Transforming the Local Exchange Network, 6th Ed.

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Factors to Consider

- ILEC Access Line and DSL Losses
- The Demand for VHS Broadband Access
- Further Deployment of VHS Broadband
- Deployment of Fixed Wireless Broadband
- Demand for 100 Mb/s and Above
- Conversion of Metallic Feeder Cable and Narrowband Switching/Circuit Equipment
- Transition to Non-Metallic Distribution Architectures

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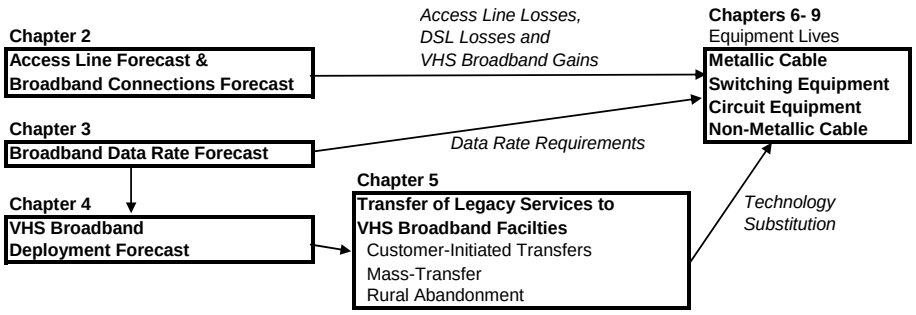
Study Logic Flow by Chapters



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Changes from Previous Edition

- Uses more publically available data reported by the three major ILECs.
- TFI's forecasts of higher broadband data rates have accelerated.
- Separate forecasts for rural and non-rural areas
- Less distinction between FTTN & TFFH companies.
- Streamlined to exclude factors that are no longer very important.

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ILEC Access Line Losses

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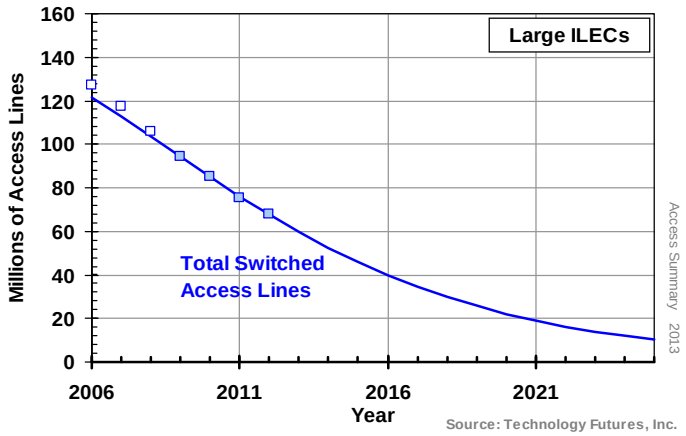
Switched Access Lines – Three Largest ILECs



Source: Technology Futures, Inc.

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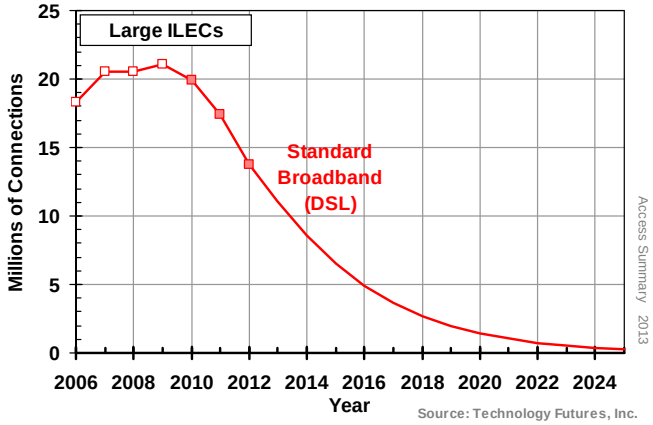
DSL Subsribers– Three Largest ILECs



Source: Technology Futures, Inc.

