Evolution of STB

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by

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Two-world evolution

- Traditional STB world is evolving into a more fractured environment for live TV and VOD delivery.
- A second adjacent ecosystem (broadband and connected devices) has developed.
- Content providers and MVPDs see growth and threats as these two ecosystems evolve.
- New devices include gaming consoles, smart TVs, over the top STBs, laptops, PCs, tablets and smartphones….in short, any "screen" that can connect to the Internet is the new "TV" set.
- Two distinct delivery and transport systems are evolving.

Transport Technologies

- Traditional: broadcast TV and cable network signals are transported from cable/telco/DBS (satellite) headends to in-home set-top boxes. Measurement via digital STBs has begun.
- IP delivery: broadcast and cable network signals, and VOD, are delivered from a server in the network to the home.
- That server is controlled by either the content owner (ESPN, CNN, HBO) or the MPVD provider (in the case of DirecTV or Time Warner Cable delivering live channels to tablets, etc.).
- The signal can travel both the public Internet and/or the provider's own private network through a broadband gateway device (cable modem) in the home to the end viewing device (gaming console, smart TV, tablet, etc.)

MVPD Share Shift

- In the last five years, DBS has grown from 29M to 34M subscribers. The telcos have grown from 0 to 8M subscribers while cable has dropped from 65M to 59M subscribers. Pay TV growth is nearing 0, but is not there yet.
- By definition, all DBS and telco subscribers are digital, and are thus two-way capable.
- Cable MSOs are converting analog basic subscribers to digital. Some 90M of the 100M MVPD subscriber homes are digital and are thus two-way capable.
- Most homes have more than one digital STB. We estimate the number of digital STBs across those 90M digital homes at 150M.
- Despite the stall in pay TV growth, the digital subscriber and digital STB count will continue to see modest growth in the next three years as MSOs complete a conversion to all digital.

HD/DVR/Network DVR

- The HD/DVR is the lead device MVPDs are now marketing to their subscribers.
- Nielsen estimates HD penetration at 80M U.S homes. MVPDs count 40M+ HD subscribers on HD tiers. (Not all homes with HDTV sets have them hooked up to an MVPD's HD service).
- Nielsen estimates DVR penetration at 50M homes.
- Network DVR places all content that is directed to be recorded by a subscriber "in the cloud," essentially storing that content on a VOD server.
- Cablevision Systems Corp. has rolled out a network DVR service. Comcast has filed a patent for a network DVR service that could launch in 2013.
- Subscribers accessing network DVR content use the same transport and delivery mechanisms used to watch VOD content.

MVPD Subscriber Counts

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	BASIC	DIGITAL	HD	DVR	HD DVR	DIGITAL STBs	BROADBAND
AT&T	4,146,000	4,146,000	1,762,450*	4,146,000	N/A	8,000,000*	14,499,000
Verizon	4,473,000	4,473,000	2,996,910	2,996,910	N/A	11,000,000*	8,776,000
Century Link	94,000	94,000	40,000*	94,000*	N/A	150,000*	5,763,000
Frontier	63,938	63,938	30,000*	30,000*	N/A	60,000*	1,781,295
Windstream							1,210,700
DirecTV	19,914,000	19,914,000	6,420,000*	7,140,000*	N/A	45,000,000*	
Dish	14,061,000	14,061,000	2,290,000*	5,460,000*	N/A	30,000,000*	
Cable One	612,729	215,284	120,000*	80,000*	N/A	300,000*	462,426
Cablevision	3,257,000	3,208,145	2,084,000*	100,000*	N/A	6,000,000*	3,032,000
Charter	4,098,000	3,484,000	N/A	N/A	2,051,876*	5,400,000	3,662,000
Comcast	22,118,000	20,896,000	N/A	N/A	11,172,000	30,000,000*	18,738,000
Suddenlink	1,230,100	807,700	520,966	371,542	N/A	1,200,000*	979,400
TWC	12,299,000	9653000*	6,820,000*	5,075,000	N/A	15,000,000*	10,775,000
Other	14,000,000	8,600,000					10,000,000
Households	100,363,767	89,616,067				150,000,000	79,678,821

