

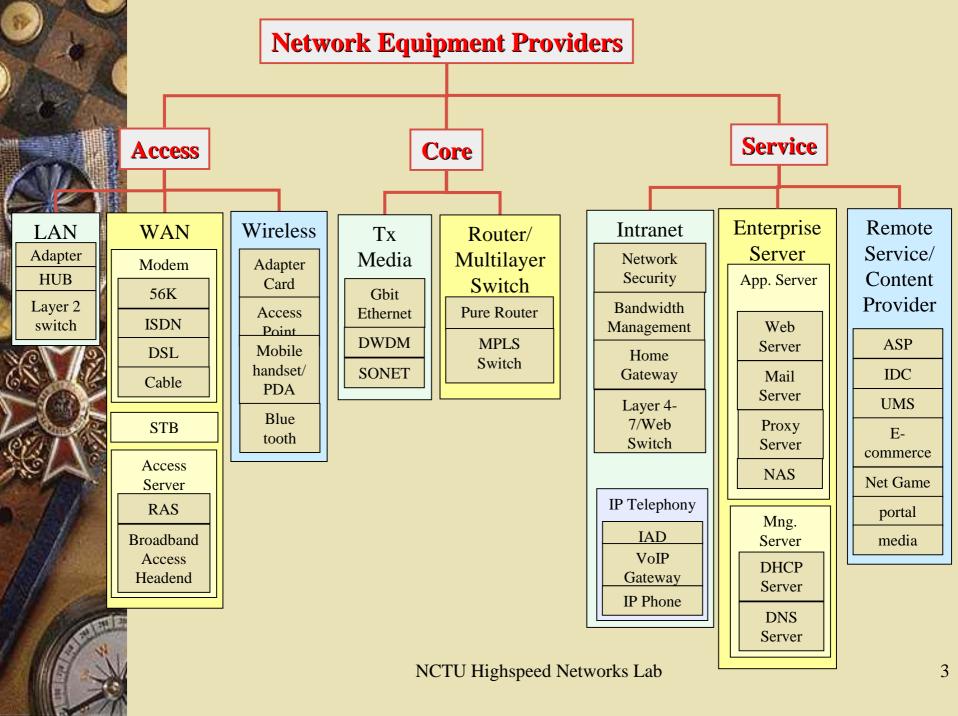
# 網路產品與服務最新發展: 趨勢. 需求與機會

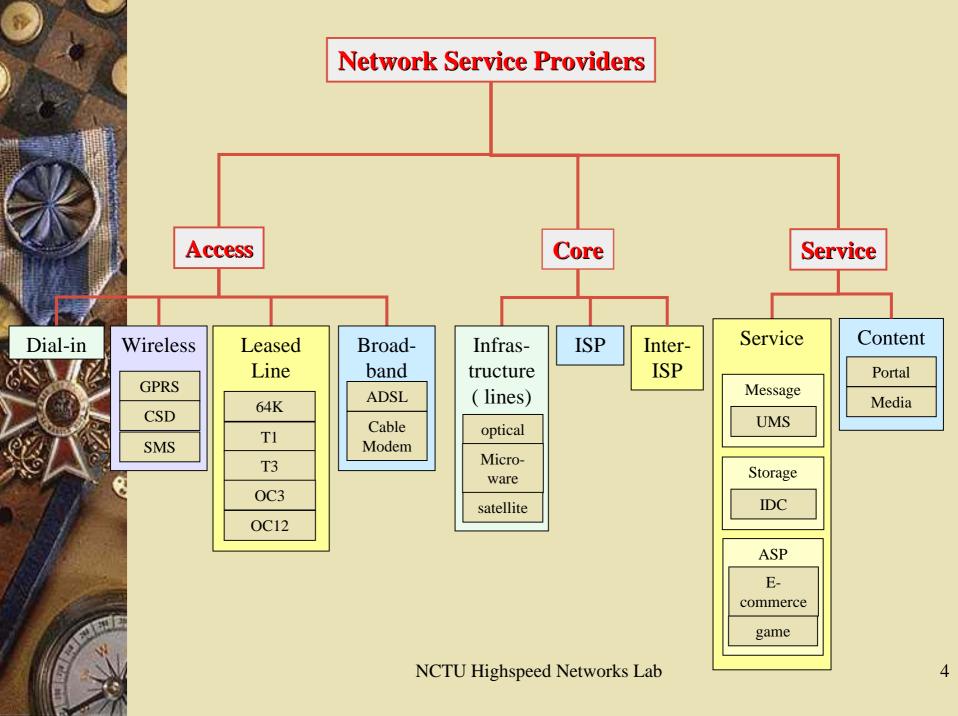
林盈達 交通大學資訊科學系 ydlin@cis.nctu.edu.tw www.cis.nctu.edu.tw/~ydlin May 2001



