



Yale SCHOOL of MANAGEMENT



China Mobile

Firm Rating: SELL

April 12, 2004

China Mobile (US: CHL; HK: 941)

Price – HK\$23.25

52 Week Range – \$14.85 - \$27.85

Market Cap - HK\$460B (US \$59B)

EPS (ttm) – Rmb\$1.81

ROA – 11.99%

ROE – 19.11%

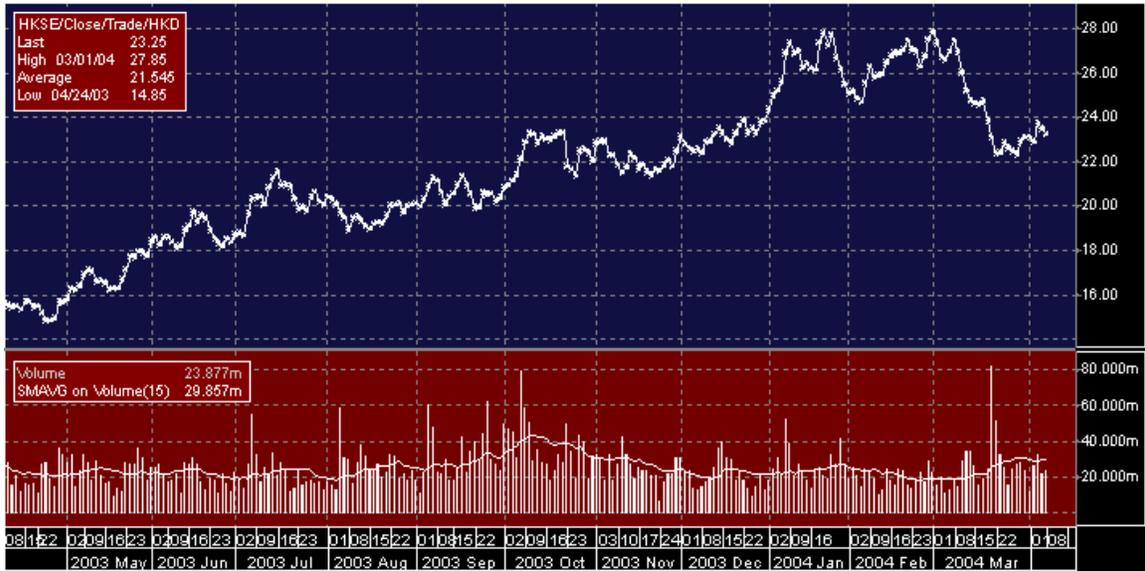
Operating Margin – 32.38%

Increasing Competition & Slowing Economy

- **Increasing competition from Unicom, Telecom, and Netcom** has resulted in more aggressive marketing and promotions, increasing SG&A expenses.
- **Vast income disparity between rural and urban population** has created a Chinese wall for growth opportunities. Companies such as China Telecom have penetrated most of the middle and high income populations and are now entering rural areas where income levels are only 30% of urban areas. This has resulted in decreased profit growth percentages over time and decreased average revenue per user (ARPU).
- **Increasing minutes of usage (MOU) in phone plan packages** forces additional network capacity and increased capital expenditures. China Mobile overspent on its capex guidance by 7% in 2003 and revised capex guidance for 2004, increasing it by 18%.
- **Chinese government is intent in cooling GDP growth.** China's premier Wen Jiabao stated "We are preparing further measures to slow growth and they will be more forceful."
- We are initiating coverage of China Mobile with a **Sell** and a target price of \$19.85 (HKD)

OVERVIEW

The stock is currently trading at HK\$23.25 with a 52 week range of \$14.85 - \$27.85. We expect to see continued declines as a result of increased competition, sliding profit growth, increased SG&A expenses, downward economic trends, and weak demographic factors. Our DCF model sets a fair price of \$19.85 (HKD).



Source: Bloomberg

Chinese Economy

The Chinese economy has grown at a Compounded Average Growth Rate (CAGR) of approximately 9.5% over the past 20 years. China's GDP hit 11.6694 trillion Rmb (US \$ 1,409.8 billion) in 2003, a 9.1 percent increase over the previous year. Per capita GDP rose to 9,030 yuan (US \$ 1,090) in 2003, exceeding the benchmark of US \$1,000 for the first time.¹

The government however is aiming to reduce this explosive growth because of concerns over inflation, financial risk, and eroding asset quality. For the second time in seven months, the Peoples Bank of China (PBoC) unveiled credit-tightening measures amid sustained high growth in loans and investment for the past two quarters. The new measures include: 1) the introduction of a differentiated reserve requirement system according to individual financial institutions. financial performance, effective April 25, and 2) raising PBoC's lending and rediscount rates charged to financial institutions, effective March 25. Financial institutions will be assigned their appropriate requirement ratios based on the assessment of their capital adequacy, non-performing loan ratio, the quality of their internal control systems and non-compliance risks, with regular reviews by the PBoC based on data provided by the China Banking Regulatory

Commission (CBRC). The PBoC has set a target of Rmb2.65 trillion in loan increases in 2004, down from Rmb3 trillion in 2003.²

The previous tightening was announced on August 23, 2003, raising reserve requirement on deposits from 6% to 7%. The latest tightening measure was prompted by continued erosion in asset quality.

Other reasons for the government's aim to steer the economy to a soft landing in 2004 include growth bottlenecks and the risk of over-investment. With strong growth across all sectors in 2003, power supply and natural resource shortages are being experienced. Higher raw material prices act as a margin squeeze on downstream manufacturing and potentially threaten the sustainability of China's industrialization and development. The deterioration in credit quality remains a concern for the authorities, whose aim is to rein in over-investment and expansion to ensure China does not replicate the conditions in Southeast Asia prior to the 1997 financial crisis.

Signs of inflation are starting to creep into the Chinese economy. New data from the country's central bank shows that companies paid rising prices in March to buy a wide range of commodities and industrial products. The corporate goods price index of the People's Bank of China jumped 8.3 percent last month compared with March 2003. The index measures prices that companies pay for goods from other companies, including the iron ore that mines sell to steel mills and the washing machines that appliance manufacturers sell to distributors and retailers.³

Chinese leadership is very serious about slowing the Chinese economy and it has become a top priority. Premier Wen Jiabao stated: "Overheating is my biggest concern. We are preparing further measures to slow growth and they will be more forceful." Unquestionably this will lead to a significant slowdown in GDP growth starting in 2004.

