

*For INFOCOM'2003*

# Evolving toward Optical Networks in Korea

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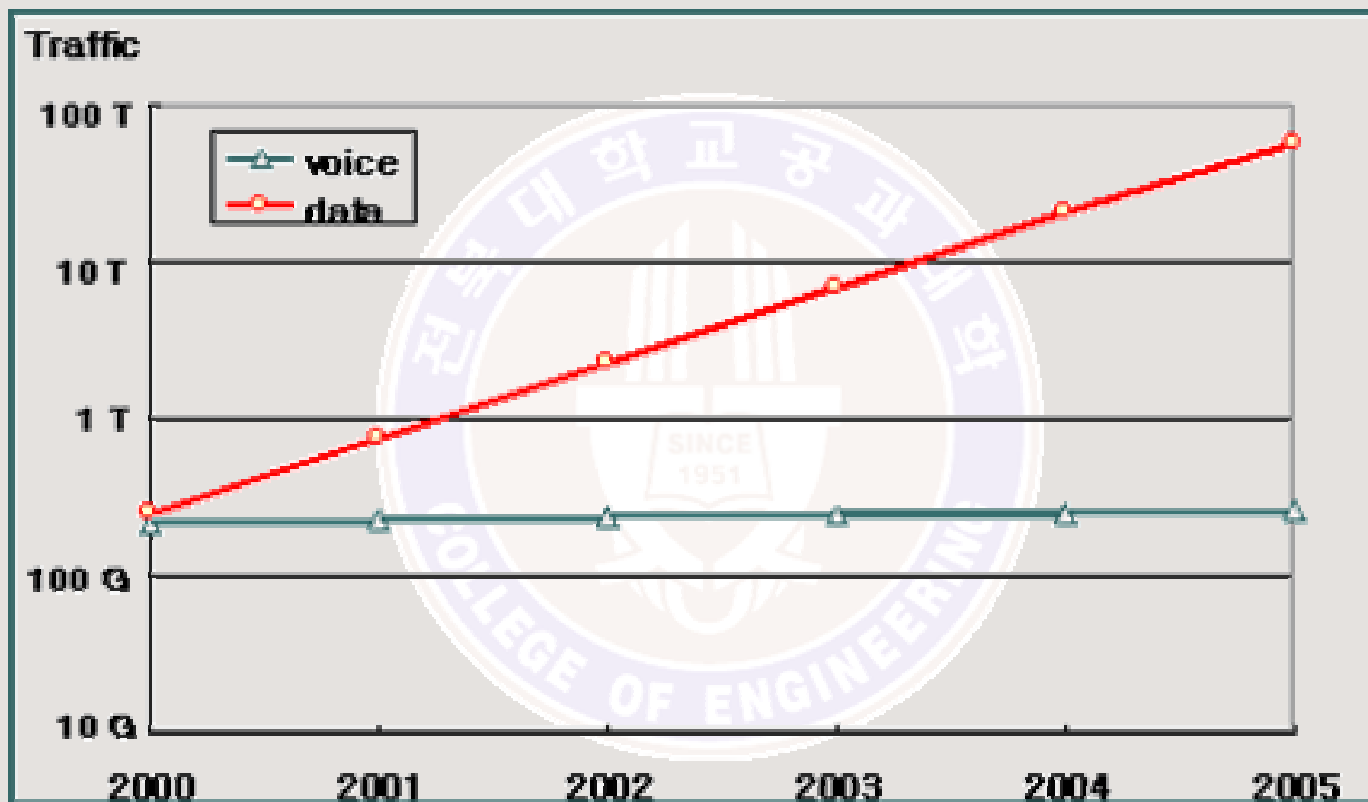
**Advanced Communications & Networks Laboratory**

# Road Map

- Trend of Voice and Data Traffic in Korea
- Current WDM Optical Transport Network
- All Optical Networks Evolution of KT
- Access Network Evolution
- Related Research & Development Projects



