Digital Deployment Update

Presented for PBS Technology Conference,
Michael T. Hayashi, Time Warner Cable,
April 20, 2001

Agenda

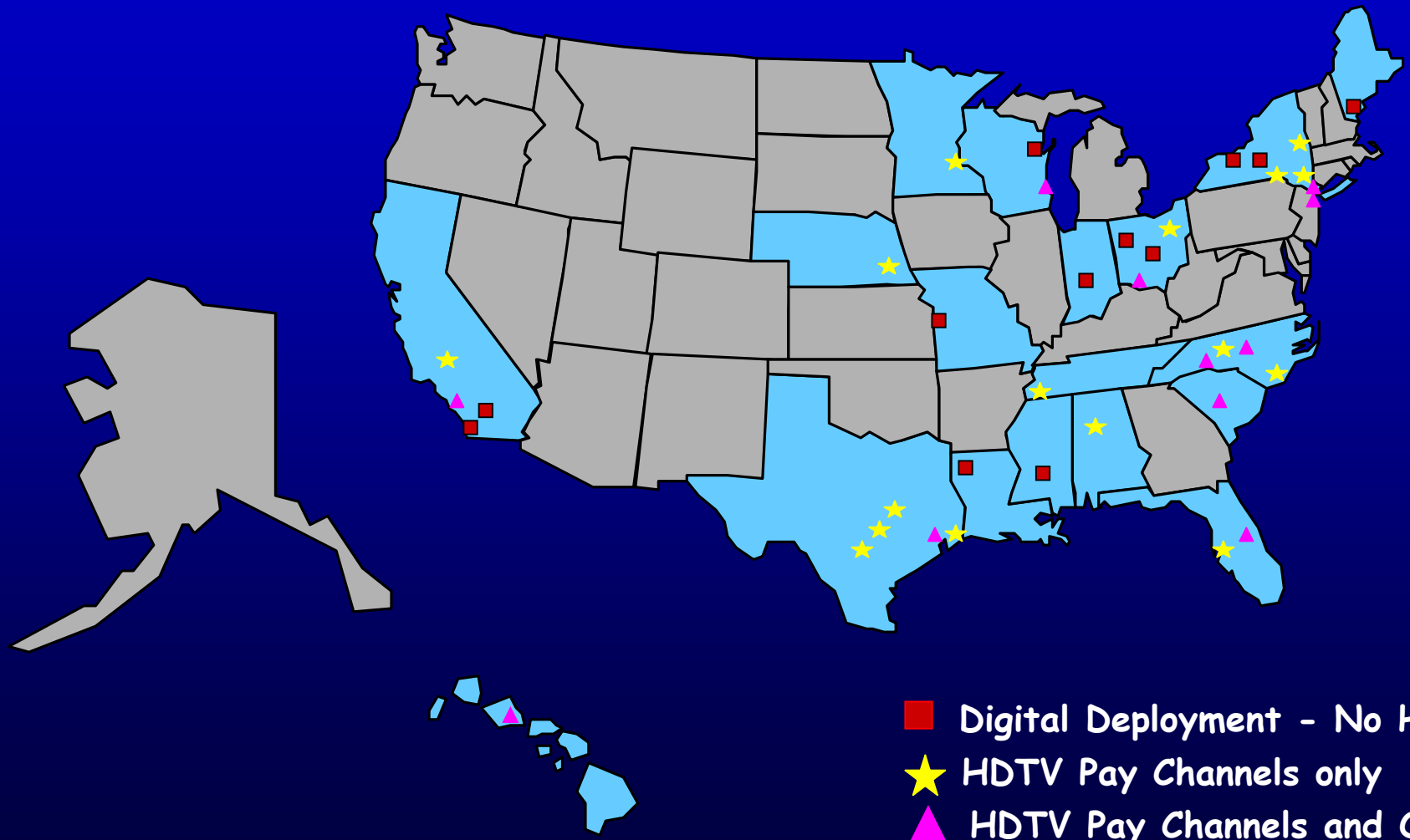
- Deployment Statistics
- Cable System Architecture
- Technology Initiatives

Deployment Statistics

- 20+ Million Homes Passed, 40 Operating Divisions
- 90% Upgraded
- ALL Digital TV Ready
  - Pegasus (90%)
  - Motorola (10%)
  - 2.5 million "boxes" per year, 50% digital subs by EOY 2003
- DOCSIS (High Speed Cable Modem) Ready – 90%
  - 15% cable modem subs by EOY 2003

