Data Centre Link Lengths & Deployment of Optical Fibre

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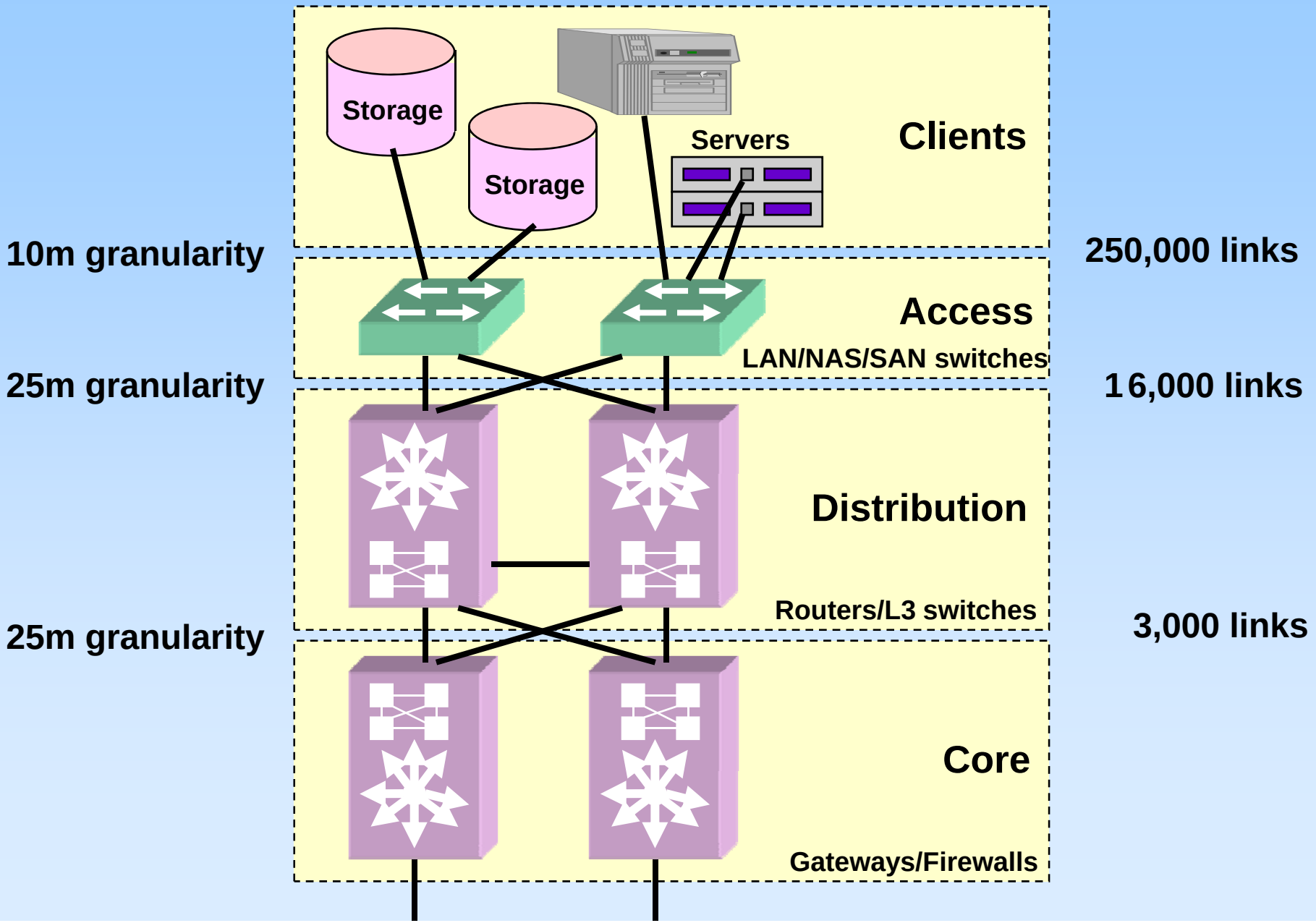
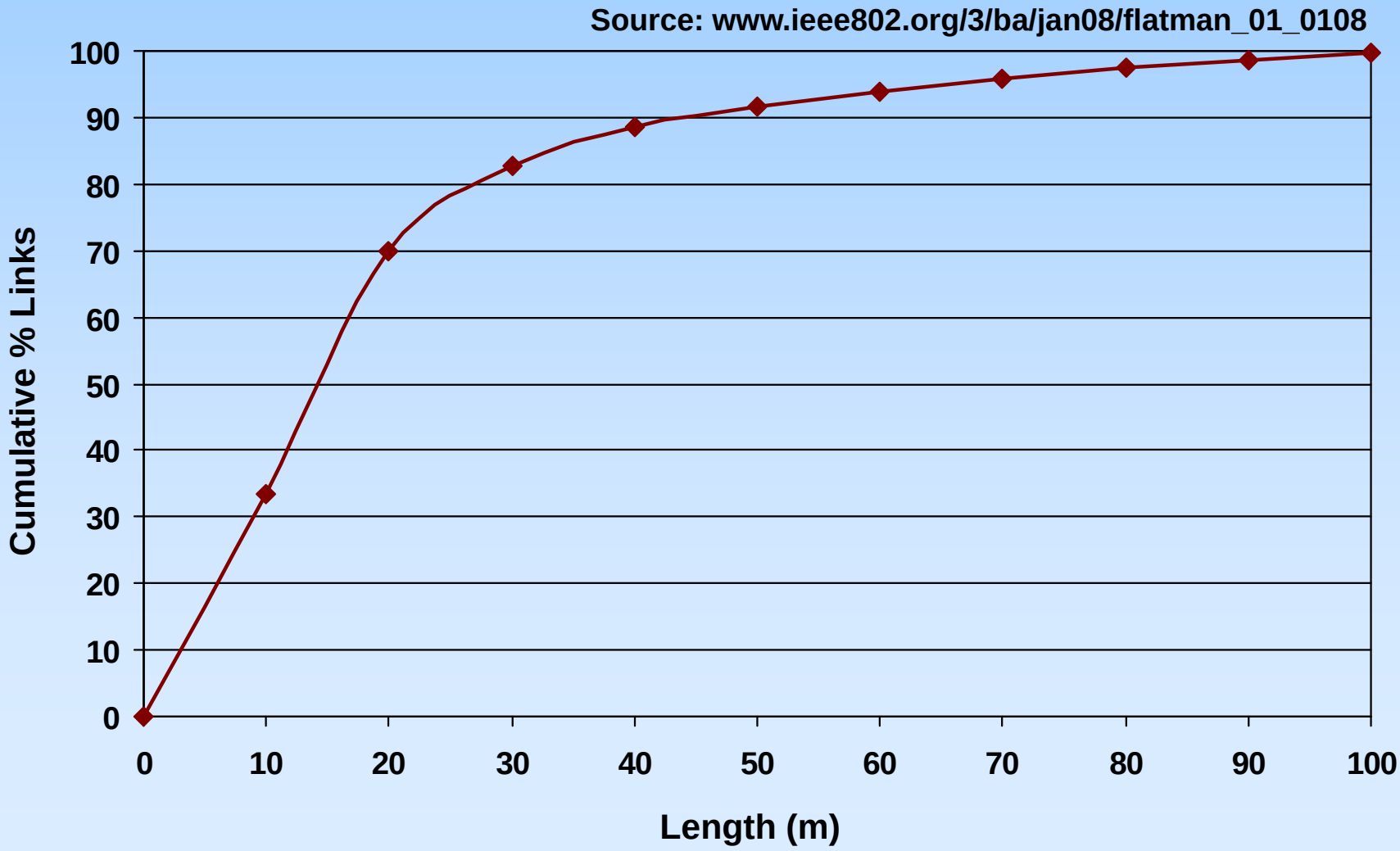
Flatman Data Centre Cabling Survey

