



Wire Broadband Infrastructure in Thailand

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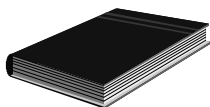
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History of the Internet



1969



**In Thailand 1987
and On-line 1992**



**1992
In Thailand 1994**

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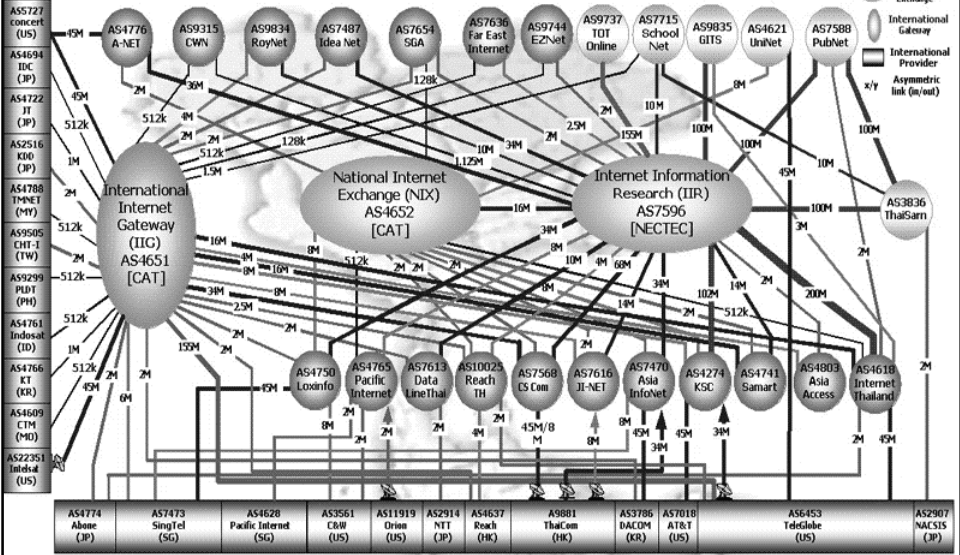
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Internet Connectivities in Thailand (January 2002)

Total International bandwidth :
690.5 Mbps (into Thailand) and
975.5 Mbps (out from Thailand)

<http://www.nectec.or.th/internet/map/>



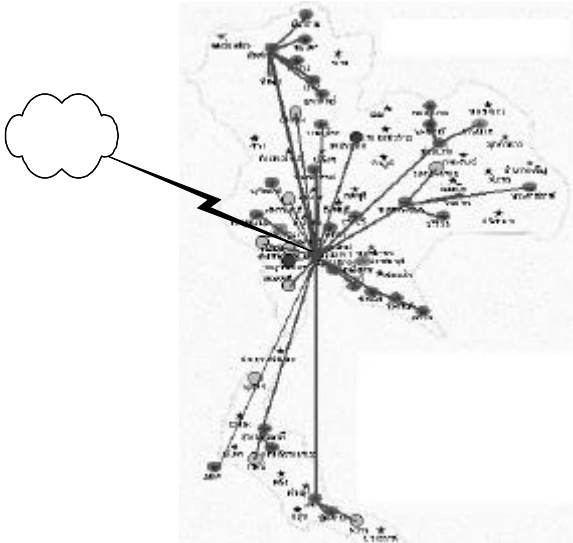
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Chart Date: 2002-01-03

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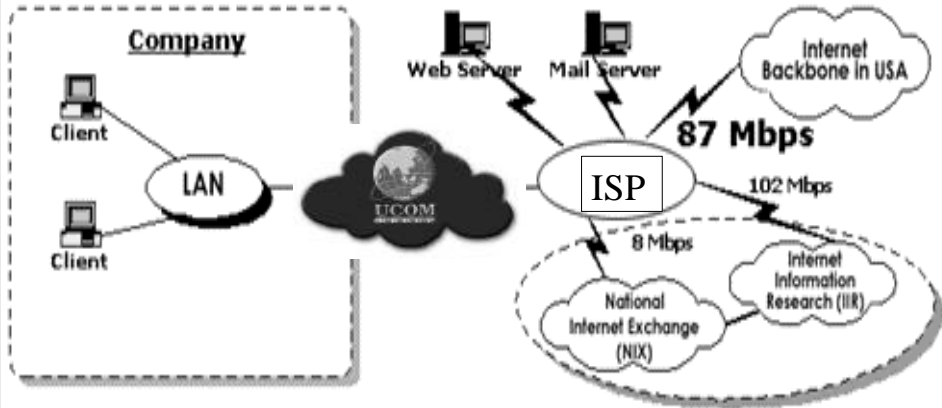