Time Warner

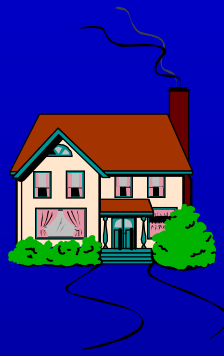
Digital Deployment by Location



Cable System Architecture

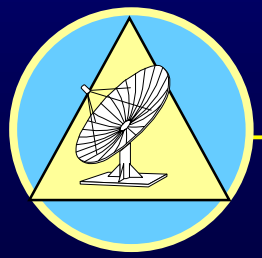
- HFC
- Spectrum Planning

Conventional Coaxial Tree & Branch Architecture

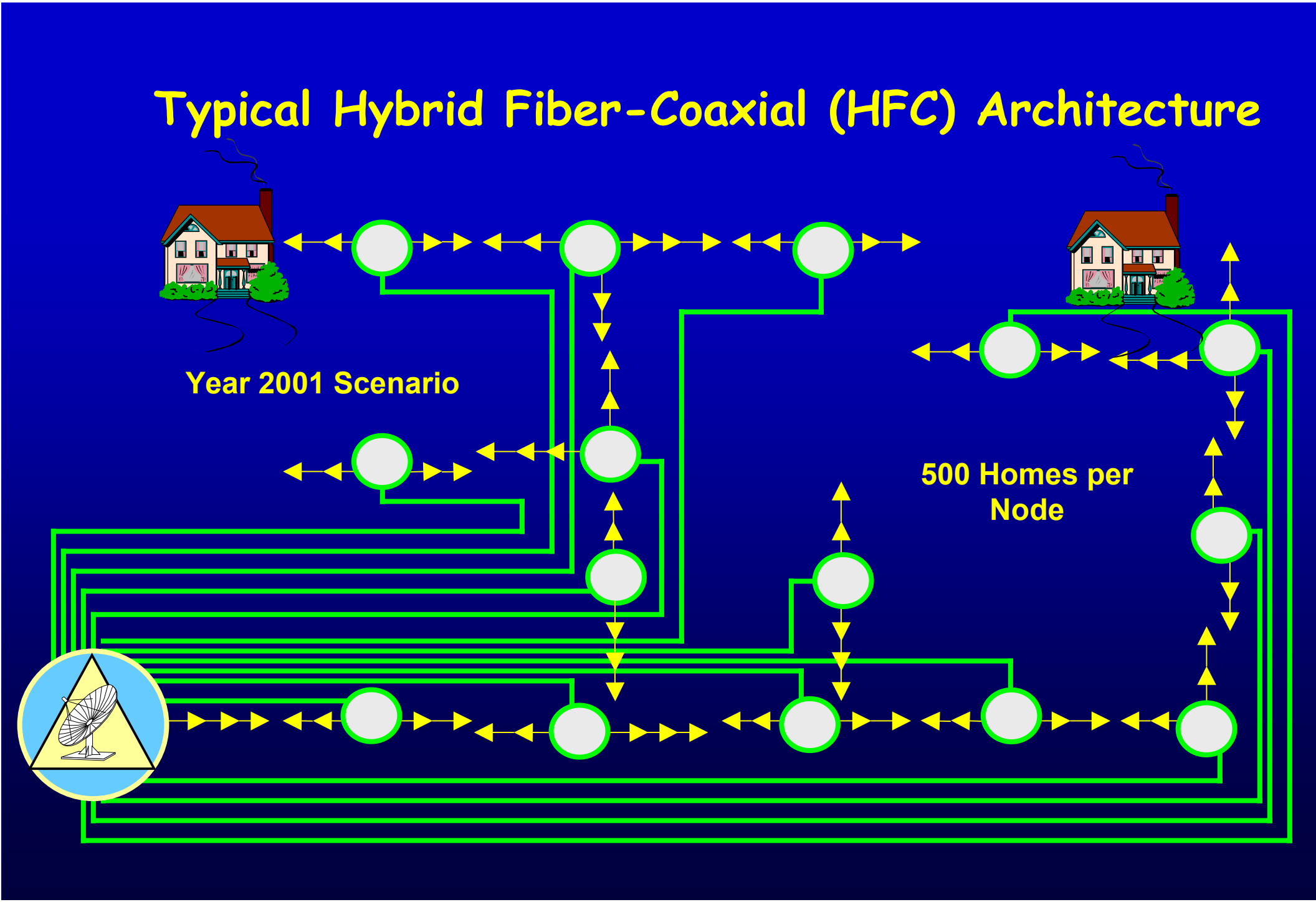


Issues:

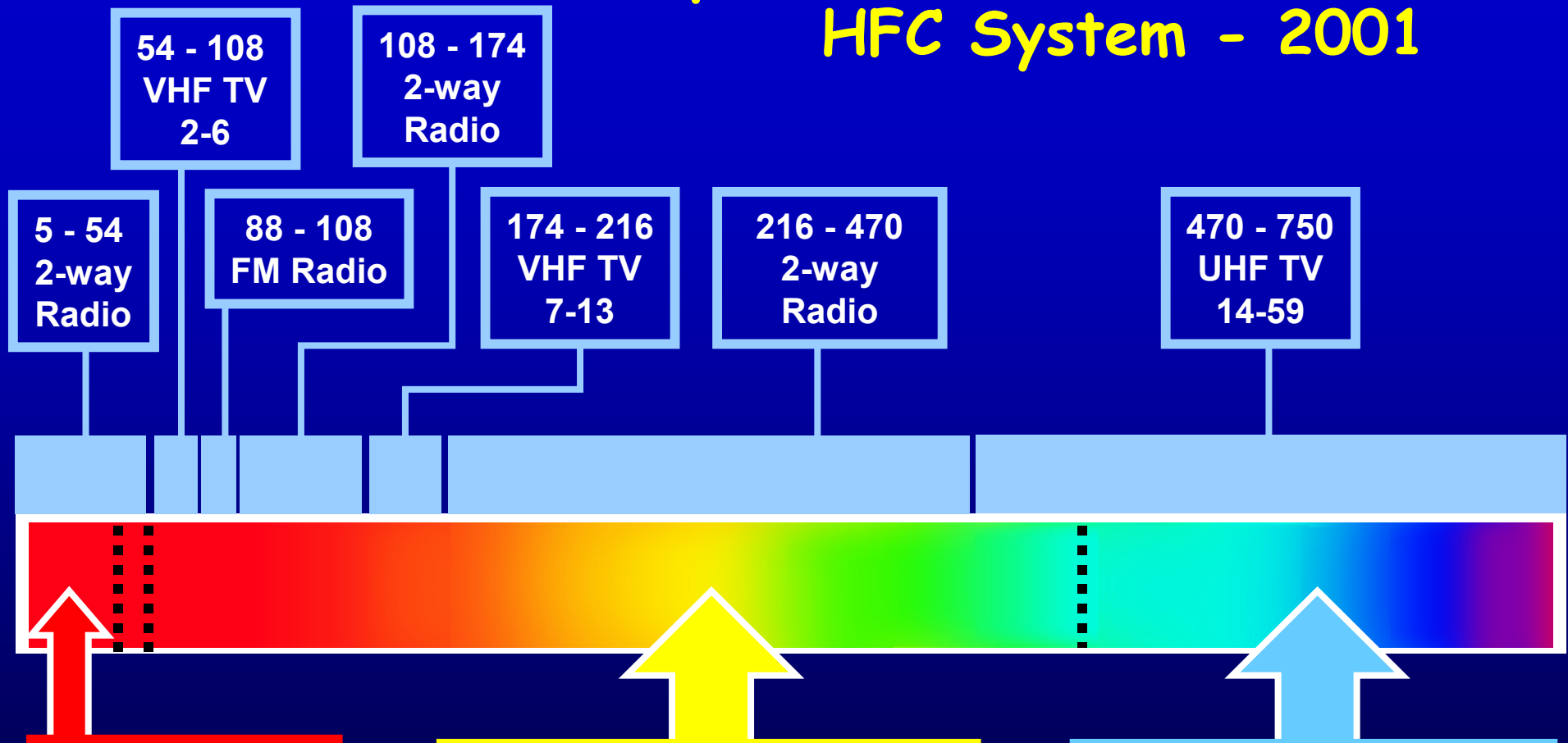
Noise
Distortions
Reliability
Upstream Path



