

Structural Power of Thai Internet System before 2006-Coup d' Etat

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Institute of Human Rights and Peace Studies

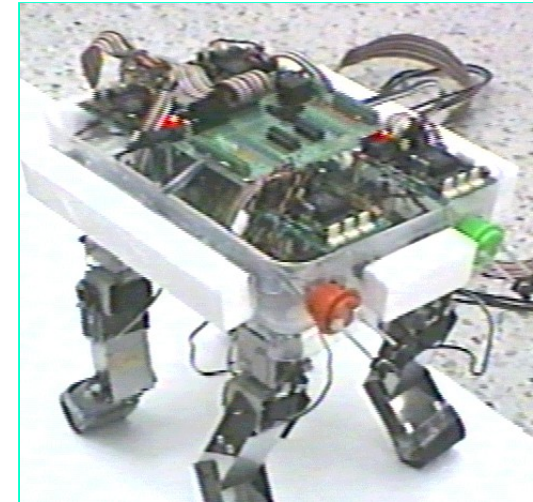
(former name : Research Centre for Peace Building)

Mahidol University, Thailand

July 19-20, 2011

My Academic Background

- **Bachelor & Master Degree** : Com. Eng.
on Artificial Intelligence Programming
to Control “Quadruped” and “Biped” Robot
- **Research Assistance** (4 Years) : Sociology
- **PhD** : Political Science => Computer + Politics
=> *“Technology & Nonviolent Political Struggle
over Internet in Thailand”*
- **Current Work (since 2010)** : Peace Building
=> Hate Speech Online; Nuclear Controversies;



Internet Studies : Sample Literatures

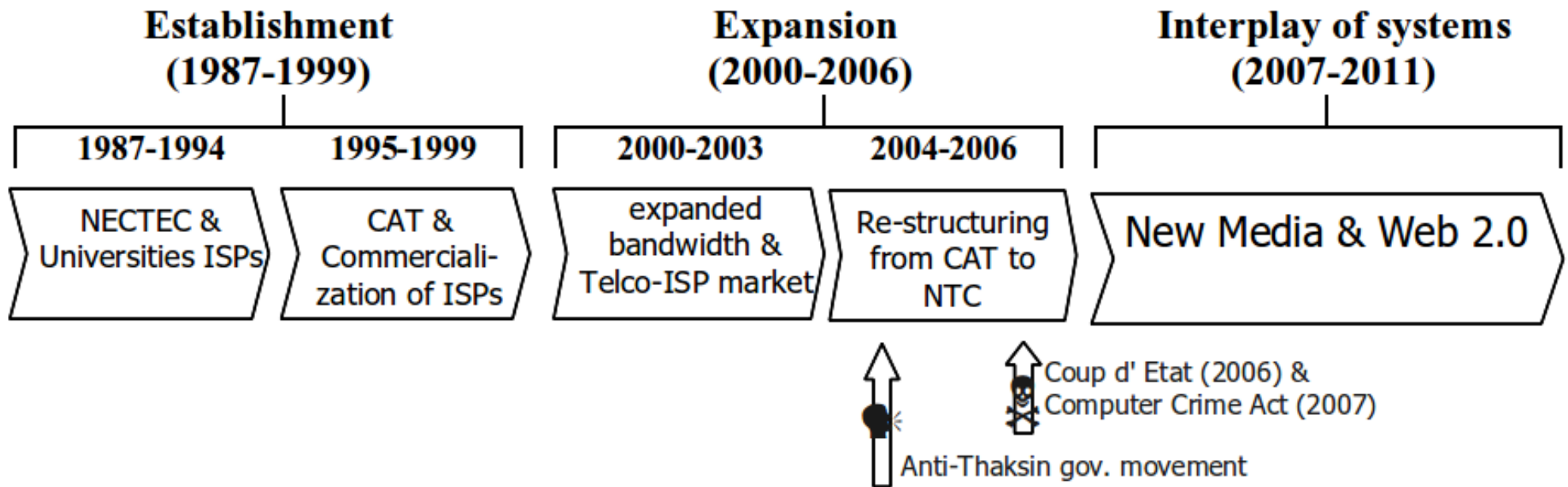
- Second Self (Turkle 2005)
- user-driven development (Abbet 1999)
- people empowering (McCaughey & Ayers 2003; Donk 2004)
- e-democracy (Hague 1999)
- surveillance (Lyon 2001)
- censorship or filtering (Diebert, et al. 2008, 2010)
- My Studies on

“Structural Power of Internet & Political Action over It”

Background Theories

- ‘Do artifacts have politics?’ (Langdon Winner 1986)
- **LTS (Large Technical System)** : Thomas P. Hughes (1999)
 - Dynamic of Technological System (Arne Kaijser 2004)
=> Establishment, Expansion, Stagnation,
& Interplay with Systems.
- **SCOT (Social Construction of Technology)**: Wiebe Bijker (1995)
 - Problem, Solution, Social Relevant Group, Artefact

Phases of Internet Development in Thailand



focus of this presentation

Technology-Power Matrix

Technological Layers

Infrastructure Layer: telcom network, IIG, NIX, etc.

Access Layer: access system, webhosting server, data center, etc.

Content Layer: website, webboard, weblog, online TV/radio, etc.


