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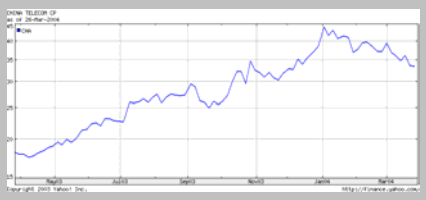
Yale SCHOOL of MANAGEMENT

China Telecom

Firm Rating: SELL
March 29. 2004

China Telecommunications Corporation (US: CHA; HK: 728)
Price – $2.58 (HKD)
52 Week Range – $1.97 - $3.45
EPS (ttm) – $.33
ROA – 8.1%
ROE – 17.38%
Operating Margin – 27.39%



Future Acquisition Overvalued

- **Impending acquisition of 10 western provinces does not appear to be a significant catalyst.** Although the acquisition of these 10 provinces is EPS accretive it is currently overvalued by the market. Most of these provinces are in poorer regions of China and have potentially lower net margins and are in a much earlier stage of the fixed line capex cycle.

- **Decreasing minutes of usage** (MOU) for fixed-line indicates a continued trend in fixed-line to mobile substitution.

- **China Telecom has underperformed** MSCI China by 16% YTD.

- **Decreasing ARPU** indicates increased penetration into poorer regions of existing provinces.

- **Management expects further increases in personnel costs** in FY2004, albeit at a lower rate.

- **China could see a 50% decrease in GDP growth** starting in FY2004 according to Morgan Stanley's China economist, Andy Xie.

- We are initiating coverage of China Telecom with a **Sell** and a target price of $2.40 (HKD)

OVERVIEW

Overview of the Current Market

There are indicators that point to the fact that the Chinese fixed line telecommunications market is maturing. This fact is highlighted by a slowdown in fixed-wire penetration growth and the decline in Average Revenue per User (ARPU) which is due to the fact that many of the new subscribers are lower quality customers who require fewer options and spend less money on telephone services.

In the short term the growth drivers are from the Personal Access System (Wireless Local Access) and the push to gain more broadband subscribers. Long-term there is a potential for China Telecom (CT) to migrate into the wireless spectrum and provide wireless service. But, that is contingent upon the procurement of a G3 license and on the company implementing a wireless strategy that provides for a sustainable real rate of return on the wireless network investment.

The Chinese Economy

The Chinese economy has blazed a path over the past 20 years and has realized a Compounded Average Growth Rate (CAGR) of approximately 9.5%. This phenomenal growth has provided for the introduction of a middle class who can spend money on things like telecom services. The estimated number of people who enter the middle class each year is 20-30m. The annual increase of incomes for households has grown from approximately .1% that had incomes above $3000 in 1980 to an estimated 25% who enjoyed that level of income in 2000. Also, since Chinese households are small, around 3.2 people, the increase in income is more apparent. Since the new middle class represents the most appealing customers who have not already been targeted by the telecom firms, the creation of these new economically viable households is an important economic factor for CT's growth prospects.

Overview of the firm

China Telecom is the leading provider of fixed-wire telephone, data and Internet, and leased line services in many of the most economically developed regions of China. China Telecom's service regions include the Shanghai Municipality, Guangdong Province, Jiangsu Province, Zhejiang Province, Anhui Province, Fujian Province, Jiangxi Province, Guangxi Zhuang Autonomous Region, Chongqing Municipality and Sichuan Province. Until the mid-1990s, it was the sole provider of fixed-wire telecommunications services in its service regions. It offers a full range of wireline telecommunications services in its service regions, including local telephone, long distance telephone, data, Internet and leased line services.

CT is planning to acquire 10 additional provinces by years end which will bring the total figure of provinces to 20. The 10 targeted provinces are in the western

part of the country and will not be as lucrative as the more populated and developed eastern provinces. The schedule for how they plan to acquire the provinces and when they will be developed has not been set.

