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# Aligning IP Strategies with the Digital Consumer:

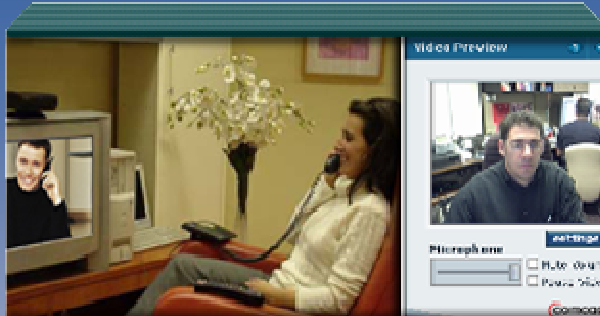
## The Deployment of Advanced IPTV Networks and Services

Paul Connolly  
April 17, 2007

# Key Consumer Market Dynamic: Consumer video choices are expanding



High Definition



Video Phone /  
Video Conferencing



Video Streaming



Video-TV On Demand /  
DVR / Mobile TV



Gaming / Interactive TV



Video to Other Devices

**Managed  
Video  
Applications**

**Video  
Communications  
Services**

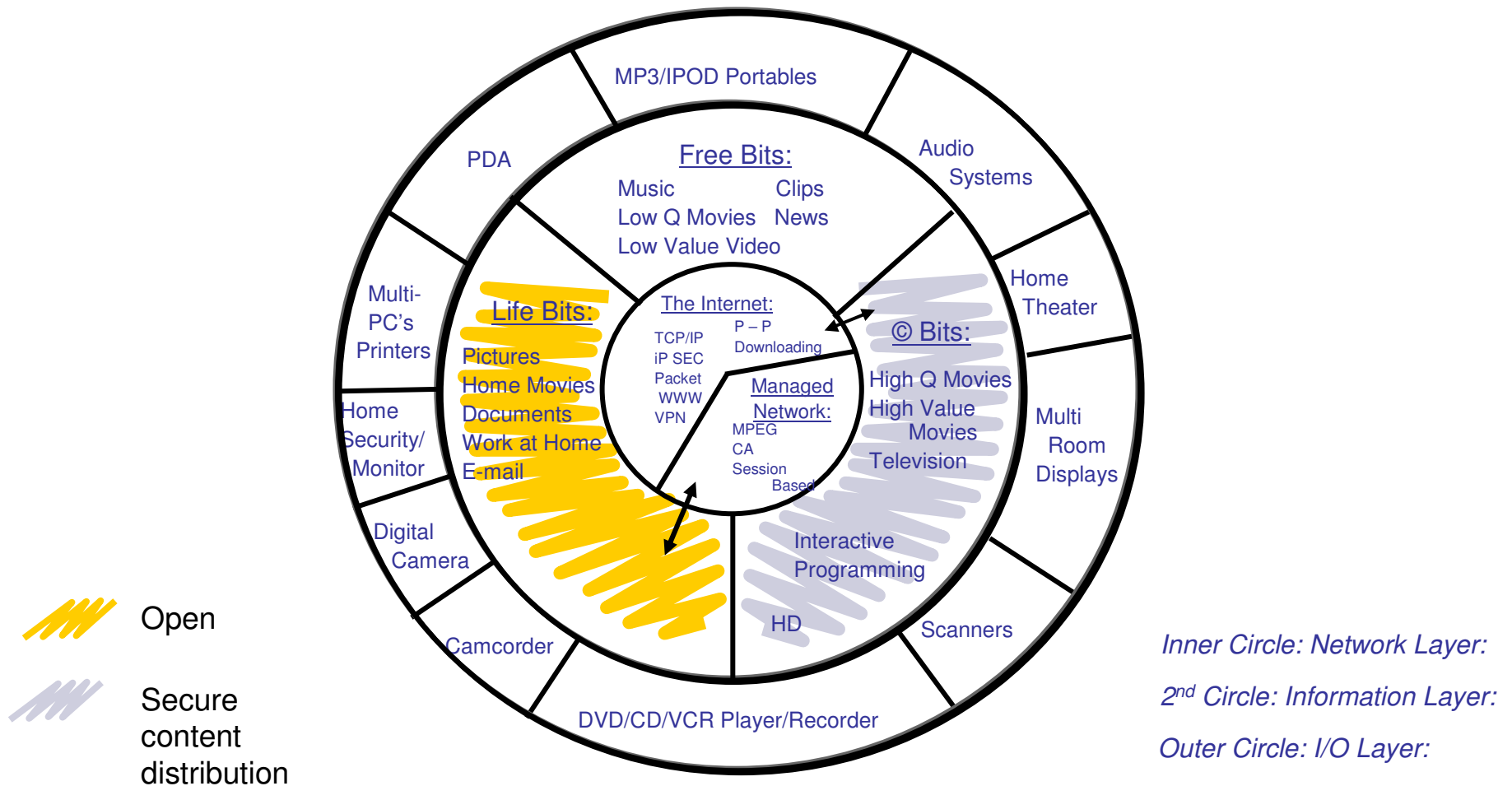
**“Over the Top”  
Video**

# The opportunity: households spend \$628B per year on entertainment, communications, and information

	Entertainment	Communications	Information
Video	<ul style="list-style-type: none"> <li>Multi-channel Subscriptions \$52.3B</li> <li>PPV &amp; VOD \$4.0B</li> <li>Box Office \$10.5B</li> <li>HV Sell Through \$19.8B</li> <li>HV Rentals \$8.2B</li> <li>DVD &amp; Internet Video Subscriptions \$1.3B</li> <li>Televisions \$19.4B</li> <li>DVD Hardware \$2.5B</li> <li>VCR Hardware \$0.8B</li> </ul> <p><b>\$126B</b></p>	<ul style="list-style-type: none"> <li>Computer Printers \$5.7B</li> <li>Aftermarket Computer Monitors \$2.5B</li> </ul> <p><b>\$8B</b></p>	<ul style="list-style-type: none"> <li>Cable Local Advertising \$5.9B</li> <li>Cable Network Advertising \$17.5B</li> <li>Broadcast Network Advertising \$18.9B</li> <li>Broadcast Station Advertising \$27.0B</li> </ul> <p><b>\$69B</b></p>