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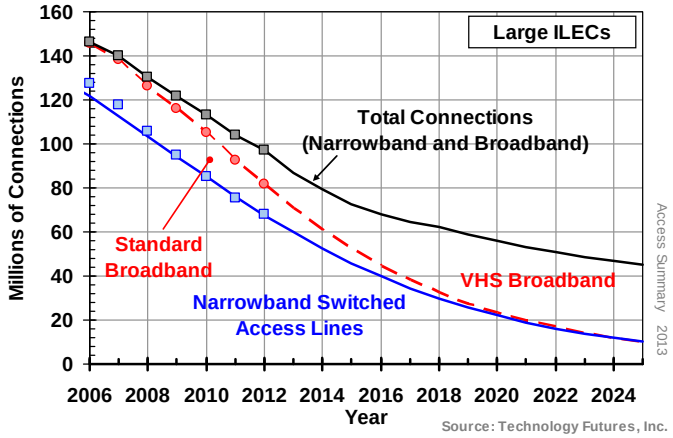
Total Connections – Three Largest ILECs



Source: Technology Futures, Inc.

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Broadband Forecasts

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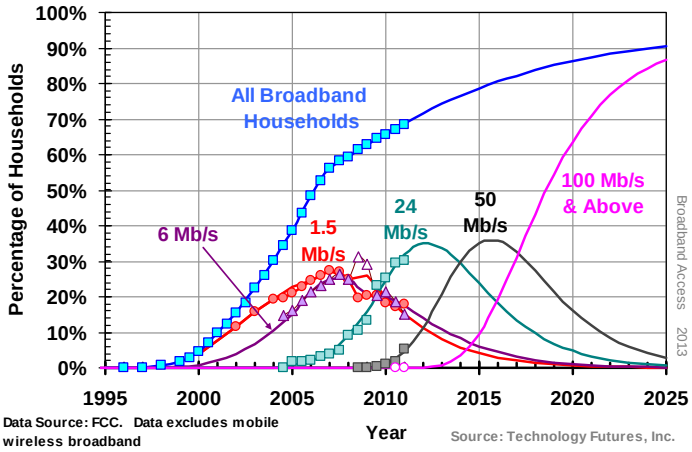
Broadband Households by Nominal Data Rate



Data Source: FCC. Data excludes mobile wireless broadband

Source: Technology Futures, Inc.

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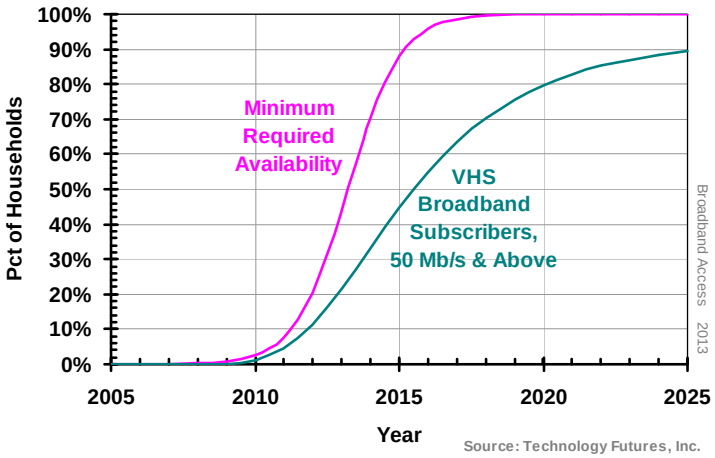
Availability vs Subscribers, 50 Mb/s



Source: Technology Futures, Inc.

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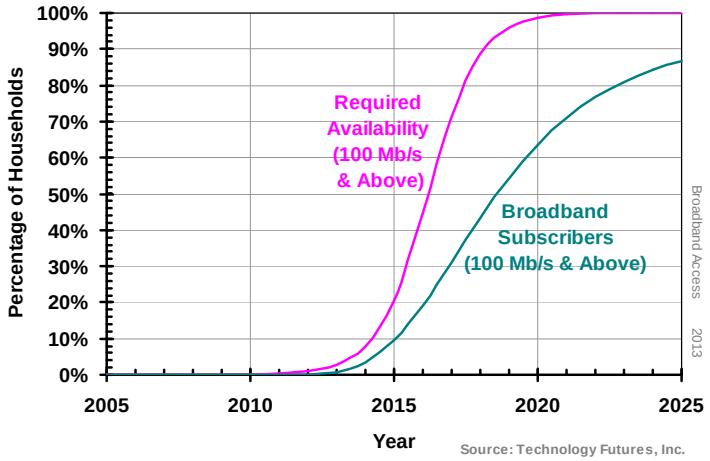
Availability vs Subscribers, 100 Mb/s



Source: Technology Futures, Inc.