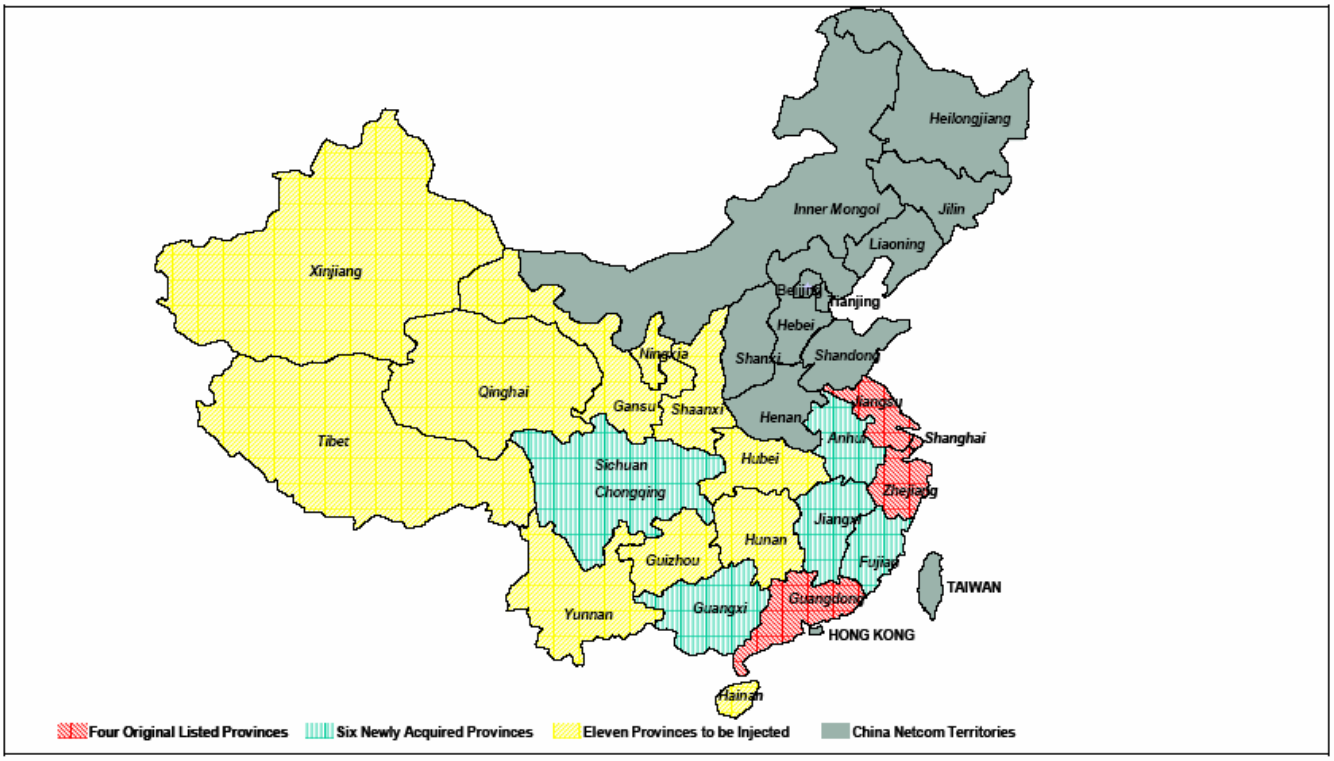
Below is a table detailing the areas where China Telecom has a presence and additional target provinces. In addition, there is a map indicating where China Telecom currently has networks, the 10 additional provinces that China Telecom will acquire in this fiscal year and areas where China Netcom, the other fixed-line service provider has its networks.

China Telecom: Key Facts about Service Areas 2003

Existing Provinces where CT has networks				Potential Target Acquisitions			
Province	**Penetration Rate**	**Lines**	**Population (MM)**	**Province**	**Penetration Rate**	**Lines**	**Population (MM)**
Shanghai	45%	7,333	16,250	Hainan	20%	1,628	8,031
Jiangsu	28%	20,439	73,810	Hubei	15%	8,898	59,880
Zhejiang	36%	16,566	46,470	Hunan	15%	9,838	66,285
Fujian	32%	11,227	34,660	Guizhou	9%	3,326	38,373
Guangdong	33%	25,670	78,586	Yunnan	11%	4,823	43,331
Anhui	16%	9,988	63,380	Shaanxi	18%	6,724	36,737
Jiangxi	15%	6,309	42,224	Gansu	16%	4,023	25,926
Guangxi	13%	6,387	48,220	Qinqhai	14%	764	5,286
Chongqing	17%	5,333	31,070	Ningxia	18%	1,003	5,715
Sichuan	13%	11,282	86,733	Xinjiang	22%	4,121	19,052
Total	**22%**	**116,299**	**521,403**	**Total Targets**		**45,148**	**308,616**

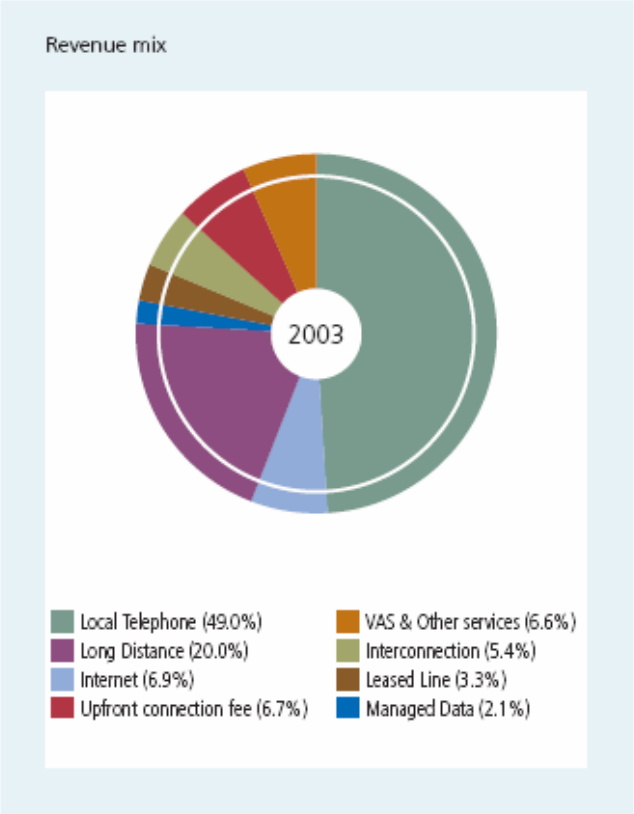
Source: Morgan Stanley CT Research Report 3/18/04

