

# In-Premises Optical Fibre Installed Base Analysis to 2007

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## *Acknowledgements*

**This study was commissioned by Agilent & Cisco Systems.**

**Base cabling market data was provided by BSRIA.**

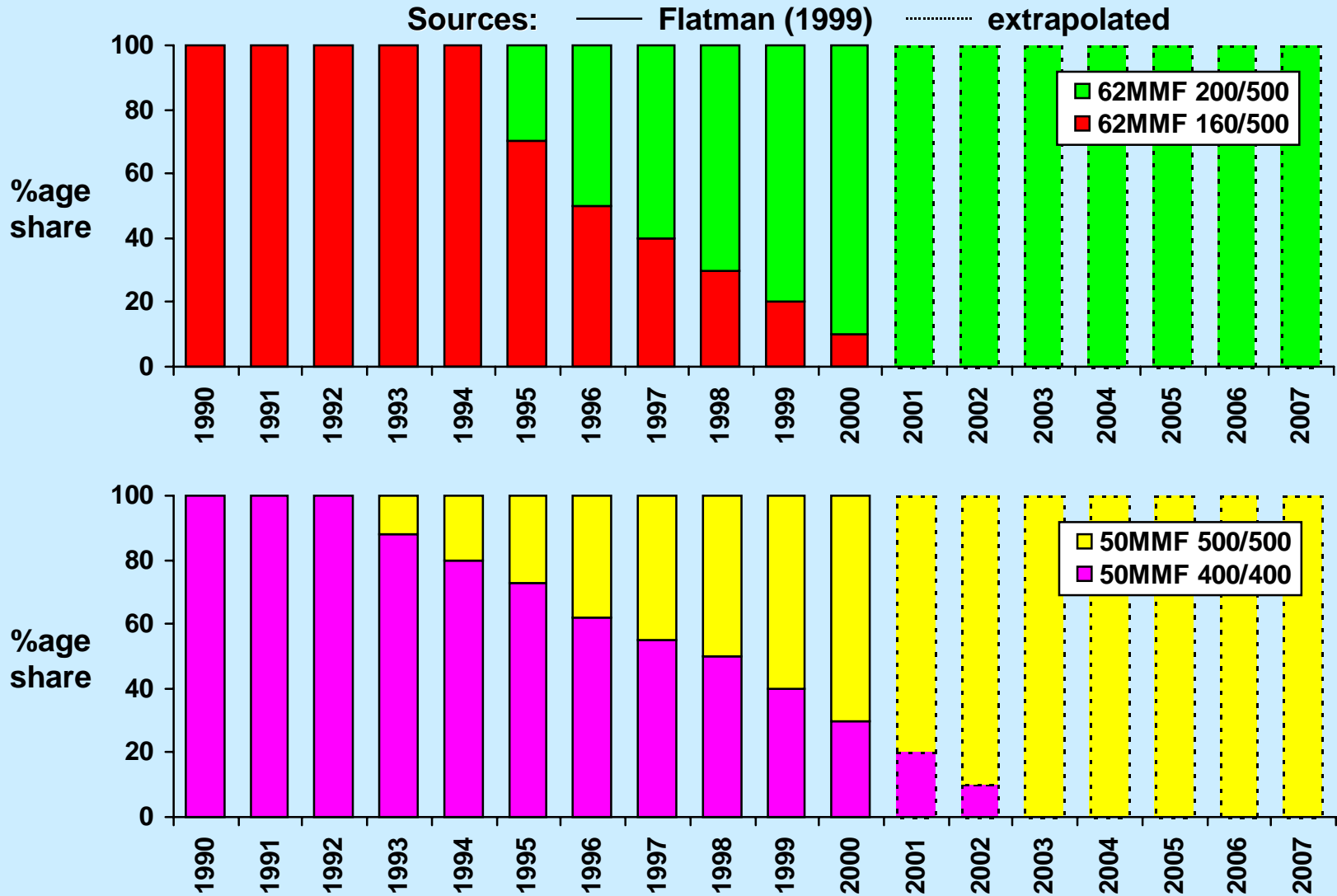
# Content

- 1. Volume shipments to 2007**
- 2. Europe, USA & Worldwide**
- 3. FDDI-grade, OM1, OM2, OM3**
- 4. Installed length distribution**
- 5. Installed duplex links to 2007**
- 6. Share of links up to 200-300m**
- 7. Size DMD-challenged fibres**

# Data Sources

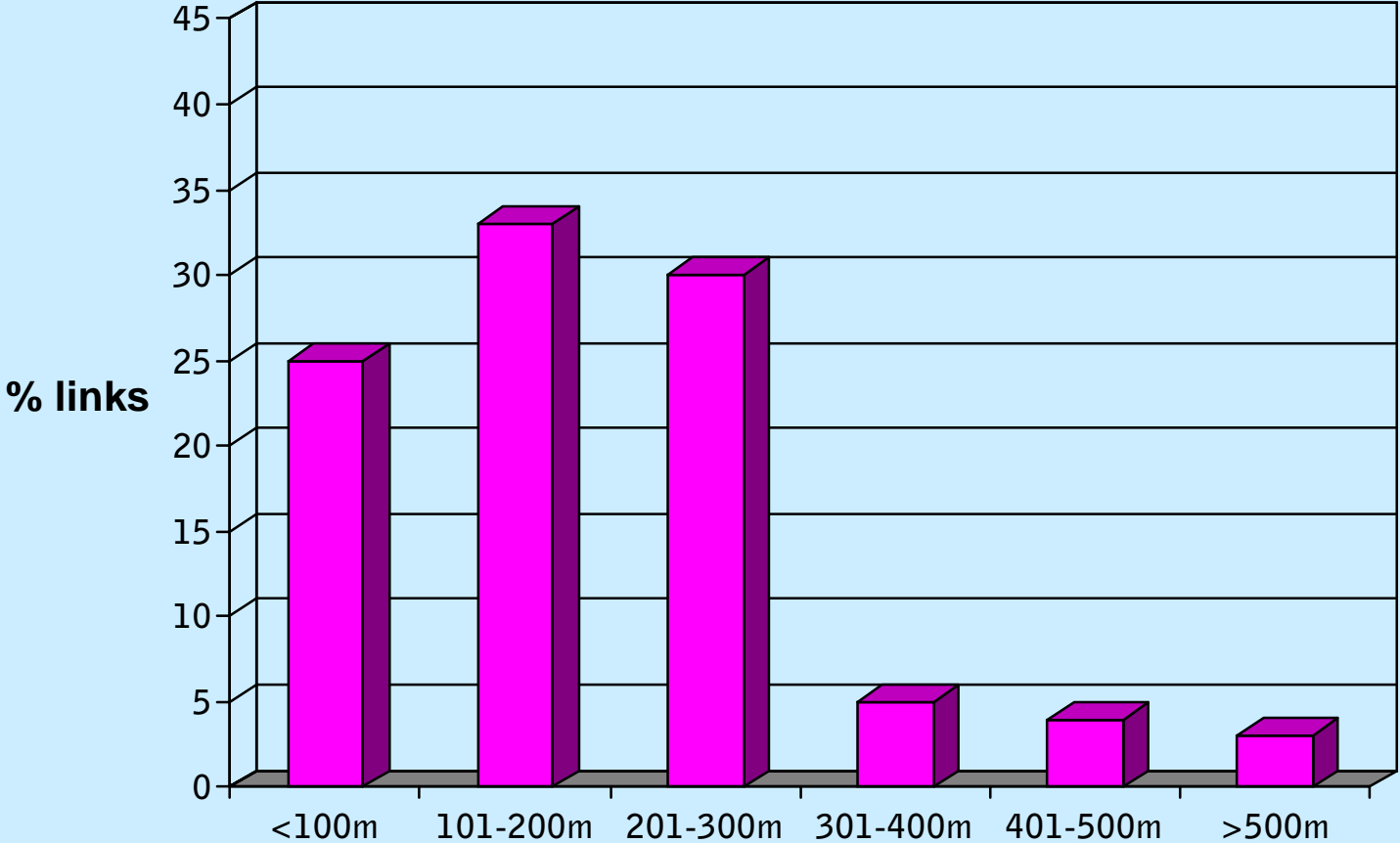
- **volume shipments from BSRIA (Feb 2004)**
  - » used for in-premises cabling 1999-2007
  - » 62MMF, 50MMF (non-OM3), OM3, SMF
  - » Europe, USA, Asia Pacific, Worldwide
- **installation trends from BSRIA (June 2002)**
  - » split by campus BB/building BB/horizontal
- **installed fibre analysis by Flatman (Jul 1999)**
  - » installed length distributions for campus/building
  - » volume & base to 2000, segmented by fibre type
  - » good segmentation of 62MMF (FDDI-grade, OM1)
  - » fair segmentation of 50MMF (400/400, OM2, etc)
  - » data from BSRIA, KMI, WIT plus 15 manufacturers, 60 installers, 18 large end users (in 6 countries)
  - » based on ~13,000 installed optical backbone links

# MMF Segmentation



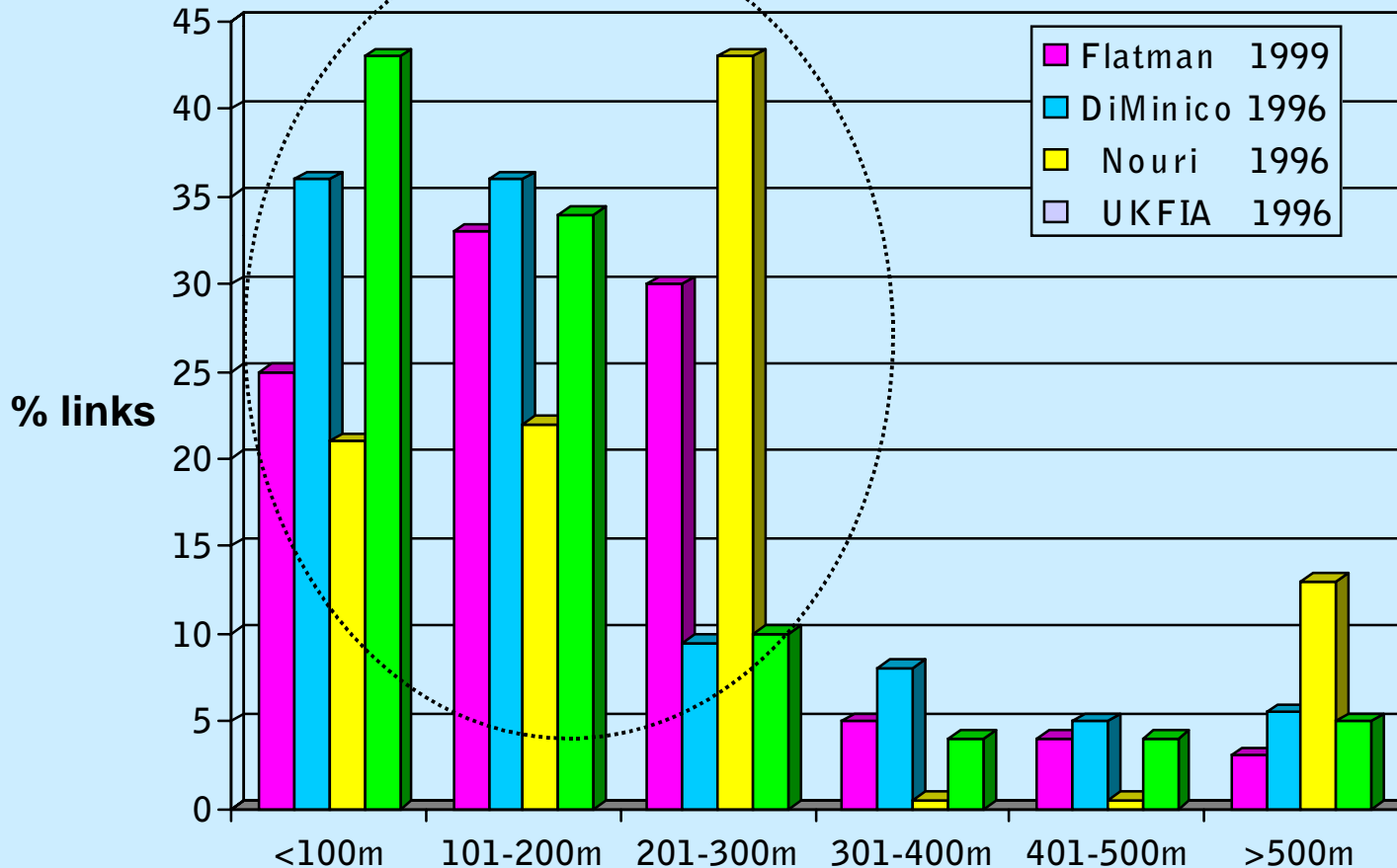
# Optical Fibre Installed Length Distribution in Building Backbones