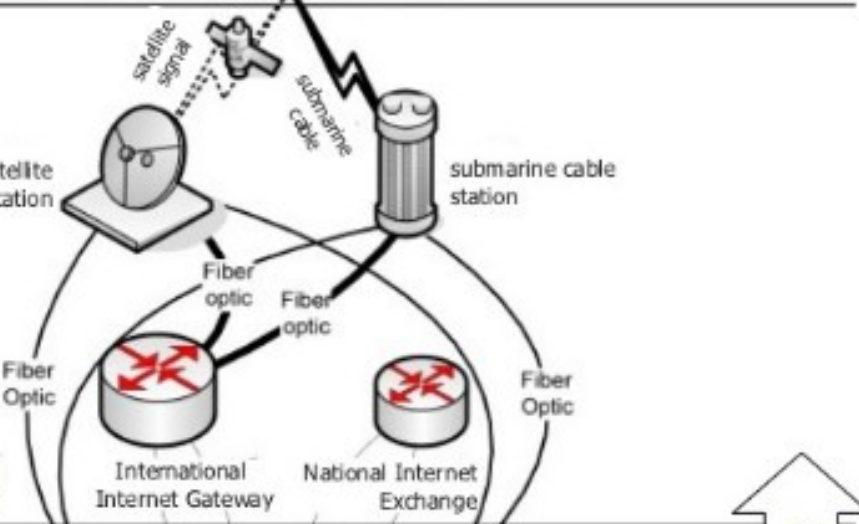
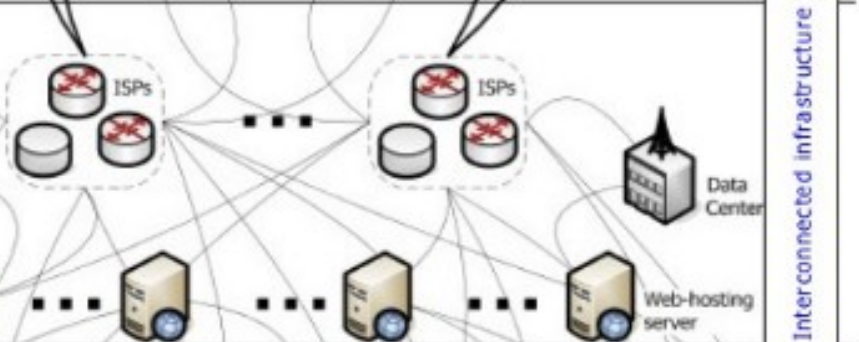
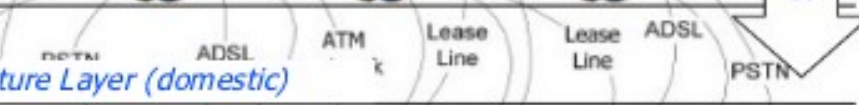

Tracks of Power

Technological Structure: set of equipments / applications


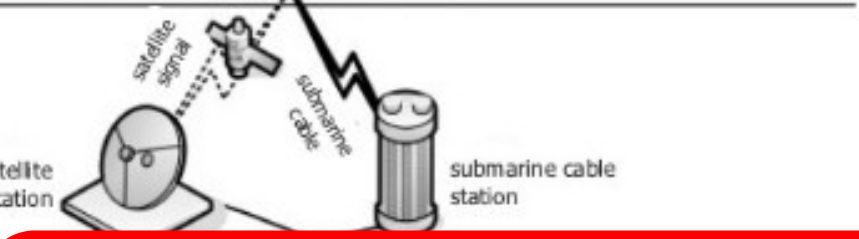
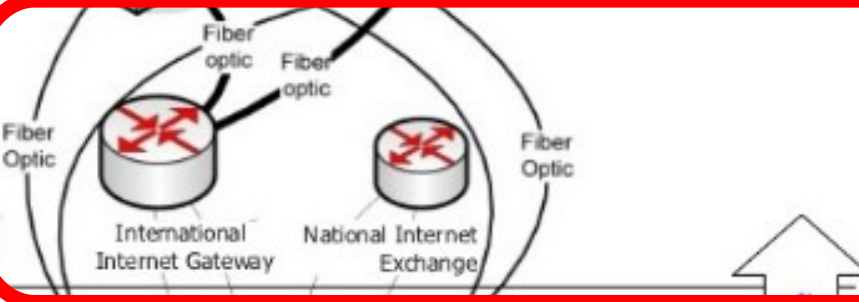
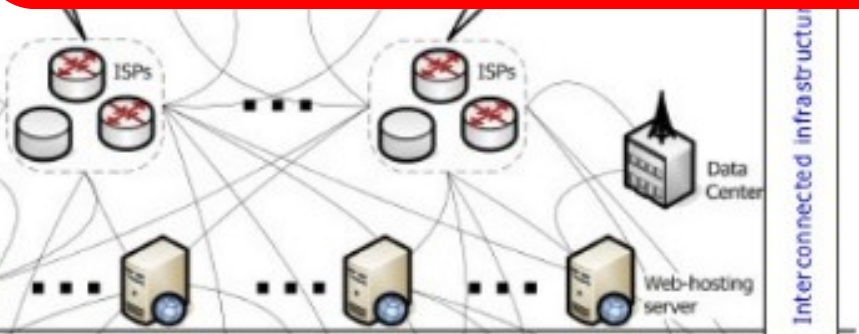
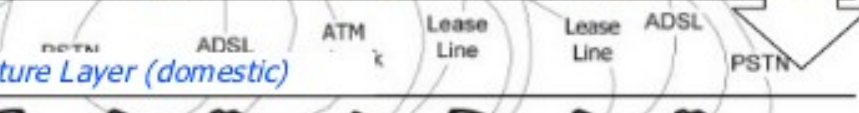

Ownership / Authorship: relevant social group

Institution: pattern of power relationship

Structural Power of Thai Net (pre-2006-coup)

