

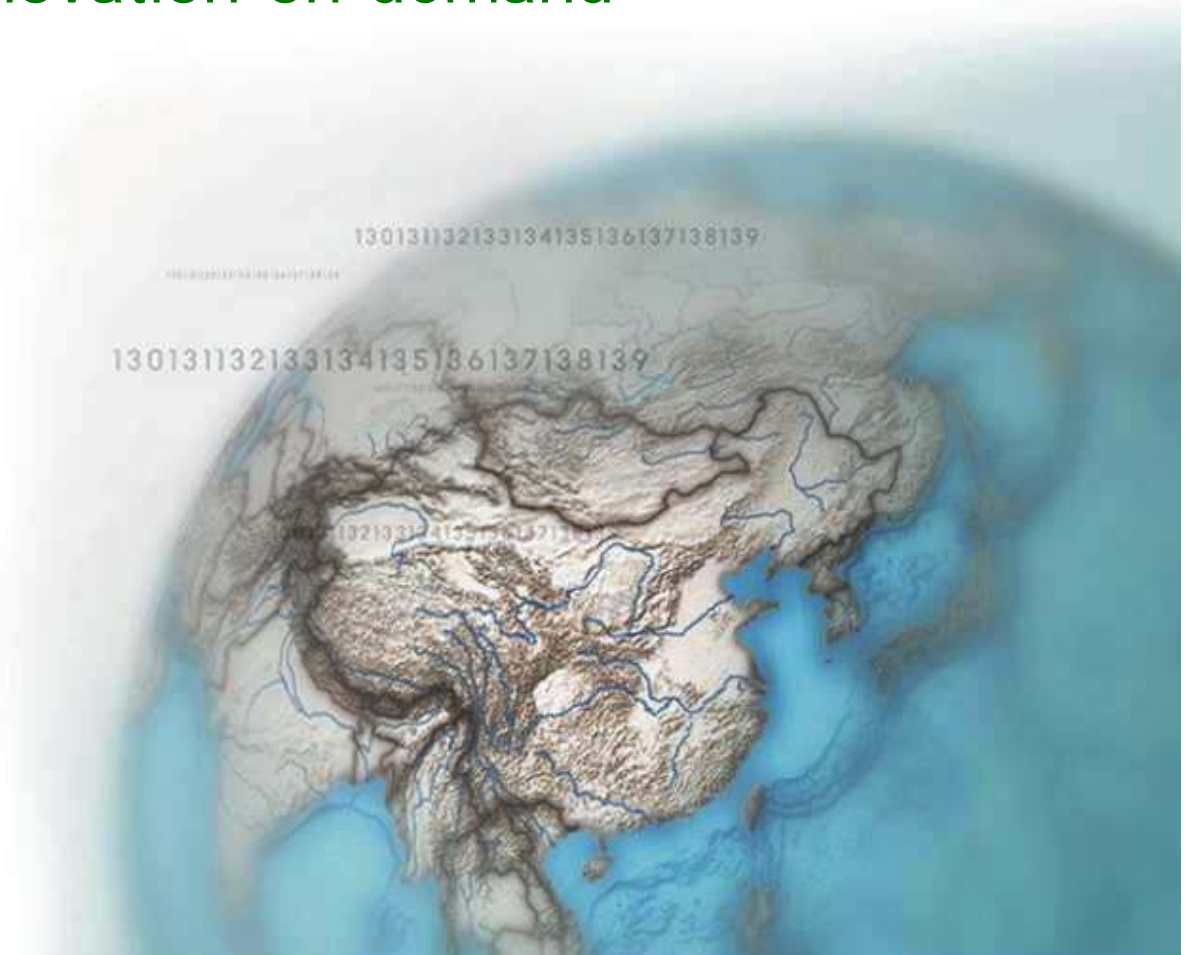
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Entrepreneurial innovation in China & challenges for State-driven 'innovation-on-demand'

Stanford University - SPRIE
January 17th, 2008

Duncan Clark
Chairman
BDA

www.bdaconnect.com



- BDA (www.bdaconnect.com) provides strategy consulting and research to leading TMT firms and investors with a focus on emerging markets and emerging technologies in Asia.
- The first TMT consultancy in China, BDA was founded in 1994 and is the leading firm of its kind, now having a team of over 45 based in Beijing. 
- Active in India since 2004, advising TRAI as well as international carriers, vendors and investors in the market. New Delhi office opened in 2006, team of 10 and growing. 
- BDA also tracks emerging technologies and business models from Japan and South Korea.  
- BDA offers ongoing research or customised consulting rendered by dedicated analyst sector groups:

Handsets/Devices



Fixed Line & Wireless Equipment & Services

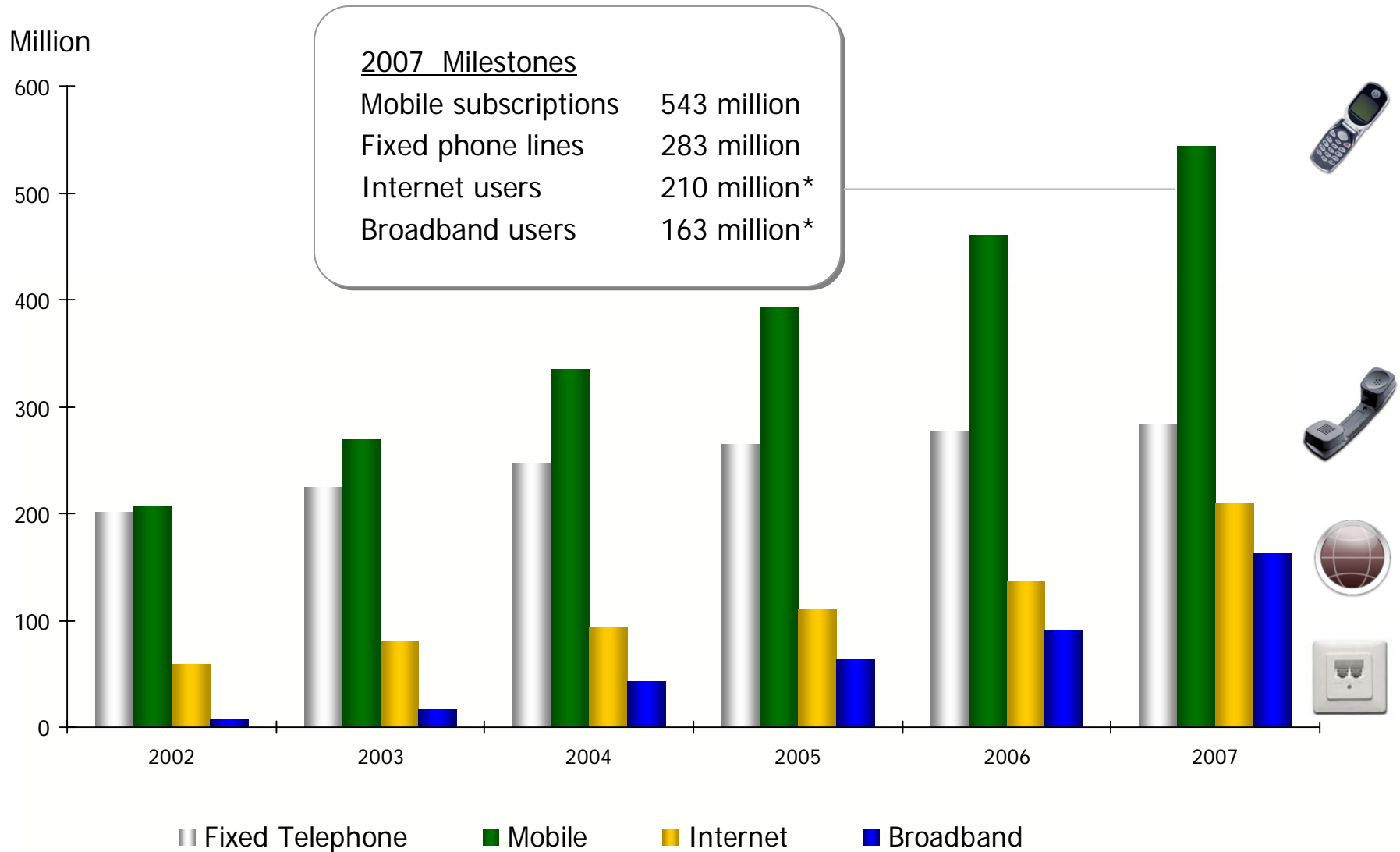


Internet & New Media



- The Government has played a major role in driving communications infrastructure
- Entrepreneurs & VC have been the driving forces for innovation in communications value added services
- As we move from Web 1.0 to Web 2.0, and from 2G to 3G, the Chinese Government – dominated by engineers – is looking to promote indigenous innovation, and – led by the Party – to reassert control over content
- Will this impact the pace of innovation? Slow the flow of VC? What role should Government play in nurturing innovation?
 - Hands off: “Creating the conditions” by focusing on education, Intellectual Property, capital market reforms or;
 - Hands on: Driving technology standards, picking winners, and funding them. Controlling content in new media, as in traditional media.

