



Market Analysis Report: China's Communications Industry

**Presented to:
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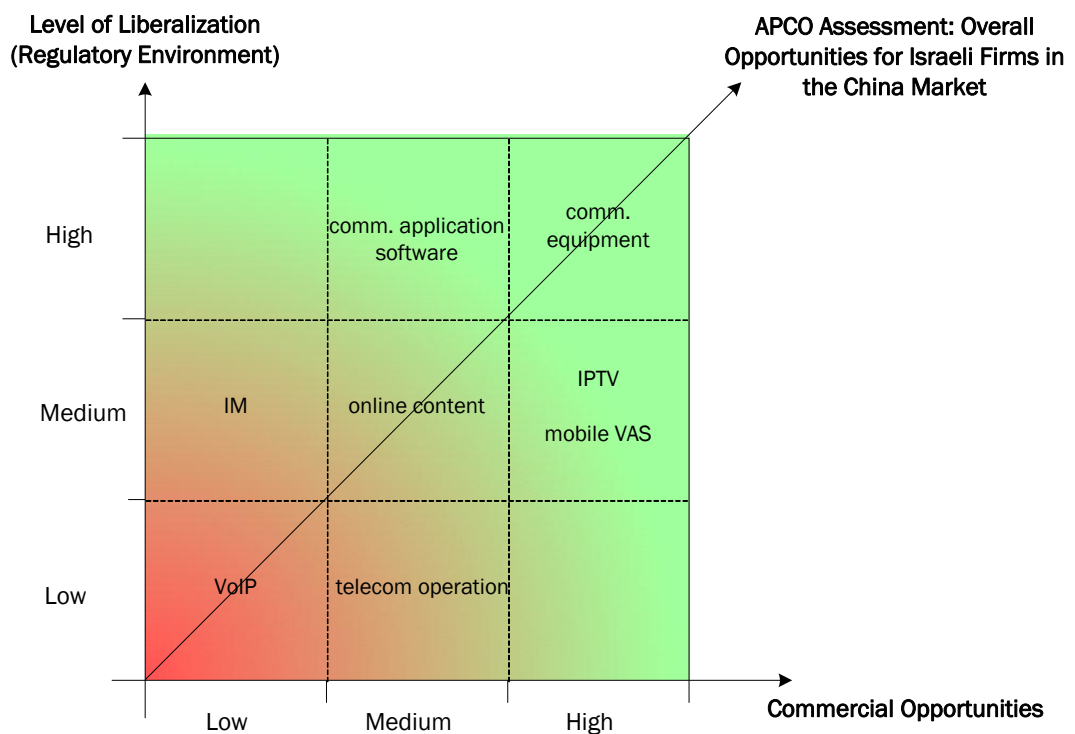
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EXECUTIVE SUMMARY

- China's telecommunications industry is subject to a range of regulatory restrictions and opportunities for foreign involvement vary by segment:
 - The equipment segment provides most opportunities for Israeli firms. The market for mobile communications equipment in particular has grown rapidly in recent years. Israeli companies should leverage technological superiority to access the market.
 - The value-added services segment, while subject to a higher degree of regulatory restrictions, still presents opportunity for foreign firms.
 - Basic telecom services including mobile and fixed-line service provision are virtually inaccessible to both foreign and domestic competitors.
- Primary drivers behind the success of China's communications industry include the growing number of internet and mobile service subscribers and international demand for lower cost communications equipment manufactured in China.
- Converged communications merging TV, mobile, and internet services, is a stated goal in the telecom industry, although progress has been slow to date.
- China's communications equipment segment represents the greatest opportunity for foreign firms. The market for mobile communications equipment in particular has grown rapidly in recent years. Israeli companies should leverage technological superiority to gain access to the market.
- The communication application software segment is saturated with small-scale companies recording low levels of profit. Foreign companies have historically been less competitive in this segment.
- The instant messaging segment expects to achieve 30% growth rate in 2009, and is dominated by a few large players. Foreign enterprises looking to access this market will be required to establish a joint venture (JV).
- The Voice over Internet Protocol (VoIP) segment is underdeveloped in China due to an overly-restrictive regulatory environment.
- IPTV is still in a preliminary stage of development; the challenge is developing a successful, profitable and localized solution for IPTV commercial use in China.
- Online content, including music, gaming, advertising, and audio/video programming continues to be promising; foreign enterprises that can establish JVs have considerable potential for success in this segment.
- Opportunities exist for Israeli firms in China's 3G transition. Israeli firms can support the transition by providing relevant equipment, especially wireless network equipment, network optimization, test and maintenance, switching equipment, optical fibres and cables, optical transmitting equipment, business application platforms, network management systems and equipment with 2G-3G converged features.
- Medium-term opportunities exist for Israeli firms that are able to provide equipment in support of 4G capability development.

- The graph below summarizes the China opportunities for Israeli firms by segment. Based on a combined assessment of China's regulatory environment and commercial opportunities, we believe that companies operating in the communications equipment segment (the top right corner) will have most opportunities, while companies operating in the VoIP (the bottom left corner) will experience most challenges. We omitted the mentioning of basic telecom services, as we believe that segment is virtually inaccessible at this point in time.



1. REGULATORY OVERVIEW

- Despite China's accession to the WTO and subsequent concessions to lower barriers to trade, the telecom industry remains highly regulated.
- The telecom equipment market is the most accessible to foreign enterprises, especially those in possession of advanced technologies. Terminal equipment related to public telecom networks must apply for testing certificates and registration before deploying in China.
- The telecom value added services (VAS) market, while technically open to foreign investment, requires a JV establishment. The market is not inaccessible, but those looking to penetrate must be willing to expend considerable effort navigating the approval process. Content-related VAS need to be particularly aware of the sensitivities in this area, and the commercial difficulties of monetizing content in China.
- The telecom basic services market including fixed-line and mobile service operation is generally considered inaccessible to foreign enterprises at this time.

1.1 TELECOM EQUIPMENT

China currently does not have in place any concrete restrictions on import activities of communications related equipment. As Chinese incomes continue to rise, giving way to a growing culture of consumerism, and the nation makes preparations for transition to 3G telecom standards, the market for telecom equipment, and especially mobile communications equipment, is expected to continue its current trend of rapid growth (see market overview section).

Telecom equipment for public telecom networks must receive domestic testing certification and registration before deployment in China. This testing and registration process can be handled either through domestic import agencies or sales agencies located in the foreign enterprise's home country. Normally for big projects such as 3G related purchasing, procurement will go through a public bidding process, with relevant information published on government procurement websites.