#### Outline

- 1. 上網設備與服務
- 2. 骨幹設備與服務
- 3. 伺服設備與服務
- 4. 企業與個人用戶的新需求
- 5. 設備與服務提供者的新機會





# Who Acquired Who

Supplied State of Sta			
The Buyer	Corp. been acquired	For What	Date
АТ&Т	NorthPoint	DSL services	2001/3/22
NetSec	Expiria	Security Services (monitoring & analysis)	2001/3/16
BMC	Perform	Network Management s/w (topology discovery, performance management)	2001/2/21
Intel	Xircom	Mobile Computing over 802.11, GSM, GPRS, Bluetooth	2001/2/8
3COM	Alteon of Nortel	Gigabit Ethernet over IP	2000/12/22
Vivendi	Seagram	Universal Studios & Music Group (content providers & distributors)	2000/6/20
Singapore Tele.Com	C&W Optus (Australia)	New Abroad Market ( carrier, broadband & mobile services )	2000/3/26

#### Which corp. has been invested by VC in CORE

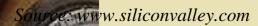
NovaLux Inc	\$109,100,000	Photonic laser solutions for Optic fiber comm market	Q3/2000
Pluris Inc	\$101,500,000	Internet backbone routers	Q3/2000
Chorum Technologies	\$92,240,000	Designer, manufacturer, and marketer of advanced	Q3/2000
		optical solutions for terabit-scal, active optical networks	
IPG Photonics	\$90,000,000	Active optical component manufacturer	Q3/2000
PhotonEx Corp.	\$80,000,000	Developing an optical backbone system	Q3/2000
Nexsi Corporation	\$75,000,000	Pioneering a new breed of routers for packet services that	Q3/2000
		serve as an integrated service delivery platform	
		from high bandwidth security and traffic management services	
Network Photonics Inc	\$70,000,000	Company produces optical networking routers	Q3/2000
Genoa Inc	\$67,000,000	Semiconductors for optical communications	Q3/2000
LightChip	\$60,000,000	Optical routing and optical monitoring products that advance	Q3/2000
		the deployment of transparent optical networks.	
Mahi Networks, Inc.	\$60,000,000	Mfg. optical transport products	Q2/2000
LuxN Inc	\$60,000,000	Designs and manufactures optical networking solutons for	Q2/2000
		high bandwidth data communications	
		applications	
Alidian Networks, Inc.	\$53,500,000	Provider of multi access and transport systems enabling	Q3/2000
		integration of voice, data and video services through	
		optical networking technology on metropolitan area	
		networks	
Rapid5 Networks Inc.	\$53,000,000	Provides both existing and emerging carriers with reliable	Q3/2000
		and cost-effective solutions for the next generation	
		networksof the 21st Century	
WaveSplitter Technologies,	\$51,000,000	Develops and manufactures fiber optic couplers, isolators	Q3/2000
Inc		and DWDM components	
Maple Optical Systems Inc	\$50,000,000	Multi-service optical systems	Q3/2000

#### Who has been invested by VC in ACCESS

AND ASSOCIATION ASSOCI			
Nishan Systems Inc.	\$50,000,000	Storage area network devices.	Q3
ZapMedia.com	\$24,000,000	Next-generation internet company delivering instant access to movies, music, videos and the web to consumers of all agesthrough existing tv's and stereos.	Q3
Mapletree Networks	\$15,000,000	Provider of multi-service network access technology	Q3
Tellus Technology	\$13,928,202	develops, manufactures & supplies cellular packet data modems and other wireless terminal products	Q3
Woodwind Communication Systems Inc	\$12,256,119	Software systems for the CLEC and telecommunications market. Woodwind is a network access company dedicated to solving the economic and technical challenges of service providers integrating voice, Internet and data services for the small business and remo	Q3

