

### US Spotlight

January 10, 2003

**Frank J. Governali, CFA**

frank.governali@gs.com  
Portland: 1-207-772-3300

**Jonathan Dorfman**

jonathan.dorfman@gs.com  
New York: 1-212-357-5691

**Jason Armstrong, CFA**

jason.armstrong@gs.com  
Portland: 1-207-772-3391

**Robert Barry**

robert.barry@gs.com  
New York: 1-212-902-5677

**Michael E. Ginal**

michael.ginal@gs.com  
New York: 1-212-357-0811

**Charles Minervino**

charles.minervino@gs.com  
New York: 1-212-902-4044

**Gregory Regan**

gregory.regan@gs.com  
Portland: 1-207-772-3533

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**VoIP – the long-term competitive threat.** The intense focus on UNE-P recently has overshadowed what we see as the real long-term threat to the ILECs: VoIP using broadband facilities. Unlike UNE-P, VoIP does not depend on changeable regulation for its survival – it is real and it is permanent. This week we visited two VoIP (Voice over Internet Protocol) providers, Vonage and Net2Phone, to learn more about developments in this area. We came away more convinced than ever of the risks to the ILECs. The two companies both depend on broadband facilities, but have very different business models. Vonage directly markets to the retail customer, while Net2Phone creates a carrier-class outsourced solution for Tier II and III cable operators. VoIP service is not a distant pipe dream: it is here now. As broadband expands, and the DSL and cable modem trojan horses continue to invade households, we believe VoIP will start infiltrating the traditional voice market.

**Quality and technology seem to be here.** Proponents of VoIP claim that the technology and software is already available to offer voice quality on par with POTS. We believe this is generally true (we have used the services and they seem to work very well), but the real question – which we will be focusing on in the coming months – is can this quality level be achieved as consistently as customers will require? Over time, we have little doubt that this will be achievable. In the meantime, VoIP as a second-line alternative is a big opportunity that is clearly available. In addition, as a second-line alternative, the absence of independent powering is less of an issue when the service is offered through a cable modem.

**Rollout time frame varies.** Net2Phone's strategy depends on cable company schedules for delivering voice in the market. Every indication is that the cable industry is moving cautiously and slowly in this direction. We think cable companies have the benefit of offering voice service as it makes sense to their business and financial needs – they are not compelled to do it by competition. Thus, we do not expect significant cable activity in this area until at earliest 2004. The Vonage service however, can be launched, broadly, almost immediately, simply depending on the establishment of retail relationships. The service sits on the Internet as an application, and broadband customers only need to connect a small Cisco analog-to-digital converter box between their phone and cable modem to get started. Basically, Vonage can scale its business by the number of retail outlets it arranges, and its own internal capabilities.

**Customer acquisition, the Achilles Heel of most competitors.** Most competitors to the Bells have failed because of distribution problems. Those that have succeeded have good distribution, i.e. UNE-P competitors, wireless competitors. The cable industry, in our view, has the distribution capability that will make it a fierce, long-term, and permanent competitor. Even the Vonage direct retail approach seems to have the necessary ingredients, assuming it chooses good retail partners. It will be the quality of these retail relationships and the reliability of the service that will determine the success of the effort. Initially, we expect strong growth, but little financial impact on the ILECs. Eventually, the combination of the carrier strategy of the cable industry and a Net2phone, with a retail strategy of a Vonage, will likely have a much more pronounced effect.

**Price Performance.** North American wireless stocks, up 13.4% this week, significantly outperformed North American wireline stocks, which were up 1.4%. NXTL reiterated 2002 guidance and hinted at a strong 2003. Also, AWE said it would receive a \$436 million refund as a result of a tax refund claim. This week we introduce our new global free cash flow yield (FCF) rankings based on our 2003, 2004 and 2005 FCF estimates. The highest ranking US company is Verizon (ranked #11), yielding 10.2%, 10.6%, and 10.8%, respectively.

### North American Outperform Stocks

Focus Stocks	Ticker	Price 1/9/03	Mkt. Cap. (\$mn)	Ent. Val. (\$mn)	EPS (\$)		EV/EBITDA (X)		P/E (X)		FCF yield	
					2002E	2003E	2002E	2003E	2002E	2003E	2002E	2003E
SBC Comm.	SBC	\$29.07	85,498	108,244	2.25	2.05	5.0	5.3	11.4	12.5	9.5%	9.9%
Verizon	VZ	\$40.46	105,562	155,957	3.04	2.81	5.4	5.5	12.6	13.7	12.4%	10.2%
CenturyTel	CTL	\$31.17	4,087	7,736	2.20	2.18	7.7	6.6	13.2	13.3	6.5%	8.6%

## Global Highlights

**Starting at parity.** The global telecoms sector seems to have started the new year in almost perfect parity in terms of valuations, following significantly diverse price performance in 4Q2002, which saw the US wireline stocks and European stocks up 33-36%, developed Asia down 5% to up 2% and Japanese telcos up 11% in the quarter. Though despite this valuation parity, which is especially striking on the incumbents' 1-yr forward FCF yields, we would argue that the global sector is somewhat mispriced given relative growth expectations, with the RBOCs probably pricing in too much good news and Asian wireless still more attractive than European and US wireless.

In wireline, the US, Europe and developed Asia all trade on a 2004E FCF yield of 9.5%-9.8%, though Japan and especially NTT are trading at higher yields to the global average at 11% and 12.9%, respectively, probably reflecting increased political uncertainty in far-east Asia. However, when relating the yields to forecast revenue growth or forecast FCF growth, it becomes apparent that Asia is relatively most attractive with a 2003E-03E FCF CAGR of 14.4%, while Europe (8.9% FCF CAGR) is still more attractive than the US wireline sector (3.5% FCF CAGR), despite equal valuations on the basis of 2004E FCF yield.

In the US, continued speculation about the UNE-P reform - this week in a WSJ featured article - and President Bush's economic package, specifically his intention to eliminate personal income taxes on stock dividends, have led to strong performance of the RBOCs in recent weeks. However, the reports on UNE-P reform did not shed incremental light on the progress of the triennial review and this week's price moves by the RBOCs in response to the expected dividend tax relief were overdone in our view. Thus, we believe that the RBOC's price decline that has started towards the end of the week is justified and the US wireline sector probably needs to trade at a more substantial discount to be attractive relative to Europe and Asia once growth expectations are taken into account.

The global wireless sector seems to be valued much more closely in-line, though Asia remains attractive relative to Europe and the US, given that it has not participated at all in the 36%-47% share price moves of European and US wireless in 4Q2002. The Asian avg. 1-yr forward FCF yield is 10.4%, higher than the US at 6.1% and Europe at 5.6%, while the respective avg. 2004E EV/EBITDA is 4.1x for Asia, 6.0x for the US and 6.6x for Europe. Forecast growth in wireless is very similar globally, with 2003E-06E FCF CAGRs of 16%-20%. However, revenue growth rates in Asia at 3.6% are much lower than in Europe (7.3%) and the US (6.9%), thus pointing to more reliance on capex and opex cuts by the Asian operators to achieve their FCF growth.

Both in 4Q2001 and 4Q2002, we saw significant rallies in the global telco sector. In 1Q2002, the moves have reversed and telcos in Europe and the US declined 15%-20%. Will last year's pattern repeat? We believe that despite the rally in 4Q2002, the global sector is still more attractively valued relative to the same time last year, and thus overall we believe the sector should do relatively better at the start of 2003 than at the start of 2002.

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## This week's North American research highlights

For complete comments and reports, please see First Call or Goldman Sachs clients may visit the Goldman Sachs Financial Workbench, at <https://www.gs.com/fw/home.gscgi>

**Q (U/N); 01/10/02: Q (U/N): Trimming estimates for 2003, and introducing first look at '04. Analyst: Frank Governali.**

**BLS (IL/N); 01/10/03: BLS (IL/N): Revising 2003 outlook; introducing '04 EPS of \$1.92. Analyst: Frank Governali.**

**T (IL/N); 01/09/03: T (IL/N): Fine tuning ests following additional historical financial disclosure. Analyst: Frank Governali.**

**NXTL (IL/N); 01/08/03: NXTL: Increasing Push Into Consumer Market is Risky, but Positive; Maintain IL. Analyst: Frank Governali.**

**01/07/03: TELECOM SERVICES: WSJ UNE article and div tax relief not grounds for outperformance. Analyst: Frank Governali.**

## What you need to know from last week

### WorldCom frames UNE-P debate in its own manner

*Sensing upcoming changes to UNE-P, WorldCom is taking the fight to a post UNE-P environment, arguing for lower hot cut rates and collocation prices.* WorldCom said that in some cases it would be able to serve customers using its own switches and unbundled loops, but in most cases new competitors would be “severely disadvantaged” if they were to use UNE-L. WorldCom proposed three main solutions to rectify cost disadvantages that competitors face: (1) ILECs lowering transport rates, (2) “hot cut” discounts and (3) ILECs offering lower collocation charges or other alternatives. However, according to WorldCom, even if these changes were made, competitors would not be able to enter certain markets – that is why state regulators would need to determine on a case-by-case basis if competitors would be able to survive in certain markets using UNE-L.

SBC refutes the WorldCom study and plans to submit its own analysis to the FCC on the issue. SBC Senior VP-FCC, James Smith, said competitors should not have to make money in every central office because every company has high-cost and low-cost facilities, and it is the aggregate that matters. In addition, SBC questions WorldCom’s analysis on costs of operation support system development. Furthermore, Smith believes that competitors should compare revenues received from UNE-L customers to the associated costs, not UNE-L costs versus UNE-P costs.

Our take is that this is a clear sign of WorldCom’s attempt to try to exact regulatory changes in exchange for altered UNE-P rules. WorldCom realizes that UNE-P changes, including the elimination of switching, are on the horizon, and the company is wisely attempting to brace for a post-UNE-P environment. WorldCom has taken the battle to hot cut rates and collocation fees, two key factors in determining WorldCom’s effectiveness in a post UNE-P environment.

### CompTel weighs in on upcoming UNE legislation

*Not surprisingly, the Competitive Telecommunications Association (CompTel) said that the consumers could save as much as \$9.2 billion annually on local telephone bills if local competition was promoted across all 50 states.* The conclusion was the result of a study performed by CompTel that used data collected by Telecommunications Research and Action Center (TRAC), which used data from 9 states to determine that consumers could save approximately \$7.50 per line per month. CompTel applied TRAC’s average savings per state to the remaining 41 states to come up with its \$9.24 billion estimate. To no surprise, given its role as a protector of competitive interests, the organization stresses that UNE-P is the key driver of these savings, and recommends that the FCC protect the savings created by UNE-P and preserve state authority to promote competition.

Although we agree that maintaining the current UNE-P regime will drive interim consumer savings in the local market, we remain skeptical about the synthetic competition that UNE-P has fostered, and are concerned about negative long-term effects on the industry. The Bells argue that UNE-P is an uneconomic business model that gives competitors little incentive to invest in their own facilities. If the FCC decides that this is the case, and elects to phase out certain UNE-P requirements, then local competition will likely come in the form of facilities-based providers like wireless and cable.

### BellSouth forced to honor interconnect agreement with Supra in Georgia

*The Georgia PSC voted unanimously to reject BellSouth’s request to terminate its interconnection agreement with Supra.* Last fall, BellSouth filed a motion to prevent Supra from offering CLEC service in Georgia, saying that Supra has defaulted on payments and filed fraudulent financial documents to state commissions. In October 2002, Supra filed

for Chapter 11 bankruptcy protection in Florida following BellSouth's request with the PSC to stop offering service to the company, claiming it defaulted on \$100 million in payments.

The PSC's decision included the requirement of the PSC staff to review Supra's technical and financial standing relatively quickly. At the current time, the commission only permitted Supra to provide service in Georgia under the interconnection agreement for testing purposes until the commission was able to confirm that Supra had adequate technical and financial ability.

Even if the PSC allows Supra to compete freely in Georgia, we think it is unlikely that the CLEC will be able to gain much traction in the state, for two reasons. First, BellSouth has now been offering long-distance service in Georgia for more than two quarters, giving it a degree of stability with its bundled offerings. Second, Supra's traction in Florida was the result of severely discounted prices that were unprofitable and unsustainable. We highly doubt that Supra's current financial condition will allow the firm to follow through on a strategy of price undercutting in Georgia.

### Global Crossing asks for extension in exclusive period for restructuring plan

*Global Crossing has asked the U.S. Bankruptcy court for an extension to its grace period for filing its reorganization plan without outside competing plans being filed.*

Global Crossing has until January 21 under the current grace period to work through its plan without outside plans being filed with the court. The company has asked for the deadline to be extended to March 31. The underlying argument for the extension is that Global Crossing is still awaiting regulatory approvals from the FCC and the Committee on Foreign Investment in the U.S. for the sale of the majority of its assets to Hutchinson and ST Telemedia. The approvals, according to Global Crossing, are expected to take several more weeks. Global Crossing is also working to finish its financial reports for last year that will be used by Hutchinson and ST Telemedia to check Global Crossing's compliance with financial tests embedded in the asset purchase agreement.

This proceeding in our view proves once again that Chapter 11 is not a quick and clean process. Although the companies are operating and offering service while in the process, the focus clearly does not appear to be on operations.

### Line-sharing uncertainty forces re-organization for SBC competitor

*Dallas-based IP Communications recently filed for Chapter 11, as uncertainty around line-sharing casts a cloud over the company's business model.* The uncertainty forced the company to inform customers that their service would be shut off by February 8, 2003. We believe this is further evidence that not only have the current regulatory concerns dried up spending among the Bells, but also funding and spending for competitors. Due to uncertainty surrounding the triennial review, many competitors and their partners have been forced to put additional spending on hold until confidence with the regulatory environment is reached.

## News events

**Verizon Wireless completed a small purchase of AllTel assets in western Pennsylvania.** With total POPs of about 136,000, this acquisition solidifies Verizon Wireless's reach in the western part of the state. This announcement marks the completion of one small portion of a larger license swap transaction dating back to 2000.

**A Vodafone spokesperson reiterated this week to Reuters that the company has no current intention to exercise its option to sell the company's 45% stake in Verizon Wireless.**

**AT&T announced it would take two charges in 4Q2002.** The first is a \$1.1 billion (approx. \$1.40 impact to EPS) charge related to its investment in AT&T Latin America. The second is a \$240 million restructuring charge (approx. \$0.20 impact to EPS) associated with the 3,500 planned employee layoffs.

## This week's global highlights

### Europe

**Deutsche Telekom (IL): Moody's takes rating down two notches.** On Friday, January 10, Moody's concluded its rating review on DT by taking the rating down two notches to Baa3, the last level above junk status. Moody's has been more conservative than S&P on its ratings for telcos such as TDC, TEF, BT and KPN, where it has consistently adopted ratings one notch below S&P, though its new rating on DT is two notches below S&P's BBB+. Moody's commented that the two notch change was necessary in order to revert to a stable outlook, which could be sustained even if the cable deal fails. While a downgrade from Moody's alone does not affect interest payments, it puts more pressure on management to reduce debt materially, in our view.

