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## Internet, Technology, Media & Telecom

### Global TMT Market Sizing: Emerging Markets Have Finally Emerged

**Five related trends emerge from the latest update of our Global TMT Database:**

**1) Emerging TMT markets have finally emerged.** US and China remain clear TMT (technology / media / telecom) market leaders, but China should pass the US in 2006. Markets poised for more substantive five-year growth are large, less-penetrated markets including China, India, and Russia.

**2) Global residential broadband growth is compelling.** In several countries – including Korea, Japan and the US – broadband Internet penetration is into the adoption “sweet spot,” at a penetration level of 25%+.

**3) Global Internet is increasingly mobile-centric.** Mobile devices are becoming small, functional computers that offer increasing levels of connectivity. Mobile services with basic Internet connectivity should enter their own “sweet spot” of adoption within two years.

**4) The pace of global innovation is accelerating.** Innovation is coming from outside the US in areas related to broadband and mobile Internet. And global investors appear willing to support it.

**5) Internet leaders, for the most part, are well positioned.** And, increasingly, they are vying to become next-generation communications hubs.

*This report includes a summary slide presentation starting on page 9 and a data-rich TMT-focused Appendix on page 52.*

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## Overview — Emerging TMT Markets Have Finally Emerged

**The Global TMT (Technology / Media / Telecom) Database is our effort to gauge how the Internet might evolve on a global basis.**

Five years ago, we made a simple statement: “We believe someday there will be as many Internet users as landline phone users.” We asked a simple question: “How many landline phone users are there?”

To determine how pervasive the Internet might become, we looked at the core user components of TMT around the world. After much global collaboration, we found estimates for the number of global telephone lines. We then pushed and estimated the installed base of PCs, the number of mobile phones in use, the number of cable subscriptions, the number of issued credit / debit cards, and, yes, the number of Internet users. We did this for the top 40-50 countries based on population and GDP per capita (or ~80% of the world's population and ~95% of GDP).

Our view was that country-by-country user and penetration stats for core TMT products / services — combined with product knowledge — would help give us a sense of how each market might develop. And each year, a different message emerged:

**2001** — outlook for global Internet user / usage growth is strong — despite negative sentiment

**2002** — outlook for many non-US TMT markets (especially China) is robust

**2003** — broadband deployment is approaching critical mass and has begun to help drive Internet user / usage growth

**Data from 2004 and our forecasts to 2010 tell the story of the emerged markets.**

The US ranked the highest in 2004 in our TMT database for the fourth year running. But in terms of global market share, China has the largest market share in telephone lines (24%), mobile phones (21%) and cable TV (28%). Meanwhile, the US has the largest numbers of PC (29%) and Internet users (22%).

If current trends continue, China would become the leading global TMT market in 2006. Other rapidly

growing markets have also moved up sharply. By 2010, assuming 2004 growth rates for all countries continue, China, India, Russia, and Brazil should move up the list, as the US, Japan, Germany, the UK, France, South Korea, Italy and Canada move down.

**Growth in emerging markets accounts for a significant portion of the global growth in TMT services and products.**

In 2004, global Internet users grew 18%; mobile phones in use rose 13%; installed PCs rose 10%; cable subscriptions grew 9%; credit / debit cards in use rose 9%; and telephone lines increased by 4% — against a backdrop of 1% population growth and a 5% rise in nominal GDP per capita. See Exhibit 1.

Exhibit 1

### Global Size and Growth of TMT Categories, 2004

Category	Annual Growth Rate	Market Size
Internet Users	18.4%	901MM
Mobile Phones in Use	13.4	1,589MM
Installed PCs	10.4	696MM
Credit/Debit Cards in Use	9.4	3,567MM
Cable TV Subscriptions	8.9	459MM
GDP per Capita	8.3	\$28,582
Telephone Lines	4.3	1,198MM
Population	1.3	6,288MM

Source: Morgan Stanley Research; GDP figures from IMF, shown in current USD; Data include totals for 50 countries in our TMT database, as well as other (roughly 150) countries.

**We have entered two of the most important computing cycles of the last 50 years, defined by pervasive broadband and mobile Internet technologies.**

The first 10 years (1995-2005) of the commercial Internet look to us like a warm-up act for what is about to happen. At the margin, it appears that consumers around the world, not enterprises, are now driving demand. Their desire to communicate and connect, combined with the acceptance and convergence of usage of broadband and mobile Internet, is at the core of innovation. For businesses, the opportunities — and potential dislocations — are significant.

Exhibit 2 summarizes our relative weightings of TMT markets for the top 15 countries for 2004 and 2010. We note the sizable and fast-growing TMT gains that

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China, India and Russia are expected to make in the next five years.

Exhibits 3 and 4 highlight the relative weightings of TMT markets for the top 15 countries and detail the key components of our rating systems for 2004 and 2010, respectively. The following TMT metrics are used to determine a country's propensity for TMT products and services: population; GDP per capita; telephone lines; installed PCs; mobile phones in use; cable TV subscriptions; Internet users; and credit / debit cards in use.

In 2010, we highlight China at the #1 spot, up from #2 in 2004. The US is expected to go down one spot to #2 from #1, while India is expected to achieve the largest stride to #3 from #6. Emerging markets such as Russia and Brazil are expected to take the #7 and #9 spots moving up from #13 and #11, respectively.

Exhibit 2

**Relative Weightings of Top 15 TMT Markets, by Country, 2004 & 2010E**

2004		2010E	
Country	Relative Weighting	Country	Relative Weighting
1 USA	9.0	1 China	8.7
2 China	8.1	2 USA	7.7
3 Japan	6.5	3 India	7.0
4 Germany	5.7	4 Japan	5.9
5 United Kingdom	5.5	5 Germany	5.3
6 India	5.3	6 United Kingdom	5.2
7 France	5.2	7 Russia	5.2
8 Italy	5.2	8 France	5.1
9 South Korea	5.1	9 Brazil	5.1
10 Canada	5.1	10 South Korea	5.0
11 Brazil	5.0	11 Canada	5.0
12 Spain	5.0	12 Italy	5.0
13 Russia	5.0	13 Spain	5.0
14 Netherlands	5.0	14 Norway	5.0
15 Norway	5.0	15 Australia	4.9

Exhibit 3

**Relative Weighting Details of Top 15 TMT Markets, 2004**

Country	2004 Relative Weighting	Population (MM)	GDP per Capita	Telephone Lines (MM)	Installed PCs (MM)	Mobile Phones in Use (MM)	Cable TV Subscriptions (MM)	Internet Users (MM)	Credit/Debit Cards in Use (MM)
1 USA	9.0	294	\$39,935	184	204	171	99	202	878
2 China	8.1	1,300	1,272	283	42	335	128	94	685
3 Japan	6.5	128	36,596	78	54	85	21	73	645
4 Germany	5.7	83	33,390	57	39	68	26	46	96
5 United Kingdom	5.5	60	35,548	33	26	54	15	35	142
6 India	5.3	1,087	622	47	13	40	49	39	38
7 France	5.2	62	32,911	34	23	42	8	25	30
8 Italy	5.2	58	29,014	27	15	54	3	29	55
9 South Korea	5.1	48	14,151	25	27	37	13	32	66
10 Canada	5.1	32	31,134	20	16	15	10	22	62
11 Brazil	5.0	176	3,325	42	19	49	2	18	175
12 Spain	5.0	41	25,320	18	10	37	3	13	95
13 Russia	5.0	142	4,087	38	19	58	10	22	24
14 Netherlands	5.0	16	37,326	10	8	14	6	11	30
15 Norway	5.0	5	54,600	3	3	4	1	3	7

Exhibit 4

**Relative Weightings Details of Top 15 TMT Markets, 2010E**

Country	2010E Relative Weighting	Population (MM)	GDP per Capita	Telephone Lines (MM)	Installed PCs (MM)	Mobile Phones in Use (MM)	Cable TV Subscriptions (MM)	Internet Users (MM)	Credit/Debit Cards in Use (MM)
1 China	8.7	1,348	\$2,271	611	108	807	317	336	953
2 USA	7.7	312	51,945	184	244	267	122	306	878
3 India	7.0	1,201	947	69	59	572	97	585	898
4 Japan	5.9	128	36,432	89	67	123	38	108	645
5 Germany	5.3	84	33,405	67	41	80	32	78	96
6 United Kingdom	5.2	62	38,923	33	32	59	24	59	142
7 Russia	5.2	142	10,215	47	53	129	13	111	129
8 France	5.1	63	36,688	35	30	46	10	53	45
9 Brazil	5.1	188	6,646	51	55	116	3	44	175
10 South Korea	5.0	51	24,615	29	31	42	25	41	93
11 Canada	5.0	34	44,254	20	18	24	10	28	62
12 Italy	5.0	58	29,791	27	24	56	7	56	55
13 Spain	5.0	43	35,941	21	17	42	3	34	110
14 Norway	5.0	5	64,166	3	3	4	1	4	7
15 Australia	4.9	22	42,115	13	13	20	3	18	47

From our database on market sizing of global TMT (Technology, Media & Telecommunications) products and services. We measure market sizes and growth rates for core TMT metrics: nominal GDP per capita (current USD); telephone lines; cable subscribers; installed PCs; mobile phones in use; Internet users and credit/debit cards in use. For each economy, we calculate past / present / potential global market weightings across seven TMT metrics - we call this our relative weighting and we use it to measure / rank a country's propensity for TMT products and services. We do this for the 50 most important economies based on purchasing power/economic strength, as measured in terms of population size, land mass and GDP per capita. To determine relative weighting we standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.3 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, 10.7 in Internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0. 2010E relative weightings derived by assuming 2003-2004 growth CAGR for each metric category to 2010. Source: Morgan Stanley Research. Red indicates countries moving out of the top 10 TMT countries; green indicates countries moving into the top 10. GDP figures from IMF, shown in constant USD

Exhibit 5

## US vs. China / India / Russia / Brazil – Comparison of Global TMT Market Share and Rank

(In Millions)

Country	Telephone			Mobile			Cable TV			Internet			Installed		
	Lines	Share	Rank	Phones	Share	Rank	Subs	Share	Rank	Users	Share	Rank	PCs	Share	Rank
China	283	24%	1	335	21%	1	128	28%	1	94	10%	2	42	6%	3
USA	184	15	2	171	11	2	99	22	2	202	22	1	204	29	1
India	47	4	5	40	3	10	49	11	3	39	4	5	13	2	12
Russia	38	3	7	58	4	5	10	2	9	22	2	10	19	3	8
Brazil	42	3	6	49	3	8	2	1	22	18	2	12	19	3	9

Source: Morgan Stanley Research.

