MEF

METRO ETHERNET FORUM

# What is Driving the Growth of Carrier Ethernet?

## Business Drivers

(Including Case Studies & Videos from Leading Market Sectors)

## Mobile Backhaul

**Mike Tighe**

**MEF Chairman**

**Executive Director Product Strategy, Verizon Communications**

Future-Net

MPLS, ETHERNET AND BEYOND

# 2008 Enterprise CIO Priorities

## CIO Business Priorities

- **Improve business processes**
- **Attract/retain new customers**
- **Create new products/services (innovation)**
- **Expand new markets/geographies**
- **Reduce enterprise costs**

## Network and IT Priorities

Network Priorities:

- **Network security**
- **Application performance**
- **Bandwidth upgrades to support apps**
- **Convergence: Migration to VoIP**
- **Convergence: FMC platforms**

Telecom Technology Priorities:

- **Mobile/wireless strategy**
- **VoIP migration**
- **Centralized mobile device/service management**
- Adopt more Ethernet
- **Migrate FR/ATM to IP**
- **Implement/upgrade video conferencing**

**Customer priorities are driving industry change and new services**

# Carrier Ethernet for Business

## Drivers behind the growth of Carrier Ethernet for Enterprises and business users

- **Top Market Sectors**
  - Healthcare, finance, education , media, government
- **Benefits**
  - Scalability, ubiquity, unprecedented reach, control, reliability, performance, data center & server consolidation, bandwidth on demand, expedites and enables new applications, predictability and risk reduction
  - **Cost reduction, revenue acceleration**
- **Application drivers** **(covered later)**

# Healthcare

- **Application Profile**
  - **Regulatory issues, privacy, digital imaging driving storage and growth, high bandwidth, performance, scalability mostly over limited geography, TCO/ROI critical**
- **Impact**
  - **New MRI technology generates 1-2 orders of magnitude more data**

- MRI/CT systems from 16X to 64X for better diagnostic quality
- File size grows from 64MBytes to 5 GBytes
- Massive impact on network bandwidth & performance with 1Gbps required now
- Plus new HIPAA requirements dictate offsite back-up storage
- 10Gbps networks (later) will be seamless

# Healthcare: Virginia Mason Medical Center

- Carrier Ethernet for VMMC
  - Better for the patients, doctors and the medical center

  - Enabled local access to medical images
  - Creates dramatic impact for patients on time, travel
  - Speed of diagnosis
  - Ease of deployment, cost savings, newly enabled applications

**Steve Tsukuno, IT Director, VMMC**

- *"Finally we had a cost metric that made sense for both the Enterprise and patients."*

# Finance

- Chicago Mercantile Exchange
  - World's largest and most diverse exchange
  - 12 x (NYSE+NASDAQ)
  - $2-3 trillion trades per day

- Carrier Ethernet decision to switch from FR & ATM based on
  - Scalability, reliability, simplicity, increased, low latency (3msec) bandwidth demand (20Mbps to 100Mbps then 1Gbps)
- Solution
  - EVPL
- Effect
  - Increased business
  - Increased customer satisfaction
  - Reversed trend that high bandwidth triggered price increases and customer resistance
  - Rapid conversion of >1200 customers

# Education

- New York Law School
  - “Impossible” installation timeframe met
  - Seamless virtual LAN
  - Higher bandwidth
  - Much reduced costs
  - New applications

# Education

- Bergen County School
  - 2,000 full time students
  - 20,000 adult students
  - Collaboration
  - Higher bandwidth
  - Lower costs

# Media

- **Application Profile**
  - **Scalability, reach, convergence demands low latency, low frame loss, minimum frame delay variation, high performance networks**
  - **Video, streaming media, massive increase in Ethernet co-located services**

# Carrier Ethernet Application Drivers

## Principal Applications

- Server consolidation
- Business continuity / disaster recovery
- Content distribution
- Converged networking