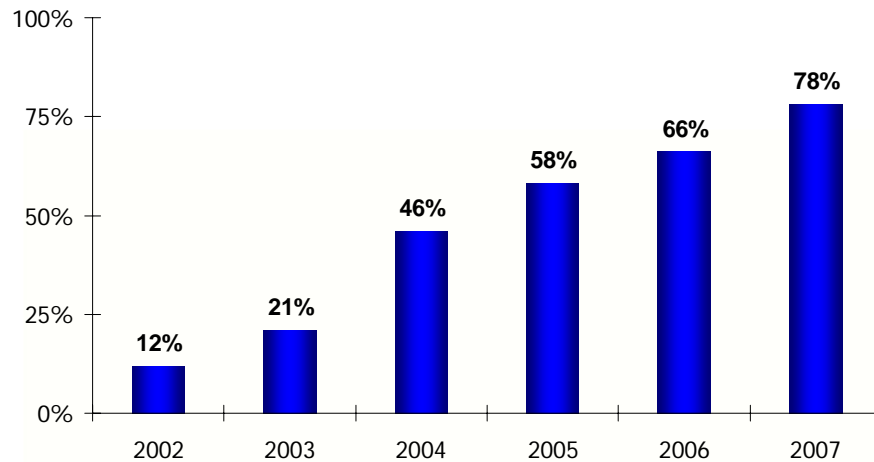
The foundation for innovation in China: "Informatization"
 信息化 - China has surpassed the US in mobile and broadband subscriptions to become the world #1



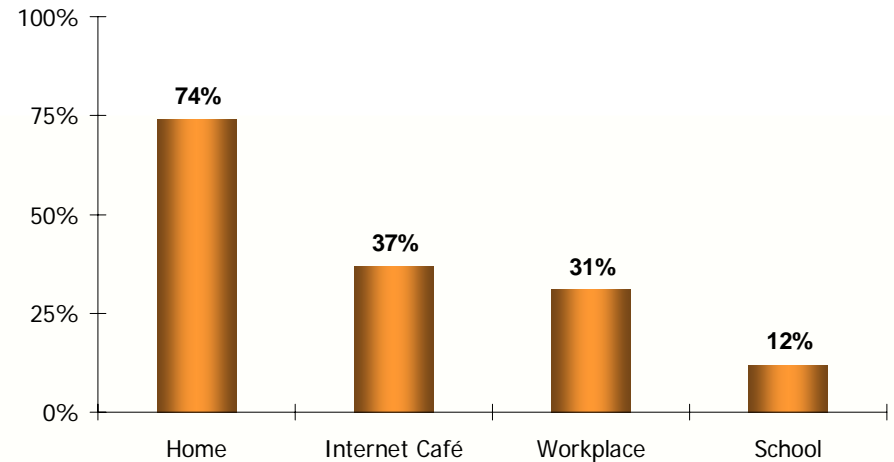
Source: BDA and *CNNIC. MII estimates are lower

China's fixed line telecom operators have aggressively rolled out ADSL. Broadband now accounts for over 78% of all Internet users, and 74% of Internet users access from home

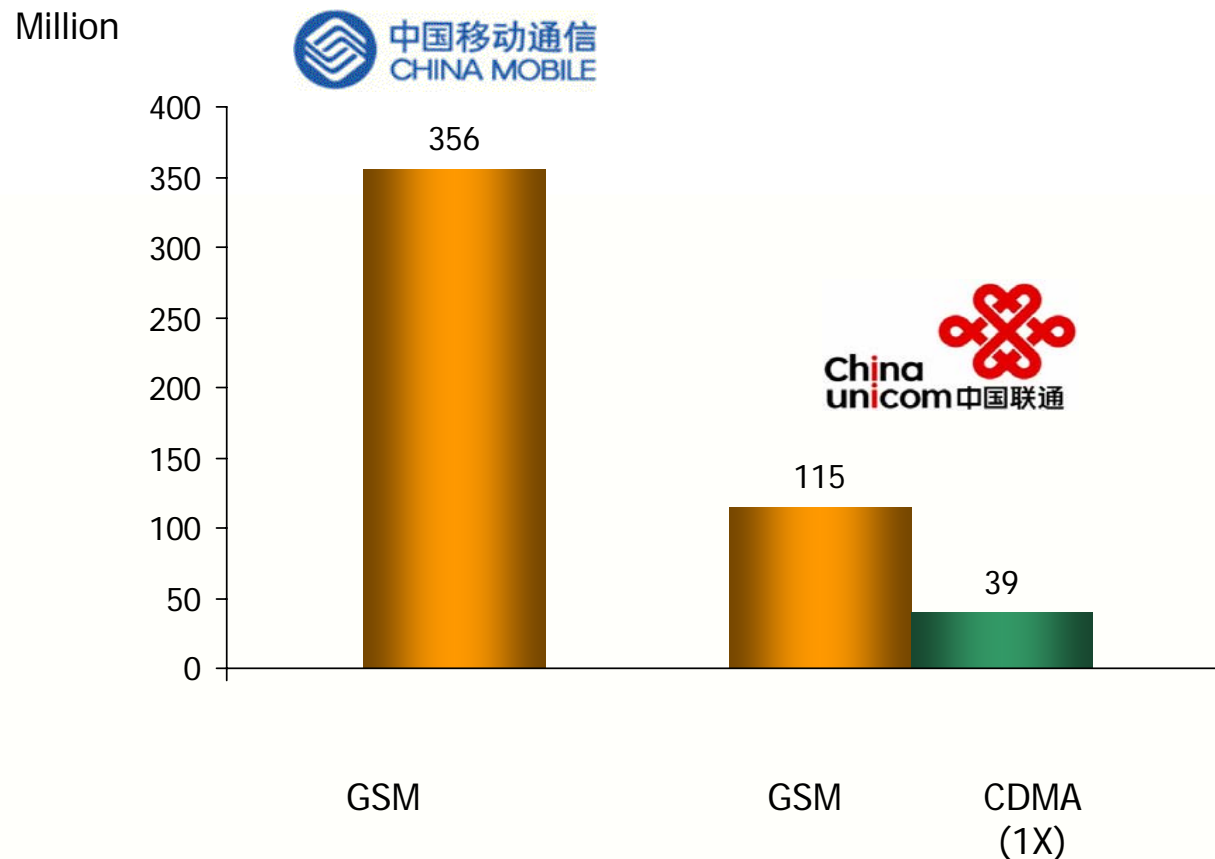
Broadband Users as % of Internet Users



Location of Internet Access (Multiple locations possible)



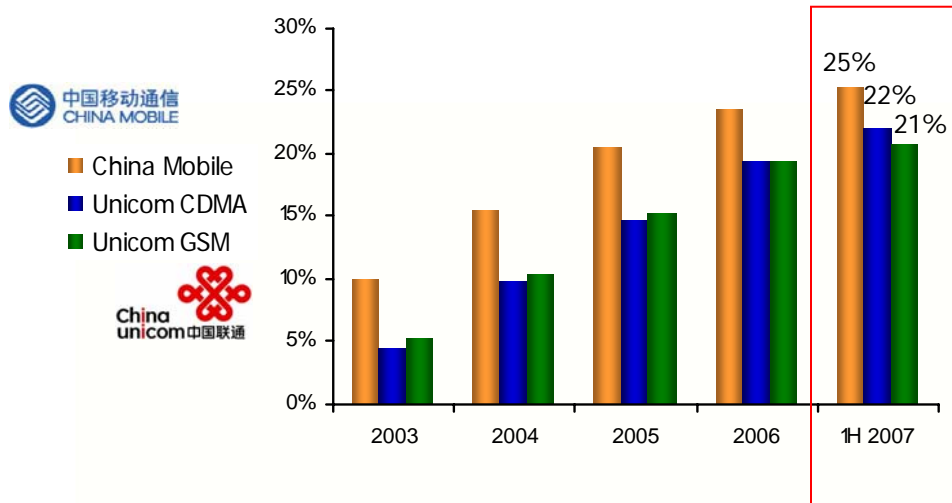
China's 2 mobile operators have blanketed the country with coverage (China Mobile: 98% of the population) and data capabilities - although no 3G yet