Source: Flatman 1999

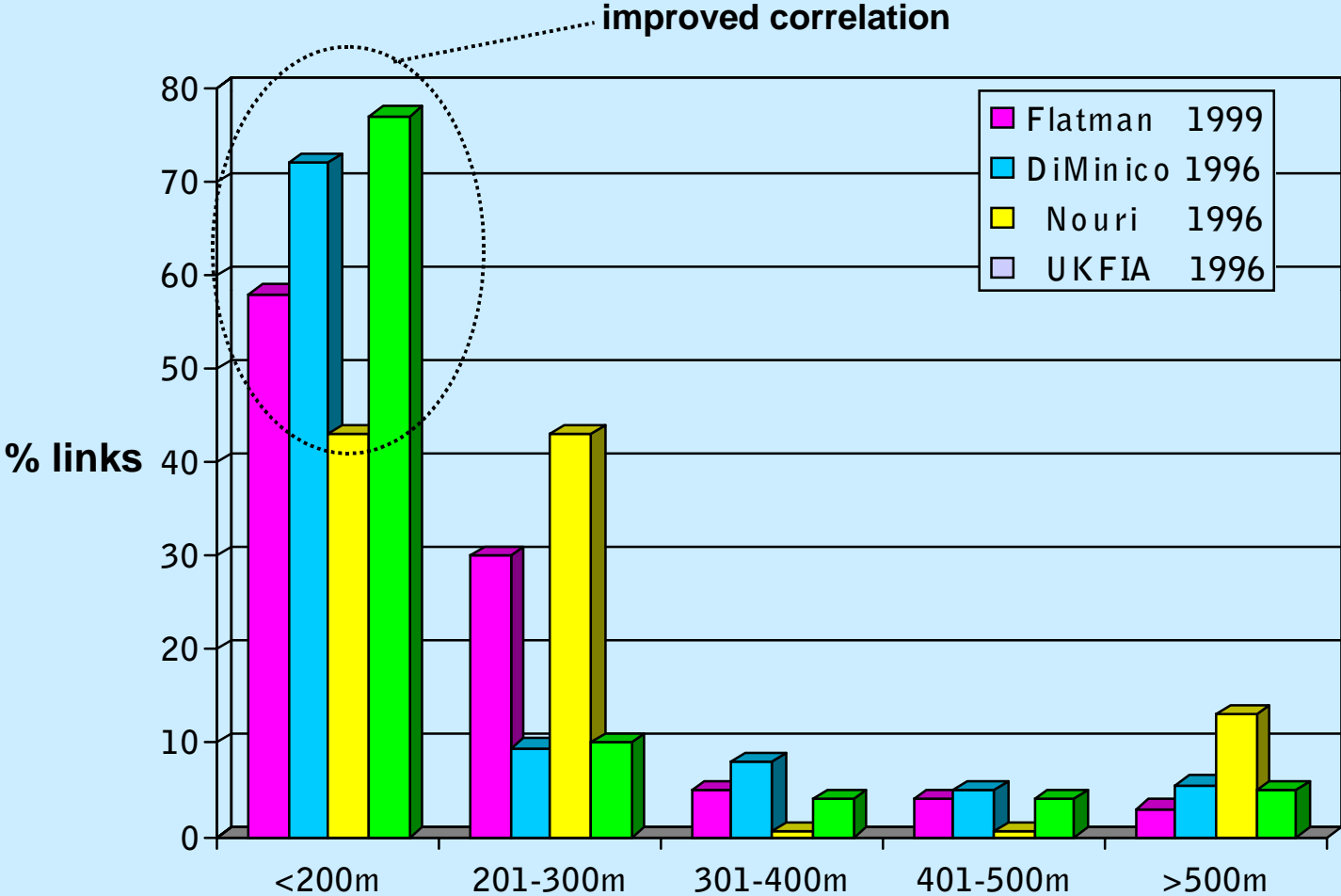


# Optical Fibre Installed Length Distribution in Building Backbones

poor in-band correlation



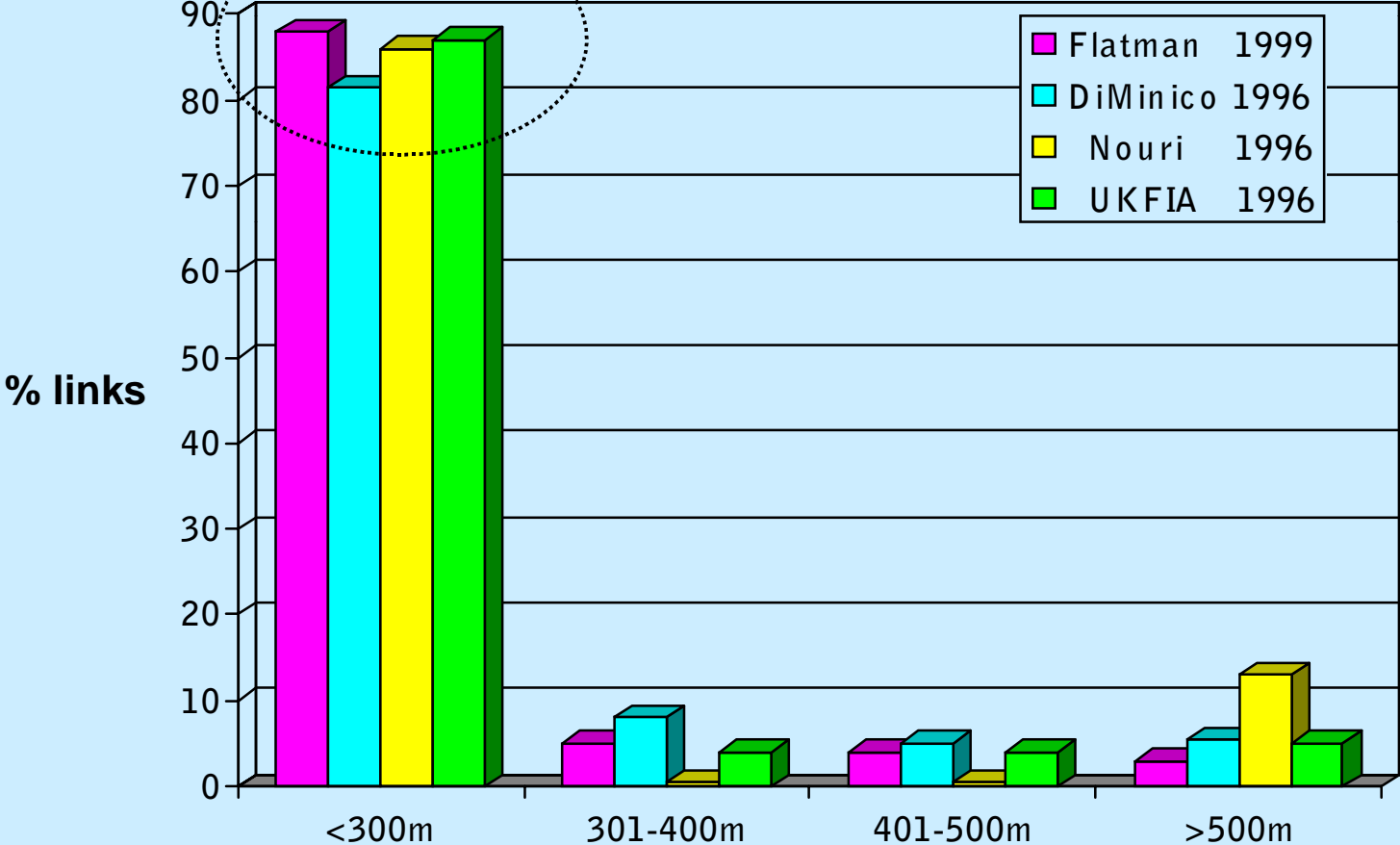
# Optical Fibre Installed Length Distribution in Building Backbones





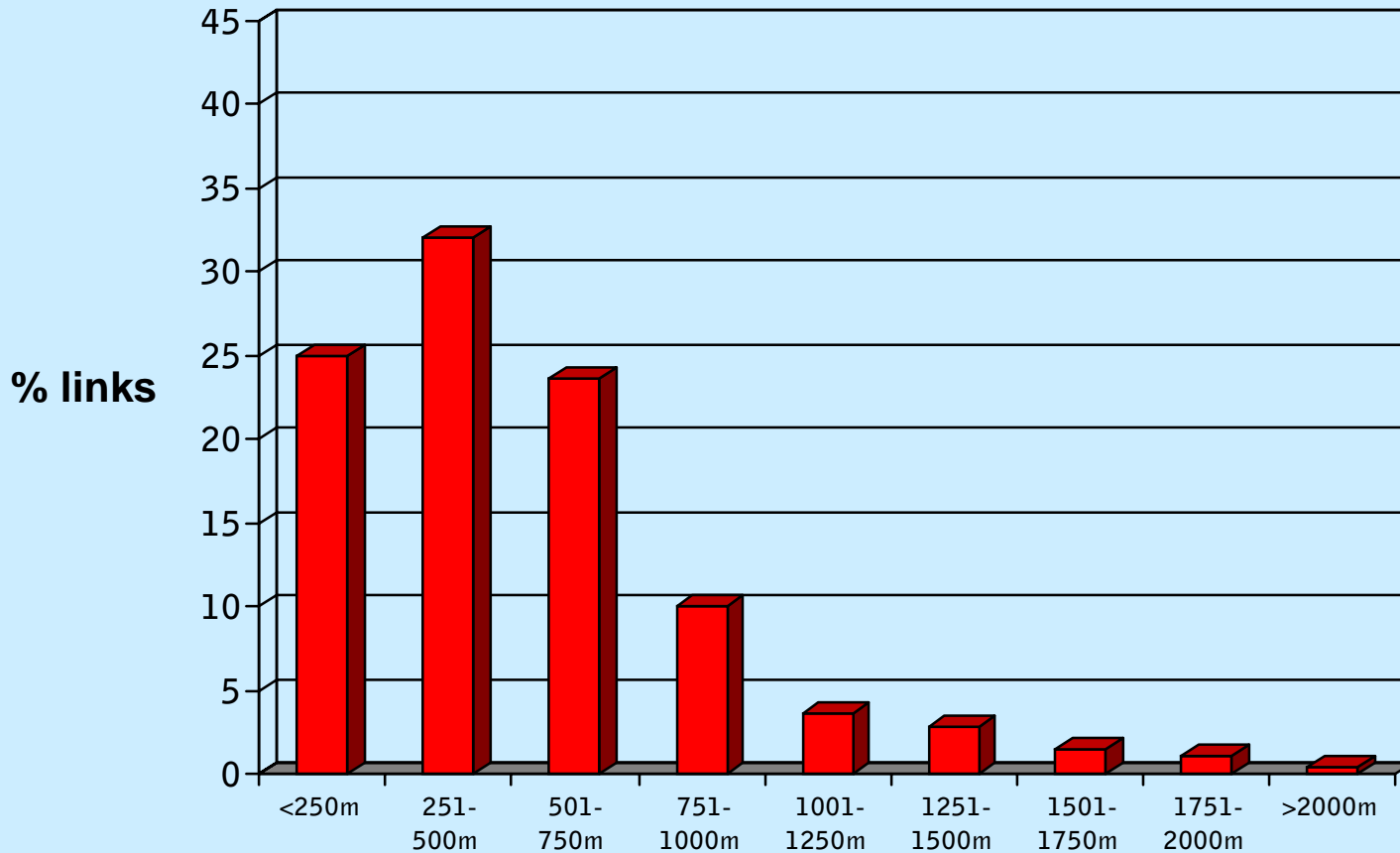
# Optical Fibre Installed Length Distribution in Building Backbones