A Sample ISP Domestic Backbone





How a Company Connects to ISP





UCOM Transmission Network

- **Optical Fiber Cables**
 - BKK (12-120 Cores)
 - Up-Country (24-48 Cores)
 - Total > 22,00 km., Nationwide
- **SDH Multiplexer Equipment.**
 - SDH STM-16 ADM/TM
 - SDH STM-4 , STM-1 ADM/TM
- **Network Management Systems**

Benefits of Optical Fiber Communication

- Lower Attenuation than Coaxial Cable
 - 0.2 dB/KM (1550 nM) or 0.4 dB/KM (1300 nM)
- Very High Bandwidth
 - Bandwidth is Still no Limitation
- Small Size/Light Weight.
 - 1/30 to 1/50 Weight&Size of Coaxial Cable
- No Electro-Magnetic Interference
- Speed of Light
 - Satellite has 200 ms. delay (not suitable for interactive application but streams like broadcasting)
- High Security

Optical Fiber Installation (Aerial)



Optical Fiber Installation (Underground)



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Strengths of SDH Infrastructure

- Network Simplification
- Network Protection Features
- Network Flexibility
- Better Network Management
- High Capacity and Reliability
- Security

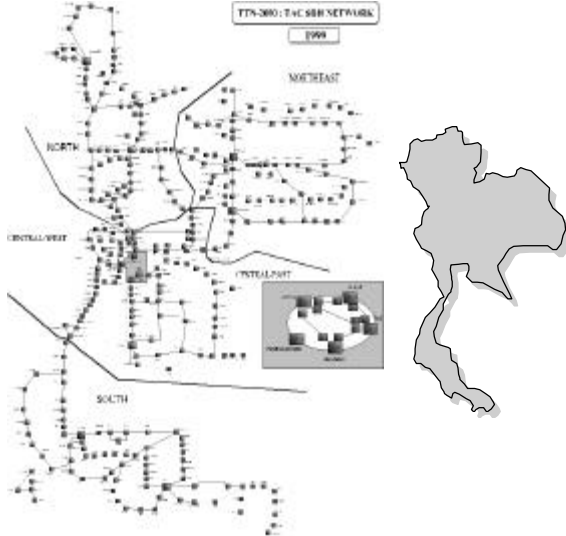
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Countrywide Coverage



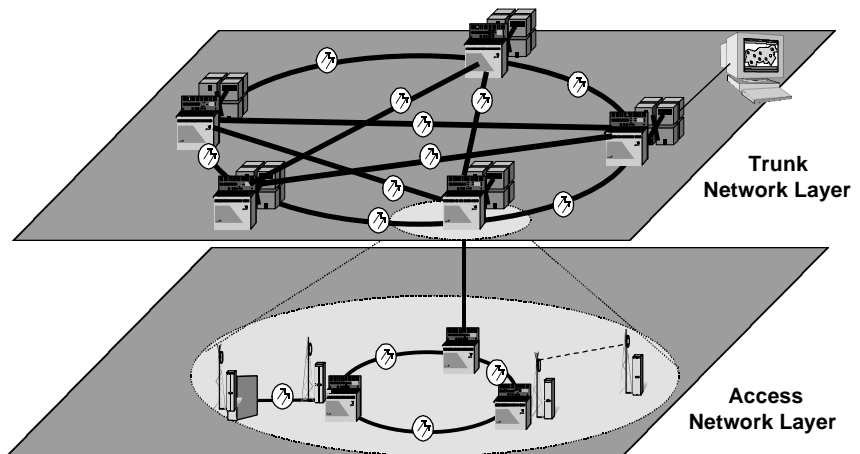
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Transmission Network