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Deployment of VHS Broadband To Additional Areas

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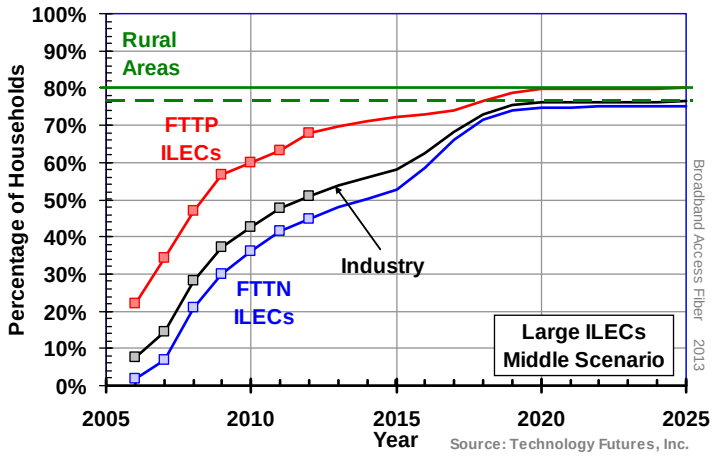
VHS Broadband Deployment by Type



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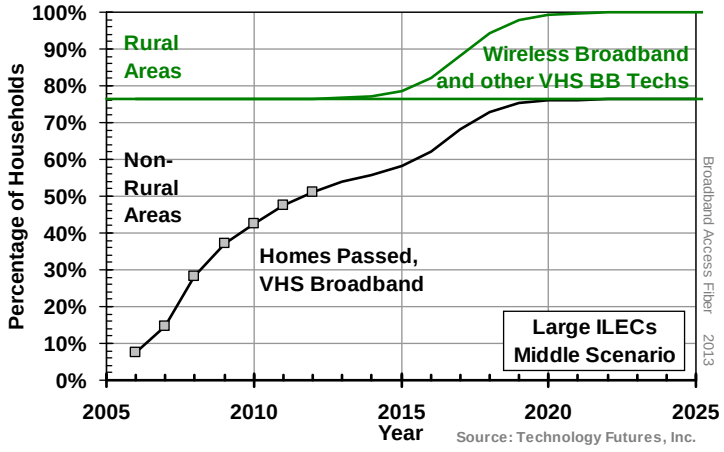
 15

VHS Broadband Deployment, Middle Scenario



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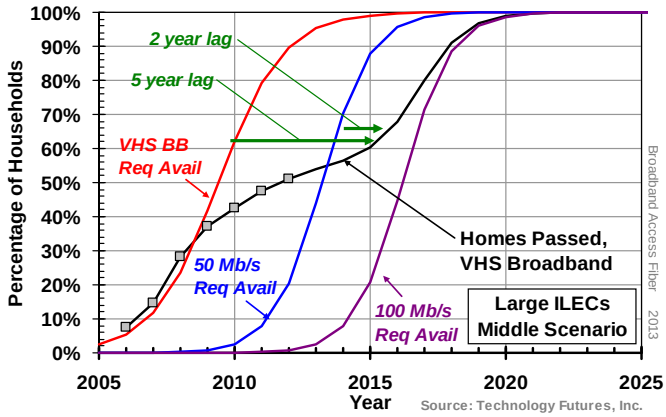
 16

VHS Broadband Availability and Deployment



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Conversion of Voice from Metallic Cable to VHS Broadband

