THE OPTICAL LAYER

PERSPECTIVES

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PRESENTATION GOALS

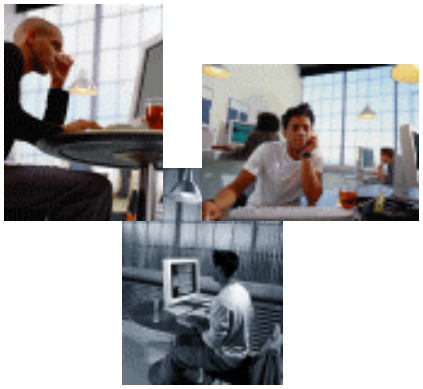
- To give a brief overview of the field
- To introduce the work done by the group

PRESENTATION STRUCTURE

- Driving forces
- Opportunities and Challenges
- Point to Point Systems
- Optical Networks

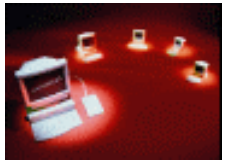
Driving Forces

Internet



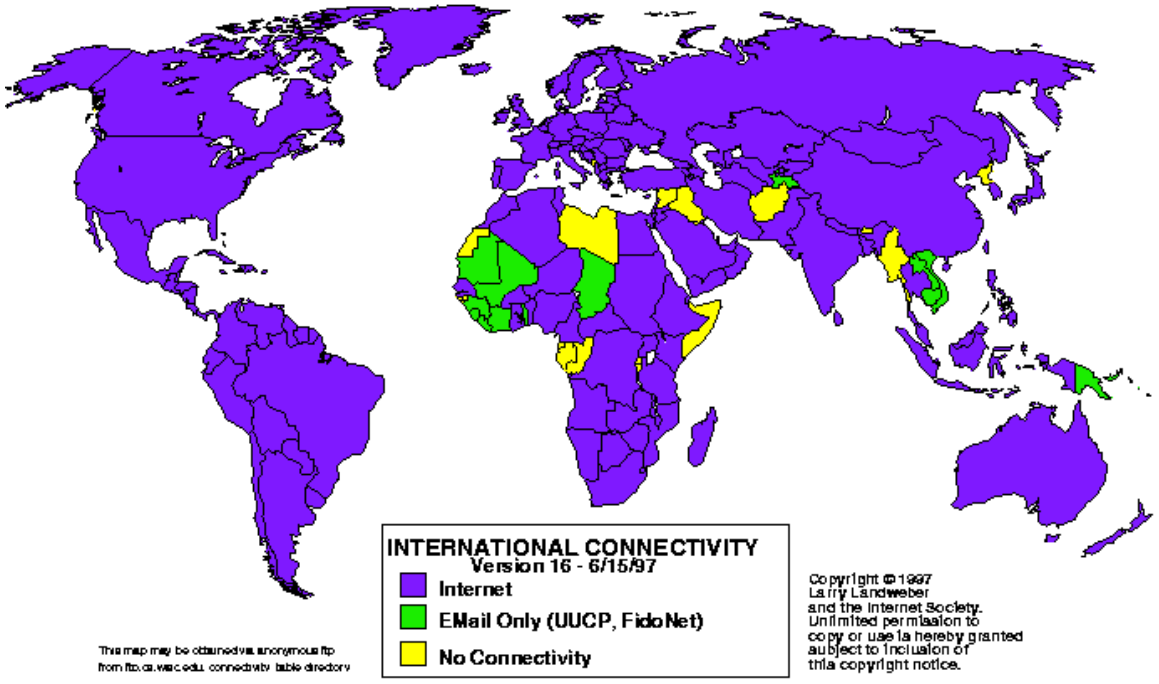
Mobile Phones

Private Networks



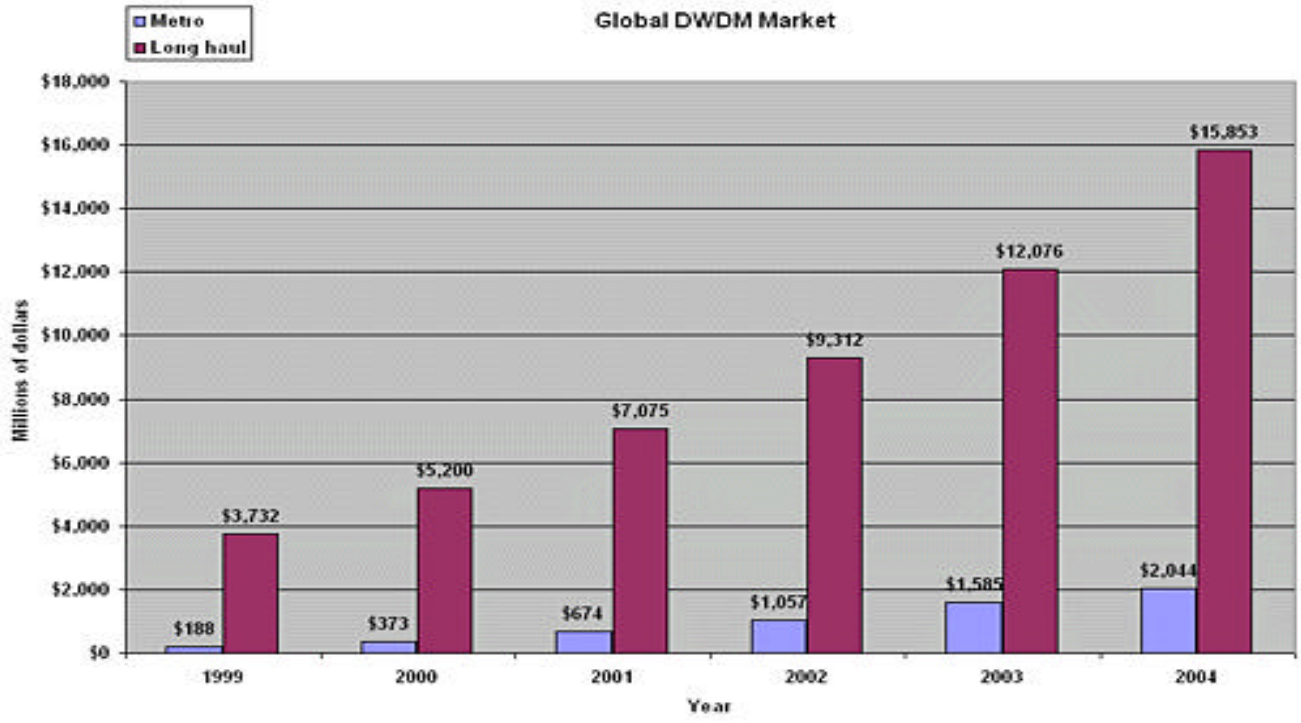
By 2005 we can expect to have a demand of 30 times the actual digital traffic over telecommunication networks

INTERNET



To have, in 2005, a Internet 10 times faster than now, we need to increase by 300 the actual network capacity

A Huge Opportunity



By Pioneer Consulting