excellent correlation <300m

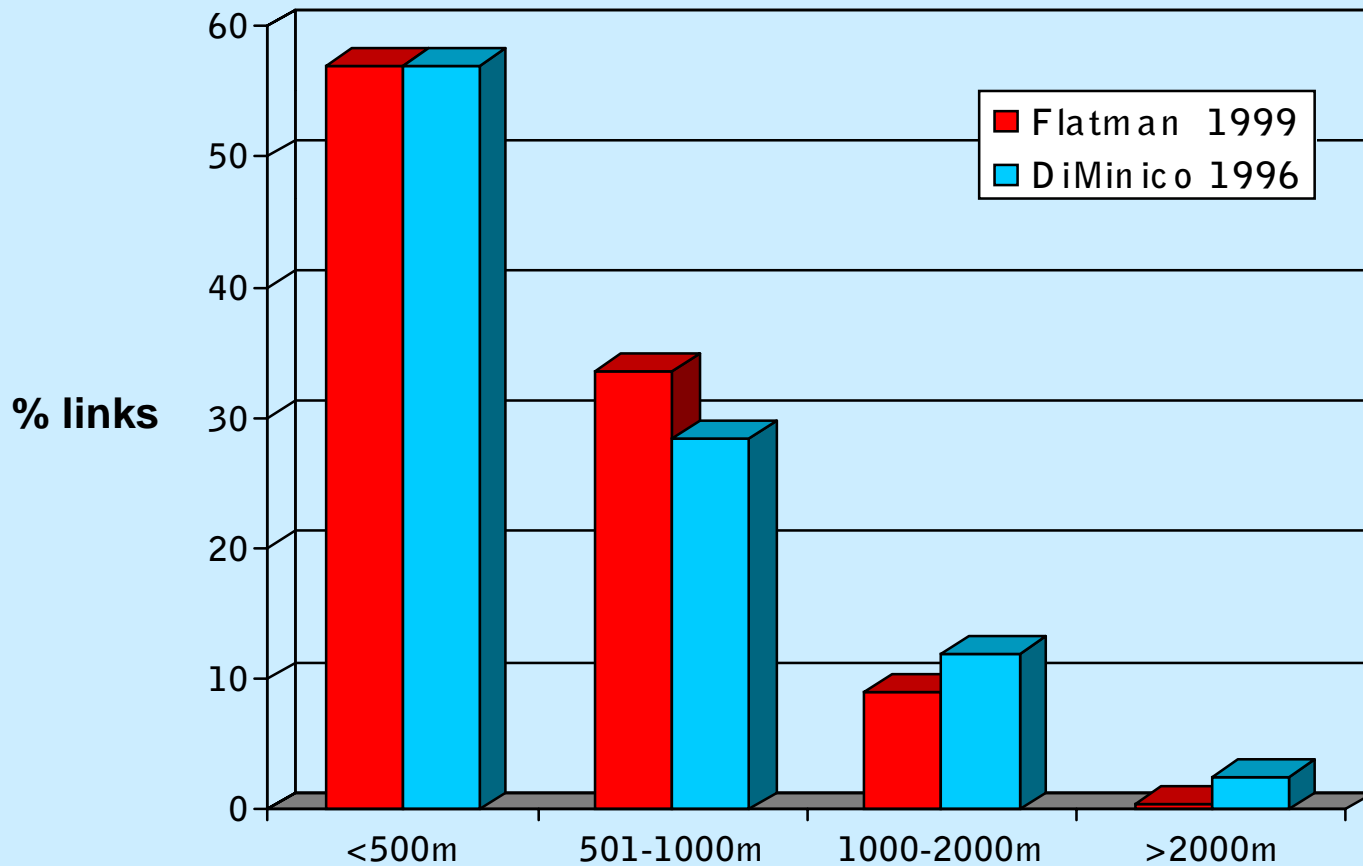


# Optical Fibre Installed Length Distribution in Campus Backbones

Source: Flatman 1999

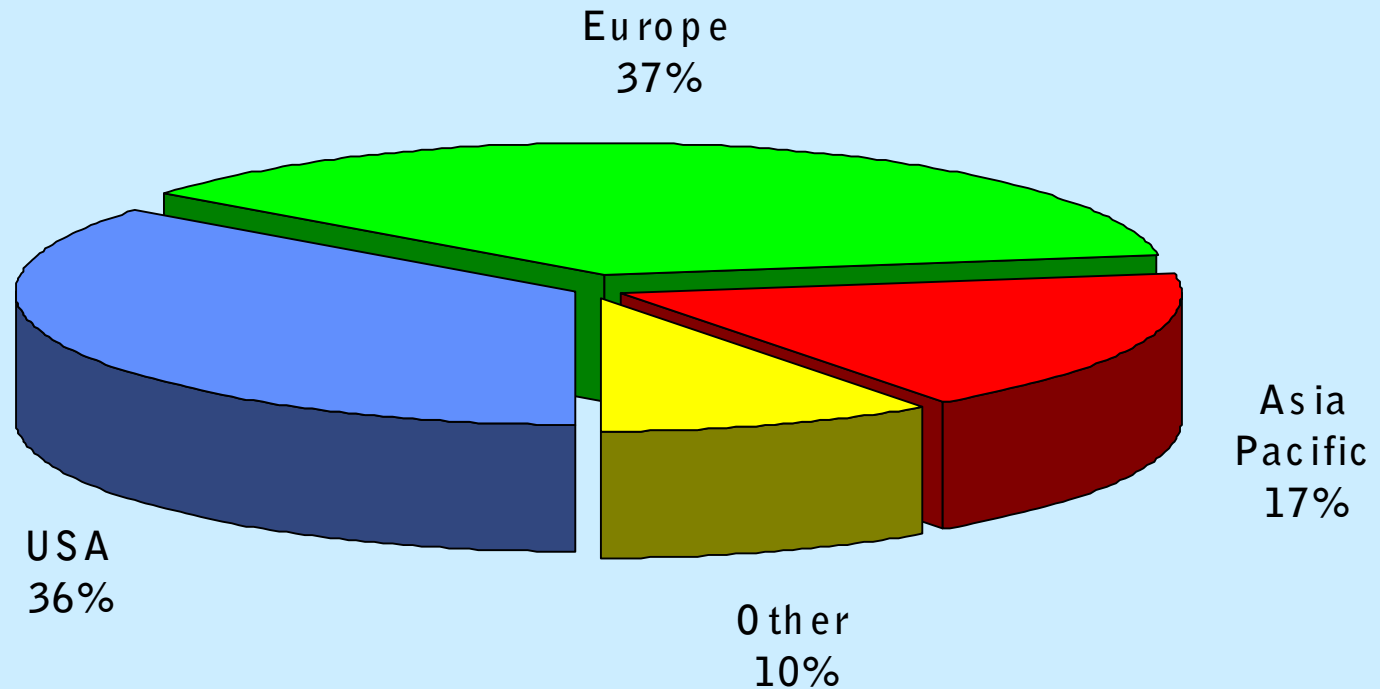


# Optical Fibre Installed Length Distribution in Campus Backbones



# Shipment Data & Installed Base

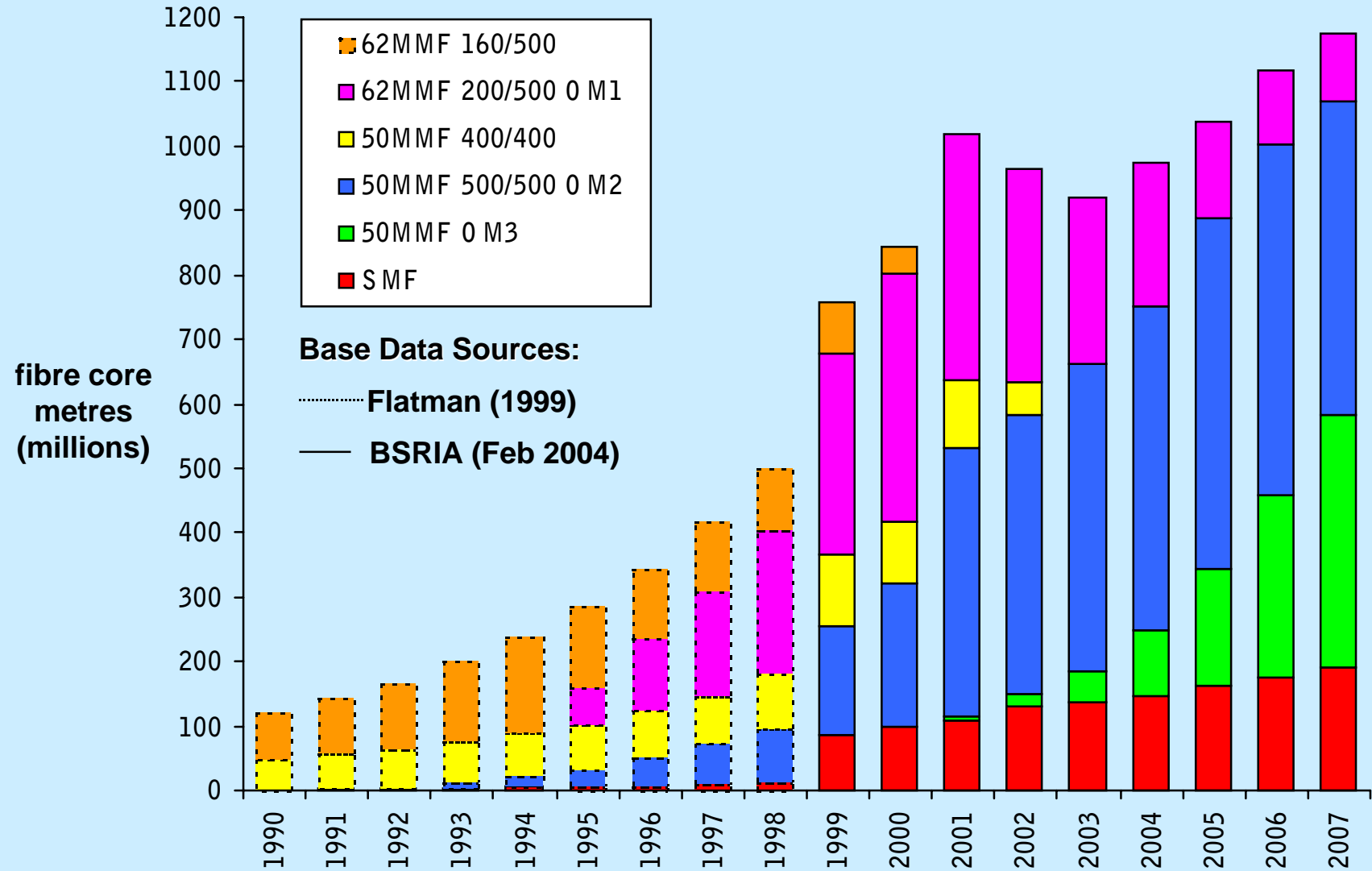
# In-Premises Optical Fibre Volume Shipment Forecast for 2007



Source: BSRIA (Feb 2004)

Europe

# Annual Shipments: European Market

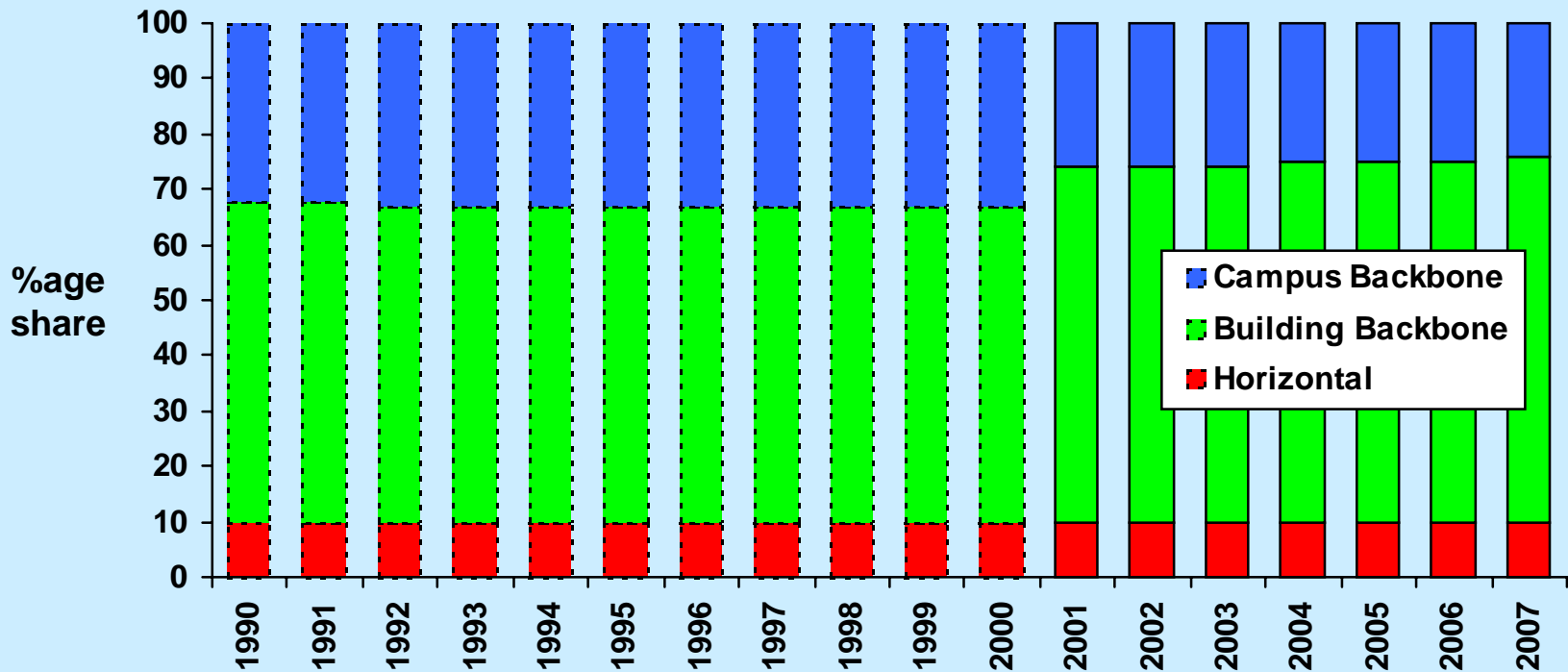


# Where Does the Fibre Go in Europe?

Sources:

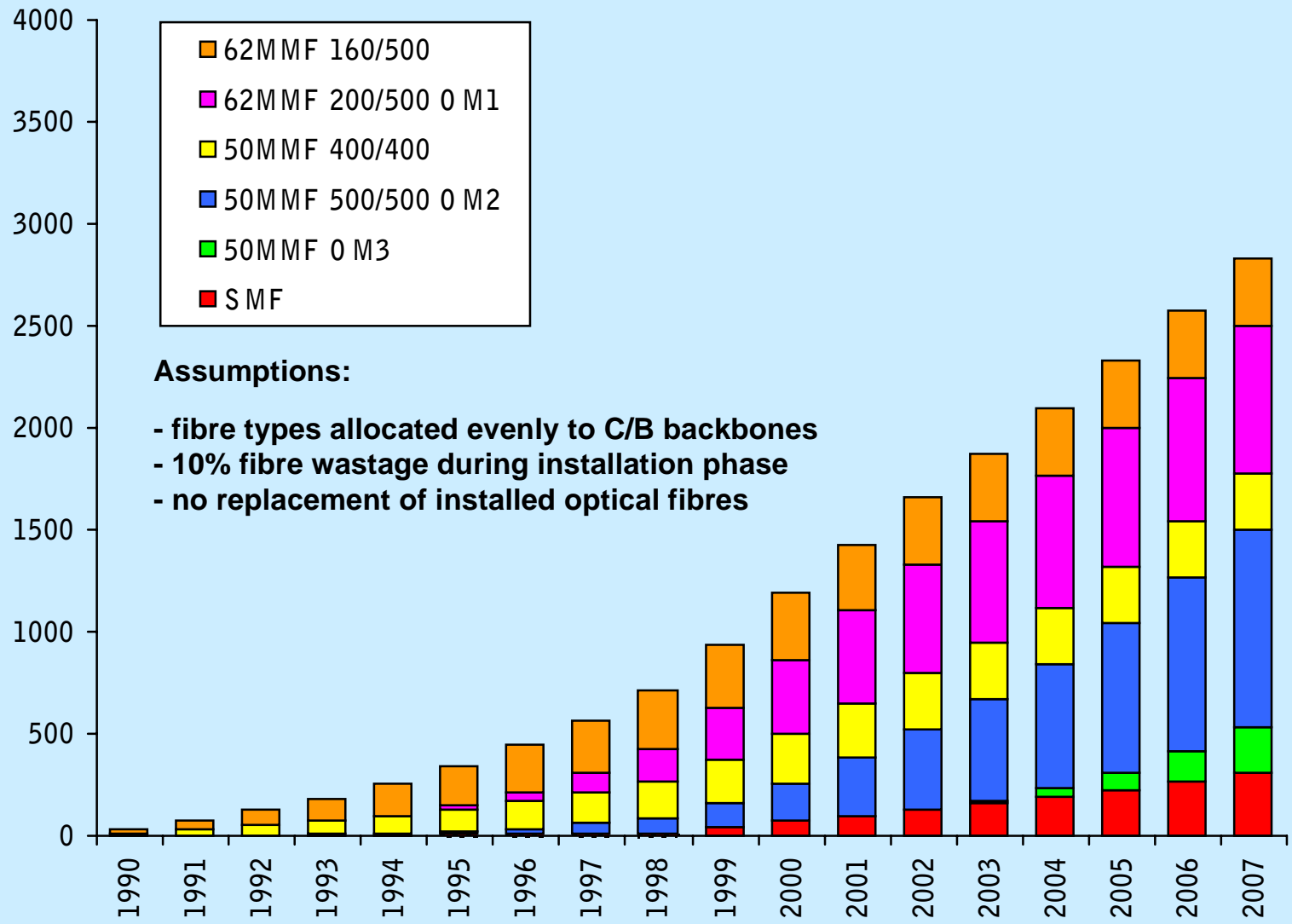
— BSRIA (Jun 2002)