### A note on our initial / first pass 2010 estimates...

In order to look at our 2010 scenario for TMT market propensity, we compute rough 2010 estimates for each country's TMT categories by applying the 2003-2004 Y/Y growth rates as a CAGR out to 2010 and we endeavor to ensure that penetration levels do not reach unrealistic levels. For GDP per capita, we use the IMF estimates out to 2006 (the latest forecast year available) and then apply the 2005-2006 Y/Y growth rate as a CAGR out to 2010. Obviously, forecasting market growth in evolving economies and TMT markets is fraught with risk—and our 2010 estimates are subject to general economic and market conditions. That said, we believe our forecasting framework provides a good scenario analysis for investor expectations and should be directionally useful.

Exhibit 6

Overview of Global TMT Markets – Sorted Regionally by Population

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Overview of Global TMT Markets - Absolute Values Sorted Regionally by Population

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	2004 Installed PCs	2004 Mobile Phones In Use	2004 Cable Subscriptions	2004 Internet Users	2004 Credit/Debit Cards
	(000's)	(US\$)	(000's)	(000's)	(000's)	(000's)	(000's)	(000's)
<b>N. America</b>								
USA	293,819	39,935	183,688	203,677	170,723	99,091	201,833	878,000
Canada	31,908	31,134	19,943	15,738	14,712	10,086	21,850	61,700
<b>Total</b>	<b>325,728</b>		<b>203,631</b>	<b>219,414</b>	<b>185,435</b>	<b>109,177</b>	<b>223,683</b>	<b>939,700</b>
<b>Weighted Average</b>		<b>39,248</b>						
<b>Europe</b>								
<b>Russia</b>	<b>142,362</b>	<b>4,087</b>	<b>38,035</b>	<b>18,935</b>	<b>57,620</b>	<b>9,927</b>	<b>22,300</b>	<b>24,400</b>
Germany	82,786	33,390	56,936	39,252	68,121	25,801	46,312	95,600
France	61,786	32,911	34,223	23,138	41,506	7,861	24,848	30,200
United Kingdom	59,941	35,548	33,374	25,964	53,662	15,148	35,179	141,700
Italy	57,521	29,014	26,720	15,218	53,964	3,272	28,610	55,400
Spain	41,127	25,320	18,234	9,584	36,625	2,905	13,440	94,500
Poland	38,829	6,344	12,006	5,493	20,100	5,660	10,600	18,224
Netherlands	16,320	37,326	10,006	8,375	14,060	6,334	10,806	29,900
Belgium	10,279	33,866	5,067	2,571	9,168	4,005	5,100	14,700
Czech Republic	10,214	10,485	3,303	2,085	9,950	1,131	3,530	8,100
Portugal	10,213	15,982	4,368	1,605	9,104	1,778	4,165	22,600
Hungary	9,809	10,233	3,514	1,293	7,907	1,998	3,050	6,901
Sweden	9,013	38,493	6,728	5,956	8,482	3,088	7,364	7,383
Austria	8,091	36,244	3,861	3,260	6,855	1,229	4,630	8,897
Switzerland	7,261	49,300	5,647	5,593	6,171	2,808	4,668	8,227
Denmark	5,394	44,808	3,825	3,310	4,991	1,730	3,720	2,994
Finland	5,219	35,666	2,566	2,415	4,878	1,173	3,260	2,746
Norway	4,594	54,600	3,401	2,574	4,352	960	3,140	6,799
Ireland	4,044	45,675	2,123	1,932	3,147	856	1,319	3,066
<b>Total</b>	<b>584,802</b>		<b>273,936</b>	<b>178,554</b>	<b>420,663</b>	<b>97,665</b>	<b>236,041</b>	<b>582,338</b>
<b>Weighted Average</b>		<b>31,797</b>						
<b>Japan</b>	<b>127,641</b>	<b>36,596</b>	<b>77,790</b>	<b>53,569</b>	<b>85,147</b>	<b>21,165</b>	<b>72,677</b>	<b>644,700</b>
<b>Asia</b>								
<b>China</b>	<b>1,300,024</b>	<b>1,272</b>	<b>282,524</b>	<b>41,600</b>	<b>334,820</b>	<b>128,000</b>	<b>94,000</b>	<b>684,700</b>
<b>India</b>	<b>1,086,529</b>	<b>622</b>	<b>47,188</b>	<b>12,627</b>	<b>40,323</b>	<b>49,234</b>	<b>39,200</b>	<b>38,100</b>
<b>Non-Japan</b>								
Indonesia	221,279	1,191	8,812	3,350	32,130	188	11,906	8,900
Pakistan	150,109	684	4,121	893	3,305	18	2,387	0
Philippines	83,986	1,010	3,414	2,949	25,062	1,095	4,829	0
Thailand	64,847	2,521	7,416	3,270	32,919	457	8,420	11,400
South Korea	48,338	14,151	24,681	27,041	37,164	12,793	31,600	65,900
Malaysia	25,467	4,646	4,590	5,378	13,110	1,566	9,513	19,900
Taiwan	23,016	13,451	13,603	10,232	21,782	5,094	10,205	120,000
Australia	20,286	30,682	11,463	12,088	14,292	1,650	13,611	46,400
Hong Kong, China	6,953	23,608	3,695	3,249	6,612	622	4,878	16,200
Singapore	4,318	24,740	1,885	2,854	3,477	412	2,413	10,000
New Zealand	4,057	23,846	1,662	1,781	2,726	625	2,340	4,400
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>	<b>127,312</b>	<b>567,721</b>	<b>201,753</b>	<b>235,301</b>	<b>1,025,900</b>
<b>Weighted Average</b>		<b>9,060</b>						
<b>Lat. America</b>								
Brazil	175,507	3,325	41,568	18,910	49,171	2,395	17,945	175,000
Mexico	103,975	6,494	17,280	12,126	36,862	3,515	12,250	49,700
Colombia	45,346	2,149	8,394	2,583	6,761	1,748	3,178	13,500
Argentina	38,837	3,915	8,011	3,638	8,514	4,810	4,818	22,100
Peru	28,889	2,492	1,707	1,516	3,700	922	2,924	3,540
Venezuela	25,910	4,175	3,116	1,822	8,022	1,612	1,551	11,700
Chile	15,992	5,903	3,554	2,247	8,003	969	4,000	6,500
<b>Total</b>	<b>434,455</b>		<b>83,630</b>	<b>42,843</b>	<b>121,033</b>	<b>15,971</b>	<b>46,665</b>	<b>282,040</b>
<b>Weighted Average</b>		<b>4,655</b>						
<b>Rest of World (ROW)</b>								
Nigeria	142,655	500	872	994	4,495	969	1,044	4,035
Turkey	70,589	4,286	19,068	3,935	29,832	989	6,000	55,000
Egypt	69,330	1,111	9,868	1,632	12,530	1,465	3,000	965
Iran	68,317	2,364	14,806	6,174	4,393	792	4,800	404
South Africa	47,312	4,587	5,155	4,132	17,567	4,134	4,373	15,900
Algeria	32,313	2,655	2,091	316	960	332	978	385
Saudi Arabia	24,952	11,065	3,544	5,220	9,178	691	2,923	11,612
Israel	6,575	17,780	2,952	1,749	6,104	1,550	3,040	3,500
Other	1,314,583	1,325	85,847	50,367	123,747	2,583	60,455	177
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>	<b>74,519</b>	<b>208,807</b>	<b>13,505</b>	<b>86,613</b>	<b>91,978</b>
<b>Weighted Average</b>		<b>3,366</b>						
<b>TOTAL</b>	<b>6,288,463</b>	<b>28,582</b>	<b>1,198,245</b>	<b>696,212</b>	<b>1,588,805</b>	<b>459,236</b>	<b>900,981</b>	<b>3,566,655</b>
<b>Growth Rate</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>	<b>10%</b>	<b>13%</b>	<b>9%</b>	<b>18%</b>	<b>9%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Overview of Global TMT Market Growth Rates – Sorted Regionally by Population

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Overview of Global TMT Market - Y/Y Growth Rates Sorted Regionally by Population