Data	<ul style="list-style-type: none"> <li>Digital Camcorders \$1.6B</li> <li>Video Game Console Software \$3.5B</li> <li>Digital Still Cameras \$5.1B</li> <li>Video Game Consoles \$2.2B</li> <li>PC Video Game Software \$1.1B</li> <li>Online Video Game Subscriptions \$1.2B</li> <li>Consumer Books \$19.0B</li> <li>Magazine Circulation \$21.0B</li> <li>Newspaper Circulation \$11.7B</li> </ul> <p><b>\$60B</b></p>	<ul style="list-style-type: none"> <li>Dial-up Internet Access \$9.2B</li> <li>Broadband Internet Access \$18.6B</li> <li>Personal Computers \$18.3B</li> <li>Computer Software \$5.2B</li> <li>Other Computer Peripherals \$3.5B</li> <li>Modems/Fax Modem \$1.3B</li> </ul> <p><b>\$56B</b></p>	<ul style="list-style-type: none"> <li>Magazine Advertising \$12.8B</li> <li>Newspaper Advertising \$47.7B</li> <li>Internet Advertising \$9.2B</li> </ul> <p><b>\$70B</b></p>
Voice & Audio	<ul style="list-style-type: none"> <li>Recorded Music \$12.3B</li> <li>C.E. Home &amp; Portable Audio Equip \$5.7B</li> <li>Wireless Video Game Subscriptions \$1.2B</li> <li>Radio Subscriptions \$0.6B</li> <li>Aftermarket Autosound Systems \$2.2B</li> </ul> <p><b>\$22B</b></p>	<ul style="list-style-type: none"> <li>Wireless Communications \$74.6B</li> <li>Long-distance \$23.6B</li> <li>Local &amp; Other Communications \$82.5B</li> <li>Wireless Telephones \$11.3B</li> <li>Home Telephone Equipment \$2.5B</li> </ul> <p><b>\$195B</b></p>	<ul style="list-style-type: none"> <li>Radio Advertising \$21.7B</li> <li>Aftermarket Vehicle Security \$0.3B</li> </ul> <p><b>\$22B</b></p>

