February 2009, promoting and implementing the subsidy program could prove difficult for the government.
- The voucher program is also likely to attract cable and satellite customers who want to continue using additional unconnected analog TVs. Since the program does not include any mechanism for qualifying consumers who apply for vouchers, it is hard to know how many people may ultimately try to participate.

3 February 2009: A New Deadline for DTV

On February 8, 2006 President Bush signed legislation that establishes a firm deadline for ending analog terrestrial TV broadcasts in the United States. The new plan for transitioning the US to an all-digital broadcasting environment was part of a broader spending bill adopted by the US Congress in late 2005.

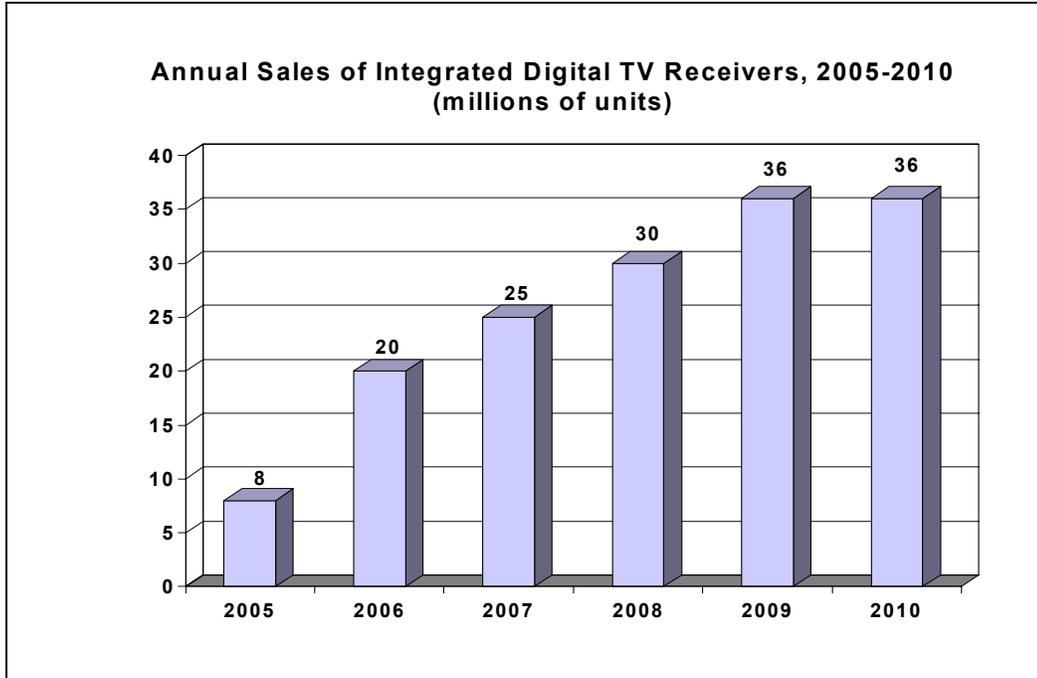
The plan requires all of the country's 1,749 full-power TV stations to transmit digital terrestrial broadcasts exclusively starting on February 17, 2009. Although over 1,500 stations offer digital broadcasts today, the vast majority also carry the same programming over a second analog signal. The transition will allow the Federal government, which allocates radio frequency spectrum for public and private use, to recover the spectrum used for these redundant analog broadcasts. The government plans to license most of the recovered spectrum to companies developing new wireless communications services in an auction that it expects will generate \$10 billion or more in revenues. The plan also calls for some spectrum to be used to upgrade emergency communications systems used by police and other public authorities.

3.1 Regulatory Background

The new transition plan replaces an earlier, less definitive schedule for the deployment of digital broadcasting set up by Congress and the Federal Communications Commission (FCC) in the late 1990s. Congress allocated the additional spectrum broadcasters needed to carry digital signals through the Telecommunications Reform Act of 1996. In 1997 the FCC created a transition schedule that required broadcasters to surrender their old analog spectrum by 2006 – or as soon as 85 percent of viewers were able to receive digital signals.