Typical Hybrid Fiber-Coaxial (HFC) Architecture



Spectrum Allocation - 750 MHz
HFC System - 2001



Coaxial Spectrum Allocation
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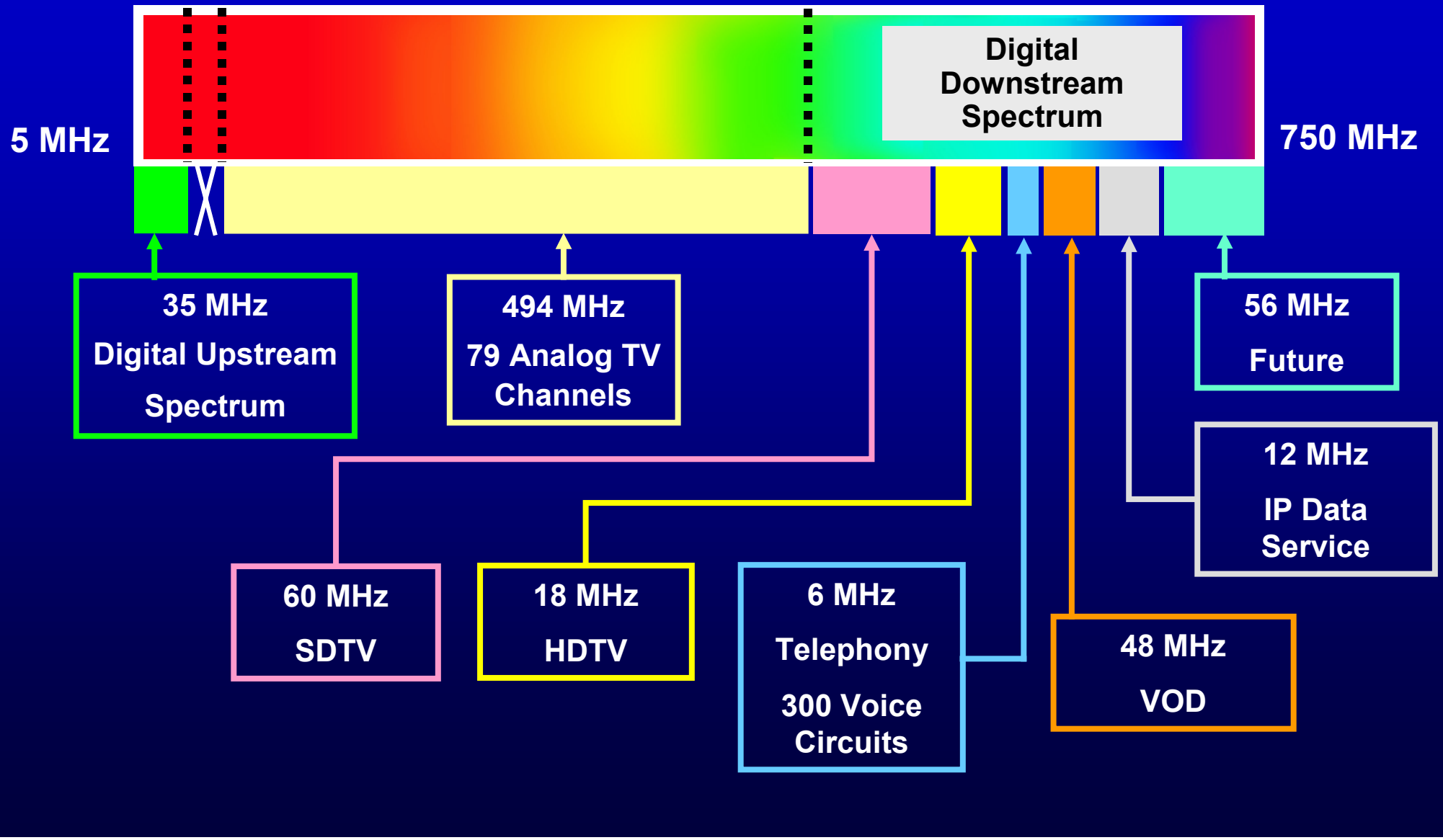
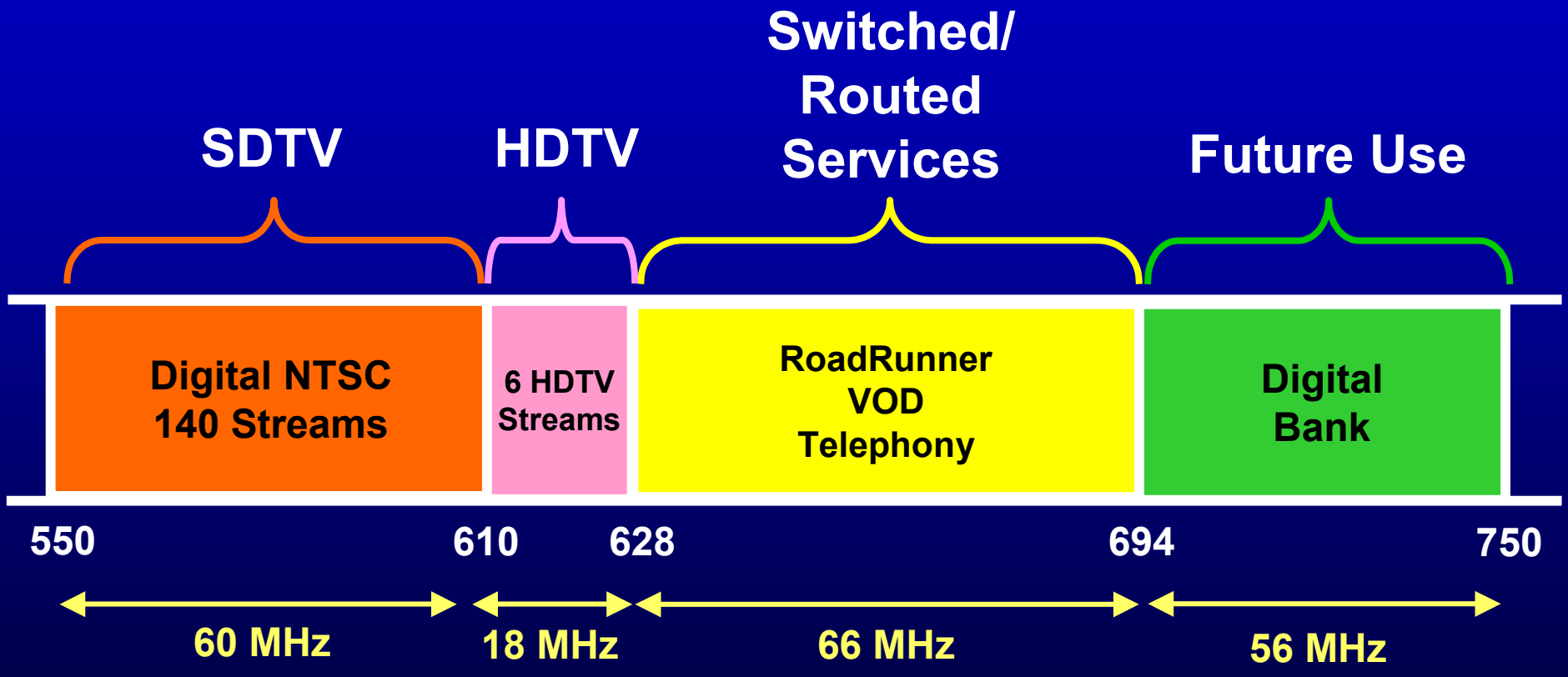
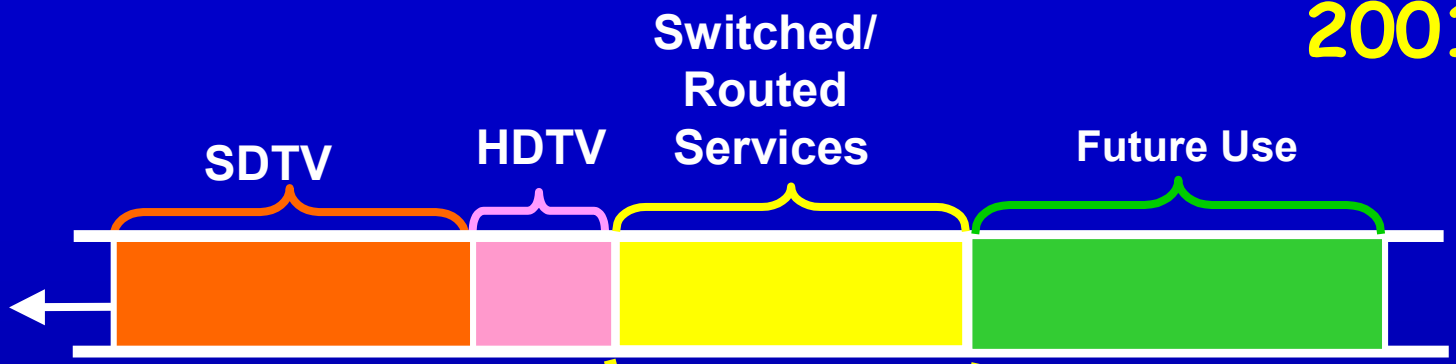
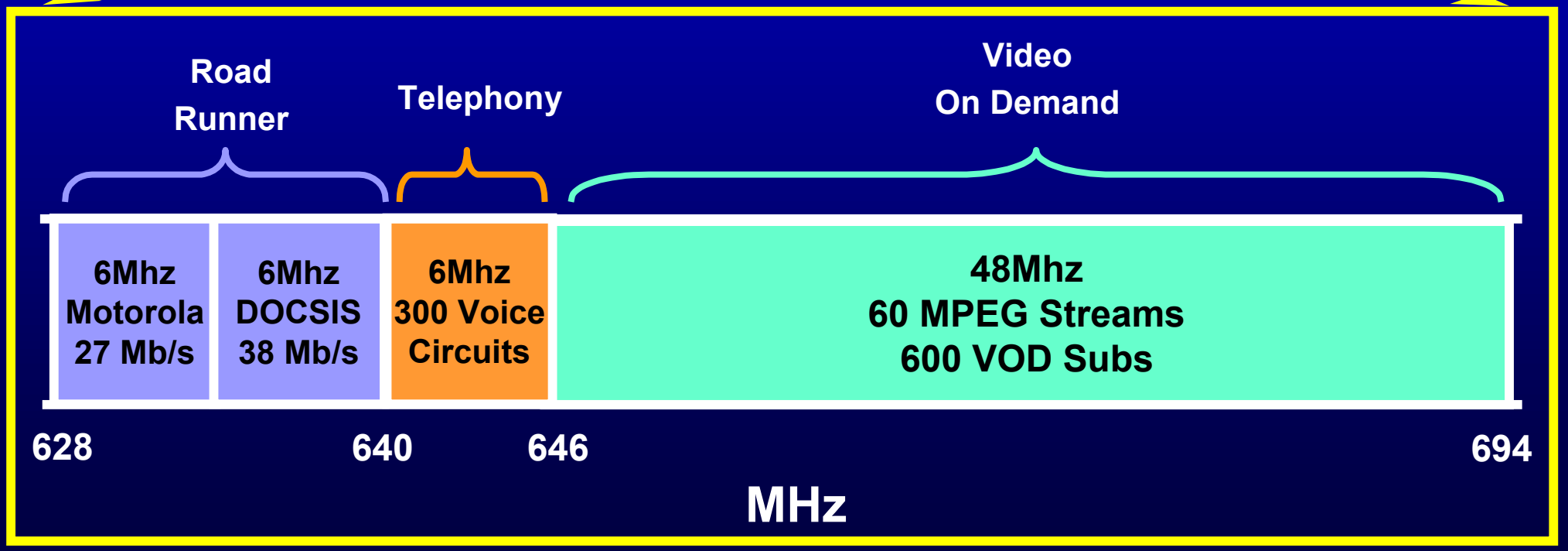