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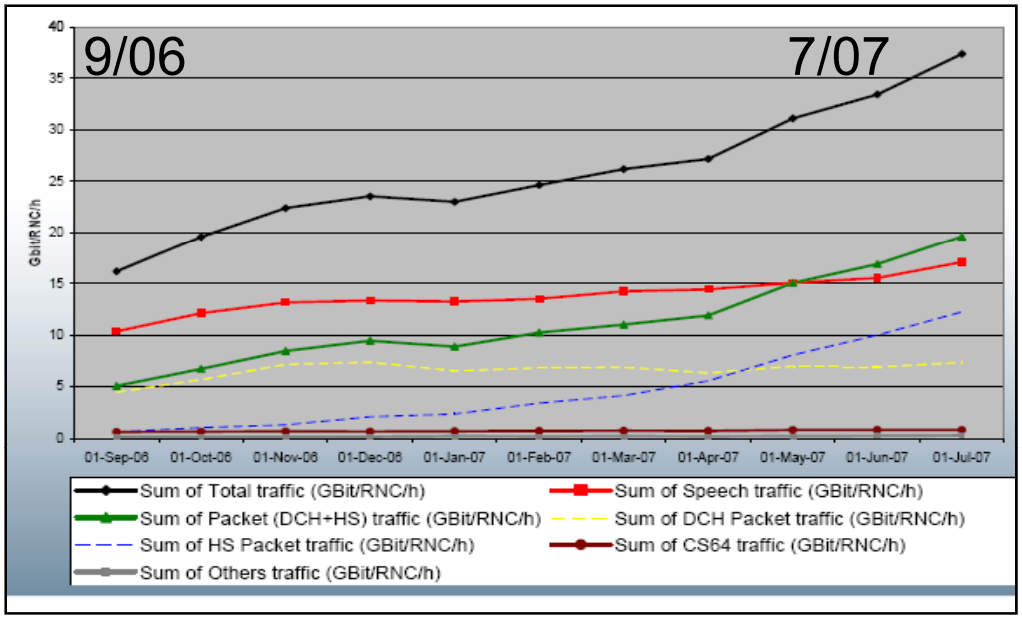
# Carrier Ethernet for Mobile Backhaul

**A new MEF initiative that merges mobile backhaul and wire-line infrastructure into a single network**

# Mobile Backhaul Has Dynamic Growth …

- **New mobile applications and bandwidth growth**
  (>100% in 2008 with much more to come)



Legacy TDM

**Movies, music, news, more music, text, web, more content ..**

# But Big Issues …

## Mobile applications and bandwidth growth is great, but …

- **Fierce competition = squeeze on margins**
- **Exploding bandwidth requirements currently constrained by prohibitive costs of legacy networks**
- **Current TDM services can't scale to handle growth.**
- **Time/urgency**
  - Cost effective development of Mobile Backhaul is stalled.
  - Services providers have report no clear path forward

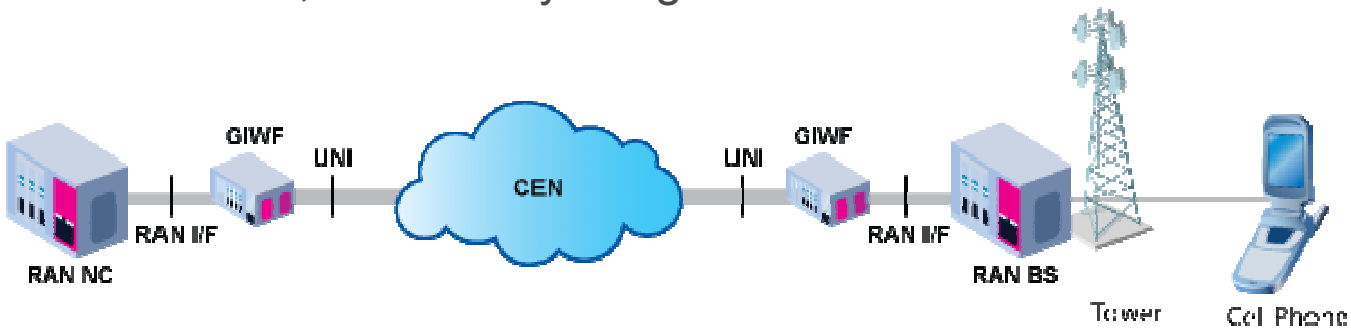
**Carrier Ethernet removes these barrier to progress**