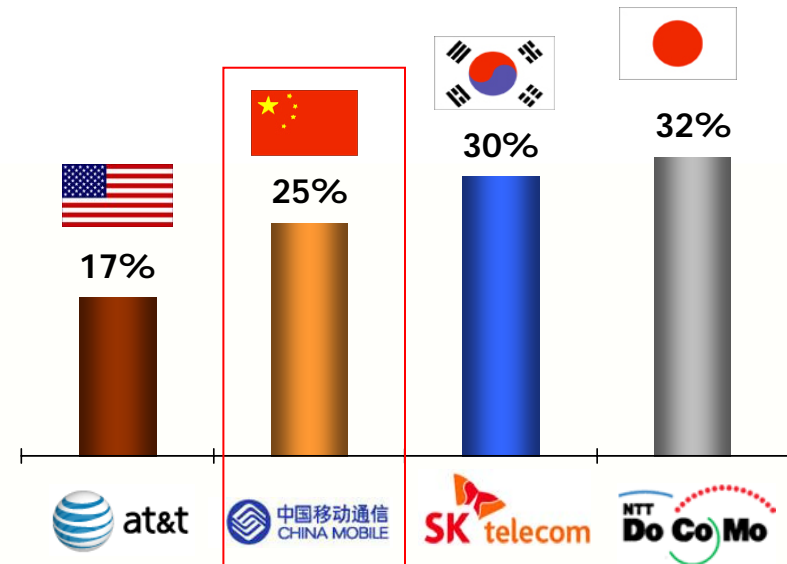
Source: MII and BDA. Note MII subscriber data is higher than reported by the mobile operators.
Note: Data is for August 2007

Although 3G has not yet been introduced, wireless value added services (WVAS) have thrived in China, overtaking the US in WVAS as % of total revenues









WVAS as % of Total Mobile Revenue
Chinese Operators 2002 - 2007 1H



WVAS as % of Total Mobile Revenue -
International Comparison



In content and applications, entrepreneurial innovation has thrived in China, exploiting the huge wireless and broadband user base

	Sub Sector	Revenues - 2006 (USD MM)	
<i>Established</i>	 WVAS Wireless Value Added Services (WVAS)	9,600	
	 Music Digital music	1,661	
	 Online games Online games	818	
	 Online ad Online brand advertising	390	
	 Search Paid search	181	
	 SNS / IM IM & Social Networking Services	140	
	 Video Online video		
	 E-commerce Ecommerce		
	<i>Emerging</i>		

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China has a growing stable of Internet millionaires and billionaires, inspiring new entrepreneurs to try their luck

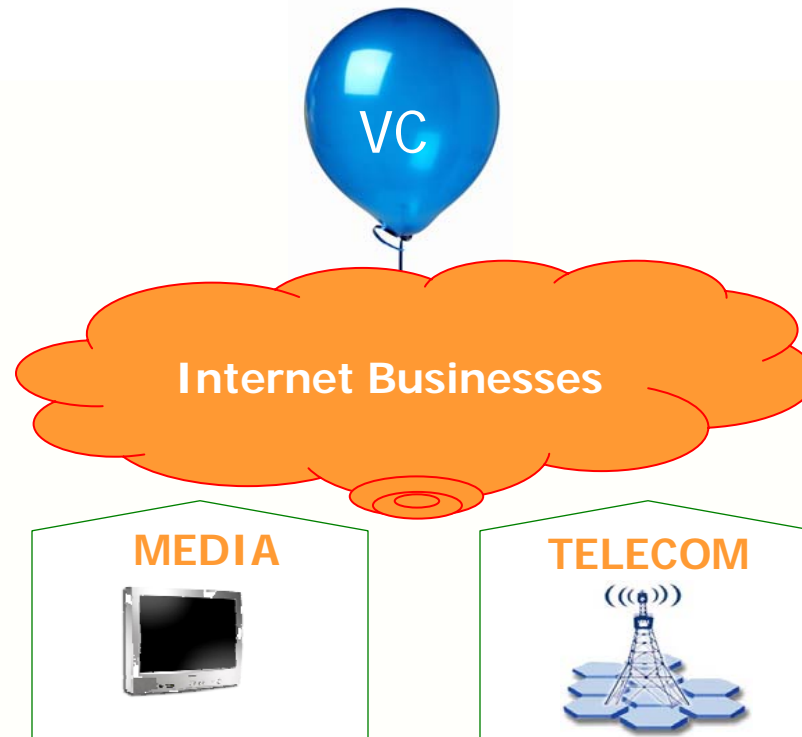


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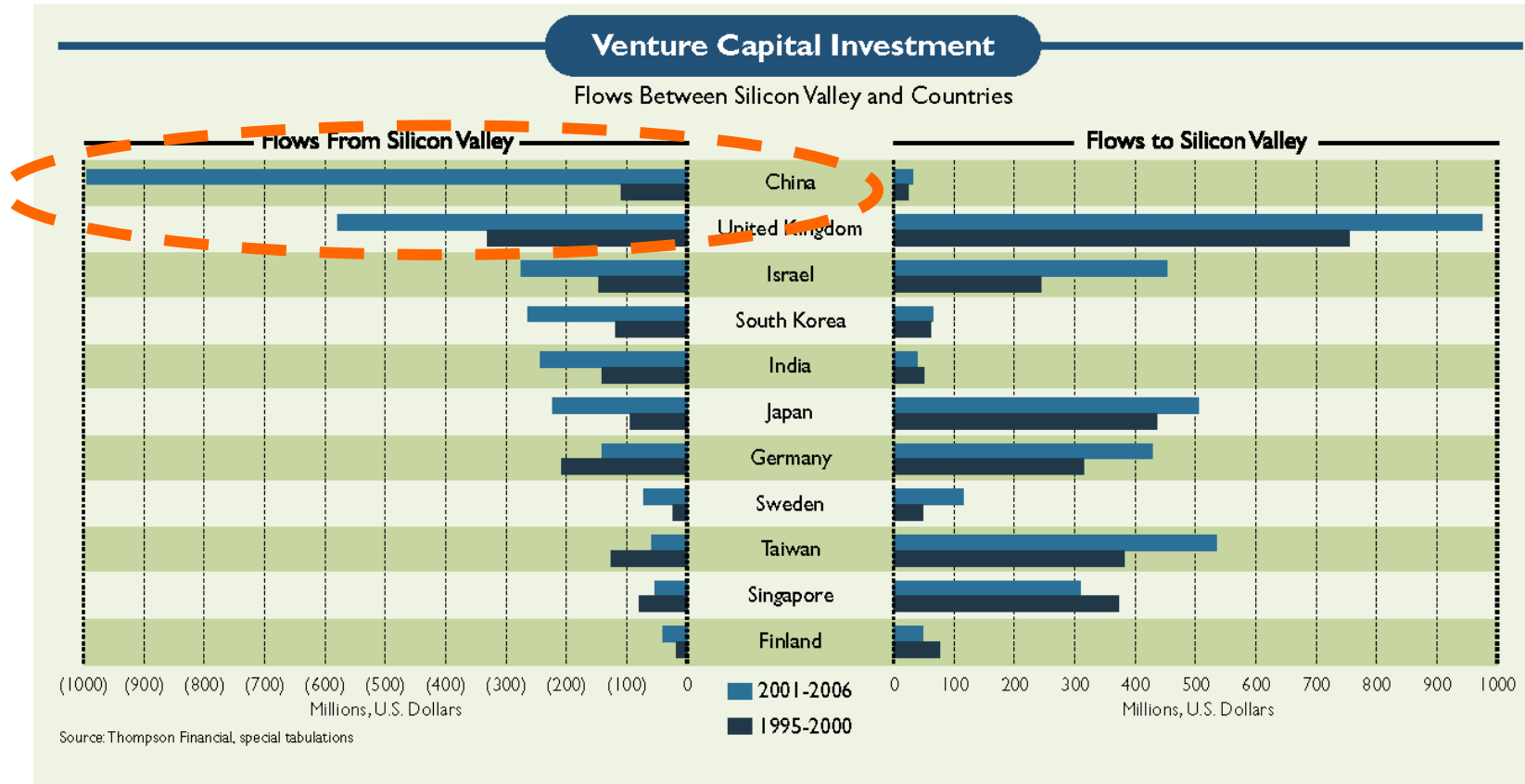
Inspired by several waves of IPOs, venture capital has played a key role in stimulating innovation in China's communications sector



