
CEC Workshop – August 2011

Gary Langille

Technology and Standards Management

EchoStar Technologies LLC

- EchoStar Corporation (NASDAQ:SATS):
 - STB manufacturer and satellite services provider
 - 2010 Revenue \$2.35B
 - EchoStar CA employees: 150 (LA and Foster City)
- DISH Network (NASDAQ:DISH):
 - National Satellite MVPD
 - 2010 Revenue \$12.6B
 - 14 Million Subscribers – about 14% market share
 - DISH CA Retailers: 784 small businesses with avg. 5 employees = 3920
 - DISH CA employees: 3158
- Total CA jobs impact: 7228

MVPD Industry Milestones:

- Digital Video Recorders (Time Shifting) – 2005 to today
 - Consumer demand accelerated from 1% to 35% today
 - Replaced millions of VCRs and Optical recording devices
- US Digital TV Transition – 2007 to 2009
 - Expanded infrastructure - simultaneous HD and SD broadcasts
 - Adopted Advanced Video Coding (MPEG- 2/4)
 - Added Over-the-Air Digital Tuners for local channel access
 - Added Digital Tuners and DOCSIS for expanded capacity
 - Required to support both Digital HDTVs and Analog SDTVs
- Expanded Capacity – 2009 to today
 - Satellite providers launched satellites to increase HD channels
 - Cable converted systems to digital to increase capacity
 - Cable provided low power DTA STBs to support subscriber existing TVs
 - Telco providers built new Fiber based IPTV services
 - Access to additional content - VOD, IPTV, new channels

MVPD Subscriber HH Power Consumption Trends:

- Trends pushing HH Energy Use Upward
 - DVRs - from 35% today to 52% of subscriber HHs by 2016*
 - HDTVs - from 67% today to 71% of subscriber HHs by 2014**
 - TVs per HH - 2.93 today...continuing to climb**
 - 3 TV HHs - 55%, 1 TV HHs - 17%
- Trends pushing HH Energy Use Downward
 - Technology integration - 20% energy reduction per generation
 - Advance Home Networks - Shared Features (client/server solutions)
 - Digital Over-the-Air Tuners - Optional, not mandatory
 - High Speed Internet Access - Some features shift to network
 - VOD - from 46% today to 58% of subscriber HHs by 2016*
 - STBs are changing rapidly
 - Single Gateway for all services - TV, Internet, Phone, Security, etc.
 - Low Power Clients at TVs - Networked to server or the SP network
 - No clients at TVs - Smart TVs, integrated user interface, talks to Gateway directly
 - Individual DVRs too expensive - shared DVR or Remote Server DVR

* MagnaGlobal, July 2011

** Nielson ,TV Audience Report 2010

Summary:

- MVPD industry has incentive to move to lower HH energy consumption
 - Lower SAC improves financial results
 - Multiple DVRs per subscriber HH are not affordable over long term
 - Server (local or remote) with multiple low power clients
 - Can keep UEC flat in short term
 - Can lower UEC in longer term
- Energy regulation of STBs is challenging
 - STB features are changing rapidly
 - New features require new allowances and new test procedures
 - Multi-room client/server configurations require improved duty cycle data
 - Re-use of SD STBs for new installations helps keep HH energy use down
- ENERGY STAR STB Program
 - EchoStar is a qualified manufacturer
 - Complex program but workable
 - Designed for top 25% or performers