With respect to foreign investment, the *Catalogue for Guidance of Foreign Investment*, which guides foreign investment in China and categorizes business sectors into four groups (encouraged, permitted, restricted, and prohibited), either "permits" or "encourages" foreign investment for the majority of telecom equipment.

Manufacturing of telecommunication systems equipment for satellites, local area networks, ultra wideband (UWB) communication equipment, IP digital communication systems, high-end routers, and network switchers, and development and manufacture of 3G and later generation mobile phones, base stations, core network equipment and network testing equipment, are all activities listed as encouraged in the latest *Catalogue*. The majority of other communications equipment is not listed in the *Catalogue*, which means it automatically falls into the 'permitted' category.

In the absence of explicit barriers to trade or market entry in the telecom equipment segment, there are substantial opportunities for foreign firms looking to supply key equipment and technologies. However, recent moves by the Chinese government may suggest an increasing regulatory environment of domestic protectionism. One such development was the January 2009 removal of preferential Value Added Tax policies for certain foreign communications equipment imports. With the removal of this provision, foreign produced telecom equipment must now compete on a level playing field with local rivals, which tend to be more competitively priced. As a result, Israeli equipment producers looking to access the Chinese market must increasingly rely upon technological superiority in order to gain a competitive advantage over more cost-effective domestic competitors.

1.2 TELECOM VALUE ADDED SERVICES

China's current regulatory framework governing the telecommunications services segment evolved from the Telecommunications Regulations promulgated in 2000, followed by a series of interpretations that categorized the telecom market into 'basic' and 'value-added' segments, and divided each segment into two categories (see the table below). The fundamental difference between the two categories is the perceived impact on state security and assets – as a result, Category One is typically very closed off to foreign involvement while Category Two presents a bit more opportunity for foreign enterprises.

IPR Issues in China

While the protection of intellectual property rights (IPR) remains a contentious issue for companies operating in the China market, the country's laws and regulations have progressed considerably in recent years, with the large majority now being compliant with the requirements of the WTO's TRIPS agreement.

The main challenge surrounding IPR protection in China regards the lack of effective enforcement of the regulations. Enforcement issues arise from a range of root causes, including the relatively recent introduction of IPR legislation and concept of intellectual property in general, the absence of a fully independent judicial system, and provincial officials' often protective attitude towards local, job creating counterfeiting industries.

While most foreign companies considering business operations in China may have to accept an unavoidable degree of IPR infringement, there are nevertheless a number of actions that a company can take in order to limit their IPR-related risk:

- Ensure to register your patents, copyrights, or trademarks with the relevant bureaus
- Ensure that your trade or other business agreements include clauses to protect your IPR
- Sign contracts or confidentiality agreements with staff that has access to key technologies and make sure that your policies on trade secrets and other relevant issues are properly communicated
- Be aware of China's (often quickly changing) laws and regulations, and understand the different possible ways of redress, including administrative and judicial channels.

2003 Telecom Catalogue – An Overview of Services

Basic Services	Category One	<ul style="list-style-type: none"> • Fixed-line communication services (international fixed-line long distance telephone services, fixed-line network local telephone services, and fixed-line network long-distance telephone services) • Cellular mobile communications services • Satellite services • Data communications (internet data transmission services, international data communications services, internet data transmission services) 	Equity cap for foreign investment 49%
	Category Two	<ul style="list-style-type: none"> • Paging, trunked radio, VSAT • Data communications services (covering packet-switched data transmission services) • Domestic communications facilities based services • Wireless local access 	
Value Added Services	Category One	<ul style="list-style-type: none"> • Online data processing and transaction processing services • Domestic multi-party communications services such as teleconferencing and videoconferencing • Domestic internet virtual private networks (VPNs) • Internet data centres (IDCs) 	Equity cap for foreign investment 50%
	Category Two	<ul style="list-style-type: none"> • Store and forward services (covering voice mailboxes, X,400 email services, fax store and forward) • Call centre services • Internet access services (also known as internet service providers) • Information service business (also known as internet content providers) 	

VAS falling under Category Two represent the most accessible segment of the telecommunications services segment in China for foreign enterprises. Investment into the telecom VAS segment requires establishment of a JV, with the foreign company's stake limited to 50%. Additionally, in order to obtain approval the JV must meet specific registered capital requirements.

In practice, however, the Chinese government has continued to adopt stalling tactics to avoid introducing foreign invested JVs. Currently among approximately 22,000 licensed VAS companies in China, less than twenty have foreign investment, with only relatively large and influential players succeeding in establishing VAS JVs, such as Microsoft, Google, and ESPN. The remaining ten or so companies who have succeeded in this regard either have close government ties (such as SK China Unicom Information Technology Co., a JV effort between China Unicom – 51%, and SK Telecom – 49%) or fall under the CEPA (Closer Economic Partnership Arrangement with Hon Kong and Macau) umbrella.

Additionally, VAS providers are subject to a wider range of regulatory issues, especially those involved in providing content. A company seeking to provide ICP (internet content providers) classified services in China must apply for an ICP telecom VAS license, and the company must be in compliance with foreign investment restrictions (i.e. for VAS no more than 50% foreign ownership). The ICP license is an umbrella category that covers all content related services either through wireless/mobile or internet access, including SMS, MMS, CRBT, WAP, IVR, music, gaming, advertising, audio/video program and

others. In addition, there are some services that require pre-approval from multiple regulators, including content related to news, publishing, education, medicine & health and medical devices.

These multiple obstacles foreign enterprises must navigate in order to legally participate in the telecom VAS segment in China have served to discourage widespread market entry from abroad. While the risk and effort that are associated with pursuing a VAS JV option are significant, the rewards that accompany success may be equally substantial, given the impressive potential that the telecom VAS market currently indicates.

Israeli firms that want to take advantage of the telecom VAS market but would prefer to not get involved in the risky JV application process can opt for a “backdoor” approach, i.e. creating an agreement with local firms that already have VAS licenses. Typically this type of agreement involves foreign firms providing technological support in return for a shared portion of the domestic firms’ revenues, in the form of a service or leasing fee. However, this business model has inherent risks as well, as from a regulatory standpoint it exists in a grey area.

1.3 TELECOM BASIC SERVICES

While technically China allows for foreign enterprises to invest in up to 49% in a JV providing basic services in the telecom industry in order to make good on its WTO accession commitments, the reality is that the market is currently dominated by an oligopoly comprised of three state-owned enterprises, with further entry barred by the Chinese government.