Digital Spectrum - 2001 (One Scenario)

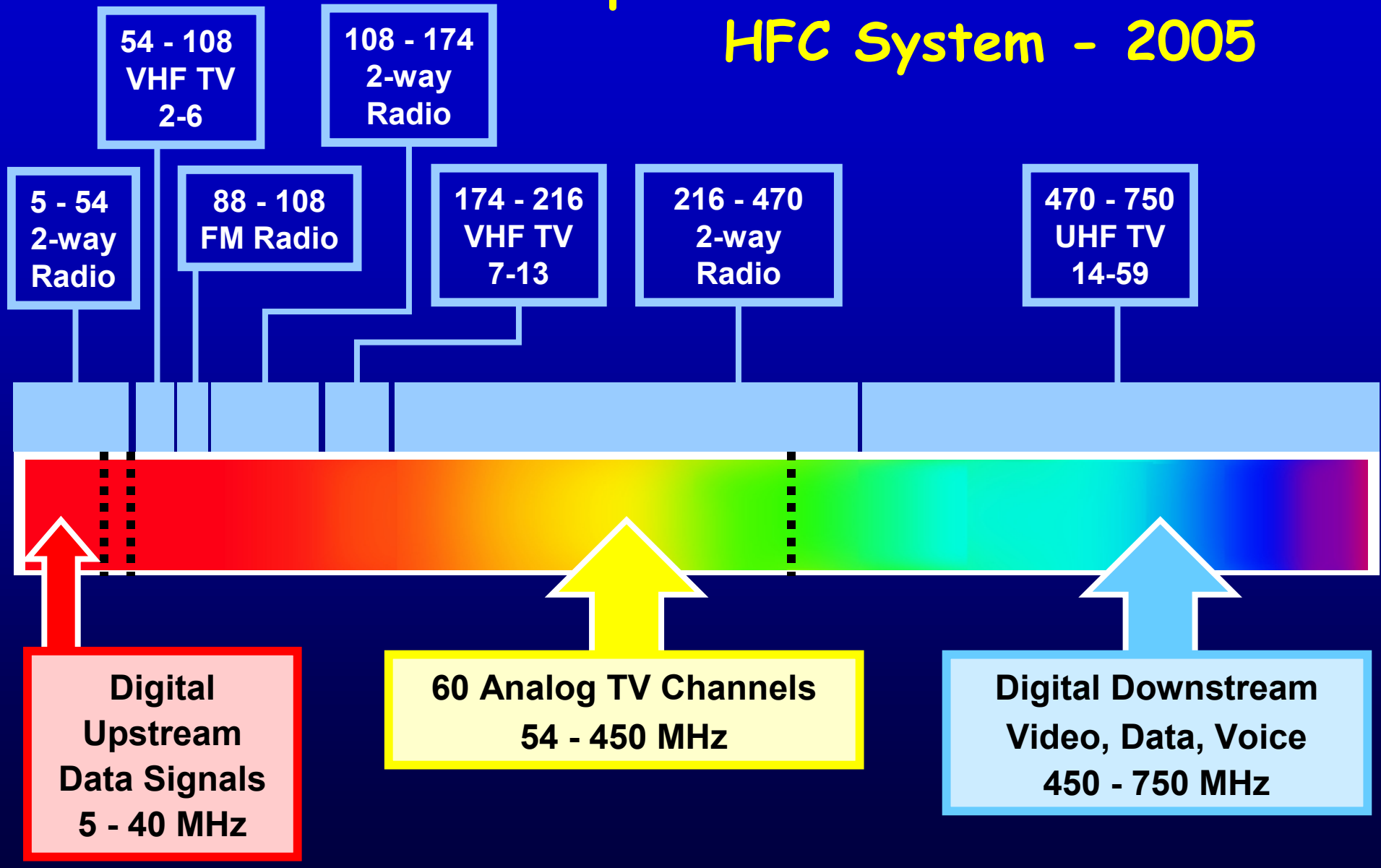


2001 Scenario

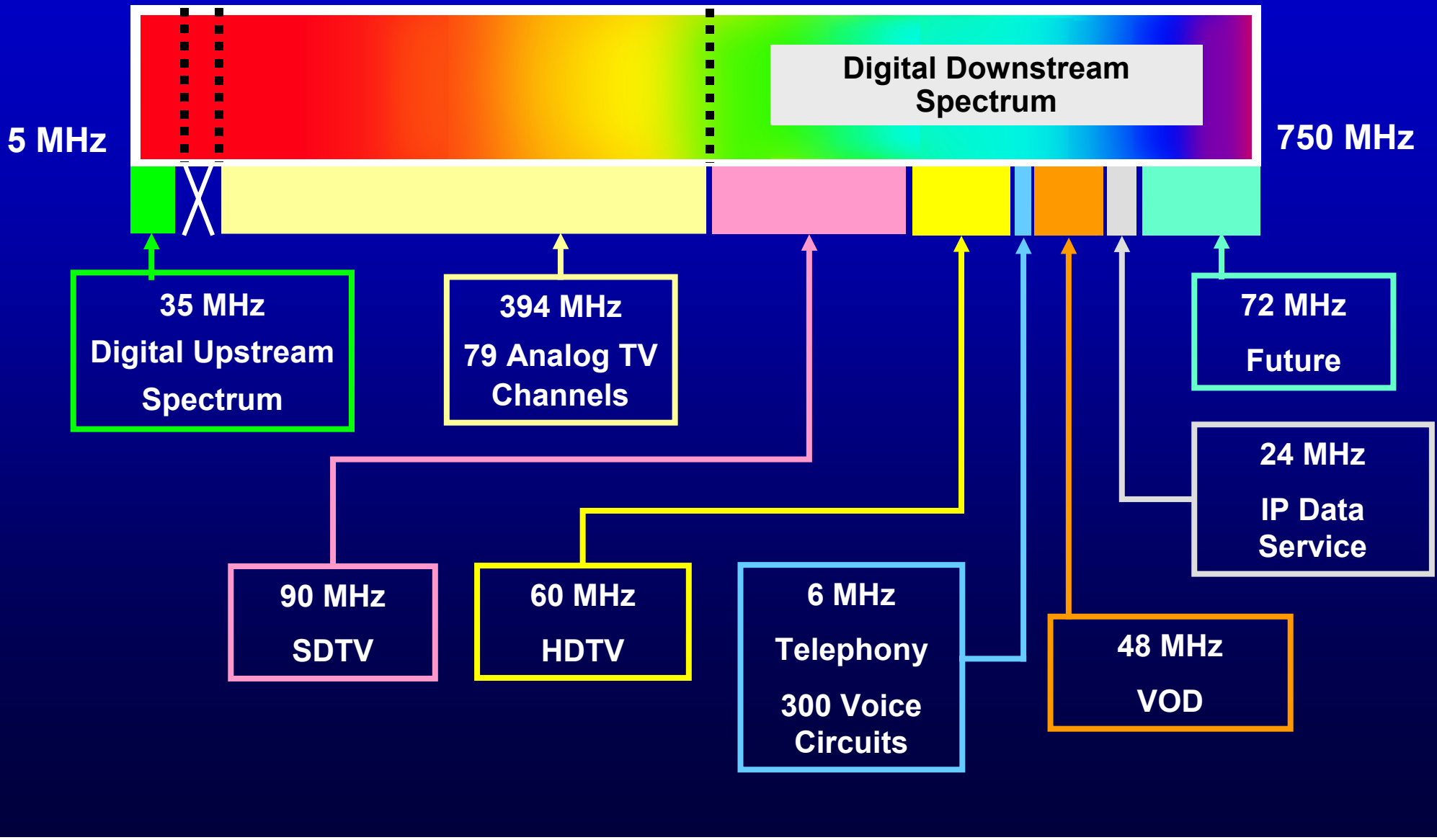




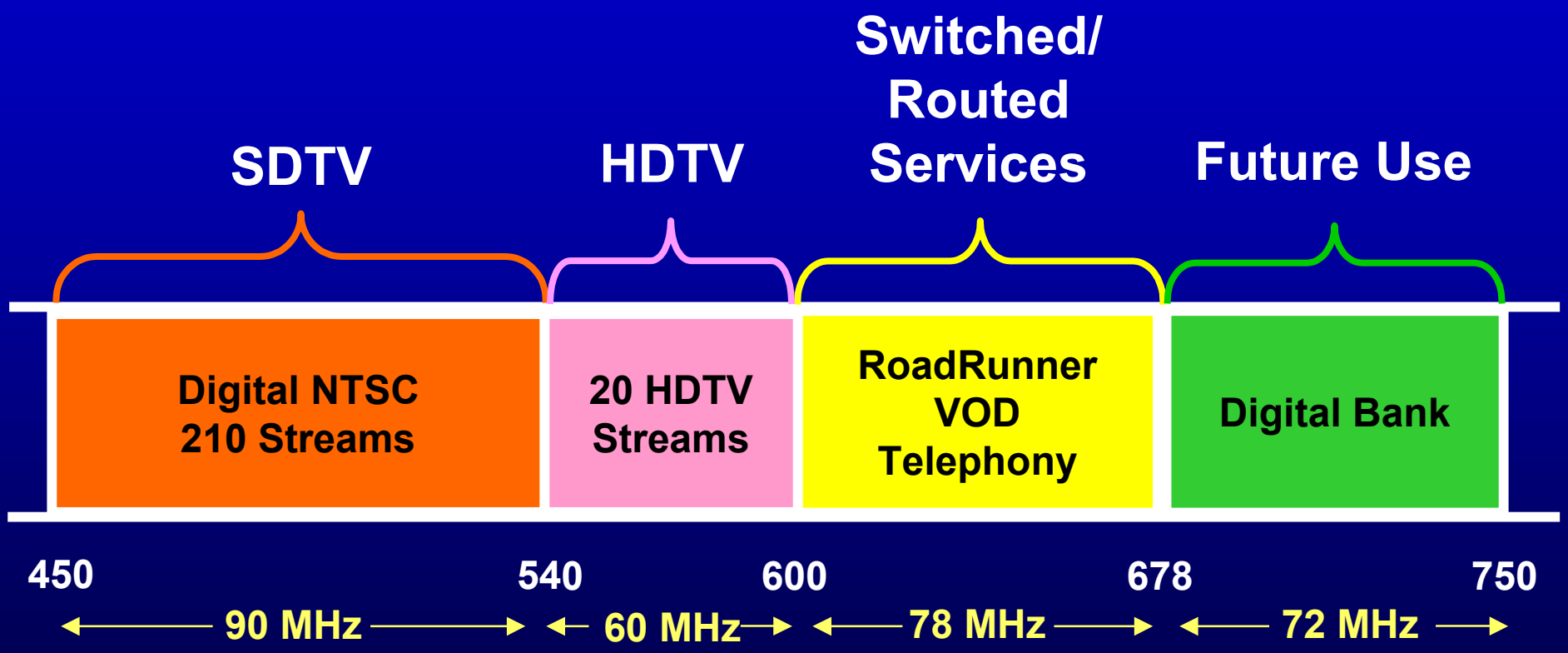
Spectrum Allocation - 750 MHz