**Telekom Austria (IL):** Initiating coverage. High FCF yield but long wait for dividend. Its low leverage, 90% domestic revenue profile, and high FCF mean TA is very defensive and has an attractive valuation in our view. However, the wait for a dividend until 2004 and acquisition risk worry us; we therefore initiate coverage with an In-Line rating.

Measured by FCF yield and EV/EBITDA, TA is one of the cheapest stocks in our coverage. As the EU incumbent most recently floated, in December 2000, it has escaped the telecom boom and bust almost unscathed - it has no balance sheet issues, or 'non-core' assets, cash flows are strong, and the international strategy has been sensible so far, in our view. However, management has ruled out a dividend for 2002 and acquisition risk is high.

**Vodafone (OP): Vodafone Live and Japanese subscriber numbers good.** Vodafone demonstrated that it is well on track to meet its 1mn subscriber target for Vodafone Live by March-03 when Chris Gent announced that it has so far signed up 380K Vodafone Live subscribers since its launch at the end of October. Furthermore, J-phone has posted strong net adds in December, with seasonality doubling the November additions of 80K to 160.3K. It increased its share of net adds from 22% in November to 22.7% in December and maintained its market share at 18.3%. Net adds in December for the market were down 1% on a year ago which is a very good performance relative to recent months where net adds have typically been down 20-30% year on year. J-phone now has 13.3mn subscribers on our estimates.

**MmO2 (IL): Reports on future of Dutch business.** On Friday, January 10, weekly Dutch financial magazine FEM/De Week reported that Vodafone-Libertel and Deutsche Telekom's Ben are both negotiating to buy O2 Netherlands, mmO2's loss making Dutch operator. This does not come as a surprise given the company's comments during the interims results analyst conference and the two companies may not necessarily have to bid against each other, but could rather agree on splitting O2's customer base.

**C&W (U): More details on One2One tax liability.** A press release sent by the company on Friday, January 10, provided more detail on the tax liability relating to the sale of One2One to DT. Earlier in the week, C&W announced that has put £1.5bn in escrow as this was the cheapest option for C&W, though it will continue to negotiate a suitable guarantee for the liability. A decision by the Inland Revenue on the One2One sale could take 12-18 months, though C&W said that it would be released from the obligation if it gets acquired by a investment grade rated company.

### Latin America

**TNE reportedly might place Oi at the operating level – negative for TMAR5.** TMAR5, Telemar's (TNE, IL/N) operating wireline subsidiary, has underperformed TNE by 6% in the last few days. This is on the back of an article in the local press stating that the parent company is studying the possibility of placing Oi, its wireless startup, at the TMAR5 level. TNE management told us they are unaware of such a study at this point. In our view, down the road this restructuring could make sense for Telemar since the company would have more flexibility to move cash from TMAR5 (cash cow) to Oi (deeply FCF negative). Although this

makes sense at the TNE holding level, we would consider this negative for TMAR5 shareholders.

**How safe is TMAR5?** Investors at the TMAR5 level are usually looking for exposure to Telemar, without the free cash flow concerns surrounding Oi. In other words, TMAR5 is the cash cow portion of Telemar, where investors feel “safer.”

The key concern for TMAR5 shareholders has been corporate governance, as there is a widespread perception that Telemar’s priority is to create value at the TNE level.

**We are still concerned about Oi.** We also have viewed TMAR5 as a good vehicle to avoid Telemar’ wireless operations. We recognize that Oi had a good start in terms of subscriber growth. However, we are concerned about the quality of this growth and very worried about Oi’s FCF prospects and how this may impact TNE. Our concerns surrounding Oi are a key reason why we continue to prefer BRP over TNE shares.

**Fundamentals vs. corporate governance.** From a fundamental perspective we believe that TMAR5 should outperform TNE because our sense is that the market is too optimistic (or not negative enough) about Oi. However, at the end of the day TMAR5’s relative performance to TNE will likely depend most on corporate governance issues, as the last few days have indicated.

Our coverage view on Latin American telecoms is Neutral.

## Asia-Pacific

**Asia-Pacific Telecoms: GS in the Loop--Walk the Talk in 2003.** In the January 9 edition of "GS In The Loop" entitled "Walk The Talk" we: (1) outline the key themes for 2003, which we believe will be similar to 2002 but with more focus on delivering on promises; (2) discuss our preference for investing in telecoms markets where there is less competition and a higher degree of government intervention; (3) link capex to sales analysis to a closer look at the sales line to understand where there may be more upside (or downside) on capex savings; (4) review KT Corp.'s (OP/CIL) VDSL rollout plan and come away less concerned about the impact on capex; and (5) review our initiation on China Telecom with an OP/CIL stock rating. We also include an update of our GS AP Telecoms Model Portfolio for December, where we outperformed the MSCI AP Free Telecom Index by 1.1%.

**Telecoms Model Portfolio: Switching Out Of CMHK, Into China Telecom.** As we have initiated coverage on China Telecom stock with an Outperform/CIL rating, we have included China Telecom in our Telecoms Model Portfolio from January 7. To make way for China Telecom, we have switched out of our position in China Mobile (HK) entirely (previous portfolio weighting of 19.1%). This reflects our negative view on the Chinese wireless space and our preference for a defensive position in China Telecom. We have also increased our weighting in Telkom (OP). On closing prices of January 6, the three most overweight positions relative to the MSCI Asia Pacific (ex-Japan) Telecoms Index in our portfolio were: KT Corp. (OP/CIL) (16.1% overweight), China Telecom (12.8%), and SmarTone (OP) (9.2%). We maintain our Cautious stance on the Asia-Pacific telecom sector.

**China Telecom: Initiating OP/CIL With HK\$1.75 Target, 25% Potential Upside.** We have initiated coverage on China Telecom stock with an Outperform rating and DCF-based 12-month share price target of HK\$1.75, offering 25% potential upside to current price levels. Our positive view on China Telecom stems from three key reasons: (1) the potential for safe growth with estimated 2002-2005 adjusted EBITDA and EPS CAGRs of 4.2% and 4.6%, respectively, and a dividend yield of 4.6% for 2003 and 2004; (2) near 100% of fixed-line demand in operating regions; (3) the limited threat from competition supports stable EBITDA margins of over 50%. Key risks to our target are mobile cannibalization and ARPU deterioration. China Telecom stock is on our Current Investment List.

# Upcoming Events – Global

## January

Mon	Tue	Wed	Thur	Fri
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
20-Jan China monthly net adds: China Unicom, China Mobile	21-Jan	22-Jan	23-Jan AT&T 4Q	24-Jan
27-Jan	28-Jan Kingston 3Q AWE 4Q & Analyst Mtg SBC 4Q	29-Jan Verizon 4Q BCE 4Q	30-Jan AT 4Q	31-Jan

## February

Mon	Tue	Wed	Thur	Fri
3-Feb British Telecom 3Q Telia FY02	4-Feb MMO2 3Q KPIs	5-Feb	6-Feb	7-Feb
10-Feb	11-Feb Tele2 FY02 Bouygues 4Q02	12-Feb	13-Feb Telenor 4Q	14-Feb
17-Feb	18-Feb	19-Feb	20-Feb China monthly net adds: China Unicom, China Mobile	21-Feb
24-Feb	25-Feb Bouygues FY02	26-Feb	27-Feb	28-Feb

## Free Cash Flow Yield Global Rankings

Rank	Company	FCF yield 03E	FCF yield 04E	FCF yield 05E	Total Score			
1	KT (OP/CIL, Won50,600)	13.1%	54	15.5%	54	17.2%	54	162
2	PCCW (IL, HK\$6.55)	12.0%	50	14.3%	53	16.3%	53	156
3	Telmex (OP/CIL, \$33.91)	12.8%	52	13.7%	52	14.0%	51	155
4	NTT (OP/CIL, Y430,000)	12.5%	51	12.9%	50	14.0%	49	150
5	SK Telecom (OP, Won220,000)	10.9%	49	11.5%	45	12.7%	46	140
6	KPN (OP, €6.81)	12.9%	53	13.5%	51	9.5%	31	135
7	Telekom Austria (IL, €9.70)	9.9%	42	11.4%	44	12.6%	45	131
8	Portugal Telecom (IL, €6.92)	10.7%	48	11.6%	46	10.5%	37	131
9	OTE (IL, €10.56)	9.9%	44	10.9%	40	12.3%	44	128
10	France Telecom (U, €20.20)	7.9%	32	12.2%	49	12.8%	47	128
11	Verizon (OP, \$40.46)	10.2%	47	10.6%	38	10.8%	40	125
12	KT Freetel (IL, Won30,450)	7.1%	26	12.1%	47	14.0%	50	123
13	TeliaSonera (OP, SKr32.60)	8.1%	33	11.1%	42	12.9%	48	123
14	Telenor (IL, NKr28.10)	6.5%	23	12.1%	48	14.6%	52	123
15	Qwest (U, \$5.75)	10.0%	45	10.4%	37	10.5%	38	120
16	China Telecom (OP/CIL, HK\$1.49)	8.4%	36	10.7%	39	11.8%	42	117
17	Sprint Group (NC, \$NA)	8.2%	34	11.0%	41	10.6%	39	114
18	TDC (IL, DKr185.00)	8.4%	35	10.1%	36	12.0%	43	114
19	SBC Communications (OP, \$29.07)	9.9%	43	9.8%	35	9.6%	34	112
20	KDDI (IL, Y357,000)	10.2%	46	9.7%	34	9.4%	29	109
21	Telefonica (IL, €9.77)	9.1%	40	9.6%	33	10.3%	36	109
22	Swisscom (OP, SFr420.00)	8.9%	39	9.5%	32	9.5%	32	103
23	BellSouth (IL, \$27.50)	9.7%	41	9.1%	31	8.5%	25	97
24	CenturyTel (OP, \$31.17)	8.6%	37	8.5%	29	8.4%	24	90
25	Telecom New Zealand (IL, NZ\$4.72)	7.7%	31	8.5%	28	9.3%	28	87
26	BT Group (IL, £2.09)	7.1%	27	8.5%	30	9.4%	30	87
27	Deutsche Telekom (IL, €13.57)	8.9%	38	7.8%	23	8.0%	22	83
28	Commonwealth (IL, \$38.04)	7.5%	29	8.2%	26	8.9%	26	81
29	SmarTone (OP, HK\$9.05)	7.5%	30	7.9%	25	7.2%	18	73
30	BCE (IL, \$19.05)	6.1%	20	7.9%	24	9.0%	27	71
31	Telstra (OP, A\$4.46)	7.4%	28	7.6%	22	7.9%	21	71
32	Europolitan (IL, SKr44.00)	4.9%	15	7.5%	20	9.7%	35	70
33	Telecom Italia (U, €7.36)	7.0%	25	7.6%	21	8.2%	23	69
34	Nextel (IL, \$13.98)	6.2%	21	11.1%	43	NA	0	64
35	China Mobile (HK) (U, HK\$19.60)	4.5%	10	7.4%	19	9.5%	33	62
36	Libertel (OP, €10.90)	6.7%	24	6.6%	18	7.2%	19	61
37	Far EasTone (IL, NT\$28.30)	4.9%	14	8.5%	27	6.9%	14	55
38	Mobistar (OP, €23.75)	5.0%	16	6.6%	16	7.7%	20	52
39	LG Telecom (U, Won4,350)	0.0%	5	2.2%	5	11.5%	41	51
40	Singapore Telecom (IL, S\$1.25)	5.6%	17	6.6%	17	7.0%	16	50
41	ALLTEL (U, \$54.50)	5.8%	19	6.5%	14	6.5%	12	45
42	Telefonica Mviles (IL, €6.69)	6.2%	22	5.8%	11	6.5%	11	44
43	Panafon (NR, €5.52)	5.7%	18	6.3%	13	6.5%	10	41
44	Vodafone Consolidated (OP, £1.19)	4.5%	11	5.6%	9	7.1%	17	37
45	Orange SA (IL, €7.49)	4.2%	9	5.9%	12	7.0%	15	36
46	Taiwan Cellular (IL, NT\$28.00)	4.7%	12	6.5%	15	6.3%	8	35
47	NTT DoCoMo (IL, Y239,000)	4.7%	13	5.0%	8	5.7%	7	28
48	Telecel (IL, €8.10)	3.1%	7	5.7%	10	6.3%	9	26
49	Telecom Italia Mobile (IL, €4.61)	4.0%	8	4.4%	7	5.2%	6	21
50	Japan Telecom Holdings (U, Y367,000)	NA	0	1.7%	3	6.6%	13	16
51	China Unicom (U, HK\$5.75)	NA	0	3.8%	6	4.2%	5	11
52	AT&T Wireless (IL, \$7.30)	NA	0	1.9%	4	3.7%	4	8
53	Alaska Communications (IL, \$2.34)	2.4%	6	NA	0	NA	0	6
54	mmO2 (IL, £0.49)	NA	0	NA	0	1.0%	3	3