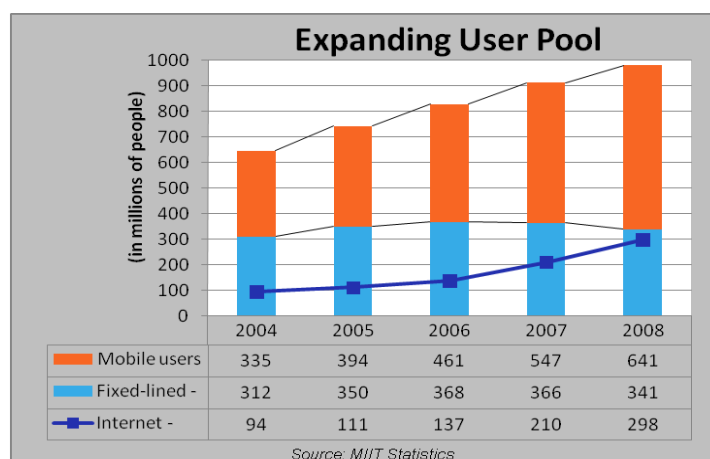
2. MARKET OVERVIEW

- China's 3G transition is expected to be a crucial driver behind industry growth for the near future.
- Converged communications merging TV, mobile, and internet services, is a stated goal in the telecom industry, although progress has been slow to date.
- The communications equipment market will continue its rapid growth. This segment represents most opportunity for foreign firms with technologically superior equipment. Wireless handset parts and handsets compose the biggest portion of China's communications equipment imports, followed by Ethernet exchangers, switching apparatus parts and wireless network interface cards.
- The mobile value-added services segment is expected to remain growing rapidly too. Foreign firms looking to access this market will face a more challenging regulatory environment.
- The communication application software segment is saturated with small-scale companies recording low levels of profit. Foreign companies have historically been less competitive in this segment.
- The instant messaging segment expects to achieve 30% growth rate in 2009, and is dominated by a few large players. Foreign enterprises looking to access this market will be required to establish a JV.
- The Voice over Internet Protocol (VoIP) segment is underdeveloped in China due to an overly-restrictive regulatory environment.
- IPTV continues to develop; the current challenge in the segment is developing a successful, profitable and localized solution for IPT commercial use in China.
- Online content, including music, gaming, advertising, and audio/video programming continue to be promising areas; foreign enterprises that can successfully establish JVs have considerable potential for success in this segment.

2.1 INTRODUCTION

Sustained by phenomenal economic growth, the communications industry in China has thrived over the past decade. As illustrated by the accompanying chart, China has made significant progress in increasing the number of mobile subscriptions as well as internet users in the past few years.

To understand China's communication industry, it is



important to first look at the oligopolistic nature of the country's telecom operation market.

While previously, China had a number of major state-owned telecom carriers competing in the market, in May 2008 China's telecom regulator, the Ministry of Industry and Information Technology (MIIT), initiated an industry restructuring process which, through a series of mergers, reduced the country's major state-owned telecom carriers to three, namely China Mobile, China Telecom and China Unicom.

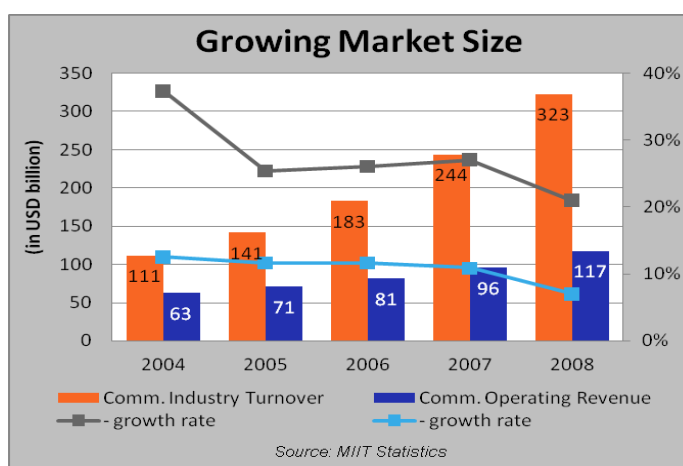
The move was aimed to enable each of the three operators to offer full telecom services and compete with equal service base in the market, which had previously been dominated by broadly four players, two in fixed-line and two in mobile. The other objective of the restructuring was to set the stage for 3G telecom operations. After the industry shake-up in early 2009, the three operators were awarded 3G licenses and subsequently launched their respective 3G services to the market. 3G technology is expected to provide the largest impetus for the next wave of telecom growth and will present enormous business opportunities for all market participants.

The most important segment of China's broad communication industry is the equipment segment, which represents a total value of USD 42.5 billion. Mobile VAS, which currently has a USD 18 billion market, has also shown potential to expand significantly in the next decade, especially in light of the roll-out of 3G operations in China. Communication application software, instant messaging and IPTV sub-markets, although much smaller compared to the equipment and mobile VAS segments, are all expected to grow.

The geographic clustering of information and communication technology investment and markets follows China's general pattern of development. That is, eastern and coastal provinces and cities, especially Beijing and Shenzhen, have the strongest capacity and largest user bases in the communication sector, while western regions where economies are less developed are less competitive in the sector (for a map of China, please see Appendix II).

2.2 THE COMMUNICATIONS MARKET

From 2004 to 2008, the total number of China's telecom users increased at an average annual growth rate of 11%. At the end of 2008, nearly 1 billion out of China's 1.3 billion citizens subscribed to telecom services. This 1 billion telecom subscriber population is comprised of roughly two thirds mobile telecom users and one third fixed-line users. While the number of mobile users continues to consistently increase, the fixed-line

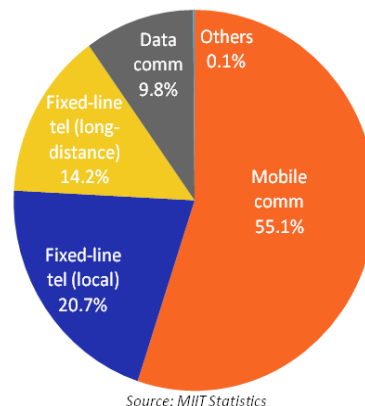


market has been losing subscribers since 2007. This trend will continue as more and more users in the saturated fixed-line market shift to mobile services.

The internet population in China tripled in the past five years and has today exceeded 300 million with a penetration rate of 22.6%, giving China the largest population of internet-users in the world.

The continuous expansion of China's telecom user base has been the central driver for the growth of communication equipment and services industries. For more than a decade, turnover in the communication industry and telecom operators' revenues have maintained strong growth rates, over 25% and 10%, respectively. In 2008, the communications industry turnover grew 21% to USD 323 billion, accounting for 7.5% of China's GDP. In 2008, the country's basic telecom service providers reported accumulated revenues of USD 117 billion, over half of which was generated from mobile communication services, one third from fixed-lined services and about 10% from data services.