Chinese Demographics

With a population of 1,294.4 million representing approximately 22% of the world's population, China is the most populous country in the world and its population has been growing at approximately 1% over the past 10 years.⁴ To slowdown population growth, China instituted a one-child policy in 1979 but according to some economic experts this may put a strain on its economic growth and social welfare resources because of an increasing aging population. In 2020, China's over 60 population group is expected to make up 12 pct of the overall population, but in 2050 the segment will grow to 23 pct.⁵

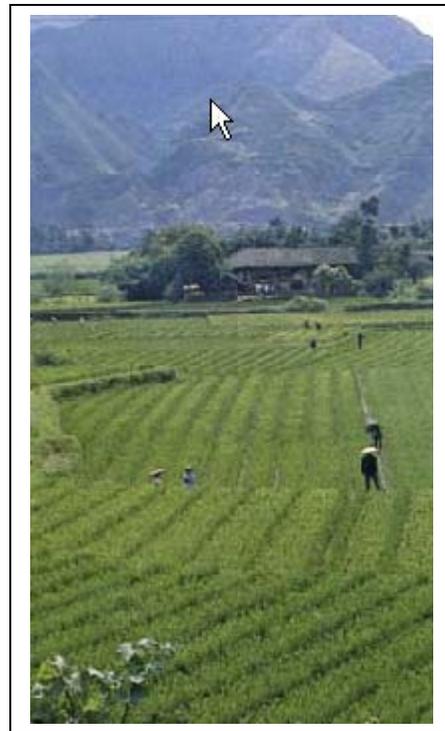
Population density is highly uneven. Vast desert areas of western China are nearly uninhabited, while areas of eastern China are among the most densely populated in the world. Average population density is about 325 per square mile.

According to World Bank figures, some 400 mln people in China have been lifted from poverty since 1981 when an estimated 634 mln people, more than half the country's population at that time, lived below the poverty line. However, about 212 million Chinese still live under the poverty line, despite over 25 years of economic reforms and rapid growth.⁶

The 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.

Despite the rise of the middle class there is still a vast gap between the haves and have nots, between urban and rural residents. According to figures released by China's National Bureau of Statistics, disposable income among urban residents in the mainland rose 9.3 percent to 8,500 Yuan (\$1,025), while per capita cash income of rural citizens increased only 4.3 percent to 2,622 Yuan (\$316) during 2003.⁷

According to varying estimates, the rural population makes anywhere from 60 - 80% of the entire Chinese population. The fact that the rural population is such a significant segment of Chinese society and yet their incomes are not keeping up to pace with urban workers is the reason why, we believe, companies such as China Mobile are hitting a wall and experiencing declining profit growth percentages. For example, China Mobile reported a nine percent rise in 2003 net profit, down from 17 percent profit growth the previous year.



If the rural population makes up to 80% of the Chinese population, this amounts to roughly 1 billion people. China Mobile has approximately 142 million subscribers and its wireless competitor China Unicom expects to have 100 million subscribers by the end of this year leaving a small percentage of people with high disposable income to go after.⁸ China Mobile has essentially saturated the middle and high class tiers in China society and is now penetrating the lower tier income classes. We believe that if the disparity between rural and urban income growth is not addressed this can have significant consequences for growth opportunities for Chinese companies, especially those in the

telecommunications space, and the Chinese government absolutely understands this.

China's planning minister pledged to address the widening wealth gap between rural and urban regions by boosting incomes for China's farmers by 5.0 percent in 2004 and increasing grain production. Another Chinese official noted: "As farmers have long been making up the majority of China's population, the entire country cannot be prosperous and powerful unless farmers get rich" implying that China's consumer demand could not be really spurred unless the rural people -- accounting for 60 – 80% percent of the country's population -- have strong enough purchasing power.⁹

If the government properly and effectively addresses the income disparity between the rural and urban population this may lessen the impact of declining profit growth and ARPU for telecommunications companies such as China Mobile. However, any policy will take time to implement and there is no guarantee to what extent and when it will be effective.

Company Overview

China Mobile is the leading mobile service provider in the world's largest mobile telecommunications market.



The company was incorporated in Hong Kong in September 3, 1997 and began listing on the NYSE on October 22, 1997 and on the Hong Kong Stock Exchange on October 23, 1997. China Mobile was admitted as a constituent stock of the Hang Seng Index on January 27, 1998.

In 2003, the Company was selected as one of "The World's 400 A-List Companies" by the internationally renowned business magazine Forbes and is the only Chinese company inducted into this A-List for two consecutive years.

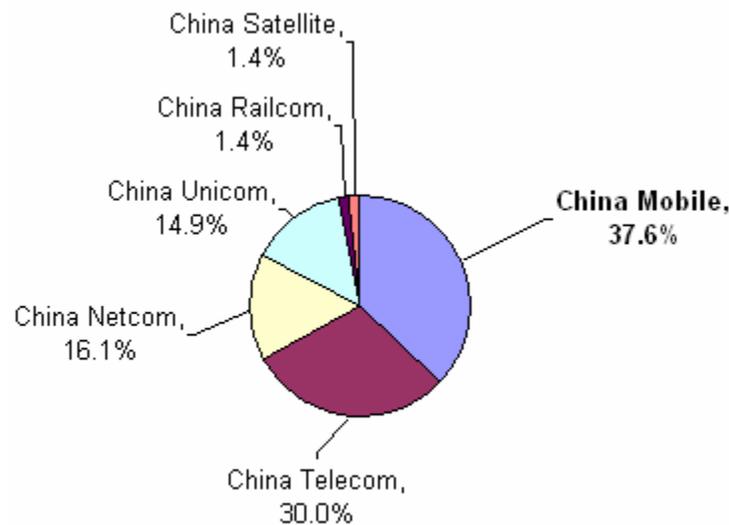
The Company's corporate credit rating was recently upgraded to Baa1 by Moody's in 2003, and to BBB+ (equivalent to China's sovereign rating) by Standard and Poor's in 2004.