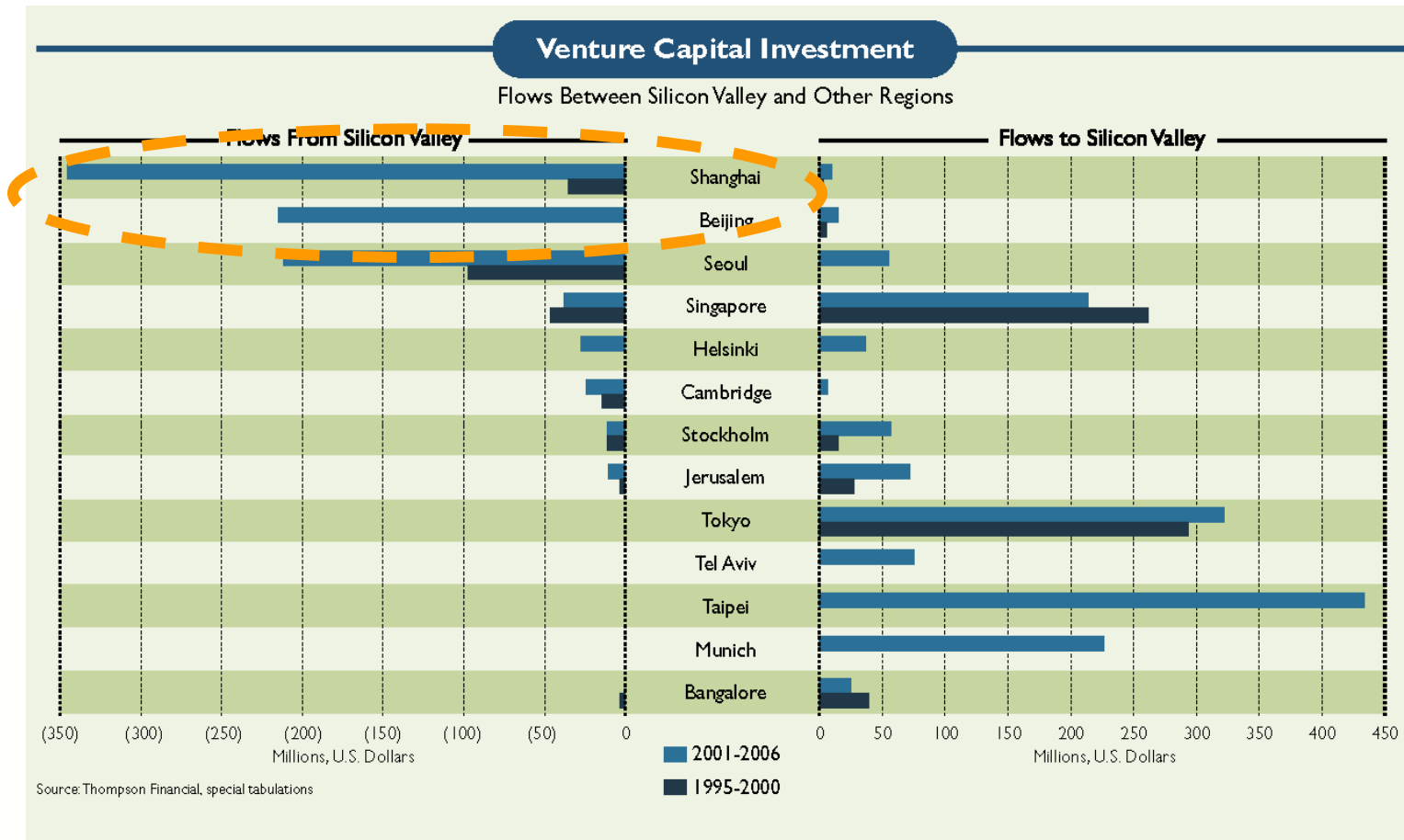
IDG Technology Venture Investment FARALLON CAPITAL MANAGEMENT



For tech companies, one of the biggest attractions of China is its appeal to Venture Capital firms. China is now the biggest recipient of Silicon Valley VC

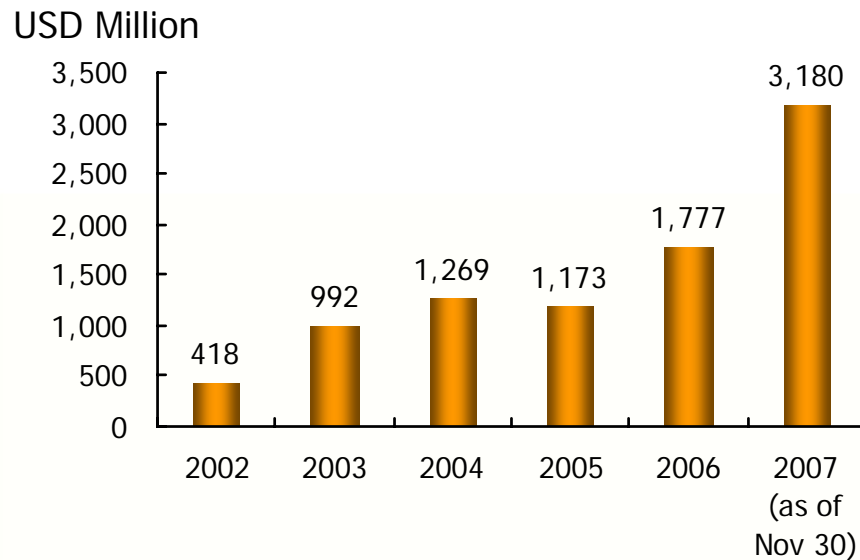


Shanghai and Beijing now receive more Silicon Valley VC than any other foreign locales

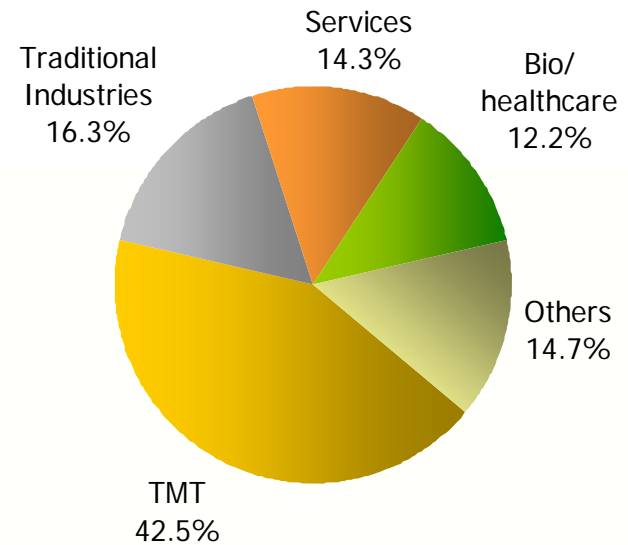


Venture capital investments – and funds being raised – are booming in China. But VC is rapidly diversifying away from the telecom, media, tech sector

VC Investments in China



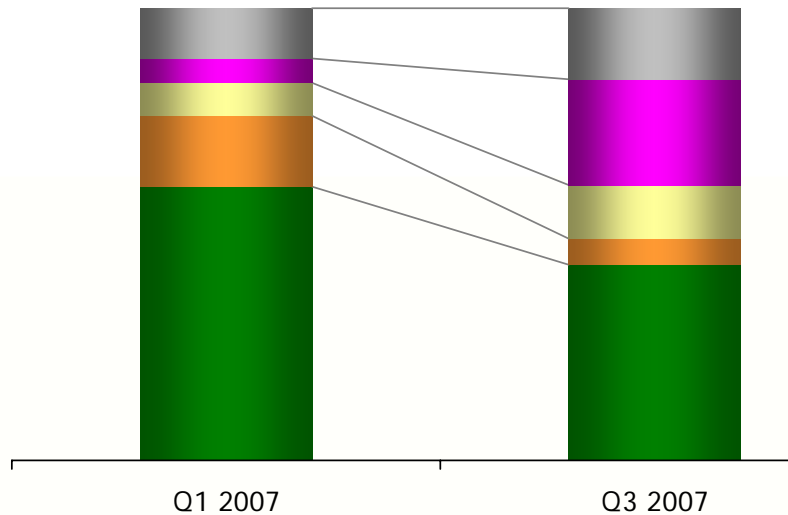
Industry Breakdown of VC Investments in China in the First 11 Months of 2007



- VC investments in China have maintained an upward growth trend since 2005 with 2007 being a bumper year. In the 11 months to November 2007 VC investment grew 79% on full year 2006.
- However in 2007 VC investments in TMT have started to level off while investments in other industries picked up. VC investments in TMT industries as % of total investments fell to 42.5% in the first 11 months of 2007, from 61.5% in 2006.

TMT has fallen as a % of total VC to below 50%, while investments in Services and Traditional Industries are booming.

Industry Breakdown of VC Investments in China in 2007



	2007 Q1	2007 Q3
Others	11.0%	15.6%
Services	5.3%	23.5%
Traditional Industries	7.3%	11.9%
Bio/healthcare	16.0%	5.7%
TMT	60.4%	43.4%
Total VC Investments (USD million)	419.0	896.5

- TMT's dominant position in driving VC investments is weakening, mainly due to the unfavorable regulatory environment in China's TMT sectors that is hampering the business initiatives of private companies. Enterprises in traditional and services industries have good prospects for domestic IPOs, which is stimulating local and foreign VCs to dilute their concentration in TMT to explore new investment opportunities.
- Within TMT, the Internet is still a major target for VC investments as a number of IPOs of online gaming and ecommerce companies in 2007 continued to show strong performance. Many VCs halted investments in wireless value added services due to the regulatory challenges from mobile carriers.