Communication Operating Revenue, Breakdown by Service Type (2008)



Since 2005, growth rates in communications operations saw a relative slowdown, reflecting a global seasonal adjustment in the telecom industry. In 2008, the growth in both industry turnover and operating revenues in China saw further slowdowns. This was largely due to the global economic crisis and China's telecom industry restructuring starting in May 2008.

3rd Generation Telecom Operation

After decades of flourishing, China's telecom market has come to a point where the 2G telecom technology-based operation can no longer sustain further market expansion. As the market evolves, consumers have raised their expectations of telecom services, and are calling for new communication technologies that offer a wider range of more advanced services. In January 2009, in a bid to spur a new round of telecom growth, China officially licensed the country's three major telecom service providers, i.e. China Mobile, China Telecom, and China Unicom, to carry out 3G telecom operations based on China's homegrown TD-SCDMA, the US-based CDMA2000, and the European WCDMA 3G standards, respectively.

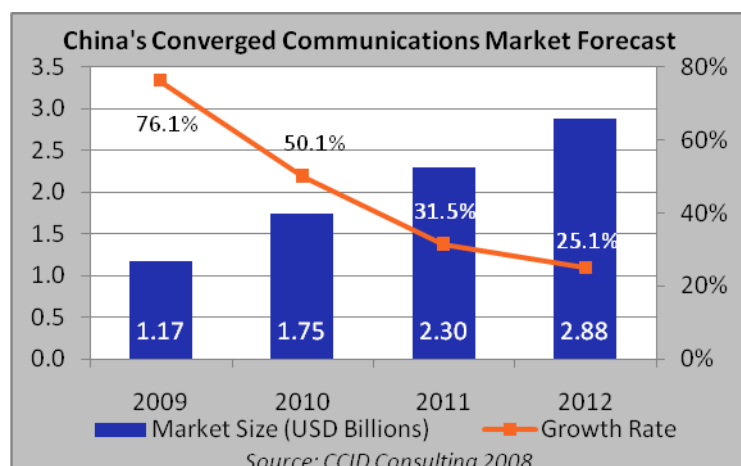
Telecom Operators and 3G			
	China Mobile	China Telecom	China Unicom
2G	GSM	CDMA	GSM
3G	TD-SCDMA	CDMA2000	WCDMA

3G has become a focal point of almost every aspect of China's telecom sector in the past few years, as it is expected to boost the industry dynamic and has presented tremendous business opportunities for players throughout the telecom value chain, from telecom carriers to equipment manufacturers, and from terminal producers to a wide range of VAS providers. According to investment plans announced by the three telecom operators,

a total of USD 57.6 billion will be pumped into 3G network construction between 2009 and 2011. In 2009 alone, operators have planned to spend approximately USD 24.5 billion on 3G development.

Converged Communications

Another frequently mentioned keyword in China's communication sector has been converged communication, the convergence of internet, television and mobile services, and is generally perceived as the primary goal of communications development. The industry has already gradually progressed in certain areas of network integration, such as wireless internet and IPTV.



However the development of network convergence in China is still in its initial stages, with most of the converged businesses running on a relatively small scale. The reason for that, apart from the lacking of effective business models, has been the obscure policy environment largely resulting from the infighting among different industry authorities.

Nevertheless, the integration of telephone, video, and data networks has begun to take shape in China. Some industry experts have predicted that China will need to invest no less than USD 86.3 billion between 2009 and 2011, before network convergence businesses can turn into scale economy.

Value Added Services

The continued investment in broadband infrastructure, together with development of the 3G-driven online VAS, provides the impetus for the steady growth of China's internet user base, as well as booming e-commerce. Mobile internet has become one of the major ways to access the internet in China.

According to CNNIC's 23rd Report in January, e-job hunting, blogs, and e-commerce ranked the top internet applications. In contrast, the growth of e-music and internet video applications has slowed for the first time. The trend of differentiation in the application of online value-added services has deepened with the rapid development of the internet in China. Online entertainment no longer ranks number one, while e-commerce and career-related websites have experienced outstanding growth in the past year.

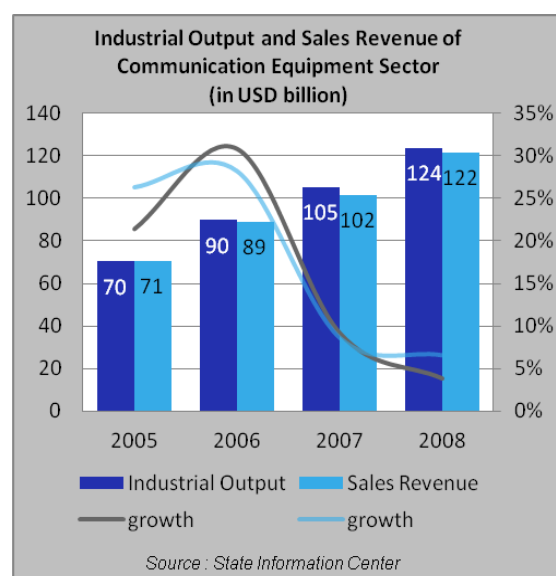
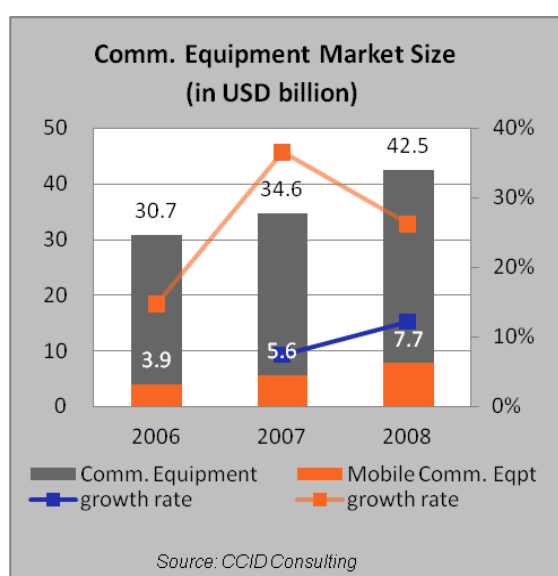
2.3 SEGMENTS WITHIN THE COMMUNICATIONS SECTOR