Source: Company data, Bloomberg, Goldman Sachs Research estimates

Note: For KPN and Telmex, 02E yield is based on 1-year forward estimates

# Global Incumbent Wireline Valuations

	Last update 9 January 2003	Rating/CIL	Price	Mkt. Cap. (US\$m)	Ent. Val. (US\$m)	EBITDA			3-yr EPS			3-yr Rev.			3-yr FCF		Div. Yld. (%)				
						EV/EBITDA (X)	CAGR (%)	(%EVEG)	PEG(X)	CAGR (%)	PEG(X)	CAGR (%)	FCF yield (X)	CAGR (%)	Yld. (%)						
						2003E	2004E	2005E	2003E	2004E	2005E	2003E	2004E	2005E	2003E	2004E	2005E				
<b>North America</b>																					
Alaska Communications	IL		\$2.34	74	647	4.9	4.9	4.8	1.6%	3.1	NM	24.2	16.4	NM	NM	1.9%	2.4%	NA	NA	NM	0.0%
ALLTEL	U		\$54.50	17,047	22,678	6.6	6.3	6.1	1.2%	5.6	16.0	15.6	15.6	2.2%	7.3	1.6%	5.8%	6.5%	6.5%	7.1%	2.6%
BCE	IL		\$19.05	17,241	27,962	5.6	5.0	4.7	6.6%	0.9	15.6	13.4	11.5	14.5%	1.1	3.3%	6.8%	6.5%	6.5%	15.6%	6.3%
BellSouth	IL		\$27.50	50,751	62,023	5.1	4.9	4.7	0.4%	14.1	14.5	14.4	14.2	1.6%	8.8	0.2%	9.3%	8.6%	8.2%	-1.0%	2.9%
CenturyTel	OP		\$31.17	4,087	7,736	6.6	6.3	5.9	3.4%	1.9	14.3	13.9	13.3	NM	NM	2.1%	8.6%	8.5%	8.4%	50.5%	0.7%
Commonwealth	IL		\$38.04	913	1,011	6.0	5.6	5.3	4.4%	1.4	16.5	15.4	14.5	NM	NM	2.8%	7.5%	8.2%	8.9%	40.6%	0.0%
Qwest	U		\$5.75	9,808	27,315	5.7	5.4	5.2	1.1%	5.1	NM	NM	NM	(23.2%)	NM	-3.7%	7.8%	10.7%	10.0%	13.5%	0.0%
SBC Communications	OP		\$29.07	85,498	108,244	5.3	5.5	5.4	1.7%	3.1	14.2	13.7	12.9	4.5%	3.2	0.8%	9.9%	9.8%	9.6%	-2.0%	3.8%
Sprint FON Group	U		\$16.00	14,362	17,057	3.7	3.4	3.0	3.6%	1.0	11.7	11.7	11.3	2.4%	4.9	1.9%	7.9%	11.3%	11.6%	16.8%	3.1%
Sprint Group	NC		NA	19,357	38,356	4.9	4.4	3.9	7.1%	0.7	19.2	16.8	13.8	NA	NM	4.6%	8.2%	11.0%	10.6%	17.8%	2.3%
Verizon	OP		\$40.46	105,562	155,957	5.5	6.0	5.9	1.6%	3.4	14.4	13.8	13.2	4.3%	3.3	0.9%	10.2%	10.6%	10.8%	0.6%	3.8%
Average/Total				324,698	468,986	5.5	5.2	5.0	3.0%	3.7	15.2	15.3	13.7	0.9%	4.8	1.5%	7.7%	9.3%	9.4%	15.9%	2.3%
Weighted Average						5.4	5.4	5.3	2.1%	4.8	14.7	14.0	13.3	3.4%	4.4	1.1%	9.3%	9.7%	9.7%	3.7%	3.4%
<b>Developed Europe</b>																					
BT Group	IL		£2.09	29,210	44,121	4.6	4.4	4.1	1.8%	2.6	13.9	12.3	11.4	9.2%	1.5	1.9%	7.1%	8.5%	9.4%	13.2%	3.4%
Deutsche Telekom	IL		€13.57	59,744	124,273	7.0	6.4	5.8	5.2%	1.3	NM	34.2	23.5	117.6%	NM	3.5%	8.9%	7.8%	8.0%	3.0%	0.0%
France Telecom	U		€20.20	25,158	110,159	6.5	5.7	4.9	8.2%	0.8	31.3	15.3	8.6	69.6%	0.4	5.1%	7.9%	12.2%	12.8%	17.5%	0.0%
KPN	OP		€6.81	17,791	30,275	6.5	6.0	5.4	3.1%	2.1	36.6	21.4	14.0	49.4%	0.7	1.1%	12.9%	13.5%	9.5%	-1.7%	0.0%
OTE	IL		€10.56	5,437	7,952	4.1	3.9	3.6	1.0%	4.1	8.8	8.8	8.8	(0.5%)	(18.0)	2.6%	9.9%	10.9%	12.3%	10.7%	6.6%
Portugal Telecom	IL		€6.92	8,899	15,860	7.1	6.4	5.8	6.5%	1.1	18.1	17.5	16.1	7.3%	2.5	2.6%	9.1%	11.6%	10.6%	2.7%	2.6%
Swisscom	OP		Sfr420.00	19,971	22,726	6.7	6.3	5.9	1.9%	3.5	12.2	11.4	10.7	3.9%	3.2	2.3%	8.9%	9.5%	9.6%	7.8%	4.1%
TDC	IL		DKr185.00	5,653	10,998	5.1	4.6	4.0	7.3%	0.7	9.1	7.8	6.5	15.2%	0.6	3.9%	8.4%	10.1%	12.0%	17.5%	6.5%
Telecom Italia	U		€7.36	50,751	90,191	6.3	6.0	5.8	2.5%	2.5	19.9	16.1	15.0	7.5%	2.4	3.0%	7.0%	7.6%	8.2%	7.0%	4.2%
Telefonica	IL		€9.77	48,574	78,865	6.6	6.0	5.4	4.6%	1.4	19.1	17.5	14.3	15.4%	1.2	5.0%	9.1%	9.6%	10.3%	6.2%	2.4%
Telekom Austria	IL		€9.70	5,086	8,544	5.3	4.8	4.4	2.6%	2.0	25.2	18.5	14.1	30.9%	0.8	1.4%	9.9%	11.4%	12.6%	11.8%	1.1%
Telenor	IL		Nkr28.10	7,342	10,432	4.5	3.9	3.4	7.2%	0.6	12.5	9.7	8.0	23.0%	0.5	5.2%	6.5%	12.1%	14.6%	39.0%	1.2%
TeliaSonera	OP		Skr32.60	17,566	19,158	5.8	4.6	3.8	10.4%	0.6	14.4	10.0	8.5	24.6%	0.6	4.4%	8.1%	11.1%	12.9%	20.5%	1.0%
Average/Total				301,182	573,557	5.8	5.3	4.8	4.8%	1.8	18.3	15.4	12.3	28.7%	(0.3)	3.4%	8.9%	10.5%	11.2%	11.0%	2.6%
Weighted Average						6.2	5.7	5.2	4.5%	1.8	19.3	18.7	14.5	40.0%	1.1	3.5%	8.6%	9.5%	9.9%	8.9%	2.1%
<b>Emerging Europe</b>																					
Matav	IL		Huf830	3,835	5,150	4.2	3.9	3.6	0.3%	16.0	7.5	7.3	7.3	0.8%	9.3	3.1%	11.9%	14.0%	14.4%	6.4%	3.4%
Telekomunikacja Polska	U		Plz13.10	4,783	9,179	4.5	4.1	3.8	2.0%	2.2	14.2	12.0	14.1	3.7%	3.8	1.9%	5.6%	9.0%	11.7%	35.6%	0.0%
Average/Total				8,618	14,329	4.4	4.0	3.7	1.1%	9.1	10.9	9.6	10.7	2.3%	6.6	2.5%	8.8%	11.5%	13.1%	21.0%	1.7%
Weighted Average						4.4	4.0	3.7	1.2%	8.3	11.2	9.9	11.1	2.4%	6.3	2.5%	8.4%	11.2%	12.9%	22.6%	1.5%
<b>Developed Asia</b>																					
China Telecom	OP/CIL		HK\$1.49	14,446	14,454	3.1	2.7	2.5	2.5%	1.3	9.9	9.4	9.1	4.2%	2.4	4.4%	8.4%	10.7%	11.8%	15.2%	4.4%
KT	OP/CIL		Won50.600	13,271	20,971	3.6	3.1	2.7	3.5%	1.0	9.4	7.5	6.1	19.1%	0.5	3.0%	13.1%	15.5%	17.2%	14.2%	3.8%
KT ADR	OP/CIL		\$21.81	13,482	21,183	3.6	3.2	2.7	3.5%	1.0	9.6	7.6	6.2	19.1%	0.5	3.0%	12.8%	15.3%	17.0%	14.2%	1.9%
PCCW	IL		HK\$6.55	3,874	7,084	6.5	5.6	4.9	5.7%	1.2	28.1	5.9	5.0	85.9%	0.3	2.7%	12.0%	14.3%	16.3%	15.2%	0.0%
Singapore Telecom	IL		S\$1.25	12,805	15,542	6.5	6.0	5.6	6.5%	1.0	10.9	10.1	8.9	10.9%	1.0	5.2%	5.6%	6.6%	7.0%	19.8%	4.4%
Telstra	OP		A\$4.46	33,100	37,838	6.4	6.0	5.7	2.9%	2.2	14.1	13.4	12.8	(17.6%)	(0.8)	2.7%	7.4%	7.6%	7.9%	12.9%	5.3%
Telecom New Zealand	IL		NZ\$4.72	4,747	7,711	6.2	5.8	5.3	3.2%	1.9	11.2	10.5	9.5	(14.6%)	(0.8)	2.7%	7.7%	8.5%	9.3%	7.6%	4.2%
Average/Total				68,972	82,629	5.4	4.9	4.4	4.1%	1.4	14.0	9.5	8.6	14.7%	0.4	3.5%	9.0%	10.5%	11.6%	14.1%	3.7%
Weighted Average						5.4	4.9	4.6	3.7%	1.6	12.6	10.7	9.9	1.6%	0.3	3.5%	8.5%	9.6%	10.4%	14.4%	4.4%
<b>Emerging Asia</b>																					
MTNL	IL		Rs86.90	1,022	608	1.3	0.8	0.3	9.1%	0.1	5.0	4.0	3.6	13.9%	0.4	5.9%	8.2%	23.5%	29.3%	54.1%	5.6%
PLDT	IL		Ps292.50	921	3,763	4.4	3.9	3.4	7.0%	0.6	9.9	4.3	3.4	56.8%	0.2	6.6%	23.6%	30.8%	32.5%	18.1%	0.0%
Telkom	OP		Rp3,600	4,062	5,111	2.6	1.9	1.4	13.4%	0.2	3.9	3.3	3.1	12.2%	0.3	13.8%	14.5%	24.4%	31.6%	36.9%	9.7%
Telekom Malaysia	NR		Rm7.35	5,992	6,597	5.5	5.0	4.5	3.1%	1.8	16.9	14.8	13.2	13.0%	1.3	2.6%	8.1%	8.3%	9.5%	5.8%	1.2%
VSNL	IL		Rs92.35	549	68	0.4	0.5	0.7	-14.7%	(0.0)	4.6	6.7	7.4	(16.3%)	(0.3)	-8.3%	23.9%	12.4%	7.4%	-35.5%	5.1%
Average/Total				12,545	16,147	2.8	2.4	2.1	3.6%	0.5	8.1	6.6	6.1	15.9%	0.4	4.1%	15.7%	19.9%	22.1%	15.3%	4.3%
Weighted Average						3.9	3.4	2.9	6.4%	1.0	10.7	9.1	8.2	14.7%	0.8	6.3%	12.0%	16.6%	19.9%	18.8%	4.4%
<b>Japan</b>																					
Japan Telecom Holdings	U		Y367,000	9,827	24,724	5.3	5.1	4.8	3.1%	1.7	17.7	20.1	21.7	(1.9%)	(9.3)	3.4%	NA	1.7%	6.6%	NM	0.2%
KDDI	IL		Y357,000	12,687	25,580	5.5	4.9	4.6	-0.4%	(14.1)	29.7	20.7	18.1	22.9%	1.3	-0.2%	10.2%	9.7%	9.4%	-17.4%	0.5%
NTT	OP/CIL		Y430,000	56,607	110,501	4.1	3.6	3.1	2.2%	1.9	13.3	11.5	10.0	15.5%	0.9	1.3%	12.5%	12.9%	14.0%	4.3%	1.2%
Average/Total				79,122	160,805	5.0	4.5	4.2	1.6%	(3.5)	20.2	17.5	16.6	12.1%	(2.4)	1.5%	11.4%	8.1%	10.0%	(6.5%)	0.6%
Weighted Average						4.5	4.0	3.5	1.9%	(0.7)	16.5	14.1	12.8	14.5%	(0.3)	1.3%	12.1%	11.0%	12.3%	0.3%	0.9%
<b>Latin America</b>																					
CanTV	OP		\$11.61	1,306	1,357	2.0	1.7	1.3	2.3%	0.9	20.3	15.4	8.1	55.5%	0.4	-2.9%	28.6%	27.6%	27.2%	0.4%	9.7%
Brasil Telecom	OP		\$28.45	2,076	2,423	2.6	2.2	1.9	3.2%	0.8	9.1	6.3	5.3	27.5%	0.3	2.9%	19.2%	23.9%	27.5%	23.4%	2.7%
Embratel	IL		\$1.36	453	1,677	2.6	2.1	1.7	17.0%	0.2	89.9	3.2	1.8	NM	NM	2.1%	15.7%	35.0%	66.7%	83.2%	0.3%
Telmar	IL		\$8.58	3,245	6,195	3.5</															

