Experiences using Uncompressed High Definition Video

Erik Hofer

School of Information

CONNECTION project

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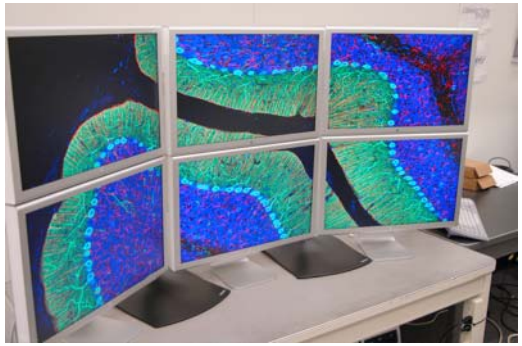
The Connection Project

- Effort at the School of Information to prototype and deploy next-generation, real-time collaboration systems
  - Tom Finholt, Project Director
  - Erik Hofer, Technical Director
  - David Lee, MSI Student
  - Archer Batcheller, PhD Student
  - Voratima Orawannukul, MSI Student
- Research and development focuses on understanding the ergonomics of real-time collaboration, video conferencing technologies and high resolution visualization systems
- Sponsored by UM Office of the Provost and NSF (NCSA partnership)
  - Additional equipment provided by MGRID and Hewlett Packard



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HD Video over IP for Telepresence

- Leveraging investments in the Michigan Lambda Rail (MiLR) to develop and deploy technologies for extremely high quality video telepresence
- Focus on partnership with the Research Channel / University of Washington around their iHD1500 system
- Helping our external partners deploy these systems
  - NCSA, CalIT2, UIC
  - CIC Course Share, Wayne State, Internet2

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Ultra-resolution collaboration environments

- NSF funded cyberinfrastructure projects are leading the development of high resolution visualization systems (e.g. OptIPuter)
- These large, high resolution tiled displays present an opportunity for next generation collaboration applications
- Working with partners on campus and off to explore both visualization and collaboration uses

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USC
UWisc
SC|05
UMich - SI
UMich - Med
SURFnet
(Netherlands)
aarnet
(Australia)
SAMSUNG

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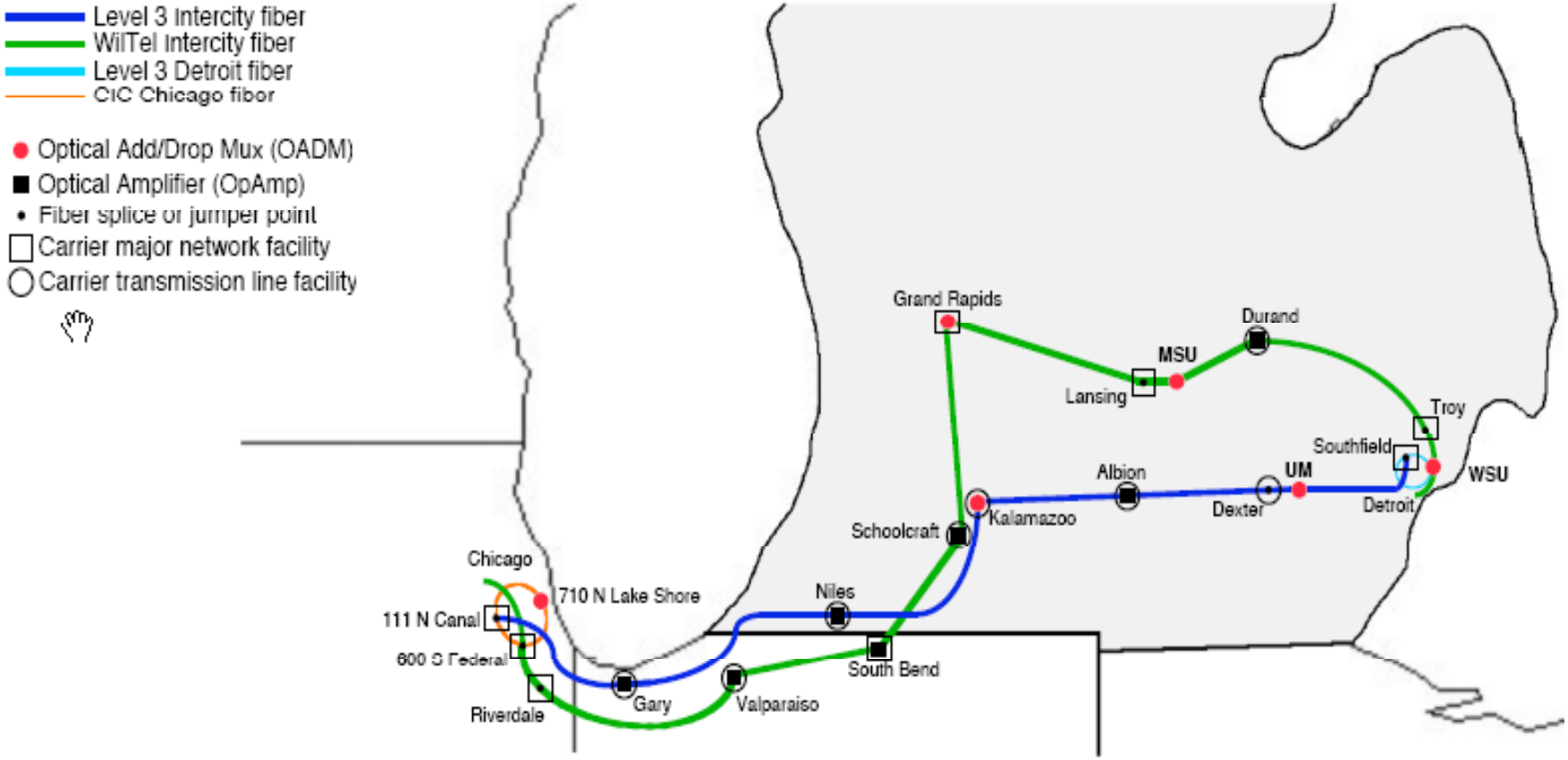
Production use