*estimate

6/30/12

Note: The majority, but not all, digital homes have broadband service

Source: Company reports

MVPD Subscriber Additions

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CABLE	FY 08	% GROWTH/ LOSS	FY 09	% GROWTH/ LOSS	FY 10	% GROWTH/ LOSS	FY 11	% GROWTH/ LOSS	1H 12	% GROWTH/ LOSS
CableOne	-2,381	-0.4%	-30,483	-5.1%	-20,573	-3.3%	-25,070	-3.9%	-8,684	-1.4%
Cablevision	-19,484	-0.6%	-45,000	-1.4%	-55,700	-1.8%	-64,000	-1.9%	7,000	0.2%
Charter	-270,200	-5.1%	-221,700	-4.4%	-214,300	-4.7%	-214,300	-5.0%	-46,000	-1.1%
Comcast	-703,000	-2.8%	-623,000	-2.6%	-756,000	-3.2%	-459,000	-2.0%	-213,000	-1.0%
Suddenlink	-25,680	-2.0%	-35,800	-2.8%	-31,500	-2.5%	-45,200	-3.7%	-22,100	-1.8%
TWC	-303,000	-2.3%	-210,000	-1.6%	-454,000	-3.6%	-451,000	-3.7%	-263,000	-2.2%
Top 6 Cable	**-1,323,745**	**-2.7%**	**-1,165,983**	**-2.5%**	**-1,532,073**	**-3.4%**	**-1,258,570**	**-2.8%**	**-545,784**	**-1.3%**
DBS										
DirecTV	861,000	5.1%	939,000	5.3%	663,000	3.6%	662,000	3.4%	29,000	0.1%
DISH	-102,000	-0.7%	422,000	3.1%	33,000	0.2%	-166,000	-1.2%	94,000	0.7%
DBS Total	**759,000**	**2.5%**	**1,361,000**	**4.3%**	**696,000**	**2.1%**	**496,000**	**1.5%**	**123,000**	**0.4%**
Telcos										
AT&T	814,000	352.4%	1,019,000	97.5%	922,000	44.7%	804,000	26.9%	355,000	9.4%
Verizon	975,000	103.4%	943,000	49.2%	728,000	25.4%	701,000	20.2%	300,000	7.2%
Telco Total	**1,789,000**	**152.4%**	**1,962,000**	**66.2%**	**1,650,000**	**33.5%**	**1,505,000**	**23.3%**	**655,000**	**8.2%**
Total Video	**1,550,058**	**1.9%**	**1,937,007**	**2.4%**	**428,227**	**0.5%**	**465,430**	**0.6%**	**120,916**	**0.1%**

Gaming Consoles

- Nielsen reports 64M U.S. homes have gaming consoles
- Nintendo Wii counts 40M homes, Microsoft's Xbox 360 34M and Sony's PS3 21M.
- Verizon has gained programming rights to distribute 75 live TV channels to Xbox Live Gold subscribers (12M in the U.S.).
- In Verizon's case, those 75 channels are transported from a server/gateway at Verizon's headend through its broadband network to the home. Signals are processed by the broadband modem through the Xbox gaming console then on to the TV screen.
- AT&T has used Xbox units as secondary STBs, but has stopped new marketing of that program.
- No other gaming consoles have been authorized by MVPDs at this point in time.

SmartTVs and Blu-ray Players

- NPD estimates 25M U.S. homes have smart TVs but only 12M are connected to the Internet.
- Digital Entertainment Group estimates there are 42M U.S. homes with Blu-ray players and Leichtman Research Group estimates 15M of those homes have that player connected to the Internet.
- The MVPDs that have gained programmer rights to carry portions of their live TV channel lineup on a smart TV require a broadband-connected smart TV or Blu-ray player to display those channels.

OTT STBs

- The broad category of over-the-top STBs includes Apple TV, Google TV, Roku, Boxee and Slingbox, among others.
- Roughly 15M boxes in this category have been shipped in the U.S., with Apple leading the way with 7M Apple TVs deployed.
- Time Warner Cable has signed a deal to deliver a set of live TV channels to authenticated subscribers via a Roku box. In some cases, MVPDs have authorized specific apps, such as HBOGO, on Roku devices.
- Apple has not signed any deals for authenticated MVPD programming, but carries access to Netflix, YouTube, iTunes plus selected VOD content from Disney, Fox and BBC America.