But consumer demand for digital TV materialized too slowly to make this schedule achievable. Although broadcasters began to deliver some high-definition digital programming as early as 1998, the high prices commanded by digital TV receivers meant that very few consumers were actually watching it. To address this problem, in 2002 the FCC issued a series of mandates to broadcasters, cable and satellite TV providers and TV vendors designed to increase the availability of digital programming as well as adoption of digital-capable hardware. The most significant of these was an order requiring consumer electronics companies to begin including digital ATSC tuners in virtually all TV receivers by 2007. As a result, Strategy Analytics projects that US sales of integrated DTV receivers will grow from eight million units last year to 36 million in 2010 (see Exhibit 2).

Exhibit 2 Digital Receiver Sales Will Soar Over the Next Five Years



Source: Strategy Analytics, 2006

In addition to regulation, market-driven forces are also pushing DTV adoption ahead after years of stagnation. Cable and satellite TV providers are both making HDTV a key selling point as they race to win new customers and upgrade existing users to more advanced service packages. Comcast, the country's largest cable operator with over 21 million customers, now offers 10-15 digital HD channels in most areas, and is beginning to launch Video-On-Demand (VOD) programming in HD as well. Direct Broadcast Satellite (DBS) providers DirecTV and EchoStar have added satellite capacity and will use advanced compression technology to deliver vastly expanded HD lineups in the near future.

Pressure to impose a new deadline for analog broadcasting and spectrum recovery has also been raised by factors outside the TV industry. Unlike the late 1990s, mounting budget deficits (as well as a thriving wireless communications industry) make the prospect of a new round of lucrative spectrum auctions more attractive than ever to the government. And events such as the September 2001 terrorist attacks and last year's destructive hurricanes have focused attention on the need to expand the spectrum reserved for emergency communications.

4 Issues for Broadcasters and Cable TV Operators

The DTV plan that was finally enacted as part of a spending bill dubbed the Deficit Reduction Act of 2005 is a compromise between previous versions adopted by the House of Representatives and Senate earlier in 2005. Throughout this process, broadcasters and cable TV providers lobbied legislators to adopt key provisions addressing their own specific interests. The most important issues at stake included digital “Must-Carry” requirements for broadcasters and digital downconversion rights for cable operators.

