The Metro Ethernet Forum

Helping Define the Next Generation of Service and Transport Standards

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METRO Ethernet Forum

Agenda

- **The Case for Metro Ethernet**

- **The Benefits of Standards**
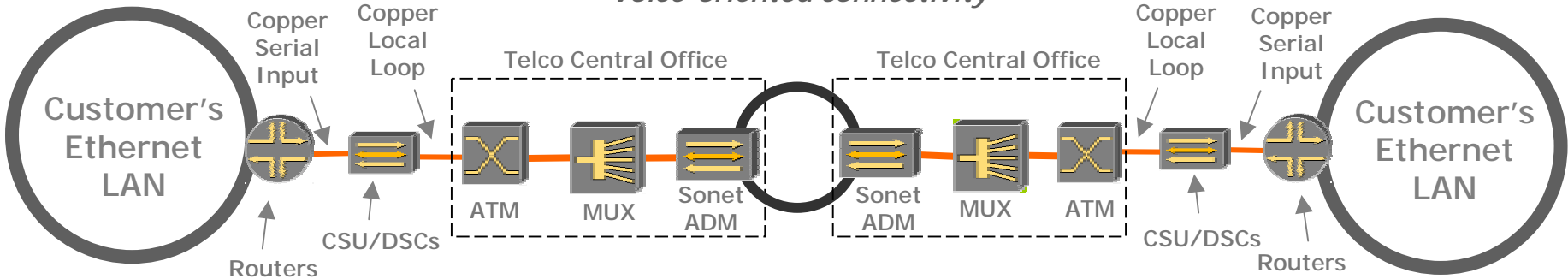
- **MEF Overview**

The Case for Metro Ethernet

Ethernet in the Metro

- **The number of sites demanding high speed access** *and flexible data services is growing fast*

- **Ethernet is a mature**, *predictable and well-standardized data networking technology*

- **Metro Ethernet significantly lowers Total Cost of Ownership**, *which benefits carriers and their customers*
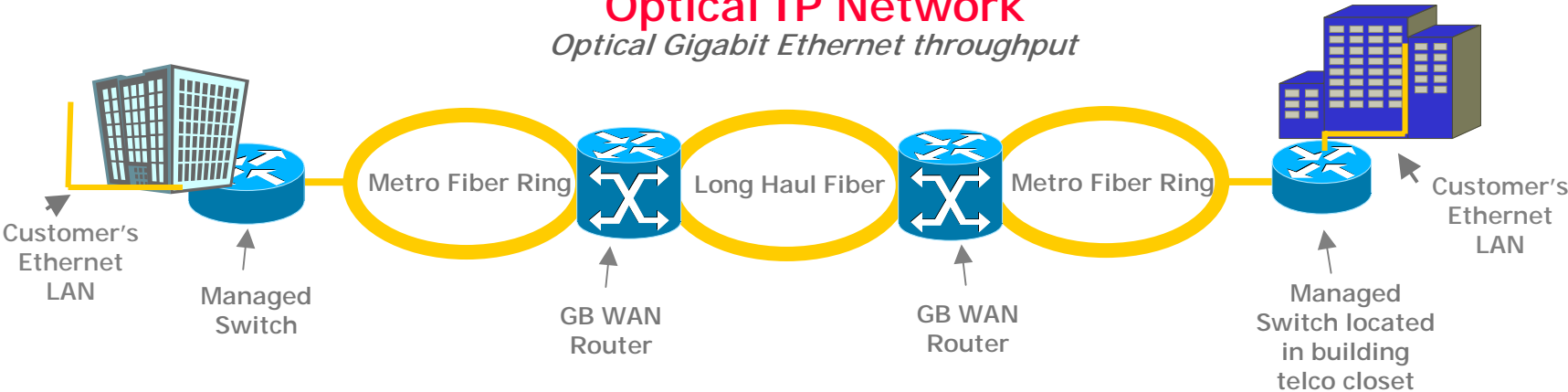
Optical Ethernet
Simplifying the Network