- summary presented to IEEE 802.3ba in Jan 2008
  - www.ieee802.org/3/ba/jan08/flatman_01_0108
- 9 enterprise data centres from US, UK, Germany
- total data centre floor space = 715,000 square feet
- small, medium, large, v. large sizes (IDC classes)
- Flatman data good for EoR/centralised switching
  - expected to continue for small/medium data centres
- but now needs to take account of ToR switching & cabinet-to-cabinet links
  - being deployed mainly in large/v.large data centres
  - with much shorter server links than before

Flatman Data Centre Survey Data



Data Centre Server-to-Switch Link Lengths for EoR/Centralised Switching



IDC Data Centre Size Classification

IDC (2006) identifies 4 different types, distinguished by size:

Small Data Centre

- ~15,000 ft² raised floor
- 350-500 volume servers
- 1-3 high end servers

Medium Data Centre

- ~20,000 ft² raised floor
- 1,500-1,700 volume servers
- 4-5 high end servers

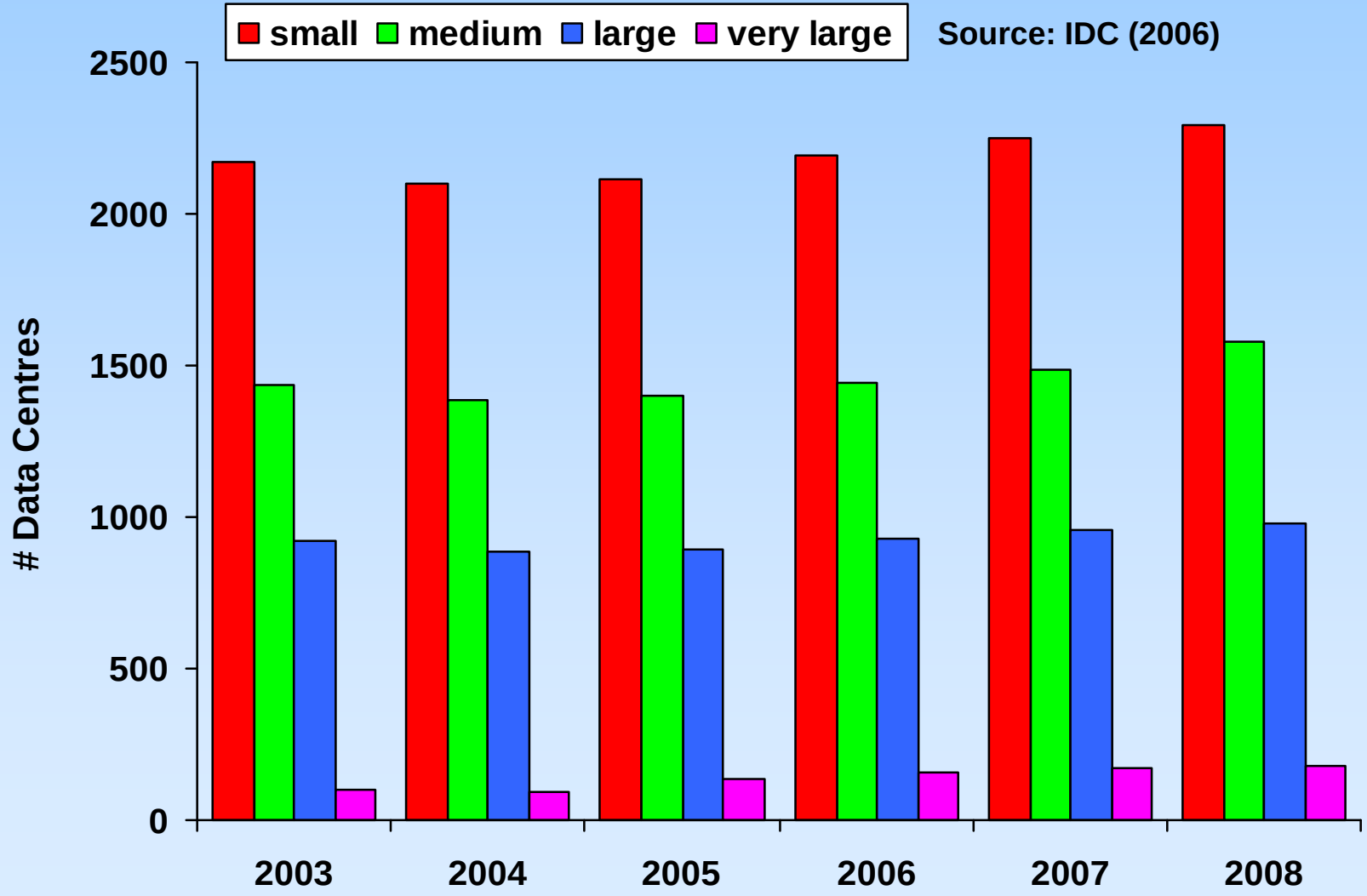
Large Data Centre

- ~35,000 ft² raised floor