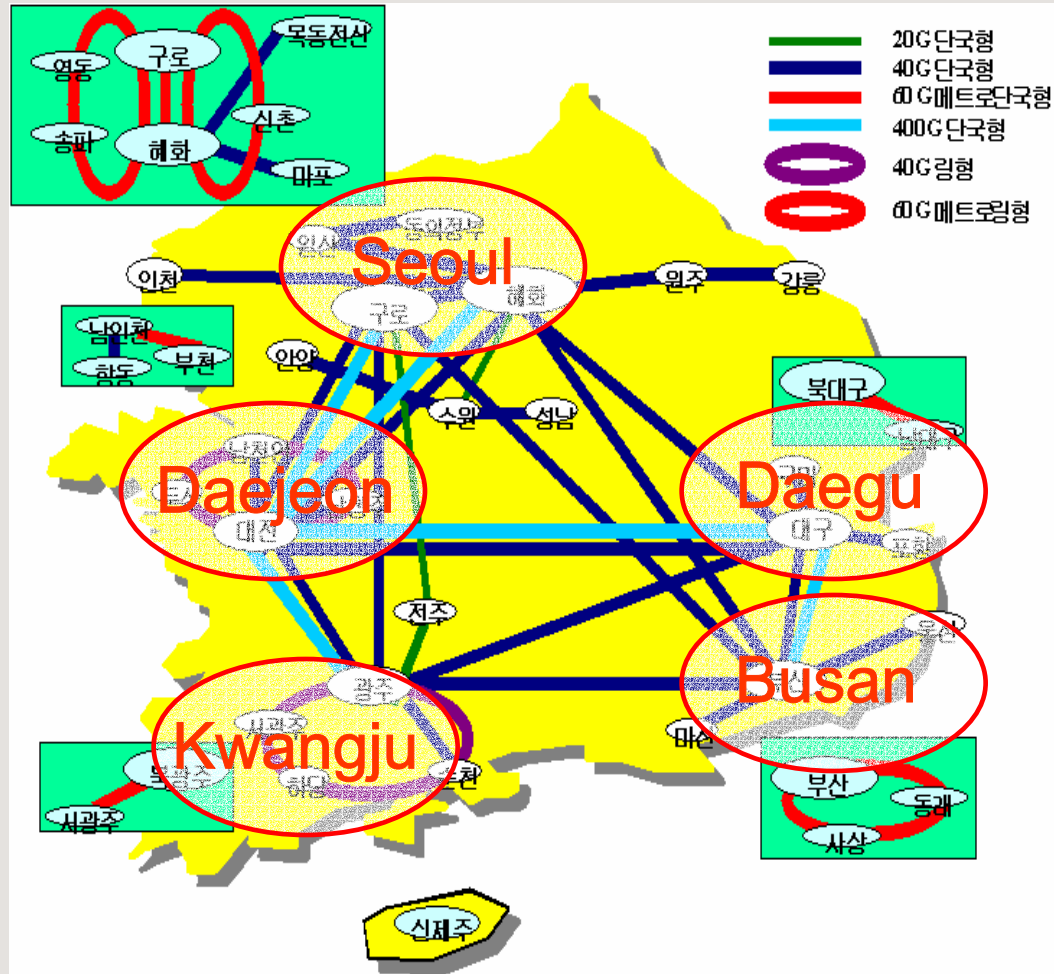
# Trend of Voice and Data Traffic in Korea