# Global Incumbent Wireline Operating Statistics

	3-yr CAGR (%) 2003E-2006E				Group Margins (%) 2003E			EBITDA estimates			Adj. EPS		Net debt	Net debt	Net debt	Capex	Capex/	FCF	EV/line	
	Sales	EBITDA	EPS	FCF	EBITDA	Net	FCF	FY2002E	FY2003E	FY2002E	FY2003E	2003E	2003E	/EV (%)	EBITDA	(X)2003E	2003E	sales/	(US\$m)	2003E
<b>North America</b>																				
Alaska Communications	1.9%	1.6%	NM	NM	38.5%	(0.7%)	0.5%	128	133	(0.21)	(0.07)	573	88.6%	4.3	79	23.0%	2	1,935		
ALLTEL	1.6%	1.2%	2.2%	7.1%	40.7%	12.7%	11.8%	3,112	3,414	3.23	3.40	5,632	24.8%	1.6	1,304	15.5%	994	7,198		
BCE	3.3%	6.6%	14.5%	15.5%	39.4%	8.7%	9.9%	7,528	7,752	1.75	1.89	9,414	33.7%	1.9	2,222	17.5%	1,253	2,118		
BellSouth	0.2%	0.4%	1.6%	(1.0%)	44.0%	12.6%	16.4%	12,616	12,207	2.08	1.90	13,064	21.1%	1.1	4,822	17.4%	4,549	2,583		
CenturyTel	2.1%	3.4%	NM	50.5%	50.8%	13.6%	16.5%	1,000	1,165	2.20	2.18	3,412	43.8%	2.9	421	18.3%	378	3,212		
Commonwealth	2.8%	4.4%	NM	40.6%	50.8%	16.9%	20.8%	157	167	2.21	2.30	98	9.7%	0.6	66	19.9%	69	2,879		
Qwest	(3.7%)	1.1%	(23.2%)	13.5%	32.8%	(2.6%)	5.3%	5,304	4,754	(0.49)	(0.22)	17,507	64.1%	3.7	2,497	17.2%	768	1,664		
SBC Communications	0.8%	1.7%	4.5%	(2.0%)	39.7%	13.1%	16.2%	21,461	20,565	2.25	2.05	18,633	18.1%	0.9	8,370	16.2%	8,386	1,751		
Sprint FON Group	1.9%	3.6%	2.4%	16.8%	30.2%	8.1%	7.5%	4,515	4,555	1.37	1.36	2,696	15.8%	0.6	2,400	15.9%	1,129	2,105		
Sprint Group	4.6%	7.1%	NA	17.8%	28.4%	3.7%	5.8%	7,301	7,775	NA	NA	18,999	49.5%	2.4	4,772	17.5%	1,593	4,734		
Verizon	0.9%	1.6%	4.3%	0.6%	37.3%	11.4%	15.7%	26,015	25,270	3.04	2.81	47,573	31.4%	1.9	9,956	14.2%	10,643	2,671		
<b>Average/Total</b>	<b>1.5%</b>	<b>3.0%</b>	<b>0.9%</b>	<b>15.9%</b>	<b>39.3%</b>	<b>8.9%</b>	<b>11.5%</b>					<b>137,602</b>	<b>36.4%</b>	<b>2.0</b>	<b>36,548</b>	<b>17.5%</b>	<b>29,764</b>	<b>2,986</b>		
<b>Developed Europe</b>																				
BT Group	1.9%	1.8%	9.2%	13.2%	30.7%	6.8%	6.5%	5,748	5,733	0.09	0.13	15,660	35.5%	1.6	4,406	14.2%	2,026	1,393		
Deutsche Telekom	3.5%	5.2%	117.6%	3.0%	31.2%	0.6%	9.1%	16,019	17,029	(0.63)	0.08	65,472	52.7%	3.7	7,342	12.8%	5,210	2,371		
France Telecom	5.1%	8.2%	69.6%	17.5%	33.8%	1.6%	7.4%	14,498	16,267	(0.68)	0.65	78,239	71.0%	4.6	6,747	13.4%	3,755	3,200		
KPN	1.1%	3.1%	49.4%	(1.7%)	37.2%	3.9%	17.8%	4,254	4,471	0.07	0.19	12,873	42.5%	2.7	1,726	13.7%	2,246	3,094		
OTE	2.6%	1.0%	(0.5%)	10.7%	40.5%	13.0%	12.0%	1,789	1,833	1.18	1.20	2,207	27.7%	1.1	879	18.5%	570	1,329		
Portugal Telecom	5.2%	6.5%	7.3%	2.7%	39.9%	8.8%	18.0%	2,229	2,134	0.34	0.38	6,429	40.5%	2.9	925	16.5%	1,012	3,736		
Swisscom	2.3%	1.9%	3.9%	7.8%	32.2%	15.5%	19.2%	4,602	4,742	31.43	34.48	(33)	-0.1%	0.0	948	9.0%	2,027	4,221		
TDC	3.9%	7.3%	15.2%	17.5%	27.7%	8.1%	7.4%	14,213	15,127	18.25	20.30	4,213	38.3%	2.0	943	12.2%	569	2,387		
Telecom Italia	3.0%	2.5%	7.5%	7.0%	43.9%	9.7%	15.7%	13,314	13,563	0.44	0.41	17,668	19.6%	1.2	5,097	15.7%	5,073	3,288		
Telefonica	5.0%	4.6%	15.4%	6.2%	41.8%	9.1%	16.9%	11,687	11,388	0.42	0.51	25,594	32.5%	2.1	4,879	17.0%	4,863	3,579		
Telekom Austria	1.4%	2.6%	30.9%	11.8%	39.0%	4.9%	12.8%	1,139	1,531	0.27	0.38	3,214	37.6%	2.0	723	17.6%	527	2,258		
Telenor	5.2%	7.2%	23.0%	39.0%	29.5%	7.4%	4.9%	13,691	16,093	2.07	2.24	4,499	43.1%	1.9	1,325	16.8%	386	3,100		
TeliaSonera	4.4%	10.4%	24.6%	20.5%	34.3%	12.5%	13.7%	25,129	28,992	2.67	2.26	2,722	14.2%	0.8	1,411	14.8%	1,325	2,914		
<b>Average/Total</b>	<b>3.4%</b>	<b>4.8%</b>	<b>28.7%</b>	<b>11.9%</b>	<b>35.5%</b>	<b>7.8%</b>	<b>12.4%</b>					<b>238,757</b>	<b>35.0%</b>	<b>2.1</b>	<b>37,350</b>	<b>14.8%</b>	<b>29,589</b>	<b>2,836</b>		
<b>Emerging Europe</b>																				
Matav	3.1%	0.3%	0.8%	6.4%	44.3%	18.7%	16.7%	249,398	272,389	97.67	110.76	1,314	25.5%	1.1	477	17.4%	457	1,768		
Telekomunikacja Polska S/	1.9%	2.0%	3.7%	35.6%	43.2%	7.1%	6.9%	7,403	7,884	0.37	0.92	3,361	36.6%	1.6	1,038	21.8%	327	808		
<b>Average/Total</b>	<b>2.5%</b>	<b>1.1%</b>	<b>2.3%</b>	<b>21.0%</b>	<b>43.8%</b>	<b>12.9%</b>	<b>11.8%</b>					<b>4,676</b>	<b>31.1%</b>	<b>1.4</b>	<b>1,515</b>	<b>19.6%</b>	<b>784</b>	<b>1,288</b>		
<b>Developed Asia</b>																				
China Telecom	4.4%	2.5%	4.2%	15.2%	52.7%	16.5%	13.8%	35,962	38,445	0.15	0.16	9	0.1%	0.0	3,014	34.2%	1,217	227		
KT	3.0%	3.5%	19.1%	14.2%	41.4%	9.9%	14.6%	6,257	6,953	3,984	5,362	5,088	24.3%	0.9	2,883	20.2%	2,078	638		
KT ADR	3.0%	3.5%	19.1%	14.2%	41.4%	9.9%	14.6%	6,257	6,953	1.99	2.68	5,088	24.0%	0.9	2,883	20.2%	2,078	645		
PCCW	2.7%	5.7%	85.9%	15.2%	39.3%	15.0%	14.2%	7,829	8,454	0.11	0.23	3,827	54.0%	3.5	295	10.7%	391	1,687		
Singapore Telecom	5.2%	6.5%	10.9%	19.8%	38.6%	18.9%	8.5%	3,057	3,892	0.12	0.11	6,168	39.7%	2.6	1,046	16.9%	527	6,865		
Telstra	2.7%	2.9%	(17.6%)	12.9%	46.3%	18.3%	18.6%	9,483	10,044	0.28	0.30	5,730	15.1%	1.0	2,091	16.3%	2,385	3,233		
Telecom New Zealand	2.7%	3.2%	(14.6%)	7.6%	43.0%	12.9%	13.3%	1,403	2,300	0.42	0.41	2,681	34.8%	2.2	405	14.0%	387	3,652		
<b>Average/Total</b>	<b>3.5%</b>	<b>4.1%</b>	<b>14.7%</b>	<b>14.1%</b>	<b>43.5%</b>	<b>15.2%</b>	<b>13.8%</b>					<b>23,502</b>	<b>28.0%</b>	<b>1.7</b>	<b>9,735</b>	<b>18.7%</b>	<b>6,985</b>	<b>2,717</b>		
<b>Emerging Asia</b>																				
MTNL	5.9%	9.1%	13.9%	54.1%	39.3%	17.6%	7.3%	23,761	21,256	20.74	14.49	(414)	-68.0%	-0.9	274	23.8%	84	132		
PLDT	6.8%	7.0%	56.8%	18.1%	54.3%	5.9%	13.9%	43,651	45,703	15.28	29.41	2,836	75.4%	3.3	301	19.2%	219	1,618		
Telkom	13.8%	13.4%	12.2%	36.9%	66.0%	34.1%	19.6%	13,554	17,800	0.92	0.91	1,047	20.5%	0.5	872	28.9%	591	802		
Telekom Malaysia	2.6%	3.1%	13.0%	5.8%	45.1%	13.3%	16.7%	4,432	4,571	0.39	0.44	1,069	16.2%	0.9	501	11.8%	445	1,304		
VSNL	(8.3%)	(14.7%)	(16.3%)	(38.5%)	26.4%	16.5%	18.0%	16,250	12,652	49.39	27.82	(481)	NM	-2.5	84	11.6%	131	NM		
<b>Average/Total</b>	<b>4.1%</b>	<b>3.6%</b>	<b>15.9%</b>	<b>15.3%</b>	<b>46.2%</b>	<b>17.5%</b>	<b>15.1%</b>					<b>4,058</b>	<b>11.0%</b>	<b>0.3</b>	<b>2,033</b>	<b>20.4%</b>	<b>1,470</b>	<b>964</b>		
<b>Japan</b>																				
Japan Telecom Holdings	3.4%	3.1%	(1.9%)	NM	30.9%	3.7%	(0.7%)	358	536	13.71	21.40	8,771	35.5%	1.9	3,656	24.2%	(111)	NM		
KDDI	(0.2%)	(0.4%)	22.9%	(17.4%)	19.7%	1.7%	5.5%	513	545	11.16	11.60	12,893	50.4%	2.8	2,623	11.1%	1,292	NM		
NTT	1.3%	2.2%	15.5%	4.3%	29.1%	4.6%	8.2%	2,215	3,230	(10.29)	29.41	50,069	45.3%	1.9	15,476	16.7%	7,580	1,831		
<b>Average/Total</b>	<b>1.5%</b>	<b>1.6%</b>	<b>12.1%</b>	<b>(6.5%)</b>	<b>26.6%</b>	<b>3.4%</b>	<b>4.3%</b>					<b>71,733</b>	<b>43.7%</b>	<b>2.2</b>	<b>21,755</b>	<b>17.3%</b>	<b>8,761</b>	<b>1,831</b>		
<b>Latin America</b>																				
CanTV	(2.9%)	2.3%	55.5%	0.4%	35.7%	3.4%	19.7%	766	675	0.06	0.57	51	3.8%	0.1	276	14.6%	373	261		
Brasils Telecom	2.9%	3.2%	27.5%	23.4%	46.6%	7.5%	13.1%	1,211	1,418	1.93	3.12	526	14.3%	0.4	627	20.6%	399	163		
Embratel	2.1%	17.0%	NM	83.2%	20.9%	0.2%	2.3%	576	648	0.01	0.02	1,224	73.0%	1.9	459	14.8%	71	NM		
Telemar	NM	NM	NM	NM	43.3%	3.7%	15.9%	2,153	2,253	0.28	0.50	3,226	47.6%	1.4	667	12.8%	827	425		
Telmex	5.5%	3.8%	16.8%	0.7%	51.5%	17.2%	24.3%	5,945	5,636	2.95	3.06	3,858	15.6%	0.7	1,200	11.0%	2,661	1,624		
<b>Average/Total</b>	<b>1.9%</b>	<b>6.6%</b>	<b>33.3%</b>	<b>26.9%</b>	<b>39.6%</b>	<b>6.4%</b>	<b>15.1%</b>					<b>8,886</b>	<b>30.9%</b>	<b>0.9</b>	<b>3,229</b>	<b>14.8%</b>	<b>4,332</b>	<b>618</b>		
<b>Wireline Avg/Total</b>	<b>2.7%</b>	<b>3.9%</b>	<b>17.6%</b>	<b>14.6%</b>	<b>38.9%</b>	<b>9.9%</b>	<b>12.4%</b>					<b>484,126</b>	<b>32.4%</b>	<b>1.7</b>	<b>109,281</b>	<b>16.9%</b>	<b>79,606</b>	<b>2,403</b>		