What's holding up 3G in China?

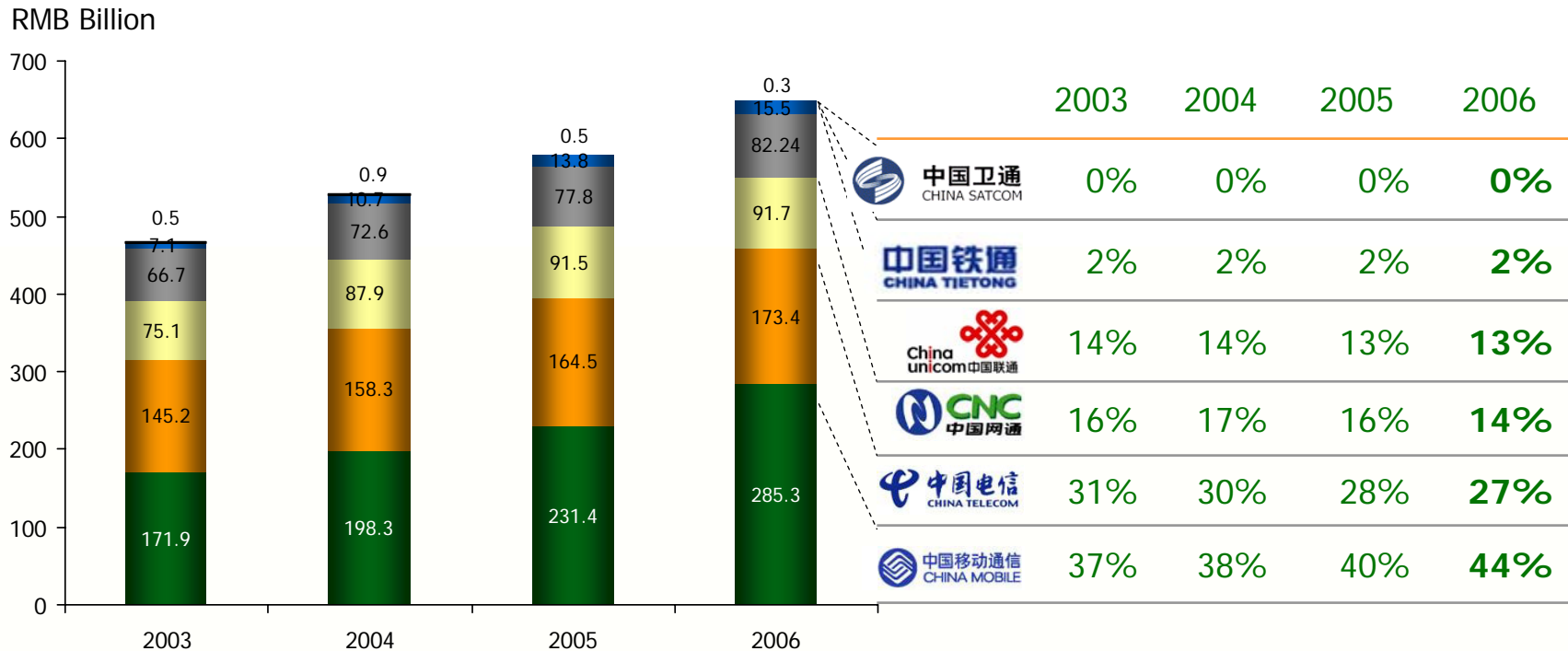
- The State owns majority stakes in all 4 leading telecom operators



- As a shareholder, it is seeing diminishing value on fixed line telcos who are suffering from fixed-mobile and IP substitution.
- But before China Telecom and China Netcom can receive 3G licenses, China is has resolved to deploy TD-SCDMA technology as a means of avoiding royalty payments to western vendors for W-CDMA or 2000-1x EV-DO
- The earliest commercial 3G launch scenario for China now appears to be late 2008, missing the opportunity of showcasing it at the Olympics

Benefiting from the delay in 3G, China Mobile has been gaining share from the other 3 carriers. Without a strong competitor it is squeezing out its WVAS partners

Comparison of Telecom Operators' Revenue Share 2003-2006

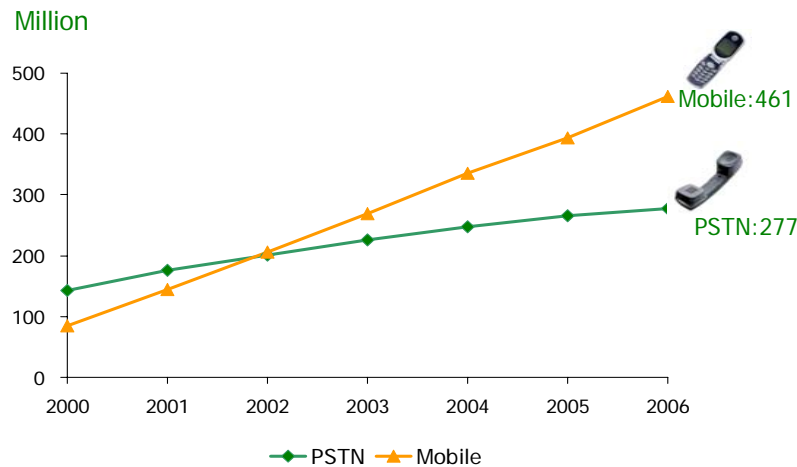


- China Mobile was the only operator that reported faster revenue growth in 2006, a further sign of its increasingly dominant position. The other three operators all recorded slightly slower growth compared to 2005.
- Benefiting from the delay in 3G, China Mobile continues to gain share from Unicom, accounting for 80% of the incremental market in Q1 2007.

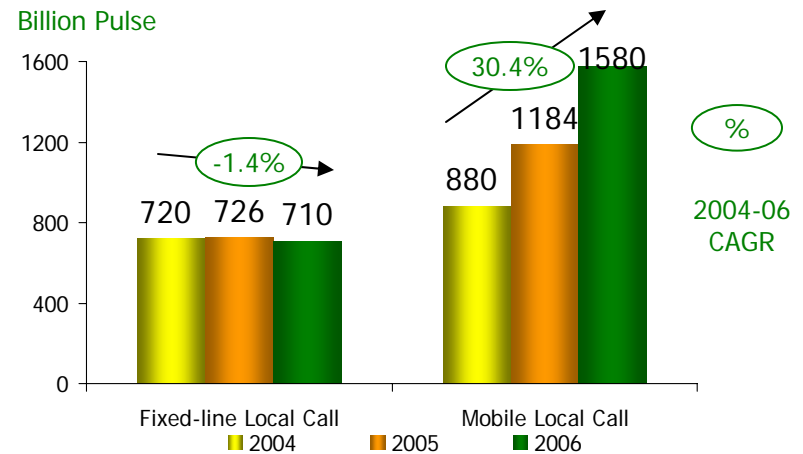
China Telecom & China Netcom are desperate to get mobile licenses – facing challenges from IP cannibalization and fixed-to-mobile substitution

Mobile Overtakes the Fixed-line Market

Mobile and PSTN Subscribers (Dec. 2006)



Local Call Volumes for Fixed-line and Mobile



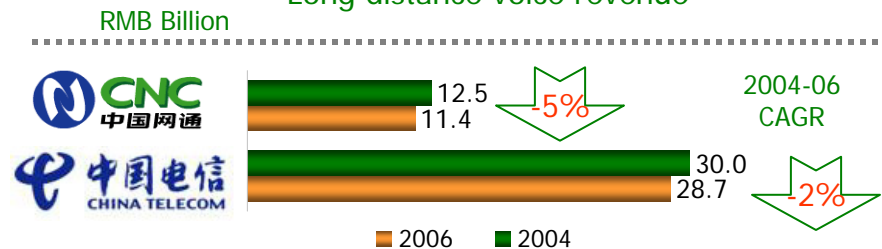
Note: Fixed-line local call volumes includes PHS