⋯ Flatman (1999)





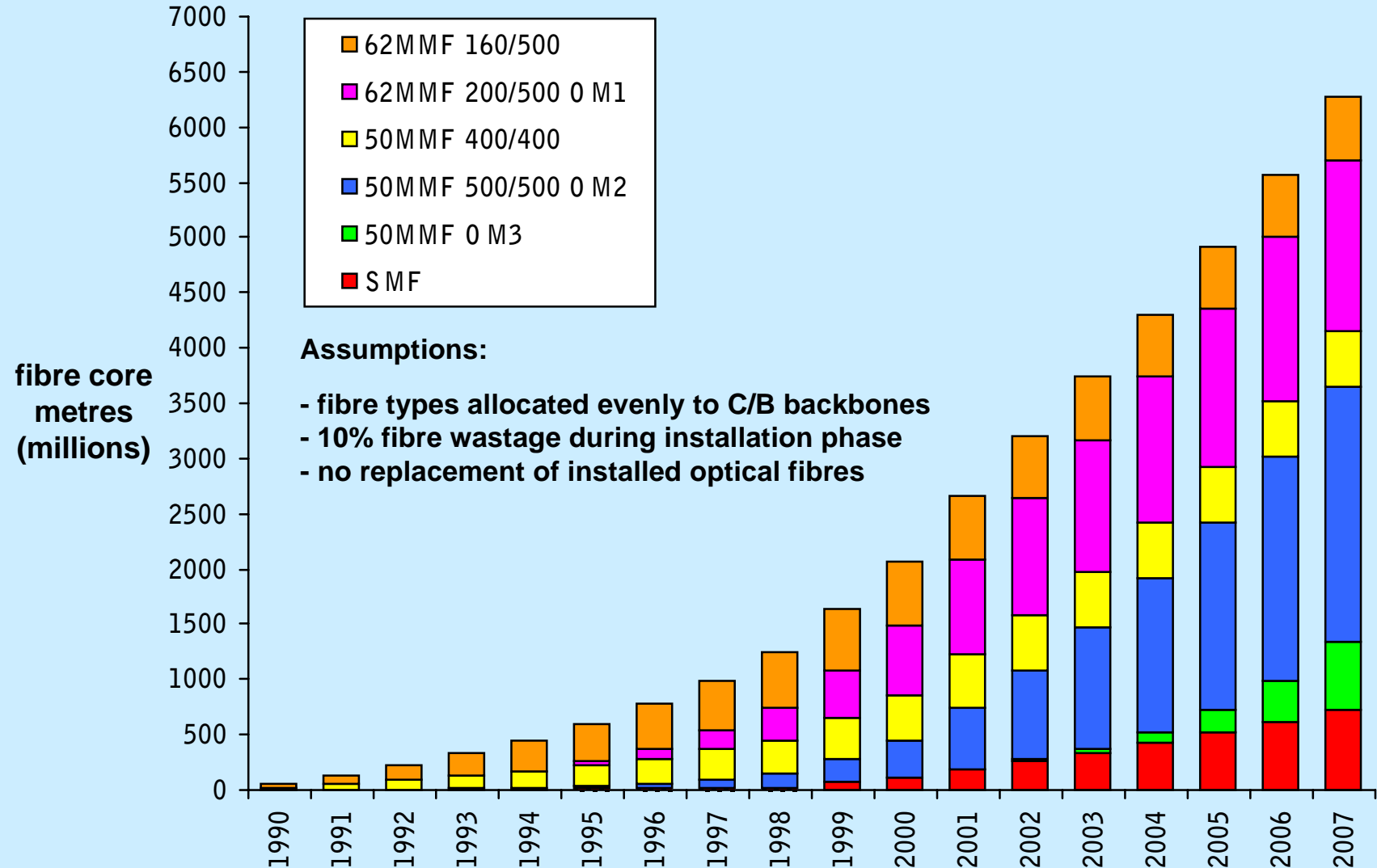
# Installed Base: European Campus Backbones



**Assumptions:**

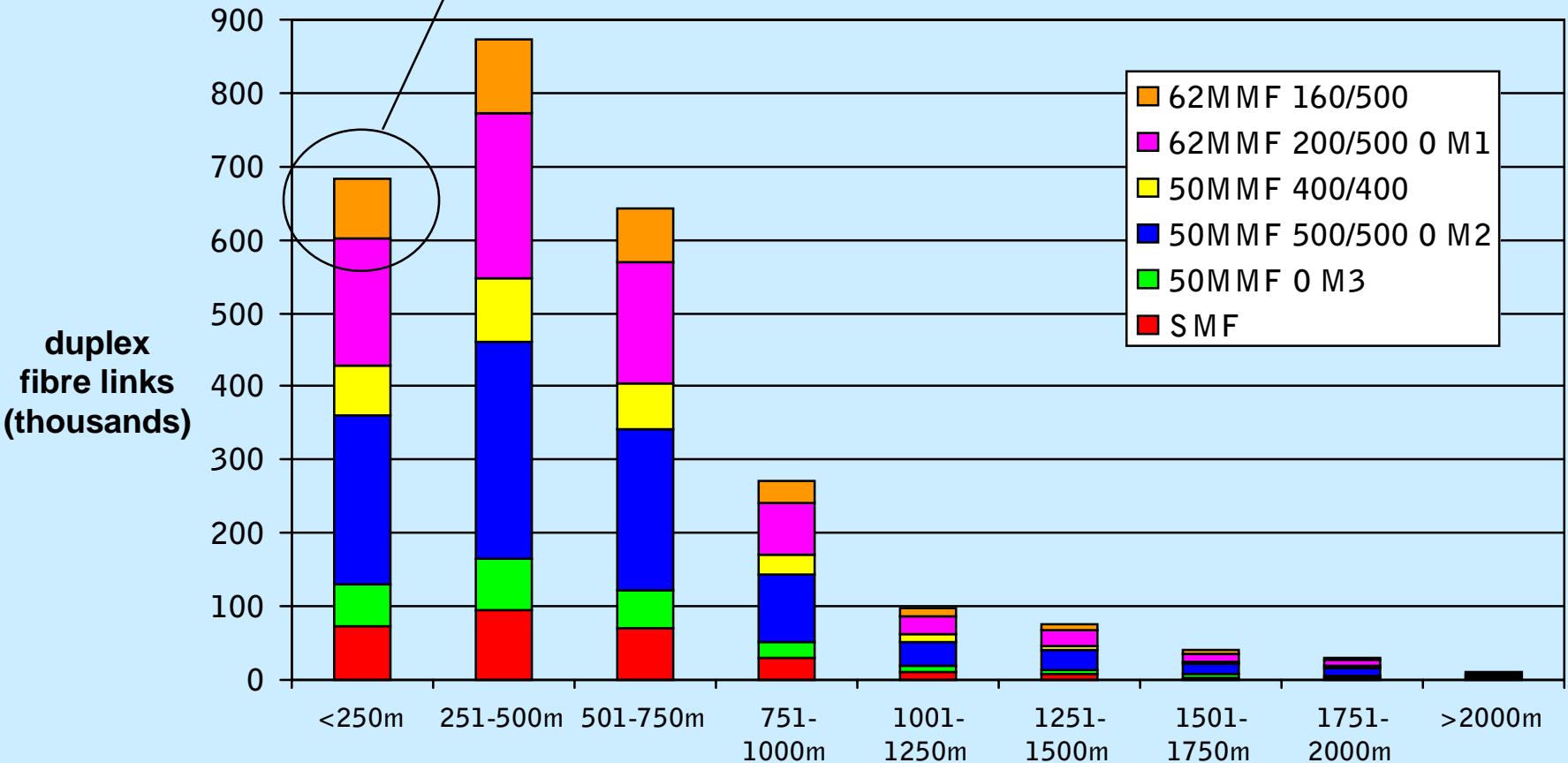
- fibre types allocated evenly to C/B backbones
- 10% fibre wastage during installation phase
- no replacement of installed optical fibres

# Installed Base: European Building Backbones



# Installed Base: European Campus Backbones (at end 2007)

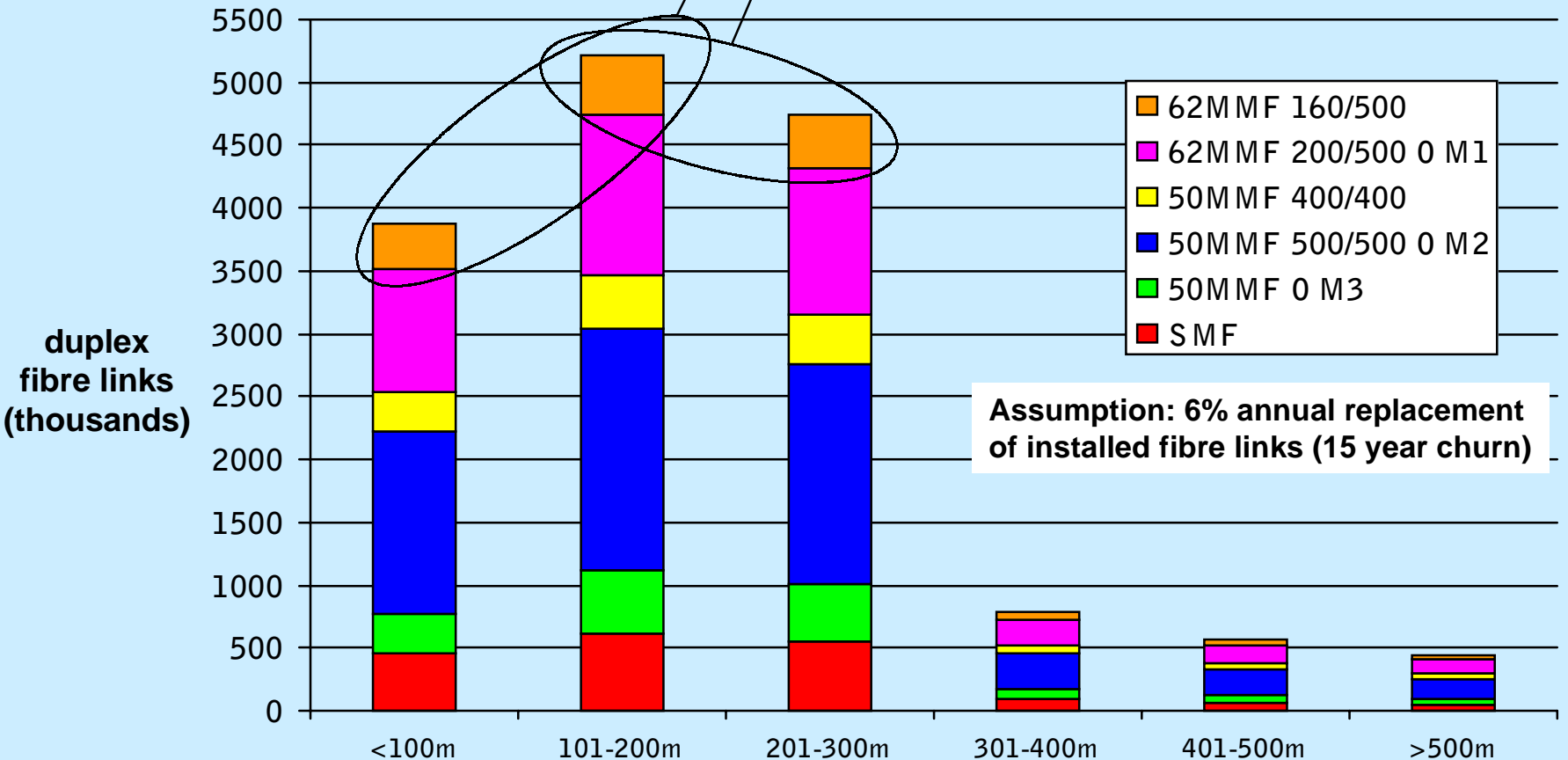
$\leq 250\text{m} = 79,000$  duplex links (3% total campus links)



