

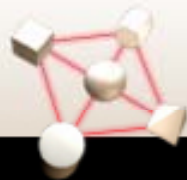


IT Cluster

A Springboard of Thai Software Opportunities

Bangalore, India

- Wealth of expertise across technologies
- Low cost of manpower
 - World Teleport



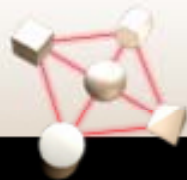
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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



Notes from Narayana Murthy's Keynote Speech at Thailand Science Park – June 2003

- *“Destiny is not a matter of chance; it is matter of choice. It is not something to be waited for; but rather something to be achieved.”* -- [William Jennings Bryan](#)
- *“The illiterate of this century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.”* – [Alvin Toffler](#)
- 53 out of the 83 companies in the world with a Level 5 certification on the SEI CMM model are located in India.
- In India, a number of policy initiatives in the telecom sector, including privatization, have led to easier and cheaper availability of data communication facilities. Resulting in 40% in price reduction of 2 MB bandwidth, over the last three years.



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South Korea: Utopia of broadband access



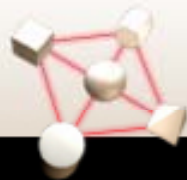
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“South Korea: Unintended success”

- The government directed its state-owned power utility to build out fiber infrastructure in the mid-1990 to provide cable TV service, not broadband telecommunications.
- This was an expensive failure! But after these losses had been taken, telecom firms utilizing this network to offer its own offerings.
- This spurred cutthroat competition but at least three viable players have emerged.

Source: Gartner



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資料7 我が国におけるブロードバンド加入者数の推移

6,000,000

5,000,000

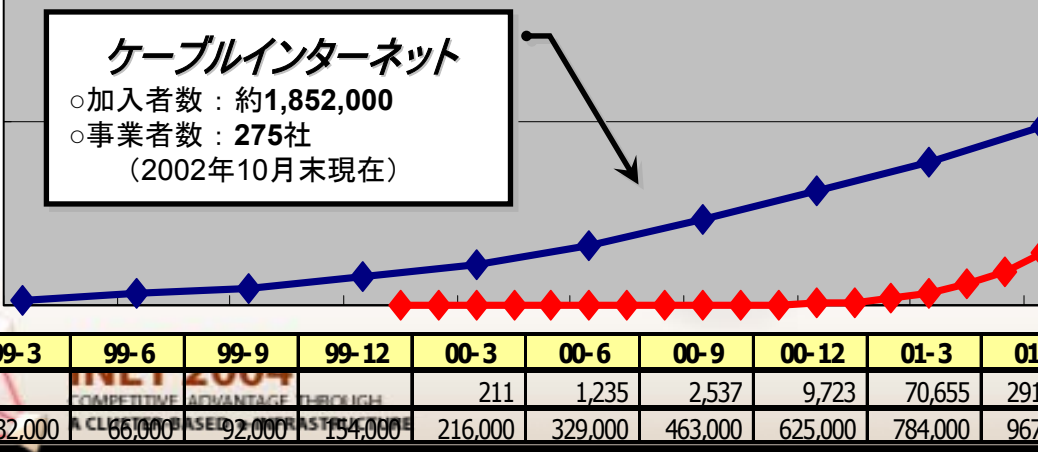
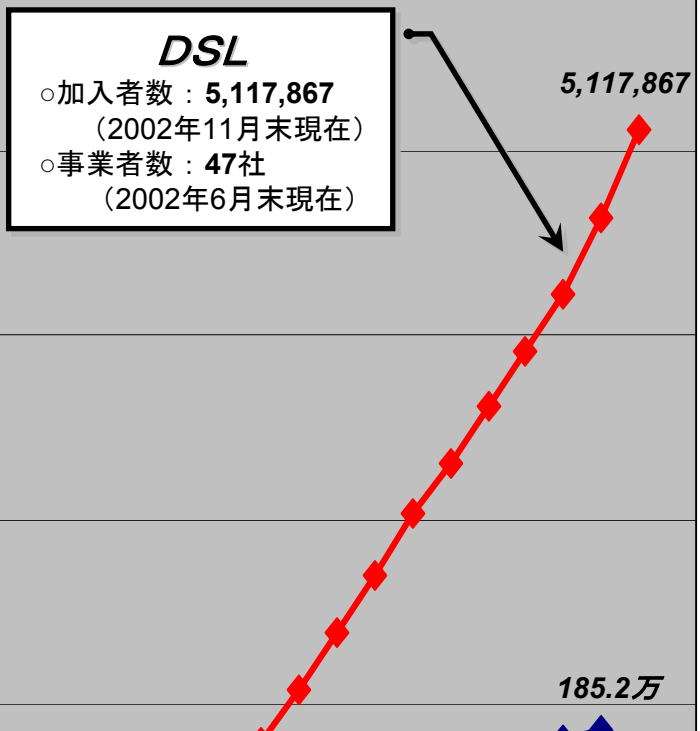
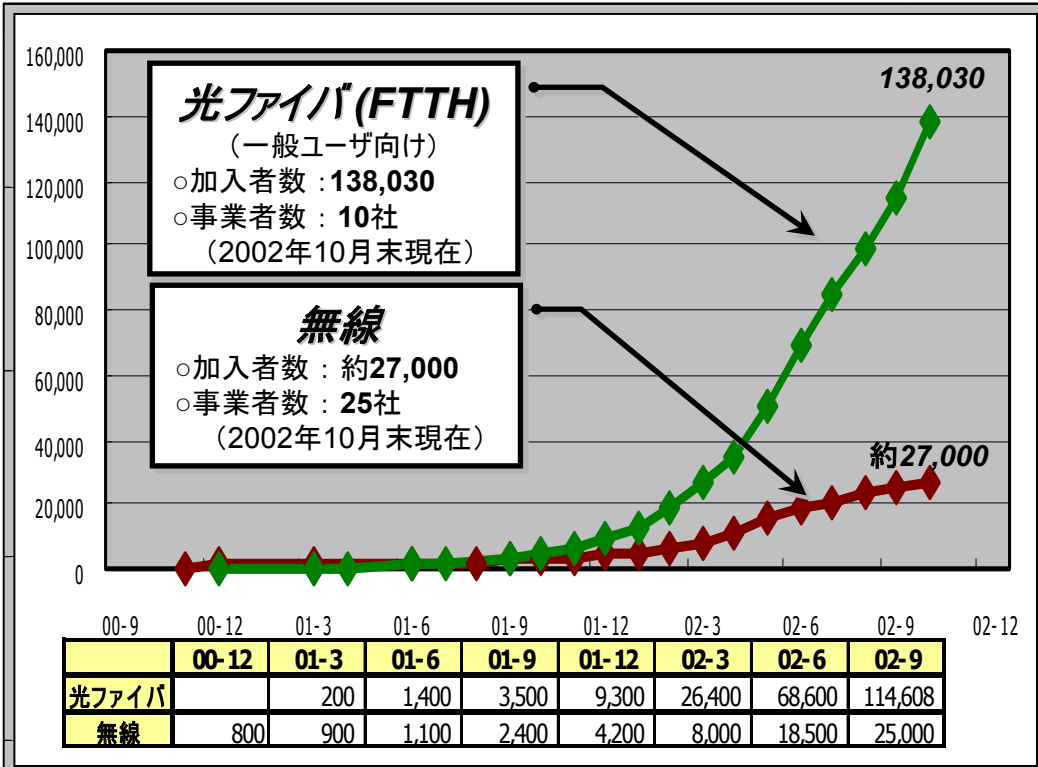
4,000,000