China Mobile was ranked first in "The Top 200 Emerging-Market Companies" by BusinessWeek for the fourth consecutive year; being named "Best Managed Telecommunications Company in China 2003" by the renowned financial

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magazine Euromoney; and being named “Best Financial Management” in China in the “Asia’s Best Companies 2003” survey by the renowned financial magazine FinanceAsia.

China Mobile’s main competitor is China Unicom but China Mobile claims a significantly greater market share. Based upon revenue, China Mobile claimed the largest market share in the Chinese telecom market at 37.6 percent, followed by China Telecom, China Netcom, China Unicom, China Railcom and China Satellite Communications Corp, with 30 percent, 16.1 percent, 14.9 percent, 1.4 percent and 1.4 percent respectively.¹⁰ In the wireless market alone, China Mobile owns a 70% market share compared to China Unicom’s 30%.¹¹



Source: China Daily Information Company, June 2003

In terms of technology, China Mobile has a predominantly GSM technology backbone whereas China Unicom uses CDMA.

The Chinese government retains a significant interest in China Mobile. China Mobile Communications Corporation, a state-owned company, owns 75.7% of the outstanding shares of China Mobile. China Mobile Communications Corporation holds all the voting shares and economic interest in China Mobile. No other person or entity owns more than 5% of China Mobile’s outstanding shares.

REVENUE & EARNINGS

China Mobile’s operating revenue in 2003 increased by 23.4 percent to Rmb158,604 million in 2003. EBITDA margin was maintained at a level of 58.2 percent. Net profit reached Rmb35,556 million, representing an increase of 9.1 percent from 2002.

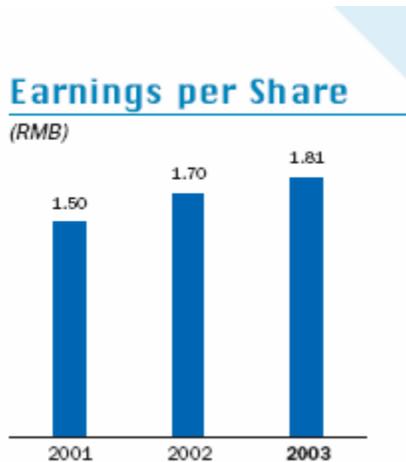
China Mobile

Actual	2003	2002	Growth
Operating revenue (Turnover) (RMB Millions)	158,604	128,561	23.4%
EBITDA (RMB Millions)	92,278	77,309	19.4%
EBITDA margin	58.2%	60.1%	—
Profit attributable to shareholders (RMB Millions)	35,556	32,601	9.1%
Earnings per share (RMB)	1.81	1.70	6.5%
Dividend per share — Interim (HK\$)	0.16	0	
— Final (HK\$)	0.20	0.32	
— Full year (HK\$)	0.36	0.32	12.5%

Source: Company Annual Report 2003

China Mobile's annual profit growth rate is slowing due to a maturing Chinese mobile market. China Mobile reported a nine percent rise in 2003 net profit to 35.5 billion yuan (US\$4.3 billion), against 17 percent profit growth the previous year. While it is hard to imagine that a 22% penetration rate is anything but mature, the fact that profit growth rate is declining reflects a growing base of subscribers who may not have as much disposable income. However, this erosion in profit growth will likely stabilize as the government develops policies to address the growing disparity between urban and rural residents.

The company's earnings per share were Rmb1.81 representing an increase of 6.5 percent from 2002.



Source: Company Annual Report 2003

The company's revenue growth strategy centers on several key factors:

- Subscriber growth due to increased penetration and fixed-line to mobile substitution.
- Aggressive initiatives to increase minutes of usage per month.

- Aggressive expansion into new lines of business including data services such as SMS and 3G.

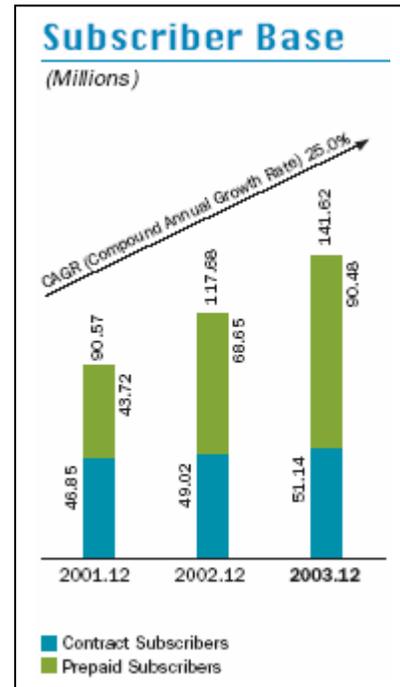
Subscriber growth

China's subscriber base continued its steady growth in 2003. At the end of 2003, the company's mobile subscriber base reached 141.616 million, of which 51.138 million were contract subscribers and 90.478 million were prepaid subscribers. The total net increase in the company's subscriber base was 23.940 million.

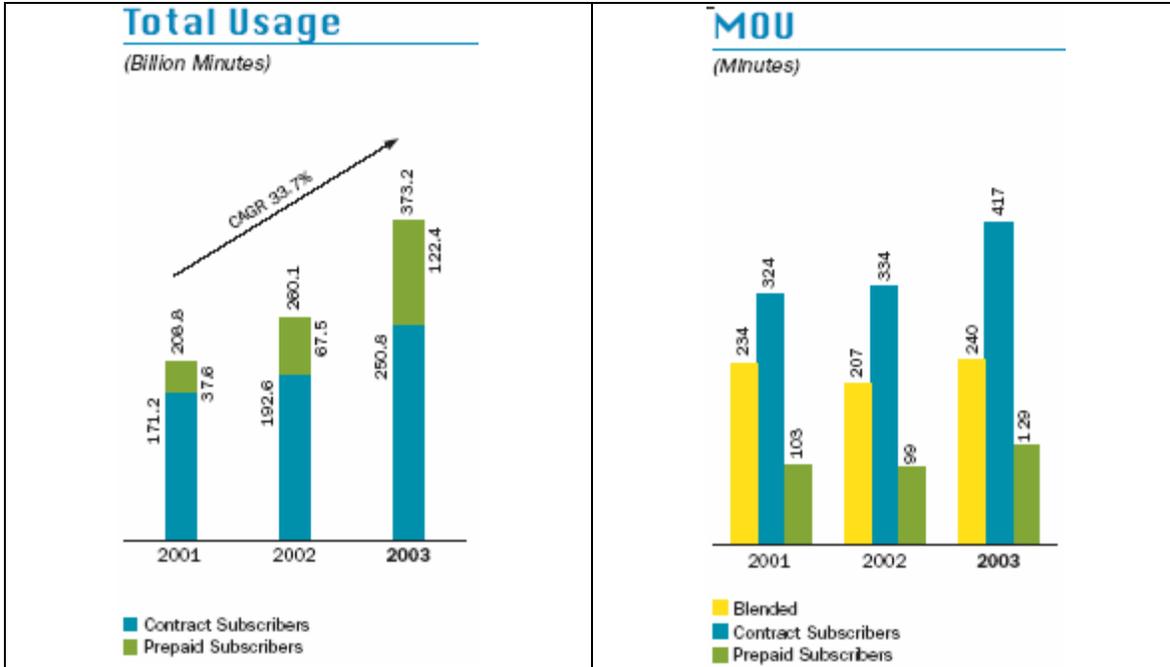
The company maintained its position as the market leader in Mainland China, with a market share within its service areas of approximately 64.8 percent. The mobile telephone penetration rate within areas serviced was approximately 21 percent.¹²