# Installed Base: European Building Backbones (at end 2007)

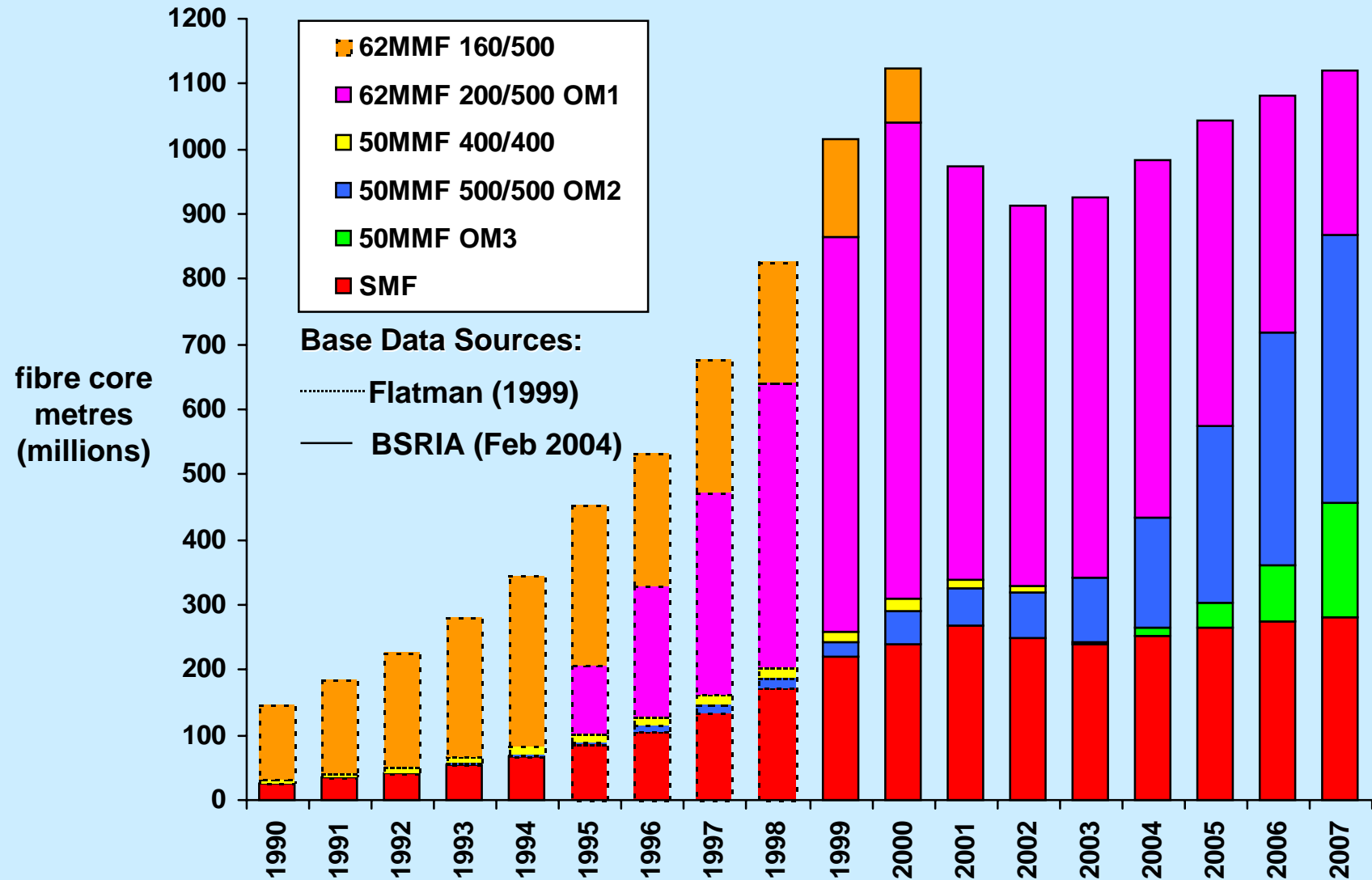
$\leq 200\text{m} = 830,000$  duplex links (5% total bldg links)

$\leq 300\text{m} = 1,259,000$  duplex links (8% total bldg links)



**United States**

# Annual Shipments: US Market

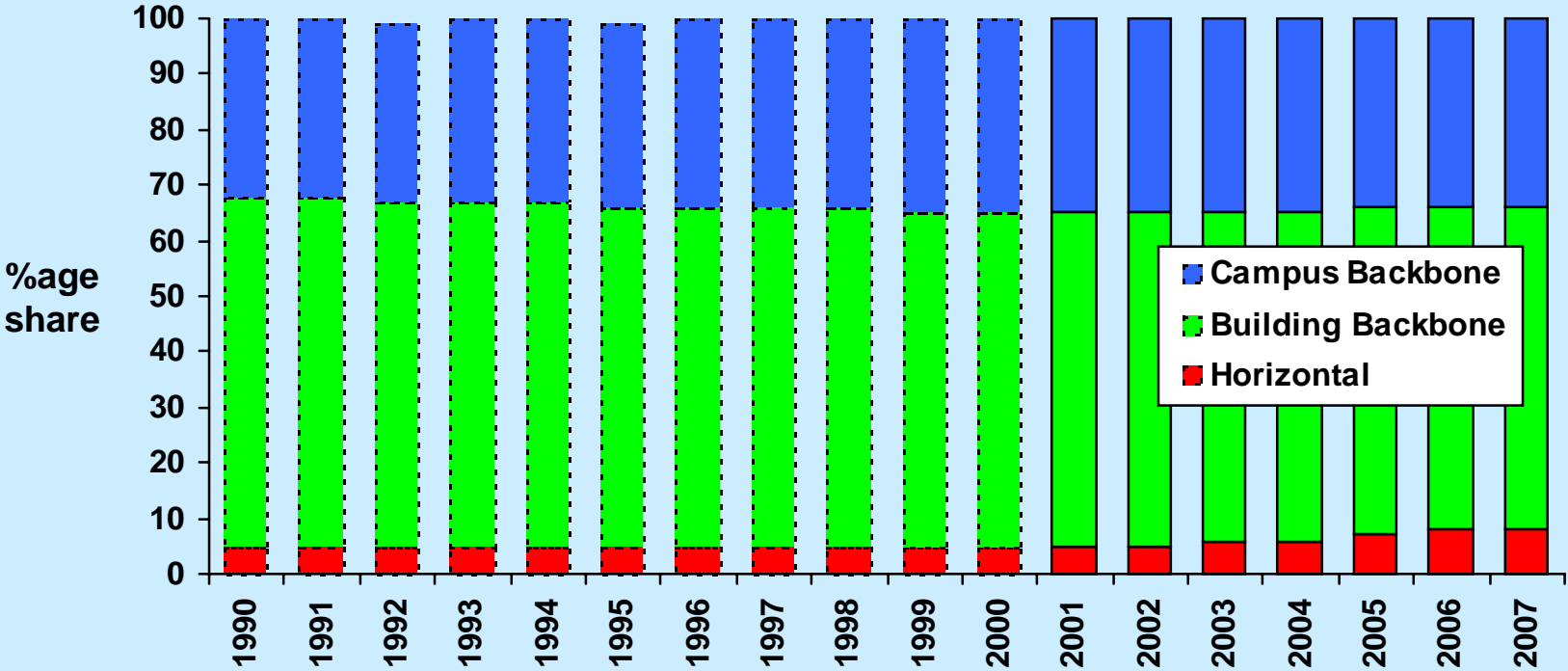


# Where Does the Fibre Go in the US?

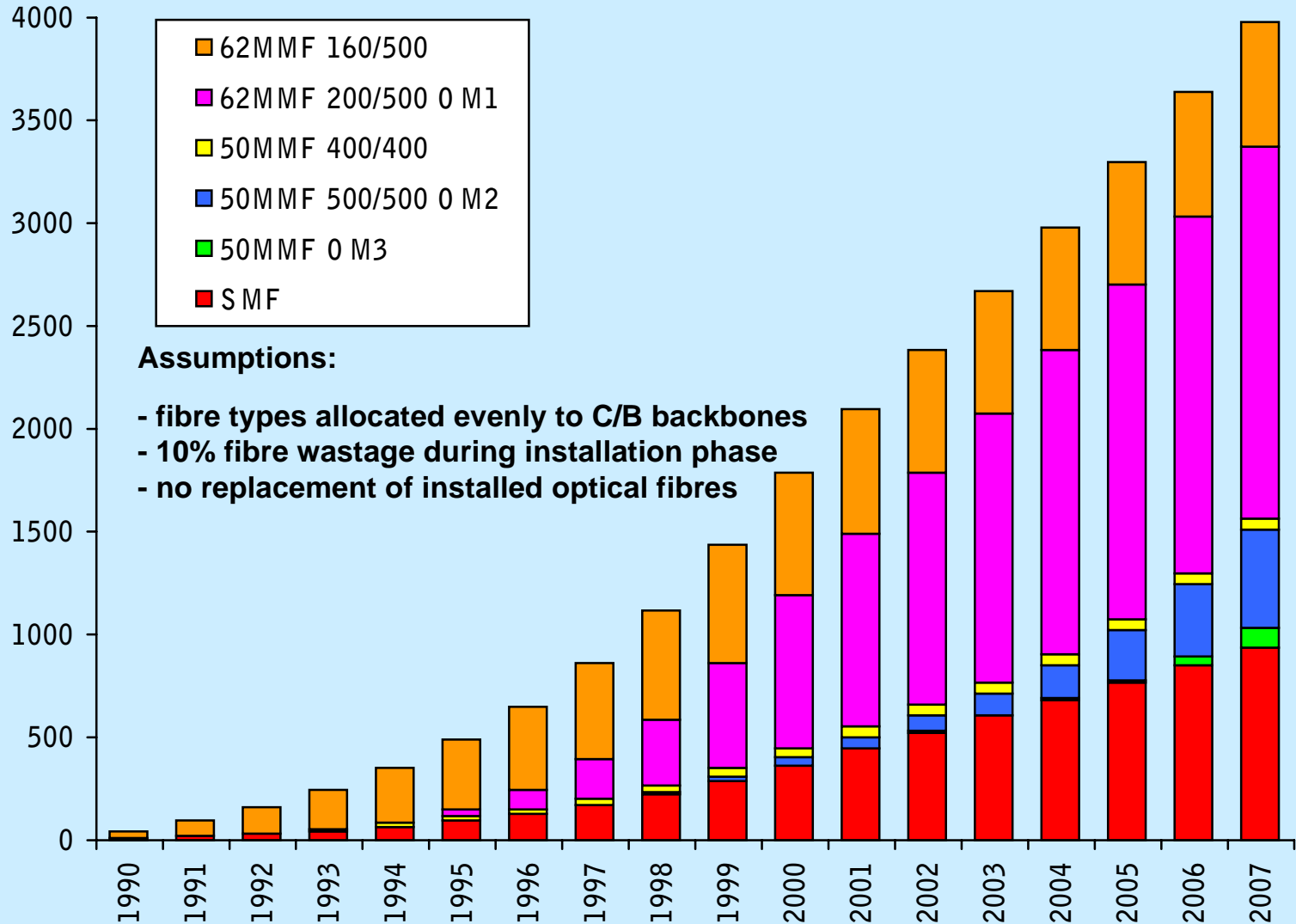
Sources:

— BSRIA (Jun 2002)

⋯ Flatman (1999)