- 2,000-2,500 volume servers
- 6-7 high end servers

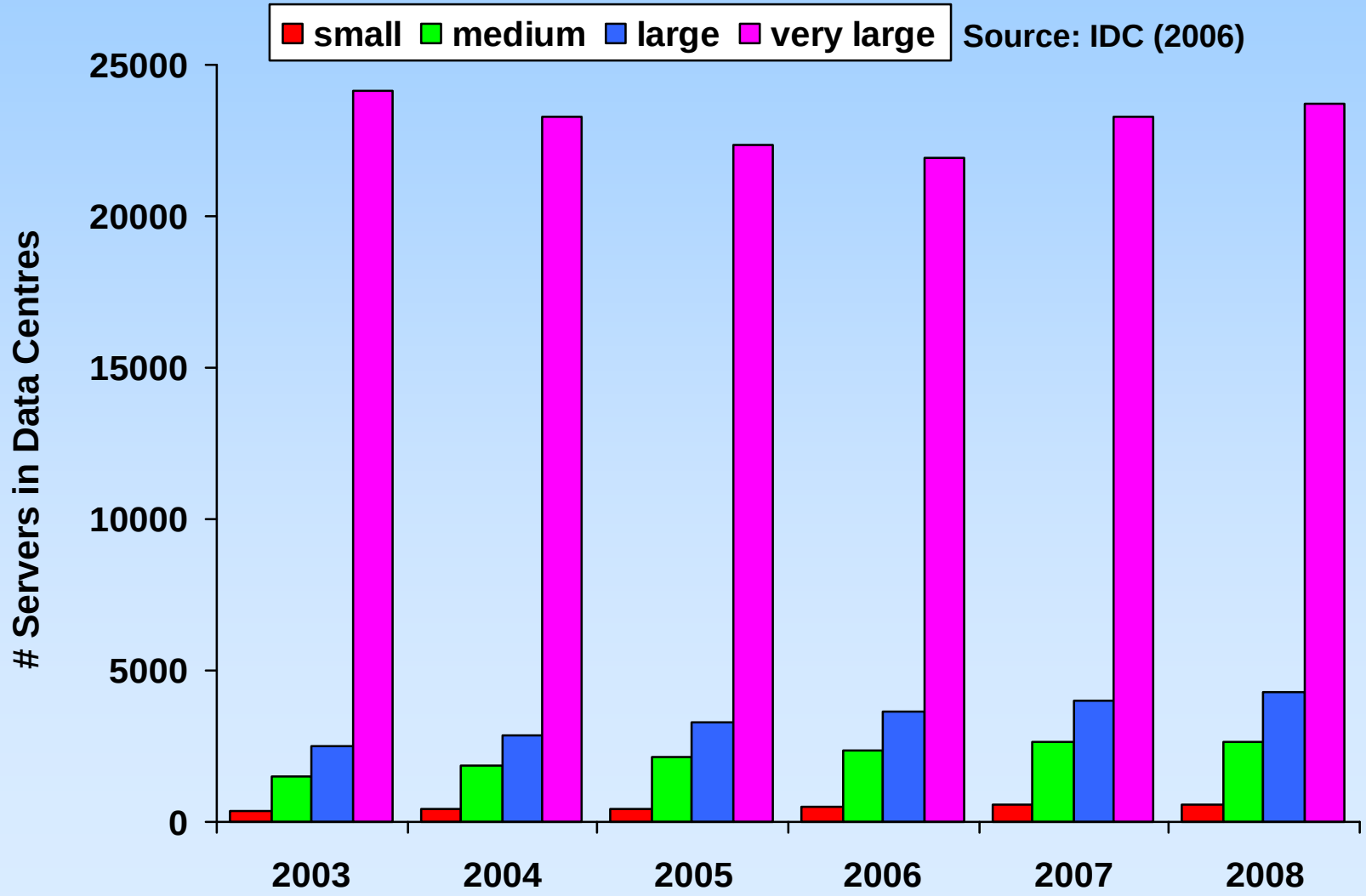
Very Large Data Centre

- >100,000 ft² raised floor
- <25,000 volume servers
- >8 high end servers

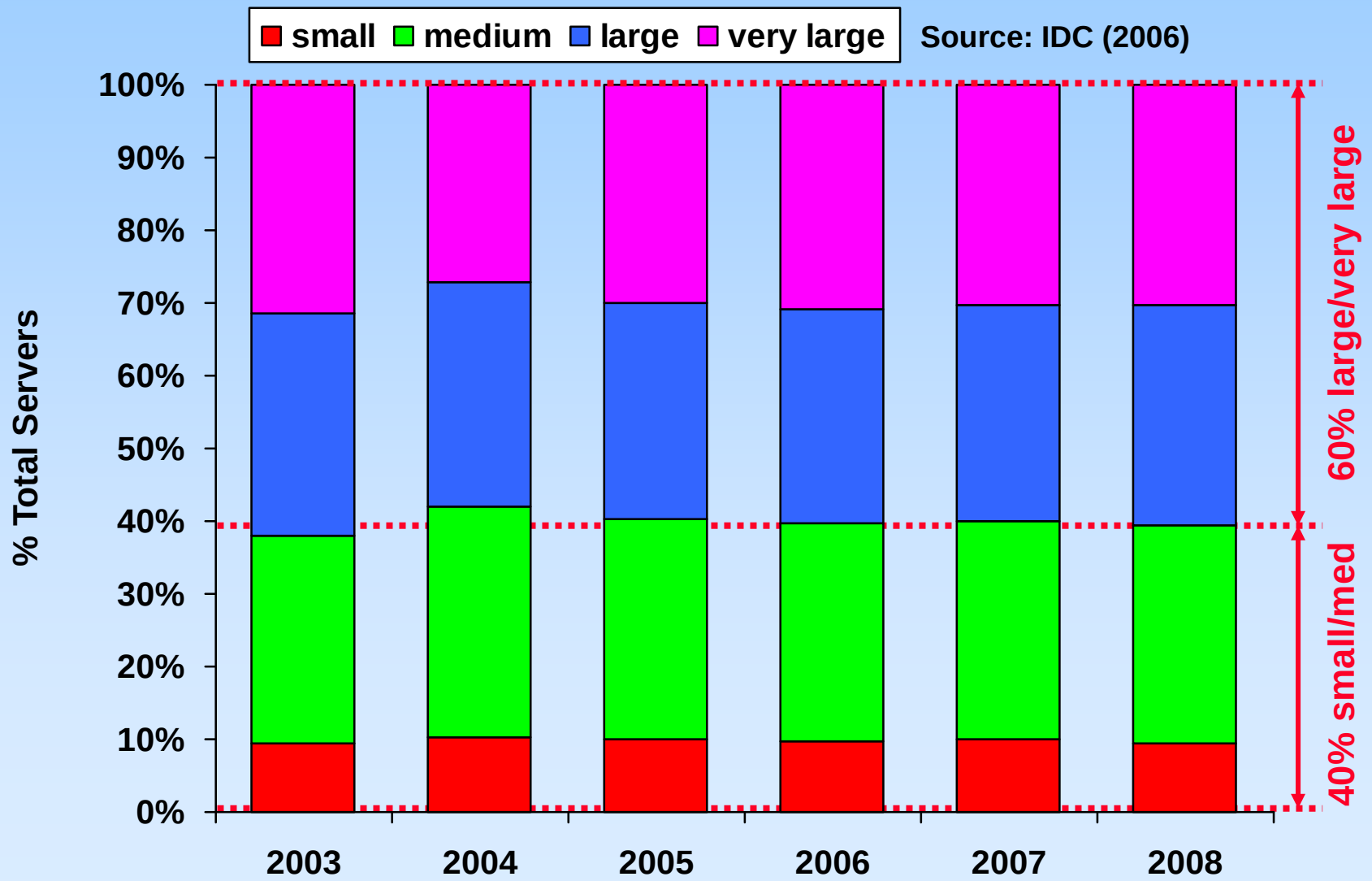
US Enterprise Data Centres by Size



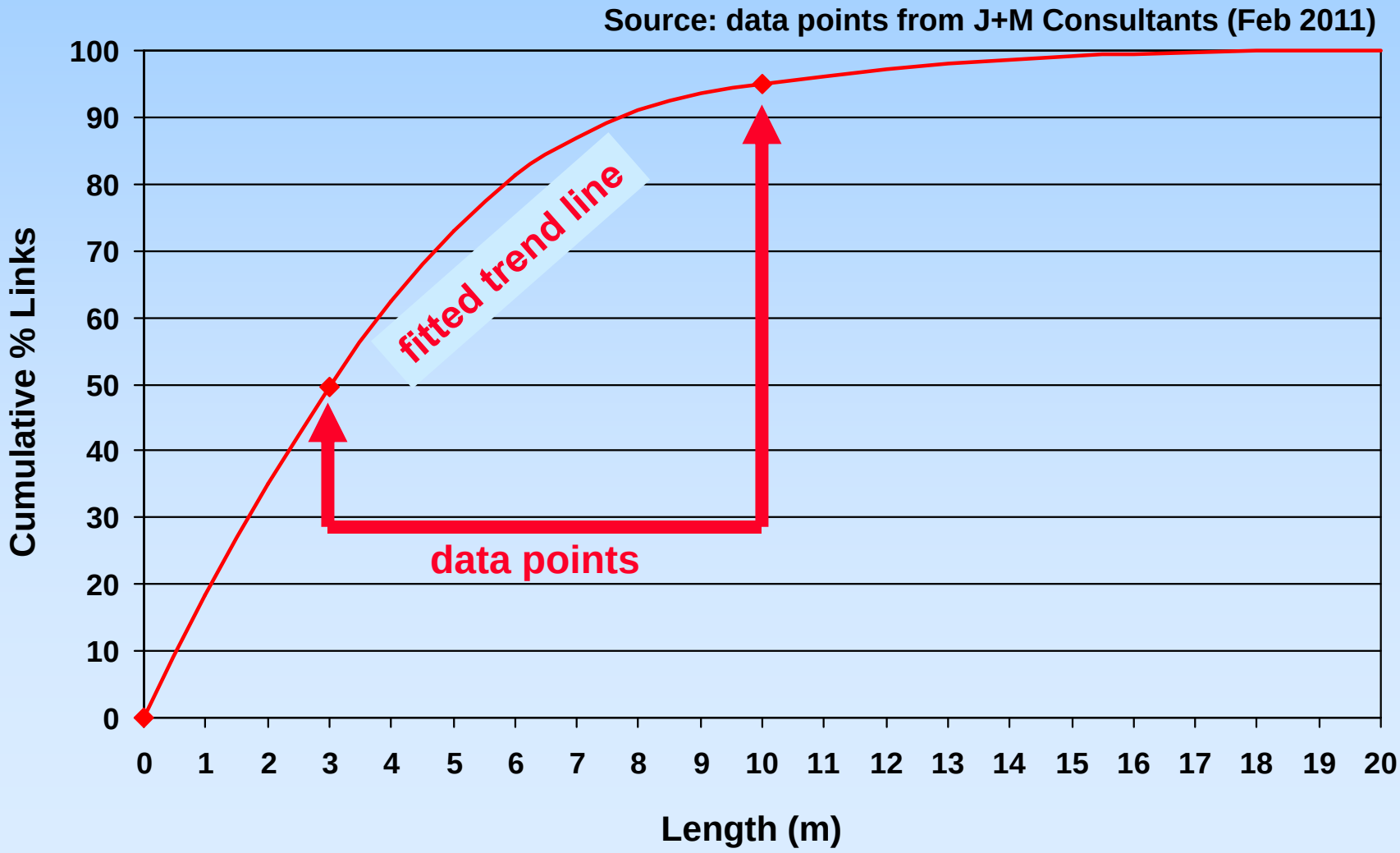
US Enterprise Data Centres by Server Count