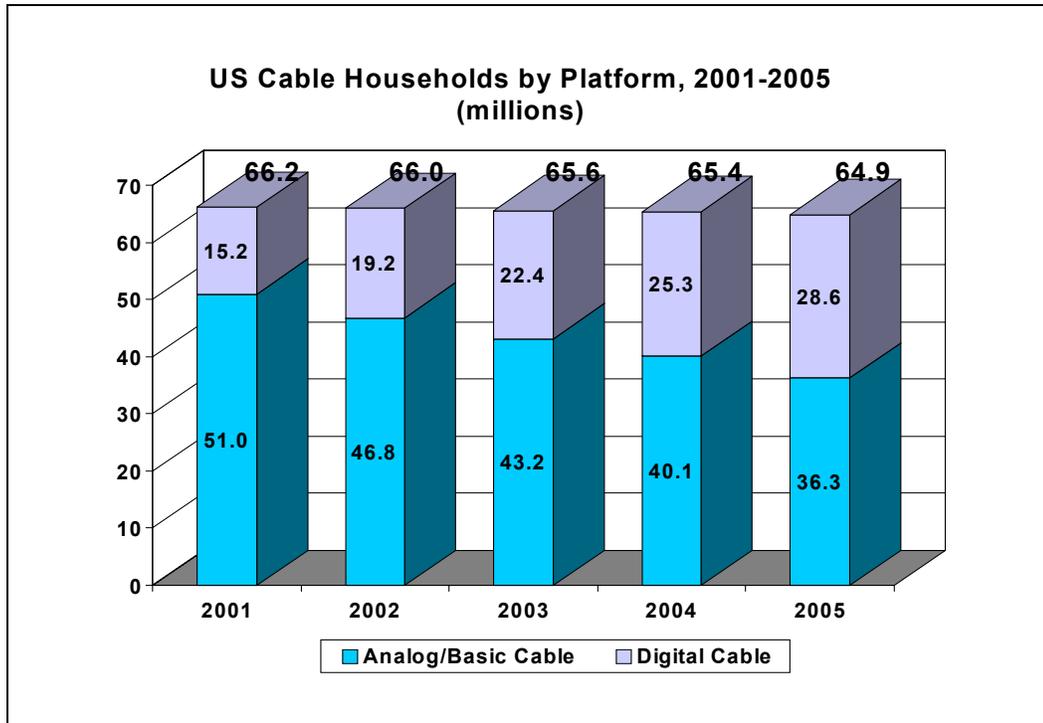
4.1 Digital Must-Carry

Broadcasters wanted the new transition plan to impose expanded must-carry requirements on cable operators. “Must-carry” rules enacted by Congress in 1992 require cable operators to carry the analog signals of local broadcast stations through to their customers. Broadcasters have argued for years that cable’s must-carry requirements should be expanded to include carriage of additional multicast channels that may also be delivered through a station’s digital signal. Despite the perceived strength of the broadcast lobby, the prospects for digital must-carry were never bright. Although many cable systems now have adequate capacity to carry additional broadcast channels, forcing operators to deliver more than a primary video signal has increasingly been perceived by politicians as an over-regulatory move. The fact that the broadcasters are widely regarded as having benefited from the free spectrum that they were “loaned” under the 1996 Telecom Reform may also have undermined their position. As a result, the final version of the transition plan does not include new must-carry provisions.

4.2 Digital Downconversion

The final plan also failed to implement a stated goal for the cable industry – the right for cable operators to downconvert digital broadcast signals to analog at their system headends. Downconversion would allow operators to continue delivering local channels to households that subscribe only to less expensive analog cable service. Today these “basic cable” customers still account for a majority of total cable customers nationwide, although penetration of digital-tier service is rising quickly (see Exhibit 3).

Exhibit 3 Analog Customers Still Make Up Most of Cable's Base



Source: Strategy Analytics, 2006

Downconversion would save operators money by sparing them from installing set top boxes, CableCard devices or digital-to-analog converters in all of these homes. But the idea was fiercely resisted by broadcasters and the consumer electronics industry, with both groups complaining that cable downconversion would undermine the growth of high-definition TV. Broadcasters claimed that downconversion would effectively negate the millions spent on encoding, recording and transmitting HD digital programming; TV manufacturers made essentially the same point, arguing that downconversion would discourage consumers from upgrading to digital TV sets, or even taking the less costly step of buying a digital-to-analog adapter for existing TVs. Since making HD-quality TV widely available to the public has always been a primary objective of any digital transition plan in the US, these arguments ultimately carried the day.

Tellingly, cable lobbyists the National Cable & Telecommunications Association (NCTA) expressed minimal dismay at their failure to win on this point. As we will note later, we believe that this reflects a growing, if unstated, belief among operators that the ban on operator

downconversion will ultimately help most operators by driving adoption of digital set tops and services far above their current level.

5 Managing the Switch for Broadcast-Only Viewers

But the new transition plan's greatest impact will be on the relatively small number of households that do not subscribe to pay TV services from cable or satellite operators. Of the 110 million homes that own a TV in US today, Strategy Analytics estimates that some 19 million still rely exclusively on free analog terrestrial broadcasts. These households now face the prospect of losing access to free broadcast TV once analog signals cease to be distributed. In addition to these broadcast-only homes, millions of secondary TVs that are not connected to cable or satellite would also become obsolete.