2.3.1 Communication Equipment

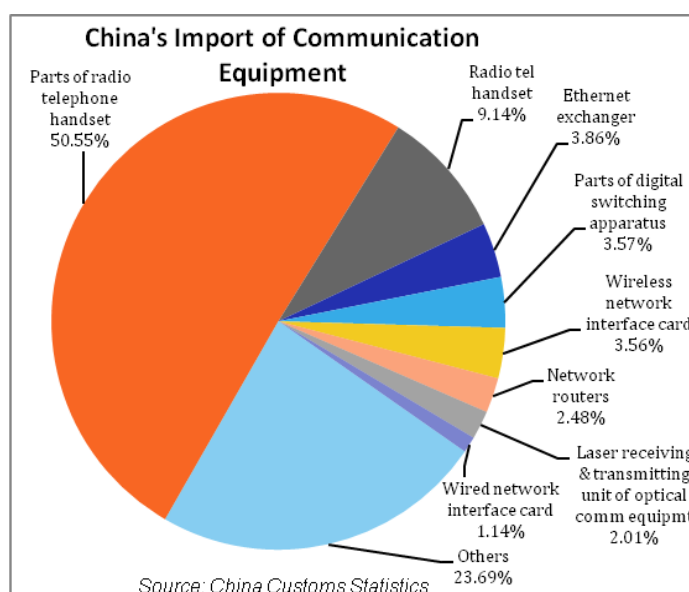
Output of China's communications equipment manufacturing industry in 2008 totalled approximately USD 122.3 billion, of which about three quarters was exported. In 2007,

yearly growth rates fell sharply under 10% from levels previously over 20% due to fluctuation in international demand. The widening gap between industry output and sales revenue since 2005 has also reflected the industry's cyclical adjustment, in which market demand shrank and industry stock rose.

Main players in China's communications equipment industry include domestic leading companies such as Huawei, ZTE, Datang, Putian, FiberHome, and international giants like Cisco, Ericsson, Nokia Siemens Networks, and Alcatel-Lucent. There are also medium and small equipment makers, who specialize in and target particular market segments of equipment manufacturing.



In 2008, China imported USD 18.89 billion worth of communication equipment, up 0.5% from the previous year. Handset parts and finished handsets, whose import values accounted for 50.6% and 9.1% of the total, respectively, were the two most important imported communication products, followed by Ethernet exchangers, switching apparatus parts, and wireless network interface cards. The fact that communications equipment imports growth (0.5% in 2008) is much smaller than industry sales revenue growth (6.5% in 2008) is a clear indicator of a growing competitiveness of domestic communications equipment producers. This competitiveness will be further enhanced by the January 2009 repeal of preferential VAT



policies for foreign enterprises. As such, foreign enterprises looking to successfully enter the communications equipment market will need to rely upon technological superiority to distinguish themselves from increasingly competitive domestic firms to establish a competitive advantage.

The table to the right lists China's communications equipment imports experiencing the highest growth rates in 2008.

Asia represents the biggest source of China's communication equipment imports, and Israel ranks 14th in terms of the value exporting to China. In terms of exports, in 2008, China

was one of the world's largest manufacturing countries, exporting communication equipments valued close to USD 90 billion, most of which flowed to Asian and U.S. markets.

High Growth Imports of Communications Equipment		
Item	Import Value (USD mln)	'08 y-o-y Growth
Interphones	126	93%
Comm. clock-synchronization equipment	7	62%
Interphone parts	9	58%
Laser receiving & transmitting units of optical comm. equipment	379	46%
Mobile communication exchangers	1	45%
Telephone/teletype exchangers	30	40%
Wireless handsets	22	26%
Ethernet exchangers	729	13%
Network routers	468	10%
Mobile communication base stations	66	6%

Source: China Customs Statistics

China's Major Communication Equipment Importing/Exporting Countries/Regions (2008) (in USD million)							
EXPORTING TO CHINA				IMPORTING FROM CHINA			
Rank	Country/Region	Value	as % of total	Rank	Country/Region	Value	% of total
1	Korea	3,537	18.7%	1	Hong Kong	23,045	25.6%
2	U.S.	1,245	6.6%	2	U.S.	12,931	14.4%
3	Malaysia	1,098	5.8%	3	Korea	6,591	7.3%
4	Japan	964	5.1%	4	India	3,933	4.4%
5	Taiwan	767	4.1%	5	Japan	2,440	2.7%
6	Hong Kong	644	3.4%	6	Hungary	2,289	2.5%
7	Philippines	528	2.8%	7	Singapore	2,239	2.5%
8	Thailand	467	2.5%	8	Germany	2,147	2.4%
9	Finland	398	2.1%	9	Netherlands	1,927	2.1%
10	Germany	356	1.9%	10	U.K.	1,838	2.0%
14	Israel	129	0.7%				

Source: China Customs Statistics

The Chinese communications equipment market can be expected to continue to experience growth, with an increasing proportion of growth driven by domestic demand. China's transition to 3G services, growing popularity in a wide range of mobile VAS, continually growing mobile service coverage, and a recently announced "Home Appliances to the Countryside" policy (under which the Chinese government will provide a 13% subsidy to mobile phones purchased in rural areas in China) will all serve to continue to drive the growth of China's mobile telecom subscriber base.

The relative ease of entry to the Chinese market, from a regulatory standpoint, combined with a huge and growing market, makes the communications equipment segment an extremely attractive one for foreign enterprises looking to penetrate China. Foreign enterprises should leverage technological advantages they may have in this segment in order to most effectively enter and gain market share in this promising segment.

2.3.2 Mobile Value-Added Service

In 2008, the mobile VAS market in China reached USD 18 billion, a 19.2% increase over the previous year. Spurred by rapid 3G market development and a steadily growing mobile phone user base, the wireless VAS market is expected to achieve a sustainable 20% annual growth rate over the next three to four years. Another factor behind this projection is the fact that growth in the traditional mobile services market has started to slow down, prompting telecom operators to develop a new business model – mobile VAS – to maximize profit growth.

Short message service (SMS) accounted for nearly 70% of the overall mobile VAS revenue, making it the largest mobile VAS business followed by multimedia messaging service (MMS), polyphonic ringtones, and wireless application protocol (WAP). The increased information transmitting capacity in the 3G network will likely drive the growth of content-intensive mobile VAS services such as mobile games, TV and music, while generally promoting the diversity of service offerings.