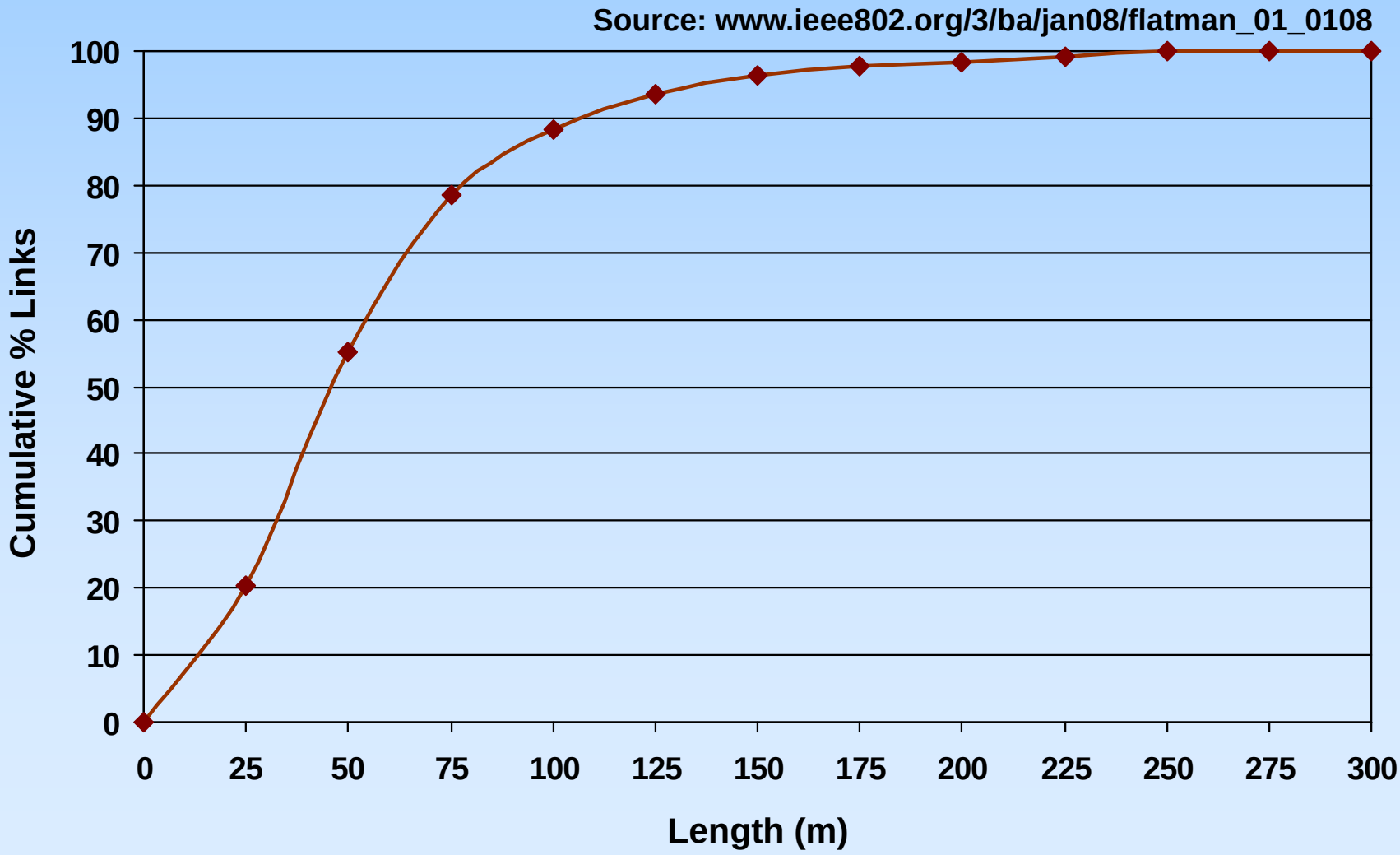
Total Servers in US Enterprise Data Centres