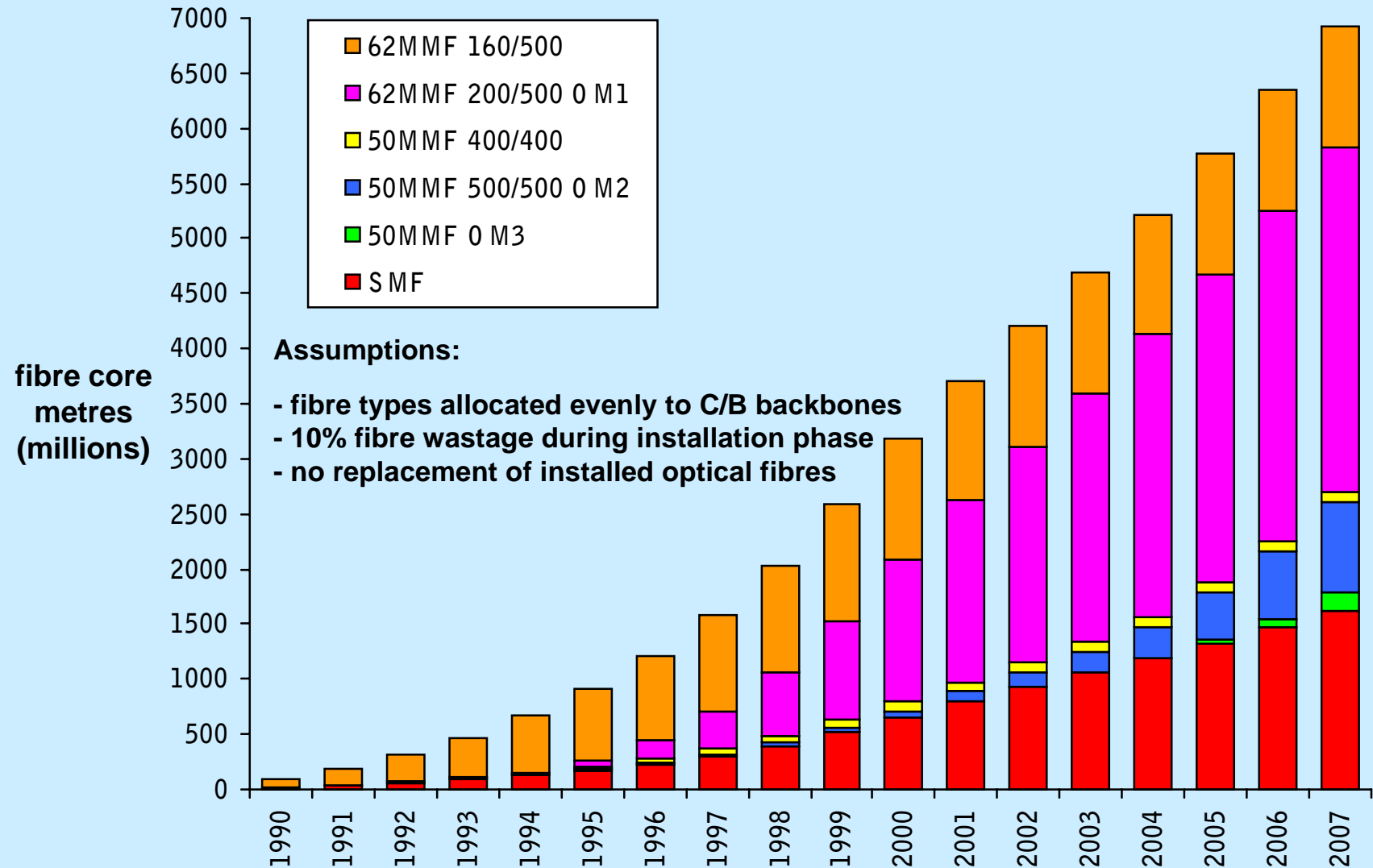


# Installed Base: US Campus Backbones



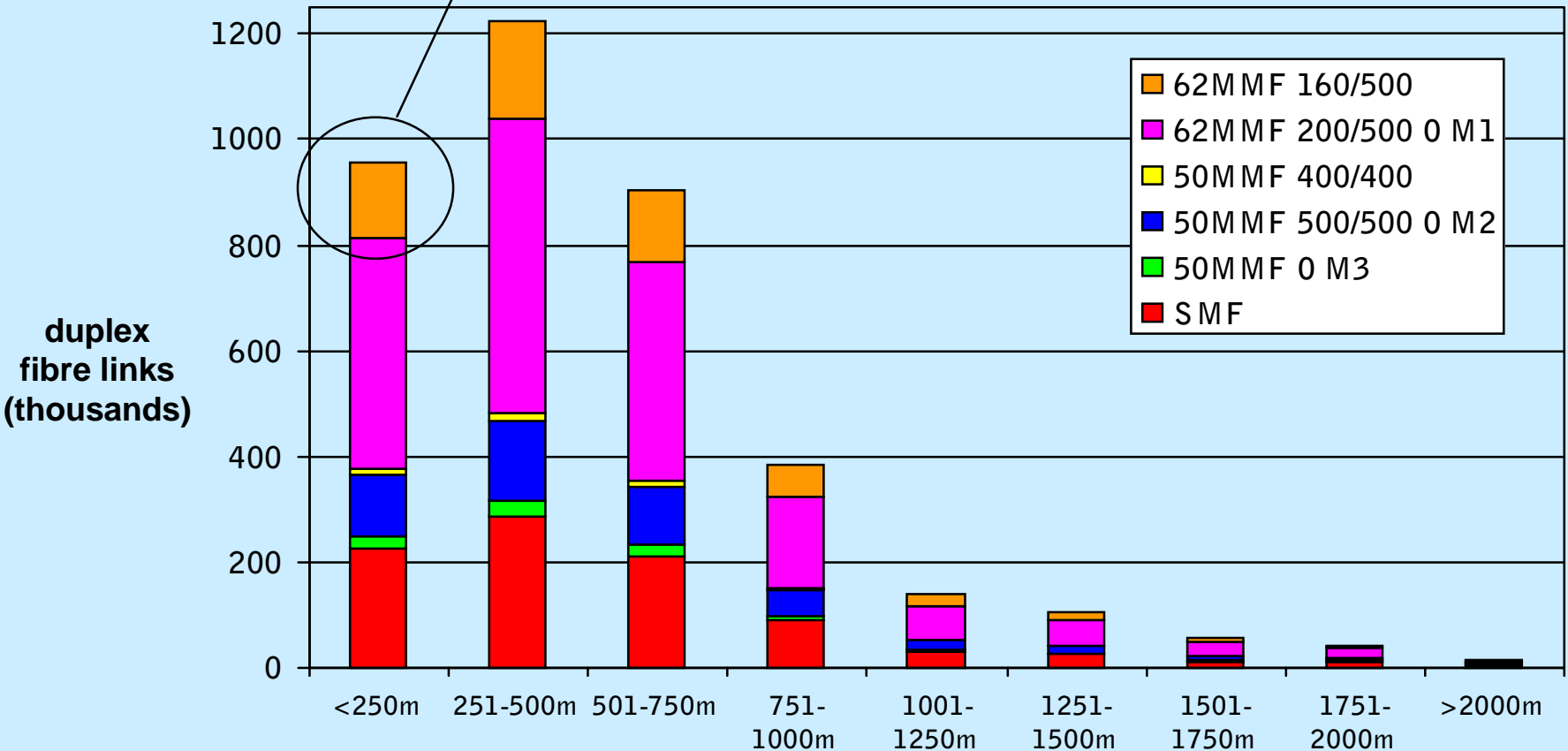


# Installed Base: US Building Backbones

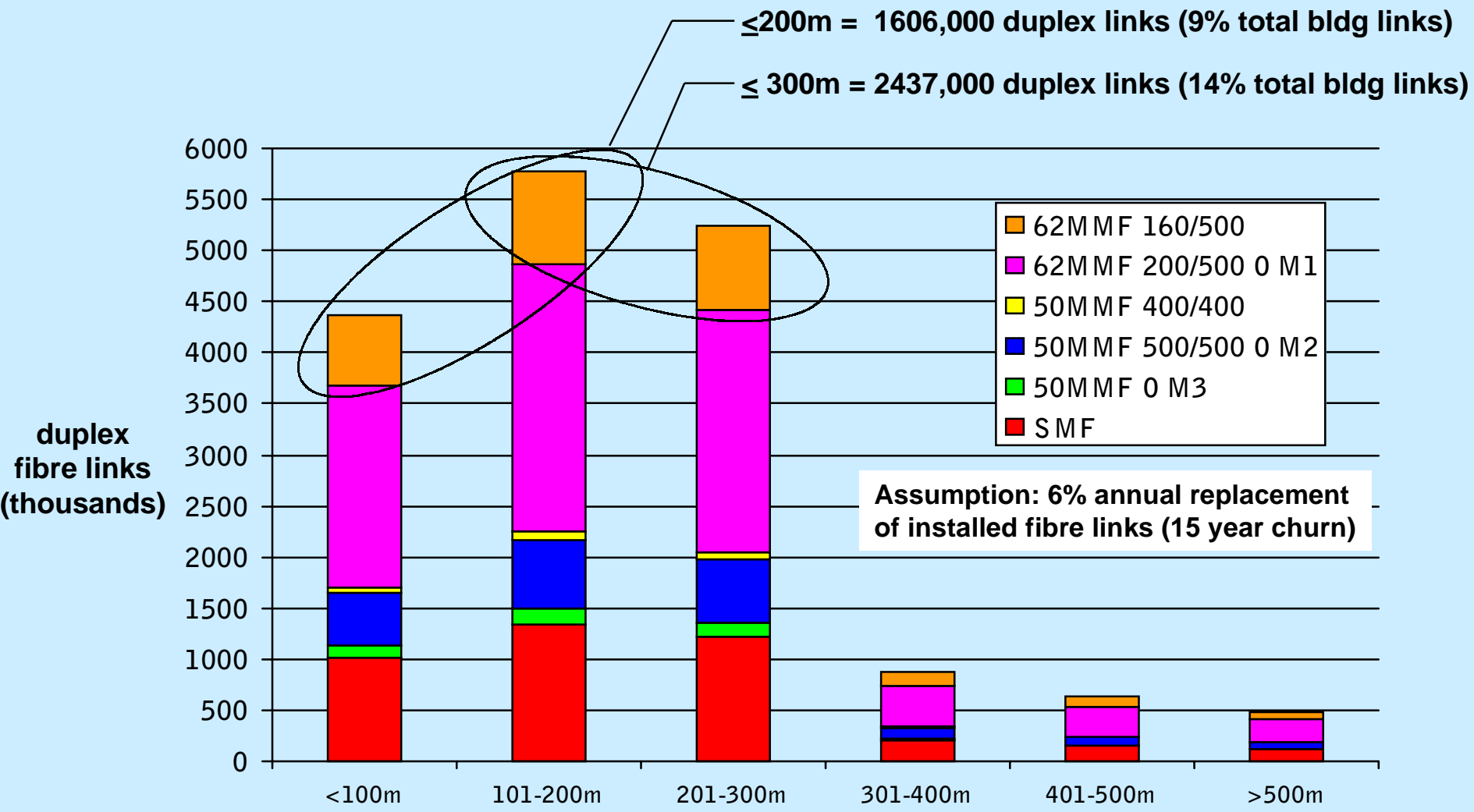


# Installed Base: US Campus Backbones (at end 2007)

$\leq 250\text{m} = 144,000$  duplex links (4% total campus links)