Country	2004 Population	2004 Population Y/Y	2004 GDP Per Capita Y/Y	2004 Telephone Lines Y/Y	2004 Installed PCs Y/Y	2004 Mobile Phones In Use Y/Y	2004 Cable Subscriptions Y/Y	2004 Internet Users Y/Y	2004 Credit/Debit Cards Y/Y
	(000's)								
<b>N. America</b>									
USA	293,819	1%	6%	-1%	3%	8%	4%	9%	7%
Canada	31,908	1	13	-1	1	9	0	24	3
<b>Average</b>	<b>325,728</b>	<b>1%</b>	<b>9%</b>	<b>-1%</b>	<b>2%</b>	<b>8%</b>	<b>2%</b>	<b>16%</b>	<b>5%</b>
<b>Europe</b>									
<b>Russia</b>	<b>142,362</b>	<b>-1%</b>	<b>36%</b>	<b>4%</b>	<b>19%</b>	<b>34%</b>	<b>4%</b>	<b>49%</b>	<b>32%</b>
Germany	82,786	0	13	3	1	3	4	19	1
France	61,786	0	13	0	5	2	5	13	7
United Kingdom	59,941	0	17	-2	4	2	8	11	11
Italy	57,521	0	13	-1	8	1	15	25	13
Spain	41,127	1	17	2	9	3	2	37	13
Poland	38,829	0	15	2	13	15	1	18	10
Netherlands	16,320	1	12	0	5	2	0	16	4
Belgium	10,279	0	15	-1	8	3	1	17	2
Czech Republic	10,214	0	18	-5	8	4	6	14	14
Portugal	10,213	0	13	0	15	2	6	8	12
Hungary	9,809	0	23	-2	9	4	4	33	10
Sweden	9,013	0	14	1	3	4	7	10	10
Austria	8,091	0	15	-1	5	1	5	24	10
Switzerland	7,261	0	11	2	3	2	1	39	10
Denmark	5,394	0	14	2	3	6	2	6	10
Finland	5,219	0	14	-3	2	3	7	23	10
Norway	4,594	1	13	1	3	5	2	4	10
Ireland	4,044	2	16	4	7	2	1	5	10
<b>Average Sum</b>	<b>584,802</b>	<b>0%</b>	<b>16%</b>	<b>0%</b>	<b>7%</b>	<b>5%</b>	<b>4%</b>	<b>20%</b>	<b>10%</b>
<b>Japan</b>	<b>Japan</b>	<b>127,641</b>	<b>0%</b>	<b>9%</b>	<b>2%</b>	<b>4%</b>	<b>6%</b>	<b>10%</b>	<b>14%</b>
<b>Asia</b>									
<b>China</b>	<b>1,300,024</b>	<b>1%</b>	<b>16%</b>	<b>14%</b>	<b>17%</b>	<b>25%</b>	<b>16%</b>	<b>18%</b>	<b>10%</b>
<b>India</b>	<b>1,086,529</b>	<b>2</b>	<b>14</b>	<b>7</b>	<b>29</b>	<b>75</b>	<b>12</b>	<b>57</b>	<b>69</b>
Indonesia	221,279	1	7	6	15	55	36	49	--
Pakistan	150,109	2	13	6	14	62	3	59	--
Philippines	83,986	2	6	1	15	22	6	24	--
Thailand	64,847	1	13	7	17	21	5	35	16
South Korea	48,338	1	11	3	2	1	12	5	5
Malaysia	25,467	2	12	-1	22	16	31	7	10
Taiwan	23,016	1	6	2	5	3	2	14	31
Australia	20,286	1	19	3	1	6	10	29	7
Hong Kong, China	6,953	1	4	-2	6	1	7	25	2
Singapore	4,318	2	14	-1	4	1	8	12	5
New Zealand	4,057	1	22	-3	4	4	4	11	10
<b>Average Sum</b>	<b>3,039,209</b>	<b>1%</b>	<b>12%</b>	<b>3%</b>	<b>12%</b>	<b>23%</b>	<b>12%</b>	<b>26%</b>	<b>17%</b>
<b>Lat. America</b>									
Brazil	175,507	1%	18%	3%	19%	15%	2%	16%	20%
Mexico	103,975	1	5	7	20	15	11	33	10
Colombia	45,346	2	20	4	11	22	14	16	11
Argentina	38,837	1	18	0	10	12	1	18	4
Peru	28,889	2	11	1	14	24	12	3	10
Venezuela	25,910	2	26	5	11	9	8	17	9
Chile	15,992	1	27	1	11	8	4	12	7
<b>Average Sum</b>	<b>434,455</b>	<b>1%</b>	<b>18%</b>	<b>3%</b>	<b>14%</b>	<b>15%</b>	<b>8%</b>	<b>16%</b>	<b>10%</b>
<b>Rest of World (ROW)</b>									
Nigeria	142,655	3%	21%	11%	14%	71%	53%	26%	10%
Turkey	70,589	2	24	0	12	10	9	9	25
Egypt	69,330	2	-7	12	16	59	36	31	10
Iran	68,317	2	19	10	12	33	49	12	10
South Africa	47,312	2	28	3	12	11	4	8	3
Algeria	32,313	1	24	5	19	59	27	55	10
Saudi Arabia	24,952	3	13	3	32	26	19	45	12
Israel	6,575	2	4	-1	4	4	4	19	3
Other	1,314,583	2	14	4	103	5	8	34	10
<b>Average Sum</b>	<b>1,776,628</b>	<b>2%</b>	<b>15%</b>	<b>5%</b>	<b>25%</b>	<b>31%</b>	<b>23%</b>	<b>27%</b>	<b>10%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

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**Summary Presentation Slides – Global TMT Market Sizing:  
Emerging Markets Have Finally Emerged**

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## Global TMT Market Sizing - Emerging TMT Markets Have Finally Emerged

March 2006

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All of Morgan Stanley's technology equity research reports are available on the Internet through Client Link at <https://secure.ms.com>. If you wish to receive this service please contact your institutional sales representative. Also this presentation and its associated report (along with other technology overview reports and presentations) can also be downloaded from <http://www.morganstanley.com/techresearch/>

## Emerging TMT Markets Have Finally Emerged

- **Large, less penetrated markets — like China, India, and Russia — have entered, or have begun to enter, sweet spots of technology adoption and penetration cycles** - US and China remain clear TMT (technology / media / telecom) market leaders, but China should pass US in 2006. Markets poised for most substantive five-year growth appear to be India, Russia, South Korea, and Taiwan, while Japan, Germany, UK, France, Italy and Canada lose ground.
- **In this update to our TMT sizing database, we remain upbeat about Internet trends** - We reiterate that average annual growth (over the next 2-5 years) should be 10-15% for Internet users while usage increases 20-30% and monetization rises 30%+.
- **Internet and Mobile remain TMT growth leaders** - Global Internet users (in 2004) grew 18%, mobile phones in use rose 13%, installed PCs rose 11%, cable subscriptions grew 9%, credit / debit cards in use rose 9%, and telephone lines increased by 4%. Global population grew 1% and nominal GDP per capita 5%.

## Key Global TMT Trends

- 1) Emerging TMT Markets Have Finally Emerged
- 2) Potential Upside for Internet Users, Usage and Uses...
- 3) China TMT Trends Remain Especially Impressive
- 4) Global Residential Broadband Remains Compelling
- 5) Global Internet is Increasingly Mobile-Centric
- 6) Pace of Global Innovation is Accelerating
- 7) Internet Leaders, For Most Part, Are Well Positioned

## 1 Emerging TMT Markets Have Finally Emerged

- Large, less penetrated markets — like China, India, and Russia — still have low penetration levels, but in terms of absolute users, they are beginning to show their potential
- China should surpass the US in 2006 as the TMT market leader, based on our analysis of TMT market sizing

## Morgan Stanley TMT Market Sizing Methodology...

We measure 2004 market sizes / growth rates for 8 core TMT-related metrics:

- 1) Population
- 2) Nominal GDP per Capita
- 3) Telephone Lines
- 4) Cable Subscriptions
- 5) Installed PCs
- 6) Mobile Phones in Use
- 7) Internet Users
- 8) Credit/Debit Cards

We do this for the 50 most important economies, as measured in terms of population size, land mass, and GDP per capita.

## ...Morgan Stanley TMT Market Sizing Methodology

We measure market sizes and growth rates for core TMT metrics: nominal GDP per capita (USD, current); telephone lines; cable subscribers; installed PCs; mobile phones in use; Internet users and credit/debit cards in use. We do this for the 50 most important economies based on purchasing power / economic strength, as measured in terms of population size, land mass and GDP per capita. We standardized each country's position in the global market in each category and adjusted values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of Z-scores across categories.

For each country, we calculate past / present / potential global market weightings across seven TMT metrics - we call this our relative weighting - we use it to measure / rank a country's propensity for TMT products and services.

**Sample Calculation: Computing the relative weighting for US Telephone Lines and then the overall US relative weighting:**

$$\frac{X - \mu}{\sigma} = Z\text{-score} + 5 = \text{relative weighting}$$

$$\frac{183,688 - 23,495}{47,742} = 3.4 + 5 = 8.4$$

Following from this, the overall US relative weighting calculation (across the seven TMT categories) for the US is 9.16, derived by the equation:  $[6.4 + 8.4 + 11.3 + 7.6 + 8.9 + 10.7 + 9.6] / 7 = 9.0$

Country	$\frac{X - \mu}{\sigma} = Z\text{-score} + 5 = \text{relative weighting}$	Per	2004 Telephone Lines
USA	$\frac{183,688 - 23,495}{47,742} = 3.4 + 5 = 8.4$	(\$)	(000's)
	293,819	39,935	183,688

## China / India / Russia Likely to Make Impressive TMT Gains In Next 5 Years

2004			2010E		
Rank	Country	Relative Weighting	Rank	Country	Relative Weighting
1	USA	9.0	1	China	8.7
2	China	8.2	2	USA	7.7
3	Japan	6.5	3	India	7.0
4	Germany	5.7	4	Japan	5.9
5	United Kingdom	5.5	5	Germany	5.3
6	India	5.3	6	United Kingdom	5.2
7	France	5.2	7	Russia	5.2
8	Italy	5.2	8	France	5.1
9	South Korea	5.1	9	Brazil	5.1
10	Canada	5.1	10	South Korea	5.0

From our database on market sizing of global TMT (Technology, Media & Telecommunications) products and services. We measure market sizes and growth rates for core TMT metrics: nominal GDP per capita (current USD); telephone lines; cable subscribers; installed PCs; mobile phones in use; Internet users and credit/debit cards in use. For each economy, we calculate past / present / potential global market weightings across seven TMT metrics - we call this our relative weighting and we use it to measure / rank a country's propensity for TMT products and services. We do this for the 50 most important economies based on purchasing power/economic strength, as measured in terms of population size, land mass and GDP per capita. To determine relative weighting we standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.3 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, 10.7 in Internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0. 2010E relative weightings derived by assuming 2003-2004 growth CAGR for each metric category to 2010.

Source: Morgan Stanley Research. Red indicates countries moving out of the top 10 TMT countries; green indicates countries moving into the top 10. GDP figures from IMF, shown in constant USD

## 2004 - Top TMT Countries

Country	2004 Relative Weighting	Population (MM)	GDP per Capita	Telephone Lines (MM)	Installed PCs (MM)	Mobile Phones in Use (MM)	Cable TV Subscriptions (MM)	Internet Users (MM)	Credit/Debit Cards in Use (MM)
1 USA	9.0	294	\$39,935	184	204	171	99	202	878
2 China	8.1	1,300	1,272	283	42	335	128	94	685
3 Japan	6.5	128	36,596	78	54	85	21	73	645
4 Germany	5.7	83	33,390	57	39	68	26	46	96
5 United Kingdom	5.5	60	35,548	33	26	54	15	35	142
6 India	5.3	1,087	622	47	13	40	49	39	38
7 France	5.2	62	32,911	34	23	42	8	25	30
8 Italy	5.2	58	29,014	27	15	54	3	29	55
9 South Korea	5.1	48	14,151	25	27	37	13	32	66
10 Canada	5.1	32	31,134	20	16	15	10	22	62
11 Brazil	5.0	176	3,325	42	19	49	2	18	175
12 Spain	5.0	41	25,320	18	10	37	3	13	95
13 Russia	5.0	142	4,087	38	19	58	10	22	24
14 Netherlands	5.0	16	37,326	10	8	14	6	11	30
15 Norway	5.0	5	54,600	3	3	4	1	3	7