#### Who has been invested by VC in SERIVCE

The state of the s			
Relera	\$207,500,000	Developer and manager of Internet data centers	Q3
StorageNetworks Inc	\$143,000,000	Provider of managed data storage services.	Q1
Intira Corp.	\$140,000,000	Builds and operates colocation data centers	Q3
CopperCom Inc.	\$90,000,000	Creating voice services over broadband	Q3
Jamcracker	\$85,000,000	Centralized platform to consolidate web-based and IT business services from multiple vendors	Q3
Yipes Communications Inc	\$77,000,000	Optical provider of managed IP Networks	Q1
Equinix Inc.	\$55,500,000	Designs, builds and operates carrier and IP neutral Internet Business Exchanges	Q2
Net Rail Inc.	\$55,000,000	Delivers universal networking solutions over its Tier One IP broadband network to both established and emerging NetworkService Providers, including ISPs, CLECs and wireless carriers	Q2
InternetConnect Inc.	\$52,600,000	B2B Internet solutions for small and medium sized businesses (broadband connectivity)	Q2



### Security Gateway (firewall)

Need License

Company/	Packet	DMZ	URL Filter			TP Cont	Stateful Inspectio	
Product	Filter	DIVIZ	Exactly String Match	Regular Expression	Java	Active X	JavaScript	n
Linux (Open Source)	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	*
BorderWare Firewall Server	<b>✓</b>	<b>✓</b>		N/A	×	×	*	×
CheckPoint VPN/Firewall-1	<b>✓</b>	<b>✓</b>	*	*	×	×	*	<b>√</b>
Cisco PIX 525R	<b>✓</b>	Need Card	External	N/A	<b>√</b>	<b>✓</b>	*	$\checkmark$
NetScreen-100	<b>✓</b>	<b>✓</b>	External	N/A	<b>✓</b>	<b>✓</b>	×	<b>√</b>
SonicWall PRO VX	<b>✓</b>	<b>✓</b>	<b>√</b>	Keyword Only	<b>✓</b>	<b>✓</b>	×	✓
WatchGuard FireBox Plus	<b>✓</b>	<b>✓</b>	*	*	<b>√</b>	<b>✓</b>	×	<b>✓</b>

means available but not implemented by us

## Security Gateway (VPN)

Need License

C /	Protocol Support	]	Encryption Algorithm				thentication Algorithm	Keying Method		utomatic Key uthentication
Company/ Product	AH/ ESP	D E S	3 D E S	OTHER	M D 5	S H A	OTHER	Manual /Auto	P S K	RSA Signature
Linux (Open Source)	<b>√</b>	<b>√</b>	<b>√</b>	*	<b>√</b>	<b>✓</b>	×	<b>✓</b>	<b>√</b>	✓
BorderWare Firewall Server	Only ESP	<b>√</b>		Blowfish, CAST	<b>√</b>	<b>✓</b>	×	<b>√</b>	<b>√</b>	×
CheckPoint VPN/Firewall-1	<b>√</b>	<b>√</b>		RC2, CAST, FWZ1	<b>√</b>	<b>*</b>	CBC-DES MAC	<b>✓</b>	<b>✓</b>	×
Cisco PIX 525R	<b>√</b>	<b>√</b>		*	<b>√</b>	<b>✓</b>	×	<b>✓</b>	<b>√</b>	✓
NetScreen-100	<b>√</b>	<b>√</b>	<b>√</b>	×	<b>√</b>	<b>✓</b>	*	<b>√</b>	<b>✓</b>	Available in ScreenOS2.5
SonicWall PRO VX	<b>√</b>	<b>√</b>	<b>√</b>	ARCFour	<b>√</b>	×	*	<b>√</b>	<b>✓</b>	×
WatchGuard FireBox Plus	<b>√</b>	<b>✓</b>	<b>√</b>	X NCTU His	√ ehsp	✓ eed ]	🗶 Networks Lab	<b>✓</b>	<b>√</b>	×

# Web Switch (Topologies)

Maria Maria				
	Alteon WebSystems Alteon 184	F5 Networks Bip-IPController 3.1	Foundry Networks ServerIron XL	Intel NetStructure 7180 e-Commerce Director
10/100/1000 Mbps Ethernet	/ /	/ /	/ /	/ /
# of Interfaces ( 10 / 100) Mbps	9/9	2/2	8-24/0-2	2/0
Redundant Power Supplies				
Active/asymmetri c load-balancing	/	/	/	/
Cookie switching				
URL parsing				
SSL acceleration/ termination				
SSL ID load- balancing				