Source: PriceWaterhouseCoopers, CEA, TIA, Morgan Stanley, Freedonia Group, The Kelsey Group and Company Estimates

# Bit Management Within the Home will become a critical differentiation feature between service providers.



# Video Services - Summary

## Must Deliver.....

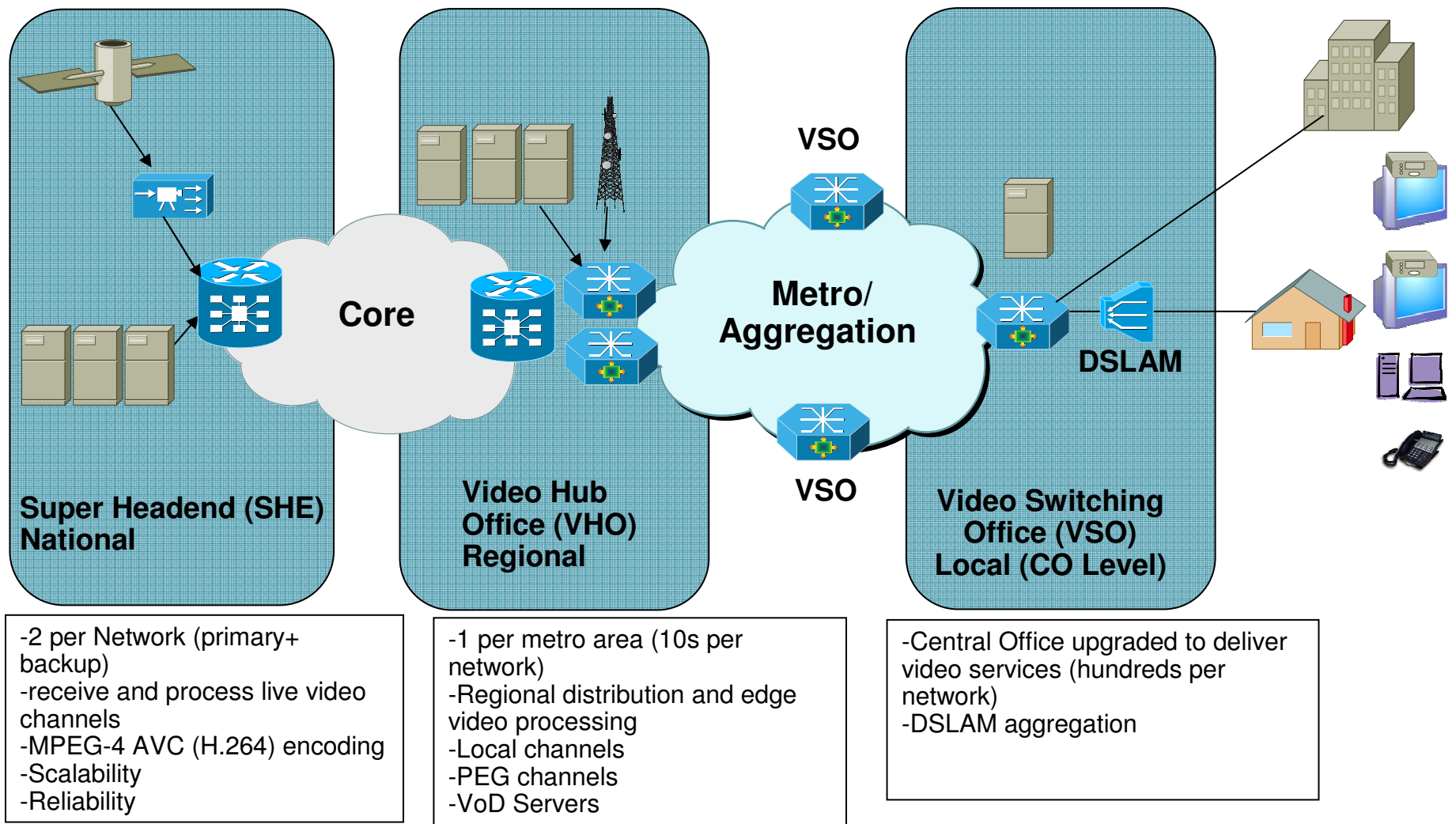
HDTV multi channel broadcast services

DVR multi room / DVD burner digital set top

Network On Demand services – including HDTV - VOD