3,000,000

2,000,000

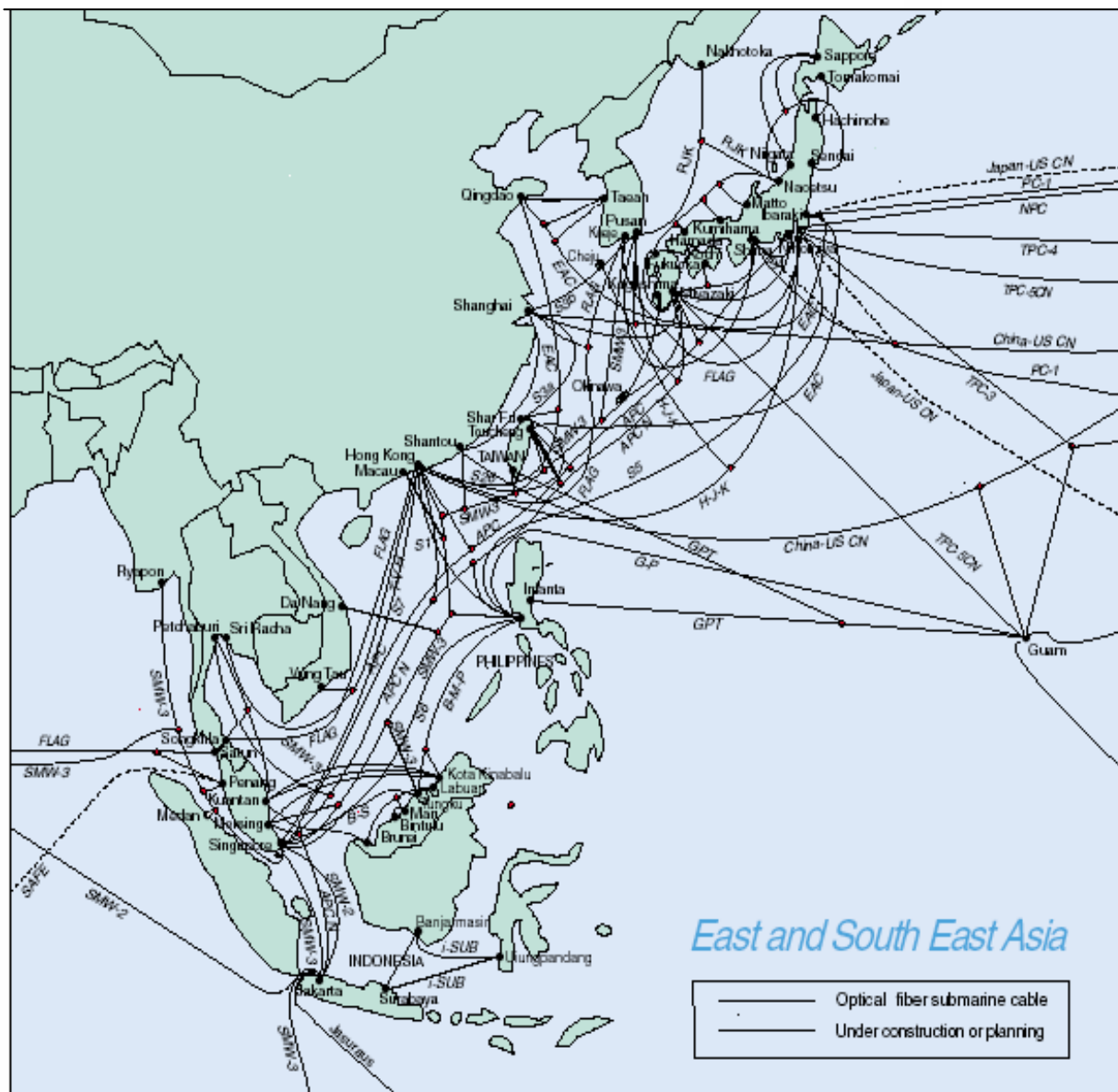
1,000,000

0



(出典) 総務省資料

資料8 アジア・太平洋地域における海底ケーブル



(注)