KRNET2000, NCS2001



# Current WDM Optical Transport Network of KT

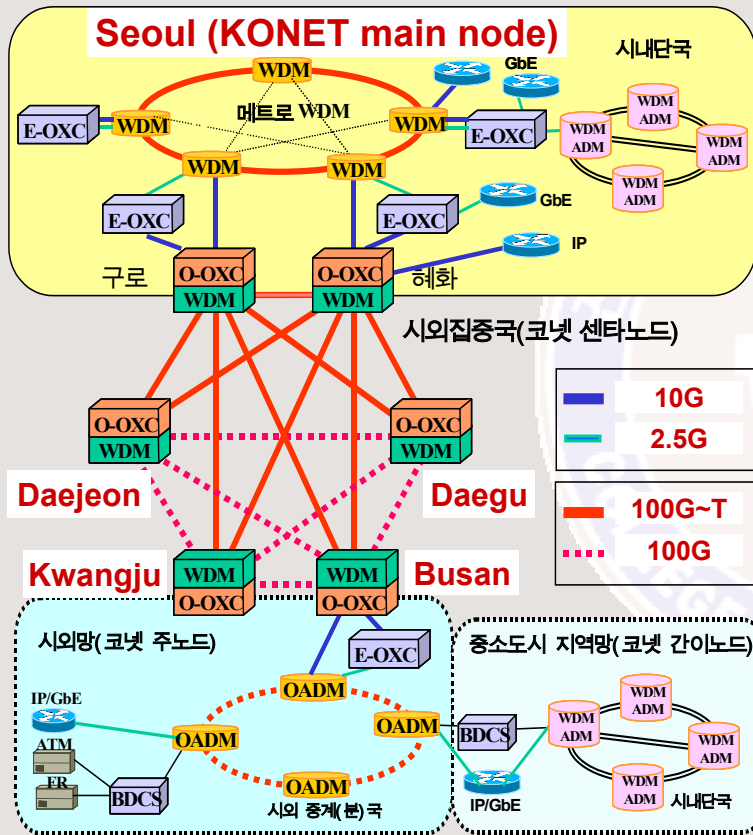


Deployed by KT in 2001



# All Optical Networks Evolution of KT

□ Based on DWDM, OXC, NG-SDH and GMPLS



- First Phase(2002-2003)
  - Backbone(Big 5 Cities) : 400G WDM Mesh
  - Metro Network : 80G WDM Ring or Mesh
  - 10G Interface & O/E/O OXC (NG-SDH)
- Second Phase(2004-2006)
  - Backbone(Big 5 Cities) : T WDM Mesh
  - Metro Network : 400G급 WDM or Mesh
  - 40G Interface & O/O/O OXC (MEMS)
- Third Phase(2007~ )
  - WDM+OXC + GMPLS based All Optical

# Access Network Evolution in Korea

Years		2002	2003	2004	2005	2006	2007
Access Rate		~10Mbps	~50Mbps			~10Gbps	
House	<3km	ADSL	FTTC+VDSL (A-PON/E-PON)			FTTH A-PON/E-PON W-PON/AON	
	>3km	FTTC+ADSL					
APT	>3km	FTTC+ADSL	FTTC+VDSL (A-PON/E-PON)				
	<3km	ADSL					
	Certificated building	Ethernet (Ntopia) FE				FTTO/FTTH E-PON/W-PON FE/Gbe/10GbE	
Rural Area	<3km	ADSL	FTTC+VDSL (A-PON/E-PON)			FTTC+VDSL E-PON/FE/AON	
	>3km	Satellite					
Commercial Area	Large Enterprise	FTTO(TDM Exclusive)	FTTO(ATM/TDM Exclusive)				
		FTTO (Metro-Ethernet), FE/GbE/10GbE				FTTO/FTTH W-AON/GbE/10GbE/AON	
	Small-Medium Enterprise	HDSL, SHDSL	FTTO(A-PON, SHDSL, VDSL)				



# Related Research & Development Projects

- **Development of 10 Gigabit Ethernet Technologies**
  - 3/1/2001 – 2/28/2005
  - 64 Gbps Edge Switch
  - 160 Gbps Backbone Switch
  - ETRI, Samsung Electronics, LG Electronics, etc.
- **Development of High-speed Optical Access Network System**
  - 1/1/2002 – 12/31/2006
  - E-PON, WDM-PON, WDM-AON, Optical CDMA
  - GMPLS, IPv6
  - ETRI, Samsung Electronics, LG Electronics, etc.



# Optical Transport Network Technologies