- Deployed an iHD1500 link between UM School of Information and NCSA
- Routinely used to support meetings between two sites
  - exclusively scheduled meetings so far
- Mix of technical and administrative uses
- This regular use provides some insight into the value of these links

Does the quality matter?

- Much more engaging and realistic
  - "Nice to finally meet you in person"
  - Even over time, quality benefit persists
- When coupled with a physically large display, there is a reduced need for camera operation in some settings
  - Not the same need to pan-tilt-zoom as with a commodity H.323 codec
- Great for applications where video and audio fidelity really matter

Michigan LambdaRail (MiLR)



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Internet2 Network

First Link Live!

UltraLight

STARLIGHT℠

The Optical STAR TAP℠

PACIFIC WAVE

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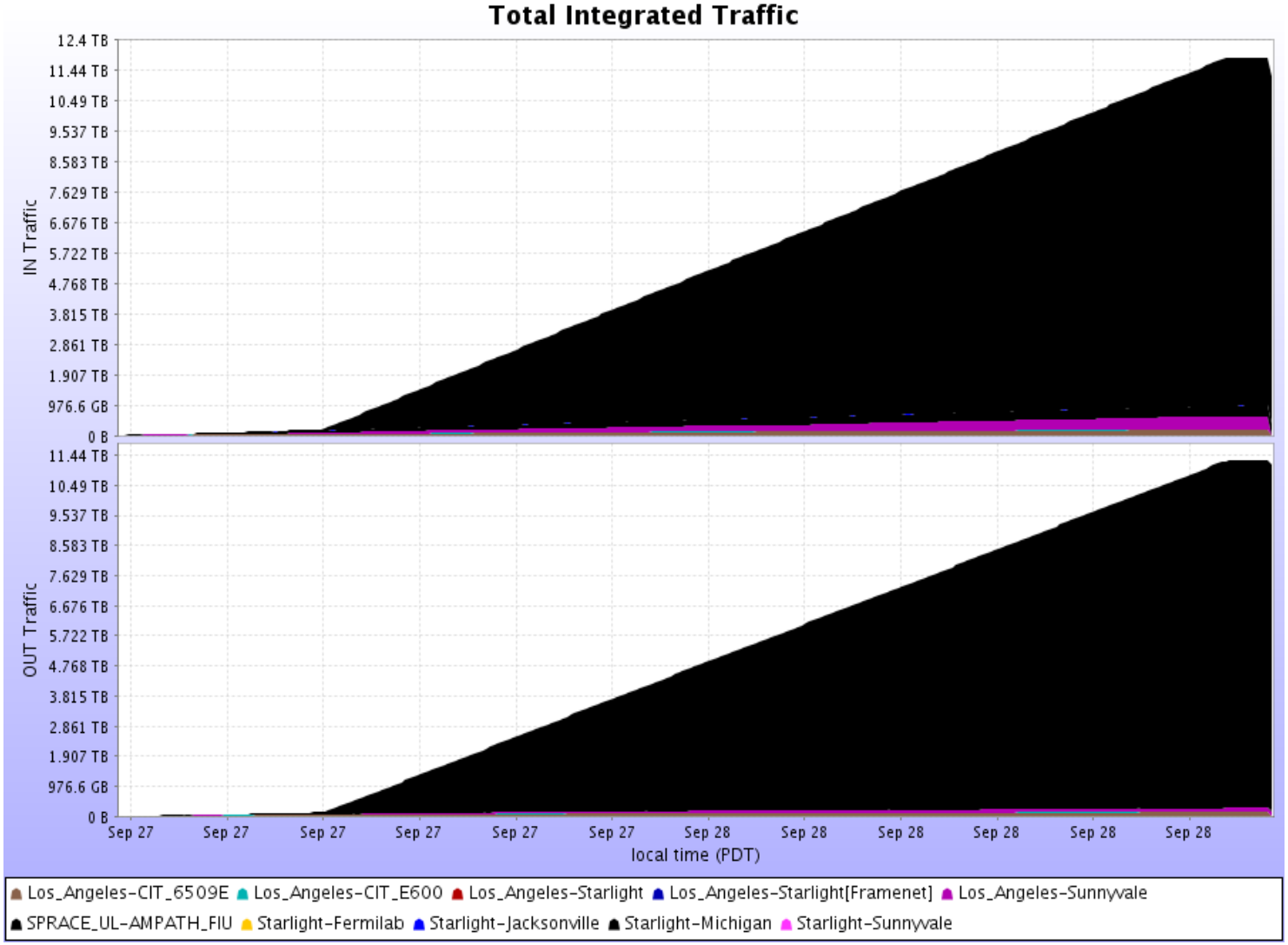