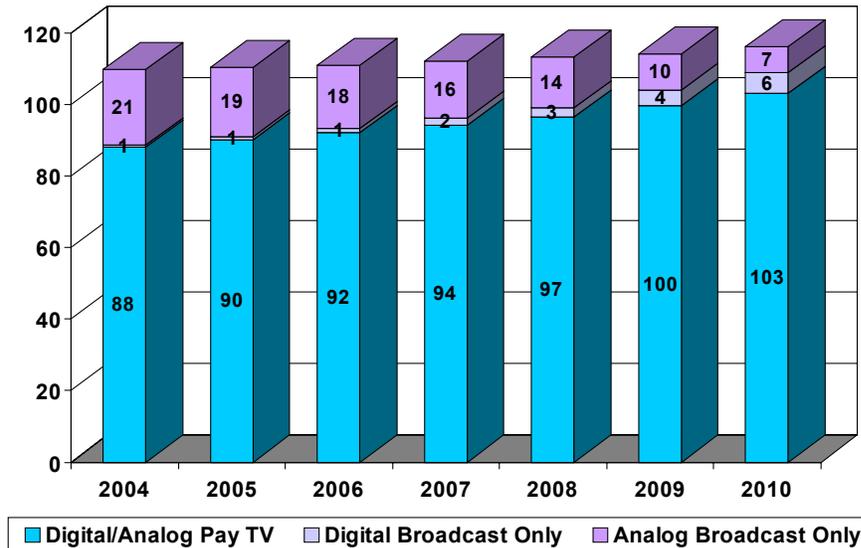
5.1 Hardware Subsidies

To address this, the transition plan allocates as much as \$1.5 billion for subsidies to help consumers pay for digital-to-analog adapters designed to let analog TV sets display digital signals. These subsidies will be distributed through a voucher program implemented by the National Telecommunications and Information Administration (NTIA). The program will allow qualified households to receive up to two \$40 coupons that may be used to partially pay for adapters, which are expected to cost between \$50 and \$60 by 2008.

The program's \$1.5 billion budget would pay for 37.5 million vouchers. This would be more than enough to cover the total number of homes using analog broadcast TV only, especially if this base continues to shrink in the next three years. By the end of 2008, we project that the number of TV homes dependent on analog broadcasts will have fallen to 14 million, five million fewer than today (see Exhibit 4).

Exhibit 4 Households Receiving Analog Broadcasts Only Will Decline as 2009 Nears

**Broadcast and Pay TV Households by Type, 2004-2010
(millions)**



Source: Strategy Analytics, 2006

But although the adapter subsidies are chiefly designed to prevent these non-pay TV homes from losing access to programming, the voucher program is also likely to attract cable and satellite customers who want to continue using additional unconnected analog TVs. Since the program does not include any mechanism for qualifying consumers who apply for vouchers, it is hard to know how many people may ultimately try to participate. It is also unclear how the NTIA will market the program to the public as the analog cut-off date approaches, and how retailers and consumer electronics vendors will take part in the program. So far, only Thomson and LG Electronics have announced plans to bring adapters to market.

6 Impact of the DTV Transition Plan

6.1 The Deadline Will Speed Cable's Migration to Digital

For cable operators, having a firm DTV deadline in place will sharply accelerate the industry's migration to an all-digital platform like those used by satellite and emerging telco-delivered TV services. Although cable operators are already using advanced services such as HDTV, DVRs and VOD to drive digital adoption, we estimate that 56 percent of all cable households today still subscribe to the same analog-based service that cable has offered for decades. These consumers have resisted upgrading to digital cable because of the higher costs that digital-tier programming packages command, or because they are reluctant to install a digital set top box.

But many of these analog cable homes will finally be spurred to upgrade when they face the prospect of losing access to programming from local broadcast stations. Because the new transition plan bars cable operators from downconverting these broadcast signals from digital to analog, current analog cable customers will need some type of digital hardware to receive local signals once analog transmissions cease. Although some of these customers may simply choose to buy a low-cost digital to analog adapter, we believe that by 2009 most will upgrade to either a digital cable set top, which converts digital signals to analog when connected to an analog TV, or a digital cable-ready TV receiver.

As the deadline for analog switch-off approaches, cable's marketing strategy and pricing structure for digital cable should change to address these customers. Adoption of digital set tops today is driven mainly by demand for advanced video services such as HDTV and Digital Video Recorders (DVRs), as well as bundled service packages combining digital cable with high speed Internet access and Voice Over IP (VOIP) telephony. While these services will continue to be important in attracting higher-spending customers, in two to three years we expect that lower set top costs and the need to maintain growth will drive digital cable subscription fees to rates closer to those of traditional analog basic service. We believe the combination of lower prices and the threat of losing local programming will help boost digital adoption significantly in the period leading up to the digital deadline in early 2009.

6.2 Digital Simulcasting and Cable-Ready TVs

Other factors will also help push digital penetration well beyond its traditional base of higher-spending cable customers. By 2007-2008, major cable MSOs will have implemented digital simulcasting through most or all of their systems. Industry leaders Comcast and Time Warner Cable, for example, plan to make digital simulcasts available to all of their customers by the

end of 2006. Simulcasting, which lets operators simultaneously deliver less expensive basic-tier programming lineups in both analog and digital formats, makes it easier for cable to compete with satellite and telco TV providers on the basis of digital picture quality. It also tends to promote adoption of full-fledged digital cable service delivered through a set top box, according to operators that have already deployed simulcasting in major systems.