## Web Switch (Fault Tolerance)

	Alteon WebSystems Alteon 184	F5 Networks Bip-IPController 3.1	Foundry Networks ServerIron XL	Intel NetStructure 7180 e- Commerce Director
Port Aggregation		N/A		N/A
Failover via network connection				
Failover via serial link				
Service to VIP bindings				
VRRP				
Backup servers				
SNMP support				

# Web Switch (Web Switch Featuers)

N. B. C. Carrier and				
	Alteon WebSystems Alteon 184	F5 Networks Bip-IPController 3.1	Foundry Networks ServerIron XL	Intel NetStructure 7180 e- Commerce Director
Rule/expression types	Pattern matching	Intelligent pattern and variable matching	Prefix/suffix pattern matching	Prefix/suffix pattern matching
Configurable rule precedence				
Binding logic	Rule to server	Rule to server group	Server group to rule	Rule to server

## Web Switch (Management Features)

	Alteon WebSystems Alteon 184	F5 Networks Bip-IPController 3.1	Foundry Networks ServerIron XL	Intel NetStructure 7180 e- Commerce Director
In service / not in service				
Secure Management	SSH, SSL	SSH, SSL	SSH, SSL	SSH, SSL
Configuration access	CLI, Web	CLI, Web	CLI, Web	CLI, Web
IP filters				
UDP-based service support				
Cache redirection				
Secondary server checking				
Content-aware health checks				
Global load-balancing				
HTTP/DNS redirection methods	/	N/A	/	N/A
802.1p priority				

# Bandwidth Enforcement

	Pri- ority	Src /Dst IP Port#	Ser- vice	Sch- edule	Dir- ection (In /Out)	Log /Alert	Diff- serv Mark -ing		Class ntrol M I N	Guarantee connections in the class
NetGuard	<b>√</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	*	<b>✓</b>	<b>√</b>	×
Check Point	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	×	<b>✓</b>	<b>✓</b>	<b>√</b>
WiseWan	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>√</b>
IPolicer	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	×	<b>√</b>	<b>✓</b>	<b>√</b>
Packeteer	×	<b>✓</b>	<b>✓</b>	×	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>√</b>
Sitara	×	<b>√</b>	<b>✓</b>	×	<b>√</b>	<b>√</b>	×	<b>√</b>	<b>✓</b>	<b>√</b>

# Mail Outsourcing Services

Service provider	POP3 /IMAP4 access	Web access	Anti- virus	Anti- spam	SSL support	Domain hosting	Migration
Yahoo!mail	Yes	Yes	Yes	Yes	Web access	Yes (for individual)	No
Hotmail.com	Yes	Yes	Yes	Yes	Web access	No	No
Critical Path	Yes	Yes	Yes	Yes	Web/POP3/ IMAP4 access	Yes (for enterprises)	No
USA.net	Yes	Yes	Yes	Yes	Web/POP3/ IMAP4 access	Yes (for enterprises)	No
Our system	Yes	Yes	Yes	Yes	Web/POP3/ IMAP4 access	Yes (for enterprises)	Yes

#### Internet Data Centers

OC Corpration

I H P L D W *	Inflow	North America & Europe	17 ID Centers(NA)&1 in Ireland
	Optiglobe	Latin America	3 ID Centers
AsiaWorks	iAsiaWorks	USA and 13 Asia Countries	3 ID Centers (Taiwan, Korea, H.K.)
	ViaWest	America	1 ID Center & 4 facilities

#### Hosting

Shared

Dedicated

10100000

#### Connection

- •Multi-Homing [ Two conn. from redundant internal network to customer equipment ]
- •Flag-rate Pricing vs Usage-base Pricing
- •BGP-4 Routing



#### High Layer Protocol Supporting

- Server Load Balance
- •Identify failure Web site and reroute
- •Secure Socket Layer support
- •Cookie-Tracking Persistence
- •Firewall





#### Storage

Backup and Quickly Reboot



Paper to Digit Content Service No Limit Storage Space



#### Monitor & Manage

- •Business Report
- •Immediate Web Report
- •Simulate End-User to connect web site, ftp or send/recv email



INCTO HIGHSPEED NETWORKS LAU