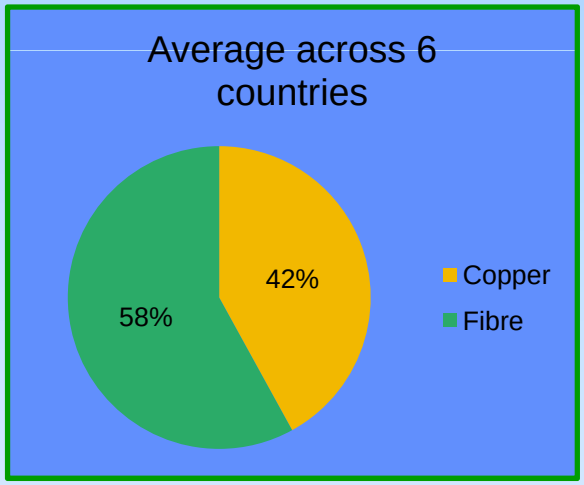
Data Centre Server-to-Switch Link Lengths for ToR/Cabinet-to-Cabinet Switching

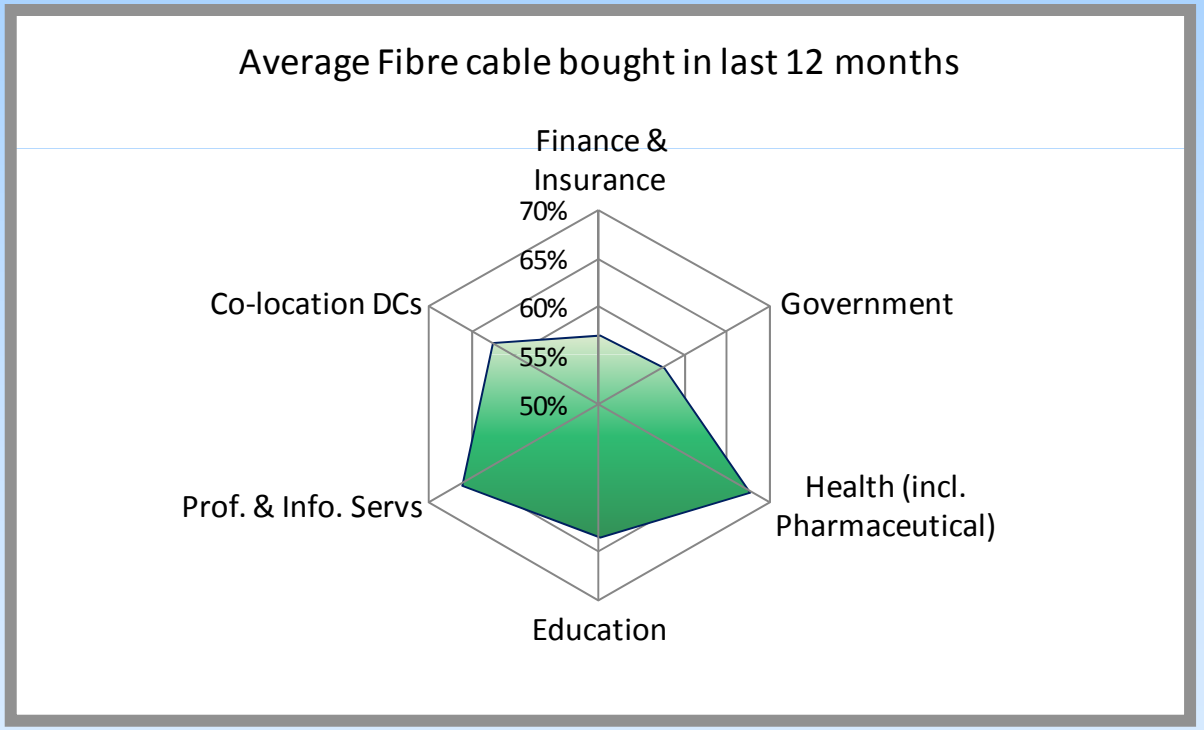


Data Centre Switch-to-Switch Link Lengths



BSRIA End User Survey of Data Centre Cabling 2011





335 respondents across 6 countries and 6 sectors.