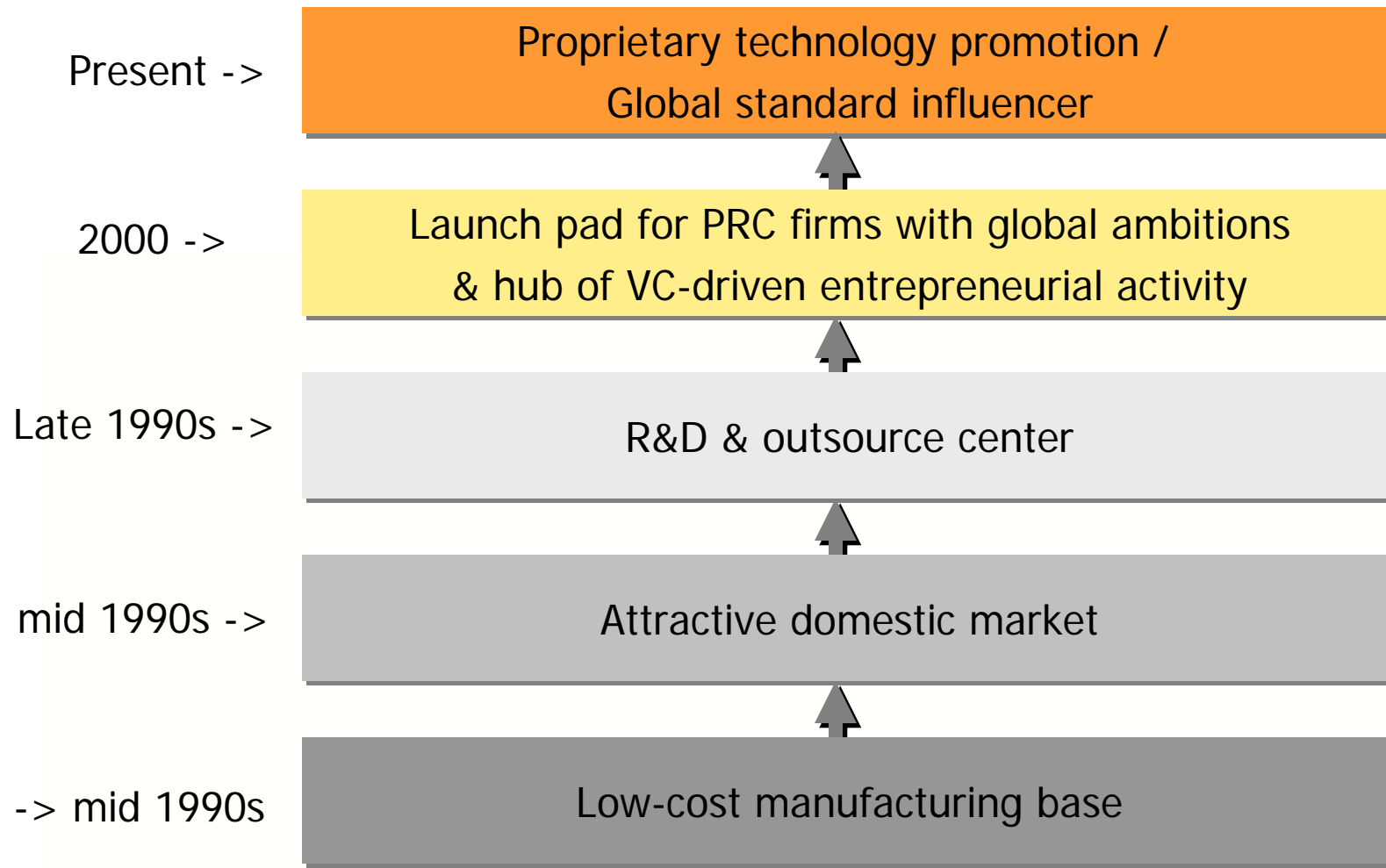
VoIP Bites into the Fixed-line Market

Long distance voice revenue is being eroded by VoIP and P2P applications



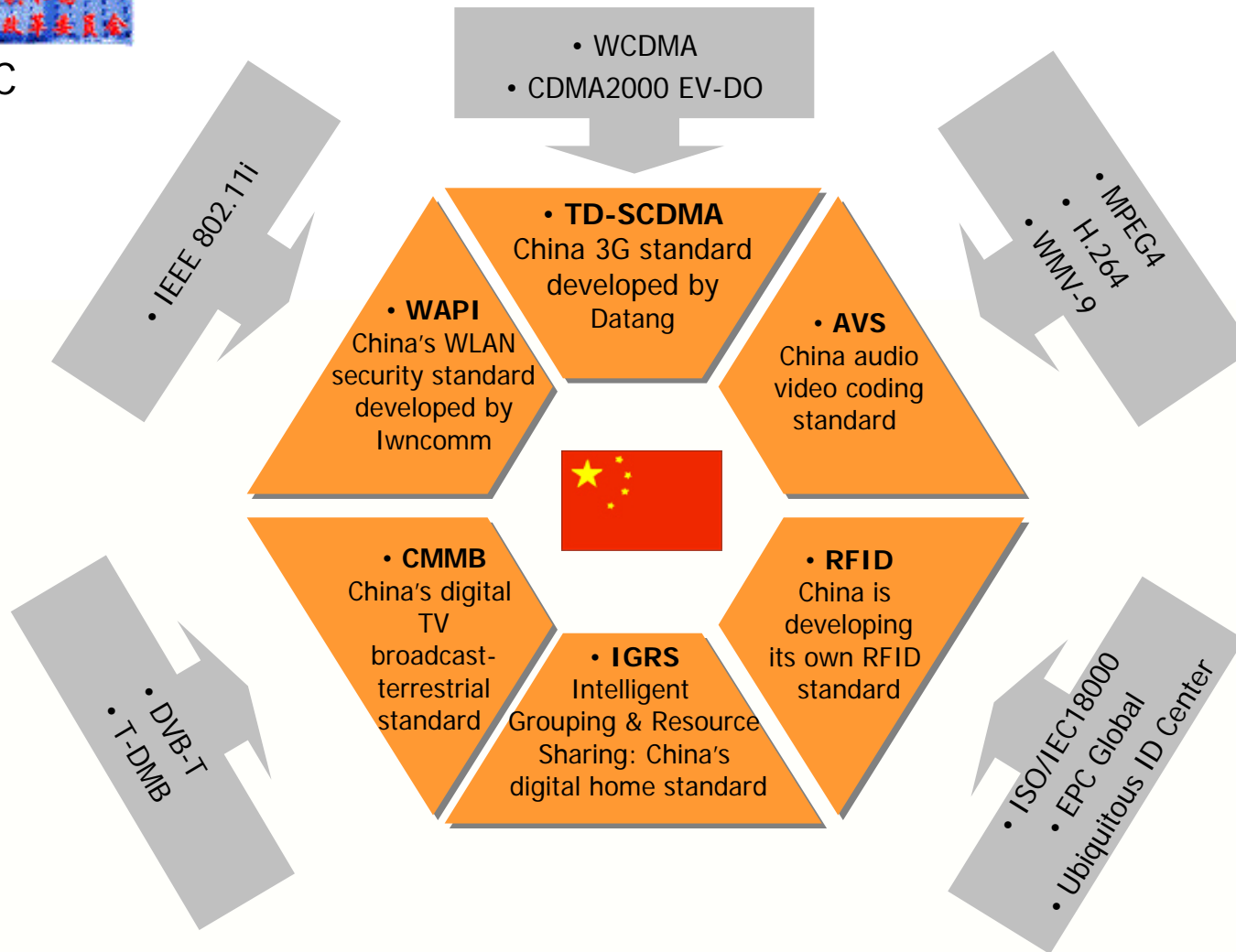
Long distance voice revenue



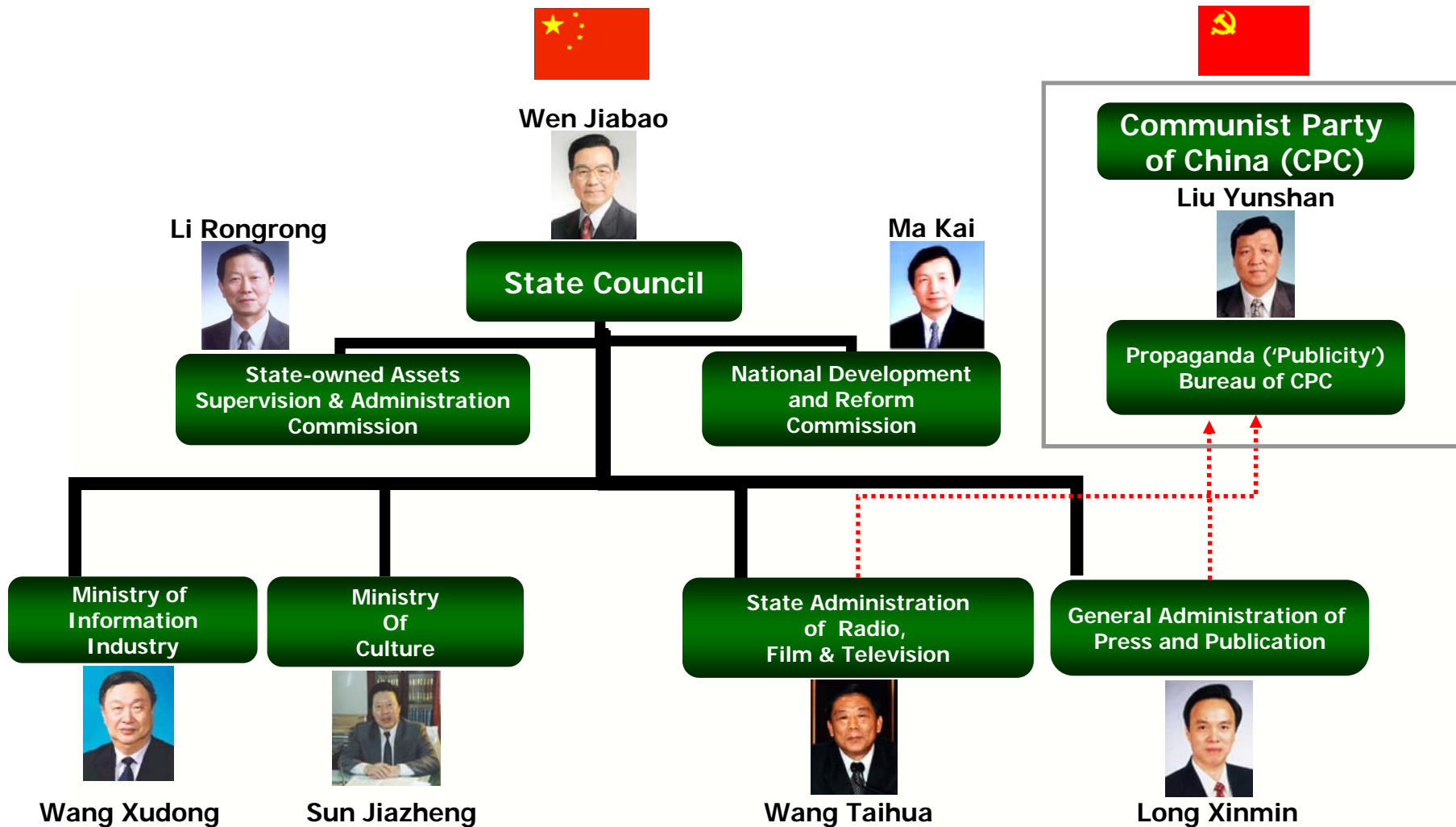




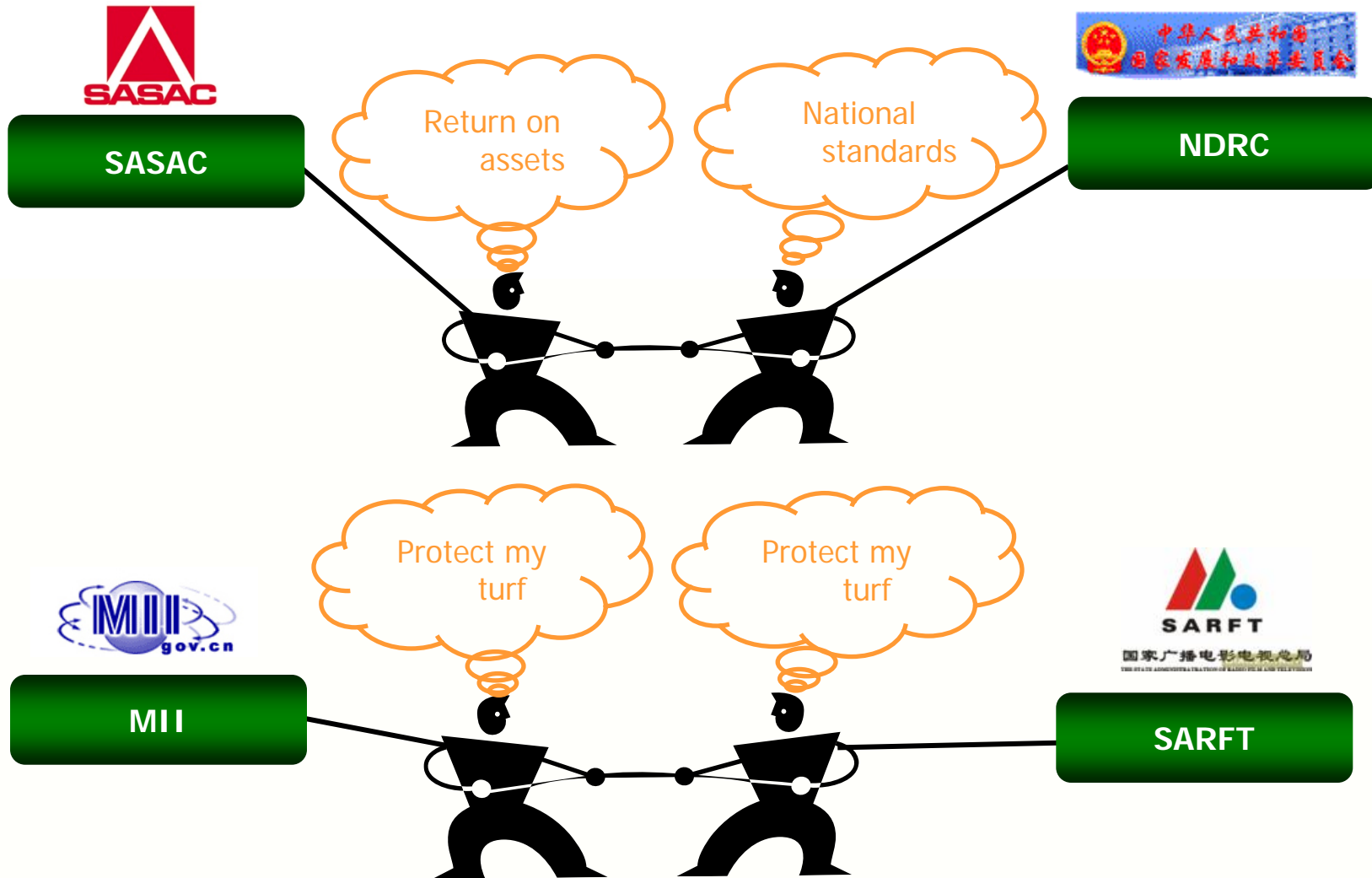
NDRC



TMT Regulation in China: State oversight of telecoms is fragmented, Communist Party controls media



Regulatory stakeholders in China are pursuing diverging agendas



Consumer demand for Content

Capital:
VC, IPOs,
Foreign Strategic investment

Entrepreneurs / private sector

Convergence of telecom, media & technology



Desire