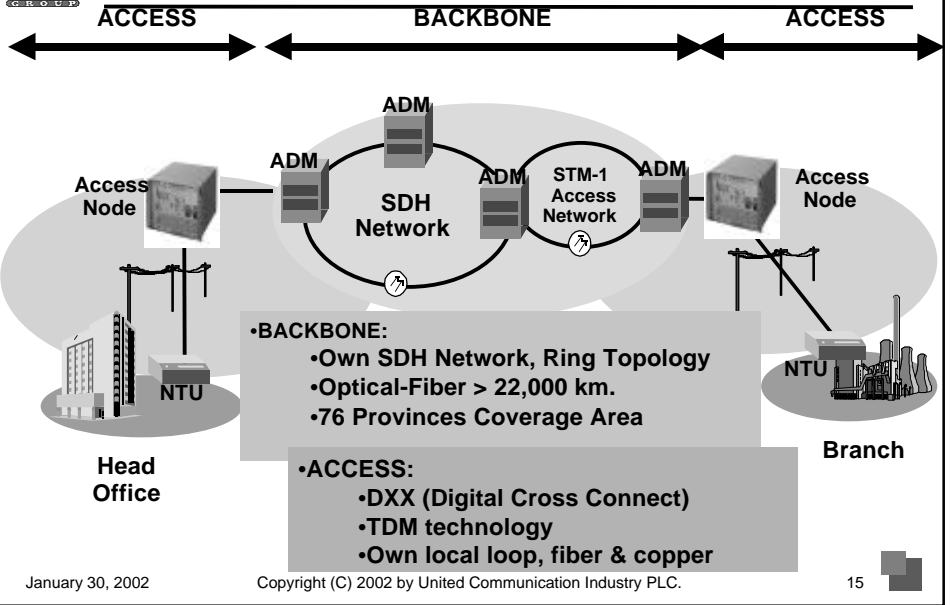
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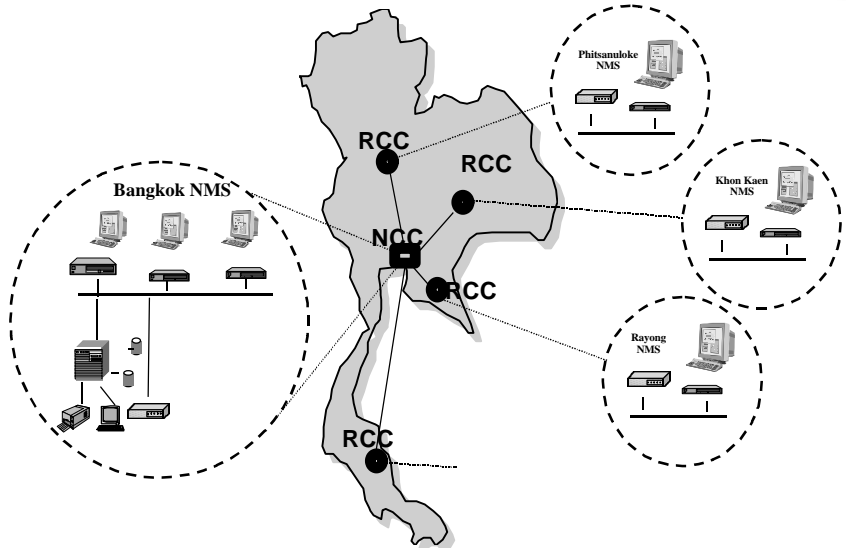
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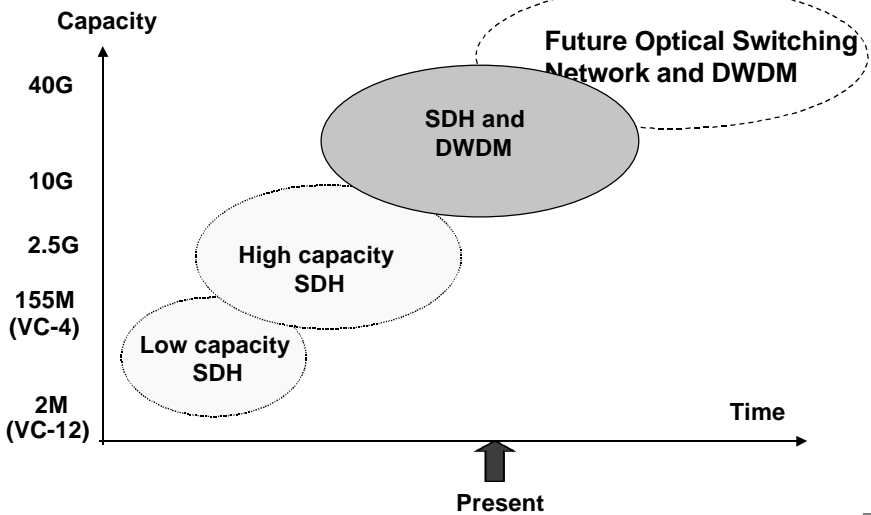
Wire Broadband Infrastructure