Technological Structure Track	Ownership / Authorship	Institutional Track			
 <p>Global Internet</p> <p>Satellite station</p> <p>submarine cable station</p> <p>satellite signal</p> <p>submarine cable</p>					
 <p>Network Infrastructure Layer (national & International Connection)</p> <p>International Internet Gateway</p> <p>National Internet Exchange</p> <p>Fiber Optic</p>	<p>submarine cable: many countries</p> <p>satellite: other & Shin Corp</p>	N T C	MICT	Civil Court	
	<p>submarine cable & satellite station (1 provider) : CAT</p>			Cyber-inspector, DPR	Admin Court
	<p>IIG (1 provider) : CAT-IIG</p> <p>NIX (almost 1 provider) => CAT-NIX (IIR of NECTEC was rarely used)</p>				Consti-tution Court
 <p>Access Layer</p> <p>ISPs</p> <p>Data Center</p> <p>web-hosting server</p>	<p>ISPs => AsiaInfoNet (True Corp), CSLoxinfo (Shin Corp), JI-Net (Jusmine Corp) + other 15 providers</p> <p>Data Center : CAT + other</p> <p>Webhosting provider: many</p>			E-Com-merce Act (2001)	
 <p>Network Infrastructure Layer (domestic)</p> <p>ADSL</p> <p>PSTN</p> <p>ATM</p> <p>Lease Line</p>	<p>Domestic Infra.(4): CAT, TOT, True Corp, TT&T (Jusmine Corp)</p>		NTC	Thai Consti-tution (1997)	
 <p>Content Layer</p> <p>online radio</p> <p>website</p> <p>webboard</p> <p>weblog</p> <p>website</p> <p>webboard</p> <p>online TV</p> <p>website</p>	<p>Content Providers => huge number</p>		MICT, Cyber-Inspector, DPR		

IIG & NIX : CAT vs NECTEC

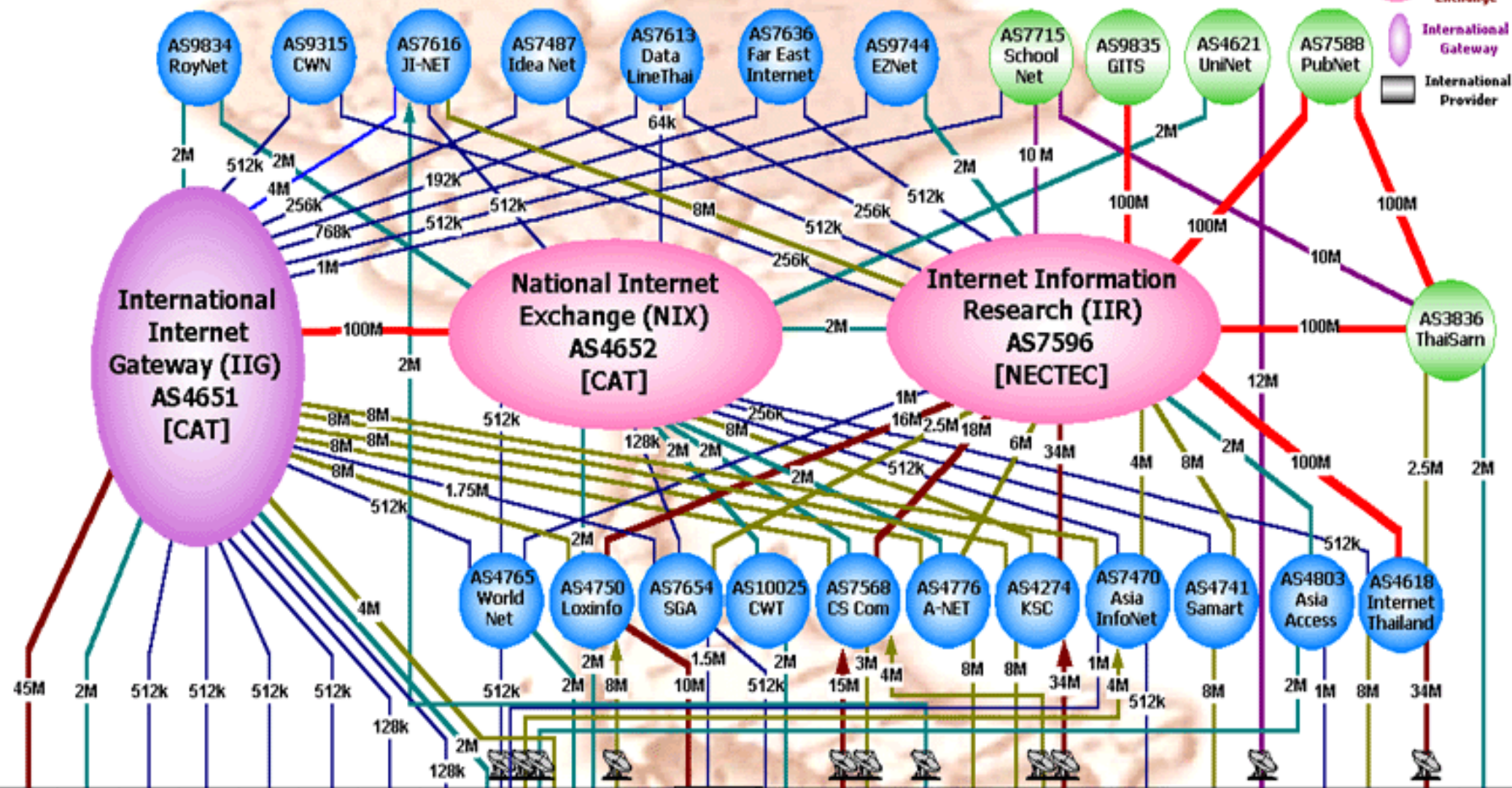
Technological Structure Track	Ownership /Authorship	Institutional Track
 <p>Global Internet</p>		
 <p>Satellite station, satellite signal, submarine cable, submarine cable station</p>	<p>submarine cable: many countries satellite: other & Shin Corp</p> <p>submarine cable & satellite station (1 provider) : CAT</p>	<p>Civil Court</p>
 <p>Network Infrastructure Layer (national & International Connection)</p> <p>International Internet Gateway, National Internet Exchange, Fiber Optic</p>	<p>IIG (1 provider) : CAT-IIG NIX (almost 1 provider) => CAT-NIX (IIR of NECTEC was rarely used)</p>	<p>Admin Court</p> <p>Constitution Court</p>
 <p>Access Layer</p> <p>ISPs, Data Center, Web-hosting server</p>	<p>ISPs => AsiaInfoNet (True Corp), CSLoxinfo (Shin Corp), JI-Net (Jusmine Corp) + other 15 providers</p> <p>Data Center : CAT + other Webhosting provider: many</p>	<p>Cyber-inspector, DPR</p> <p>E-Commerce Act (2001)</p>
 <p>Network Infrastructure Layer (domestic)</p> <p>ADSL, PSTN, ATM, Lease Line</p>	<p>Domestic Infra.(4): CAT, TOT, True Corp, TT&T (Jusmine Corp)</p>	<p>NTC</p> <p>Thai Constitution (1997)</p>
 <p>Content Layer</p> <p>online radio, website, webboard, weblog, website, webboard, online TV, website</p>	<p>Content Providers => huge number</p>	<p>MICT, Cyber-Inspector, DPR</p>