Traditional Telco Network
Voice-oriented connectivity

Customer's Ethernet LAN

Copper Serial Input

Copper Local Loop

Telco Central Office

Telco Central Office

Copper Local Loop

Copper Serial Input

Customer's Ethernet LAN

Routers

CSU/DSCs

ATM   MUX   Sonet ADM

Sonet ADM   MUX   ATM

CSU/DSCs

Routers

Optical IP Network
Optical Gigabit Ethernet throughput

Customer's Ethernet LAN

Managed Switch

Metro Fiber Ring

GB WAN Router

Long Haul Fiber

GB WAN Router

Metro Fiber Ring

Customer's Ethernet LAN

Managed Switch located in building telco closet

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The Case for Ethernet Services
Advantages for End-Users

- **Flexible services and scalability**
  - *Eliminate over-provisioning*
  - *Networks readily satisfy growing bandwidth demand*
  - *1 Mbps – 1 Gbps*
- **Lower start-up costs**
  - *CPE costs reduced by mass scale of Ethernet market*
- **Lower engineering and operational support**
  - *Simple Ethernet technology*
- **Faster service delivery**
  - *Point & Click provisioning, no 3-month delays*

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The Case for Ethernet Transport
Advantages for Service Providers

- **People**
  - *Reduced engineering and support cost*
  - *Simplified fault isolation and diagnostics*
  - *Dynamic, point & click service provisioning*
- **Pipes**
  - *Efficient data transport*
  - *Economical scalability*
- **Ports**
  - *Cost-effective network build-outs*

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Market for Metro Ethernet

- **Metro Ethernet is a key growth area for RBOCs,** *with significant deployments in 2003 (Solomon Smith Barney, RBC, Yankee)*

- **$4 billion in annual metro Ethernet service** *revenue by 2006 in North America (RHK)*