Total Usage

In 2003, the Company's aggregate mobile subscriber usage volume reached 373.22 billion minutes, representing an increase of 43.5 percent from 2002. The Company's average minutes of usage per user per month (MOU) in 2003 was 240 minutes, representing an increase of 16.0 percent from that of 207 minutes in 2002. The MOU of contract subscribers and prepaid subscribers in 2003 were 417 minutes and 129 minutes, respectively.



Source: Company Annual Report 2003



Source: Company Annual Report 2003

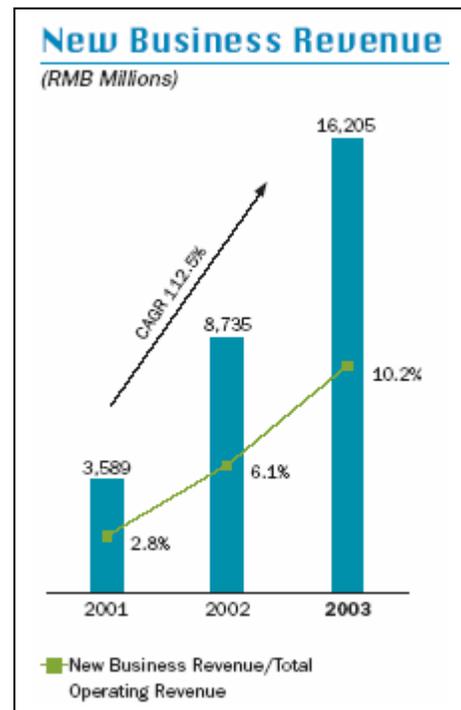
A principle component of China Mobile’s strategy is to aggressively increase voice usage volume. In 2003, the company stepped up its efforts to promote voice usage volume, especially by stimulating off-peak hour usage and increasing network utilization during offpeak hours and in low-traffic areas.

New Businesses

In 2003, China Mobile’s new businesses, stemming primarily from SMS usage, continued to drive rapid growth and became a key driver of operating revenue growth.

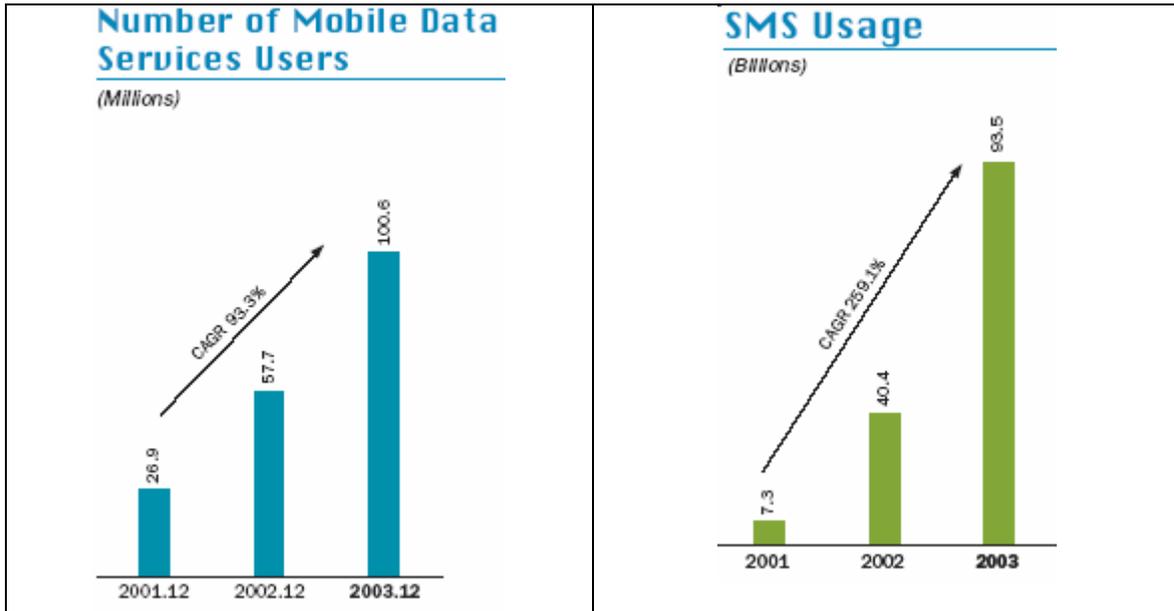
Revenue from new businesses for 2003 reached 16.205 billion, representing an increase of 85.5 percent from 2002.

The proportion of the company’s operating revenue that derives from new businesses reached 10.2 percent., representing an increase of 4.1 percentage points from 2002.



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SMS continued to be the main source of revenue growth for new businesses. In 2003, revenue from SMS reached 9.909 billion, the number of mobile data services users reached 100.640 million, the SMS penetration rate (SMS subscribers as a percentage of total subscriber base) reached 71.1 percent and SMS usage volume reached 93.51 billion messages.



Source: Company Annual Report 2003

China Mobile is actively monitoring the development of 3G mobile telecommunications technology and will conduct 3G technology trials in certain cities to prepare for the future adoption of next generation mobile technology. 3G technology could provide a potential growth opportunity for the company.