Internet Connectivities in Thailand (August 2000)

Total International bandwidth :
228.25 Mbps (into Thailand) and
161.25 Mbps (out from Thailand)

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

- Academic/Research/Government
- Commercial
- Domestic Exchange
- International Gateway
- International Provider



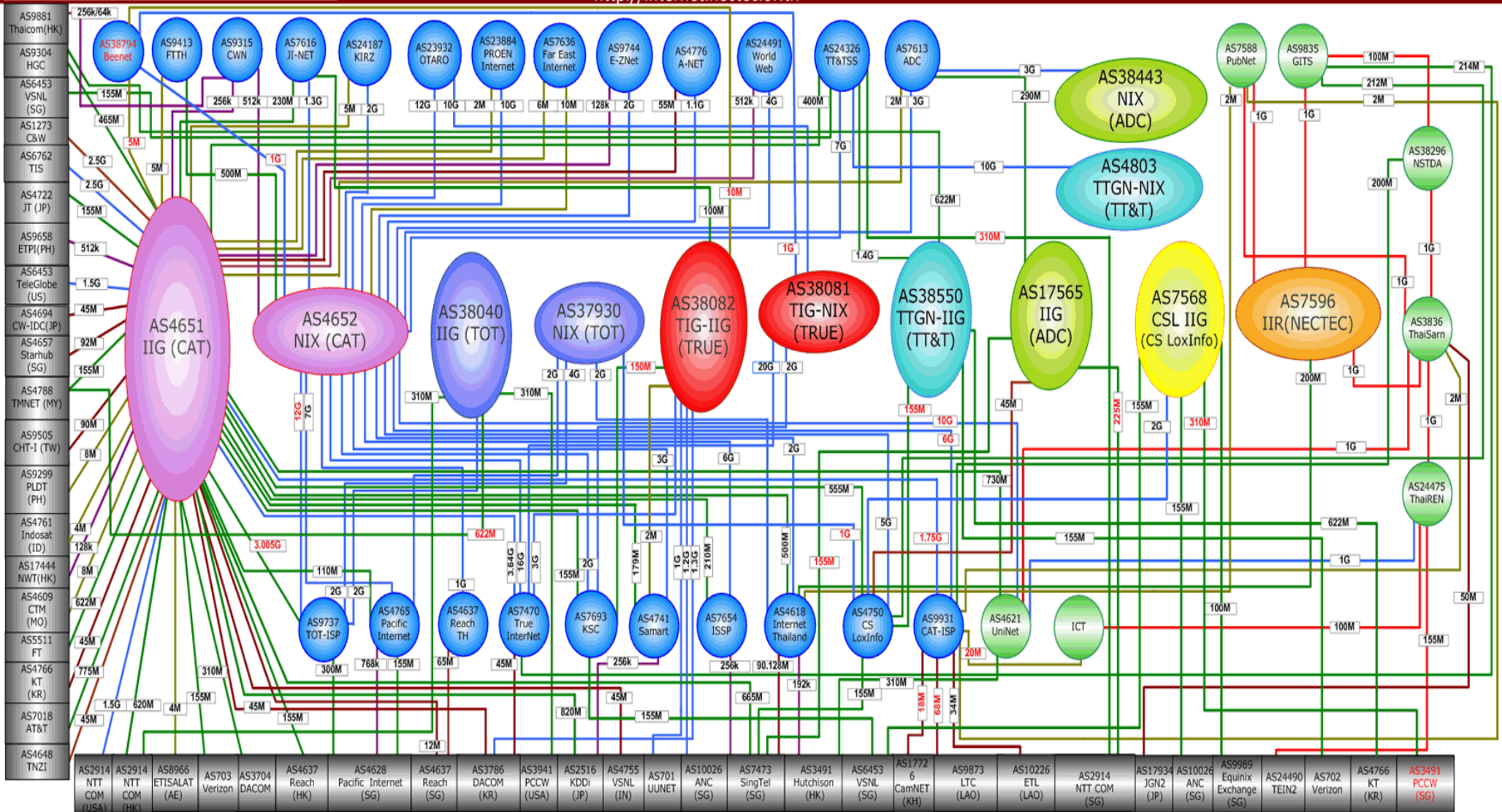
AS5727 AT&T (US)	AS4774 Abone (JP)	AS9505 CHT-I (TW)	AS4766 KIX (KR)	AS2516 KDD (JP)	AS4788 TMNET (MY)	AS4722 ITJ (JP)	AS4694 IDC (JP)	AS7473 SingTel (SG)	AS3561 C&W (US)	AS11915 Orion US	AS4000 Global One (US)	AS4637 C&W (HK)	A9881 ThaiCom (HK)	AS8961 EMIX (AE)	AS7018 AT&T (US)	AS6453 TeleGlobe (US)	AS8297 TeleGlobe (Europe)	AS2907 NACSIS (JP)
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Total International Bandwidth
 21763.496 Mbps (Into Thailand)
 21763.496 Mbps (Out from Thailand)