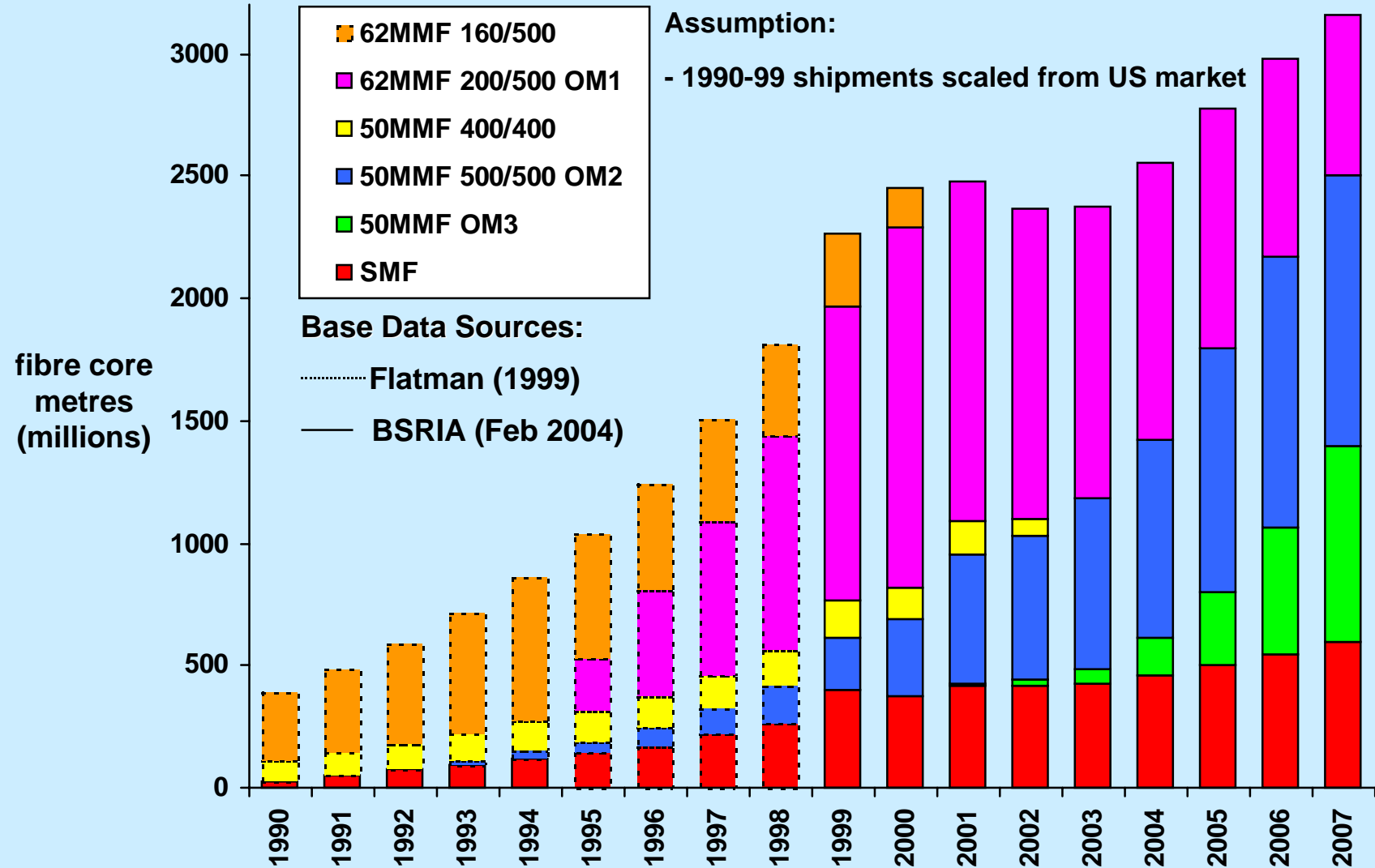


# Installed Base: US Building Backbones (at end 2007)

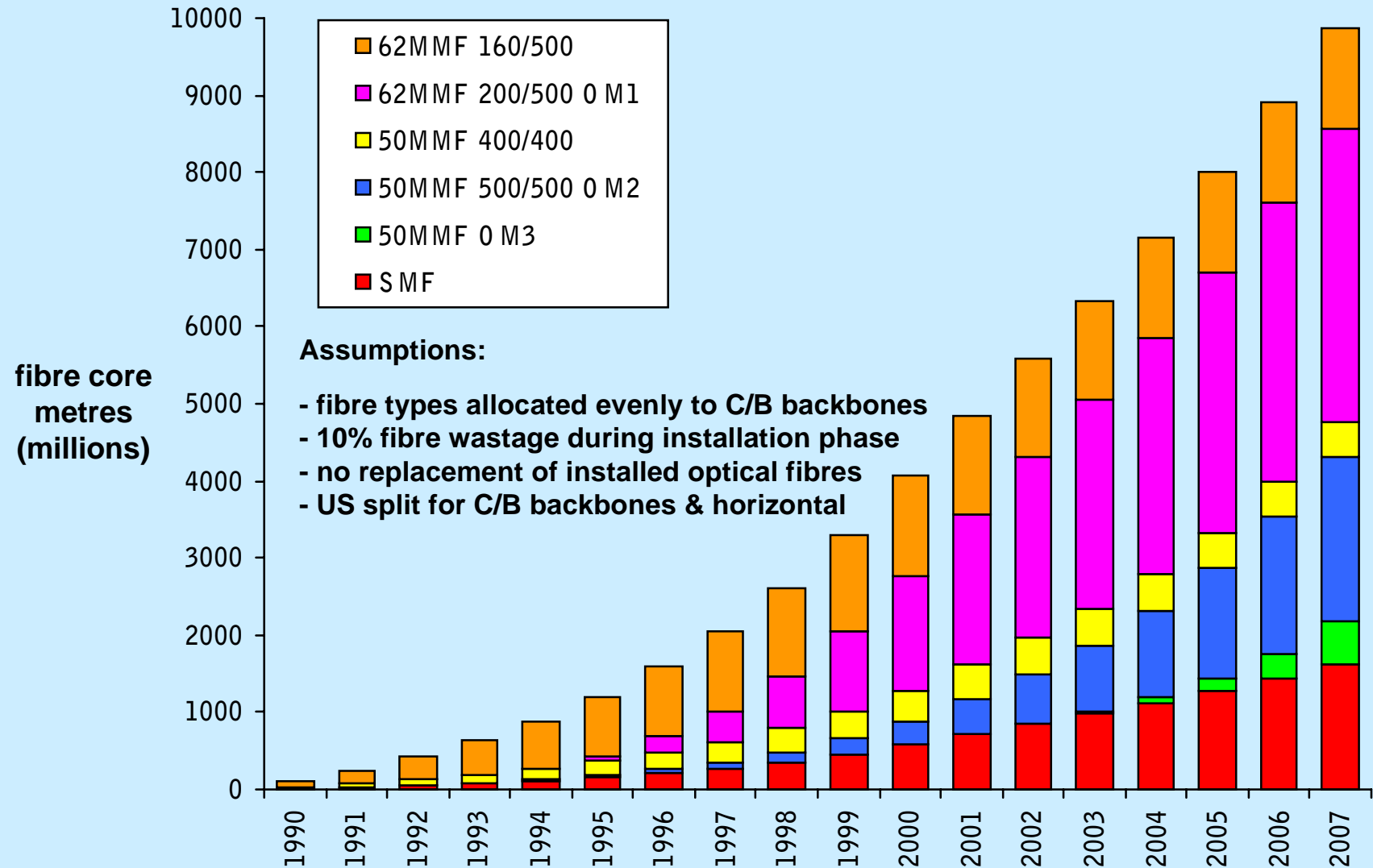


**Worldwide**

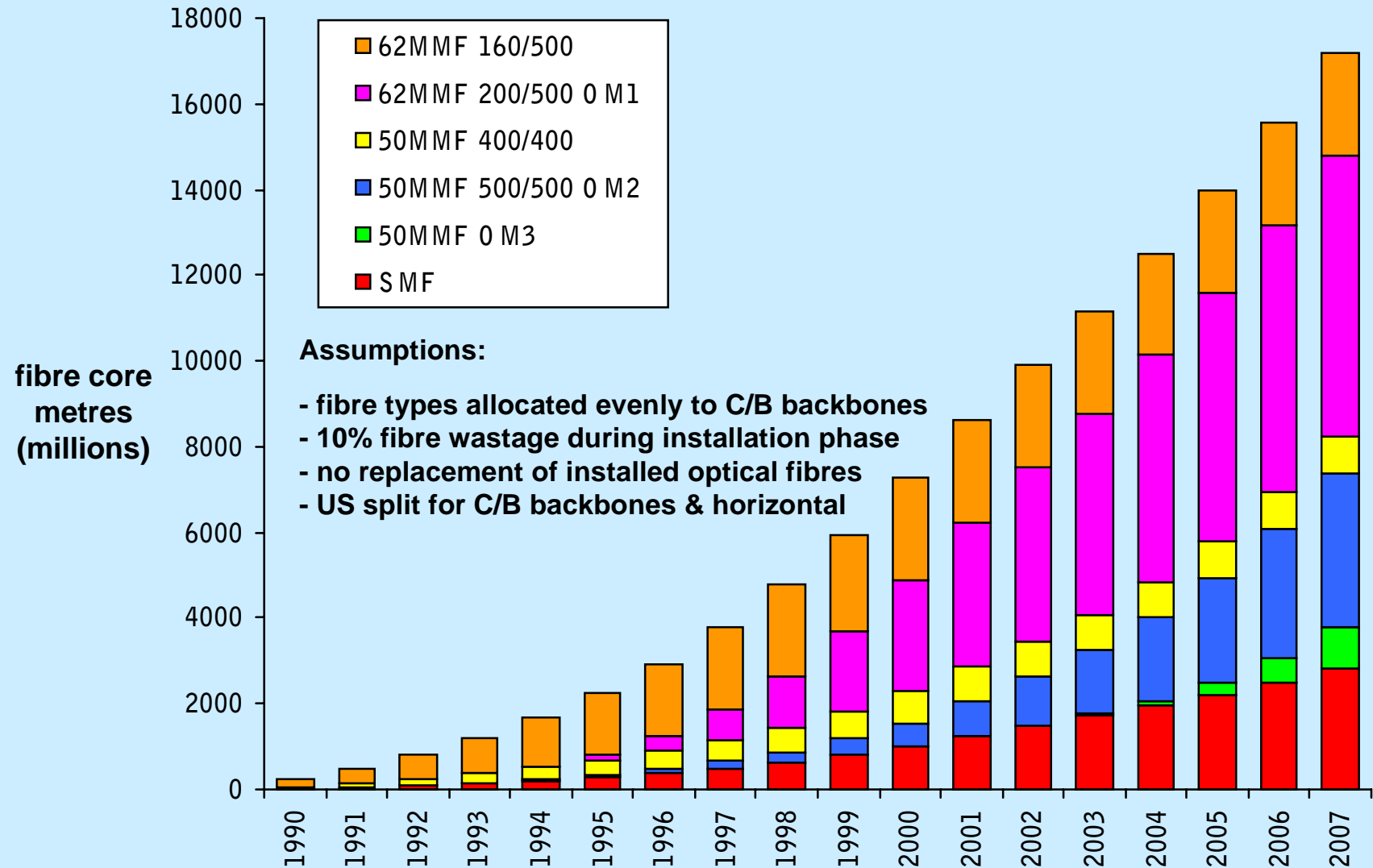
# Annual Shipments: Worldwide Market



# Installed Base: Worldwide Campus Backbones

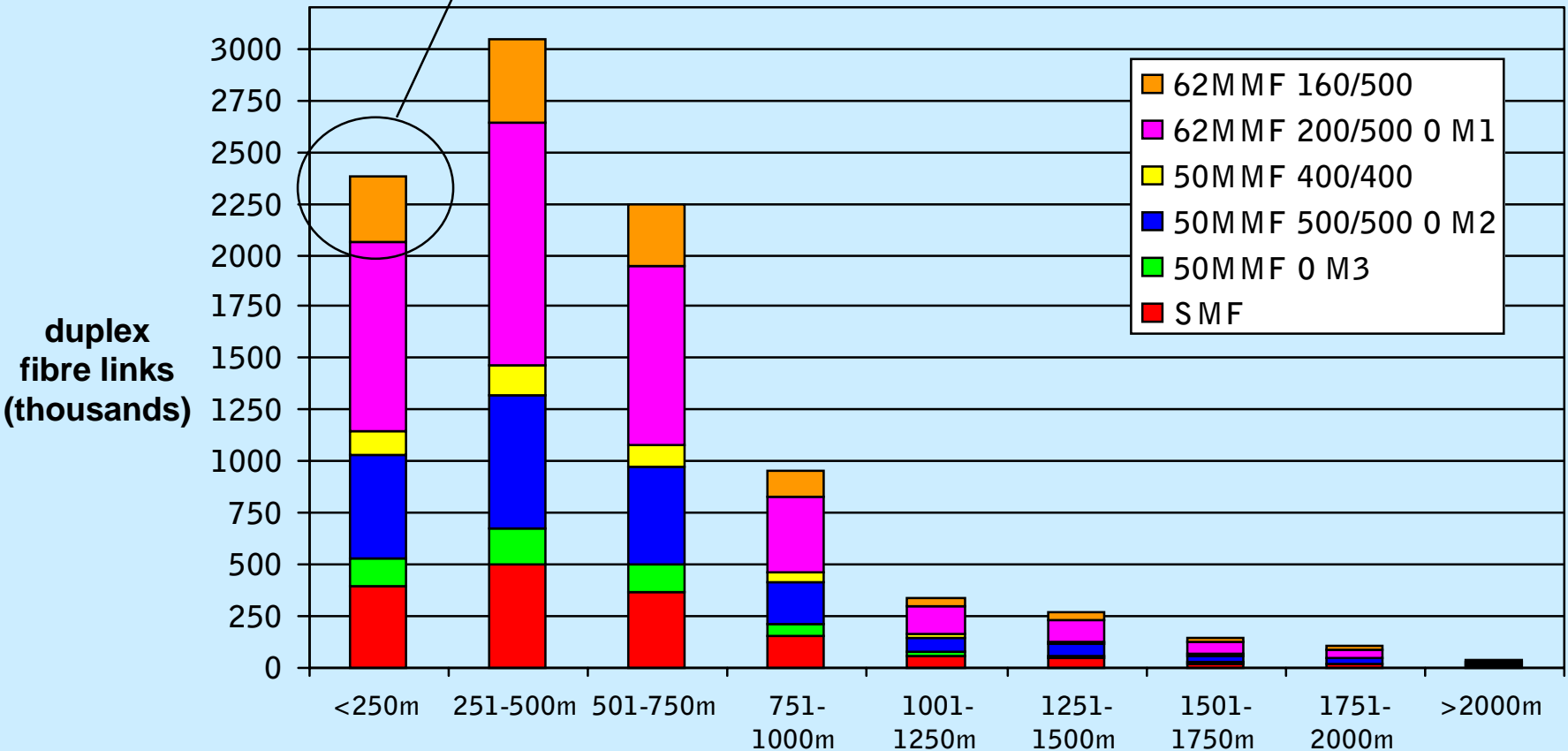


# Installed Base: Worldwide Building Backbones



# Installed Base: Worldwide Campus Backbones (at end 2007)

$\leq 250\text{m} = 312,000$  duplex links (3% total campus links)