Source: Bloomberg, Goldman Sachs Research estimates

# Global Incumbent Wireline Performance

	Last update 9 January 2003	Rating/CIL	Price	Mkt. Cap. (US\$m)	Absolute Performance				Perf. relative to local index				Perf. relative to MSCI Global Telco			
					1-wk	QTD	YTD	LTM	MTD	QTD	YTD	LTM	1-wk	QTD	YTD	LTM
<b>North America</b>																
Alaska Communications	IL		\$2.34	74	11.4%	27.2%	27.2%	-70.6%	20.6%	20.6%	20.6%	-63.3%	5.8%	21.6%	21.6%	-44.2%
ALLTEL	U		\$54.50	17,047	2.5%	6.9%	6.9%	-5.9%	1.4%	1.4%	1.4%	17.2%	-3.0%	1.3%	1.3%	20.5%
BCE	IL		\$19.05	17,267	3.0%	5.8%	5.8%	-14.6%	0.3%	0.3%	0.3%	6.3%	-2.6%	0.2%	0.2%	11.8%
BellSouth	IL		\$27.50	50,751	1.4%	6.3%	6.3%	-28.4%	0.8%	0.8%	0.8%	-10.8%	-4.2%	0.7%	0.7%	-2.0%
CenturyTel	OP		\$31.17	4,386	2.8%	6.1%	6.1%	-0.3%	0.6%	0.6%	0.6%	24.2%	-2.8%	0.5%	0.5%	26.1%
Commonwealth	IL		\$38.04	913	4.6%	6.1%	6.1%	-8.1%	0.7%	0.7%	0.7%	14.4%	-1.0%	0.6%	0.6%	18.3%
Qwest	U		\$5.75	9,808	7.5%	15.0%	15.0%	-60.0%	9.1%	9.1%	9.1%	-50.2%	1.9%	9.4%	9.4%	-33.6%
SBC Communications	OP		\$29.07	96,149	0.6%	7.2%	7.2%	-23.8%	1.7%	1.7%	1.7%	-5.2%	-5.0%	1.6%	1.6%	2.5%
Sprint FON Group	U		\$16.00	14,362	3.6%	10.5%	10.5%	-17.0%	4.8%	4.8%	4.8%	3.3%	-2.0%	4.9%	4.9%	9.4%
Verizon	OP		\$40.46	111,225	0.7%	4.4%	4.4%	-17.2%	-1.0%	-1.0%	-1.0%	3.1%	-4.9%	-1.2%	-1.2%	9.1%
Average/Total				321,980	3.8%	9.5%	9.5%	-24.6%	3.9%	3.9%	3.9%	-6.1%	-1.8%	4.0%	4.0%	1.8%
Weighted Average/Total					1.4%	6.4%	6.4%	-21.3%	0.9%	0.9%	0.9%	-2.0%	-4.2%	0.8%	0.8%	5.1%
<b>Developed Europe</b>																
BT Group	IL		£2.09	29,210	3.5%	7.2%	7.2%	-14.7%	7.4%	7.4%	7.4%	13.4%	-2.1%	1.6%	1.6%	11.7%
Deutsche Telekom	IL		€13.57	59,744	4.3%	10.8%	10.8%	-29.2%	5.5%	5.5%	5.5%	23.2%	-1.3%	5.2%	5.2%	-2.9%
France Telecom	U		€20.20	25,158	11.0%	21.1%	21.1%	-55.1%	17.7%	17.7%	17.7%	-34.7%	5.4%	15.5%	15.5%	-28.8%
KPN	OP		€6.81	17,791	5.4%	9.8%	9.8%	9.1%	6.4%	6.4%	6.4%	63.4%	-0.2%	4.3%	4.3%	35.5%
OTE	IL		€10.56	5,437	0.6%	0.6%	0.6%	-42.7%	2.7%	2.7%	2.7%	-3.7%	-5.0%	-5.0%	-5.0%	-16.4%
Portugal Telecom	IL		€6.92	8,899	3.6%	5.6%	5.6%	-24.4%	2.5%	2.5%	2.5%	-1.3%	-2.0%	0.1%	0.1%	2.0%
Swisscom	OP		SFr420.00	19,971	4.9%	4.9%	4.9%	-10.0%	0.0%	0.0%	0.0%	17.9%	-0.7%	-0.7%	-0.7%	16.4%
TDC	IL		DKr185.00	5,653	0.8%	7.6%	7.6%	-35.5%	4.4%	4.4%	4.4%	-16.7%	-4.8%	2.0%	2.0%	-9.2%
Telecom Italia	U		€7.36	50,751	-0.9%	1.7%	1.7%	-22.6%	-2.4%	-2.4%	-2.4%	0.8%	-6.5%	-3.8%	-3.8%	3.8%
Telefonica	IL		€9.77	48,574	-1.1%	0.0%	0.0%	-16.6%	-4.2%	-4.2%	-4.2%	8.6%	-6.7%	-5.6%	-5.6%	9.8%
Telekom Austria	IL		€9.70	5,086	14.5%	14.5%	14.5%	-29.6%	7.5%	7.5%	7.5%	-11.7%	8.9%	8.9%	8.9%	-3.2%
Telenor	IL		Nkr28.10	7,342	14.5%	14.5%	14.5%	-29.6%	7.5%	7.5%	7.5%	-11.7%	8.9%	8.9%	8.9%	-3.2%
TeliaSonera	OP		SKr32.60	17,566	4.1%	6.0%	6.0%	-26.4%	4.8%	4.8%	4.8%	7.4%	-1.5%	0.5%	0.5%	-0.1%
Average/Total				301,182	5.0%	8.0%	8.0%	-25.2%	4.6%	4.6%	4.6%	4.2%	-0.6%	2.4%	2.4%	1.2%
Weighted Average/Total					3.4%	7.1%	7.1%	-23.4%	3.4%	3.4%	3.4%	9.0%	-2.2%	1.5%	1.5%	3.0%
<b>Emerging Europe</b>																
Matav	IL		HUF830	3,835	-1.4%	1.8%	1.8%	-15.0%	2.6%	2.6%	2.6%	-19.5%	-7.0%	-3.7%	-3.7%	11.4%
Telekomunikacja Polska SA	U		Plz13.10	4,783	2.7%	2.7%	2.7%	-26.6%	0.1%	0.1%	0.1%	-18.3%	-2.8%	-2.8%	-2.8%	-0.2%
Average/Total				8,618	0.7%	2.3%	2.3%	-20.8%	1.3%	1.3%	1.3%	-18.9%	-4.9%	-3.3%	-3.3%	5.6%
Weighted Average/Total					0.9%	2.3%	2.3%	-21.4%	1.2%	1.2%	1.2%	-18.8%	-4.7%	-3.2%	-3.2%	4.9%
<b>Developed Asia</b>																
China Telecom	OP/CIL		HK\$1.49	14,446	1.4%	-0.2%	-0.2%	5.4%	-0.6%	-0.6%	-0.6%	25.7%	-4.2%	-5.8%	-5.8%	31.8%
KT	OP/CIL		Won50.600	13,271	2.3%	1.2%	1.2%	8.8%	-4.0%	-4.0%	-4.0%	35.5%	-3.3%	-4.4%	-4.4%	35.2%
KT ADR	OP/CIL		\$21.81	13,482	2.3%	1.2%	1.2%	8.8%	-4.0%	-4.0%	-4.0%	35.5%	-3.3%	-4.4%	-4.4%	35.2%
PCCW	IL		HK\$6.55	3,874	1.6%	6.5%	6.5%	-43.0%	2.6%	2.6%	2.6%	-32.7%	-4.0%	0.9%	0.9%	-16.7%
Singapore Telecom	IL		S\$1.25	12,805	1.6%	0.8%	0.8%	-27.7%	1.3%	1.3%	1.3%	-8.7%	-4.0%	-4.8%	-4.8%	-1.4%
Telstra	OP		A\$4.46	33,100	0.5%	1.1%	1.1%	-18.9%	-1.3%	-1.3%	-1.3%	-9.7%	-5.1%	-4.5%	-4.5%	7.5%
Telecom New Zealand	IL		NZ\$4.72	4,747	4.2%	4.2%	4.2%	-12.9%	1.8%	1.8%	1.8%	-8.8%	-1.4%	-1.4%	-1.4%	13.5%
Average/Total				82,243	1.9%	2.3%	2.3%	-14.7%	0.0%	0.0%	0.0%	0.2%	-3.7%	-3.3%	-3.3%	11.6%
Weighted Average/Total					1.6%	1.5%	1.5%	-14.8%	-1.0%	-1.0%	-1.0%	3.5%	-5.0%	-5.1%	-5.1%	16.8%
<b>Emerging Asia</b>																
MTNL	IL		Rs86.90	1,022	-7.1%	-8.4%	-8.4%	-32.5%	-8.6%	-8.6%	-8.6%	-32.2%	-12.7%	-14.0%	-14.0%	-6.1%
PLDT	IL		Ps292.50	921	9.3%	8.3%	8.3%	-32.8%	6.6%	6.6%	6.6%	-23.1%	3.8%	2.7%	2.7%	-6.4%
Telkom	OP		Rp3,600	4,062	-3.4%	-6.5%	-6.5%	16.1%	0.3%	0.3%	0.3%	14.8%	-8.9%	-12.1%	-12.1%	42.5%
Telekom Malaysia	NR		Rm7.35	5,992	-2.6%	-7.0%	-7.0%	-27.2%	-4.0%	-4.0%	-4.0%	-18.6%	-8.2%	-12.6%	-12.6%	-0.9%
VSNL	IL		Rs92.35	549	-4.4%	-6.2%	-6.2%	-33.9%	-6.4%	-6.4%	-6.4%	-33.6%	-10.0%	-11.8%	-11.8%	-7.5%
Average/Total				12,545	-1.6%	-3.9%	-3.9%	-22.1%	-2.4%	-2.4%	-2.4%	-18.5%	-7.2%	-9.5%	-9.5%	4.3%
Weighted Average/Total					-2.4%	-5.8%	-5.8%	-14.3%	-2.3%	-2.3%	-2.3%	-9.9%	-8.0%	-11.4%	-11.4%	12.1%
<b>Japan</b>																
Japan Telecom Holdings	U		Y367	9,827	-0.8%	-0.3%	-0.3%	-7.6%	0.2%	0.2%	0.2%	12.9%	-6.4%	-5.9%	-5.9%	18.8%
KDDI	IL		Y357,000	12,687	-8.9%	-7.3%	-7.3%	38.4%	-6.8%	-6.8%	-6.8%	69.0%	-14.5%	-12.9%	-12.9%	64.7%
NTT	OP/CIL		Y430,000	56,607	-2.3%	-0.2%	-0.2%	1.4%	0.2%	0.2%	0.2%	23.9%	-7.9%	-5.8%	-5.8%	27.8%
Average/Total				79,122	-4.0%	-2.6%	-2.6%	10.7%	-2.1%	-2.1%	-2.1%	35.2%	-9.6%	-8.2%	-8.2%	37.1%
Weighted Average/Total					-3.2%	-1.4%	-1.4%	6.2%	-0.9%	-0.9%	-0.9%	29.7%	-8.7%	-7.0%	-7.0%	32.6%
<b>Latin America</b>																
CanTV	OP		\$11.61	1,357	-10.6%	-7.9%	-7.9%	-22.9%	-12.6%	-12.6%	-12.6%	-4.0%	-16.2%	-13.4%	-13.4%	3.5%
Brasil Telecom	OP		\$28.45	2,076	8.2%	12.7%	12.7%	-29.9%	6.9%	6.9%	6.9%	-12.7%	2.6%	7.1%	7.1%	-3.6%
Embratel	IL		\$1.36	453	14.3%	27.1%	27.1%	-70.2%	20.6%	20.6%	20.6%	-62.9%	8.7%	21.5%	21.5%	-43.8%
Telmex	IL		\$8.58	3,245	10.7%	16.7%	16.7%	-44.0%	10.7%	10.7%	10.7%	-30.2%	5.1%	11.1%	11.1%	-17.6%
Telmex	OP/CIL		\$33.91	20,846	4.0%	6.0%	6.0%	-6.5%	0.6%	0.6%	0.6%	16.5%	-1.6%	0.4%	0.4%	19.9%
Average/Total				27,977	5.3%	10.9%	10.9%	-34.7%	5.2%	5.2%	5.2%	-18.7%	-0.3%	5.3%	5.3%	-8.3%
Weighted Average/Total					5.0%	7.8%	7.8%	-13.3%	2.5%	2.5%	2.5%	6.8%	-0.3%	2.5%	2.5%	11.8%
<b>Incumbent Wireline Average/Total</b>				<b>847,150</b>	<b>2.8%</b>	<b>5.7%</b>	<b>5.7%</b>	<b>-22.4%</b>	<b>2.6%</b>	<b>2.6%</b>	<b>2.6%</b>	<b>-3.7%</b>	<b>-2.8%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>4.0%</b>
<b>Incumbent Wireline Weighted Average/Total</b>					<b>1.7%</b>	<b>5.2%</b>	<b>5.2%</b>	<b>-18.1%</b>	<b>1.4%</b>	<b>1.4%</b>	<b>1.4%</b>	<b>5.4%</b>	<b>-3.9%</b>	<b>-0.4%</b>	<b>-0.4%</b>	<b>8.3%</b>