↑ สถานะปัจจุบัน
 เพิ่มขึ้นจากเดือนก่อน

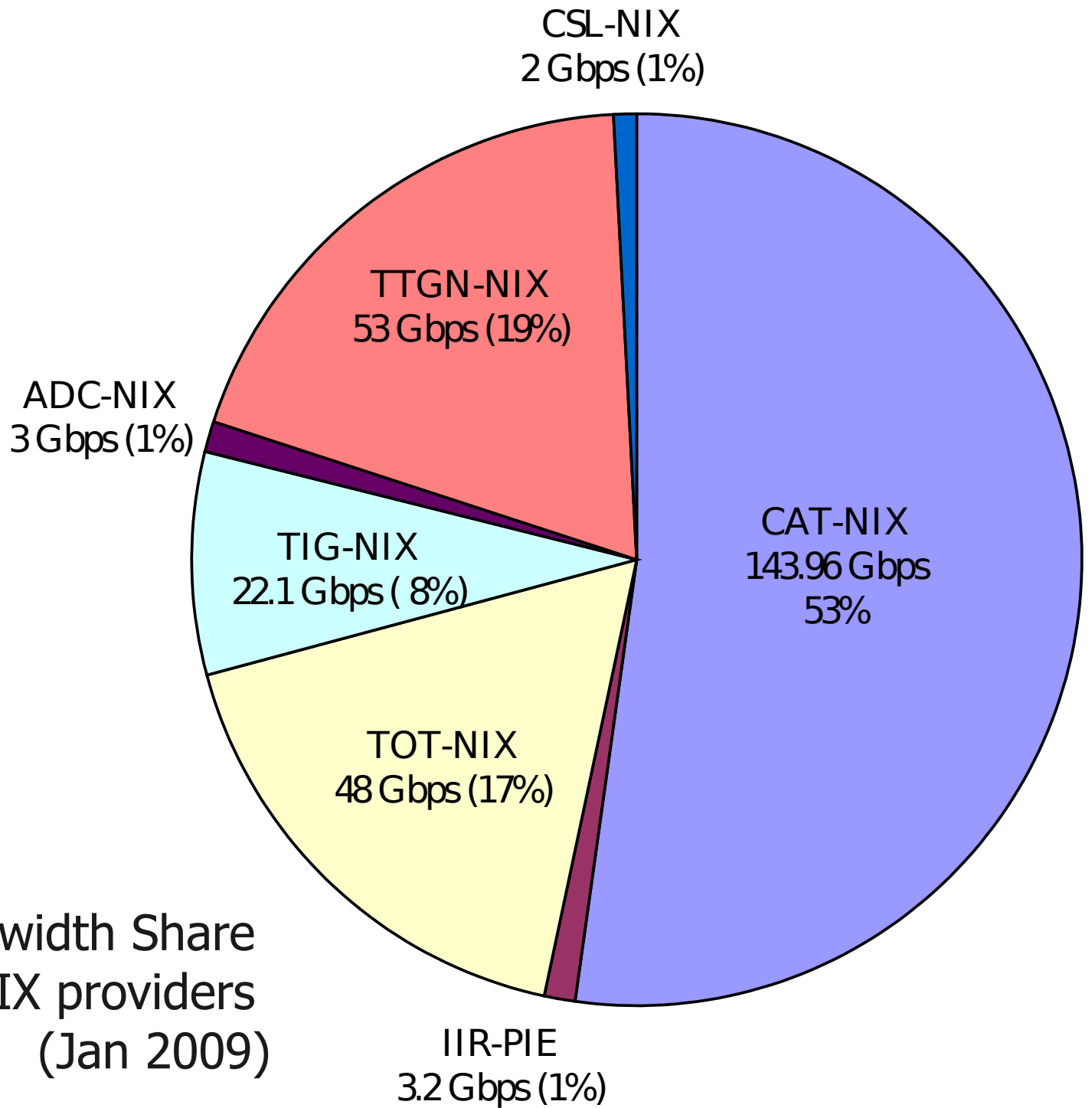
Internet Connectivity in Thailand (December 2007)

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



Academic/Research/Government	International Gateway (CAT)	International Gateway (TRUE)	International Gateway (TTGN TT&T)	National Internet Exchange(TOT)	Government/Research/Academic Link	Link (>=100Mbps & < 1Gbps)
Commercial	International Gateway (TOT)	International Gateway (ADC)	National Internet Exchange (CAT)	International Gateway (CSL IIG CS Loxinfo)	Link (< 1Mbps)	Link (>=1Gbps)
			National Internet Exchange (ADC)	International Provider	Link (1Mbps -10Mbps)	Link (>10M and <100Mbps)

Domestic Bandwidth Share
of Thai NIX providers
(Jan 2009)

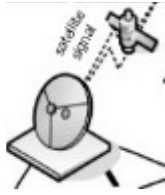


ISPs & Telecom carrier

Technological Structure Track	Ownership / Authorship	Institutional Track		
<p>Global Internet</p> <p>Satellite station, submarine cable station, Fiber Optic, International Internet, National Internet, ISPs, Data Center, web-hosting server, ADSL, PSTN, ATM, Lease Line, online radio, website, webboard, weblog, website, webboard, online TV, website</p>	<p>submarine cable: many countries satellite: other & Shin Corp</p>			
<p>Network Infrastructure Layer (national & International Connection)</p>	<p>submarine cable & satellite station (1 provider) : CAT</p>			Civil Court
<p>Access Layer</p>	<p>IIG (1 provider) : CAT-IIG NIX (almost 1 provider) => CAT-NIX (IIR of NECTEC was rarely used)</p>	N T C	MICT	Admin Court
<p>Network Infrastructure Layer (domestic)</p>	<p>ISPs => AsiaInfoNet (True Corp), CSLoxinfo (Shin Corp), JI-Net (Jusmine Corp) + other 15 providers Data Center : CAT + other Webhosting provider: many</p>		Cyber-inspector, DPR	Constitution Court E-Commerce Act (2001)
<p>Content Layer</p>	<p>Domestic Infra.(4): CAT, TOT, True Corp, TT&T (Jusmine Corp)</p>		NTC	Thai Constitution (1997)
<p>Content Providers => huge number</p>	<p>Content Providers => huge number</p>		MICT, Cyber-Inspector, DPR	