for
self-
preservation

- Control of dissent (seeing 'Orange' not Red)
- Preventing leak of state secrets
- Limiting private sector media influence
- Limiting foreign media influence

Desire
for
social
stability

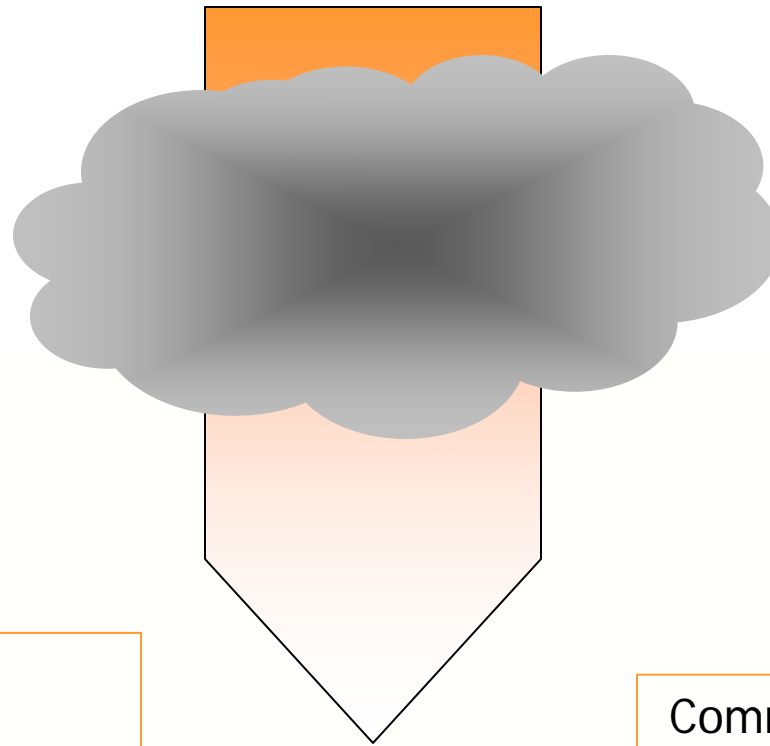
- Keeping a lid on nationalism (unless expedient not too)
- Nanny state / father-know-best instincts

Desire
to
protect
traditional
players

- Protect propaganda function of state-controlled (esp. central) media
- Protect value of state-owned assets in media, telecom
- Regulate pace of private sector growth (SAFE's VC restrictions)

What's undermining the efficacy of government attempts to control?