RISKS

Tariffs/Prices

Currently, mobile phone users pay a tariff for incoming and outgoing calls to fixed line users. These tariffs are set by the Chinese government to help subsidize the fixed line service providers such as China Telecom because of continued migration of fixed-line to mobile services. If the Chinese government chooses to increase these tariffs in the future, this can seriously impact the profit margins of China Mobile.

Increased Competition

The primary competitor to China Mobile is China Unicom. However, licenses for wireless service may be issued to other fixed – line providers such as China Telecom and China Netcom. Competition has already impacted profit margins and any further increases can significantly alter future earning projections.

China Mobile also faces continued competition from Personal Access Systems (PAS) that are aggressively promoted by China Telecom and Netcom. PAS is a form of mobile communication in urban areas that is less expensive but has limited range.

Increased competition has forced China Mobile to give away more minutes in plan packages which in turn requires the company to add more network capacity. Additional network capacity results in more capital expenditures that can dampen China Mobile's future profit growth.

Additionally, an agreement with the WTO may allow the entrance of foreign companies putting further pressure on the competitive landscape.

Chinese economy

As previously mentioned, the Chinese government aims to slow growth because of concerns over inflation and financial asset quality. This can greatly reduce GDP growth and have significant ramifications for growth in the telecommunications sector. One China economist claims that China could see up to a 50% slowdown in GDP growth rates in 2004.

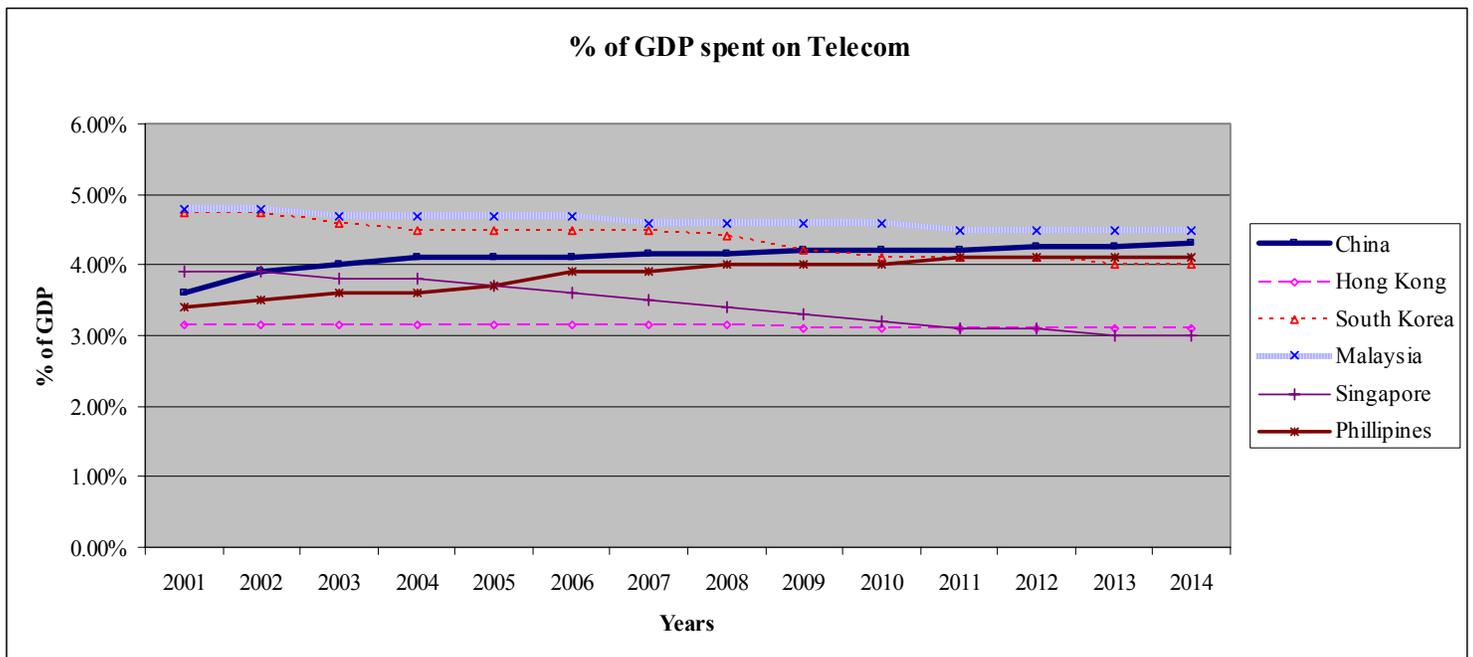
VALUATION

Market Sizing

In order to address the size of the Chinese telecom market and China Mobile's share of that pie, we gathered some information regarding: the Chinese population and its growth, estimates of Chinese GDP and the amount of GDP that will be spent on telecom. This data was put into context by comparing the GDP percentages to a few countries in the same region as China. In performing this exercise, we did not want to come to an exact valuation, rather we wanted to find an estimate of the amount that could realistically be spent by consumers on their phone bills.

The first assumption is the size of the Chinese population and how fast it is growing. It has shown that the population, while very large, is not growing at that fast of a clip. Therefore we have estimated growth to be somewhere between 0-1%. In addition to the population growth estimates it is worth noting that the size of the middleclass is most important when considering the number of new subscribers who might be recruited to get mobile phones. The middle class has been growing and so long as overall economic growth the continues the middle class should also grow.

The next assumption we used was the growth of the Chinese economy. The economy has been growing at a phenomenal rate over the last 20 years, approximately 9.5%. Estimates for continued growth in the economy have it leveling off at approximately 6-7% in the near term, but will taper off in the next 10 years and have a perpetuity growth rate of approximately 2%.



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WACC

The WACC was calculated by using Yahoo's Beta. The beta figure is large, but other estimates of beta were in line with this one. Therefore, we determined that it was an acceptable. Also we chose to use the 10-year treasury for the risk free rate of 4.19% and a market risk premium of 8%.