## 2010E – Top TMT Countries

Country	2010E Relative Weighting	Population (MM)	GDP per Capita	Telephone Lines (MM)	Installed PCs (MM)	Mobile Phones in Use (MM)	Cable TV Subscriptions (MM)	Internet Users (MM)	Credit/Debit Cards in Use (MM)
1 China	8.7	1,348	\$2,271	611	108	807	317	336	953
2 USA	7.7	312	51,945	184	244	267	122	306	878
3 India	7.0	1,201	947	69	59	572	97	585	898
4 Japan	5.9	128	36,432	89	67	123	38	108	645
5 Germany	5.3	84	33,405	67	41	80	32	78	96
6 United Kingdom	5.2	62	38,923	33	32	59	24	59	142
7 Russia	5.2	142	10,215	47	53	129	13	111	129
8 France	5.1	63	36,688	35	30	46	10	53	45
9 Brazil	5.1	188	6,646	51	55	116	3	44	175
10 South Korea	5.0	51	24,615	29	31	42	25	41	93
11 Canada	5.0	34	44,254	20	18	24	10	28	62
12 Italy	5.0	58	29,791	27	24	56	7	56	55
13 Spain	5.0	43	35,941	21	17	42	3	34	110
14 Norway	5.0	5	64,166	3	3	4	1	4	7
15 Australia	4.9	22	42,115	13	13	20	3	18	47

## 2 Potential Upside for Internet Users, Usage and Uses...

10-15% user growth

20-30% usage growth

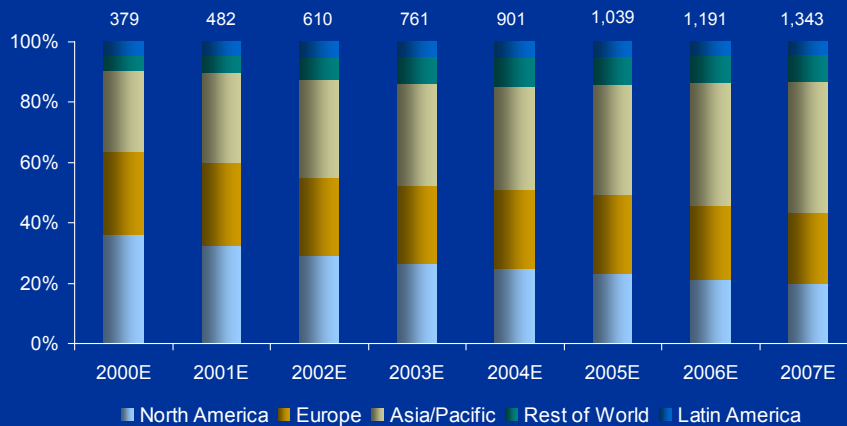
30%+ monetization growth

## ...Compelling Upside for Internet Users, Usage and Uses

- We expect the strongest Internet user growth to come from Asia/Pacific, and the slowest growth to come from North America and Latin America.
- For 2004-07, we forecast the strongest regional Internet user growth (3-year CAGR) to be in Asia/Pacific category (24%), followed by Rest of World (11%) and Europe (10%). We expect the slowest growth to come from North America (6%) and Latin America (6%).

## N. America - 36% of Internet Users in 2000E; 20% in 2007E

Geographic Distribution of Internet Users (MM)



Source: Morgan Stanley Research.

3

## China TMT Trends Remain Especially Impressive

- China leads the world in number of mobile phone users, cable households, and telephone lines

TMT Category	Global Ranking	Units (MM)	2004 Growth
Mobile Phones	1	335	25%
Cable TV Subscriptions	1	128	16
Telephone Lines	1	283	14
Internet Users	2	94	18
Installed PCs	4	42	17

Source: Morgan Stanley Research.

## Major Drivers for Chinese Internet Trending Up

- China leads the world in number of mobile subscribers
- China ranks No. 2 in Internet users with more Internet users under the age of 30 than any other country
- Growth drivers for Chinese Internet have been / are robust

	By the end of 2004	CAGR for next 3 years
<i>Volume</i>		
Internet users	94MM (18% yoy; < 7% of population)	13%
Broadband users	43MM (146% yoy; <3% of population)	32%
Mobile users	335MM (24% yoy; 26% of population)	12%
<i>ARPU</i>		
Internet users	\$5-\$6 per month	
Broadband users	\$10-\$15 subscription fee per month	
<i>Industry revenue</i>		
MVAS	\$770MM (89% yoy)	28%
Online Gaming	\$390MM (90% yoy)	37%
Online Advertising	\$220MM (78% yoy)	24%

Source: CNNIC, Morgan Stanley Research; Notes: MVAS- mobile value-added services; ARPU- average revenue per user

4

## Global Residential Broadband Remains Compelling

- In several countries (including Korea, Japan and the US), broadband Internet penetration is well into an adoption “sweet spot,” with penetration levels of 25%+ of households in 2004.
- While global penetration is roughly 17%, penetration by region is N. America (32%); Europe (25%); Japan (38%); Asia-Pacific (11%, with an estimated 70% in Korea, offset by only 7% in China); and Latin America (4%) <sup>(1)</sup>
- We see 20+% Y/Y global growth in the next few years. The global broadband subscriber count (as of CQ4:05) appears to be at least 209MM (up +42% Y/Y and +8% Q/Q), and continues to grow at a rapid clip.

<sup>(1)</sup> Morgan Stanley Research; year-end 2004

## Global Broadband Trends

## Broadband Data by Region, CQ4:05

Rank	Region	Subscribers <sup>(1)</sup>	Y/Y Growth	Users <sup>(1)</sup>	Penetration <sup>(2)</sup>
1	Asia Pacific (ex. Japan)	70MM	58%	140MM	11%
2	Europe	60	43	120	25
3	North America	50	29	100	32
4	Japan	22	23	44	38
5	Latin America	7	52	14	4
<b>TOTAL GLOBAL</b>		<b>209MM</b>	<b>42%</b>	<b>418MM</b>	<b>17%</b>

Source: Morgan Stanley Research, Nick Sebrell, Paul Marsch, Richard Bilotti, Simon Flannery, Mitchell Kim.

<sup>(1)</sup> Cable modem, DSL or FTTH deployments; In terms of broadband-users, we roughly estimate 2.0+ users per Internet subscription<sup>(2)</sup> Broadband subscriptions per household; data based on 2004 households from Morgan Stanley's TMT database. Using subscriber-to-user multiplier, user penetration would be higher.

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## Global Internet is Increasingly Mobile-Centric

- Networked personal computer (thanks to broadband adoption) still has lots of evolutionary running room
- In 5th major computing cycle - Mobile Internet
- If past is prologue, Mobile Internet will likely be bigger (based on aggregate wealth creation) and have more reach (based on global users) than cycles that have come before it
- ~2B global mobile phones in use > ~1B Internet users in 2005E
- \$19B in global Mobile Internet premium services revenue, comparable to Internet advertising revenue in 2005, expected to grow at a 25% CAGR through 2009E

Source: Morgan Stanley Research.

## Mobile – A New Computing Cycle

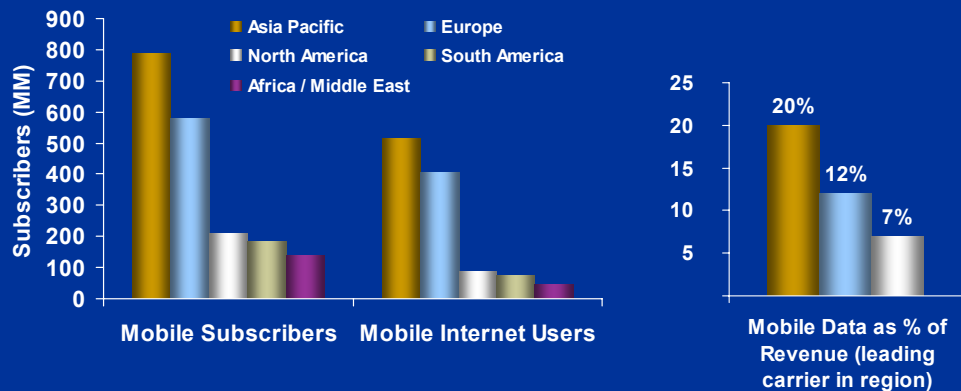
- **Mobile Internet represents a new computing cycle**  
Mainframe → Minicomputer → PC → PC Internet → Mobile Internet
- **Unlike past cycles, US is follower, not leader**
  - 89% of mobile subscribers, 93% of Mobile Internet users in non-US markets; China is #1
- **Compelling usage / revenue generated on Mobile Internet platform**
  - Messaging, ringtones, games, search, blogs, location-based services...
- **Why now? 1) handsets becoming small functional computers; 2) cheaper / faster / more data; 3) more content**
  - 334MM (48%) of handsets shipped (18% of base) Mobile Internet ready (can run Java or BREW applications...), 2005E
  - 374MM subscribers (20%) with 2.5G (~50Kbps) or 3G (~300Kbps) network access; 61MM 3G subscribers (3%) have broadband-like services (browsing, full track music)
  - Mobile content improving steadily - consumers are spending billions on it

## Profound Changes in How People Communicate

**Combination of Moore's Law, IP-networks, fixed and mobile broadband changing how people communicate...**

- **Computer - telephony integration is happening rapidly, blurring lines between phone / computer applications, spilling over to mobile**
  - 75MM registered Skype users making phone calls via PC - Google, Yahoo!, AOL, MSN responding with competitive VoIP / IM offers
  - Community and communications arising faster and in more ways than ever before – immediate global acceleration of blogs to mass-market
- **Mobile devices could disrupt PC ecosystem**
  - Phones are available with 4GBs of storage, 400Kbps 3G speeds (KDDI W41T) - Phone more and more like computer – potentially connect via UWB / or cable to any keyboard and monitor
  - Mass-consumer devices that are "mobile" but aren't "phones" (wireless iPod...) almost here
  - Battery life biggest remaining challenge

## Asia / Europe Lead – Mobile Internet Adoption + Carrier Revenue



Source: Informa 5/05. Mobile Internet user defined as someone who regularly uses data (including SMS) a minimum of once per week, whether for internet browsing or regular push services to their terminal. For right chart, leading carriers by wireless subscribers in Asia Pacific, Europe, and North America are China Mobile, Vodafone, and Cingular, respectively.