Source: Bloomberg, Goldman Sachs Research estimates

# Global Wireless Valuations

	Last update 9 January 2003	Rating/CIL	Price	Mkt. Cap. (US\$m)	Ent. Val. (US\$m)	3-yr EBITDA				3-yr EPS				3-yr rev. FCF yield (x)					
						EV/EBITDA (X)	CAGR (%)	EV/EG(X)	P/E (X)	CAGR(%)	PEG(X)	CAGR (%)	FCF yield (x)						
						2003E	2004E	2005E	03-06E	2003E	2004E	2005E	03-06E	2002E	2003E	2004E	2005E		
<b>North America</b>																			
AT&T Wireless	IL		\$7.30	19,601	29,508	6.3	5.7	4.9	10.2%	0.6	NA	NA	NA	NM	NM	6.8%	NA	1.9%	3.7%
Nextel	IL		\$13.98	12,764	24,994	7.2	6.3	6.4	2.3%	3.1	NA	NA	NA	NM	NM	6.6%	6.2%	11.1%	NA
Sprint PCS	U		\$4.92	4,995	21,299	5.3	4.6	4.6	11.8%	0.4	NA	NA	NA	NM	NM	7.8%	9.3%	10.0%	7.7%
Average/Total				37,359	75,800	6.3	5.5	5.3	8.1%	1.4	NA	NA	NA	NA	NA	7.1%	7.7%	7.7%	5.7%
Weighted Average						6.5	5.8	5.4	7.7%	1.5	NA	NA	NA	NA	NA	6.9%	7.1%	6.1%	4.5%
<b>Developed Europe</b>																			
Cosmote	IL		€9.50	3,288	3,612	5.9	5.5	5.0	2.6%	2.3	12.2	11.8	11.5	2.3%	5.4	5.4%	5.4%	7.5%	9.2%
Europlattan	IL		SKr44.00	2,066	1,840	5.7	5.2	4.5	5.8%	1.0	12.6	13.1	12.1	4.4%	2.9	6.2%	4.9%	7.5%	9.7%
Libertel	OP		€10.90	3,572	4,047	6.6	6.0	5.3	5.2%	1.3	15.1	15.0	14.0	6.1%	2.5	7.6%	6.7%	6.6%	7.2%
mm02	IL		€0.49	6,829	8,283	4.8	4.2	3.8	12.6%	0.4	NM	NM	NM	(17.2%)	NM	6.9%	NA	NA	1.0%
Mobistar	OP		€23.75	1,553	2,317	6.6	5.9	5.5	7.1%	0.9	13.0	13.5	11.9	(10.2%)	-1.3	7.9%	5.0%	6.6%	7.7%
Orange SA	IL		€7.49	38,225	44,136	7.0	6.0	5.3	8.6%	0.8	27.8	22.6	19.2	19.0%	1.5	6.8%	4.2%	5.9%	7.0%
Panafon	NR		€5.52	3,145	3,477	6.4	5.8	5.6	4.6%	1.4	13.5	12.9	12.3	6.5%	2.1	6.5%	5.7%	6.3%	6.5%
Stet Hellas	IL		€6.98	581	847	3.4	2.9	2.8	0.1%	38.3	8.3	7.4	8.7	(6.9%)	-0.9	3.0%	6.4%	9.2%	10.1%
Telecel	IL		€8.10	1,831	2,066	5.7	5.1	4.6	8.8%	0.7	16.3	15.5	13.6	13.7%	1.2	7.8%	3.1%	5.7%	6.3%
Tele2	U		SKr231.00	3,898	6,069	10.6	9.2	7.3	16.2%	0.7	59.1	31.6	17.3	NM	NM	9.9%	NA	NA	NA
Telefonica Moviles	IL		€6.69	30,384	34,412	8.2	7.6	6.8	7.3%	1.1	18.5	16.5	14.9	11.1%	1.7	8.0%	6.2%	5.8%	6.5%
Telecom Italia Mobile	IL		€4.61	41,361	42,860	8.2	7.7	7.3	6.0%	1.4	24.9	21.0	18.9	11.5%	2.2	6.1%	4.0%	4.4%	5.2%
Vodafone Consolidated	OP		£1.19	131,211	132,020	7.2	6.4	5.7	7.4%	1.0	17.5	15.9	14.4	11.2%	1.6	7.7%	4.5%	5.6%	7.1%
Average/Total				267,944	285,985	6.6	6.0	5.3	7.1%	3.9	19.9	16.4	14.1	4.1%	1.7	6.9%	5.1%	6.5%	7.0%
Weighted Average						7.3	6.6	5.9	7.5%	1.1	20.7	17.8	15.8	11.2%	1.7	7.3%	4.6%	5.6%	6.6%
<b>Emerging Europe</b>																			
Mobile Telesystems	OP		\$40.36	4,023	4,554	4.5	4.0	3.4	11.0%	0.4	10.7	7.7	7.0	18.5%	0.6	13.0%	NA	2.0%	8.2%
Turkcell	IL		\$15.13	3,026	3,283	4.1	3.2	2.7	7.6%	0.5	10.7	7.8	10.9	9.8%	1.1	9.9%	21.0%	18.5%	7.3%
Vimpelcom	OP		\$37.76	1,766	2,380	7.4	6.8	6.1	11.3%	0.7	21.5	25.6	25.8	(1.4%)	-15.2	9.3%	NA	NA	NA
Average/Total				8,814	10,216	5.4	4.7	4.1	10.0%	0.5	14.3	13.7	14.6	9.0%	-4.5	10.7%	21.0%	10.2%	7.8%
Weighted Average						5.0	4.3	3.7	9.9%	0.5	12.9	11.3	12.1	11.5%	-2.4	11.2%	21.0%	9.1%	7.8%
<b>Developed Asia</b>																			
Far Eastone	IL		NT\$28.30	1,888	2,298	5.3	4.9	4.5	4.4%	1.2	8.2	7.6	9.6	(4.6%)	-1.8	5.0%	4.9%	8.5%	6.9%
Hutchison Australia	U		A\$0.28	108	1,148	NM	NM	NM	NM	NM	NM	NM	NM	(6.0%)	NM	27.1%	NA	NA	NA
LG Telecom	U		Won4,350	1,012	2,009	3.9	3.7	3.3	7.0%	0.6	12.2	12.9	11.3	10.5%	1.2	3.3%	0.0%	2.2%	11.5%
KT Freetel	IL		Won30,450	4,756	7,333	5.0	4.5	4.0	5.5%	0.9	10.9	10.4	9.3	8.5%	1.3	3.3%	7.1%	12.1%	14.0%
SK Telecom	OP		Won220,000	16,642	16,262	4.2	3.6	3.1	3.5%	1.2	10.3	9.4	8.7	8.8%	1.2	3.1%	10.9%	11.5%	12.7%
SmarTone	OP		HK\$9.05	683	192	1.6	1.2	1.0	8.0%	0.2	11.2	10.0	9.8	5.2%	2.2	9.1%	7.5%	7.9%	7.2%
Taiwan Cellular	IL		NT\$28.00	3,648	4,583	6.8	6.3	6.1	3.8%	1.8	8.6	8.6	10.8	(7.2%)	-1.2	3.6%	4.7%	6.5%	6.3%
Average/Total				28,737	33,826	4.5	4.0	3.7	5.4%	1.0	10.2	9.8	9.9	2.2%	0.5	7.8%	5.8%	8.1%	9.8%
Weighted Average						4.7	4.1	3.7	4.2%	1.2	10.1	9.5	9.3	5.7%	0.7	3.6%	8.6%	10.4%	11.5%
<b>Emerging Asia</b>																			
AIS	IL		Bt32.75	2,252	2,616	3.3	2.8	2.5	3.8%	0.9	8.0	7.0	6.6	9.3%	0.9	4.8%	12.4%	14.7%	14.1%
Bharti Tele-Ventures	IL		Rs21.45	829	1,805	7.5	5.5	4.3	32.1%	0.2	NM	NM	15.0	NM	NM	27.6%	NA	NA	10.9%
Celcom	NR		Rm2.50	1,305	1,492	5.0	4.1	3.2	8.6%	0.6	27.8	18.4	11.7	44.7%	0.6	8.0%	9.5%	10.9%	12.4%
China Mobile (HK)	U		HK\$19.60	49,429	52,802	5.0	4.4	3.8	6.5%	0.8	10.7	10.0	9.0	9.2%	1.2	8.6%	4.5%	7.4%	9.5%
China Unicom	U		HK\$5.75	9,255	12,417	3.9	3.4	3.1	7.5%	0.5	13.3	11.3	9.6	15.3%	0.9	14.5%	NA	3.8%	4.2%
Indosat	IL		Rp8,350	968	1,440	3.1	2.4	1.7	17.4%	0.2	6.8	6.0	4.8	27.9%	0.2	16.6%	NA	13.8%	27.4%
Maxis	IL		Rm5.40	3,483	3,254	6.0	5.0	4.2	9.1%	0.7	13.1	11.7	10.6	10.1%	1.3	8.8%	11.4%	14.7%	17.2%
TAC	IL		\$0.61	287	1,687	6.6	6.1	5.5	8.8%	0.8	4.6	4.3	4.1	6.8%	0.7	7.6%	NA	NA	4.1%
Average/Total				67,808	77,513	5.0	4.2	3.5	11.7%	0.6	12.1	9.8	8.9	17.6%	0.8	12.1%	9.4%	10.9%	12.5%
Weighted Average						4.9	4.2	3.6	7.2%	0.7	11.4	10.3	9.1	11.0%	1.1	9.6%	5.4%	7.7%	9.7%
<b>Japan</b>																			
NTT DoCoMo	IL		¥239,000	98,700	104,965	6.7	6.1	5.4	6.3%	1.1	20.4	17.1	14.8	16.8%	1.2	0.04	4.7%	5.0%	5.7%
<b>Latin America</b>																			
America Movil	OP		\$14.89	9,503	13,052	5.2	4.5	3.8	11.3%	0.5	16.3	10.6	7.9	36.5%	0.4	0.11	3.2%	8.3%	10.4%
Tele Celular Sul	IL		\$8.62	296	270	4.2	4.3	3.8	0.1%	42.4	15.3	14.0	11.0	19.4%	0.8	(0.02)	12.1%	11.8%	16.4%
Tele Centro-Oeste Celular	IL		\$4.66	589	664	4.0	3.7	3.0	5.0%	0.8	5.7	5.2	4.3	17.6%	0.3	0.04	12.2%	14.4%	18.3%
Tele Leste Celular	U		\$7.40	71	175	3.0	2.5	1.9	2.6%	1.2	15.3	3.7	2.2	130.3%	0.1	0.02	19.4%	40.7%	58.5%
Tele Nordeste Celular	IL		\$17.00	294	281	3.5	3.5	3.1	0.0%	-132.0	7.4	7.1	6.0	13.1%	0.6	(0.02)	13.4%	14.8%	18.4%
Tele Norte Celular	U		\$5.25	35	112	2.1	1.8	1.7	5.7%	0.4	3.4	2.6	1.8	31.1%	0.1	0.05	39.1%	50.3%	73.6%
Telemig Celular	OP		\$19.10	319	366	4.3	4.1	3.3	4.8%	0.9	16.0	8.9	6.4	42.5%	0.4	0.04	13.0%	14.5%	16.8%
Telesp Celular	IL		\$3.51	1,645	2,170	5.3	4.8	4.2	NM	NM	27.8	13.9	9.2	NM	NM	NM	8.6%	9.4%	11.8%
Average/Total				12,752	17,090	3.9	3.6	3.1	4.2%	-12.3	13.4	8.2	6.1	41.5%	0.4	3.2%	15.1%	20.5%	28.0%
Weighted Average						5.1	4.5	3.7	10.1%	-1.9	17.0	10.7	7.8	35.1%	0.4	9.7%	5.2%	9.4%	11.9%
<b>Wireless Average/Total</b>				<b>522,115</b>	<b>605,396</b>	<b>5.4</b>	<b>4.8</b>	<b>4.2</b>	<b>7.5%</b>	<b>-0.4</b>	<b>15.0</b>	<b>12.1</b>	<b>10.7</b>	<b>14.1%</b>	<b>0.5</b>	<b>7.7%</b>	<b>8.8%</b>	<b>10.7%</b>	<b>12.8%</b>
<b>Wireless Weighted Average/Total</b>						<b>6.6</b>	<b>5.9</b>	<b>5.3</b>	<b>7.1%</b>	<b>1.0</b>	<b>18.4</b>	<b>15.8</b>	<b>14.0</b>	<b>12.6%</b>	<b>1.4</b>	<b>6.8%</b>	<b>5.1%</b>	<b>6.2%</b>	<b>7.3%</b>

Source: Bloomberg, Goldman Sachs Research estimates

Multiples in this valuation table may NOT be directly comparable to figures in our research due to definition differences. In this table,

1. We define enterprise value as market capitalization + net debt + minorities – associates
2. EPS figures have been adjusted to exclude goodwill amortization and exceptionals
3. FCF is defined as EBITDA less capex, change in working capital, interest paid and tax paid

# Global Wireless Operating Statistics

	3-yr CAGR (%) 2003E-2006E			Group Margins (%) 2003E			EBITDA estimates		Adj. EPS		Net debt	Net debt	Net debt	Capex	Capex/	FCF	
	Sales	EBITDA	EPS	FCF	EBITDA	Net	FCF	FY2002E	FY2003E	FY2002E	FY2003E	(US\$m)	/EV (%)	(X)2003E	(US\$m)	sales/2003E	(US\$m)
<b>North America</b>																	
AT&T Wireless	6.8%	10.2%	NA	NM	25.3%	(0.3%)	(3.5%)	3,722	4,263	NA	NA	9,907	33.6%	2.3	3,900	23.1%	(589)
Nextel	6.6%	2.3%	NA	NM	39.8%	8.3%	8.3%	3,056	3,810	NA	NA	12,230	48.9%	3.2	1,976	20.7%	792
Sprint PCS	7.8%	11.8%	NA	20.2%	26.3%	3.0%	3.8%	2,786	3,220	NA	NA	16,304	76.5%	5.1	2,372	19.4%	464
<b>Average/Total</b>	<b>7.1%</b>	<b>8.1%</b>	<b>NA</b>	<b>20.2%</b>	<b>30.5%</b>	<b>3.7%</b>	<b>2.9%</b>					<b>38,440</b>	<b>53.0%</b>	<b>3.5</b>	<b>8,248</b>	<b>21.1%</b>	<b>667</b>
<b>Developed Europe</b>																	
Cosmote	5.4%	2.6%	2.3%	21.7%	43.2%	18.9%	12.8%	542	587	0.73	0.78	258	7.1%	0.4	278	19.5%	182
Europoitan	6.2%	5.8%	4.4%	33.1%	42.5%	21.4%	11.9%	2,510	2,741	3.34	3.62	(20)	-1.1%	-0.1	184	24.1%	91
Libertel	7.6%	5.2%	6.1%	6.2%	37.6%	14.4%	14.7%	453	583	0.49	0.83	475	11.7%	0.8	205	12.6%	240
mmO2	6.9%	12.6%	(17.2%)	NM	20.8%	(7.2%)	(4.6%)	433	829	(0.04)	(0.01)	1,550	18.7%	0.9	2,021	24.5%	(382)
Mobistar	7.9%	7.1%	(10.2%)	1.2%	31.4%	10.6%	6.9%	299	336	1.67	1.82	764	33.0%	2.2	211	18.8%	78
Orange SA	6.6%	8.6%	19.0%	24.8%	33.0%	7.1%	8.4%	4,897	6,048	0.21	0.27	5,911	13.4%	0.9	2,780	14.4%	1,617
Panafon	6.5%	4.6%	6.5%	5.5%	39.6%	17.0%	13.1%	428	491	0.35	0.39	332	9.5%	0.6	208	15.2%	180
Stet Hellas	3.0%	0.1%	(8.9%)	14.1%	34.8%	9.8%	5.2%	220	249	0.72	0.85	266	31.4%	1.1	143	20.0%	37
Telecel	7.8%	8.8%	13.7%	31.9%	30.7%	9.5%	4.9%	286	325	0.49	0.51	235	11.4%	0.7	204	17.3%	57
Tele2	9.9%	16.2%	105.8%	NM	14.5%	1.7%	(2.6%)	4,373	5,003	0.03	3.91	1,239	20.4%	2.2	502	12.7%	(103)
Telefonica Moviles	8.0%	7.3%	11.1%	3.2%	42.8%	16.8%	18.3%	3,706	4,012	(0.81)	0.36	5,492	16.0%	1.3	1,209	12.3%	1,795
Telecom Italia Mobile	6.1%	6.0%	11.5%	14.6%	44.1%	14.0%	14.0%	4,852	4,985	0.24	0.18	838	2.0%	0.2	1,976	16.7%	1,662
Vodafone Consolidated	7.7%	7.4%	11.2%	14.5%	36.1%	14.6%	10.0%	8,031	10,821	0.05	0.06	19,031	14.4%	1.0	9,540	18.7%	5,114
<b>Average/Total</b>	<b>6.9%</b>	<b>7.1%</b>	<b>12.0%</b>	<b>15.5%</b>	<b>34.7%</b>	<b>11.4%</b>	<b>8.7%</b>					<b>36,370</b>	<b>14.5%</b>	<b>0.9</b>	<b>19,460</b>	<b>17.4%</b>	<b>10,569</b>
<b>Emerging Europe</b>																	
Mobile Telesystems	13.0%	11.0%	18.5%	NM	47.3%	17.7%	(1.7%)	625	1,002	2.78	3.76	650	14.3%	0.6	815	38.5%	(36)
Turkcell	9.9%	7.6%	9.8%	(19.0%)	35.3%	12.5%	24.6%	716	801	0.61	1.42	625	19.0%	0.8	151	6.7%	558
Vimpelcom	9.3%	11.3%	(1.4%)	NM	35.4%	9.1%	(17.2%)	284	321	2.22	1.76	426	17.9%	1.3	415	45.7%	(156)
<b>Average/Total</b>	<b>10.7%</b>	<b>10.0%</b>	<b>9.0%</b>	<b>(19.0%)</b>	<b>39.3%</b>	<b>13.1%</b>	<b>1.9%</b>					<b>1,701</b>	<b>17.1%</b>	<b>0.9</b>	<b>1,380</b>	<b>30.3%</b>	<b>366</b>
<b>Developed Asia</b>																	
Far EastOne	5.0%	4.4%	(4.6%)	20.8%	42.9%	23.0%	9.1%	14,911	14,939	3.95	3.47	410	17.8%	0.9	316	31.3%	92
Hutchison Australia	27.1%	NM	(6.0%)	(14.0%)	(10.0%)	(89.3%)	(145.3%)	(58)	(31)	(0.20)	(0.41)	1,040	90.6%	NM	182	100.2%	(263)
LG Telecom	3.3%	7.0%	10.5%	NM	31.9%	5.2%	0.0%	520	603	343	355	998	49.6%	1.9	381	23.8%	0
KT Freetel	3.3%	5.5%	8.5%	33.2%	38.4%	11.5%	8.9%	1,582	1,716	3,082	2,797	2,578	35.1%	1.8	852	22.4%	337
SK Telecom	3.1%	3.5%	8.8%	8.6%	49.4%	20.7%	21.5%	4,309	4,531	19,948	21,353	849	5.2%	0.2	1,296	16.6%	1,675
SmarTone	9.1%	8.0%	5.2%	1.9%	31.5%	16.0%	13.5%	568	858	0.38	0.72	(490)	-254.9%	-4.1	64	16.8%	51
Taiwan Cellular	3.6%	3.8%	(7.2%)	26.6%	41.2%	26.0%	10.5%	22,140	23,302	3.55	3.27	934	20.4%	1.4	438	26.7%	1,72
<b>Average/Total</b>	<b>7.8%</b>	<b>5.4%</b>	<b>2.2%</b>	<b>12.8%</b>	<b>32.2%</b>	<b>1.9%</b>	<b>(11.7%)</b>					<b>6,318</b>	<b>-5.1%</b>	<b>0.4</b>	<b>3,528</b>	<b>34.0%</b>	<b>2,064</b>
<b>Emerging Asia</b>																	
AIS	4.8%	3.8%	9.3%	4.3%	39.9%	14.2%	14.1%	30,863	33,633	3.77	4.07	364	13.9%	0.5	304	15.4%	278
Bharti Tele-Ventures	27.6%	32.1%	NM	NM	26.7%	(2.2%)	(34.0%)	3,248	7,044	(0.38)	(1.23)	976	54.1%	4.0	417	46.1%	(307)
Celcom	8.0%	8.6%	44.7%	12.6%	41.0%	6.5%	17.0%	1,164	1,134	0.19	0.09	186	12.5%	0.6	113	15.5%	124
China Mobile (HK)	8.6%	6.5%	9.2%	37.0%	55.0%	24.1%	11.7%	73,007	86,928	1.68	1.94	3,374	6.4%	0.3	6,108	32.0%	2,228
China Unicom	14.5%	7.5%	15.3%	NM	42.7%	9.2%	(1.1%)	16,767	26,659	0.34	0.46	3,163	25.5%	1.0	2,564	34.0%	(86)
Indosat	16.6%	17.4%	27.9%	NM	51.3%	15.7%	(1.6%)	3,430,854	4,143,895	913	1,225	472	32.8%	1.0	379	42.0%	(14)
Maxis	8.8%	9.1%	10.1%	18.3%	49.3%	24.1%	36.0%	1,874	2,069	0.42	0.41	(229)	-7.0%	-0.4	260	23.5%	398
TAC	7.6%	8.8%	6.8%	NM	26.0%	6.3%	(15.7%)	9,995	10,930	5.01	5.57	1,400	83.0%	5.5	286	29.1%	(155)
<b>Average/Total</b>	<b>12.1%</b>	<b>11.7%</b>	<b>17.6%</b>	<b>18.1%</b>	<b>41.5%</b>	<b>12.2%</b>	<b>3.3%</b>					<b>9,705</b>	<b>27.6%</b>	<b>1.6</b>	<b>10,432</b>	<b>29.7%</b>	<b>2,465</b>
<b>Japan</b>																	
NTT DoCoMo	3.6%	6.3%	16.8%	9.4%	39.0%	12.2%	11.7%	1,641	1,791	8.01	9.90	6,265	6.0%	0.4	6,081	15.2%	4,678
<b>Latin America</b>																	
America Movil	11.0%	11.3%	36.5%	52.0%	36.8%	8.6%	4.5%	2,107	2,493	0.51	0.91	3,549	27.2%	1.4	1,000	14.7%	303
Tele Celular Sul	(2.3%)	0.1%	19.4%	12.7%	42.2%	9.4%	17.5%	118	86	0.62	0.56	(35)	-9.6%	-0.4	49	24.0%	36
Tele Centro-Oeste Celular	4.2%	5.0%	17.6%	25.1%	41.3%	23.2%	16.1%	216	184	0.84	0.82	83	11.4%	0.4	66	14.9%	72
Tele Leste Celular	1.8%	2.6%	130.3%	34.9%	33.2%	2.7%	7.9%	52	58	(0.01)	0.49	104	59.6%	1.8	30	17.0%	14
Tele Nordeste Celular	(1.6%)	(0.0%)	13.1%	18.7%	42.6%	16.1%	16.0%	132	105	2.01	2.29	(17)	-4.5%	-0.2	49	20.0%	39
Tele Norte Celular	5.2%	5.7%	31.1%	32.1%	31.7%	4.6%	6.1%	62	71	1.06	1.54	101	68.6%	1.4	29	12.8%	14
Telemig Celular	4.3%	4.8%	42.5%	12.9%	39.1%	7.6%	15.8%	128	103	0.97	1.19	56	12.7%	0.5	37	14.1%	41
Telesp Celular	NM	NM	NM	NM	38.9%	5.6%	13.5%	485	410	(0.75)	0.13	525	24.2%	1.3	111	10.5%	142
<b>Average/Total</b>	<b>3.2%</b>	<b>4.2%</b>	<b>41.5%</b>	<b>26.9%</b>	<b>38.2%</b>	<b>9.7%</b>	<b>12.2%</b>					<b>4,366</b>	<b>23.7%</b>	<b>0.8</b>	<b>1,371</b>	<b>16.0%</b>	<b>661</b>
<b>Wireless Average/Total</b>	<b>7.6%</b>	<b>7.5%</b>	<b>16.5%</b>	<b>16.7%</b>	<b>36.3%</b>	<b>9.3%</b>	<b>4.2%</b>					<b>103,165</b>	<b>18.1%</b>	<b>1.1</b>	<b>50,500</b>	<b>23.2%</b>	<b>21,470</b>