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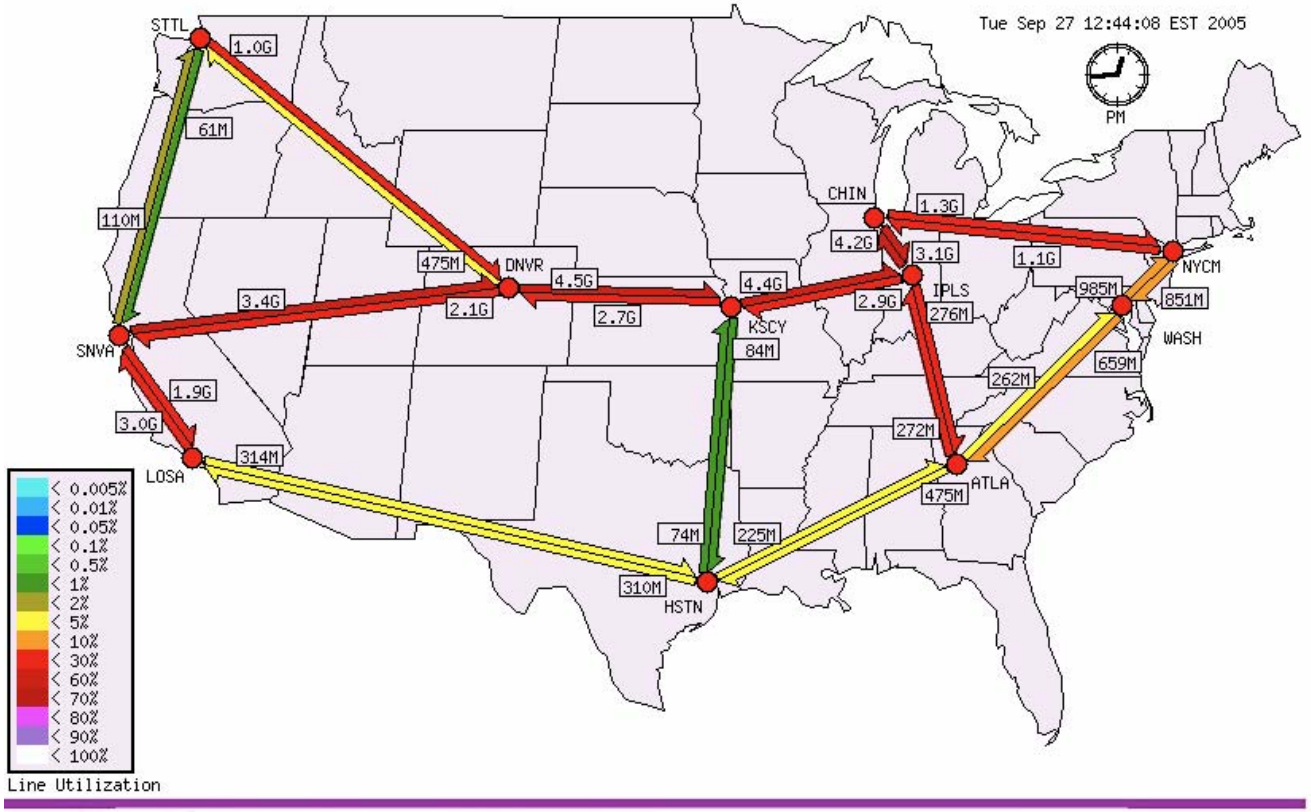
INDIANA UNIVERSITY ABILENE NOC WEATHERMAP