China Telecom Asset Acquisition: Snapshot of Six Provinces and What's Left in ParentCo



Source: Company data, Morgan Stanley Research

REVENUE



Fixed-Line

China Telecom is the leading fixed-line provider in China. CT has over 118m fixed-line subscribers, which represented a 21.3m (22%) increase over the previous year. CT owns and operates the networks on which they have their operations. The fixed-line customers who have fueled the fantastic growth that CT has enjoyed, will be more difficult to reach and exploit as the company is expanding into provinces that are less developed. Therefore, the development of the network will require significant capital expenditures and the rate of return that the firm will realize from these expenditures will be lower as the denizens of those provinces that have less disposable income. Therefore, any additional value that might be created by bundling services such as fixed-line and broadband service will be less apparent in these regions. Furthermore, these "low valued" customers will not add on services such as Caller ID and voicemail which all have helped provide value to CT despite the low service fee for fixed-line service.

Value Added Services (VAS) are part of the fixed line revenue stream. The value added services include items such as caller ID and voice information services. This source of revenue grew significantly, 66% over the previous year's figures. While finding new subscribers is becoming more difficult as the reach of the firm

goes into less developed provinces, these valued added services have been providing a steady stream of revenue and growth which the existing customers have come to adopt. Obviously, customers who utilize these VAS services are more lucrative to the firm and thus the added gain that CT obtains for their increased spending somewhat offsets the decrease in average revenue per user (ARPU) that new subscribers are generating.

Wireless Local Access/Personal Access System

The total number of subscribers to Wireless Local Access (also called Personal Access System "PAS"), stands at over 18m, an increase of over 150% from a year before. This service provides a unique blend of fixed-line service and mobile phone convenience. PAS allows patrons to have a "mobile phone" that only has service with a very small range, usually only a few kilometers. This service, allows the firm to take full advantage of its fixed-line proliferation to provide this type of service to people who are interested in using its technology either in combination with a fixed line phone or in lieu of it.

CT is pushing this service as it has lower capex and higher ARPUs than traditional wireline service. While there may be short-term opportunities in this market, there is no upgrade path to 2.5-3G and the primary cost advantage is based on regulation. The fixed-wire incumbents opted to use PHS because it is not viewed as a mobile technology and as such has been regulated as a fixed line service, with much lower tariffs on each call.

The Chinese Government is taking a hands-off approach with PAS deployment. PAS networks are viewed as informal wireless licenses for the traditionally fixed-wire incumbents. Regulations state that PAS technologies are to be limited to the smaller cities, but CT has managed to deploy PAS networks in larger cities. While there has been substantial growth in PAS subscribers, there does seem to be a cap on it.

First of all, the technology is limited. The range for the phones is only a few kilometers and the phones have unreliable service indoors. Furthermore, subscribers to PAS service will have to resign themselves to having sub-par service and features which may not be acceptable to users as other customers migrate into G3 technology.

Dial-up Internet/Broadband

The Internet service segment is a strong growth segment. Subscriber base for the broadband service was up approximately 200% in FY 2003 to 5.6m. During the last year, the decrease in ARPU was not as pronounced as some would have thought, given the strong rate of growth. At the same time, a decrease in ARPUs remains a concern as the monthly fees are decreased to entice new subscribers to the service. While the broadband service has increased the dial-up usage is decreasing (most likely from cannibalization of these users to broadband service).

Long-Distance

The domestic long distance market is led by CT (50% market share), but is in the midst of a decline. Users have started substituting cell phones and email for long distance calling, the revenue for this segment of the business has begun to decline, approximately 1% from last year. In an attempt to stem the flow of revenue from this source of funds, CT is offering packaged services that offer flexible options for users.

The international long distance market grew for CT grew both in revenue and market share. The increase in revenue captured increased by approximately 2% while the total minutes logged in this market increased over 8%. CT enjoys an approximately 61% market share in the international long distance arena.

Since international calls cannot be logged from mobile phones, this segment of the market is still fully dependant on the fixed-line providers. This may explain why the minutes logged and revenue gained, while small in comparison to domestic long distance, is a source of growth for CT.