WACC

r_f	0.04197	* Yield for 10 Year treasury bond (Yahoo Finance - 4/10/04)
beta	1.56	Yahoo Beta
r_m	0.08	Market Risk Premium

CAPM = 0.101297 = COST OF EQUITY, unlevered

Cost of Debt 5.50%

Cost of unlevered equity	0.1013
Cost of debt	5.50%
Target leverage ratio D/(D+E)	0.1000
Target weight on equity	0.9000
Cost of levered equity	0.1064
Tax rate	0.3300
WACC	9.95%

Key Model Drivers

The key drivers for value of the company are the Average Revenue Per User (ARPU) and number of users. There has been a recent trend whereby ARPUs are decreasing, but the number of subscribers are increasing. While China Mobile has been able to offset these decreases in ARPU with the subscriber growth, this cannot continue indefinitely as the company will eventually run out of new subscribers to recruit. Therefore, unless the decline of ARPUs can be contained the company will not be able to provide investors with a real rate of return. Presumably, the ARPU decline will be contained, but then the question remains at what level and when? It is with this outlook that we are somewhat reticent to agree to that growth for the stock can continue indefinitely.

In valuing the company, we did assume that there would be a decline of ARPUs that is in line with estimates. We also assumed that the number of subscribers would continue to grow, but that growth would slow significantly. In addition, many of the new subscriber growth has been in the Prepaid category, where users purchase time for mobile phone use and do not pay a monthly subscription fee. Therefore, this segment of the subscription provides less ARPU and is less committed to continuing with the company, since the only cost is a phone and the amount on the prepaid card.

The costs rise in FY 2005/2006 because that is when the G3 licenses will be awarded and we foresee a significant increase in the costs in bringing that technology online.

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Figures (RmB millions, except share data)

China Mobile - FCF Calculations

	2002	2003	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E
EBIT	49,546.0	53,817.0	56,512.4	58,217.6	62,755.3	65,450.3	67,489.3	70,129.2	72,178.4	73,737.1	76,277.0	78,807.6	80,283.4
- Taxes on EBIT	16,375.0	17,412.0	18,649.1	19,211.8	20,709.3	21,598.6	22,271.5	23,142.6	23,818.9	24,333.2	25,171.4	26,006.5	26,493.5
= Net Op Profit Less Adj Taxes	65,921.0	71,229.0	75,161.5	77,429.4	83,464.6	87,048.9	89,760.8	93,271.8	95,997.3	98,070.3	101,448.4	104,814.0	106,777.0
+ Depreciation	17,664.0	26,827.0	36,611.0	36,689.2	38,674.8	37,333.7	37,660.8	37,991.1	38,324.8	38,661.8	39,002.2	39,345.9	39,693.2
adj for working capital													
-) cash		(6,554.0)	(3,291.2)	(3,585.6)	(3,225.1)	(2,397.6)	(2,195.4)	(2,038.3)	(1,779.1)	(1,552.6)	(1,448.1)	(1,444.2)	(901.3)
-) non-cash curr. assets		(6,801.0)	(4,655.8)	(2,957.0)	(2,659.7)	(1,977.3)	(1,810.5)	(1,681.0)	(1,467.2)	(1,280.4)	(1,194.2)	(1,191.0)	(743.3)
+) curr. liab		18,036.0	6,994.3	7,196.8	6,473.3	4,812.5	4,406.5	4,091.2	3,571.0	3,116.4	2,906.6	2,898.7	1,809.1
- Capital Expenditures	41,000.0	50,978.0	45,016.0	86,260.8	65,641.1	68,838.0	71,765.2	74,482.9	76,855.0	78,925.2	80,856.0	82,781.6	83,983.4
Capital Ex as % of Total Rev	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Free Cash Flow (FCF)	42,585.0	51,759.0	65,803.9	28,512.1	57,086.8	55,982.1	56,057.0	57,152.0	57,791.7	58,090.2	59,858.8	61,641.9	62,651.2
<i>Discount Factor</i>			1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
			0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4
WACC 9.95%	Discounted FCF		59,848.9	23,585.2	42,948.7	38,306.1	34,886.2	32,348.9	29,750.8	27,198.2	25,490.1	23,873.9	22,069.0

Terminal Value 700,013.60

2004-2013 CF Value 338,237.07

Terminal Value (PV) 271,115.37

PV (firm) 609,352.44

PV (debt) 194,070.00

PV Equity 415,282.44

Per Share Price (RmB) 21.11

Per Share Price HK\$ 19.86

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REVENUE DRIVERS

Figures in Thousands (RmB)	Actuals			Estimates										
	2001	2002	2003	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E
Contract Subscriber	34,010	49,024	51,138	54,718	61,284	66,186	70,820	75,069	78,822	81,187	83,216	84,881	85,730	86,158
% Change in Contract Sub	4.94%	44.15%	4.31%	7.00%	12.00%	8.00%	7.00%	6.00%	5.00%	3.00%	2.50%	2.00%	1.00%	0.50%
Pre-paid Subscriber	35,633	68,652	90,478	108,574	130,288	156,346	179,798	206,768	227,444	250,189	267,702	281,087	289,520	295,310
% Change in Pre-paid Sub	180.01%	92.66%	31.79%	20%	20%	20%	15%	15%	10%	10%	7%	5%	3%	2%
# of Subscribers	69,643	117,676	141,616	163,291	191,572	222,533	250,617	281,836	306,267	331,376	350,918	365,968	375,249	381,468
% Change in Number of Subs	54.30%	68.97%	20.34%	15.31%	17.32%	16.16%	12.62%	12.46%	8.67%	8.20%	5.90%	4.29%	2.54%	1.66%
Total Mobile Subs in China	108,313.0	177,386.4	215,997.0	248,829.5	294,218.0	342,628.1	388,727.4	436,519.4	476,417.9	515,139.1	549,383.1	578,325.0	598,224.3	615,592.0
Implied Mobile Penetration Rate	8.49%	13.81%	16.70%	19.11%	22.46%	26.00%	29.34%	32.77%	35.58%	38.28%	40.64%	42.59%	43.87%	44.97%
% Change in # of Subs		63.8%	21.8%	15.0%	20.0%	17.0%	15.0%	12.0%	10.0%	8.0%	8.0%	7.0%	5.0%	5.0%
China Mobile % of Total Mobile	64.3%	66.3%	65.6%	65.6%	65.1%	64.9%	64.5%	64.6%	64.3%	64.3%	63.9%	63.3%	62.7%	62.0%
ARPU (Avg revenue Per User)														
Contract Subscribers ARPU	199	176	171	167	167	165	162	162	158	155	153	150	150	149
Pre-paid Subscribers ARPU	72	63	58	56	56	54	53	53	52	50	50	49	49	49
Operating Income	100,331.0	128,561.0	158,604.0	176,750.7	191,690.6	205,128.5	215,118.7	224,266.2	232,759.0	240,172.0	246,641.3	252,675.0	258,692.5	262,448.0
Blended ARPU*	141.24	115.75	102.28	93.47	86.41	79.60	74.12	68.72	65.63	62.59	60.69	59.62	59.53	59.41
% Change from Prev Year	-36%	-18%	-12%	-9%	-8%	-8%	-7%	-7%	-4%	-5%	-3%	-2%	0%	0%
MACRO ESTIMATES														
Est Amount spent on Telecom	355.15	417.12	466.54	514.61	554.50	595.26	645.60	690.07	743.78	794.09	843.72	906.48	951.81	1,003.18
Fixed-line (plus broadband) Share	60%	56%	54%	48%	46%	45%	43%	41%	40%	40%	38%	36%	35%	35%
Mobile Share of telecom Pie	40%	44%	46%	52%	54%	55%	57%	59%	60%	60%	62%	64%	65%	65%
Amount Spent on Mobile (Millions)	142,060.3	183,531.3	214,606.6	267,596.1	299,427.3	327,390.3	367,993.1	407,141.5	446,267.7	476,451.5	523,104.0	580,148.4	618,673.9	652,068.3
China Mobile Rev (RmB millions)	100,331	128,561	158,604	176,751	191,691	205,128	215,119	224,266	232,759	240,172	246,641	252,675	258,693	262,448
CM's Share of the Mobile pie	70.63%	70.05%	73.90%	66.05%	64.02%	62.66%	58.46%	55.08%	52.16%	50.41%	47.15%	43.55%	41.81%	40.25%

