The Customer Requirement for 10GBASE-LX4

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Need –LX4 to fulfill current Task Force objectives

802.3ae Detailed Objectives (1/2)

- **Preserve the 802.3/Ethernet frame format at the MAC Client service interface.**

- **Meet 802 Functional Requirements, with the possible exception of Hamming Distance.**

- **Preserve minimum and maximum FrameSize of current 802.3 Std.**

- **Support full-duplex operation only.**

- **Support star-wired local area networks using point-to-point links and structured cabling topologies.**

- **Specify an optional Media Independent Interface.**

- **Support proposed standard P802.3ad (Link Aggregation)**

- **Support a speed of 10.000 Gb/s at the MAC/PLS service interface**

802.3ae Detailed Objectives (2/2)

- **Define two families of PHYs**

  A LAN PHY, operating at a data rate of 10.000 Gb/s

  A WAN PHY, operating at a data rate compatible with the payload rate of OC-192c/SDH VC-4-64c

- **Define a mechanism to adapt the MAC/PLS data rate to the data rate of the WAN PHY**

- **Provide Physical Layer specifications which support link distances of:**

  At least 65 m over MMF

  At least 300 m over installed MMF

  At least 2, 10, and 40 km over SMF

- **Support fiber media selected from the second edition of ISO/IEC 11801 (802.3 to work with SC25/WG3 to develop appropriate specifications for any new fiber media).**

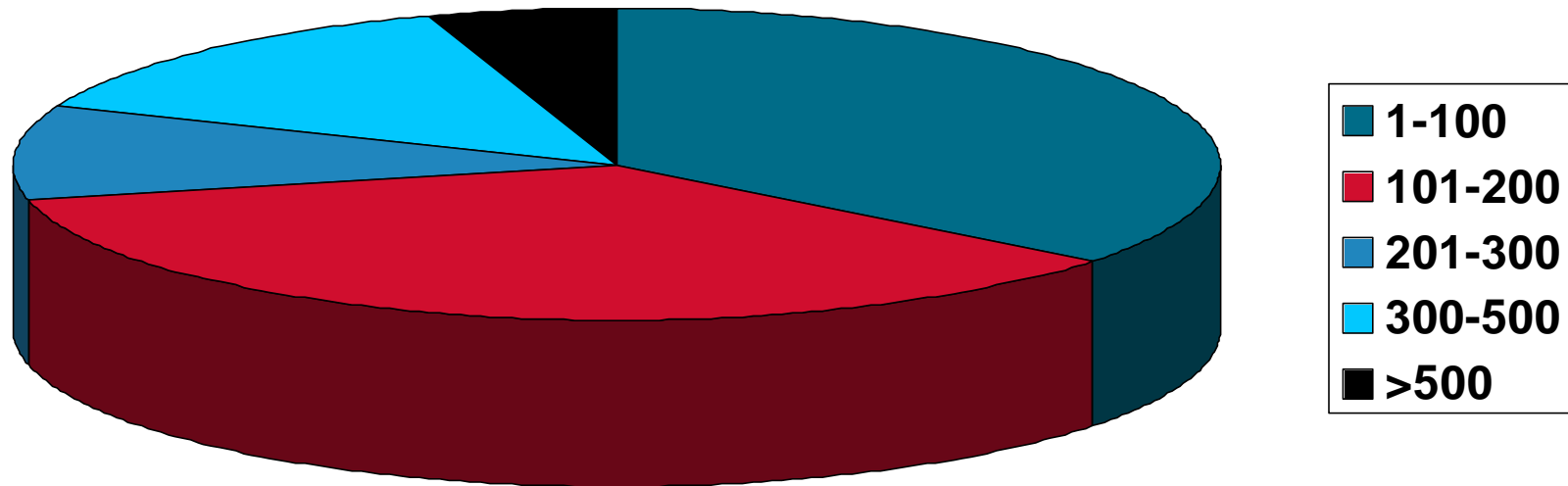# Need –LX4 to support installed MM fiber infrastructure of enterprise customers