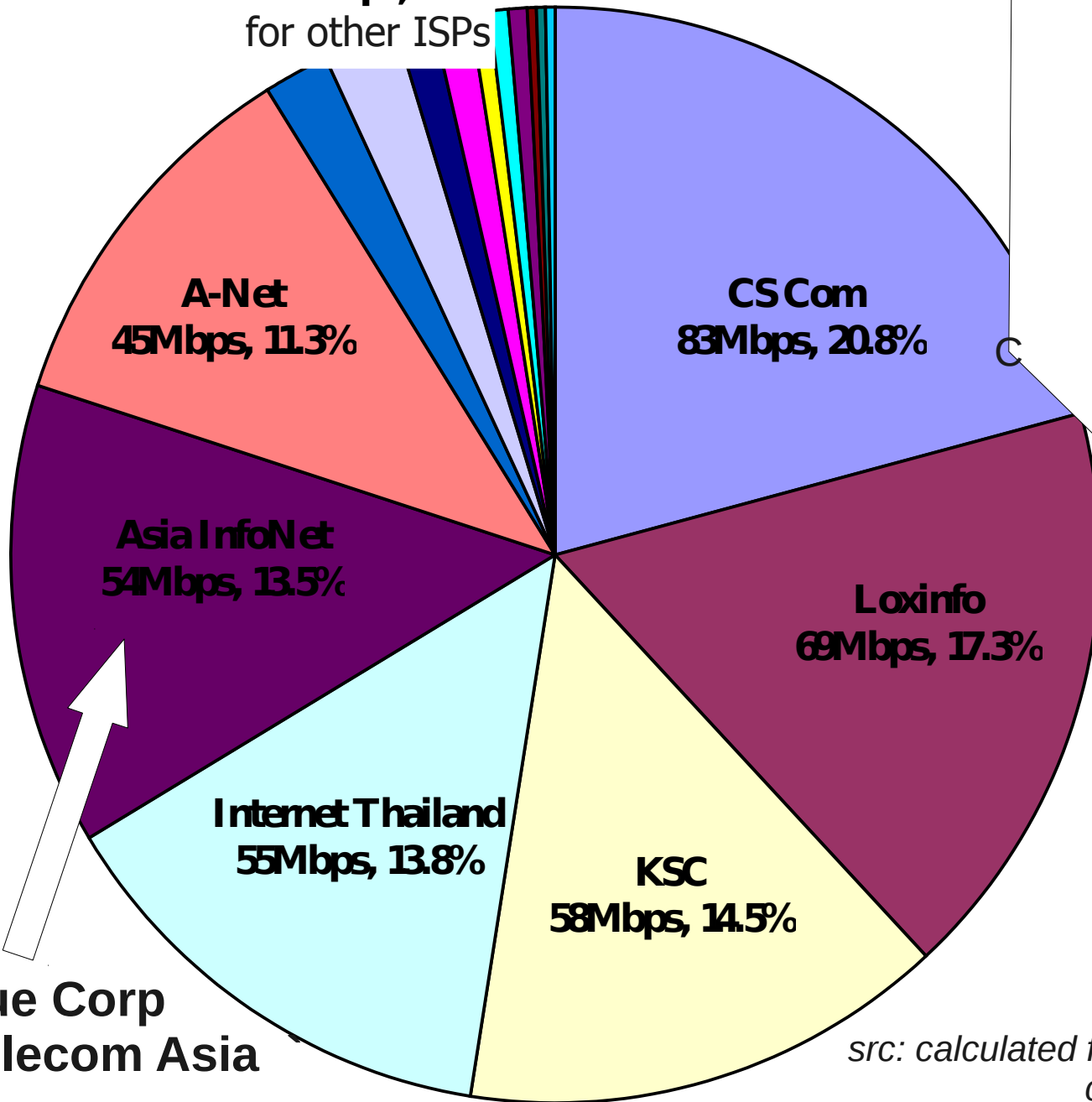
International Bandwidth Share among Thai ISPs (June 2001)

Shin Corp & iPSTAR



35Mbps, 8.9%
for other ISPs

**CS Comm
+ Loxinfo
= CS Loxinfo
(38.1%)**

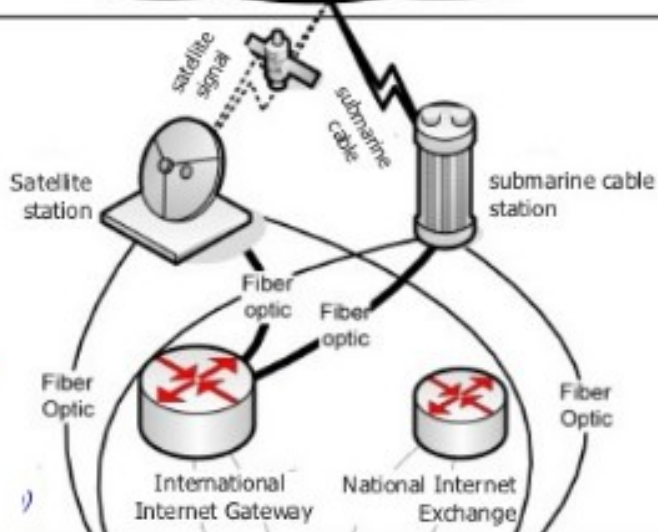


**True Corp
/Telecom Asia**

*src: calculated from <http://ntl.nectec.or.th/internet/>
cited in Tangkitwanit (2001: 17)*