Tablets and smartphones

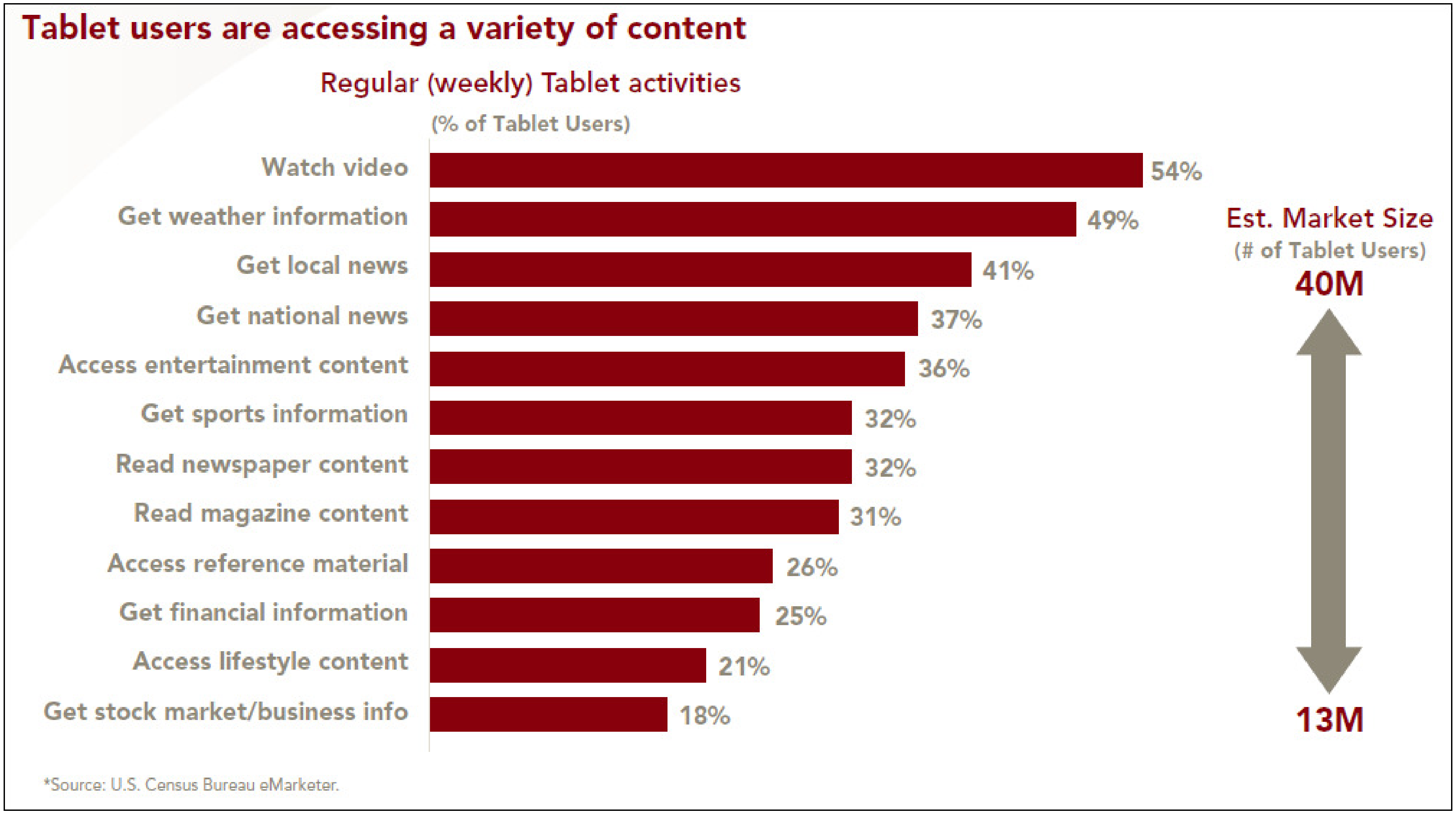
- eMarketer estimates there are 53M iPad users in the U.S.
- The success of the iPad has caused MVPDs (TWC, DirecTV, Verizon) to concentrate second-screen development efforts on Apple's iOS platform, authenticating live channel lineups and other programmer apps on those devices.
- But Android, Kindle and other devices are joining that lineup as other MVPDs sign deals with programmers for second-screen authentication services.
- The transport method mirrors the methods described earlier: TV signals are transmitted through an MVPD provider's broadband plant to an in-home modem/gateway/router, then are delivered over an in-home WiFi network to the end device.
- In the burgeoning case of outside the home delivery, the signal is sent over a mix of the provider's network and the wireless connection network associated with that device.

US iPad users and penetration, 2010-2015

	2010	2011	2012	2013	2014	2015
iPad users (million)	**11.5**	**28.0**	**53.2**	**70.5**	**81.1**	**90.8**
—% change	—	143.9%	90.1%	32.6%	15.1%	11.9%
—% of total population	3.7%	8.9%	16.8%	22.1%	25.2%	27.9%
—% Internet users	5.1%	12.1%	22.2%	28.7%	32.3%	35.3%
—% tablet users	88.0%	83.0%	76.4%	71.2%	68.0%	68.0%

Note: individuals of any age who use an iPad at least once per month
Source: eMarketer, June 2012

Tablet weekly content



Estimated breakdown of devices: Top 10 markets

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	DIGITAL SUB	HD/DVRS	GAMING CONSOLE	SMART TV/ BLU RAY	OTT STB	TABLETS	TV HOMES
New York	5,192,511	3,240,268	4,147,542	1,620,134	777,664	1,036,886	7,387,810
Los Angeles	2,306,782	2,442,886	3,126,894	1,221,443	586,293	781,724	5,569,780
Chicago	1,610,339	1,532,228	1,961,252	766,114	367,735	490,313	3,493,480
Philadelphia	1,872,919	1,312,882	1,680,488	656,441	315,092	420,122	2,993,370
Dallas	986,251	1,127,768	1,443,542	563,884	270,664	360,886	2,571,310
San Francisco	1,323,681	1,099,346	1,407,164	549,673	263,843	351,791	2,506,510
Boston	1,621,831	1,043,724	1,335,966	521,862	250,494	333,992	2,379,690
Washington	1,370,337	1,035,167	1,325,013	517,583	248,440	331,253	2,360,180
Atlanta	995,636	1,005,544	1,287,096	502,772	241,331	321,774	2,292,640
Houston	858,059	958,447	1,226,813	479,224	230,027	306,703	2,185,260
		44%	56%	22%	11%	14%	
U.S. Total		50,000,000	64,000,000	25,000,000	12,000,000	16,000,000	
U.S. Total homes		114,000,000	114,000,000	114,000,000	114,000,000	114,000,000	

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