HFC System - 2005



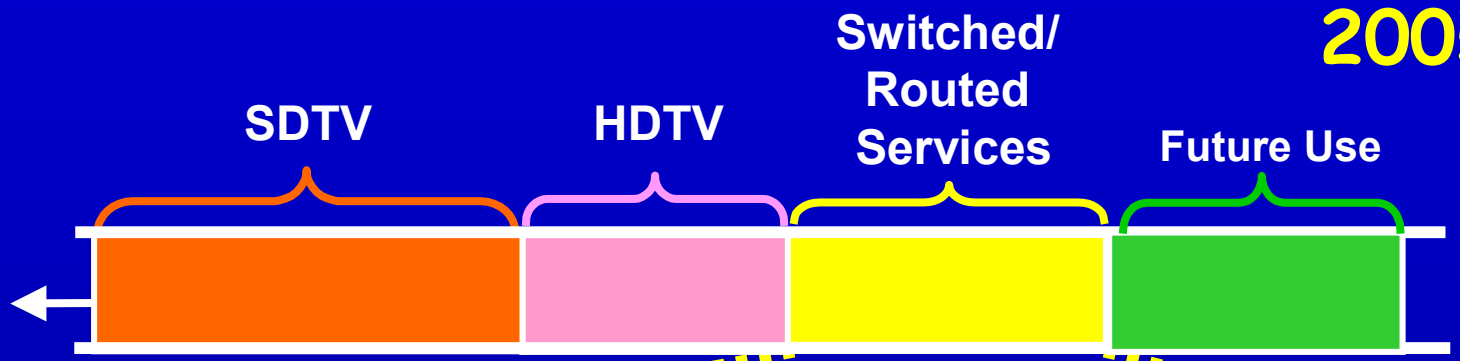
Coaxial Spectrum Allocation
HFC System - 2005

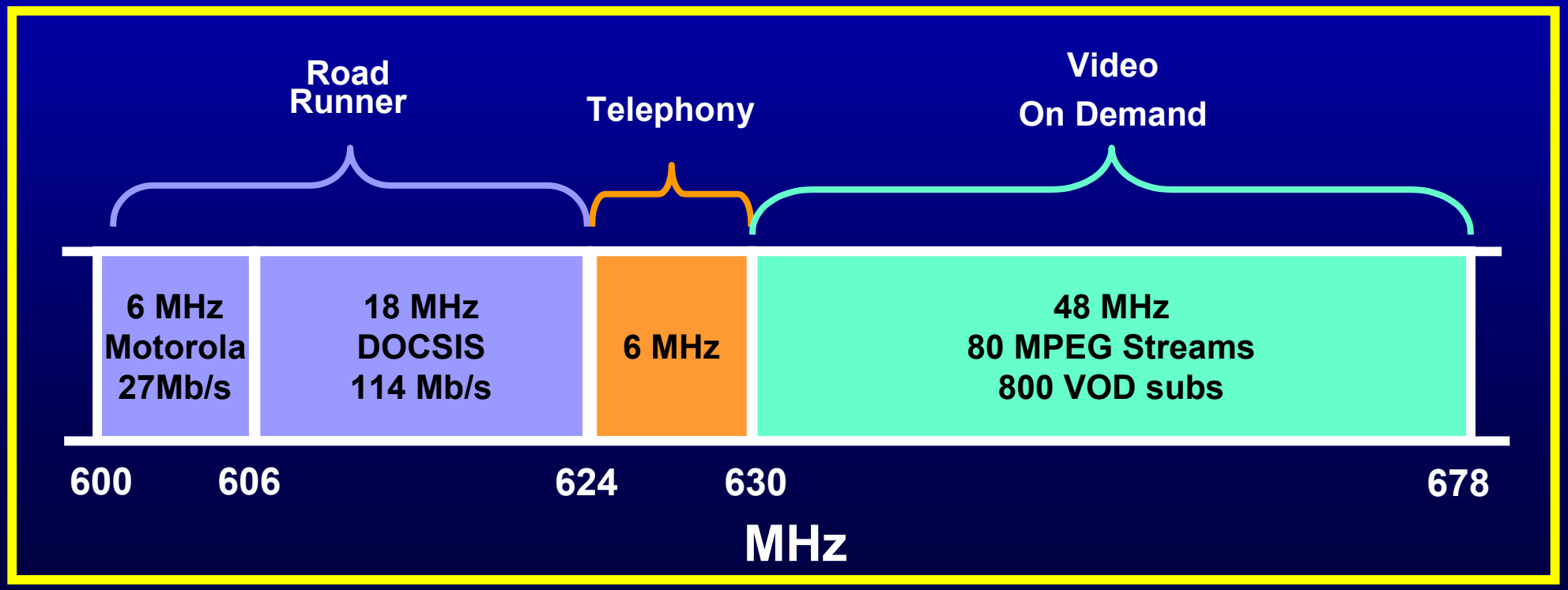


Digital Spectrum - 2005 (One Scenario)