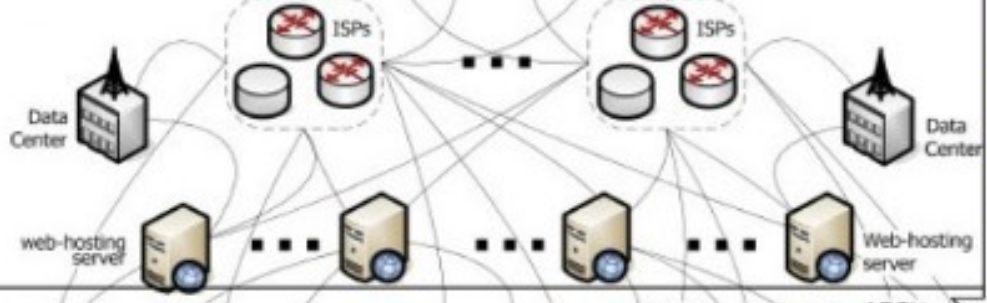
Institutional Track & Political Conflict (2005-6) (1)

Technological Structure Track



Network Infrastructure Layer (national & international connection)

Access Layer



Network Infrastructure Layer (domestic)



Content Layer

Ownership / Authorship

submarine cable: many countries
satellite: other & Shin Corp

submarine cable & satellite station (1 provider) : CAT

IIG (1 provider) : CAT-IIG
NIX (almost 1 provider) => CAT-NIX
(IIR of NECTEC was rarely used)

ISPs => AsiaInfoNet (True Corp), CSLoxinfo (Shin Corp), JI-Net (Jusmine Corp) + other 15 providers
Data Center : CAT + other
Webhosting provider: many

Domestic Infra.(4): CAT, TOT, True Corp, TT&T (Jusmine Corp)

Content Providers => huge number

Institutional Track

NTC

MICT
Cyber-inspector,
DPR

Civil Court

Admin Court

Constitution Court

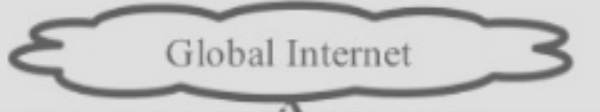


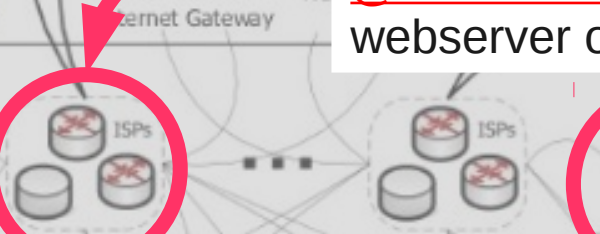


E-Commerce Act (2001)

Thai Constitution (1997)

NTC

MICT, Cyber-Inspector, DPR

Institutional Track & Political Conflict (2005-6) (2)

Technological Structure Track	Ownership / Authorship	Institutional Track	
 <p>Global Internet</p>			
 <p>Satellite station, submarine cable, submarine cable station</p>	<p>submarine cable: many countries satellite: other & Shin Corp</p>		Civil Court
 <p>Fiber optic, Fiber Optic, International Internet Gateway</p>	<p>submarine cable & satellite station (1 provider) : CAT</p>		Admin Court
 <p>ISPs, Data Center</p>	<p>IIG (1 provider) : CAT-IIG NIX (almost 1 provider) => CAT-NIX (MCTEC was...)</p>	N T C	MICT Constitution Court
 <p>Webhosting server, Lease Line, ASL</p>	<p>ISPs => AsiaInfoNet (True Corp), CSLoxinfo (Shin Corp), JI-Net (Jusmine Corp) + other 15 providers</p> <p>Data Center : CAT + other Webhosting provider: many</p>		Cyber-inspector, DPR E-Com-merce Act (2001)
 <p>online radio, website, webboard, weblog, website, webboard, online TV, website</p>	<p>Domestic Infra (4) : CAT TOT Content Providers => huge number</p>	NTC	The Constitution (1997) Cyber-Inspector, DPR

@ISPs : secretly order to blockade accessing to manager.co.th

@Data Center: try to “unplug” webserver of www.manager.co.th

@Webhosting Server :
-force to halt corruptionwatch.net
- verbal order to cut off signals of www.manager.co.th

@webmaster : shut down thaiinsider.com & fm9225.net

Institutional Track & Political Conflict (2005-6) (3)