(1)左図には、音声電話用回線も含まれる。

(2)左図のうち、ブロードバンドは、例えば、①RJK、FLAG(*)、

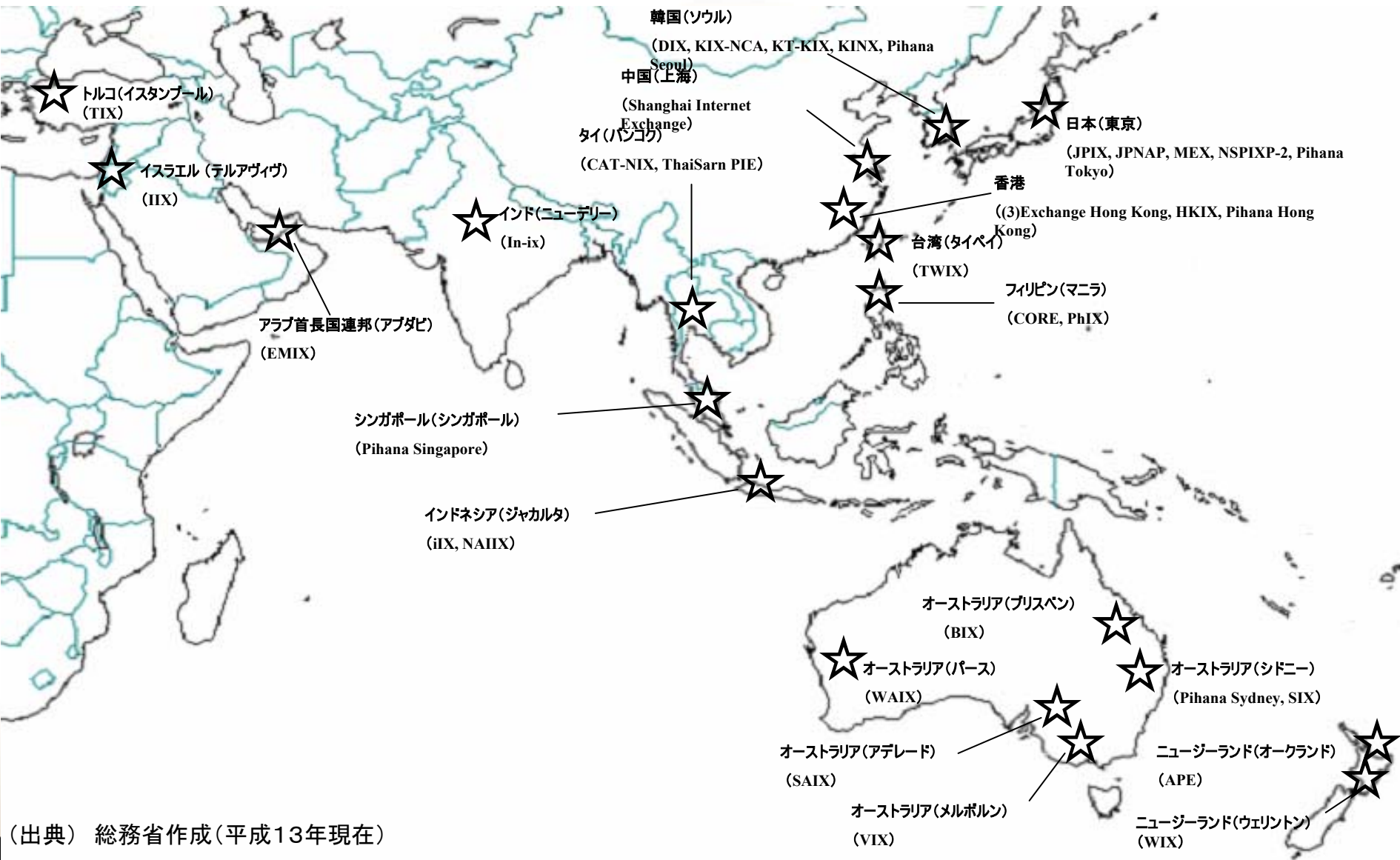
SMW3(*), APCN(*), APCN2(*), APC, TVH, CHINA-US CN(*)はKDDI、②EAC(*)はアジア・グローバル・クロッシング、③KJCNはNTTコムが提供

(*は、NTTコムも参加している。)

(出典)KDDIマテリアル(2001年10月現在)



資料11 アジア・太平洋地域内における国際IXの現状

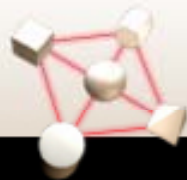
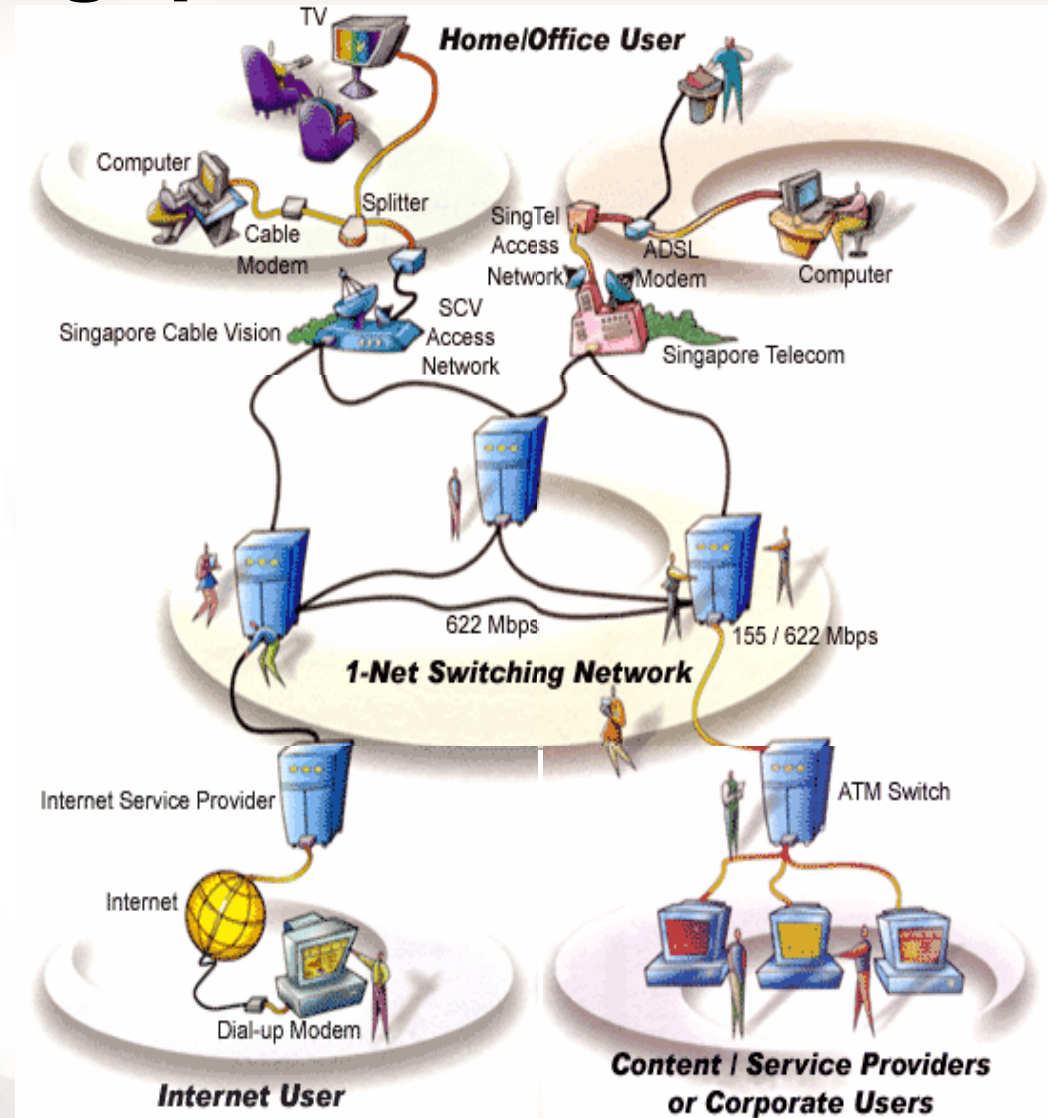