# Compelling Reasons for Carrier Ethernet

## for Mobile Backhaul

- **Carrier Ethernet**
  - Economically meets exploding bandwidth requirements
  - Easier for service providers to manage and maintain
  - Carrier Ethernet is optimized for packet data traffic
  - Overcomes TDM (T1/E1) services scalability

- **Smooth transition from legacy networks**
  - Protects investment, seamlessly bridges from TDM to Ethernet

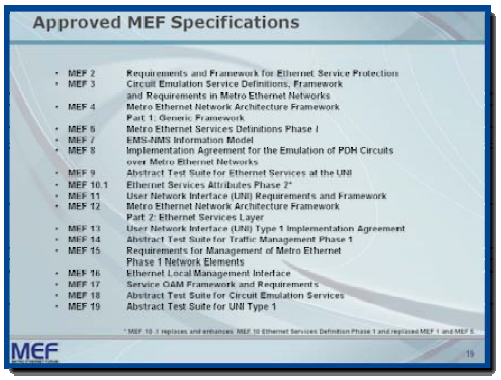



- **Supported by new MEF 18 Certification Program**
  - Announced 2/08 first certification 6/08

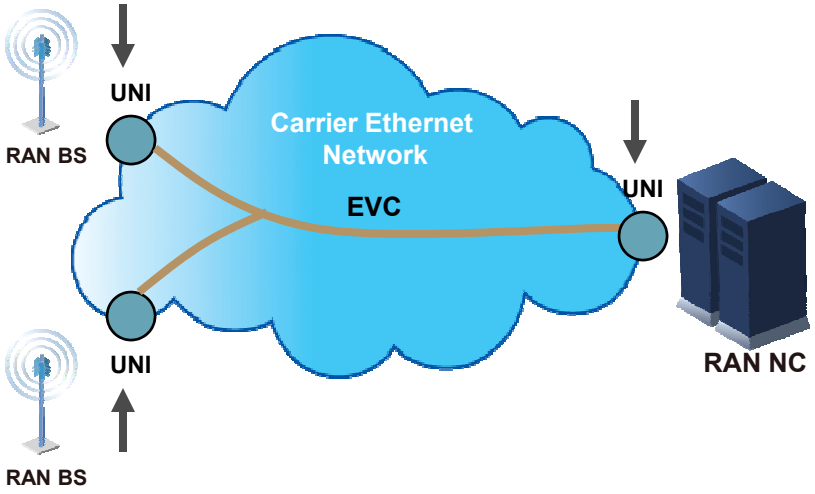
# MEF Mobile Backhaul Implementation Agreement

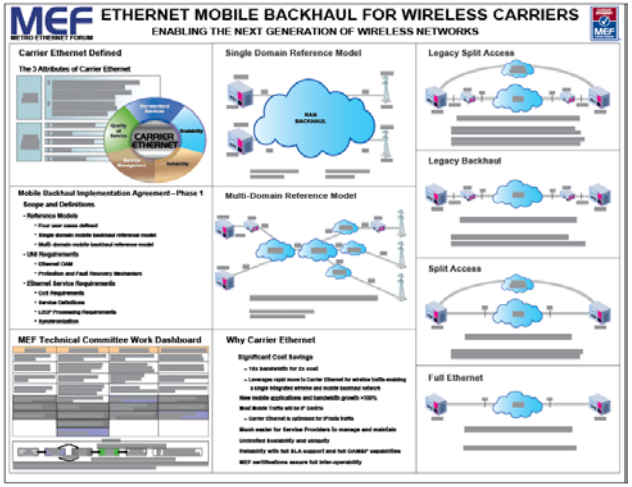
**Targeted to complete by 2008 Q3**

**The structure of the IA provides generic guidelines for several mobile technologies – specific guidelines for a given mobile technology may also be specified**




- **UNI Requirements**
  - Ethernet OAM (Link OAM and Service OAM)
  - Protection and Fault Recovery Requirements
- **Service Requirements**
  - CoS Requirements
  - Service Definitions
  - Synchronization



# Questions?

**For further information on the MEF Backhaul initiative, circuit emulation services over Ethernet, white papers and full presentation visit www.metroethernetforum.org**