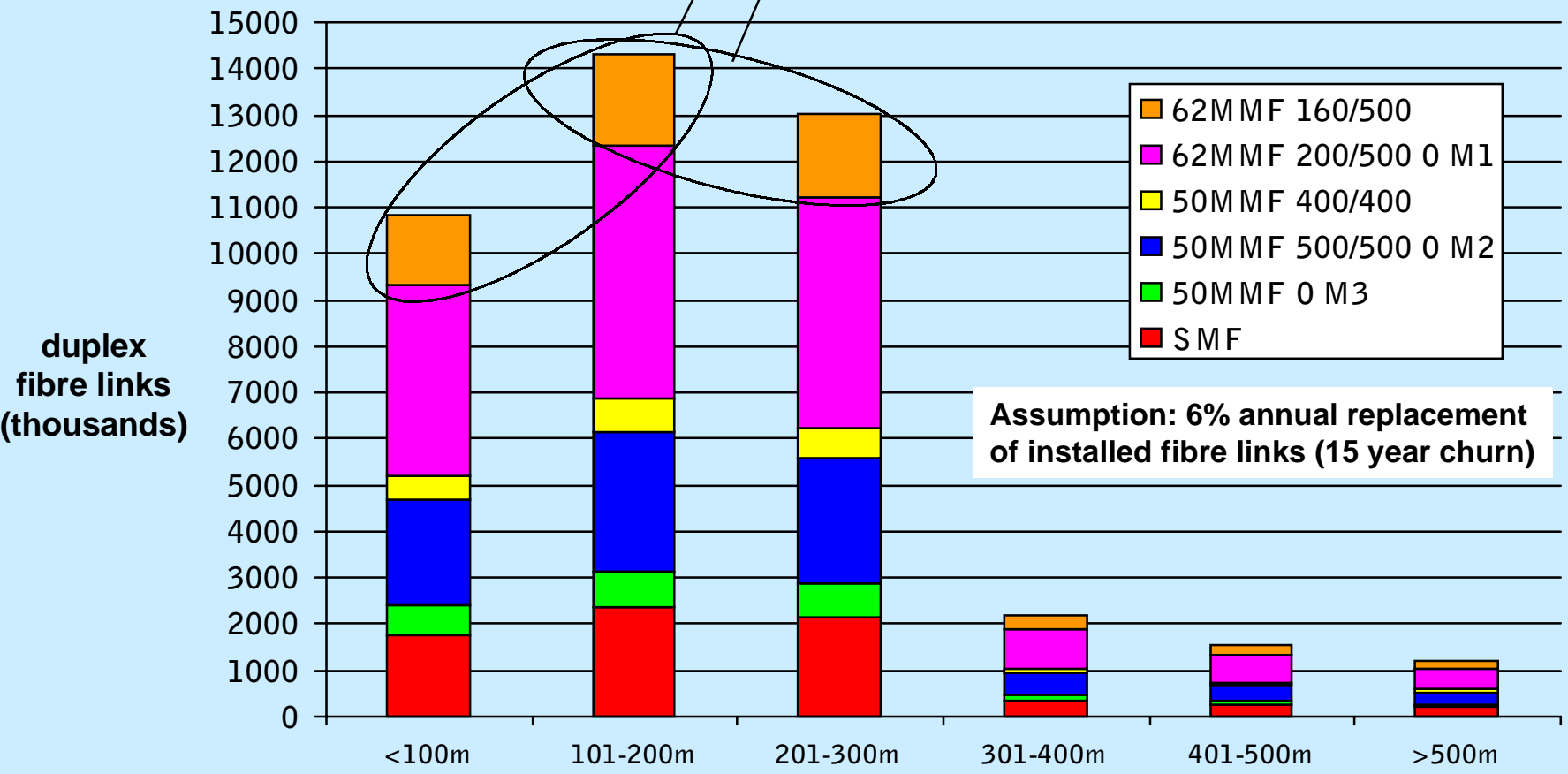




# Installed Base: Worldwide Building Backbones (at end 2007)

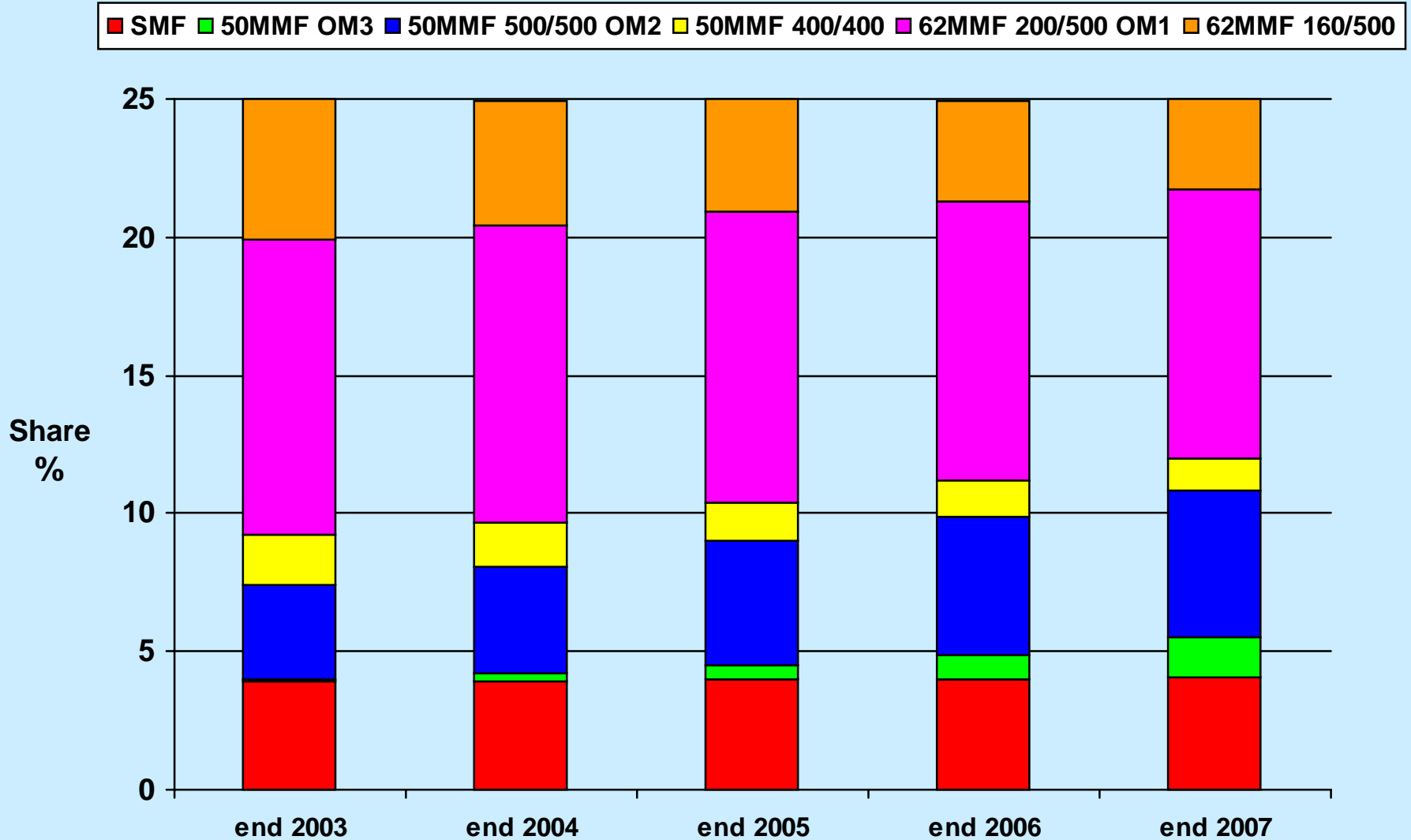
$\leq 200m = 3489,000$  duplex links (8% total bldg links)

$\leq 300m = 5293,000$  duplex links (12% total bldg links)

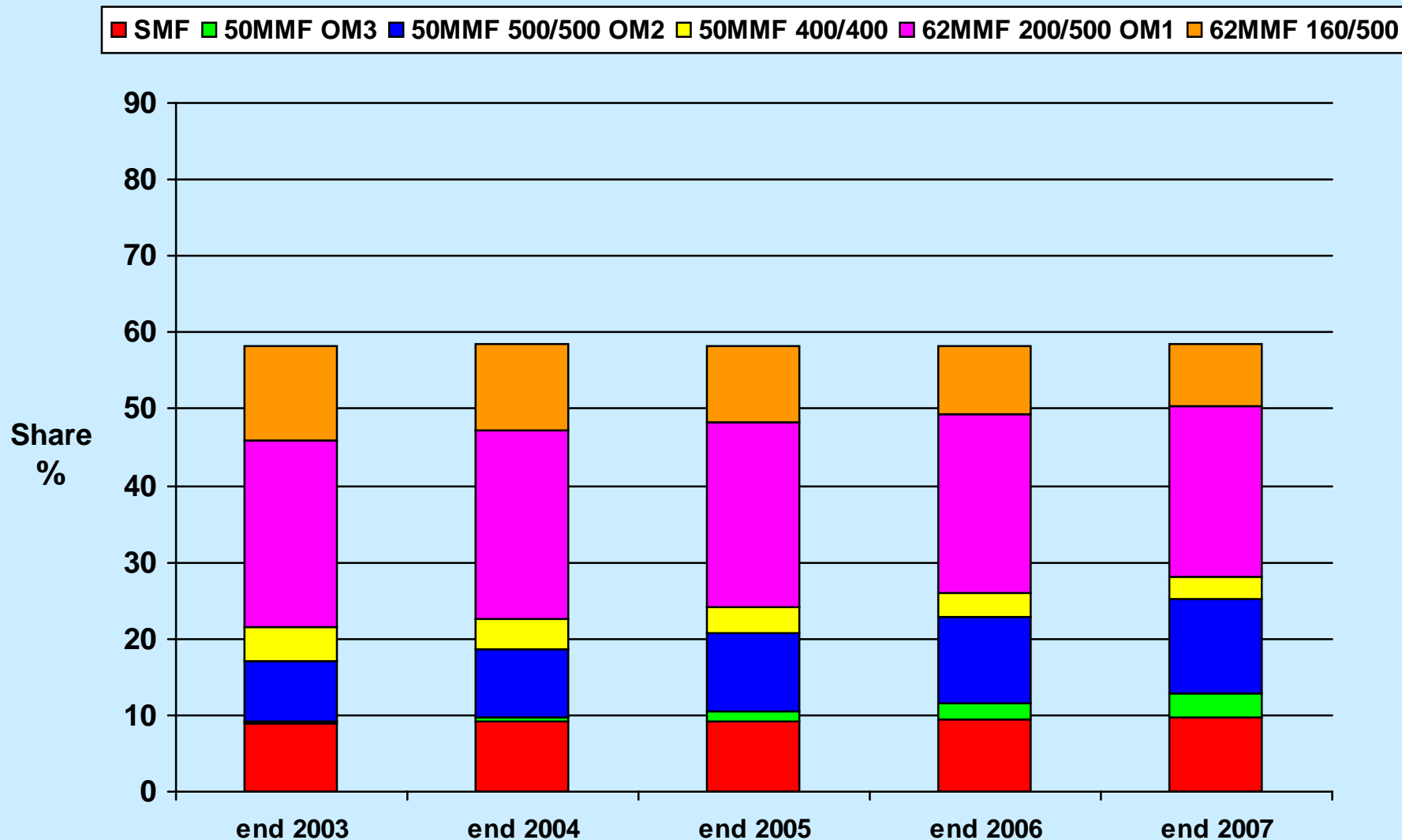


# Summary

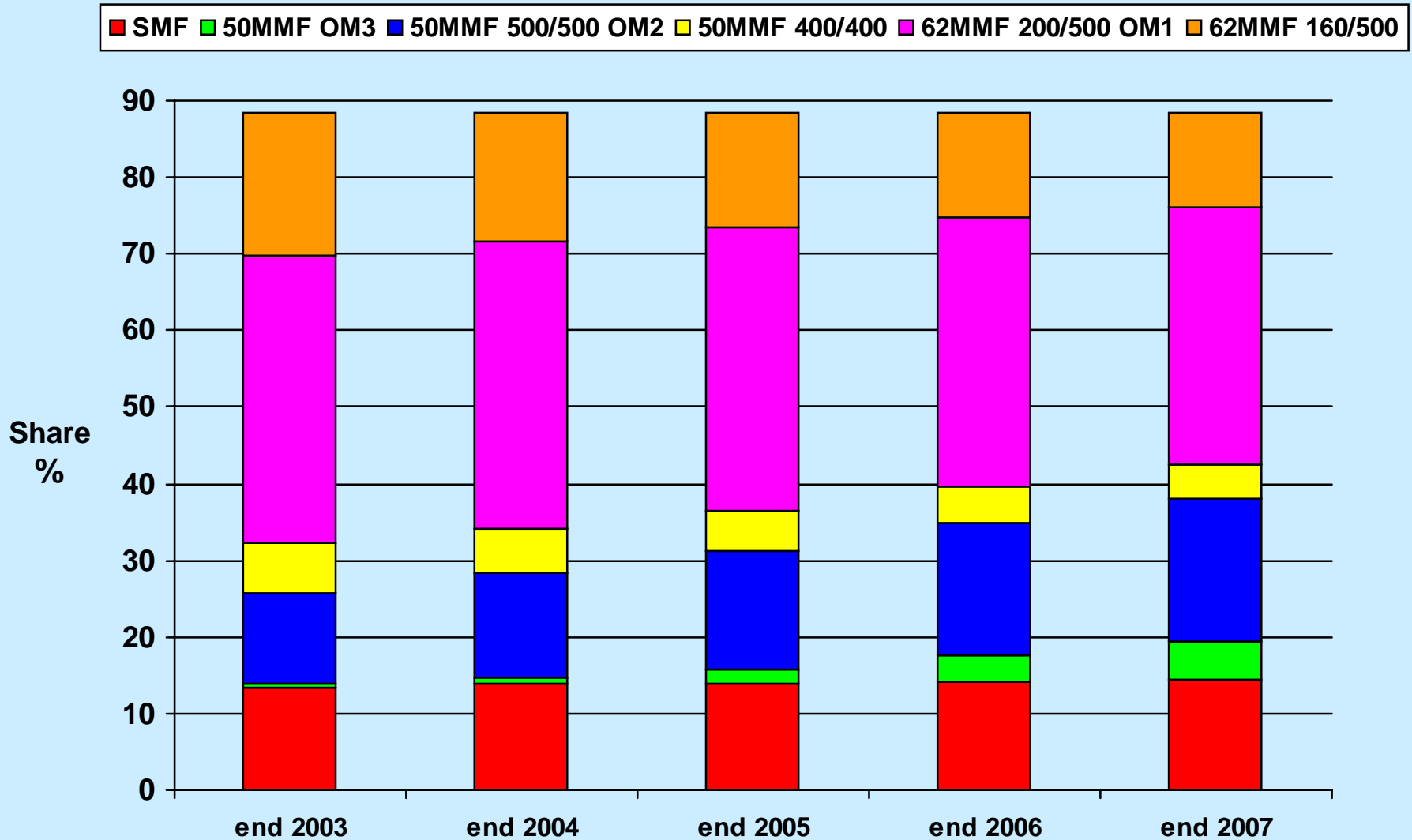
# Share of Campus Backbone Links up to 250m in Worldwide Installed Base



# Share of Building Backbone Links up to 200m in Worldwide Installed Base



# Share of Building Backbone Links up to 300m in Worldwide Installed Base



# Share of FDDI -grade Fibre Backbone Links up to 300m in 2007 Worldwide Installed Base

Total campus backbone duplex links = 9,514,000  
Total building backbone duplex links = 45,139,000  
Total = 54,653,000

Total campus backbone duplex links  $\leq$  250m = 312,000  
Total building backbone duplex links  $\leq$  200m = 3,489,000  
Total = 3,801,000 = 6.95%

Total campus backbone duplex links  $\leq$  250m = 312,000  
Total building backbone duplex links  $\leq$  300m = 5,293,000  
Total = 5,605,000 = 10.25%

# Contribution of Post-1999 MMF to Worldwide Installed Base of Backbone Links