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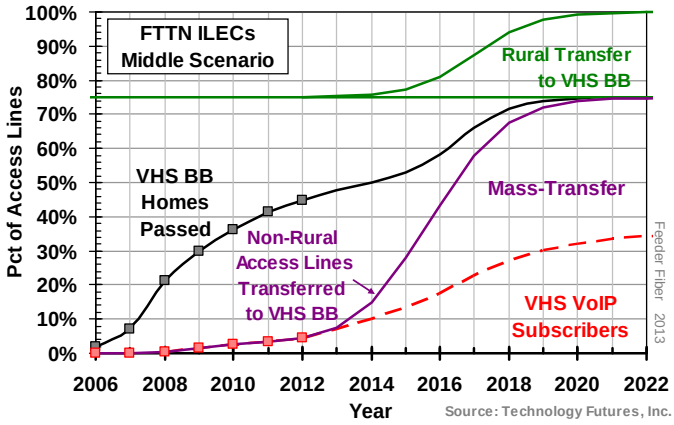
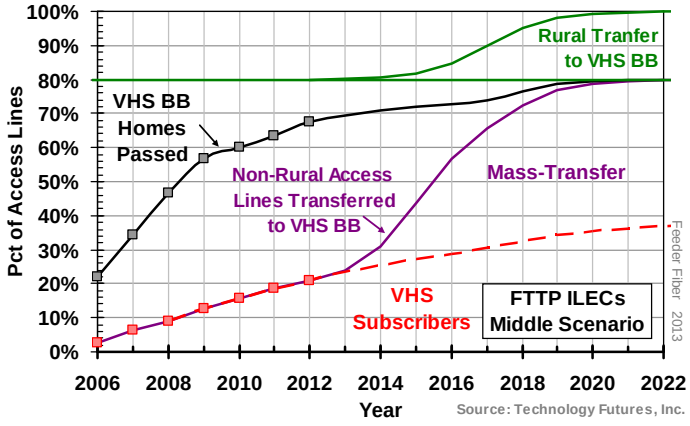
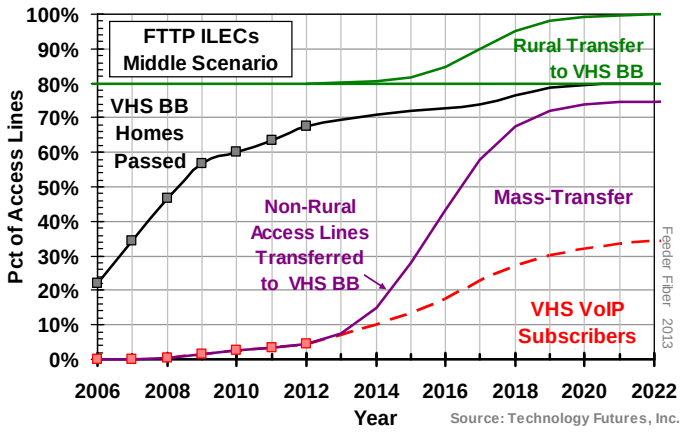
Transfer of Narrowband Access Lines to VHS Broadband – FTTN ILECs



Transfer of Narrowband Access Lines to VHS Broadband – FTTP ILECs, Cable



Transfer of Narrowband Access Lines to VHS Broadband – FTTP ILECs,Switching



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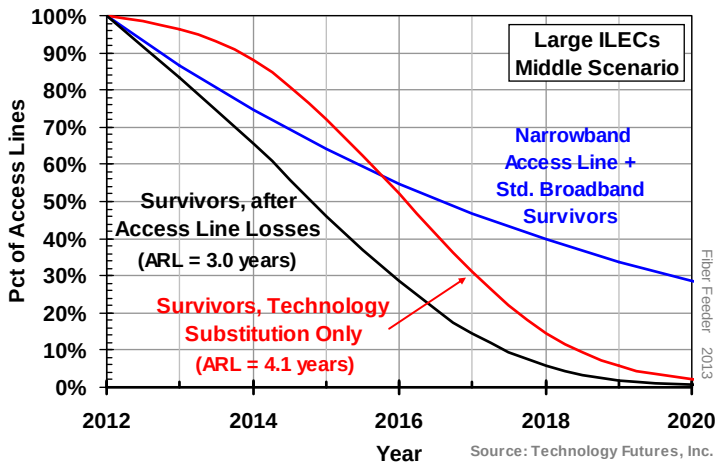
Metallic Feeder Cable Survivor Curves



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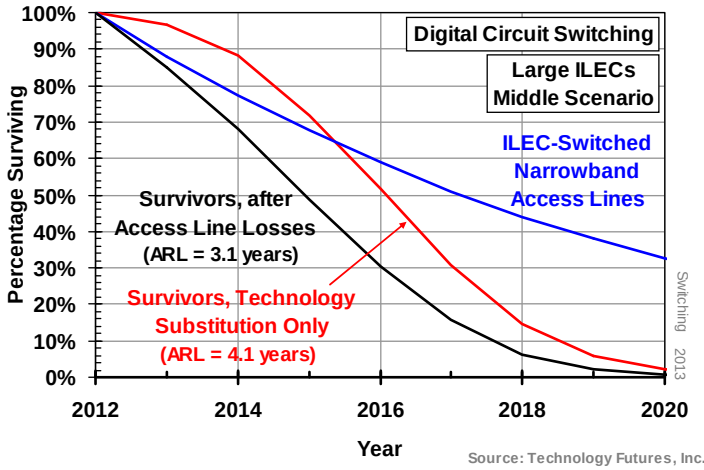
Digital Switching Survivor Curves



Source: Technology Futures, Inc.