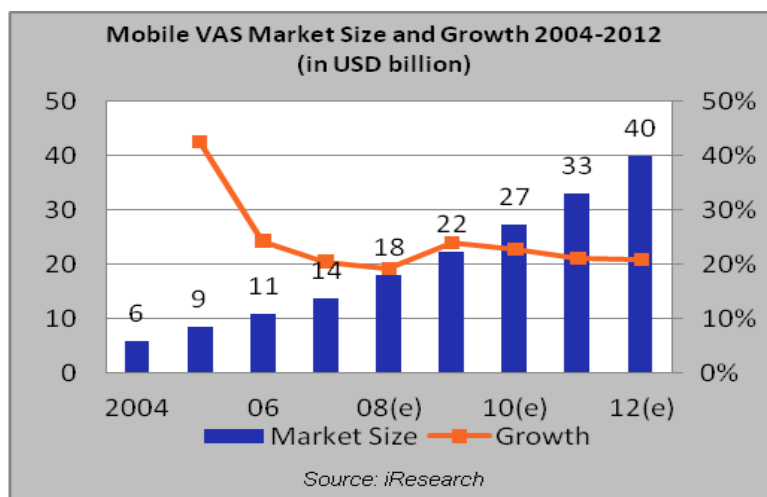
The trend of operators to run mobile VAS themselves has strengthened in the past two years, as they have started to seek out ways to establish market share in the fast-growing market. With the pie expected to grow, domestic non-government service providers active in the market, such as Sina, NetEase, Sohu, TOM, Beijing Newpalm, and Shenzhen SkyInfo, will continue to prosper.

Flagship Telecom Companies

SINA Corporation

Founded in 1997, one of China's leading online media companies. Listed on the Nasdaq Stock Exchange, it reported USD 88.8 million in net profits in 2008.

- Targets both domestic and overseas Chinese markets
- Has five major business lines, including SINA.com, SINA Mobile, SINA Community, SINA.net and SINA E-commerce.
- Adopted diversification strategy, with services spanning online portals, mobile VAS, search and directory, online games, e-commerce, and more.
- Of its 2008 net revenues of USD 369 million, 258.5 million came from its advertising business.
- Mobile VAS is its second most important channel of revenue generation, reaching USD 103 million in 2008.
- Has formed a number of cooperative relationships with international technologies, including a 2007 deal with Google under which Google provides web page search services for SINA.com in return for shared advertising revenue generated by traffic from SINA's portals.



2.3.3 Communication Application Software

At present, the communication application software market in China is far from mature with over-competition and low profits among a multitude of small-scale companies. Some relatively larger companies include AsiaInfo, Linkage, Neusoft, Bright Oceans, and SureKAM; foreign companies such as Portal, CSG and Siebel have also entered the market, though they have mostly been less competitive in terms of pricing and localization.

According to CCW Research statistics, the communication application software market will reach USD 2.3 billion by 2011, mainly driven by growing deployment of 3G services in China. BSS (Business Support Systems), OSS (Operation Support Systems), and MSS (Management Support Systems), and the segments of billing, network management, customer management and security in particular, will become some of the main development and investment areas to support 3G construction in China in the future.

2.3.4 Internet Messaging and VoIP

The Internet Messaging, or Instant Messaging market reached USD 684 million by the end of 2007 and is expected to hit USD 1.25 billion with a year-on-year (y-o-y) growth rate of 30% by the end of 2009, according to the China Internet Network Information Center (CNNIC).

For individual users, Tencent and MSN are the top two giants that dominate the Chinese IM market. Enterprise-wise, the top players in China are Tencent (RTX), Microsoft (OCS) and IBM (Lotus Sametime), Dianji Tech (GKE), InfowareLab (Easy Touch), IMO and

Flagship Telecom Companies

AsiaInfo

Founded in 1993, it specializes in the development of business and telecom software solutions and IT security products. In 2008 its revenues grew 32% to USD 175.5 million.

- Its software solutions and services covering IP, VOIP, broadband, wireless and 3G, include business and operation support systems, service application solutions and network infrastructure solutions.
- Also offers IT security products and services, which are focused on firewall and VPN technologies.
- Has a long record of entering new business segments through acquisition.
- Major customers include China's major telecom carriers, as well as leading international IT companies

Tencent Inc.

Founded in 1998, China's largest and most used Internet service portal. It generated USD 1.03 billion in revenues in 2008.

- Greatest competitive advantage comes from popularity of instant messaging platform.
- Also offers online media, interactive entertainment, Ecommerce, and mobile and internet VAS.
- Formed strategic partnerships with a number of foreign companies, including IBM and Intel.

Jingol, among which Tencent enjoys 70% market share in the enterprise IM market. Foreign enterprises looking to access the IM market are required



to establish JVs, facing the same hurdles discussed in above sections. Cooperation with Chinese companies through technology support could be one option for foreign companies with no direct investment plan, but remains subject to regulatory and commercial risks, given the grey area in which this approach would require the foreign enterprise to operate.

VoIP, also known in China as “broadband phone” or “multi-directional communication” systems, is classified as a Category One VAS: While less restricted than basic services, it remains a difficult segment for foreign investment or involvement. China’s three telecom operators are licensed to provide both basic and value-added telecom services across China, including VoIP. However, given their incumbent nature, operators have been slow to pursue VoIP and undermine existing revenue / profit structures.

ISP (Internet Service Provider) and ICP (Internet Content Provider) licensed domestic firms are permitted to provide internet access and internet content services in China, respectively. However, those firms are not permitted to access or provide service related to PSTN (Public Switched Telephone Network) voice networks. Voice terminated or generated via the PSTN must be provided by an operator. PC-to-PC service provision by an ICP / ISP licensed firm is possible; however PC-to-phone would require the involvement of an operator and could not be conducted (legally) with just an ICP / ISP license. As a result, the VoIP market in China is still far from developed due to the tightly-restricted regulatory environment.

2.3.5 IPTV and Content Delivery

IPTV (Internet Protocol Television) services in China fall into two categories:

- IPTV through broadcasting networks
- IPTV through internet networks

Both these categories are promising but still in initial trial stages and only in first-tier cities; as such, IPTV is far from being commercialized in China. While relevant

Flagship Telecom Companies

ZTE Corporation

Founded in 1985, it is a comprehensive communications provider of products and services to over 140 countries & regions. In 2008 it reported operating income of USD 6.38 billion.

- Products and services cover virtually all segments in the wireless, wired and terminal markets
- Established partnerships with over 500 telecom operators and equipment manufacturers globally
- Market leader in China’s communications sector, claiming major share of domestic communications equipment market
- 2009 focus will be on consolidation of initial success in 3G networks and equipment in the domestic market.

technologies are already widely available in the market, the key challenge at the moment is to provide a profitable and localized solution for IPTV commercial use in China.