Network Management System



Next Step on Optical Fiber Evolution



Broadband Infrastructure Trend

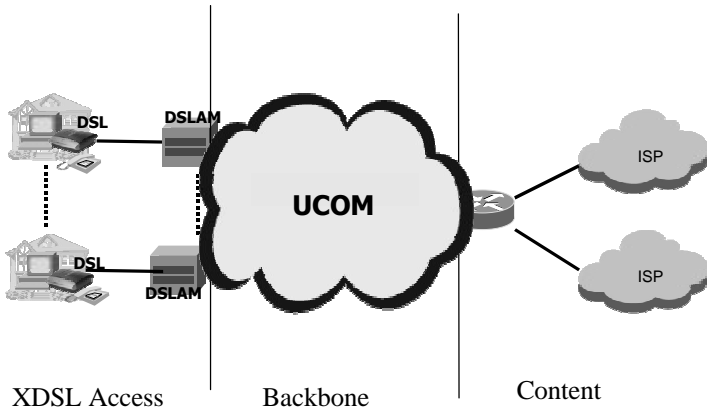
- Optical Switch

switches optical wavelengths. While the traditional DCS takes electrical signals in and sends electrical signals out, the optical switch takes optical signals in and sends optical signals out.

- DWDM

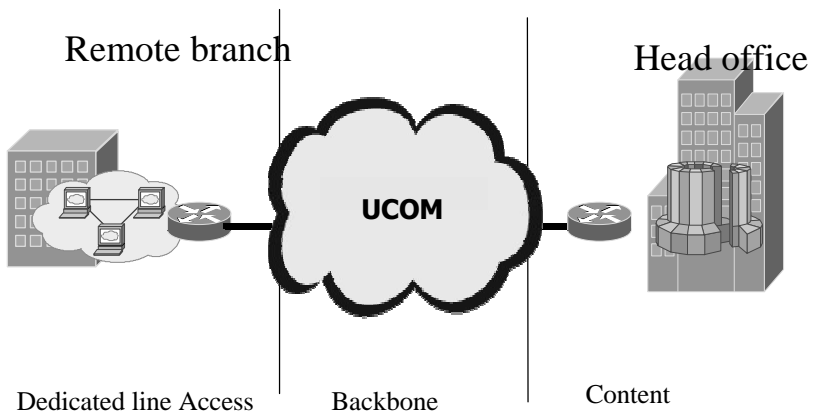
works by combining and transmitting multiple signals simultaneously at different wavelengths on the same fiber.

Internet Access Application



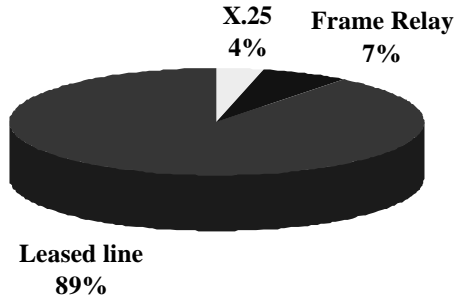
Internet, B2C, CRM Application

Private Network Application



Intranet, Extranet, EDI, B2B Application

Data Communication in Thailand



Growth of Datacom in Thailand