Source: Bloomberg, Goldman Sachs Research estimates

# Global Wireless Performance

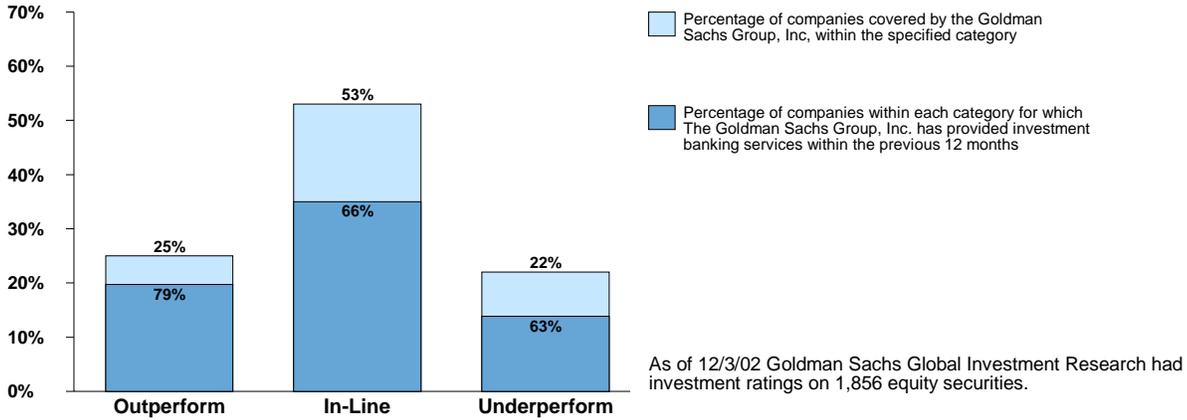
	Last update 9 January 2003	Rating/CIL	Price	Mkt. Cap. (US\$m)	Absolute Performance				Perf. relative to local index				Perf. relative to MSCI Global Telco			
					1-wk	QTD	YTD	LTM	MTD	QTD	YTD	LTM	1-wk	QTD	YTD	LTM
<b>North America</b>																
AT&T Wireless		IL	\$7.30	19,601	17.0%	29.2%	29.2%	-40.6%	22.6%	22.6%	22.6%	-26.0%	11.4%	23.6%	23.6%	-14.2%
Nextel		IL	\$13.98	12,764	12.2%	21.0%	21.0%	39.8%	14.8%	14.8%	14.8%	74.1%	6.6%	15.5%	15.5%	66.2%
Sprint PCS		U	\$4.92	4,995	2.7%	12.3%	12.3%	-74.4%	6.5%	6.5%	6.5%	-68.2%	-2.9%	6.7%	6.7%	-48.1%
Average/Total				37,359	10.6%	20.9%	20.9%	-25.1%	14.6%	14.6%	14.6%	-6.7%	5.0%	15.3%	15.3%	1.3%
Weighted Average/Total					13.4%	24.2%	24.2%	-17.6%	17.8%	17.8%	17.8%	2.6%	7.9%	18.6%	18.6%	8.7%
<b>Developed Europe</b>																
Cosmote		IL	€9.50	3,288	1.3%	1.3%	1.3%	-18.8%	3.4%	3.4%	3.4%	36.6%	-4.3%	-4.3%	-4.3%	7.6%
Europoitan		IL	SKr 44.00	2,066	7.3%	7.3%	7.3%	-36.2%	4.1%	4.1%	4.1%	5.6%	1.7%	1.7%	1.7%	-9.9%
Libertel		OP	€10.90	3,572	2.3%	7.1%	7.1%	4.8%	3.7%	3.7%	3.7%	56.9%	-3.2%	1.5%	1.5%	31.2%
mm02		IL	€0.49	6,829	4.8%	10.7%	10.7%	-44.0%	10.9%	10.9%	10.9%	-25.6%	-0.8%	5.1%	5.1%	-17.6%
Mobistar		OP	€23.75	1,553	2.2%	4.7%	4.7%	12.7%	5.8%	5.8%	5.8%	50.6%	-3.4%	-0.9%	-0.9%	39.0%
Orange SA		IL	€7.49	38,225	10.1%	13.7%	13.7%	-24.5%	10.5%	10.5%	10.5%	9.9%	4.6%	8.1%	8.1%	1.9%
Panafon		NR	€5.52	3,145	0.0%	0.0%	0.0%	-11.0%	2.1%	2.1%	2.1%	49.8%	-5.6%	-5.6%	-5.6%	15.4%
Stet Hellas		IL	€6.98	581	-0.6%	-4.1%	-4.1%	15.4%	-9.1%	-9.1%	-9.1%	43.7%	-6.2%	-9.7%	-9.7%	41.7%
TeleZ		U	SKr 231.00	3,898	0.2%	0.2%	0.2%	-38.6%	-2.8%	-2.8%	-2.8%	1.6%	-5.4%	-5.4%	-5.4%	-12.3%
Telecel		IL	€8.10	1,831	4.9%	9.5%	9.5%	-15.4%	6.2%	6.2%	6.2%	10.5%	-0.7%	3.9%	3.9%	11.0%
Telefonica Moviles		IL	€6.69	30,384	7.9%	7.9%	7.9%	-17.0%	1.3%	1.3%	1.3%	4.1%	2.3%	2.3%	2.3%	9.4%
Telecom Italia Mobile		IL	€4.61	41,361	3.2%	6.0%	6.0%	-22.8%	1.7%	1.7%	1.7%	0.5%	-2.3%	0.4%	0.4%	3.6%
Vodafone Consolidated		OP	€1.19	131,211	1.3%	4.9%	4.9%	-30.5%	5.0%	5.0%	5.0%	-7.6%	-4.3%	-0.7%	-0.7%	-4.1%
Average/Total				267,944	3.5%	5.3%	5.3%	-17.4%	3.3%	3.3%	3.3%	18.2%	-2.1%	-0.3%	-0.3%	9.0%
Weighted Average/Total					3.7%	6.7%	6.7%	-26.1%	4.8%	4.8%	4.8%	-0.1%	-1.8%	1.1%	1.1%	0.3%
<b>Emerging Europe</b>																
Mobile Telesystems		OP	\$40.36	4,023	5.3%	8.7%	8.7%	4.3%	3.1%	3.1%	3.1%	29.9%	-0.3%	3.1%	3.1%	30.7%
Turkcell		IL	\$15.13	3,026	-1.5%	-2.4%	-2.4%	-26.2%	-7.4%	-7.4%	-7.4%	-8.1%	-7.1%	-8.0%	-8.0%	0.1%
Vimpelcom		OP	\$37.76	1,766	14.8%	18.0%	18.0%	40.9%	11.9%	11.9%	11.9%	75.5%	9.2%	12.4%	12.4%	67.3%
Average/Total				8,814	6.2%	8.1%	8.1%	6.3%	2.5%	2.5%	2.5%	32.4%	0.6%	2.5%	2.5%	32.7%
Weighted Average/Total					4.9%	6.7%	6.7%	1.2%	1.2%	1.2%	1.2%	26.0%	-0.7%	1.1%	1.1%	27.5%
<b>Developed Asia</b>																
Hutchison Australia		U	A\$0.28	108	-8.3%	-1.8%	-1.8%	-58.3%	-4.2%	-4.2%	-4.2%	-49.2%	-13.9%	-7.4%	-7.4%	-32.0%
Far EasTone		IL	NT\$28.30	1,888	9.3%	9.7%	9.7%	-24.8%	1.6%	1.6%	1.6%	-6.8%	3.7%	4.1%	4.1%	1.6%
LG Telecom		U	Won4,350	1,012	-2.9%	0.0%	0.0%	-47.9%	-8.3%	-8.3%	-8.3%	-11.0%	-8.5%	-5.6%	-5.6%	-21.5%
KT Freetel		IL	Won30,450	4,756	2.5%	8.0%	8.0%	-31.0%	-0.4%	-0.4%	-0.4%	5.9%	-3.1%	2.4%	2.4%	-4.6%
SK Telecom		OP	Won220,000	16,642	-2.2%	-3.9%	-3.9%	-12.4%	-4.4%	-4.4%	-4.4%	4.5%	-7.8%	-9.5%	-9.5%	14.0%
SmarTone		OP	HK\$9.05	683	-0.5%	4.0%	4.0%	-8.1%	0.2%	0.2%	0.2%	8.6%	-6.1%	-1.6%	-1.6%	18.3%
Taiwan Cellular		IL	NT\$28.00	3,648	1.1%	-3.4%	-3.4%	-27.4%	8.4%	8.4%	8.4%	-75.7%	-4.5%	-9.0%	-9.0%	-1.0%
Average/Total				28,737	-0.2%	1.8%	1.8%	-30.0%	-1.0%	-1.0%	-1.0%	-17.7%	-5.7%	-3.8%	-3.8%	-3.6%
Weighted Average/Total					-0.3%	-0.7%	-0.7%	-19.5%	-1.7%	-1.7%	-1.7%	-6.8%	-5.9%	-6.3%	-6.3%	6.9%
<b>Emerging Asia</b>																
AIS		IL	Bt32.75	2,252	-0.8%	-7.7%	-7.7%	-21.6%	-8.3%	-8.3%	-8.3%	-30.2%	-6.3%	-13.3%	-13.3%	4.8%
Bharti Tele-Ventures		IL	Rs21.45	829	-5.3%	-6.3%	-6.3%	NA	-6.5%	-6.5%	-6.5%	NA	-10.9%	-11.9%	-11.9%	NA
Celcom		NR	Rm2.50	1,305	1.2%	2.5%	2.5%	17.9%	5.7%	5.7%	5.7%	31.8%	-4.4%	-3.1%	-3.1%	44.3%
China Mobile (HK)		U	HK\$19.60	49,429	4.8%	5.7%	5.7%	-19.3%	1.8%	1.8%	1.8%	-4.6%	-0.8%	0.1%	0.1%	7.0%
China Unicom		U	HK\$5.75	9,255	7.5%	8.5%	8.5%	-28.6%	4.5%	4.5%	4.5%	-15.5%	1.9%	2.9%	2.9%	-2.2%
Indosat		IL	Rp8,350	968	-5.1%	-9.7%	-9.7%	-13.5%	-3.1%	-3.1%	-3.1%	-14.5%	-10.7%	-15.3%	-15.3%	12.9%
Maxis		IL	Rm5.40	3,483	0.9%	0.0%	0.0%	NA	3.2%	3.2%	3.2%	NA	-4.7%	-5.6%	-5.6%	NA
TAC		IL	\$0.61	287	4.3%	9.0%	9.0%	-63.3%	8.4%	8.4%	8.4%	-75.7%	-1.3%	3.4%	3.4%	-37.0%
Average/Total				67,808	0.9%	0.2%	0.2%	-21.4%	0.7%	0.7%	0.7%	-18.1%	-4.6%	-5.4%	-5.4%	5.0%
Weighted Average/Total					4.5%	4.9%	4.9%	-18.8%	1.8%	1.8%	1.8%	-6.4%	-1.1%	-0.7%	-0.7%	5.9%
<b>Japan</b>																
NTT DoCoMo		IL	Y239,000	98,700	8.1%	9.1%	9.1%	-18.2%	9.6%	9.6%	9.6%	0.0%	2.6%	3.5%	3.5%	8.2%
<b>Latin America</b>																
America Movil		OP	\$14.89	9,503	0.4%	3.7%	3.7%	-23.8%	-1.6%	-1.6%	-1.6%	-5.1%	-5.2%	-1.9%	-1.9%	2.6%
Tele Celular Sul		IL	\$8.62	296	5.1%	9.7%	9.7%	-44.6%	4.0%	4.0%	4.0%	-31.1%	-0.5%	4.1%	4.1%	-18.3%
Tele Centro-Oeste Celular		IL	\$4.66	589	9.9%	16.5%	16.5%	-31.8%	10.5%	10.5%	10.5%	-15.0%	4.3%	10.9%	10.9%	-5.4%
Tele Leste Celular		U	\$7.40	71	21.3%	17.5%	17.5%	-64.3%	11.4%	11.4%	11.4%	-55.5%	15.7%	11.9%	11.9%	-37.9%
Tele Nordeste Celular		IL	\$17.00	294	10.5%	11.1%	11.1%	-41.4%	5.4%	5.4%	5.4%	-27.0%	4.9%	5.5%	5.5%	-15.0%
Tele Norte Celular		U	\$5.25	35	11.7%	12.9%	12.9%	-76.0%	7.1%	7.1%	7.1%	-70.1%	6.1%	7.3%	7.3%	-49.6%
Telemig Celular		OP	\$19.10	319	10.1%	13.0%	13.0%	-48.4%	7.2%	7.2%	7.2%	-35.8%	4.5%	7.4%	7.4%	-22.1%
Telesp Celular		IL	\$3.51	1,645	6.7%	15.1%	15.1%	-59.7%	9.2%	9.2%	9.2%	-49.9%	1.1%	9.5%	9.5%	-33.4%
Average/Total				12,752	9.5%	12.4%	12.4%	-48.7%	6.6%	6.6%	6.6%	-36.2%	3.9%	6.8%	6.8%	-22.4%
Weighted Average/Total					2.4%	6.4%	6.4%	-30.6%	0.9%	0.9%	0.9%	-13.6%	-3.2%	0.8%	0.8%	-4.3%
<b>Wireless Average/Total</b>				<b>522,115</b>	<b>4.3%</b>	<b>6.5%</b>	<b>6.5%</b>	<b>-25.1%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>-5.1%</b>	<b>-1.3%</b>	<b>0.9%</b>	<b>0.9%</b>	<b>1.3%</b>
<b>Wireless Weighted Average/Total</b>					<b>5.1%</b>	<b>7.8%</b>	<b>7.8%</b>	<b>-22.3%</b>	<b>5.7%</b>	<b>5.7%</b>	<b>5.7%</b>	<b>-1.0%</b>	<b>-0.5%</b>	<b>2.2%</b>	<b>2.2%</b>	<b>3.8%</b>