Advanced User Interface

# Wireline IPTV Network Architecture

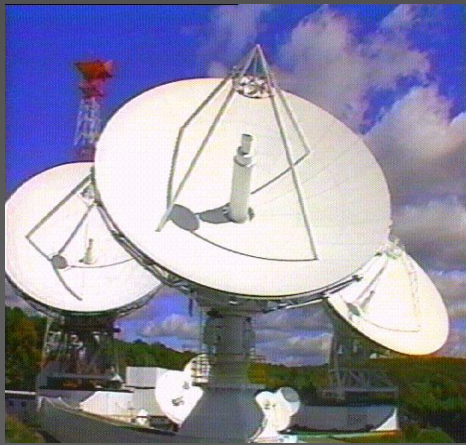


# IPTV Head End Building Blocks

## Video

### Acquisition

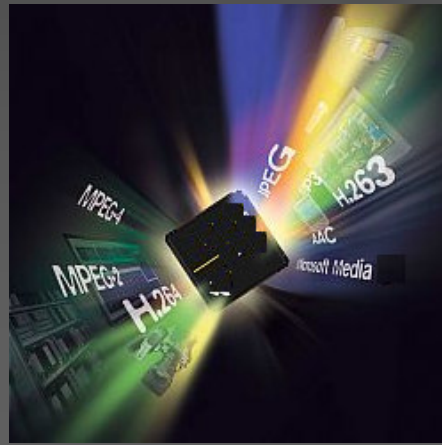
Satellite Reception  
Satellite, Off-Air, and  
Fiber Receivers  
Signal Conversion



## Video

### Processing

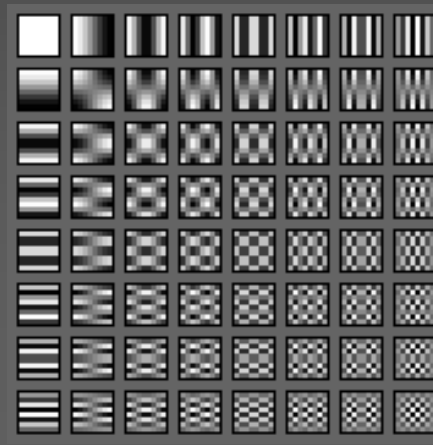
Transcoding  
Transrating  
Splicing  
Multiplexing