Managed Data/Leased Line Services

The managed data and leased line services both grew over last year's figures. As more industries in China become more technologically savvy and required more information technology resources and data, CT was been able to meet their demands and witnessed a 4% increase of revenue over last year's figures. In addition, the leased line services also grew, in all of the leased line categories. In the past other telecommunications firms leased bandwidth from CT but as they built their own networks, this source of revenue declined. Governments, universities and corporations took their place but did not meet the revenues generated by the telecom firms the year before.

RISKS

Consumer Preferences:

While CT does enjoy a large position in the fixed-line market, the trend for consumers in the provinces in which they serve, and the country as a whole, has been to choose mobile phones over fixed-lines.

Developing markets, such as China tend to lean toward wireless as an option rather than fixed-line, as mobile technology and infrastructure represents a cheaper/faster way to deploy telecom infrastructure in lower-income markets. These latter-stage markets skip straight to cellular for basic telephony, leading to very different investment and consumption patterns for telecom services.

Therefore, in order for CT to find additional sources of revenue and not lose out to mobile providers entirely (unless they also procure a mobile license) CT will have to provide additional fixed-line services such as value added services like caller ID, pursue other growing markets like Internet service, both dial up and broadband and also further pursue the Wireless Local Access (Personal Access System) technology that provides users with a “super-cordless” phone.

Tariffs/Prices

CT is subject to extensive government regulations on the prices they charge customers, especially those relating to basic telecommunications services. Currently, each provincial communications administrations and provincial price bureaus determine the monthly fee and usage fees for fixed-line local telephone services, based on a guidance price and tariff range set by the Ministry of Information Industry (MII) in consultation with the State Development and Reform Commission. These two agencies jointly set prices for all domestic and international, Hong Kong, Macau and Taiwan long distance services using public switched telephone networks, leased lines and data services.

CT derives a substantial portion of its revenues from services that are subject to tariffs determined by the Chinese government. In September 2002, the Ministry of Information Industry indicated in writing that it does not intend to initiate any adjustment to prices for fixed-line local telephone services during the next three to five years. Thus, the risk of adjustment of such tariffs in such period has been substantially reduced. However, we cannot predict the timing, likelihood or likely magnitude of any price adjustments generally or the extent or potential impact on CT’s business of future tariff adjustments.

Competition

The primary competitors to China Telecom are the other state sponsored telecommunications firms, China Netcom, China Unicom and China Mobile. China Netcom is the other provider of fixed-line services primarily in the Northern provinces. China Mobile and China Netcom are primarily wireless providers and have reach around the country. While each firm has its niche, competition is

apparent, especially as CT weighs its options and decides on whether or not it will pursue a wireless license and as China Netcom considers moving into the areas where Telecom has traditionally had a strong hold.

Wireless License

CT has made it clear that they will likely, pursue a wireless G3 license. While, the date that a license might be granted and wireless strategy are not clear, it is likely that procurement of such a license would provide CT a way to stem the flow of customers who choose Mobile over Fixed-line phones. In addition, it is also clear that given the extremely large base of fixed-wire customers, CT would have a large pool of potential applicants from which they could target potential mobile phone services users.

Unbundled Local Loop

The MII does not have any immediate plans to implement a local loop in the near term. An unbundled local loop requires that the incumbent fixed-wire provider must sell the last-mile connections to discount/alternative carriers. This breaks up the value chain that the incumbents enjoy and will put downward pressure on rates. If the unbundled local loop is required, then the incumbents loose that portion of the income to discount providers.

Chinese economy

As was mentioned above, the growth of the economy which, fuels the growth of the Chinese middle class. Thereby, as the economy goes, so do the growth prospects of companies like CT which require new subscribers to continue growing. Morgan Stanley's China economist, Andy Xie, believes that 4Q2003 represented the peak of the global economic cycle. China, in particular, should see up to a 50% slowdown in GDP growth rates in F2004. The Chinese government has taken action to slow its investment growth rate, and the effect should be seen in F2004. The key portfolio decision in F2004, according to Andy, is to decrease beta.

VALUATION

Using the discounted cash flow model, we valued the company at $2.44 (HKD) based upon medium growth projections. An element of our valuation that presented a challenge was modeling the planned acquisition of 10 additional provinces from the government as P&L data from these 10 provinces were difficult to find. The difficulty also lies in estimating the amount of capital expenditures that are needed because of the nascent state of telecommunications development in these western regions.

We used the following assumptions to build our income statement for the combined entity of 10 original and 10 new provinces (Refer to Exhibit A):

- Fixed line ARPU will decrease over time as a result of fixed to mobile substitution and increased penetration into poorer regions of the country.
- Although tax rate is normally 33%, historical financial data shows a tax rate of approximately 20%. The state oftentimes offers a preferential tax rate as low as 15% for business development in poorer regions of the country.
- Blended Broadband and Internet ARPU will continue to increase over time as more consumers go online and other consumers substitute dial up for broadband.
- Broadband and Internet customer growth will outpace fixed line customer growth based upon current trends.
- Operating expenses for the 10 original provinces will increase over time as a result of increased personnel costs that are only slightly balanced by decreasing Network and Operations costs.
- Earnings Before Interest & Taxes (EBIT) % of Total Revenue for the 10 new provinces will decrease over time because cost to serve for customers in less developed parts of the country is likely to rise.
- With the acquisition of 10 additional provinces through an equity issuance, the number of outstanding share will increase from 75.6 million to 83.2 million.

