



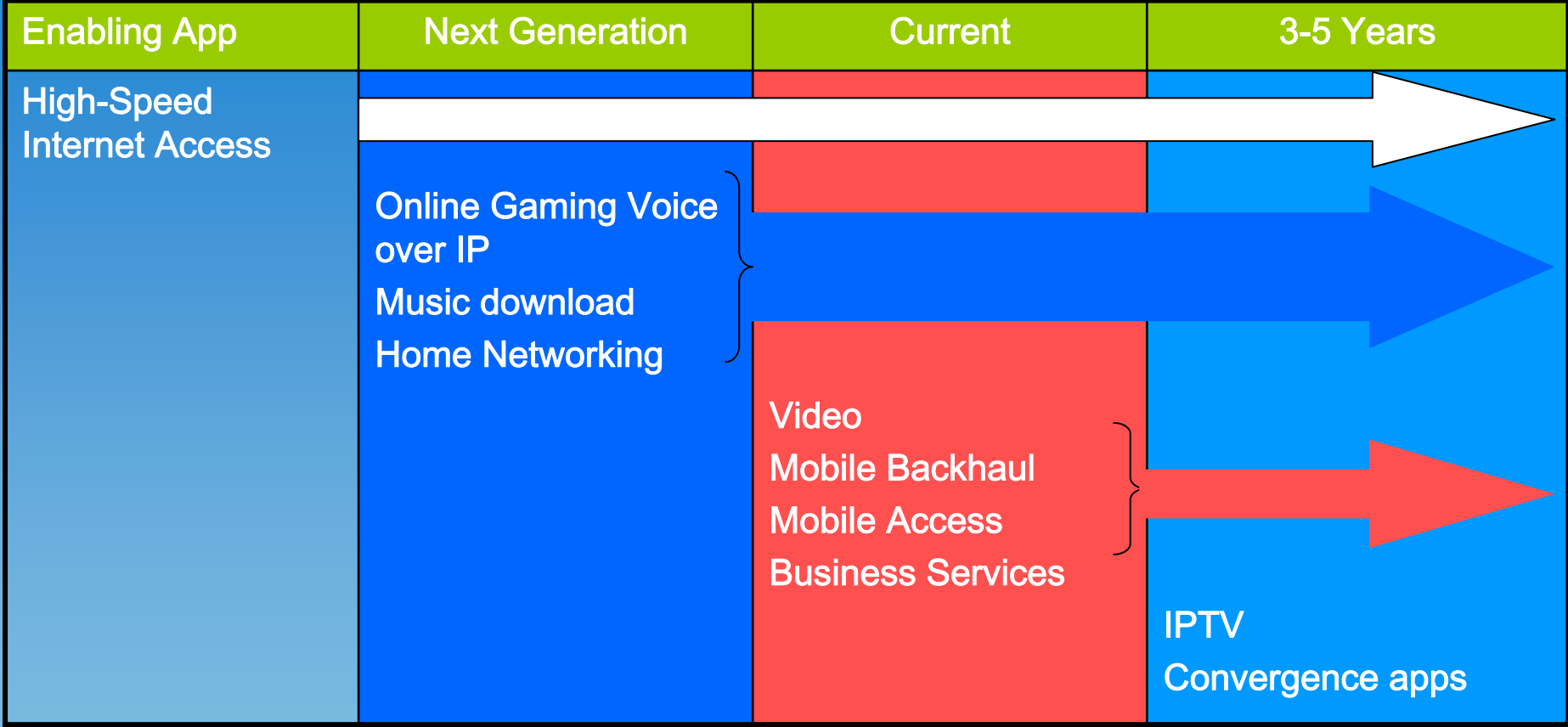
FCC Broadband Workshop on Future Fiber Architectures and Local Deployment Choices

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CableLabs®
...Revolutionizing Cable Technology®

Broadband Service Evolution over Cable



DOCSIS 1.0 and 1.1
(1997 - 1999)

DOCSIS 2.0
(2001 - 2007)

DOCSIS 3.0
(2008 - current)