## Video

### Encoding

MPEG2  
MPEG4  
Standard Definition  
High Definition



## Video

### Management

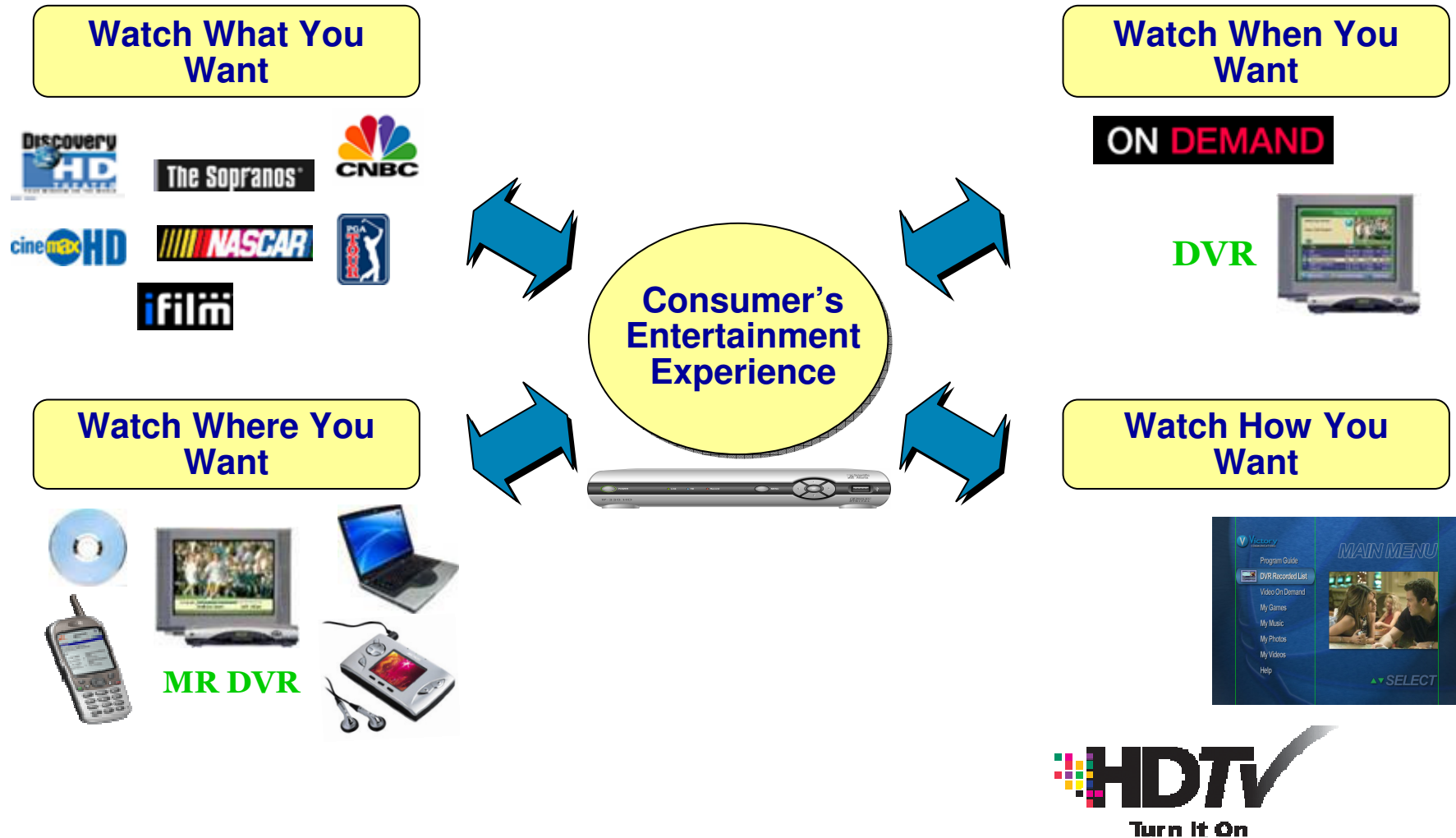
Single Point of  
Control  
Third Party  
Equipment  
Remote Operations



# SES Americom – Reduced Capital Investment for Telcos

- Solution – IP-Prime - aimed at Tier 2/3 Telcos who cannot afford the capital investment for a dedicated Headend
- Jointly marketed with NRTC (National Rural Telecommunications Cooperative) and NTCA (National Telecommunications Cooperative Association)
- SES has rights for carriage of 250 SD and 20+ HD channels – all SA encoders
- SES has two distribution models
  - IP programming to larger Telcos. SES hands off decrypted streams.
  - Managed Service for Tier 2 and 3 Telcos. Middleware and CA to the STB (HITS like service)
- Telcos save over 90% in capital cost (only require a single 3.8M dish and a single rack of equipment) and \$100's K in opex

# Providing the consumer with a more compelling user experience



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