We then used the income statement to calculate our FCF using the following assumptions (Refer to Exhibit B):

- Capital expenditures as a % of sales will stay relatively stable for the next several years and gradually decrease over time because fixed line development in the 10 new provinces are still in the early stages.
- Working capital will decrease over time and stabilize as a result of the company's careful management of using credit for capital expenditures. However, as capital expenditures decreases, working capital will gradually stabilize and even perhaps increase because of increased customers and increased accounts receivables.

We conducted a valuation using both adjusted present value (APV) and weighted average cost of capital (WACC). Both valuation methods gave very similar results. For our APV (Exhibit C) and WACC (Exhibit D) calculations we used the following assumptions or data elements:

- For APV, we assumed a constant debt of $77,365 which represents the combined current debt level of both the 10 old and new provinces. This appears reasonable as future expansion and acquisition appears to be funded by new equity rather than debt issuance.
- For WACC, we assumed a constant debt to equity ratio of 45%. The company has said that it seeks to maintain a debt to equity ratio of between 40 – 50%.
- Risk free rate of 5%
- Cost of debt of 4.7% based upon financial data
- Market risk premium of 7.5%
- Tax rate of 20%
- Equity beta of 1.05 relative to the S&P500

Using a medium growth scenario for both fixed line and broadband/internet we arrived at a share price of $2.44 (HKD). We also undertook a sensitivity analysis of various parameters in our model which led to a range of share prices and this will be discussed in the following section.

Exhibit A
China Telecom - Projected Income 2004 - 2013

	2002A	2003A	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E
10 CURRENT PROVINCES												
Revenue												
Fixed Line Subscribers	96,788,000	118,000,000	141,600,000	169,920,000	203,904,000	240,606,720	281,509,862	320,921,243	359,431,792	395,374,972	430,958,719	452,506,655
ARPU (Rmb)	$80.33	$67.80	$62.38	$59.26	$56.30	$53.48	$51.34	$49.80	$48.81	$48.32	$48.32	$48.32
Fixed Line Local and Long Distance Revenue (Rmb - MM)	$93,298	$96,008	$105,993	$120,832	$137,748	$154,416	$173,440	$191,790	$210,508	$229,244	$249,876	$262,369
Broadband subscribers	1,874,000	5,630,000										
Internet subscribers	17,602,000	20,242,000										
Total Broadband and Internet Subscribers	19,476,000	25,872,000	34,927,200	47,500,992	65,076,359	88,503,848	116,825,080	150,704,353	188,380,441	229,824,138	275,788,966	325,430,980
Broadband Internet ARPU (Rmb)	$21.03	$26.28	$30.23	$33.25	$36.57	$40.23	$42.24	$44.35	$46.57	$48.90	$49.88	$50.88
Internet - Dial up and broadband Revenue (Rmb - MM)	$4,914	$8,160	$12,668	$18,952	$28,561	$42,727	$59,219	$80,212	$105,279	$134,862	$165,071	$198,679
Managed Data Revenue (Rmb)	$2,431	$2,540	$2,642	$2,774	$2,940	$3,146	$3,303	$3,435	$3,573	$3,716	$3,827	$3,942
Leased Line Services Revenue (Rmb)	$4,214	$3,915	$4,072	$4,275	$4,532	$4,849	$5,091	$5,295	$5,507	$5,727	$5,899	$6,076
Others	$4,707	$7,828	$8,141	$8,548	$9,061	$9,695	$10,180	$10,587	$11,011	$11,451	$11,795	$12,149
Total Operating Revenue	$109,564	$118,451	$133,516	$155,381	$182,842	$214,833	$251,234	$291,320	$335,877	$384,999	$436,467	$483,215
Operating Expense												
Depreciation and amortisation	$33,005	$32,921										
Network operations and support	$24,139	$22,759										
Selling, general, and administrative	$10,235	$12,176										
Personnel	$13,315	$15,251										
Interconnection and other operating expenses	$2,873	$2,896										
Total Operating Expenses	$83,567	$86,003	$98,802	$116,536	$138,960	$165,421	$193,450	$227,229	$261,984	$300,300	$344,809	$386,572
Operating Expenses as % of Total Operating Revenue	76%	73%	74%	75%	76%	77%	77%	78%	78%	78%	79%	80%
Operating Income	$25,997	$32,448	$34,714	$38,845	$43,882	$49,411	$57,784	$64,090	$73,893	$84,700	$91,658	$96,643
Interest/Investment Income, Non-Operating	37	34										
Interest Income (Expense), Net Non-Operating	37	34										
Unrealized Gains (Losses)	($14,690)	$0										
Other Non-Operating Income (Expense)	($2,081)	($1,807)										
Other, Net	($16,771)	($1,807)										
Income Before Tax	$9,263	$30,675	$34,714	$38,845	$43,882	$49,411	$57,784	$64,090	$73,893	$84,700	$91,658	$96,643
Income Tax - Total	-$582	$5,933	$6,943	$7,769	$8,776	$9,882	$11,557	$12,818	$14,779	$16,940	$18,332	$19,329
Income After Tax	$9,845	$24,742	$27,771	$31,076	$35,106	$39,529	$46,227	$51,272	$59,114	$67,760	$73,327	$77,314
Minority Interest	($72)	($56)										
Net Income	$9,773	$24,686	$27,771	$31,076	$35,106	$39,529	$46,227	$51,272	$59,114	$67,760	$73,327	$77,314
10 ADDITIONAL PROVINCES TO BE ACQUIRED												
Fixed line subscribers			49,010,000	58,812,000	70,574,400	83,277,792	97,435,017	111,075,919	124,405,029	136,845,532	149,161,630	156,619,712
ARPU (local fixed line)			$40	$38.00	$36.10	$34.30	$32.92	$31.94	$31.30	$30.98	$30.98	$30.98
Local Revenue (RMB mn)			$23,525	$26,818	$30,573	$34,272	$38,494	$42,567	$46,722	$50,880	$55,459	$58,232
Local Revenue as % of Total Revenue			80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Total Operating Revenue			$29,406	$33,523	$38,216	$42,840	$48,118	$53,209	$58,402	$63,600	$69,324	$72,790
EBITDA Margin			55%	49%	47%	45%	44%	43%	43%	42%	42%	42%
EBITDA			$16,173	$16,426	$17,962	$19,278	$21,172	$22,880	$25,113	$26,712	$29,116	$30,572
EBIT Margin			26.50%	25.00%	24.00%	23.00%	22.00%	21.00%	20.00%	20.00%	20.00%	20.00%
EBIT			$7,793	$8,381	$9,172	$9,853	$10,586	$11,174	$11,680	$12,720	$13,865	$14,558
Interest Expense			($1,301)	($1,301)	($1,301)	($1,301)	($1,301)	($1,301)	($1,301)	($1,301)	($1,301)	($1,301)
EBT			$6,492	$7,080	$7,871	$8,552	$9,285	$9,873	$10,379	$11,419	$12,564	$13,257
Income Tax			$1,298	$1,416	$1,574	$1,710	$1,857	$1,975	$2,076	$2,284	$2,513	$2,651
Net Income			$5,193	$5,664	$6,297	$6,842	$7,428	$7,898	$8,304	$9,135	$10,051	$10,606
COMBINED ENTITY												
Operating Revenue			$162,922	$188,904	$221,058	$257,673	$299,352	$344,529	$394,280	$448,599	$505,791	$556,005
Net Income			$32,965	$36,740	$41,402	$46,371	$53,655	$59,171	$67,418	$76,895	$83,378	$87,920