* Calculating ARPU is a pain. You total revenue for that a specific time period and then divide by the average number of subscribers in a 13 month period. It is not very straight forward.

SENSITIVITY ANALYSIS

The sensitivity analysis that we performed considered the macro picture as opposed to the standard micro economic analysis. In particular, we deduced that given the estimated size of the mobile market in China, CMHK would capture approximately 40% by year 2014. While the market share that CMHK now enjoys is much higher, it is likely that given stiff competition from domestic carriers and the introduction of foreign competition that CMHK's piece of the pie will dwindle. Thus, rather than estimating ARPUs going forward and tweaking the WACC, we have decided to compare CMHK's value from the total mobile telecommunication figures that have been estimated above. We realize that in order for CMHK to capture any piece of the mobile telecom market, that there will be inherent subscriber and ARPU figures that will drive the valuation, but this exercise serves a similar purpose and allows us a quick estimate of the size of the CMHK and whether that is a reasonable assumption.

Thus, the *Estimated Case Scenario* provides a snapshot of the percentage of the mobile market that CMHK will capture given the figures that we have estimated above. The *High Case Scenario* provides a similar snapshot, but projects that CMHK will capture approximately 5% more of the market, which while seemingly small, is a significant increase. Similarly the *Low Case Scenario* projects the size of CMHK if the market share were approximately 5% lower than the estimated.

The result of this analysis is that in the High Case, the stock, while closer to its current price, is still somewhat overvalued. The Low Case only serves as a warning of what could potentially happen to the firm and its stock value if competition is ramped up and CMHK loses market share.

China Mobile

Sensitivity

High Case Scenario				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Amount Spent on Mobile (Millions)	142,060.3	183,531.3	214,606.6	267,596.1	299,427.3	327,390.3	367,993.1	407,141.5	446,267.7	476,451.5	523,104.0	580,148.4	618,673.9	652,068.3			
China Mobile Rev (RmB millions)	100,331	128,561	158,604	189,993	200,616	212,804	231,836	244,285	209,746	262,048	272,014	278,471	284,590	293,431			
CM's Share of the Mobile pie	70.63%	70.05%	73.90%	71.00%	67.00%	65.00%	63.00%	60.00%	47.00%	55.00%	52.00%	48.00%	46.00%	45.00%			
Stock Value, High Case	21.13																

Estimated Case Scenario				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Amount Spent on Mobile (Millions)	142,060.3	183,531.3	214,606.6	267,596.1	299,427.3	327,390.3	367,993.1	407,141.5	446,267.7	476,451.5	523,104.0	580,148.4	618,673.9	652,068.3			
China Mobile Rev (RmB millions)	100,331	128,561	158,604	176,751	191,691	205,128	215,119	224,266	232,759	240,172	246,641	252,675	258,693	262,448			
CM's Share of the Mobile pie	70.63%	70.05%	73.90%	66.05%	64.02%	62.66%	58.46%	55.08%	52.16%	50.41%	47.15%	43.55%	41.81%	40.25%			
Stock Value (HK\$)	19.86																

Low Case				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Amount Spent on Mobile (Millions)	142,060.3	183,531.3	214,606.6	267,596.1	299,427.3	327,390.3	367,993.1	407,141.5	446,267.7	476,451.5	523,104.0	580,148.4	618,673.9	652,068.3			
China Mobile Rev (RmB millions)	100,331	128,561	158,604	176,613	191,634	199,708	209,756	215,785	218,671	219,168	219,704	226,258	228,909	228,224			
CM's Share of the Mobile pie	70.63%	70.05%	73.90%	66.00%	64.00%	61.00%	57.00%	53.00%	49.00%	46.00%	42.00%	39.00%	37.00%	35.00%			
Stock Value	18.76																

CONCLUSION

We initiate coverage of China Mobile with a sell recommendation and a target price of \$19.85 (HKD). Our recommendation rests upon several key elements:

- Lower ARPU is a sign that the company has likely saturated the high income bracket and is now penetrating into lower income rural demographics.
- Since the rural population makes up to 80% of the total Chinese population and their incomes levels are approximately 30% of urban residents, companies such as China Mobile are hitting a wall and this is evident in declining profit growth percentages. Profit growth declined from 17% in 2002 to 9% in 2003.
- A DCF model and sensitivity analysis leads us to conclude a fair market price of \$19.85.
- China Telecom and China Netcom may receive wireless licenses in the future resulting in increased competition.
- Agreement with WTO may allow entrance of foreign competitors
- Increased marketing costs and more than expected capital expenditures will bring downward pressure on profit margins.
- The Chinese government is determined to slow GDP growth because of concerns over inflation and an erosion in asset quality.