In recent years, IPTV has experienced a rapid growth with a y-o-y user increase of over 100% in the past three years. By the end of 2008, China had 2.36 million IPTV users, and expects to hit 20 million by end of 2010. IPTV equipment providers include ZTE, Huawei, Konka and Skyworth while IPTV solutions are led by firms including ZTE, Huawei, FiberHome and Onewave. ZTE is a full-package solution provider which accounts for over 50% of the IPTV equipment market in general.

In 2008, the internet gaming market reached USD 2.88 billion, growing 52.2% over the previous year; overall market revenue is expected to hit USD 9.87 billion by 2011 with an average growth rate of over 20%. Around 50% of the internet gamers make zero expenditure while playing, and 20% spend less than USD 1.44 a month on games. As a result, developing gaming models that increase average gamer expenditures, either through subscription models or in-game item sales models will be a key driving factor for further growth.

In 2008, the online advertising market hit USD 1.68 billion with a y-o-y growth of 55.6%. It is expected to reach USD 5.32 billion by 2011 with branding advertising and search engine advertising accounting for USD 3.41 billion and USD 1.91 billion in revenues, respectively. Allyes AdNetwork, Hylink Ad. and Tensyn Interactive Ad ranked the top leading online advertising companies in China, with Allyes accounting for 12% of the overall market. Search engines, rich media and other new models of online advertising will become the main driving factors behind this market. In terms of sub-sector market share, there is a trend of decline in display and rich media advertising, while search engine advertising has been experiencing growth recent years. Search engine advertising is likely to exceed display and rich media advertising to become the top form of online advertising revenue generator by 2010. Big Chinese players as service providers include portals like Sina, Sohu, NetEase, Tencent and TOM, and specifically Lianzhong (ourgame.com) and Shanda for gaming, and Tudou, PPStream and Yule for audio/video programming.

Flagship Telecom Companies

Datang Telecom

Founded in 1998 by China Academy of Telecommunication Technology "CATT" of the Ministry of Information Industry (MII). The company posted net revenues of USD 390 million in 2008, up 9.62% over 2007

- Produces and sells telecommunications equipment for core switching, optical and wireless networks.
- Product lines include large-capacity SPC switches, optical communications technology, wireless communications systems, full-service access network equipment, telecommunications software, and a series of communication cables and microelectronic products
- Products cover over 30 provinces nationwide, with overseas markets in Asia, Europe and America.
- Established manufacturing bases in Beijing, Chengdu, Xi'an, Tianjin, Shanghai and Shenzhen
- Net profits in 2008 were up 44% over the previous year, reaching USD 6.56 million
- Plans to develop businesses including microelectronics, software, terminals and value-added services in 2009.

Online content, such as music, gaming, advertising and audio/video programming, falls into the VAS category two, which is less restricted by Chinese government, but still requires an ICP license for service providers. Content services related to healthcare, education and news also require extra specific licenses before applying for an ICP license.

Sino-Israeli technology cooperation and technology support will be much easier from a regulatory perspective. Such a business model would involve setting up a financial agreement whereby the foreign firm would provide technology support to a domestic firm that has an ICP license, and in return the domestic firm would share a portion of its operating revenue with the foreign firm in the form of a service fee or a leasing fee. However, such a business model exists in a grey area in terms of regulatory administration, presents high risks for foreign participation, and only serves for short-term business purposes.

3. MARKET OPPORTUNITIES

Opportunities and Recommendations

- The main areas of opportunity: 3G deployment and relevant services, converged communications (telecom, broadcasting and internet), and unified communications.
- China's 3G transition is expected to generate huge opportunities for those capable of providing equipment in support of the 3G development, especially wireless network equipment, network optimization, test and maintenance, switching equipment, optical fibres and cables, optical transmitting equipment, and business application platforms, network management systems and equipment with 2G-3G converged features.
- In the medium term, support of 4G capability development will provide opportunities for Israeli firms capable of providing equipment in support of 4G development.
- Israeli firms that sell equipment or applications to service providers (fixed & mobile) need to recognize that there are only three such companies and they are all state-owned. This places Israeli vendors at a commercial disadvantage and application vendors in particular (often smaller companies) have sometimes been squeezed to the point that their business is no longer viable. China Mobile has also taken application development in-house in some cases. Consequently, foreign companies often choose local partners to access the market.
- Israeli telecom equipment vendors should recognize that the cost structure of domestic Chinese vendors with similar equipment or technology will almost inevitably be more competitive and their access to customers better – the opportunities are still there, but the competitive challenge is great.
- Israeli firms that already sell equipment or solutions to mainstream international vendors (Cisco, Ericsson, Nokia-Siemens, Alcatel-Lucent, etc.) may wish to look for opportunities to capitalize on those relationships in China: these companies have invested a great deal of time and resources in cultivating customer relationships with the operators.
- For Israeli firms hoping to license technology to a domestic Chinese telecom equipment manufacturer, the main stumbling blocks tend to be the valuation of the technology, the protracted negotiation process, and the IP risk involved.

3.1 CURRENT OPPORTUNITIES

3G-driving Equipment Purchase

Telecom operators will invest some USD 24.5 billion into 3G network development this year (and USD 57.6 billion in total by 2011, to serve 150 million users) exciting the telecom equipment industry. In terms of investment structure, a quarter of the total USD 24.5 billion, or USD 6.12 billion, will go to wireless network access equipment. Switching equipment, optical fibres and cables, and optical transmitting equipment are expected to receive 5% a piece, or an USD 1.22 billion slice of the pie. 12% will be invested in

network optimization, test and maintenance, and 2% in network management system, 6% in business application platform.

In the context of 3G expansion, manufacturers of wireless network access equipment and optical equipment are expected to enjoy rapid growth in the coming years. Meanwhile, in light of the coexistence of 2G and 3G operations in China, equipment with 2G-3G converged features will be likely become popular among telecom operators.

Taking the lead in developing China's home-grown 3G technology TD-SCDMA network, China Mobile plans to invest 58.8 billion in total this year to complete TD network coverage of 238 prefecture-level cities, 70% of the total number in China. In addition, China Mobile plans to add 140,000 TD base stations in the period from 2009 to 2011.

Foreign firms with the capability to contribute to the 3G transition by providing up-to-date equipment have an excellent opportunity to access the Chinese market, especially given the relatively relaxed regulations regarding foreign sales of equipment into China.

4G Evolution

Though China is just now beginning to make the transition to 3G services, it is already under considerable time pressure regarding its transition from 3G to 4G, given the context of its stage of development relative to more developed telecom markets around the world. While the 4G evolution is expected to take place around 2010 to 2012 in developed nations, who already deployed 3G technology eight years ago, China has a long ways to catch up given the under-developed status of its 3G market.