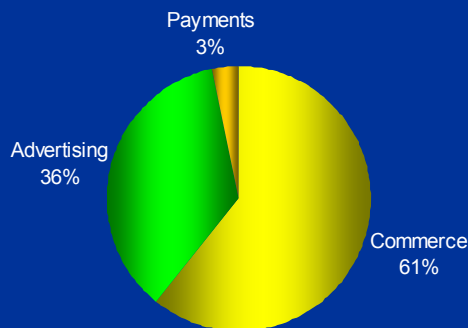
## Mobile Leads Internet in Most Markets

Country	Mobile Users (MM)	Internet Users (MM)	Mobile Phone to Internet User Ratio	Installed PCs (MM)
<b>China</b>	<b>363</b>	<b>100</b>	<b>3.6:1</b>	<b>53</b>
US	177	211	0.8:1	207
Japan	88	78	1.1:1	55
Germany	69	51	1.4:1	39
UK	54	37	1.5:1	26
Italy	54	32	1.7:1	16
S. Korea	37	32	1.2:1	27

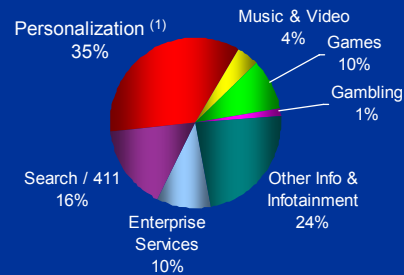
Source: Euromonitor, CNNIC, World Bank, Morgan Stanley Research (July 2005)

## Broadband – Vendor / Seller Pays... Mobile – User Pays - Make it Up on Volume!

Top 10 Internet Companies - Revenue Composition  
C2005 - \$42B



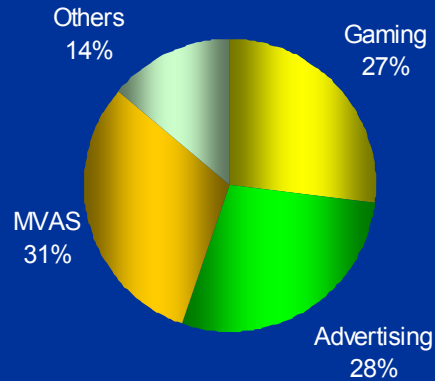
Revenue Composition - Mobile Internet  
C2005E - \$19B



Source: Left Chart - Morgan Stanley Research estimates; includes revenue from Google, eBay, Yahoo!, Yahoo! Japan, Amazon.com, T-Online, InterActive, Time Warner (AOL only, ex-access), Microsoft (MSN only, ex-access), and Rakuten. CQ3:05 annualized revenue for Rakuten, and T-Online. Right Chart - Morgan Stanley Research estimates, Global Data, Informa (5/05), Ovum (5/05). (1) Personalization includes ringtones, wallpapers, and screensavers. If SMS / MMS were added to Mobile Internet—it would add \$55B to total revenue and would account for 74% of total revenue.

## China Internet Companies – Diversified Revenue Mix

Revenue Composition - Top 13 China Internet Companies  
CQ3 Annualized - \$2B



Source: Morgan Stanley Research, company data. Based on CQ3:05 earnings results for Baidu, Shanda, NetEase, SINA, Tom Online, Tencent, Sohu, The9, Linktone, KongZhong, 51job, Ctrip, and Hurray. Companies selected based on market capitalization as of 2/13/06.

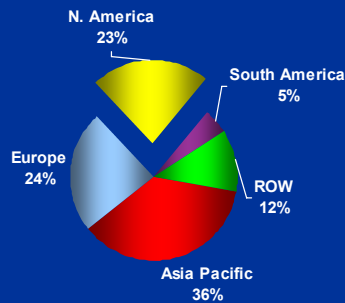
### 6

## Pace of Global Innovation Is Accelerating

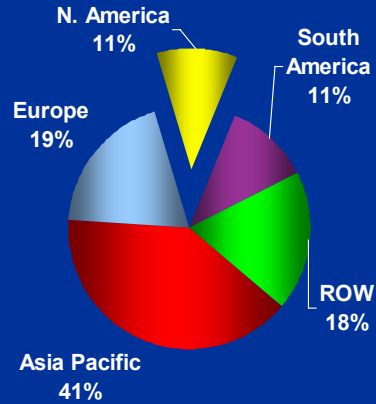
- Innovation is coming from outside US in areas related to broadband and mobile Internet
- US companies, at the margin, will likely continue to turn overseas for technological innovations
- Global investors have proven they are willing to commit rising amounts of capital to non-US technology companies, particularly in Asia
- Many Asian technology companies have been criticized for being 'fast followers' rather than fast innovators — but that has begun to change

## Mobile Users 2x > Than Internet Users

Internet Users – 1B  
C2005E (1)

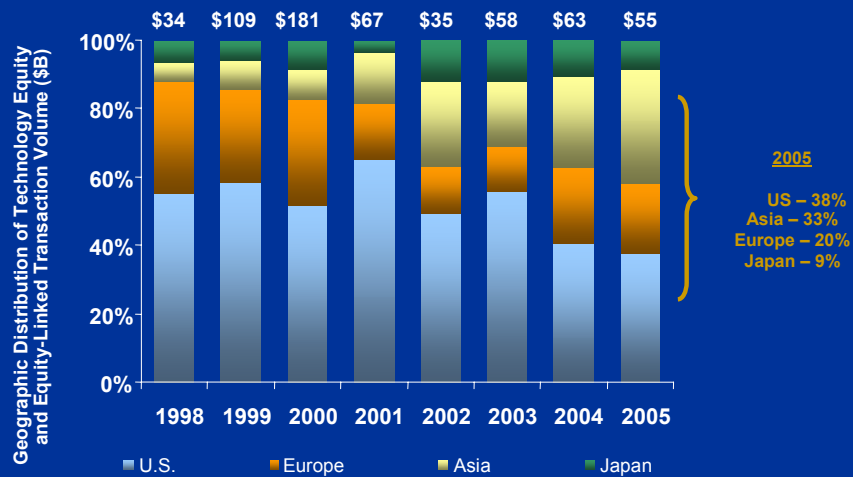


Mobile Subscribers – 2B  
C2005E (2)



(1) Source: Morgan Stanley Research.  
(2) Source: Morgan Stanley Communications Equipment Research - Scott Coleman, John Marchetti.

## US Share of Technology Financings Falling



Source: SDC, Dealogic, Morgan Stanley; 01/31/06

## Watch Where Global Younger Generation Goes

**Ringtone Downloads, Connecting Mobiles to Net**

- Jamster!
- DIRTY HIPPO
- Mobile AIM® Service

**Social Networking**

- orkut
- facebook
- myspace.com® a place for friends

**Social Tagging**

- flickr™
- del.icio.us
- WIKIPEDIA The Free Encyclopedia

**Web OS Programs**

- Basecamp™
- writely (beta)
- kiko

**In-Game Advertising**

- massive Incorporated YOUR CHANNEL TO THE GAMING AUDIENCE™
- DOUBLE FUSION In-Game Advertising

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## Internet Leaders, For Most Part, Are Well Positioned

- We foresee an accelerated scramble among Internet leaders for control of next-generation communications hubs
- Internet leaders are observing the convergence of the Internet with other types of communications, and they plan to leverage existing subscriber bases into new services
- But the leading mobile service providers — China Mobile (with 225 million subscribers); Vodafone (165 million); China Unicom (120 million) and China Netcom (120 million) — also desire to be next-generation market leaders

## Leading Global TMT Companies

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Subscriptions	Mobile Handsets*	Internet Service Providers (ISPs)	DSL	Credit / Debit Cards
<b>USA</b> Pop. 294MM	184MM Verizon - 36% SBC Comm. - 31% BellSouth - 14% Qwest - 9% Sprint - 5%	99MM Comcast - 22% DirecTV - 14% EchoStar - 11% Time Warner - 11% Cox - 6%	204MM Dell - 35% HP - 19% Gateway - 6% Apple - 5% Lenovo - 5%	171MM Cingular - 27% Verizon - 25% Sprint PCS - 12% T-Mobile - 10% Nextel - 8%	141MM Motorola - 35% LG - 17% Samsung - 16% Nokia - 14% Kyocera - 4%	171MM users AOL/RoadRunner - 27% Comcast - 8% NetZero/Juno - 6% SBC Yahoo! - 6% EarthLink - 5%	5.8MM SBC - 38% Verizon - 31% Bell South - 18% Qwest - 9%	873MM Citibank - 13% Bank One - 10% MBNA - 8% Bank of America - 8% JPMorganChase - 6%
<b>China</b> Pop. 1,300MM	203MM China Telecom - 60% China Netcom - 36% China TieTong - 4%	126MM Shanghai Cable Tianjin Cable Beijing Cable	42MM Lenovo - 26% Founder Elec - 12% Tongfang - 8% Dell - 7% IBM - 5%	335MM China Mobile - 64% China Unicom - 36%	85MM Nokia - 26% Motorola - 10% Samsung - 9% Bird - 8% TCL - 6%	335MM users China Telecom - 15% China Unicom - 14% China Netcom - 10%	3.3MM ChinaNet China Netcom GBNet China Unicom	685MM Ind. & Comm. Bank of of China - 20% Bank of China - 18% Agr. Bank of China - 14% China Const. Bank - 10%
<b>Japan</b> Pop. 128MM	78MM NTT KDDI Japan Telecom	21MM Sky Perfect - 15% Jupiter Telecom - 8%	54MM NEC - 20% Fujitsu - 19% Dell - 11% Toshiba - 8% IBM - 7%	85MM NTT DoCoMo - 56% KDDI (au) - 22% Vodafone - 17% TU-KA - 4%	49MM NEC - 17% Panasonic - 14% Sharp - 13% Sanyo - 12% Fujitsu - 11%	85MM users @nifty - 14% SoftbankBB - 13% NTT (OCN) - 12% NEC (biglobe) - 11% KDDI (dion) - 8%	7MM NTT Regional - 43% BB Technologies - 25% ACCA Networks - 10% e-Access - 10% Japan Telecom - 7%	645MM Sumitomo Mitsui - 16% UJ Card - 15% Nippon Shinyan - 14% Credit Saison - 12% UFJ Card - 9%
<b>Germany</b> Pop. 83MM	57MM Deutsche Telecom - 89% Arcor Mobilcom	26MM Kabel Deustsch. - 38% Ish (Kabel NRW) - 16% Premiere World - 13% Kabel Baden Wurt. - 9% EWT (UPO) - 8%	39MM Fujitsu Siemens - 21% HP - 11% Acer - 10% Medion - 10% Dell - 9%	68MM T-Mobile - 40% Vodafone D2 - 36% E-Plus - 13% O2 - 11%	30MM Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	68MM users T-Online - 53% freenet.de AOL Tiscali	3.1MM Deutsche Telecom	96MM Bank. Berlin - 7% Citibank - 6% Barclaycard - 6% Commerzbank - 5% KarstadtQuelle Bank - 4%
<b>UK</b> Pop. 60MM	33MM BT - 83% NTL/televest - 13%	15MM Sky Digital - 48% Freeview - 30% NTL/televest - 22%	26MM Dell - 29% HP - 16% Acer - 5% NEC/Packard Bell - 5% Toshiba - 5%	54MM O2 - 25% T-Mobile - 24% Orange - 23% Vodafone - 23%	30MM Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	54MM users Freeerve - 9% World Online - 6% BT/Genie - 6% AOL - 5% LineOne - 5%	0.55MM BT	142MM Barclays Bank - 18% RBS/NetWest - 15% HSBC Bank - 6% MBNA - 6% Co-operative Bank - 4%

Source: 2004 data from Morgan Stanley Research TMT database. Orange represents absolute market size within a given country, company market share listed below. For ISPs, the company market shares refer to share of the ISP market, while the user numbers refer to Internet users. \*Shipment units.