Another technical development likely to boost digital cable adoption is the long-awaited launch of standardized Open Cable Application Platform (OCAP) middleware for digital cable set tops and TVs. OCAP enables critical new functions such as access to on-demand programming, interactive TV applications, and the use of a single remote control to operate TVs, set tops, DVD players or other devices. Equally important, it is also likely to drive down hardware costs to operators and consumers by bringing new vendors and competition to the US cable market. In January, Comcast announced contracts with CE vendors Samsung and Panasonic for a combined 450,000 OCAP-capable set tops. Samsung also has an order for 50,000 OCAP boxes from Time Warner Cable.

6.3 Satellite and Telco TV Providers Will Also Benefit

The new DTV deadline will also create growth opportunities for other pay TV providers, though not on the same scale as those available to cable and its huge base of upgradeable customers. Since US satellite operators DirecTV and EchoStar already employ an all-digital platform, the end of analog broadcasts will not result in the loss of programming for any subscribers. And while some broadcast-only homes will undoubtedly choose DBS over cable as the deadline nears, satellite's limited bundling capabilities and the need to install an outdoor antenna will remain a deterrent to many potential customers.

The deadline may produce a more significant boost for telecom companies as they attempt to build scale in a highly competitive pay TV market. Like the cable operators, regional telcos AT&T (formerly SBC Communications) and Verizon have stressed their plans to offer advanced TV products and multi-service bundles to consumers willing to spend more for features or convenience. But with an end to analog broadcasts looming, the telcos will also have the chance to scoop up millions of households that have never paid for TV before. Once again, making the most of this opportunity will require the telcos to offer entry-level TV packages designed to compete with cable on the basis of price as well as functionality.

6.4 New Options for Terrestrial Broadcasting

Finally, the establishment of a firm DTV deadline and the apparent resolution of long-debated issues such as digital-must carry may also produce new forms of broadcast TV. At least one

company, Utah-based start-up U.S. Digital Television Inc. offers a low-cost digital terrestrial service that delivers a mix of 20-30 free broadcast and pay TV channels.

Although USDTV's service has been available in just a handful of small markets since March 2004, the company received \$26 million in funding last fall from Fox Television Stations, Hearst-Argyle Television, McGraw-Hill Broadcasting and other independent broadcast station groups. These local broadcasters can provide the digital spectrum needed to carry USDTV to millions of households – particularly those that do not currently subscribe to cable or satellite and are reluctant to pay the \$30-\$45 in monthly fees that the incumbent pay operators typically command. USDTV's combination of local broadcast channels and popular pay networks such as ESPN, Lifetime and the Disney Channel currently sells for \$19.95 a month. Subscribers receive the service via a conventional digital terrestrial antenna and a proprietary set top that may be purchased directly from USDTV or at retail through partner company Wal-Mart.

Although USDTV is likely to remain a niche player with limited local distribution for the next year or so, broadcasters' interest in similar digital terrestrial TV (DTTV) services is likely to increase as the new DTV deadline nears. These services could not only reduce the potential loss of analog broadcast-only homes in 2009, but could also be used to build an audience for secondary channels that local broadcasters could deliver via their digital spectrum.

7 DTV Forecast and Assumptions

Based on current competitive trends as well as the impact of the new DTV deadline, Strategy Analytics projects that the total number of US households using some type of digital TV service will grow from 57 million today to 77 million by the end of 2008 – less than two months before the scheduled end of analog broadcasting. By 2010, 95 million homes will use DTV (see Exhibit 5).