Datang Telecom Group and China Potevio displayed their TD-LTE equipment at the recent 2009 Mobile World Congress, reaching a download speed of 100Mbps and upload speed 50Mbps. A trial of 4G-level TD-LTE network will be conducted by China Mobile at the World Expo 2010 Shanghai. China Mobile has decided to use TD-LTE as a standard for evolving its TD-SCDMA network, and TD-LTE is strongly supported by the TD-SCDMA industry chain as well as vendors. China Mobile expects to take the lead on TD-LTE deployment together with Datang in China. It was further confirmed that 60% of China Mobile's investment will be spent on TD-LTE in the future.

Stimulus Plan on Electronic and Information Industry

As Chinese government announced its stimulus plan in general, specific stimulus spending will also be directed towards supporting the electronics and information industry to reflect a key priority area for long-term development. Investments will focus on spurring the progress of 3G mobile communication services, promoting the use of digital TVs, developing national science and technology projects, and encouraging outsourcing, including the efforts of electronics and information enterprises to expand overseas. In particular, 3G, NGN and digital TV were all mentioned to be targets for receiving additional investment of over 600 billion in the plan. However, considering the relatively small-scale investment in the latter two in the past, 3G should attract most of the investment, which is expected to reach 550 billion in next three years.

3.2 KEY INDUSTRY EVENTS

P&T/Wireless& Networks Comm China 2009 (2009 年中国国际信息通信展览会)

China International Exhibition Centre, Beijing

September 16-20

With strong government and local industry background, this event has been held 17 times in the past, with both local and global influence. It currently ranks as the largest global-level ICT Expo in Asia. MIIT, the key stakeholder regulating the telecom sector in China, is the main organizer, with China's three basic service operators, China Mobile, China Telecom and China Unicom, serving as co-organizers of the event. Participants come from all parts of the industry chain, including carriers, equipment and terminal manufacturers, channels, service providers, software vendors as well as academic institutes and industry associations.

<http://www.2456.com/JasperWeb/Shows/sid-233/lang-eng/Details.aspx>

2009 NextComm Expo (Fall Session) & CIPCC (China IP Comm Conference)

Shanghai

September 23-25

CIPCC is China's most high-profile and influential next generation network & telecom event, taking the form of both conference and exhibition. It is held twice a year, once in Beijing and once in Shanghai, attracting thousands of professionals from all parts in China's IP communications food chain, including carriers, end users (especially key accounts from various vertical markets and large enterprises), channels, manufacturers, software vendors, VASP (value added service provider), along with numerous channel distributors and SIs. This year's areas of focus include:

- IP Communications and UC (Unified Communications) in China for both carriers and enterprise markets, the status quo, deployment rate and speed, and the future perspective
- IPT, IP Call center market in China
- Wireless IP communications; Mobile internet
- NGN/IMS/FMC
- China market for video communications (conference, monitoring)
- The market perception and reception of IP-based VAS

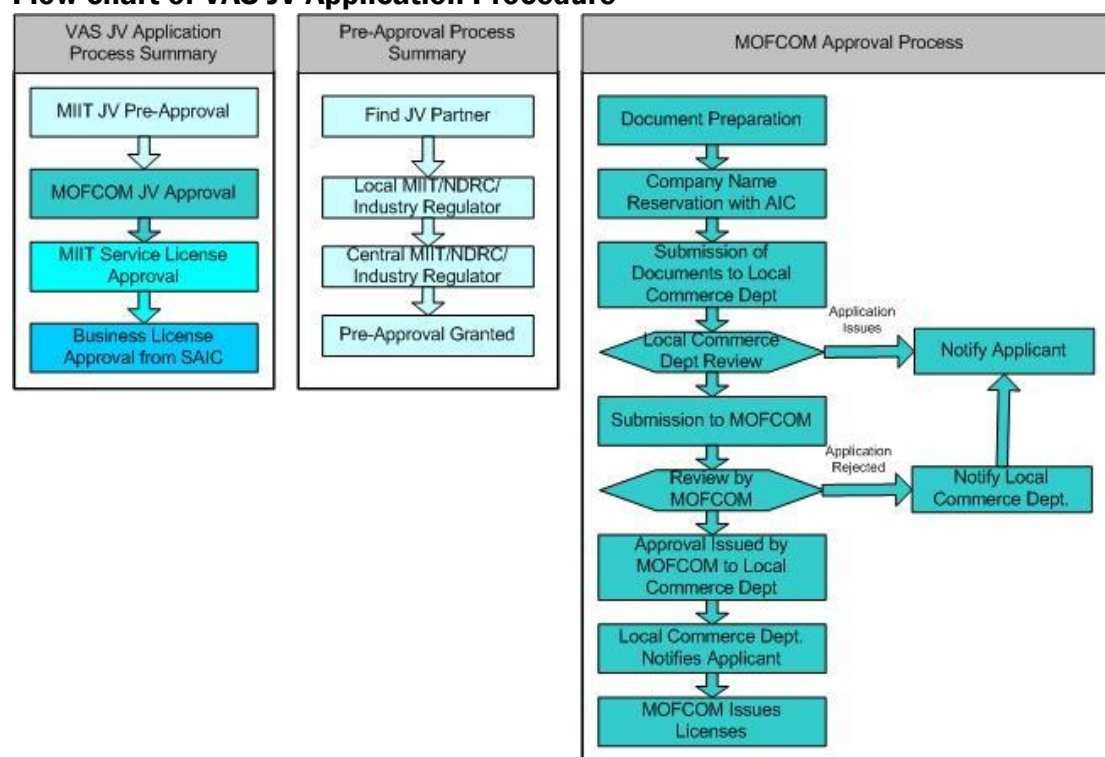
<http://www.cipcc.cn/>

APPENDIX I: INVESTMENT ROADMAP

The following shows the general process by which a foreign firm would apply to establish a VAS JV in the China's communication industry. General approval for a VAS JV has four stages:

- Approval to establish a VAS JV from MIIT
- Approval to establish a foreign invested telecom VAS JV by Ministry of Commerce
- Sectoral service approval from the MIIT
- Business license approval from the State Administration of Industry and Commerce (SAIC)

Flow chart of VAS JV Application Procedure



N.B. The pre-approval process at the local level will require approaching different government organizations in different provinces, due to different degrees of progress in a current push to restructure provincial governments. APCO will be happy to provide provincial-specific information, if so requested.

APPENDIX II: CHINA MAP



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