(出典) 総務省作成(平成13年現在)

SingaporeOne, Singapore

The center of
Telecommunication
(Faster, Better, Easier)

- Fiber facility network connecting the entire island to all communities



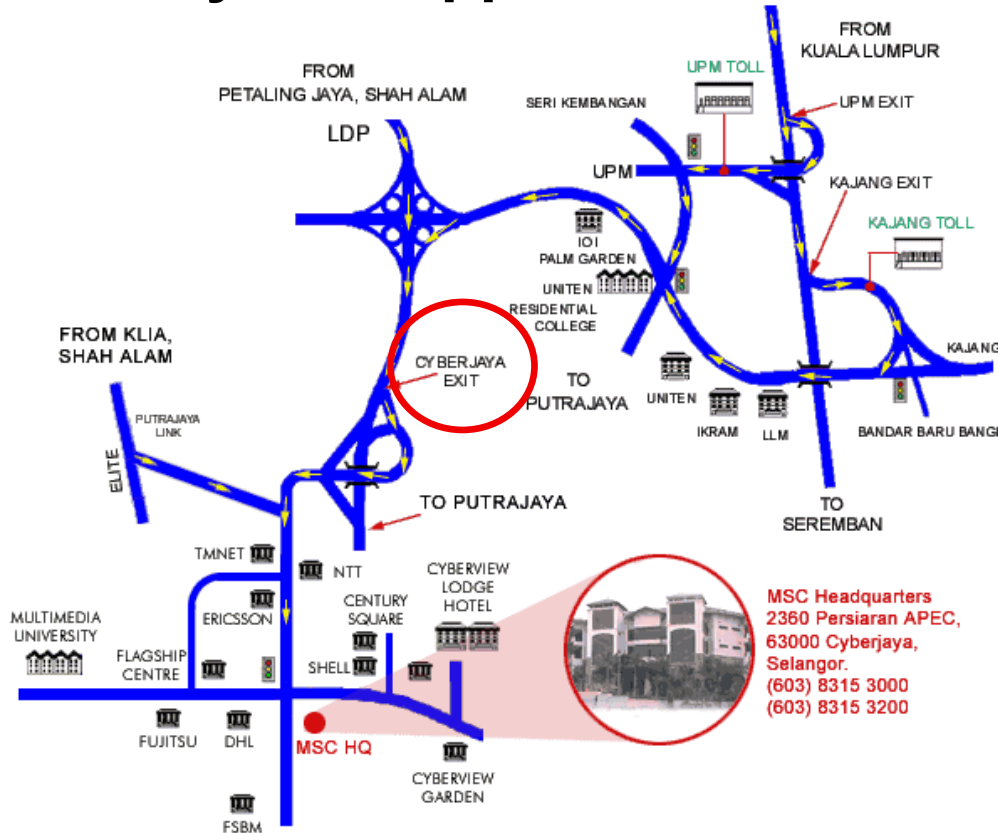
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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



Multimedia Supercorridor, Malaysia

A center of Knowledge-based Economy and Opportunities



- Cyber Jaya
- Senai Southern Airport
- Broadband Network
- High speed train



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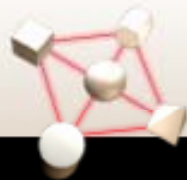
COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



Xian, China



Target to develop over 100,000 programmers
within 10 years



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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE

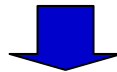


Thailand in New Economy

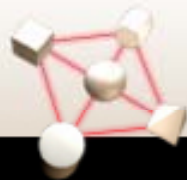
Leverage Bangkok e-Infrastructure



**Seamless & Competitive
Communication Network**



ICT-driven Competitiveness

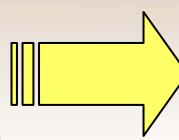


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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE

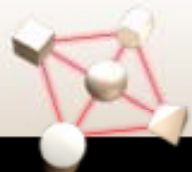
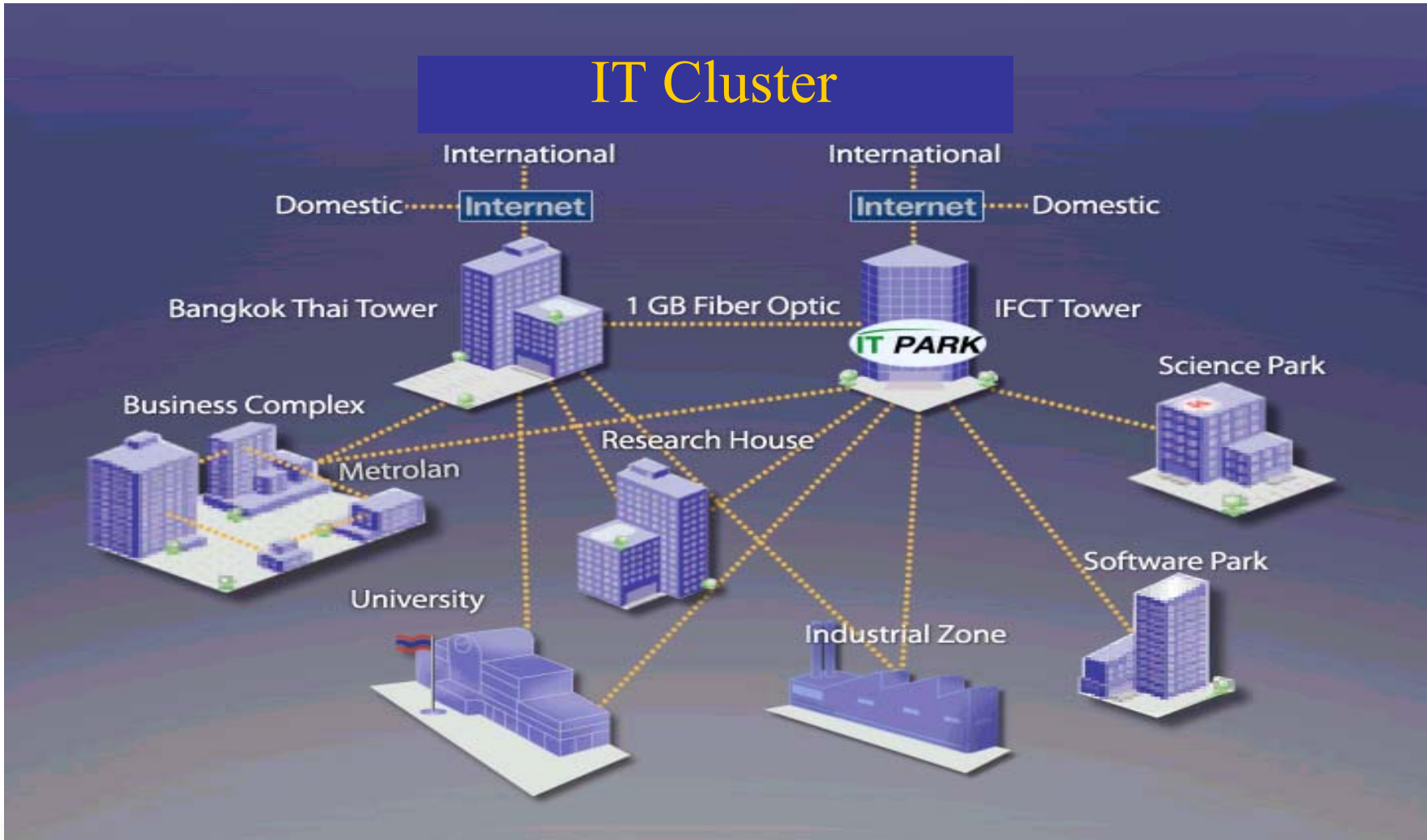


IT PARK
Business extension



ICT Cluster
e- Infrastructure

IT Cluster



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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE

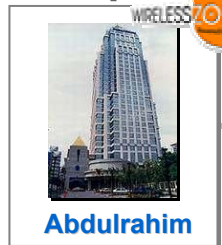




Sathorn City



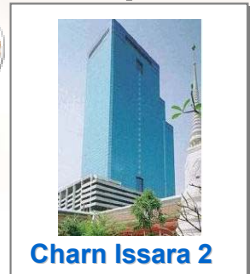
Bangkok City



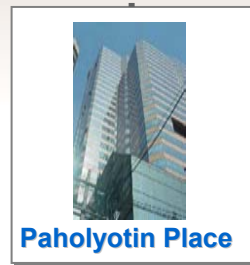
Abdulrahim



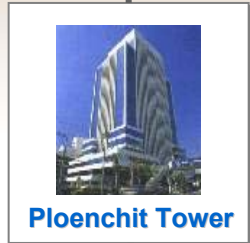
Ital-Thai Tower



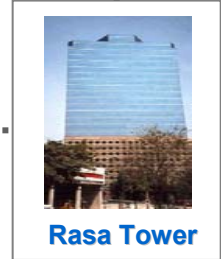
Charn Issara 2



Paholyotin Place



Ploenchit Tower



Rasa Tower



IFCT Tower

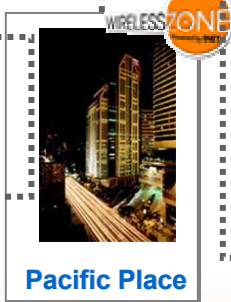
MetroLAN



Emporium Tower



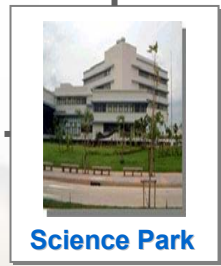
All Seasons Place



Pacific Place



Software Park



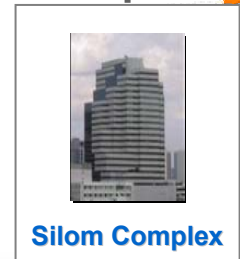
Science Park



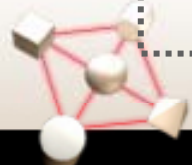
UBC II



Lake Rachada



Silom Complex



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A CLUSTER-BASED e-INFRASTRUCTURE