Power struggles among government agencies (e.g. MII vs SARFT), standards (e.g. digital TV)



Informatization facilitates technologies which erode control

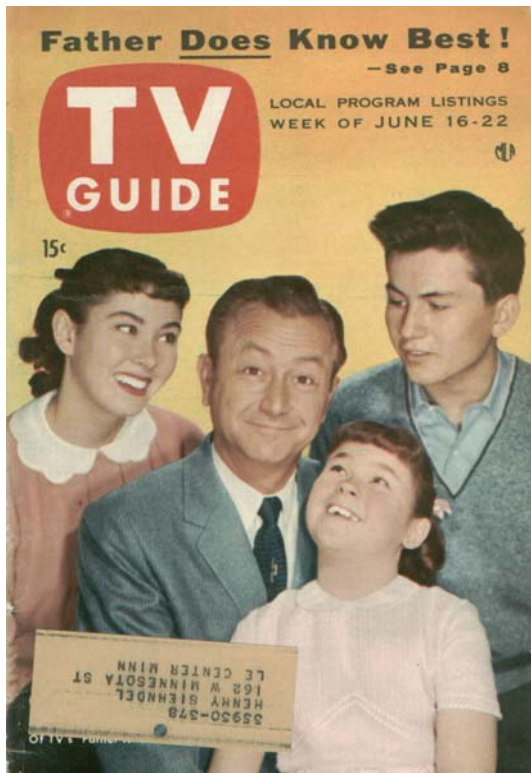
Inadequate/half-hearted enforcement (e.g. proliferation of satellite dishes, DVDs)

Commercial instincts, even of bureaucrats, are strong, which may stay their hand

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In recent years, provincial channels (most notably Hunan TV in 2005 with Super Girl) have eroded CCTV's dominance

Does Father Know Best?



Super Girl Voice, August 2005



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Now central and provincial TV stations together feel threatened by the growth of online video

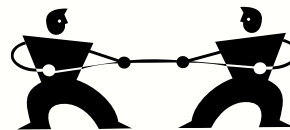
- SARFT (on behalf of Propaganda Bureau) and MII are involved in a major land-grab push to wrest control of online video from the VC-backed, entrepreneurial YouTube lookalike sites
- Whether a Jan 31st deadline to push online video under State media control will be implemented remains to be seen – resistance is fierce and consumer interests need to be considered



lookalikes



土豆网 Tudou.com
每个人都是生活的导演



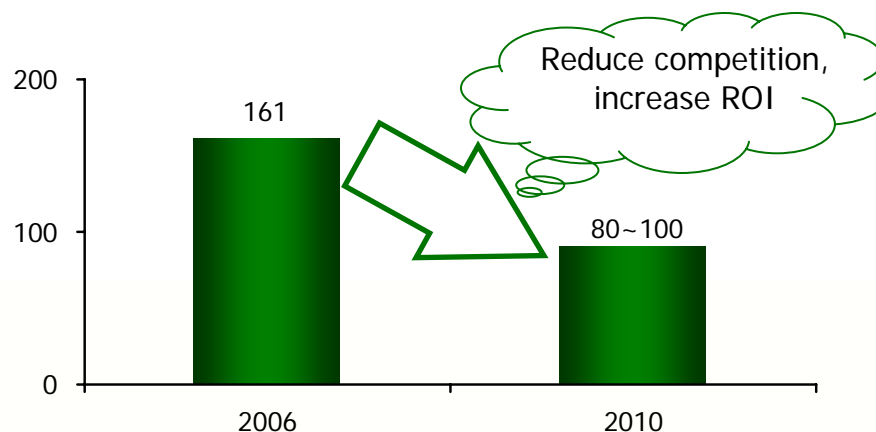
State-controlled media



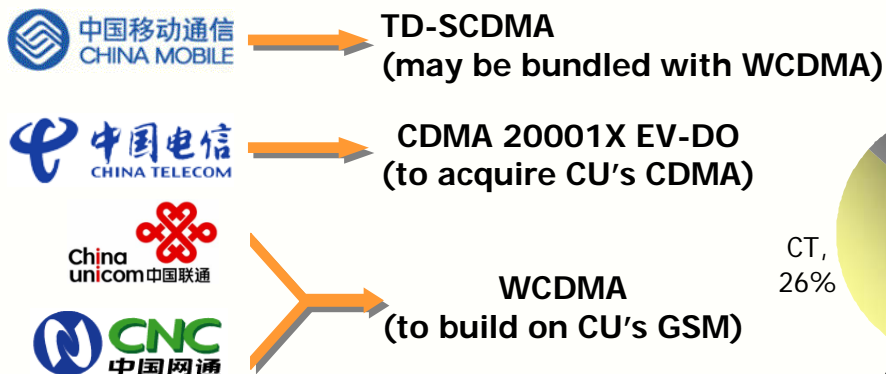
SASAC's Key Roles

- Shareholder in all state-owned carriers
- Maximize return on state-owned assets
- Consolidate state-owned enterprises to reduce competition
- Reduce SASAC-managed enterprises to 80-100 by 2010, down from 161 at present
- To retain the top 3 players in the major industries by consolidating the smaller state-owned enterprises by 2010

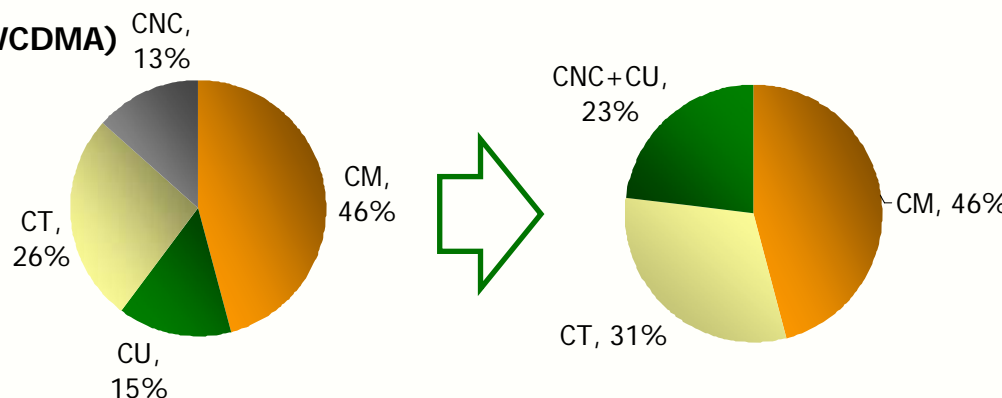
Number of SASAC-Managed Enterprises



Possible 3G Restructuring Scenario

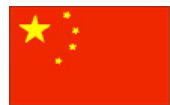


Revenue Share Before and After Restructuring (Pro Forma 2006)

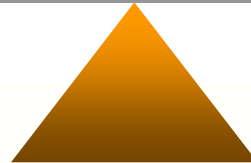


Government needs to strike a balance between protecting domestic firms via indigenous standards and attracting continued Foreign Direct Investment

- Protect domestic firms
- Promote domestic manufacturing
- Boost economic growth
- Promote foreign investment



“Indigenous Innovation”



Open Market



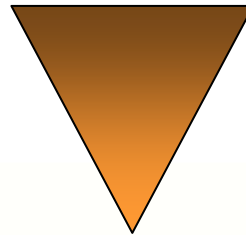
Implications for Foreign Vendors

- Politically-sensitive environment, with growing ‘non-tariff barriers’ such as extended test and certification measures
- Need to develop technologies that comply with the Chinese technological standards, pushing up R&D expenditure
- Question remains – as costs mounts and technology adoption (such as 3G) is delayed, how long will China pursue this policy?

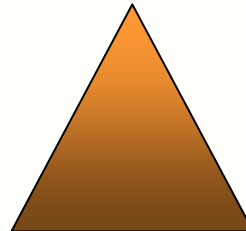
Innovation in China: Top-down from State, or bottom-up from Entrepreneurs? Or a combination of both?



Engineers/Technocrats



?

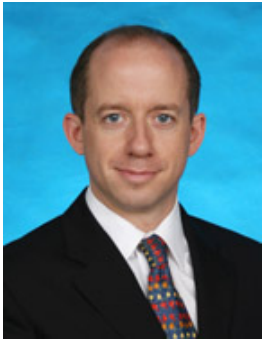


Entrepreneurs



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