Source: Bloomberg, Goldman Sachs Research estimates

## Disclosures

**Goldman Sachs Research global coverage universe**

Distribution of ratings/investment banking relationships



Goldman Sachs uses three ratings - Outperform, In-Line, and Underperform - reflecting expected stock price performance relative to each analyst's coverage group, on an unweighted basis with regard to market capitalization and with a 12-month time horizon. Each analyst also assigns a coverage view - Attractive, Neutral, or Cautious - representing the analyst's fundamental outlook on the coverage group. NASD/NYSE rules require a member to disclose the percentage of its rated securities to which the member would assign a buy, hold, or sell rating if such a system were used. Although relative ratings do not correlate to buy, hold, and sell ratings across all rated securities, for purposes of the NASD/NYSE rules, Goldman Sachs has determined the indicated percentages by assigning buy ratings to securities rated Outperform, hold ratings to securities rated In-Line, and sell ratings to securities rated Underperform, without regard to the coverage views of analysts.

Source: Goldman Sachs

As of December 3, 2002

**Analyst coverage**

Companies that the analysts mentioned in this document follow

Covering Analyst: Tim Storey	
Company name	Ticker
Bharti Tele-Ventures	BRTI.BO
China Mobile (HK)	0941.HK
China Mobile (HK) (ADS)	CHL
China Telecom Corporation	0728.HK
China Telecom Corporation (ADR)	CHA
China Unicom	0762.HK
China Unicom (ADS)	CHU
Far EastOne Telecommunications	4904.TWO
Mahanagar Telephone Nigam	MTNL.BO
Mahanagar Telephone Nigam (ADR)	MTE
Taiwan Cellular	3045.TW
UTStarcom	UTSI
Videsh Sanchar Nigam	VSNL.BO
Videsh Sanchar Nigam (ADR)	VSL

Covering Analyst: Radek Barnert	
Company name	Ticker
Advanced Info Service	ADVA.BK
Advanced Info Service (Foreign)	ADVAf.BK
PCCW Limited	0008.HK
PCCW Limited (ADR)	PCW
Philippine Long Distance Telephone	TEL.PS
Philippine Long Distance Telephone (ADR)	PHI
SmarTone	0315.HK
TelecomAsia	TA.BK
TelecomAsia (Foreign)	TAf.BK
Total Access Communication	TACC.SI

Covering Analyst: Jason Billings	
Company name	Ticker
Bharti Tele-Ventures	BRTI.BO
Celcom (Malaysia)	CECM.KL
Indonesian Satellite Corp.	ISAT.JK
Indonesian Satellite Corp. (ADR)	IIT
Maxis Communications	MXSC.KL
Singapore Telecom	TELE.SI
Singapore Telecom	SGT.AX
Taiwan Cellular	3045.TW
Telekom Malaysia	TLMM.KL
Telekomunikasi Indonesia	TLKM.JK
Telekomunikasi Indonesia (ADR)	TLK

Covering Analyst: Matthew Jamieson	
Company name	Ticker
Hanaro Telecom	33630.KQ
Hanaro Telecom (ADS)	HANA
KT Corp	30200.KS
KT Corp (ADR)	KTC
KT Freetel	32390.KQ
LG Telecom	32640.KQ
SK Telecom	17670.KS
SK Telecom (ADR)	SKM

Covering Analyst: Stephen Wood	
Company name	Ticker
Hutchison Telecommunications Australia	HTA.AX
Telecom Corp. of New Zealand	TEL.NZ
Telstra	TLS.AX

Covering Analyst: Yoshio Ando	
Company name	Ticker
Anritsu	6754.T
Crosswave Communications	CWCI
Internet Initiative Japan	IJJI
Japan Telecom Holdings	9434.T
KDDI	9433.T
Nippon Telegraph & Telephone	9432.T
NTT DoCoMo	9437.T

Covering Analyst: Keita Arisawa	
Company name	Ticker
Internet Initiative Japan	IJJI

Covering Analyst: James Golob	
Company name	Ticker
Deutsche Telekom	DTEGN.DE
Olivetti	OLIV.MI
Portugal Telecom	PTCO.IN
Telecom Italia	TIT.MI
Telecom Italia (Savings)	TITN.MI
Telefonica	TEF.MC
Telefonica Moviles	TEM.MC
Telekom Austria	TELA.VI
Telenor	TEL.OL

Source: Goldman Sachs Research.

**Analyst coverage**

Companies that the analysts mentioned in this document follow

Covering Analyst: Freya Guinness	
Company name	Ticker
BT Group (ADS)	BTY
BT Group Plc	BT.L
Cable & Wireless	CW.L
Cable & Wireless (ADR)	CWP
Colt Telecom plc	CTM.L
Colt Telecom plc (ADS)	COLT
Europolitan	EURO.ST
Kingston Communications (Hull) plc	KCOM.L
mmO2	OOM.L
mmO2 (ADR)	OOM
Mobistar	MSTAR.BR
Thus	THUS.L
Vodafone-Libertel	LTEL.AS
Vodafone-Telecel	TELN.IN

Covering Analyst: James Sawtell	
Company name	Ticker
Deutsche Telekom	DTEGN.DE
France Telecom	FTE.PA
Orange SA	ORA.PA
Orange SA	OGE.L
Portugal Telecom	PTCO.IN
Swisscom	SCMZN.VX
Telefonica	TEF.MC
Telefonica Moviles	TEM.MC
TeliaSonera	TLSN.ST
TPSA	TPSA.WA
Turkcell (ADR)	TKC

Covering Analyst: Simon Weeden	
Company name	Ticker
Cosmote	COSR.AT
Equant (France)	EQU.PA
Equant (US)	ENT
mmO2	OOM.L
mmO2 (ADR)	OOM
Orange SA	ORA.PA
Orange SA	OGE.L
Panafon	PANR.AT
Stet Hellas (ADR)	STHLY
Tele2 (B)	TEL2B.ST
Telecom Italia Mobile	TIM.MI
Vodafone	VOD.L
Vodafone (ADR)	VOD

Covering Analyst: Sergei Arsenyev	
Company name	Ticker
Mobile Telesystems	MBT
Vimpel Communications	VIP

Covering Analyst: Matthew Bloxham	
Company name	Ticker
BT Group (ADS)	BTY
BT Group Plc	BT.L
Cable & Wireless	CW.L
Cable & Wireless (ADR)	CWP
Colt Telecom plc	CTM.L
Colt Telecom plc (ADS)	COLT
Equant (France)	EQU.PA
Equant (US)	ENT
Jazztel	JAZ.MC
Kingston Communications (Hull) plc	KCOM.L
Royal KPN NV	KPN.AS
Song Networks	SONW.ST
Thus	THUS.L

Covering Analyst: Michael Blank	
Company name	Ticker
Cosmote	COSR.AT
Deutsche Telekom	DTEGN.DE
Europolitan	EURO.ST
mmO2	OOM.L
mmO2 (ADR)	OOM
Mobistar	MSTAR.BR
Panafon	PANR.AT
Stet Hellas (ADR)	STHLY
TeliaSonera	TLSN.ST
Vodafone-Libertel	LTEL.AS
Vodafone-Telecel	TELN.IN

Covering Analyst: Mike Meloan	
Company name	Ticker
Orange SA	ORA.PA
Portugal Telecom	PTCO.IN
Swisscom	SCMZN.VX
TDC	TDC.CO
Telenor	TEL.OL

Covering Analyst: Dimitrije Mitrinovic	
Company name	Ticker
Deutsche Telekom	DTEGN.DE
Jazztel	JAZ.MC
Matav	MTAV.BU
OTE	OTER.AT
Song Networks	SONW.ST
Telefonica	TEF.MC
Telefonica Moviles	TEM.MC
Telekom Austria	TELA.VI

Source: Goldman Sachs Research.

**Analyst coverage**

Companies that the analysts mentioned in this document follow

<b>Covering Analyst: Jonathan Rodgers</b>	
<b>Company name</b>	<b>Ticker</b>
France Telecom	FTE.PA
Olivetti	OLIV.MI
Royal KPN NV	KPN.AS
Tele2 (B)	TEL2B.ST
Telecom Italia	TIT.MI
Telecom Italia (Savings)	TITN.MI
Telecom Italia Mobile	TIM.MI
TPSA	TPSA.WA

<b>Covering Analyst: Jonathan Dorfman</b>	
<b>Company name</b>	<b>Ticker</b>
BCE, Inc.	BCE
BCE, Inc. (Toronto)	BCE.CA
Rogers AT&T Wireless	RCN
Rogers AT&T Wireless (Toronto)	RCM_B.C A
TELUS Corp. (ADR)	TU
TELUS Corp. (Toronto)	T.CA

<b>Covering Analyst: Frank J. Governali</b>	
<b>Company name</b>	<b>Ticker</b>
Alaska Communications Sys. Gr.	ALSK
ALLTEL Corp.	AT
AT&T Corp.	T
AT&T Wireless Group	AWE
BellSouth Corp.	BLS
CenturyTel Inc.	CTL
Commonwealth Tel Enterprises	CTCO
Level 3 Communications, Inc.	LVLT
Nextel Communications	NXTL
Qwest Communications Intl.	Q
SBC Communications, Inc.	SBC
Sprint FON Group	FON
Sprint PCS Group	PCS
Verizon Communications	VZ

<b>Covering Analyst: Daniel Henriques, CFA</b>	
<b>Company name</b>	<b>Ticker</b>
America Movil, S.A. de C.V. (ADS)	AMX
AT&T Latin America Corp.	ATTL
Brasil Telecom Part. (ADS)	BRP
CanTV (ADS)	VNT
Corp. Interam Entre, S.A. de C.V.	CIEB.MX
Embratel Participacoes	EMT
Grupo Televisa, S.A. (ADR)	TV
Net Servicos de Comunicacao S.A.	NETC
T.V. Azteca, S.A. de C.V. ADR	TZA
Tele Celular Sul Participacoes	TSU
Tele Centro Oeste Participacoes	TRO
Tele Leste Celular Participacoes	TBE
Tele Nordeste Participacoes	TND
Tele Norte Celular Participacoes	TCN
Tele Norte Leste Participacoes	TNE
Telecom Argentina (ADS)	TEO
Telefonos de Mexico (ADS)	TMX
Telemig Celular Participacoes	TMB
Telesp Celular Participacoes	TCP

Source: Goldman Sachs Research.

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## Previous rating system

### Investment ratings: definitions

**RL = Recommended List.** Expected to provide price gains of at least 10 percentage points greater than the market over the next 6-18 months.

**LL = Latin America Recommended List.** Expected to provide price gains at least 10 percentage points greater than the Latin America MSCI Index over the next 6-18 months.

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**MP = Market Performer.** Expected to provide price gains similar to the market over the next 6-18 months.

**MU = Market Underperformer.** Expected to provide price gains of at least 5 percentage points less than the market over the next 6-18 months.

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