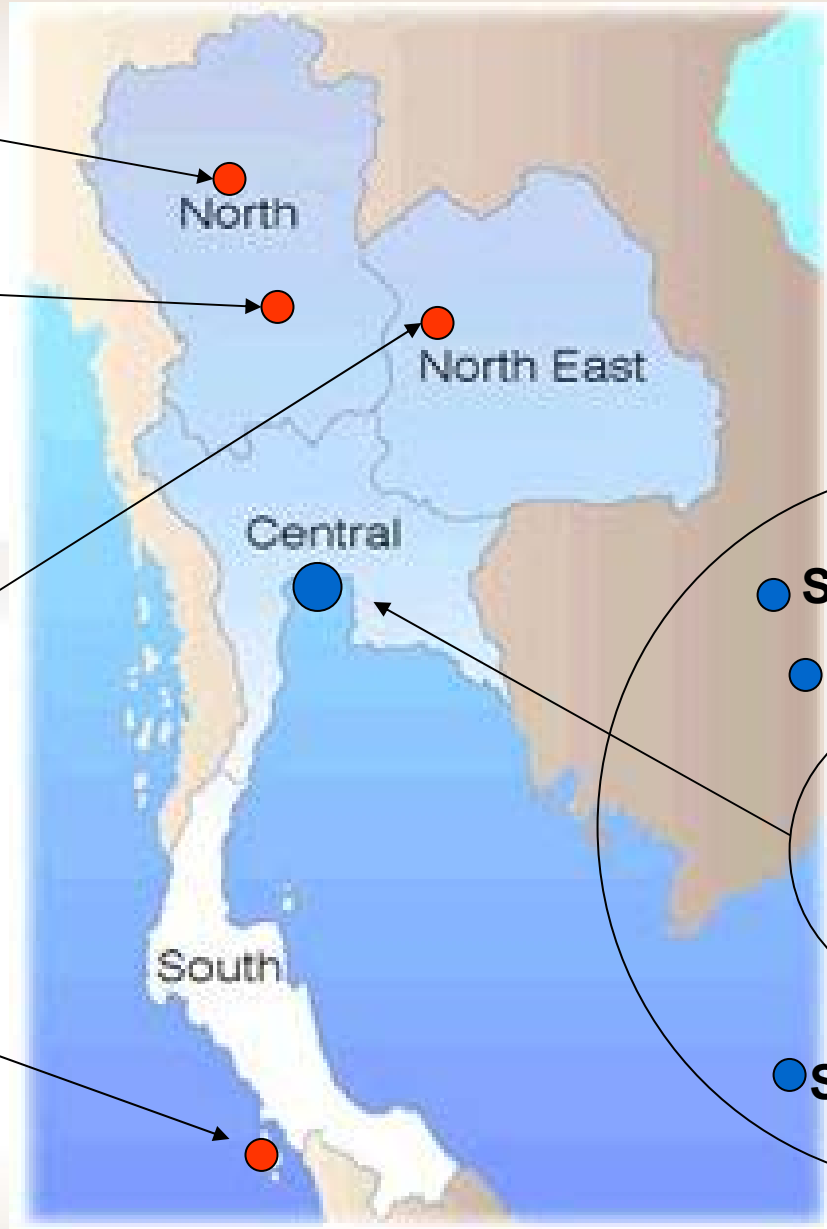
Thailand ICT Cluster

Chiangmai

Phitsanulok

Khon Kean

Phuket



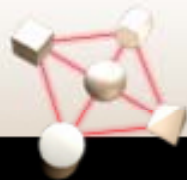
● Science park

● Software

Bangkok

● Eastern hub

● Southern hub



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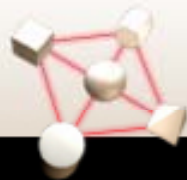
COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