62.5 Micron Fiber by Link Length
(meters)

Legend:
- <100
- 100-199
- 200-299
- 300-399
- 400-499
- >500
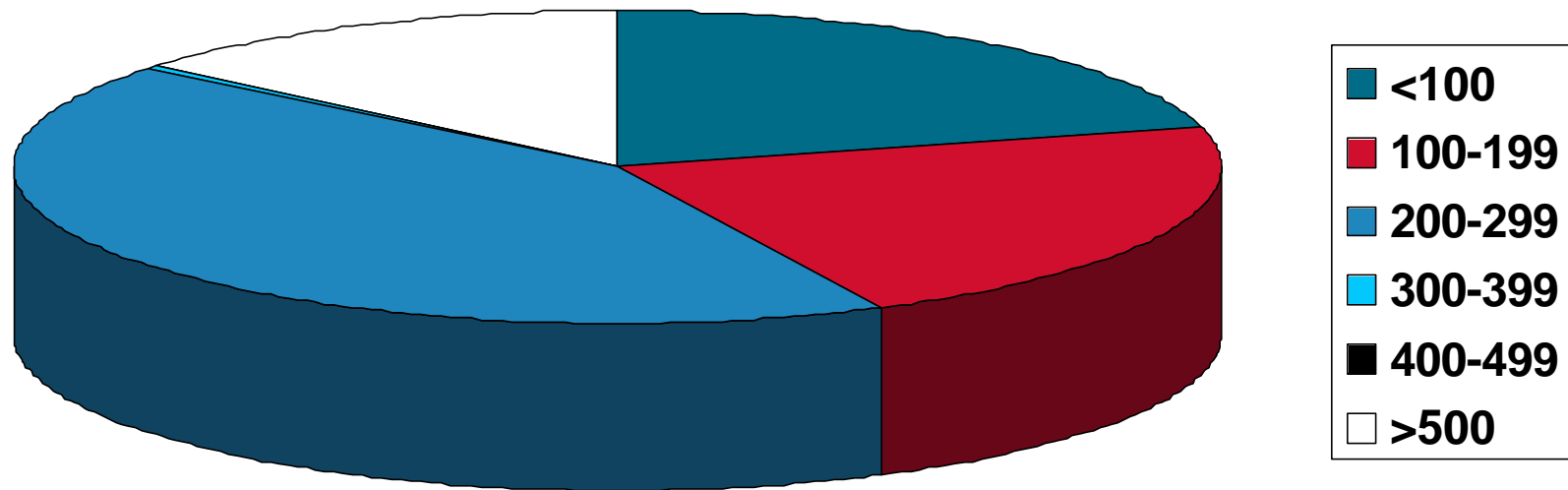
Ahmad Nouri, Fiber Cable Survey, IEEE 802.3, 1997

Intrabuilding Backbone Max. Distance (meters)

Legend:
- 1-100
- 101-200
- 201-300
- 300-500
- >500
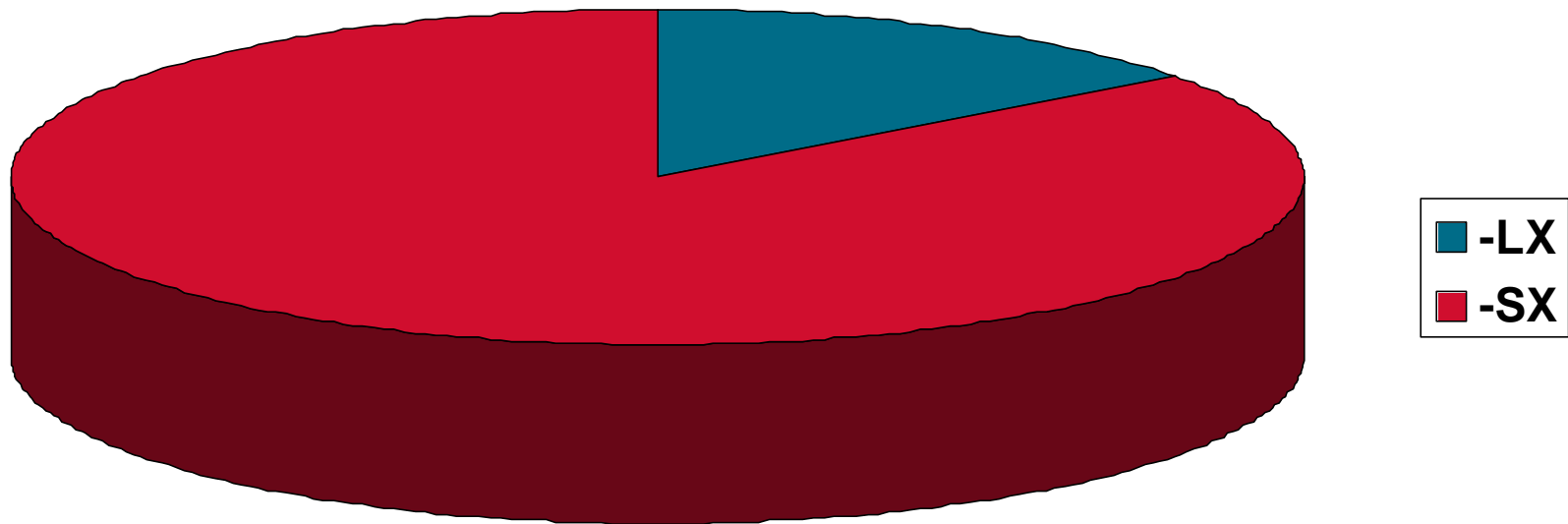
Chris Diminico, Fiber Optic Cabling Survey. IEEE 802.3, 1997

Most of the 1000BASE-X ports shipping today is -SX for installed MM fiber

1000BASE-X Ports Q3 CY2001

Legend:
- **-LX**
- **-SX**

Dell'Oro Group and Cisco Estimates

Conclusions

We need −LX4 to support our objectives and the installed base of MM fiber

We need −LX4 to deliver 10GbE solutions to the existing enterprise customers of 1 GbE