2005 Scenario



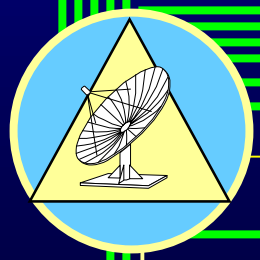


HFC Architecture

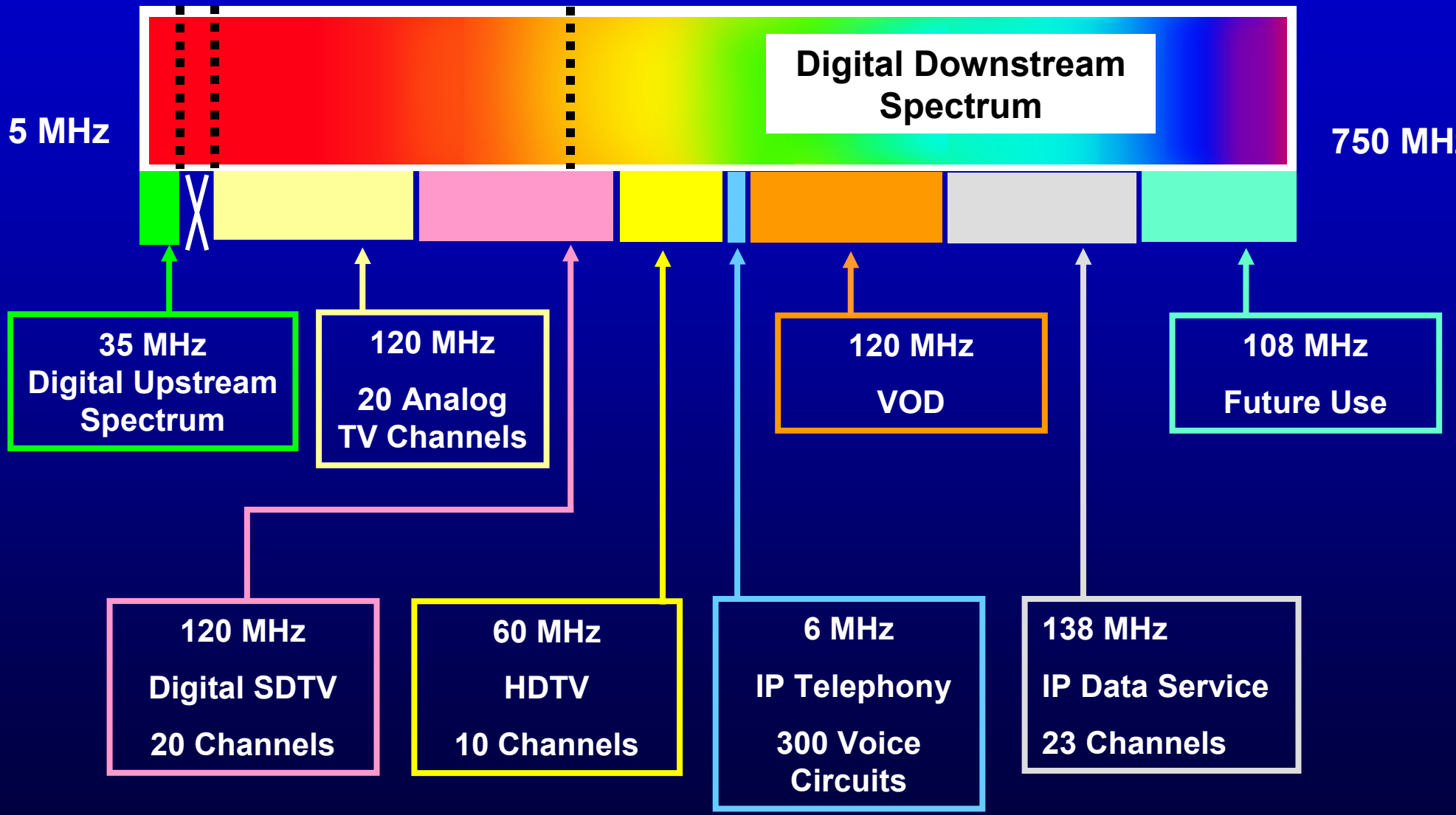
Year 2010 Scenario

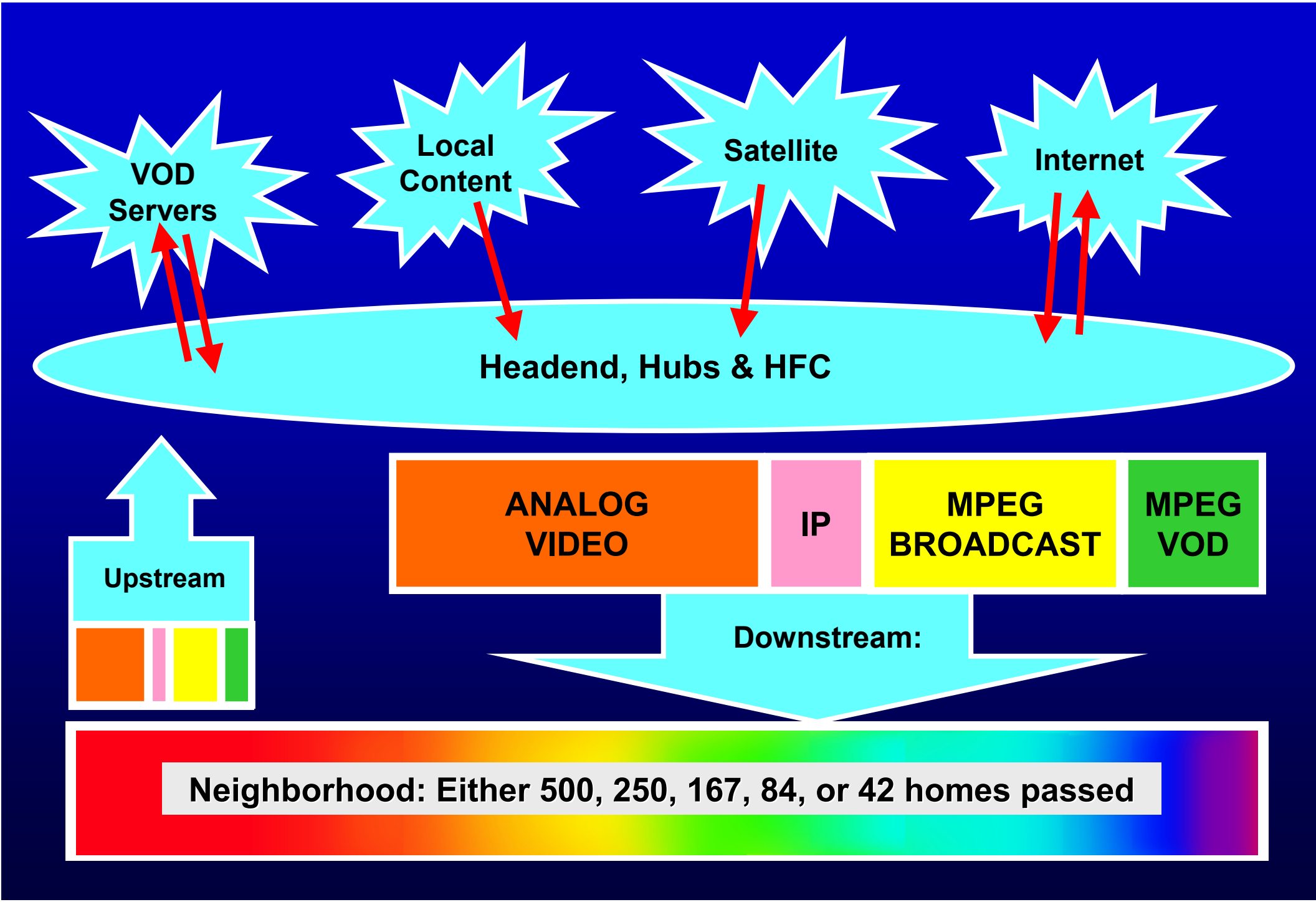
50 Homes per Node

Multiple-fiber cables



Coaxial Spectrum Allocation
HFC System - 2010




VOD Servers
Local Content
Satellite
Internet
Headend, Hubs & HFC
Upstream
ANALOG VIDEO
IP
MPEG BROADCAST
MPEG VOD
Downstream:
Neighborhood: Either 500, 250, 167, 84, or 42 homes passed

Digital Set-tops: Pegasus

- Born from FSN experiment, circa 1994
- MPEG-2, DVS and DAVIC standards based real-time two-way system
- Deployed in 38 out of 40 divisions
- Current services are:
  - More channels, more channels, more channels
  - On screen digital navigator

Coming Very Soon

- Movies-On-Demand (MOD)