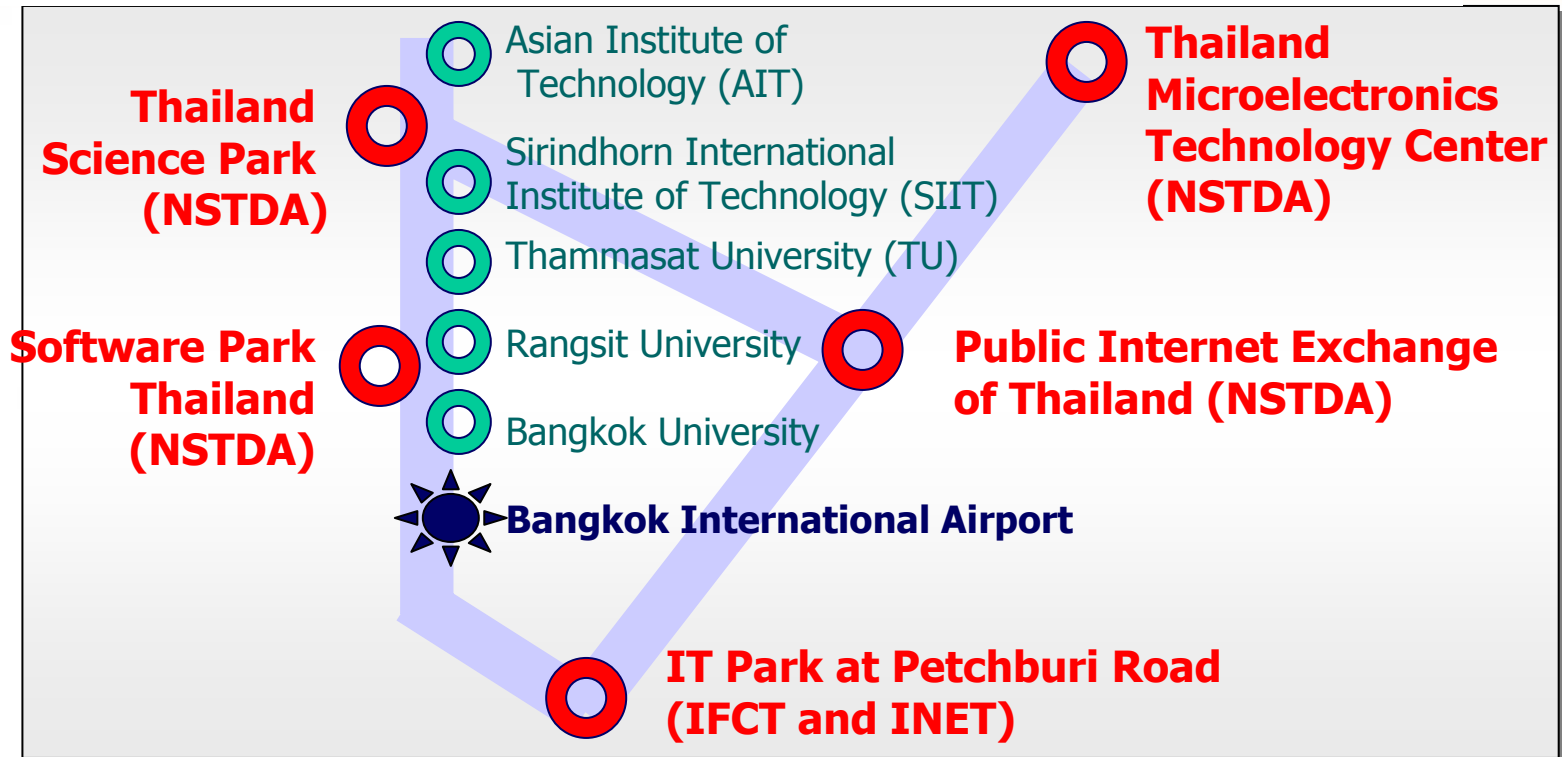
Technology Clusters of North Bangkok



- **Five Universities**
(AIT, Thammasat, SIIT, Rangsit, Bangkok)
- **Four major Industrial Estates in the vicinity**
(Navanakorn, Rojana, Hi-tech, Bangkradii)



Technology Clusters of North Bangkok



Gigabit network links to

- **Software Industry Cluster** at **Software Park***
- **e-Commerce and Business Cluster** at **IT Park**
- **Public Internet Exchange of Thailand** at **Rangnam Road**

IFCT Tower Building



Name: IT Park

Owner: ADCO/IFCT

Status: BOI-cert. SwPark

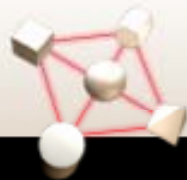
Peers: SciPark/SwPark/
SIPA/MetroLAN

Surrounded by univ'ies

Business funding

Transportations:

- 200m to subway station
- 300m to train station
- 1km to expressway
- 100m to pier



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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



Source: Internet Information Research Center (IIR)

October 25, 2001

	Traffic injected into IIR	Traffic taken from IIR	Total Data Market Share
	kbps	kbps	kbps
Internet Thailand	40,100.00	13,300.00	53,400.0
Internet KSC	20,000.00	18,900.00	38,900.00
CS Internet	10,900.00	17,400.00	28,300.00
Loxinfo	11,100.00	12,600.00	23,700.00
TOTAL	111,342.60	114,073.20	228,415.80

Source: NIX at Internet Information Research Center (IIRC)

November 26, 2003

	Traffic injected into IIR	Traffic taken from IIR	Total Data Market Share
	kbps	kbps	kbps
Internet Thailand	123,200.00	102,400.00	225,600.00
Asiainfonet	106,900.00	63,900.00	170,800.00
Internet KSC	82,800.00	74,700.00	157,500.00
CSLoxinfo	57,400.00	74,900.00	132,300.00
TOTAL	561,567.70	524,411.30	1,085,979.00

Growth Rate

- Overall Market 5 times
- INET Content 3 times
- INET Consumption 8 times

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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



Killer Applications

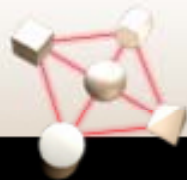
First Wave

- Heavy Internet users
(always on)
- Stock exchange
(Day Trader)
- Online games

Second Wave

- Broadband Portal
- Education
- Music
- Movie
- Television Program

Source: Prof. Kilnam Chon, KAIST



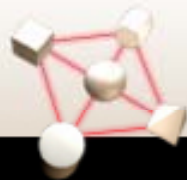
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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE



The Next Software Shift

- Why shifting in the first place?
 - Follow good examples or try a warp speed?
 - Why Software companies are switching away from their traditional cashcows?
- Effects of Open Source Software, True Automation/Straight-through Processing and “Telecosm”
- When?



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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE





Special Thanks to

- National Science and Technology Development Agency (NSTDA)
- National Electronic and Computer Technology Center (NECTEC)
- Software Park Thailand (SWPark)
- Thailand Science Park (ThSciPark)
- Software Industry Promotion Agency (SIPA)
- Industrial Finance Corporation of Thailand (IFCT)
- Board of Investment (BOI)

IT Cluster
Thank you

Internet Information Research Center (IIRC)

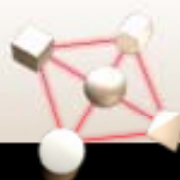
National Internet Exchange (NIX) NIX Traffic Statistics 8-day Average