Exhibit A (cont'd)
China Telecom - Projected Income 2004 - 2013
Growth Sensitivity

% Growth in Fixed Line		
Customer	2 Med	1 = High, 2 = Medium, 3 = Low
ARPU	2 Med	1 = High, 2 = Medium, 3 = Low
% Growth in Internet and Broadband		
Customers	2 Med	1 = High, 2 = Medium, 3 = Low
ARPU	2 Med	1 = High, 2 = Medium, 3 = Low

Growth Drivers - Customers	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
% Growth in Fixed Line - high	24%	24%	24%	22%	19%	17%	15%	12%	11%	7%
% Growth in Fixed Line - medium	20%	20%	20%	18%	17%	14%	12%	10%	9%	5%
% Growth in Fixed Line - low	15%	15%	15%	13%	12%	11%	9%	7%	6%	3%
% Growth in Internet/BB - high	40%	42%	42%	40%	38%	36%	33%	30%	28%	25%
% Growth in Internet/BB - medium	35%	36%	37%	36%	32%	29%	25%	22%	20%	18%
% Growth in Internet/BB - low	20%	23%	25%	27%	23%	20%	17%	15%	12%	10%
Growth Drivers - ARPU	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
% Growth in Fixed Line - high	-5%	-4%	-3%	-2%	-1%	0%	0%	0%	0%	0%
% Growth in Fixed Line - medium	-8%	-5%	-5%	-5%	-4%	-3%	-2%	-1%	0%	0%
% Growth in Fixed Line - low	-10%	-8%	-7%	-6%	-5%	-4%	-3%	-2%	-1%	0%
% Growth in Internet/BB - high	20%	18%	18%	15%	10%	10%	8%	8%	5%	5%
% Growth in Internet/BB - medium	15%	10%	10%	10%	5%	5%	5%	5%	2%	2%
% Growth in Internet/BB - low	10%	10%	5%	5%	5%	2%	2%	2%	2%	2%
Growth Drivers - (Managed Data, Leased line, etc)	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
% Growth in Revenue	4%	5%	6%	7%	5%	4%	4%	4%	3%	3%