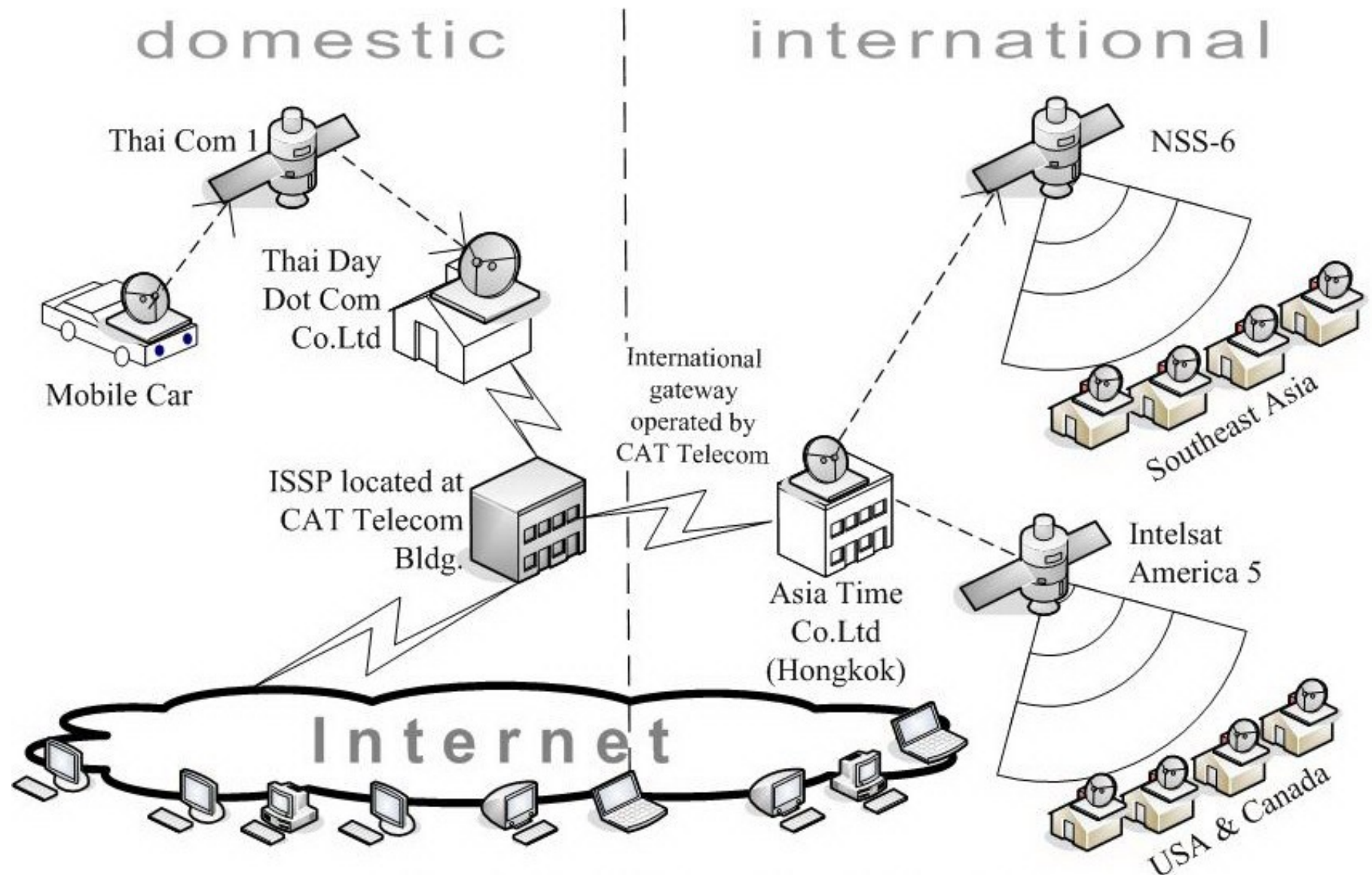


Diagram 1 : ASTV integrated broadcasting system

Institutional Track & Political Conflict (2005-6) (4)

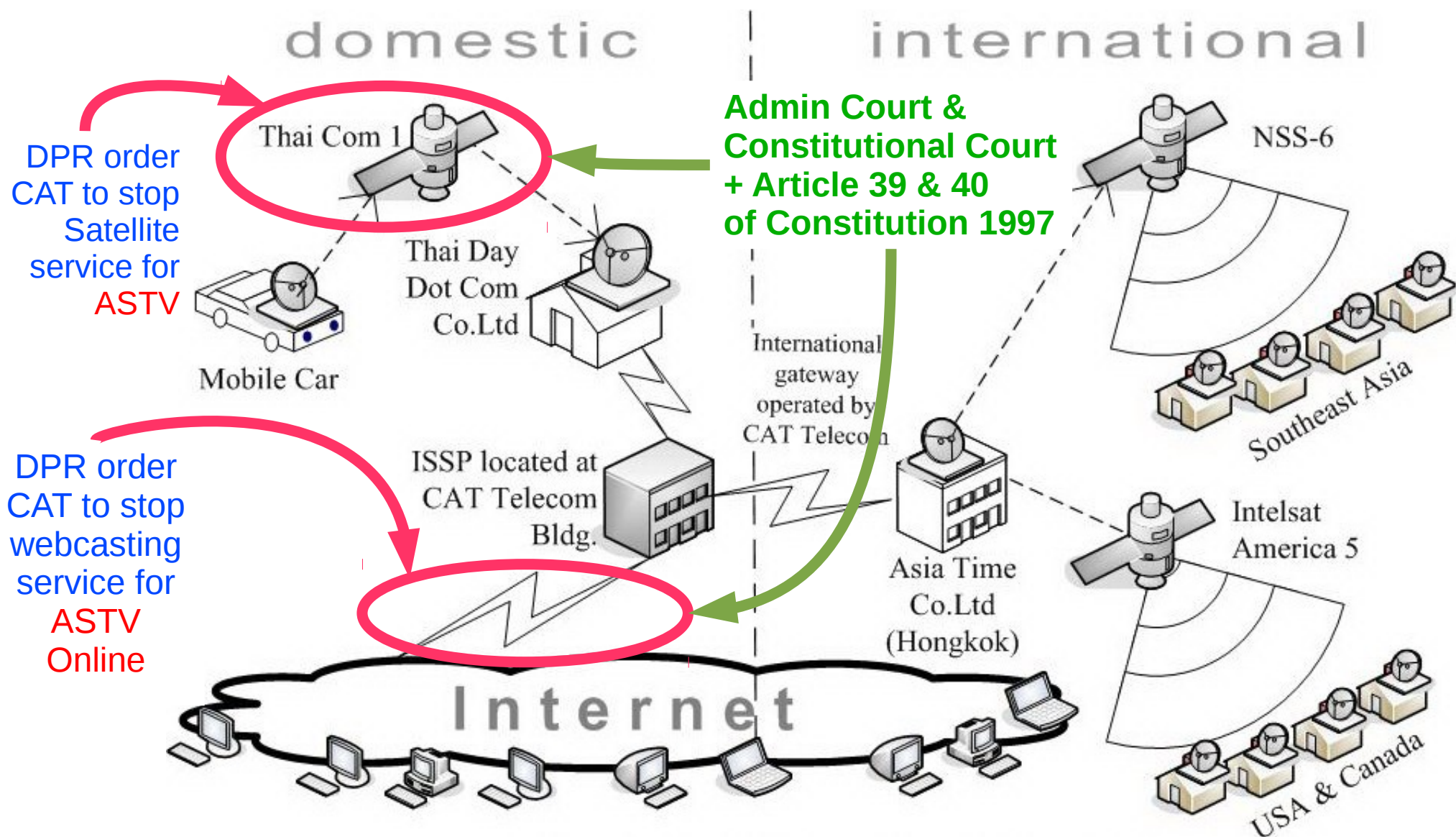


Diagram 1 : ASTV integrated broadcasting system

Reference (1)

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Thank You

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