November 28, 2003 at 9:31

	Traffic injected into NIX		Traffic taken from NIX		Total Data Traffic Share		Export Import ratio of ISP	Line Speed
	kbps	Share	kbps	Share	kbps	Share	Ratio	kbps
ANET	22300.0	4.1%	21500.0	4.3%	43800.0	4.2%	1.0	46080
AsiaAccess	6279.1	1.2%	5688.0	1.1%	11967.1	1.1%	1.1	102400
AsiaInfonet	102700.0	19.1%	61500.0	12.2%	164200.0	15.8%	1.7	1433600
CAT	11100.0	2.1%	23900.0	4.7%	35000.0	3.4%	0.5	1024000
CSLoxinfo	55200.0	10.2%	70700.0	14.0%	125900.0	12.1%	0.8	261120
CWN	14.0	0.0%	44.1	0.0%	58.1	0.0%	0.3	512
DataLineThai	891.6	0.2%	1369.4	0.3%	2261.0	0.2%	0.7	16384
EZNet	175.7	0.0%	819.0	0.2%	994.7	0.1%	0.2	2048
FarEast	50.8	0.0%	168.3	0.0%	219.1	0.0%	0.3	512
IdeaNet	5273.1	1.0%	3968.0	0.8%	9241.1	0.9%	1.3	34816
InternetThailand	117000.0	21.7%	100100.0	19.9%	217100.0	20.8%	1.2	1024000
ISSP	60300.0	11.2%	38500.0	7.6%	98800.0	9.5%	1.6	2048000
Ji-Net	23000.0	4.3%	31500.0	6.3%	54500.0	5.2%	0.7	102400
KSC	78900.0	14.6%	71700.0	14.2%	150600.0	14.4%	1.1	363520
PacificInternet	34900.0	6.5%	19100.0	3.8%	54000.0	5.2%	1.8	1024000
ReachThai	116.4	0.0%	101.2	0.0%	217.6	0.0%	1.2	1024000
RoyNet	1553.8	0.3%	1930.3	0.4%	3484.1	0.3%	0.8	102400
Samart	6837.3	1.3%	16000.0	3.2%	22837.3	2.2%	0.4	102400
UniNet	12400.0	2.3%	34800.0	6.9%	47200.0	4.5%	0.4	69632
TOTAL	538991.8		503388.3		1042380.1			9703424

AVERAGE TRAFFIC CIRCULATION
DAILY TRAFFIC VOLUME
WEEKLY TRAFFIC VOLUME
MONTHLY TRAFFIC VOLUME

521.2Mb/s
 5368.1GB
 37576.6GB
 161042.8GB

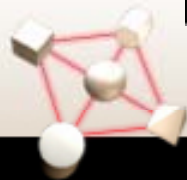
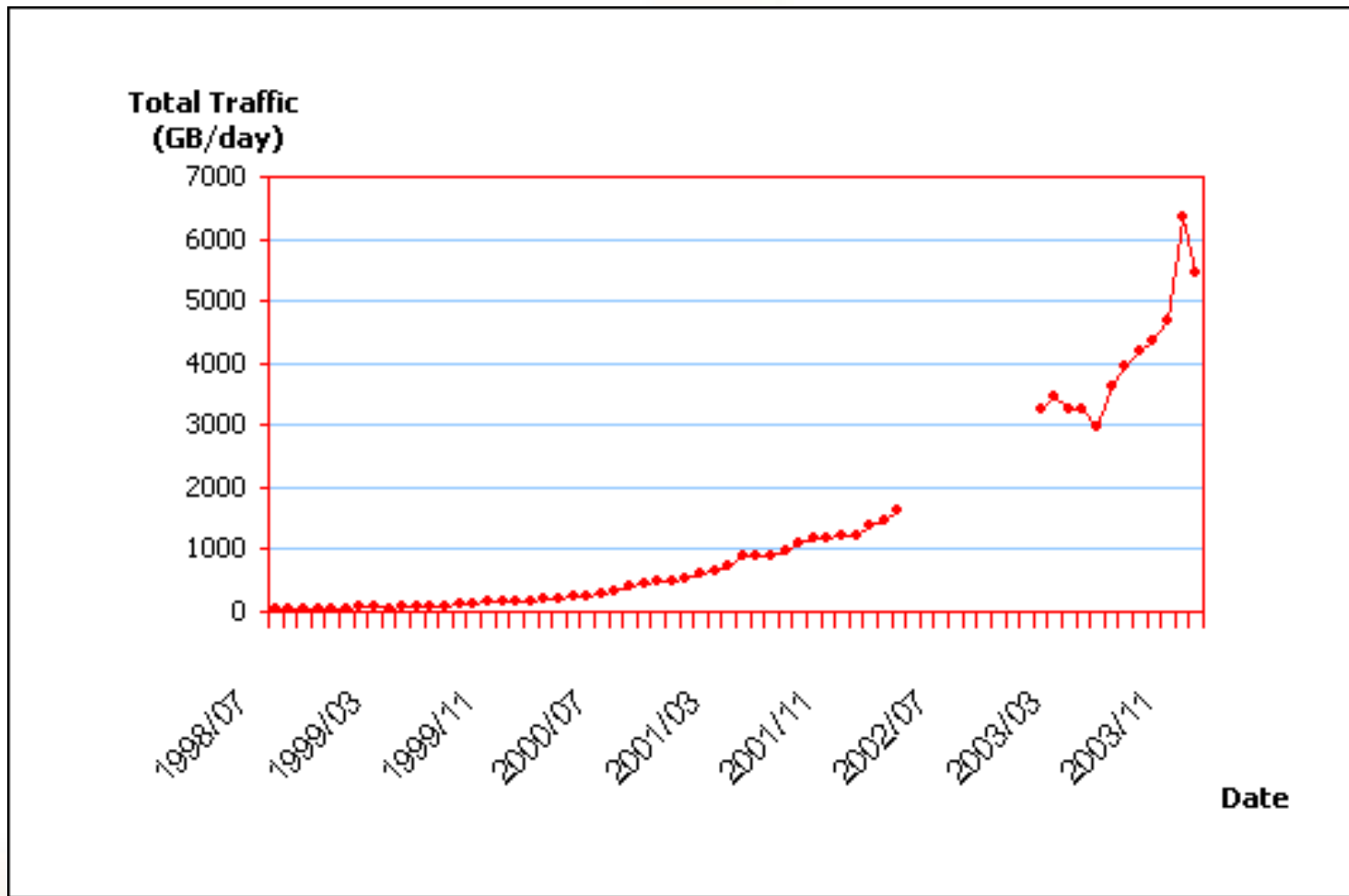


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COMPETITIVE ADVANTAGE THROUGH
 A CLUSTER-BASED e-INFRASTRUCTURE



Growth of Domestic Traffic



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COMPETITIVE ADVANTAGE THROUGH
A CLUSTER-BASED e-INFRASTRUCTURE