Exhibit B
China Telecom - FCF Calculations

	2004E	**2005E**	**2006E**	**2007E**	**2008E**	**2009E**	**2010E**	**2011E**	**2012E**	**2013E**
EBIT	$42,507	$47,226	$53,054	$59,265	$68,370	$75,264	$85,573	$97,420	$105,523	$111,201
- Taxes on EBIT	$8,501	$9,445	$10,611	$11,853	$13,674	$15,053	$17,115	$19,484	$21,105	$22,240
= Net Operating Profit Less Adjusted Taxes	$34,005	$37,781	$42,443	$47,412	$54,696	$60,211	$68,459	$77,936	$84,418	$88,961
+ Depreciation	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000
- Increases in Working Capital	($4,000)	($3,000)	($3,000)	($2,000)	($2,000)	($1,000)	($1,000)	$0	$0	$0
- Capital Expenditures	$53,764	$60,449	$68,528	$77,302	$80,825	$75,796	$70,970	$71,776	$70,811	$77,841
Capital Expenditure as % of Total Revenue	33%	32%	31%	30%	27%	22%	18%	16%	14%	14%
Free Cash Flow (FCF)	$17,241	$13,332	$9,915	$5,110	$8,871	$18,415	$31,488	$39,160	$46,608	$44,120

Exhibit C
APV Calculations (constant debt)

	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E
Tf (tax rate)	20%									
Rf (risk free rate)	5%									
Rd (cost of debt)	4.70%									
Market Risk Premium	7.50%									
Current Market Cap (w/10 original provinces) F	$208,701									
B-equity	1.05									
B-asset	0.88									
Cost of Unlevered equity, rA	11.62%									
Discount factor	0.8959	0.8027	0.7192	0.6443	0.5773	0.5172	0.4634	0.4152	0.3720	0.3332
Discounted cash flows	$15,447	$10,701	$7,131	$3,292	$5,121	$9,524	$14,591	$16,258	$17,336	$14,703
PV(all cash flows)	$114,104									
Terminal growth Rate	2.50%									
Terminal Value										$484,031
PV(Terminal Value)	$161,303									
Debt from 10 current provinces	$49,684									
Debt of 10 new provinces	$27,681									
Total Debt	$77,365									
PV(tax shield)	$15,473									
PV(firm)	$290,880									
PV(debt)	$77,365									
PV(equity)	*$213,515*									
Original number of shares outstanding	75,614									
New number of shares outstanding	83,176									
Price/Share (Rmb)	$2.57									
1Rmb =	0.942 HKD									
Price/Share (HKD)	**$2.42**									

Exhibit D
WACC Calculations (constant debt/equity ratio)

	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E
Target leverage ratio D/(D+E)	0.45									
Target weight on equity	0.55									
Cost of levered equity, Re	0.172729873									
WACC	11.19%									
Discount factor	0.89934412	0.808819846	0.727407373	0.654189543	0.588341519	0.529121486	0.475862297	0.427963959	0.38488687	0.346145743
Discounted cash flows	15,506	10,783	7,212	3,343	5,219	9,744	14,984	16,759	17,939	15,272
PV(all cash flows)	$116,761									
Terminal growth Rate	2.50%									
Terminal Value										$507,586
PV(Terminal Value)	$175,699									
PV(firm)	$292,459									
PV(debt)	$77,365									
PV(equity)	*$215,094*									
Price/Share (Rmb)	$2.59									
1Rmb =	0.942 HKD									
Price/Share (HKD)	**$2.44**									

SENSITIVITY ANALYSIS

We conducted a sensitivity analysis on three critical parameters: 1) customer growth rate; 2) ARPU growth rate; 3) terminal value. Customer and ARPU growth rate for fixed-line and broadband were trended in high, medium, and low scenarios. This was analyzed against terminal growth rates of 2%, 2.5%, and 3%. The Chinese economy has been growing at 9.5% annually but we believe that as it continues to develop it will eventually taper off to a steady growth of roughly between 2 and 3%.

Exhibit E
China Telecom - Share Price Sensitivity (HKD)
Terminal Growth - 2%

Fixed Line	Broadband Internet	APV	WACC
High customer and ARPU growth	High customer and ARPU growth	$2.57	$2.61
Medium customer and ARPU growth	Medium customer and ARPU growth	$2.32	$2.33
Low customer and ARPU growth	Low customer and ARPU growth	$2.27	$2.26

Terminal Growth - 2.5%

Fixed Line	Broadband Internet	APV	WACC
High customer and ARPU growth	High customer and ARPU growth	$2.69	$2.74
Medium customer and ARPU growth	Medium customer and ARPU growth	$2.42	$2.44
Low customer and ARPU growth	Low customer and ARPU growth	$2.36	$2.36

Terminal Growth - 3%

Fixed Line	Broadband Internet	APV	WACC
High customer and ARPU growth	High customer and ARPU growth	**$2.82**	**$2.89**
Medium customer and ARPU growth	Medium customer and ARPU growth	$2.52	$2.56
Low customer and ARPU growth	Low customer and ARPU growth	$2.45	$2.47

The stock is currently selling at $2.58 (HKD) and the only scenario where the APV or WACC valuation exceeds this current share price is when the customer and ARPU growth rates for both fixed line and broadband/internet is high and the terminal growth rate is 3%.