Exhibit 5 95 Million Homes Will Use Digital TV by 2010

US Digital TV Households by Platform, 2004-2010							
	2004	2005	2006	2007	2008	2009	2010
TV Households	110	110	111	112	113	114	116
Total Multichannel TV Households	88.0	90.1	92.2	94.2	96.5	99.7	103.2
Cable TV Households (Analog and Digital)	65.4	64.9	64.4	63.8	63.0	62.2	61.4
% of Multichannel Households	74.4%	72.0%	69.8%	67.7%	65.3%	62.4%	59.5%
Dual-Source Multichannel Households	2.4	2.2	2.0	2.0	2.0	2.0	2.0
% of Multichannel Households	2.7%	2.4%	2.2%	2.1%	2.1%	2.0%	1.9%
Digital Cable TV Households (M)	25.3	28.6	31.9	35.0	38.6	42.2	45.6
Net new households (M)	2.9	3.3	3.3	3.1	3.6	3.6	3.4
<i>Growth Rate (%)</i>	13%	13%	12%	10%	10%	9%	8%
% of Multichannel Households	28.8%	31.7%	34.6%	37.2%	40.0%	42.3%	44.2%
% of Cable Households	38.7%	44.1%	49.5%	54.9%	61.3%	67.8%	74.3%
Satellite TV Households (M)	24.9	27.3	29.6	31.7	34.0	36.0	38.0
Net new households (M)	3.3	2.4	2.3	2.1	2.3	2.0	2.0
<i>Growth Rate (%)</i>	15%	10%	8%	7%	7%	6%	6%
% of Multichannel Households	28%	30%	32%	34%	35%	36%	37%
Telco IPTV Households (M)	0.05	0.08	0.20	0.70	1.50	3.50	5.80
Net new households (M)	0.0	0.0	0.1	0.5	0.8	2.0	2.3
<i>Growth Rate (%)</i>	67%	60%	150%	250%	114%	133%	66%
% of Multichannel Households	0.1%	0.1%	0.2%	0.7%	1.6%	3.5%	5.6%
Terrestrial DTV Households (M)	1.6	2.1	2.8	3.7	4.9	7.0	9.3
Net new households (M)	0.50	0.50	0.70	0.90	1.20	2.10	2.30
<i>Growth Rate (%)</i>	45%	31%	33%	32%	32%	43%	33%
TOTAL DIGITAL TV HOUSEHOLDS (M)*	50.7	56.8	62.8	69.3	76.6	85.9	95.0
Net new households (M)	6.30	6.10	6.00	6.50	7.30	9.30	9.10
<i>Growth Rate (%)</i>	14%	12%	11%	10%	11%	12%	11%

Source: Strategy Analytics, 2006

7.1 Cable

Cable will remain the dominant pay TV platform in the US, although competition from satellite and telco-delivered services will continue to erode its total base of subscribers. We estimate that cable's combined base of analog and digital subscribers will shrink from 64.9 million today to 61.4 million by 2010. Despite this trend, we expect cable to emerge as the leader in digital TV over the next five years. After running neck-and-neck with satellite in the race for digital customers from 2002 to 2004, in 2005 cable's digital base reached 28.6 million, 1.3 million more than DBS. As we have noted above, we believe that demand for HDTV, VOD and DVRs will sustain digital cable growth in the near term, allowing it to widen its lead over satellite this year. By 2008, the combination of digital simulcasting, more functional digital cable-ready TVs and the pending DTV deadline will help operators grow their digital base to 38.6 million homes.

7.2 Satellite

The prospects for satellite providers over the next five years are less clear. As noted in Chapter 6, the transition from analog to digital broadcasting will spur additional adoption of DBS as the deadline approaches, but not on the same scale as for cable, which will draw upon its huge base of analog customers.

We also expect satellite subscriber growth will slow significantly unless operators can develop technical solutions, mergers or partnerships to allow delivery of high-speed Internet access and communications services along with pay TV. DirecTV has recently announced plans to spend as much as \$1 billion to develop wireless infrastructure capable of delivering broadband Internet and communications services, possibly as part of a joint venture with EchoStar. While such an approach could eventually bring both satellite providers to match triple-play bundles from cable or telecom providers, timing will be critical to success. The danger for both companies is that by the time wireless bundles reach the market, most potential triple-play customers will have been captured by cable, which is quickly gaining strength in VOIP, or the telcos, which should begin to scale up their TV deployments in 2006-2007.

7.3 Telco/IPTV

Telco-delivered TV services will gradually begin to acquire real subscribers, with 200,000 households projected to add service during 2006. Most growth will be driven by long-awaited rollouts by top regional operators Verizon and AT&T (SBC) instead of the smaller independent carriers that account for the vast majority of telco TV households today. By year-end 2006 we expect that Verizon will have made the greatest progress in winning TV customers as it

continues to build out FTTH plant aggressively and launch cable-like TV service on an incremental, city-by-city basis.