## Leading Global TMT Companies Typically Maintain Geographic Bias

- In telephone line segment, companies with very large market shares among the top markets are Telemex in Mexico (96%), KT Corp in Korea (95% share), Deutsche Telekom in Germany (89%), Telefonica in Spain (89%), and Telia in Sweden (84%)
- Highest country market share in PCs — arguably the most competitive of the segments — belongs to Dell in US, with 35% share (plus 29% in UK and 25% in Canada)
- Mobile handsets show slightly more concentration — Nokia has 42% share in Western Europe and 31% worldwide. In Japan, NEC has largest share at 17%

## Leading TMT Markets by Category

Category	2004 Growth Rate	Market Size
Internet Users	18%	901MM
Mobile Phones in Use	13	1,589MM
Installed PCs	10	696MM
Credit/Debit Cards in Use	9	3,567MM
Cable TV Subscriptions	9	459MM
GDP per Capita	8	\$28,582
Telephone Lines	4	1,198MM
Population	1	6,288MM

Source: Morgan Stanley Research; GDP figures from IMF, shown in current USD.  
Note: Data include totals for 50 countries in our TMT database, updated for 12/2004; GDP updated for 12/2005.

## Population – Top 15 Markets

Country	2004 Population (000's)	2004 Growth	Worldwide Share
1 China	1,300,024	1%	21%
2 India	1,086,529	2	17
3 USA	293,819	1	5
4 Indonesia	221,279	1	4
5 Brazil	175,507	1	3
6 Pakistan	150,109	2	2
7 Nigeria	142,655	3	2
8 Russia	142,362	-1	2
9 Japan	127,641	0	2
10 Mexico	103,975	1	2
11 Philippines	83,986	2	1
12 Germany	82,786	0	1
13 Turkey	70,589	2	1
14 Egypt	69,330	2	1
15 Iran	68,317	2	1
<b>Total</b>	<b>6,288,463</b>		

## Nominal GDP per Capita – Top 15 Markets

Country	2003 GDP Per Capita (US\$)	2004 GDP Per Capita (US\$)	2004 Growth
1 Norway	\$48,325	\$54,600	13%
2 Switzerland	44,439	49,300	11
3 Ireland	39,532	45,675	16
4 Denmark	39,295	44,808	14
5 USA	37,708	39,935	6
6 Sweden	33,678	38,493	14
7 Netherlands	33,199	37,326	12
8 Japan	33,705	36,596	9
9 Austria	31,622	36,244	15
10 Finland	31,164	35,666	14
11 United Kingdom	30,273	35,548	17
12 Belgium	29,330	33,866	15
13 Germany	29,647	33,390	13
14 France	29,035	32,911	13
15 Canada	27,531	31,134	13

Note: Morgan Stanley Research GDP per capita figures (current prices) from IMF.

## Telephone Lines – Top 15 Markets

Country	2004 Telephone Lines (000's)	2004 Growth	Telephone Line Penetration	Worldwide Share
1 China	282,524	14%	22%	24%
2 USA	183,688	-1	63	15
3 Japan	77,790	2	61	6
4 Germany	56,936	3	69	5
5 India	47,188	7	4	4
6 Brazil	41,568	3	24	3
7 Russia	38,035	4	27	3
8 France	34,223	0	55	3
9 United Kingdom	33,374	-2	56	3
10 Italy	26,720	-1	46	2
11 South Korea	24,681	3	51	2
12 Canada	19,943	-1	63	2
13 Turkey	19,068	0	27	2
14 Spain	18,234	2	44	2
15 Mexico	17,280	7	17	1
<b>Total</b>	<b>1,198,245</b>			

## Cable Subscriptions – Top 15 Markets

		2004 Cable Subscriptions (000's)	2004 Growth	Cable Penetration	Worldwide Share
1	China	128,000	16%	10%	28%
2	USA	99,091	4	34	22
3	India	49,234	12	5	11
4	Germany	25,801	4	31	6
5	Japan	21,165	10	17	5
6	United Kingdom	15,148	8	25	3
7	South Korea	12,793	12	26	3
8	Canada	10,086	0	32	2
9	Russia	9,927	4	7	2
10	France	7,861	5	13	2
11	Netherlands	6,334	0	39	1
12	Poland	5,660	1	15	1
13	Taiwan	5,094	2	22	1
14	Argentina	4,810	1	12	1
15	South Africa	4,134	4	9	1
	<b>Total</b>	<b>459,236</b>			

## Installed PCs – Top 15 Markets

		2004 Installed PCs (000's)	2004 Growth	PC Penetration	Worldwide Share
1	USA	203,677	3%	69%	29%
2	Japan	53,569	4	42	8
3	China	41,600	17	3	6
4	Germany	39,252	1	47	6
5	South Korea	27,041	2	56	4
6	United Kingdom	25,964	4	43	4
7	France	23,138	5	37	3
8	Russia	18,935	19	13	3
9	Brazil	18,910	19	11	3
10	Canada	15,738	1	49	2
11	Italy	15,218	8	26	2
12	India	12,627	29	1	2
13	Mexico	12,126	20	12	2
14	Australia	12,088	1	60	2
15	Taiwan	10,232	5	44	1
	<b>Total</b>	<b>696,212</b>			

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## Mobile Phones – Top 15 Markets

Country	2004 Mobile Phones In Use (000's)	2004 Growth	Mobile Phones Penetration	Worldwide Share
1 China	334,820	25%	26%	21%
2 USA	170,723	8	58	11
3 Japan	85,147	6	67	5
4 Germany	68,121	3	82	4
5 Russia	57,620	34	40	4
6 Italy	53,964	1	94	3
7 United Kingdom	53,662	2	90	3
8 Brazil	49,171	15	28	3
9 France	41,506	2	67	3
10 India	40,323	75	4	3
11 South Korea	37,164	1	77	2
12 Mexico	36,862	15	35	2
13 Spain	36,625	3	89	2
14 Thailand	32,919	21	51	2
15 Indonesia	32,130	55	15	2
<b>Total</b>	<b>1,588,805</b>			

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## Internet Users – Top 15 Markets

Country	2004 Internet Users (000's)	2004 Growth	Internet Users Penetration	Worldwide Share
1 USA	201,833	9%	69%	22%
2 China	94,000	18	7	10
3 Japan	72,677	14	57	8
4 Germany	46,312	19	56	5
5 India	39,200	57	4	4
6 United Kingdom	35,179	11	59	4
7 South Korea	31,600	5	65	4
8 Italy	28,610	25	50	3
9 France	24,848	13	40	3
10 Russia	22,300	49	16	2
11 Canada	21,850	24	68	2
12 Brazil	17,945	16	10	2
13 Australia	13,611	29	67	2
14 Spain	13,440	37	33	1
15 Mexico	12,250	33	12	1
<b>Total</b>	<b>900,981</b>			

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## Credit / Debit Cards – Top 15 Markets

	Country	2004	2004	Credit / Debit	Worldwide
		Credit / Debit Cards (000's)	Growth	Card Penetration	
1	USA	878,000	7%	299%	25%
2	China	684,700	10	53	19
3	Japan	644,700	3	505	18
4	Brazil	175,000	20	100	5
5	United Kingdom	141,700	11	236	4
6	Taiwan	120,000	31	521	3
7	Germany	95,600	1	115	3
8	Spain	94,500	13	230	3
9	South Korea	65,900	5	136	2
10	Canada	61,700	3	193	2
11	Italy	55,400	13	96	2
12	Turkey	55,000	25	78	2
13	Mexico	49,700	10	48	1
14	Australia	46,400	7	229	1
15	India	38,100	69	4	1
<b>Total</b>		<b>3,566,655</b>			

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## Potential Upside For Internet Users, Usage, and Uses...

**Global Internet user growth should remain a solid 14% annually over the next three years, supported by a narrowing Internet penetration gap, even though growth rates will likely decelerate.**

Worldwide, we believe global Internet users could rise to 1,343MM in 2007 (14% global population penetration), up from 901MM users at the end of 2004 (9% penetration) and about 379MM users at the end of 2000 (4% penetration). User penetration has increased rapidly over the past few years, considering the still relatively early stage of the Internet medium, and the penetration level remains somewhat low compared to other media such as cable subscribers and mobile phones. However, the law of large numbers does suggest to us that the growth rate will decline from 18% in 2004 to 15% in 2005, 15% in 2006, and 13% in 2007. Internet user growth should slow as more countries reach the 50%+ population penetration level over the next three years.

**We expect Internet *usage* to continue to grow at a faster rate than Internet *user* growth.**

We believe the primary drivers of increased usage will be broadband adoption, continued expansion onto the mobile platform, and ongoing improvements to the online user experience. Our broad Global Internet growth thesis is that *user* growth will grow at 10-15% Y/Y, *usage* will grow at 20-30% Y/Y, and *monetization* will grow at 30%+ Y/Y. (See the section on broadband for a discussion of trends in the different regions.)

**Mobile phones continue to exceed the number of fixed telephone lines in use — a trend that is particularly evident in China.**

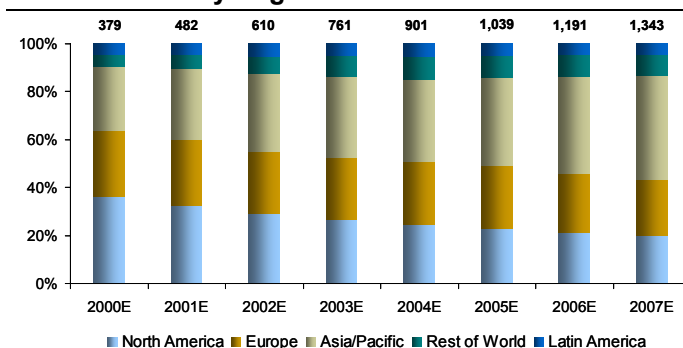
In China, as of year-end 2004, mobile phone penetration is now higher than fixed-line telephone penetration (26% vs. 22%). In terms of units added, China has nearly twice the number of mobile phones compared to telephone lines in 2004. Mobile phones grew 25% year-over-year in China in 2004, while telephone lines increased 14%. We expect this pattern to continue in large countries, where the infrastructure costs of providing telephone service far outweigh the costs of mobile phone towers.