CONCLUSION

We initiate coverage of China Telecom with a sell recommendation and a target price of $2.40 (HKD). Our recommendation rests upon four critical elements:

- Although the acquisition of 10 additional provinces is EPS accretive, we believe the market has overvalued the growth prospects and underestimated the capital expenditures necessary to propel growth in these rural regions
- A DCF model and sensitivity analysis leads us to conclude a fair market price of $2.40
- Increased personnel costs and higher fixed to wireless substition will bring downward pressure on profit margins and revenues.
- Growth in the Chinese economy is expected to slow starting in FY 2003

APPENDIX

The word 'telecommunication' is derived from the Greek world 'tele' meaning 'far off' and the Latin word 'communio' meaning mutual participation. In this sense, telecommunications is relatively easy to understand but with its complex technology and terminology, telecommunications can often times have a language of its own. Our attempt in this section is to provide a brief explanation of the prevalent technologies in Telecommunications to help investors better understand the landscape of the industry so as to make more informed investment decisions.

The Telecommunications industry can be broken up into four major categories:

- Fixed line voice services
- Fixed line data services
- Wireless
- Satellite

Fixed Line Voice Services

Fixed line voice services are often called landline telephony services or plain old telephone service (POTS). These services run on fixed line telephone networks which are often referred to as public switched telephone networks (PSTN).

Valued-added services offer by fixed line service providers include voice mail, conferencing, call waiting, or call forwarding.

Fixed Line Data Services

Fixed line data services include Internet services (broadband and dialup) and fax. Internet services can be provided through the following technologies:

Technology	Brief description
Dial-up	Low speed internet access (narrowband) using telephone line and a dial-up modem
Cable	High-speed Internet access using a cable model
XDSL	High-speed Internet access using DSL modems

Source: Deutsche Bank

Wireless Services

With advancement in chip technology the wireless sector has gone through various generations of evolution in the past two decades. These are described here below.

1G (First Generation)
The first generation of wireless services was analogue and was designed to carry only voice traffic. Analogues systems included TACS (total access communication system) and AMPS (Advanced Mobile Phone System).

2G (Second Generation)
The second generation of wireless services was digital and enabled both voice and limited data communication. The two prevalent standards include the following:

- GSM (Global System for Mobile Communication): Originally developed as European standard for digital mobile telephone, it has become the world's most widely used mobile system and can be found mostly in Europe and Asia. About 70% of the world's cellular networks use GSM technology.
- CDMA (Code Division Multiple Access): This standard was originally developed by Qualcomm for the military, to allow soldiers to better communicate on the battlefield. It has evolved to become widely used in the commercial sector especially in the United States and Japan.

2.5G (Second Generation)
2.5G extends 2G capabilities by adding features such as packet-switched connection and enhanced data rates. Standards in 2.5G include EDGE (Enhanced Data for GSM Evolution) and GPRS (General Packet Radio Service).

3G (Third Generation)
The third generation of wireless services extends data transfer up to 2Mbps and enables enhanced voice, data, and video transmission through mobile devices. 3G standards include W-CDMA (Wideband Code Division Multiple Access), CDMA2000, and TD-SCDMA (Time Division – Synchronous Code Division Multiple Access. TD-SCDMA was developed by the Chinese Academy of Telecommunications Technology.

Wireless services can also be divided into voice and data services but because both are so interconnected we have decided to combine it into one main category.

Wireless voice services offer the same services as in fixed-line such as local calls, long distance calls, voice mail, phone book and directory services, conferencing, and call waiting. For wireless voice services, the backbone infrastructure is fixed and the same as that for fixed line services. The main difference is that radio frequencies are the medium used for transmission.

Wireless data services include the following:

- Wireless internet access
- Short messaging services (SMS)
- Multi-media messaging services (MMS)

Wireless internet access enables customers the ability to access the Internet using wireless devices such as smartphones, PDAs, and laptops. SMS allows users to send short text messages, typically less than 160 characters, over mobile devices MMS is a relatively new offering enabled by 2.5G and 3G networks. It allows multimedia (photos, voice and video) to be sent in a way similar to SMS.

Satellite Services

Satellite systems used for voice and data do not form a significant part of the telecommunications revenue in China and will not be covered in this report. Satellite services in China are provided by ChinaSat and ChinaSat revenues only accounted for .2% of total telecommunications revenue in China in 2003. ChinaSat does not offer any residential services and most of ChinaSat customers are telecom operators, banks, securities brokerages, insurance companies, TV companies and the military.

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