AT&T, which began to offer IPTV service on a limited commercial basis in its home market of San Antonio, TX in December 2005, will likely take longer to attract significant numbers of customers. SBC's strategy of using less expensive DSL-based infrastructure and Microsoft's IPTV middleware platform is likely to require more time to implement, especially on the large scale that the company has planned for. SBC is also counting on regulatory changes at the state or national level that would free it from pursuing local franchises from individual cities for the right to provide TV service.

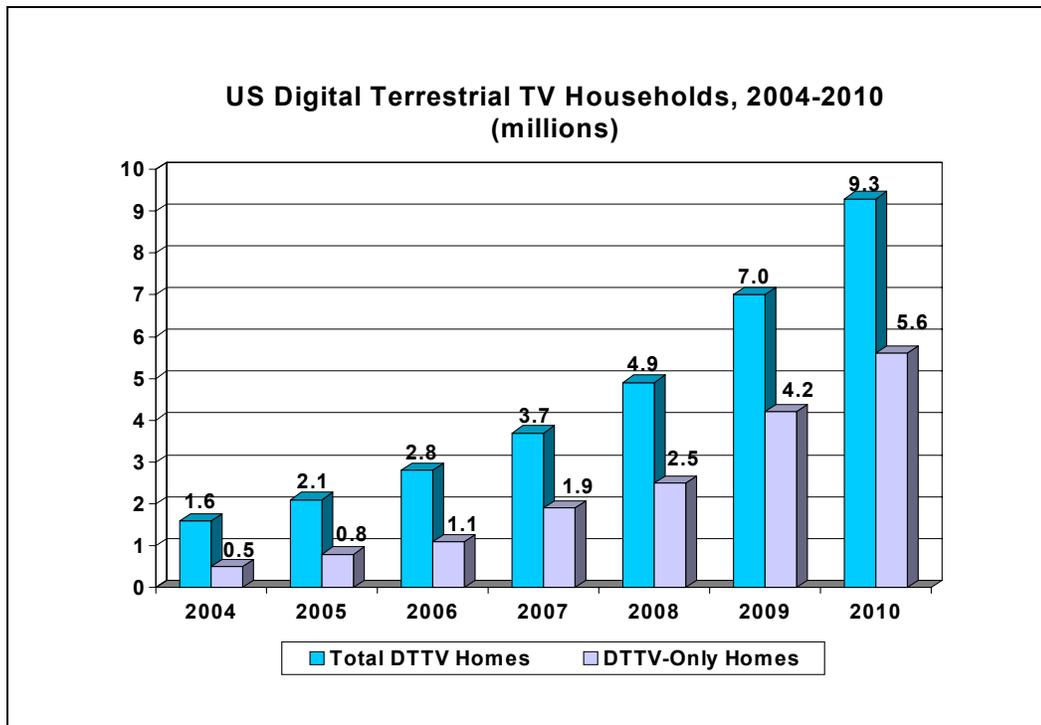
As we have noted in previous reports, the maturity of the US pay TV market and the strength of the established competitors will pose a severe challenge to telcos entering the video business. By 2010, our forecast projects that 5.8 million homes will use telco-based TV services.

7.4 Terrestrial

Although we expect the 2009 deadline for analog broadcasts to have the greatest impact on pay TV services, growing sales of integrated digital TV receivers, improvements in terrestrial tuner and antenna technology and the potential growth of services such as USDTV's will also lead to rapid growth for terrestrial DTV. But even with these developments, we believe most homes receiving local DTV signals via indoor or outdoor antennas will also use some type of pay service as their primary TV source, with terrestrial reception acting as a complementary channel for secondary digital TVs.

We estimate that only 2.1 million households currently receive local DTV signals through the air, with about 60 percent (1.3 million) also subscribing to cable or satellite. By 2010 the number of homes capable of receiving terrestrial signals will reach 9.3 million. By this time a larger share of these consumers will be former broadcast-only homes that have made the switch from analog to digital, but roughly 40 percent will also use a pay TV provider (see Exhibit 6).

Exhibit 6 Many Homes Receiving DTTV Will Also Use Pay Providers



Source: Strategy Analytics, 2006

For more detailed statistics and projections for subscribers, household penetration and market share for all DTV services in the US and Canada, please consult “**Digital TV Subscriber Market Forecast Data – North America**,” a forecast data table published by Broadband Media & Communications in February 2005.