APPENDIX

Wireless Technology

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.¹³

China Mobile

Income Statement

All Figures are in millions of Renminbi except share earnings data

Operating Revenues	2001A	2002A	2003A	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E
Usage Fees	73,458	93,272	111,027	119,909	127,104	133,459	138,797	143,655	147,965	151,664	154,697	157,791	160,947
Monthly Fees	14,085	16,901	20,666	23,766	25,905	27,459	28,969	30,418	31,939	33,216	34,379	35,238	35,943
Connection Fees	711	-	-	-	-	-	-	-	-	-	-	-	-
Data Services	-	5,223	12,758	17,861	22,327	26,792	28,801	30,529	32,208	33,819	35,341	36,754	38,224
Other Operating Revenue	12,077	13,165	14,153	15,214	16,356	17,419	18,551	19,664	20,647	21,473	22,225	22,891	23,578
Total Operating Revenue	100,331	128,561	158,604	176,751	191,691	205,128	215,119	224,266	232,759	240,172	246,641	252,675	258,693
COGS	18,060	18,262	17,782	22,094	28,754	31,795	33,343	34,761	36,078	37,227	38,229	39,165	40,097
SG&A	5,325	6,757	7,700	9,721	10,543	12,308	13,983	15,699	17,457	19,214	20,965	21,477	21,989
Other Operating Expenses	18,270	27,919	43,308	53,025	57,507	63,590	67,762	71,765	74,483	76,855	78,925	80,856	82,782
Total Operating Costs	41,655	52,938	68,790	84,840	96,804	107,692	115,089	122,225	128,017	133,295	138,119	141,498	144,868
Other Net Income	1,594	1,686	2,464	3,080	3,696	4,250	4,590	4,866	5,060	5,238	5,421	5,584	5,751
EBITDA	60,270	77,309	92,278	94,990	98,583	101,686	104,621	106,907	109,802	112,114	113,943	116,761	119,576
Depreciation	17,664	26,827	36,611	36,689	38,675	37,334	37,661	37,991	38,325	38,662	39,002	39,346	39,693
EBITA	42,606	50,482	55,667	58,301	59,908	64,353	66,960	68,916	71,477	73,452	74,941	77,415	79,883
Amortization	-	936	1,850	1,789	1,690	1,597	1,510	1,427	1,348	1,274	1,204	1,138	1,075
EBIT	42,606	49,546	53,817	56,512	58,218	62,755	65,450	67,489	70,129	72,178	73,737	76,277	78,808
Non-operating inc/(exp)	(6)	571	434	200	200	200	200	200	200	200	200	200	200
Net Interest inc/(exp)	(883)	(1,139)	(1,292)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Taxes	(13,703)	(16,375)	(17,412)	18,649	19,212	20,709	21,599	22,271	23,143	23,819	24,333	25,171	26,006
Minority Interests	1	(2)	9	5	5	5	5	5	5	5	5	5	5
Net Income	28,015	32,601	35,556	37,068	38,211	41,251	43,057	44,423	46,192	47,565	48,609	50,311	52,006
EPS	1.51	1.70	1.81	1.85	1.91	2.06	2.15	2.22	2.20	2.26	2.31	2.40	2.36
Shares Outstanding	18,605	19,151	19,673	20,000	20,000	20,000	20,000	20,000	21,000	21,000	21,000	21,000	22,000
KEY RATIOS													
Usage Fees Growth	58.70%	26.97%	19.04%	8.00%	6.00%	5.00%	4.00%	3.50%	3.00%	2.50%	2.00%	2.00%	2.00%
Monthly Fees	46.37%	19.99%	22.28%	15.00%	9.00%	6.00%	5.50%	5.00%	5.00%	4.00%	3.50%	2.50%	2.00%
Data Services	-	-	144.27%	40.00%	25.00%	20.00%	7.50%	6.00%	5.50%	5.00%	4.50%	4.00%	4.00%
Other Operating Revenue	76.02%	9.01%	7.50%	7.50%	7.50%	6.50%	6.50%	6.00%	5.00%	4.00%	3.50%	3.00%	3.00%
Other Net Income	74.97%	5.77%	46.14%	25.00%	20.00%	15.00%	8.00%	6.00%	4.00%	3.50%	3.50%	3.00%	3.00%
Total Revenue Growth	54.39%	28.14%	23.37%	11.44%	8.45%	7.01%	4.87%	4.25%	3.79%	3.18%	2.69%	2.45%	2.38%
Costs													
COGS as % of Sales	18.00%	14.20%	11.21%	12.50%	15.00%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
SG&A as a % of Sales	5.31%	5.26%	4.85%	5.50%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	8.50%	8.50%
Other Exp as % of Sales	18.21%	21.72%	27.31%	30.00%	30.00%	31.00%	31.50%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%
Depreciation as a % of PPE		14.24%	18.31%	18.50%	18.50%	18.50%	18.50%	18.50%	18.50%	18.50%	18.50%	18.50%	18.50%
Amort as % of Goodwill		2.58%	5.38%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Taxes as % of EBIT	-32.16%	-33.05%	-32.35%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
Int Payments as % of Debt		-2.56%	-3.98%	8.04%	7.73%	7.44%	7.17%	6.92%	6.69%	6.48%	6.27%	6.08%	5.90%
? in Total Cost		27.09%	29.94%	23.33%	14.10%	11.25%	6.87%	6.20%	4.74%	4.12%	3.62%	2.45%	2.38%
EBITDA Margin	60.07%	60.13%	58.18%	53.74%	51.43%	49.57%	48.63%	47.67%	47.17%	46.68%	46.20%	46.21%	46.22%
EBIT Margin	42.47%	38.54%	33.93%	31.97%	30.37%	30.59%	30.43%	30.09%	30.13%	30.05%	29.90%	30.19%	30.46%
Net Income Margin	27.92%	25.36%	22.42%	20.97%	19.93%	20.11%	20.02%	19.81%	19.85%	19.80%	19.71%	19.91%	20.10%
? Net Income Margin		16.37%	9.06%	4.25%	3.08%	7.96%	4.38%	3.17%	3.98%	2.97%	2.20%	3.50%	3.37%

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