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Transition from Metallic Distribution Cable to Non-Metallic Distribution Architectures

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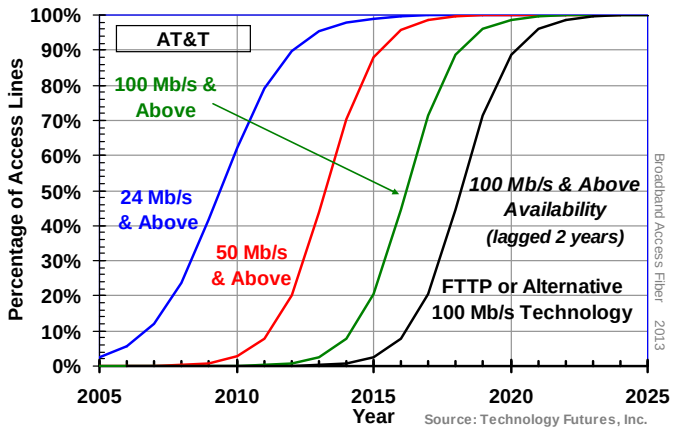
Non-Metallic Distribution Architectures (Middle Scenario)



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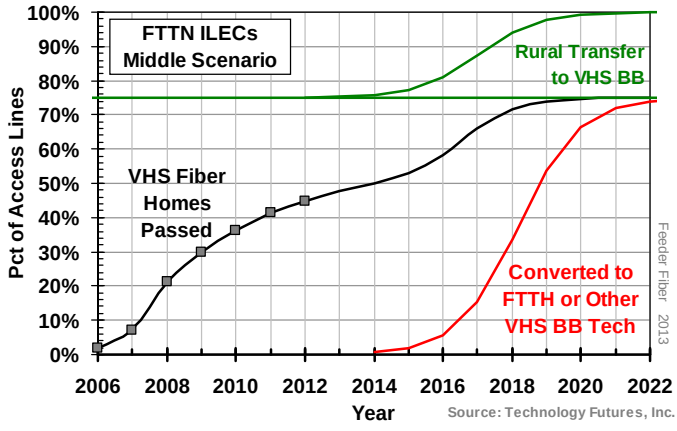
Conversion from Metallic Distribution Cables – FTTN ILECs



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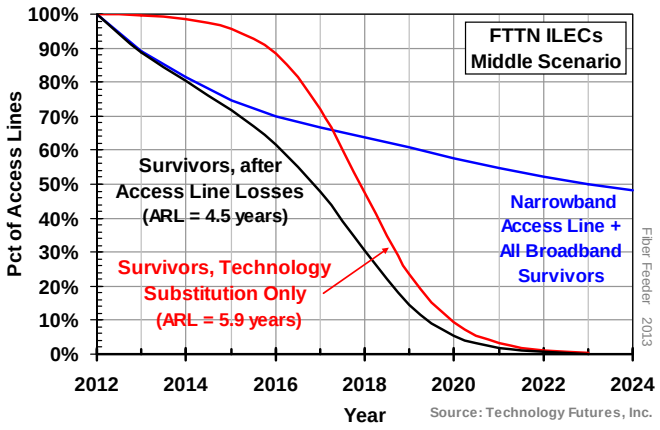
Survivor Curves for Metallic Distribution Cable



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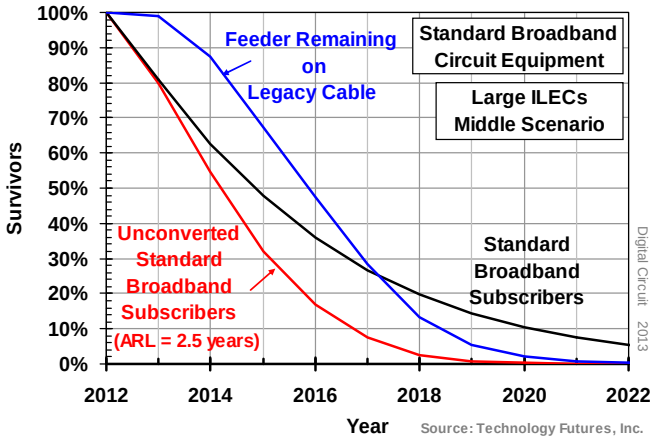
Standard Broadband (i.e. DSL) Circuit Equipment