  - Need to resolve title availability
- Subscription VOD
- Enhanced TV
  - ATVEF triggers

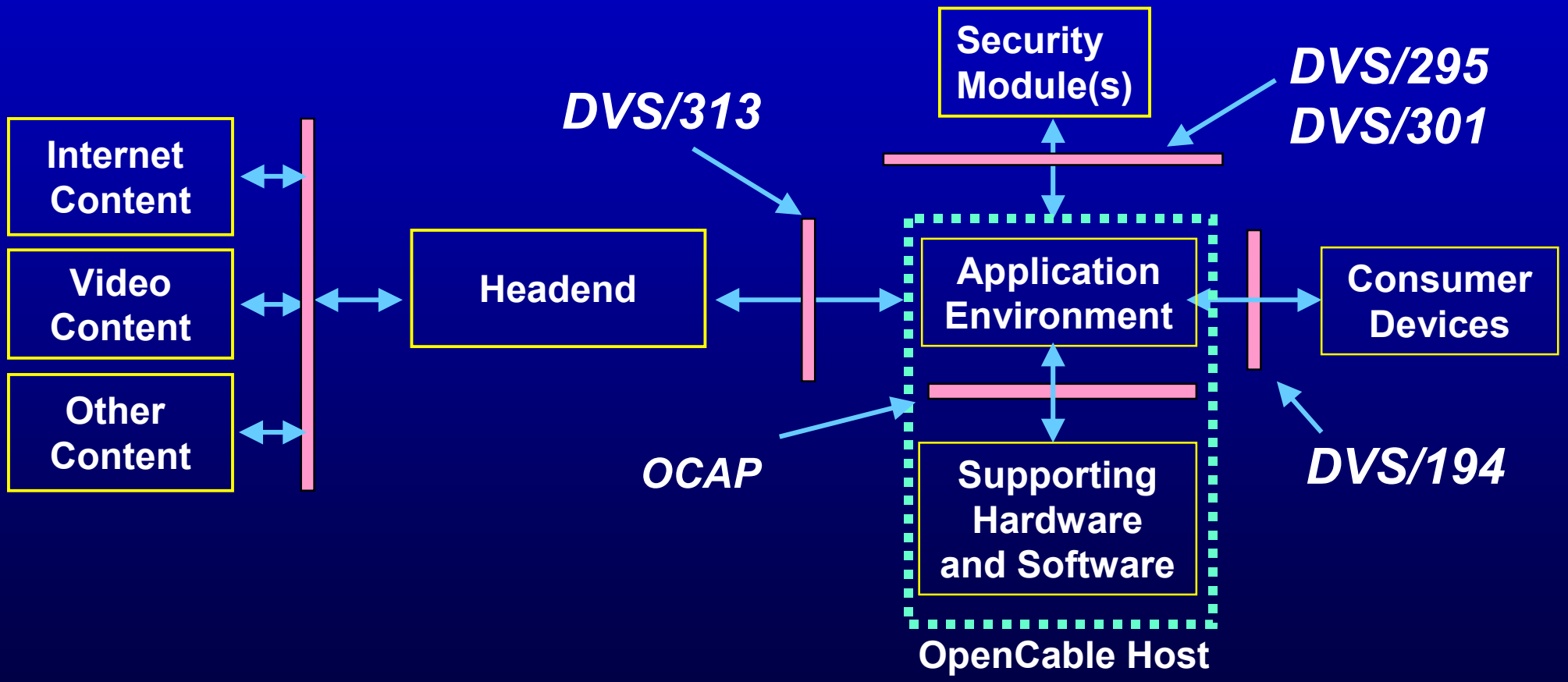
Coming Soon

- Personal video recording service
  - Phase I – via set-top boxes with hard disc drives
  - Phase II – via network services
- Higher level integration of:
  - Data and voice services
  - Home networking

Industry Developments

- OpenCable: Cable's Retail Initiative
  - OpenCable Application Platform: aka middleware
  - Separation of Security and Navigation: POD Module
  - Standards based

OpenCable Architecture



Opportunities

- Cable needs more HD content to differentiate itself from its competitors
  - Spectrum advantages
  - Local advantages
- Cable is a local infrastructure…enhanced services to increase local presence