**North America has now slipped to No. 3, behind both Asia/Pacific and Europe in terms of Internet users.**

The number of Internet users in Asia/Pacific (including Japan and China) grew to 308MM in 2004, which is 84MM more Internet users than in North America. And we see more room for growth in Asia, where the overall population penetration rate remains particularly low. Europe moved into the No. 2 position in 2004, with an estimated 26% share of global Internet users, compared to 25% for the US.

Exhibit 8

### Internet Users by Region



Source: Morgan Stanley Research. E = Morgan Stanley Research Estimates.

**We expect the strongest Internet user growth to come from Asia/Pacific, and the slowest growth to come from North America and Latin America.**

For 2004–07, we forecast the strongest regional Internet user growth (3-year CAGR) to be in Asia/Pacific category (24%), followed by Rest of World (11%) and Europe (10%). We expect the slowest growth to come from North America (6%) and Latin America (6%).

**Despite the differential in growth rates, Internet penetration should remain highest in North America, then Europe, for the foreseeable future.**

By 2007, we estimate the penetration rate could reach 82% in North America, 53% in Japan, 16% in Asia/Pacific, 12% in Latin America, and 6% in Rest of World.

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Exhibit 9

## Internet Penetration — Top Five Countries, 2004E

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- 1) **Sweden** (82%)
  - 2) **Hong Kong** (70%)
  - 3) **Denmark** (69%)
  - 4) **USA** (69%)
  - 5) **Canada** (68%)
- 

E = Morgan Stanley Research Estimates  
Source: Morgan Stanley Research

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Exhibit 10

## Internet Users — Top Five Countries, 2004E

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- 1) **United States**  
(202MM, 69% penetration, up 9% Y/Y in 2004)
  - 2) **China**  
(94MM, 7% penetration, up 18% Y/Y in 2004)
  - 3) **Japan**  
(73MM, 57% penetration, up 14% Y/Y in 2004)
  - 4) **Germany**  
(46MM, 56% penetration, up 19% Y/Y in 2004)
  - 5) **India**  
(39MM, 4% penetration, up 57% Y/Y in 2004)
- 

E = Morgan Stanley Research Estimates  
Source: Morgan Stanley Research

Exhibit 11

## Morgan Stanley Global Internet User Estimates, 2003E–2004E

	Country	2003 Internet Users (000's)	2004 Internet Users (000's)	2004 Y/Y Growth Rate	2003E Internet Population Penetration	2004E Internet Population Penetration
<b><i>N. America</i></b>	USA	185,668	201,833	9%	64%	69%
	Canada	17,640	21,850	24	56	68
	<b>Total</b>	<b>203,308</b>	<b>223,683</b>	<b>10%</b>	<b>63%</b>	<b>69%</b>
	<b>Weighted Average Share of World</b>	<b>27%</b>	<b>25%</b>			
<b><i>Europe</i></b>	Germany	39,000	46,312	19%	47%	56%
	United Kingdom	31,736	35,179	11	53	59
	Italy	22,852	28,610	25	40	50
	France	21,900	24,848	13	36	40
	Russia	14,932	22,300	49	10	16
	Spain	9,829	13,440	37	24	33
	Netherlands	9,300	10,806	16	57	66
	Poland	8,970	10,600	18	23	27
	Sweden	6,668	7,364	10	74	82
	Belgium	4,350	5,100	17	42	50
	Switzerland	3,348	4,668	39	46	64
	Austria	3,730	4,630	24	57	57
	Portugal	3,872	4,165	8	38	41
	Denmark	3,504	3,720	6	65	69
	Czech Republic	3,100	3,530	14	30	35
	Finland	2,650	3,260	23	51	62
	Norway	3,033	3,140	4	66	68
Hungary	2,299	3,050	33	23	31	
Ireland	1,260	1,319	5	32	33	
<b>Total</b>	<b>196,334</b>	<b>236,041</b>	<b>20%</b>			
<b>Weighted Average Share of World</b>	<b>26%</b>	<b>26%</b>		<b>34%</b>	<b>40%</b>	
<b><i>Asia Non-Japan</i></b>	China	79,500	94,000	18%	6%	7%
	India	24,981	39,200	57	2	4
	South Korea	30,220	31,600	5	63	65
	Australia	10,572	13,611	29	53	67
	Indonesia	8,000	11,906	49	4	5
	Taiwan	8,930	10,205	14	39	44
	Malaysia	8,892	9,513	7	36	37
	Thailand	6,231	8,420	35	10	13
	Hong Kong, Chin	3,913	4,878	25	57	70
	Philippines	3,900	4,829	24	5	6
	Singapore	2,150	2,413	12	51	56
	Pakistan	1,500	2,387	59	1	2
	New Zealand	2,110	2,340	11	53	58
	<b>Total</b>	<b>190,899</b>	<b>235,301</b>	<b>23%</b>		
<b>Weighted Average Share of World</b>	<b>25%</b>	<b>26%</b>		<b>6%</b>	<b>8%</b>	
<b>Japan</b>	<b>63,900</b>	<b>72,677</b>	<b>14%</b>	<b>50%</b>	<b>57%</b>	
<b>Share of World</b>	<b>8%</b>	<b>8%</b>				
<b><i>Lat. America</i></b>	Brazil	15,464	17,945	16%	9%	10%
	Mexico	9,243	12,250	33	9	12
	Argentina	4,100	4,818	18	11	12
	Chile	3,575	4,000	12	23	25
	Colombia	2,732	3,178	16	6	7
	Peru	2,850	2,924	3	10	10
	Venezuela	1,325	1,551	17	5	6
<b>Total</b>	<b>39,290</b>	<b>46,665</b>	<b>19%</b>			
<b>Weighted Average Share of World</b>	<b>5%</b>	<b>5%</b>		<b>9%</b>	<b>11%</b>	
<b><i>Rest of World (ROW)</i></b>	Turkey	5,500	6,000	9%	8%	8%
	Iran	4,300	4,800	12	6	7
	South Africa	4,050	4,373	8	9	9
	Israel	2,549	3,040	19	40	46
	Egypt	2,293	3,000	31	3	4
	Saudi Arabia	2,010	2,923	45	8	12
	Nigeria	828	1,044	26	1	1
	Algeria	630	978	55	2	3
	Other	45,229	60,455	34	4	5
<b>Total</b>	<b>67,389</b>	<b>86,613</b>	<b>29%</b>			
<b>Weighted Average Share of World</b>	<b>9%</b>	<b>10%</b>		<b>4%</b>	<b>5%</b>	
<b>Total</b>	<b>761,119</b>	<b>900,981</b>	<b>18%</b>	<b>12%</b>	<b>14%</b>	

E = Morgan Stanley Research Estimates; Sources: Morgan Stanley Research

Exhibit 12

## Morgan Stanley Internet User Forecasts, 2000E–2007E

	2000E	2001E	2002E	2003E	2004E	2005E	2006E	2007E	04-07E CAGR
<b>Total Internet Users (MM)</b>	<b>379</b>	<b>482</b>	<b>610</b>	<b>761</b>	<b>901</b>	<b>1,039</b>	<b>1,191</b>	<b>1,343</b>	<b>14%</b>
North America	137	157	178	203	224	241	255	268	6
Europe	105	132	157	196	236	271	290	312	10
Asia/Pacific (including China, Japan)	101	143	198	255	308	382	486	588	24
Rest of World	18	26	44	67	87	97	108	120	11
Latin America	18	23	32	39	47	50	53	55	6

Source: Morgan Stanley Research (US - M. Meeker, B. Pitz), (Europe - J. Marin), (Asia/Pacific - M. Liu), (Japan - Y. Motoyama), (Latin America - M. Epelbaum, N. Sebrell). E = Morgan Stanley Research Estimate. Note that Europe includes both Western and Eastern Europe.

Exhibit 13

## Morgan Stanley Internet User Annual Growth Forecasts, 2000E–2007E

	2000E	2001E	2002E	2003E	2004E	2005E	2006E	2007E
<b>Total Internet Users Growth (Y/Y)</b>	<b>67%</b>	<b>27%</b>	<b>26%</b>	<b>25%</b>	<b>18%</b>	<b>15%</b>	<b>15%</b>	<b>13%</b>
North America	47	15	14	14	10	8	6	5
Europe	54	26	18	25	20	15	7	8
Asia/Pacific (including China, Japan)	117	41	38	29	21	24	27	21
Rest of World	74	48	69	52	29	12	12	11
Latin America	113	28	38	23	19	6	6	4

Source: Morgan Stanley Research. E = Morgan Stanley Research Estimate

Exhibit 14

## Morgan Stanley Internet User Regional Share Forecasts: 2000E–2007E

	2000E	2001E	2002E	2003E	2004E	2005E	2006E	2007E
<b>Share of Total Internet Users</b>								
North America	36%	33%	29%	27%	25%	23%	21%	20%
Europe	28	27	26	26	26	26	24	23
Asia/Pacific (including China, Japan)	27	30	33	33	34	37	41	44
Rest of World	5	5	7	9	10	9	9	9
Latin America	5	5	5	5	5	5	4	4

Source: Morgan Stanley Research. E = Morgan Stanley Research Estimate

Exhibit 15

## Morgan Stanley Internet User Regional Penetration Forecasts: 2000E–2007E

	2000E	2001E	2002E	2003E	2004E	2005E	2006E	2007E
<b>Internet Penetration</b>	<b>4%</b>	<b>5%</b>	<b>7%</b>	<b>8%</b>	<b>9%</b>	<b>11%</b>	<b>12%</b>	<b>14%</b>
North America	44	50	56	63	70	75	79	82
Europe	18	23	27	34	37	46	49	53
Asia/Pacific (including China, Japan)	2	3	5	6	8	10	13	16
Rest of World	1	2	3	4	5	5	6	6
Latin America	4	6	8	9	10	11	12	12

Source: Morgan Stanley Research. E = Morgan Stanley Research Estimate

## China TMT Trends Remain Especially Impressive

*China continues to rank second in terms of size based on our relative share calculation. The low population penetration rates create a significant growth opportunity. Below we have an update from our China Internet analyst, Richard Ji.*

*For more thoughts on the Internet in China, see our China Internet Report and the complementary slide presentation (April 2004) at:*

[http://www.morganstanley.com/institutional/techresearch/Chinainternet\\_report0404.html](http://www.morganstanley.com/institutional/techresearch/Chinainternet_report0404.html)

*Also, see our Initiation Report on the China Internet Industry and the complementary slide presentation (Sept 2005) at:*

[http://www.morganstanley.com/institutional/techresearch/China\\_Internet\\_091205.html](http://www.morganstanley.com/institutional/techresearch/China_Internet_091205.html)

### Big and Getting Bigger...

China's number 2 ranking reflects its position among the top five countries in terms of telephone lines, installed PCs, mobile phones, Internet users, and cable households on an absolute basis — and growth rates, on a relative basis, that remained solid in 2004. Specifically, China ranks as the largest market worldwide in terms of mobile phone users, cable households, and telephone lines, the second-largest market in terms of Internet users (and the largest in terms of Internet users under the age of 30), and the fourth-largest market in terms of installed PCs.