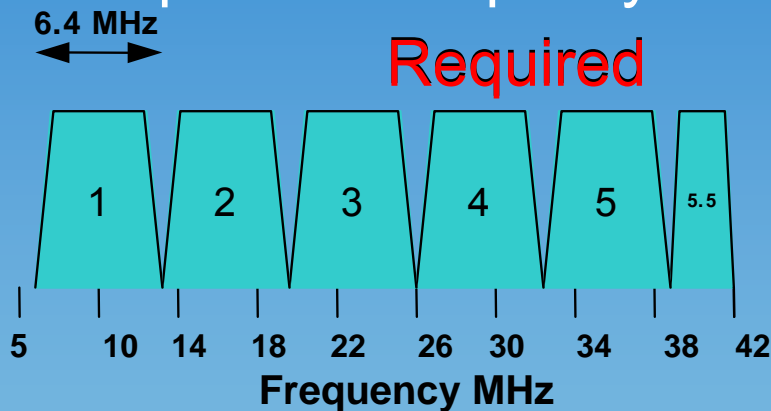
Higher Data Rates of DOCSIS® 3.0

- Downstream Capacity bonding of 6 MHz channels
 - Four channels = 152 Mbps
 - Eight channels = 304 Mbps
- Upstream Capacity bonding of 6.4 MHz channels
 - Two channels = 54 Mbps
 - Four channels = 108 Mbps
- Can choose to bond any number of channels
 - Channels ≠ adjacent
 - Legacy cable modems supported

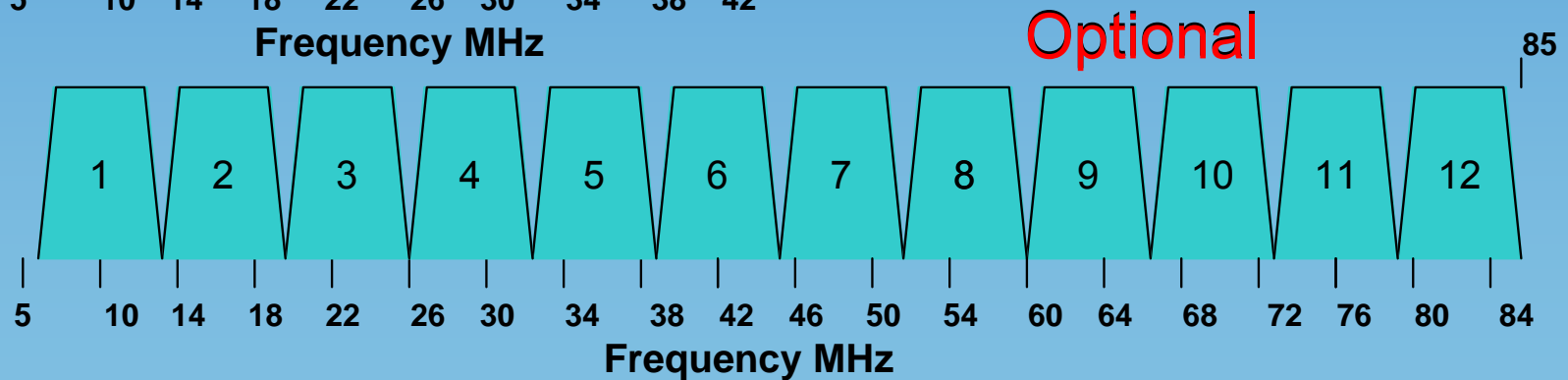


DOCSIS 3.0 Upstream Bandwidth

- Upstream operation can be extended from 5-42 MHz to 5-85 MHz to add nearly 200 Mbps of potential capacity



@ 64QAM 27Mb/s / 6.4 MHz
5.5 x 27 Mbps = 148.5 Mbps



12 x 27 Mbps = 324 Mbps

Use of Cable Spectrum

- Same amount of RF spectrum delivered to each home passed
- Spectrum may be reused for interactive services by subdividing into service groups

	Number of 6 MHz Channels per Household	Service Group Size**	Spectral Reuse	Total Delivered Channels per 20,000 HHP hub	Percentage of Delivered Bandwidth
Linear Content	101	20,000	1	101	17%
SDV	16	900	22	352	60%
VoD	4	1,500	13	52	9%
Broadband*	4	1,000	20	80	14%
	125			585	100%

*Includes upstream

**Representative values only, wide variation in practice due to cable system specifics