- **Strong demand for metro Ethernet** *in APAC and Europe (RBC Capital Market)*
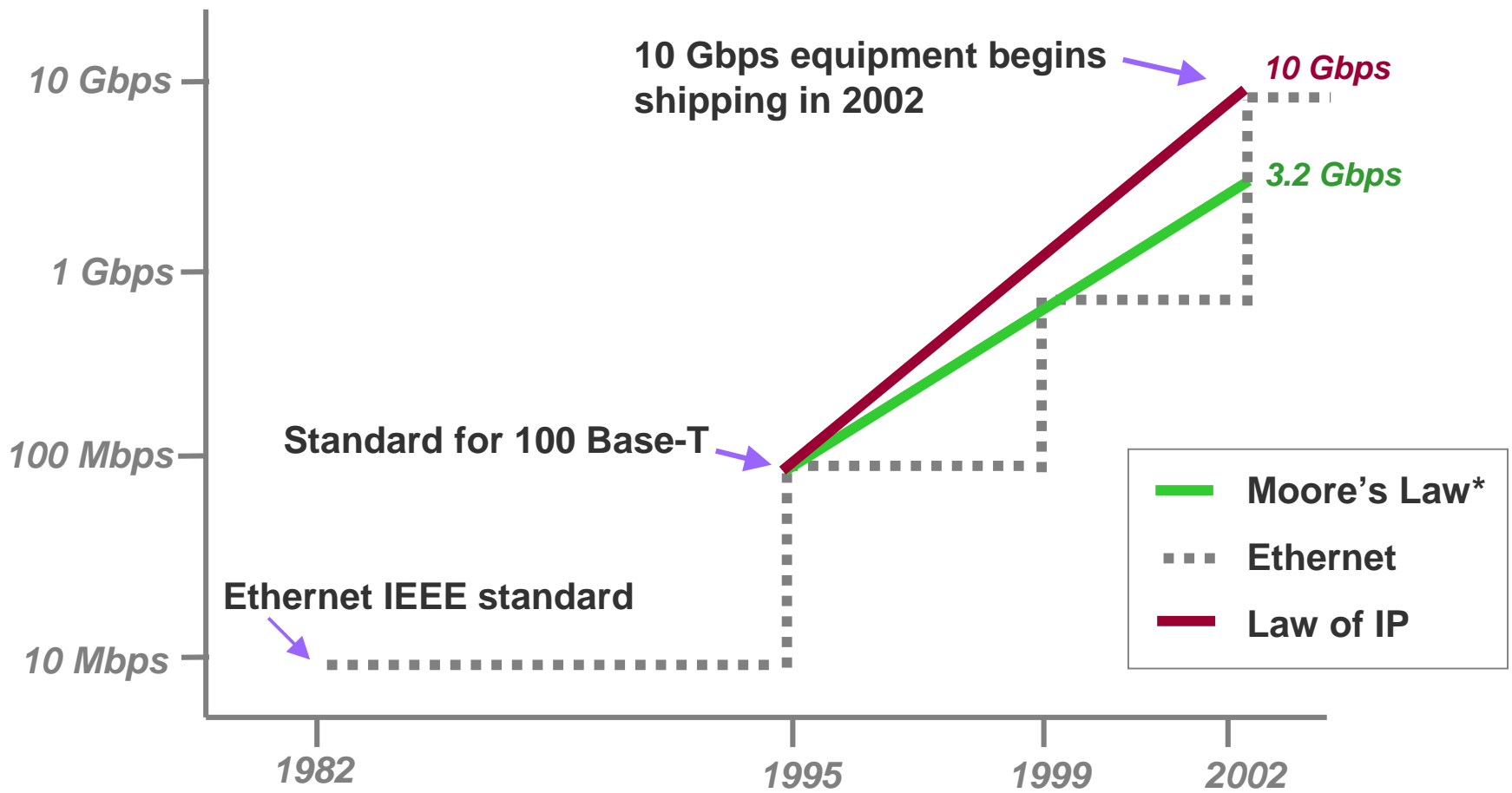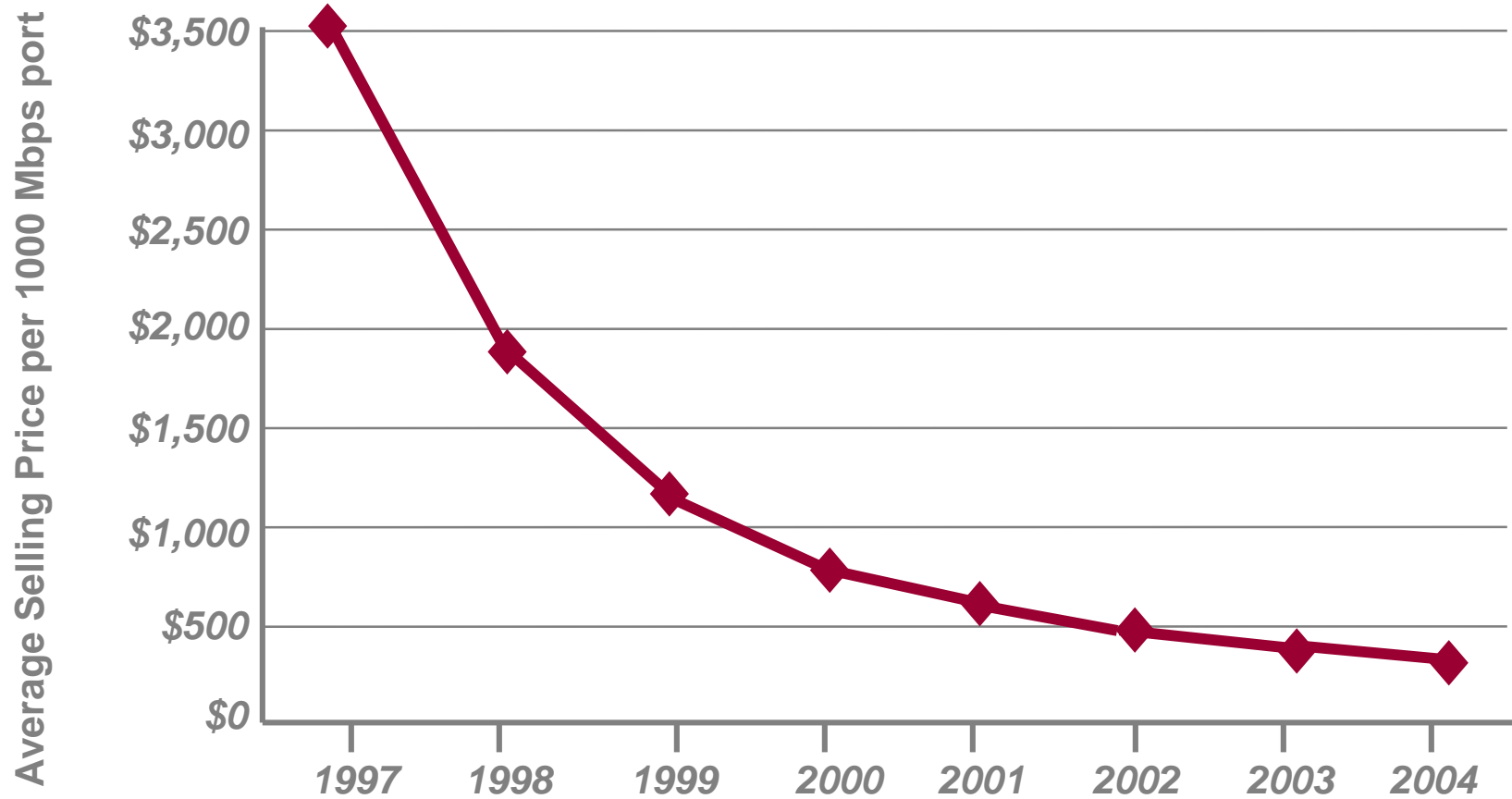
Metro Ethernet
Has Benefited Greatly from Standards