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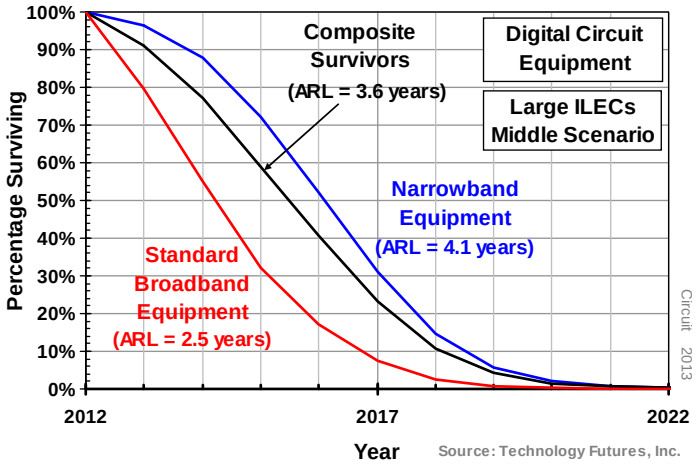
Circuit Equipment Survivor Curves



Source: Technology Futures, Inc.

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TFI Industry Recommended Average Remaining Lives as of 1/1/2013

	Technology Substitution Only	After Access Line Losses
Digital Switching (Legacy)*	**3.1 - 5.3**	**2.5 - 3.7**
Circuit Equipment (Legacy)*	**2.8 - 4.5**	**2.4 - 3.4**
Metallic Cable - Feeder	**3.1 - 5.3**	**2.4 - 3.5**
Metallic Cable - Distribution	**3.1 - 7.0**	**2.6 - 5.2**
Fiber Cable (Legacy)**	**5.2 - 9.2**	**4.2 - 6.5**

* Applies to legacy equipment only. For VHS broadband equipment, TFI recommends an ARL based on a 4-10 year P-Life, depending on the equipment type.

** Applies to legacy standard single mode fiber only. For full spectrum fiber, TFI recommends an ARL based on a 20-25 year P-Life.

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TFI Industry Recommended P-Lives as of 1/1/2013

	Technology Substitution Only	After Access Line Losses
Digital Switching (Legacy)*	**7-12**	**6-10**
Circuit Equipment (Legacy)*	**7-11**	**6-9**
Metallic Cable - Feeder	**8-16**	**7-13**
Metallic Cable - Distribution	**11-19**	**10-16**
Fiber Cable (Legacy)**	**13-24**	**11-20**

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** Applies to legacy standard single mode fiber only. For full spectrum fiber, TFI recommends a 20-25 year P-Life.

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TFI Industry Recommended Average Remaining Lives as of 1/1/2011 PREVIOUS EDITION FOR COMPARISON!

	Technology Substitution Only	After Access Line Losses
Digital Switching	**4.1 - 6.3**	**3.5 - 4.9**
Circuit Equipment*	**3.9 - 5.3**	**3.5 - 4.5**
Metallic Cable - Feeder	**4.2 - 6.3**	**3.4 - 4.7**
Metallic Cable - Distribution	**4.3 - 9.8**	**3.8 - 7.9**
Fiber Cable**	**6.6 - 10.5**	**5.6 - 8.4**

* Applies to non-VHS broadband equipment only. For VHS broadband equipment, TFI recommends an ARL based on a 4-10 year P-Life, depending on the equipment type.

** Applies to standard single mode fiber only. For full spectrum fiber, TFI recommends an ARL based on a 20-25 year P-Life.

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TFI Industry Recommended P-Lives as of 1/1/2011 PREVIOUS EDITION FOR COMPARISON!

	Technology Substitution Only	After Access Line Losses
Circuit Switching	**8-16**	**7-14**
Circuit Equipment*	**7-12**	**7-10**
Metallic Cable - Feeder	**9-18**	**8-15**
Metallic Cable - Distribution	**11-23**	**10-20**
Fiber Cable**	**12-23**	**10-20**

* Applies to non-VHS broadband equipment only. For VHS broadband equipment, TFI recommends a 4-10 year P-Life, depending on the equipment type.

** Applies to standard single mode fiber only. For full spectrum fiber, TFI recommends a 20-25 year P-Life.

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