

# 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** 



## **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)



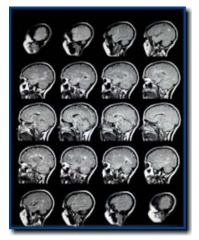


# Healthcare

- 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

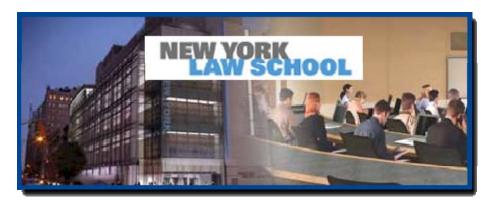






# Education

- 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













- Application Profile
  - Scalability, reach, convergence demands low latency, low frame loss, minimum frame delay variation, high performance networks

Dr Robert M Metcalfe Inventor of Ethernet

 Video, streaming media, massive increase in Ethernet co**located services** 





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### **Carrier Ethernet Application Drivers**

## **Principal Applications**

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







# Carrier Ethernet for Mobile Backhaul

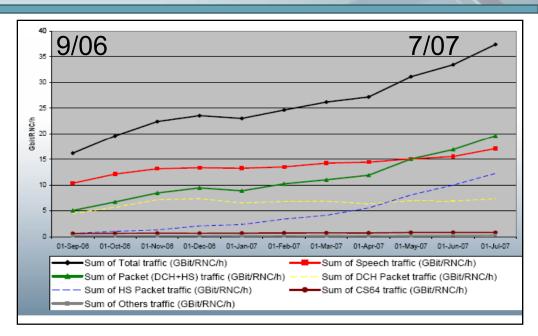
A new MEF initiative that merges mobile backhaul and wire-line infrastructure into a single network

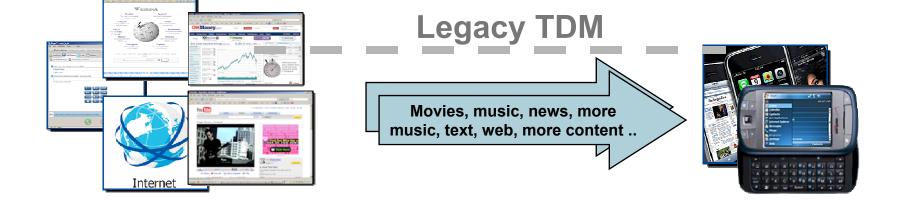


## Mobile Backhaul Has Dynamic Growth ...

## New mobile applications and bandwidth growth

(>100% in 2008 with much more to come)









## 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**



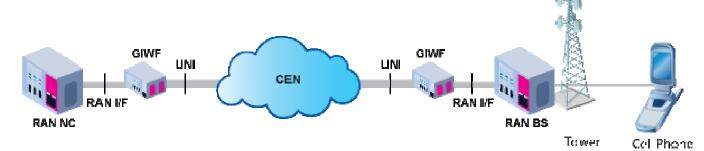


# **Compelling Reasons for Carrier Ethernet**

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





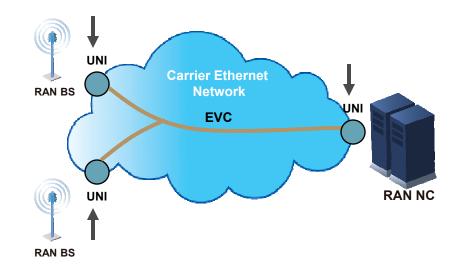
## **MEF Mobile Backhaul Implementation Agreement**

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

#### Targeted to complete by 2008 Q3

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	<ul> <li>MEF 16</li> <li>MEF 17</li> <li>MEF 18</li> </ul>	Elhernet Local Management Interface Service CAM Framework and Requirement's Abstract Test Suite for Circuit Emulation Services
MEF 13 Abstract Test Suite for Circuit Emulation Services     MEF 19 Abstract Test Suite for UNI Type 1	<ul> <li>MEF 16</li> <li>MEF 17</li> <li>MEF 18</li> </ul>	Elhernet Local Management Interface Service CAM Framework and Requirement's Abstract Test Suite for Circuit Emulation Services
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# **Questions?**

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