A Huge Challenge

Capacity

- 40-160 Gbit/s/per channel
- more then 100 channels

Flexibility

- Terabit optical routers
- IP/ATM/SDH over DWDM

Getting The Most Out Of The Fiber

DWDM Gigabit Short Pulses Sources

In Adaptive Way

Compensation Techniques

DWDM Gigabit Receivers

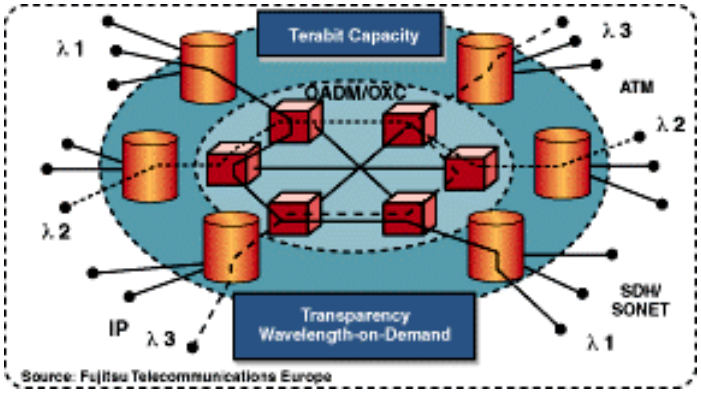
WHY ADAPTIVE IS IMPORTANT ?

Because…

- **We are pushing the technology to the limit**
- **We are increasing the complexity of the systems**

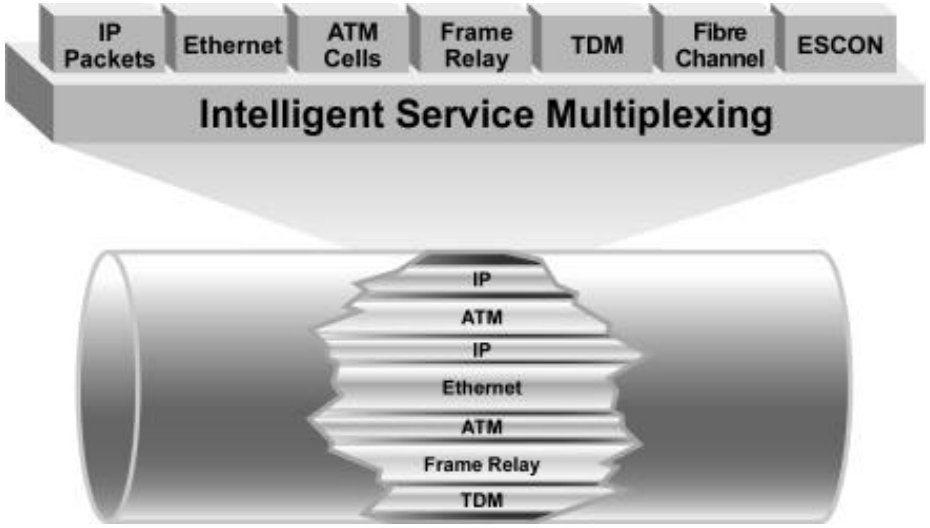
Getting The Most Out Of The Network

The Perfect Network



- Bit-Rate Independent
- Wavelength Independent
- Easily Scalable
- Easily Reconfigurable
- Installed Technology

Getting The Most Out Of The Network



Support the More Popular Protocols in an Efficient and Reconfigurable Way

Thank You