Abilene INTERNET2 Qwest Spirit of Service NORTEL NETWORKS Juniper NETWORKS

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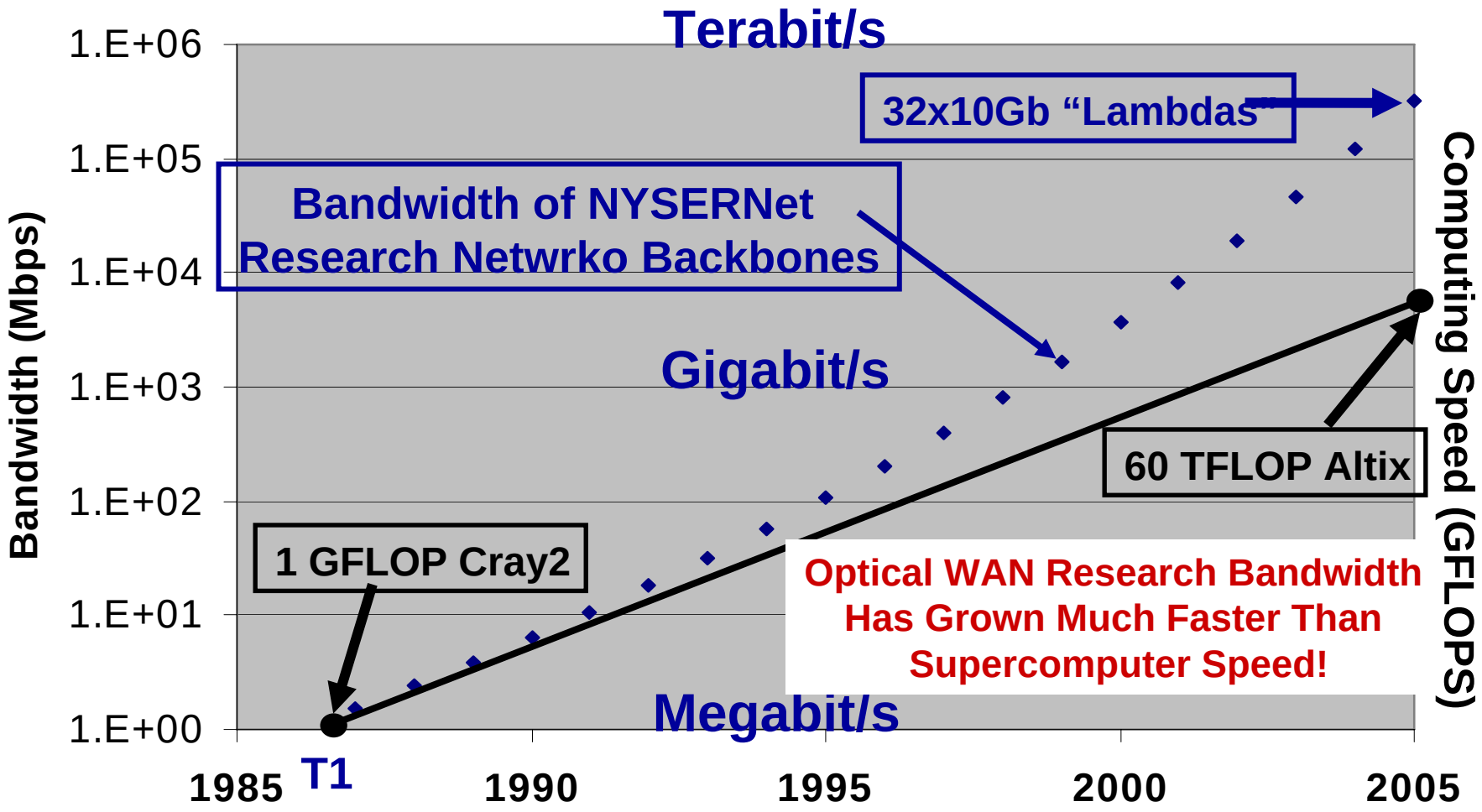

Network Data Source: Timothy Lance, President, NYSERNet

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Questions?
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