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Ethernet Speeds Outpace Moore's Law
3x Moore's Law since 1995

10 Gbps equipment begins shipping in 2002

10 Gbps

3.2 Gbps

Standard for 100 Base-T

Ethernet IEEE standard

▬▬	**Moore's Law***
▪▪▪	**Ethernet**
▬▬	**Law of IP**

10 Gbps — *1 Gbps* — *100 Mbps* — *10 Mbps* —

1982   1995   1999   2002

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10

Ethernet Port Costs are Plummeting

Source: Dell'Oro Group

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Overview

What is the MEF?

The Metro Ethernet Forum

is a non-profit organization dedicated to

accelerating the adoption of optical Ethernet

as the technology of choice in

metro networks worldwide.

Who is the MEF?

MEF members are:

– *Leading service providers*

– *Major incumbent local exchange carriers*

– *Top network equipment vendors*

– *Other prominent networking companies that share an interest in metro Ethernet*

65 Members and growing

Key Objectives

- **Build consensus and unite** *service providers, equipment vendors, and end customers behind optical Ethernet services and transport*

- **Facilitate implementation** *of optical Ethernet standards to accelerate delivery of Ethernet services and make Ethernet-based metro transport networks carrier-class*

- **Enhance worldwide awareness** *of the benefits of optical Ethernet services and Ethernet-based metro transport networks*

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Priorities

The *primary* priorities of the MEF are to define:

- *Ethernet Services* for metro transport networks

- *Carrier-class Ethernet-based metro transport technologies by specifying architecture, protocols and management systems*

The *secondary* priorities of the MEF are to define:

- *Work to be done by other organizations on other transport technologies (liaison activity)*

- *Non-Ethernet interfaces, if not defined by others*

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17

Focus of Work

- **MEF is working to fill the gaps** *between existing standards needed to standardize complete metro Ethernet networks*

- **Technical work is focused on**
  - *Ethernet service specifications*
  - *Transport network features for protection, QoS and NNIs*
  - *End-to-end management, OAM&P*
  - *User interface definition*

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Complete a membership application at:

www.MetroEthernetForum.org

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Optical Ethernet for the Metro Market

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