Exhibit 16

### China's Leading Global Rank in TMT Categories

TMT Category	Global Ranking	Units (MM)	2004 Growth
Mobile Phones	1	335	25%
Cable TV Subscriptions	1	128	16%
Telephone Lines	1	283	14%
Internet Users	2	94	18%
Installed PCs	4	42	17%

Source: Morgan Stanley Research

### View of China Internet Market Segments

- 1) Online gaming is Richard Ji's favorite segment pick. We estimate the industry revenue for online gaming at \$390MM in 2004, growing at a three-year sales CAGR of 37% to \$1B in 2007. Local players with self-development and distribution capacity may emerge as long-term winners.

- 2) Competition is breaking out in online brand advertising (industry revenue was \$220MM in 2004, and should expand at a CAGR of 24% to \$420MM in 2007), which faces inventory oversupply and a secular shift toward performance-centric models. Paid search, on the other hand, is poised for robust expansion.
- 3) Richard sees an overlooked opportunity in mobile value-added services (MVAS; industry sales for MVAS excluding those for mobile carriers was \$770MM in 2004, and should grow at a CAGR of 28% to \$1.6B in 2007). Despite regulatory concerns, entry barriers are rising and a segment recovery is in sight.
- 4) Richard sees rising opportunities in online commerce, including travel, instant messaging-related services, and auctions. Emerging payment mechanisms are needed for more substantive growth.

Exhibit 17

### Major Drivers for Chinese Internet Trending Up

	By the End of 2004	CAGR for next 3 years
<b>Volume</b>		
Internet users	94MM (18% Y/Y; <7% of population)	13%
Broadband users	43MM (146% Y/Y; <3% of population)	32%
Mobile users	335MM (24% Y/Y; 26% of population)	12%
<b>ARPU</b>		
Internet users	\$5-\$6 per month	
Broadband users	\$10-\$15 subscription fee per month	
<b>Industry revenue</b>		
MVAS	\$770MM (89% Y/Y)	28%
Online Gaming	\$390MM (90% Y/Y)	37%
Online advertising	\$220MM (78% Y/Y)	24%

Note: ARPU- average revenue per user.  
Source: CNNIC, Morgan Stanley Research

### Unlike Rest of the World, China Internet is Mobile-centric Rather Than PC-centric

Unlike most other regions of the world, China's Internet market centers on mobile handsets rather than personal computers (PCs):

- As of September 2005, China had over 360MM mobile phone users, 3.6 times more than Internet users. The total number of Chinese mobile users is equal to the total of the next three nations combined. In the US, it is the reverse: the total number of Internet users in the

US is equal to the total of the next three nations combined.

- We estimate ISPs (or Internet Service providers, including Sina, TOM Online, and Tencent) generated around \$700-800MM from MVAS for 2004, two times more than online gaming and three times more than online advertising.
- There are six publicly traded companies (Sina, TOM Online, Tencent, KongZhong, Linktone and Hurray!) that generated the majority of their 2004 revenues from MVAS, versus three (Shanda, NetEase and The9) from online gaming and two (Sohu and Baidu) from online advertising/ search.
- China's people are heavier users of mobile data services, relative to other countries. This trend is exemplified by the usage of SMS (short message service, a service that allows brief text messages to be sent and received on mobile phones): there were 652 SMS per mobile phone sent in China vs. 139 SMS per mobile phone sent in the US, in 2004 (where China SMS data is from the Ministry of Information Industry, US SMS data is from SMS.ac, and mobile data is from Morgan Stanley Research). We believe this China trend is due to the immediacy and cost-effectiveness of phones. (When we say cost-effectiveness, we don't mean on a per MB basis, but on an absolute dollar basis, since the cost of a computer and Internet connection outweighs that of a mobile phone and a text message in the short term.)
- China, in many ways, is leading the development and monetization of mobile content (i.e., KongZhong, TOM Online) in ways that are still nascent in the US; we believe investors underappreciate the secular trend at work within mobile computing, and the value, both in terms of wealth and consumer satisfaction, that mobile value-added services can contribute.

## China Has Attracted Major Internet Players

We maintain that China is a key strategic market for the major Internet players and will continue to monitor developments closely in coming years. We believe the recent actions of some of the Internet leaders demonstrate a recognition of the importance of the China market, and we list some of the most relevant transactions below:

- In June 2004, Google acquired a stake in Baidu.com, a Chinese search company that went public on 8/5/05

and closed that trading day with a market capitalization of \$4.0 billion.

- Silicon Valley venture capital firm Accel Partners said it partnered with the media company International Data Group to form a \$250 million fund to invest in Chinese tech companies. Others, including Intel, have established similar funds to take advantage of China's booming technology, gaming, broadband and cellular markets.
- PayPal, the online payment subsidiary of Net auction giant eBay, launched a new payment service for Internet users in China. PayPal China will deal in the local currency, the company said. The payment service is integrated with 15 Chinese banks and more than 20 different debit cards. PayPal has offered buyer protection on purchases made on popular Chinese portals NetEase and TOM Online, and has offered the same on eBay's own Chinese auction site, eBay EachNet, since September 1, 2005.
- On October 23, 2005, Yahoo! acquired a 46% minority stake (40% on a fully diluted basis) in the outstanding common stock of Alibaba.com Corporation from Softbank Corp. and other investors for approximately RMB 8.1B (US \$1.0B) in cash, the contribution of Yahoo! China based businesses, and direct transaction costs of \$8MM. Jerry Yang, co-founder and Chief Yahoo!, will assume a board seat at the combined entity and Yahoo! will obtain 35% voting rights. This acquisition marks the biggest investment yet made by a foreign investor in the Chinese e-commerce industry. On October 25, 2005, Alibaba.com acquired 100% stake in Yahoo! China Co Ltd for an undisclosed amount. The new asset, called Alibaba Yahoo!, is valued at ~\$4.25B (including \$250MM in cash contributed from Yahoo! plus \$750MM in cash paid by Yahoo! to Alibaba shareholders plus \$100MM in cash held by Alibaba + Taobao). The combined entity will comprise Alibaba properties (Alibaba International, Alibaba China, AliPay, Taobao) and Yahoo! properties (Yahoo! China portal with its communications / advertising services, Yahoo! Search Technology and 3721).

## Global Residential Broadband Remains Compelling

**The global broadband subscriber count (as of CQ4:05) appears to be at least 209MM (up +42% Y/Y and +8% Q/Q), and continues to grow at a rapid clip.**

The estimate is based on Morgan Stanley C2005 data from the major players in the major markets (Asia-Pacific, North America, Europe, Japan and Latin America) for broadband subscriber count (largely residential, with cable modem and DSL deployments). We expect 20+% Y/Y global growth over the next few years.

We continue to believe that the residential broadband ramp is part of an important inflection point for Internet usage. Surveys have shown that broadband (versus narrowband) users spend more time and money online, owing in large part to: 1) fast speed, 2) "always-on" functionality, and 3) high user satisfaction.

Exhibit 18

### Broadband Subscriptions by Region, CQ4:05

Rank	Region	Subscriptions (MM)	Y/Y Growth
1	North America)	50	29%
2	Asia Pacific	70	58
3	Europe	60	43
4	Japan	23	23
5	Latin America	7	52
<b>TOTAL</b>		<b>209</b>	<b>42%</b>

Source: Morgan Stanley Research, Nick Sebrell, Paul Marsch, Richard Bilotti, Simon Flannery, Mitchell Kim

### Regional Broadband Updates

**US** — Richard Bilotti (Cable & Entertainment) and Simon Flannery (Wireline Telecommunications Services) estimate that there were 50MM total broadband (DSL and cable modem) customers in the US at the end of 2005, which should grow to 42MM or 33% household penetration by the end of 2006. By the end of 2007, they look for residential penetration to increase to 45% (53MM subscriptions).

The level of incremental market share gain for the cable and telecom sectors has consumed investor attention. However, Rich and Simon believe the aggregate combined penetration is equally important. While the market shares of net additions for DSL and cable modem have moved as much as 500-800 basis points per quarter, over longer periods the shares have been generally equal (i.e., 50/50%) since the end of 2003. For 2006, they estimate a 53/47 share of additions for cable modem and DSL, compared to 51/49 in 2004. Cable modem additions should benefit from VoIP telephony

deployments. Cable modem net additions should continue to benefit from VoIP over the next few years, as MSOs deploy VoIP telephony more aggressively and begin to market discounted data/voice bundles.

In several countries – including Korea, Japan and the US – broadband Internet penetration is into the adoption "sweet spot", at a penetration level of 25%+, where opportunities have been greatest for investors into new technologies.

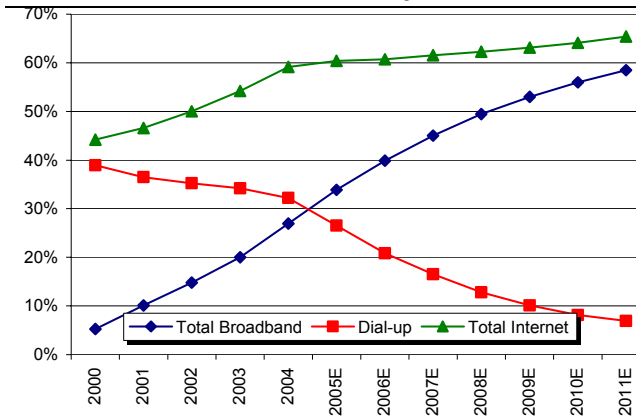
For US broadband penetration, we gathered estimates of total PC and total Internet households in the US from several sources. These estimates vary widely depending on the source, showing Internet penetration anywhere from 60-70% of total households. However, we believe that the Motion Picture Association of America (MPAA) showed the most consistent data from Nielsen Media Research. We believe this is not coincidental, as the MPAA's constituents have a great deal to lose from increased Internet access. Based upon these estimates, total US Internet penetration reached 60% of total households at the end of 2005 and will likely approach 75% by 2010.

Broadband has also rapidly gained share from dial-up since 1999. At the end of 2004, broadband reached 43% of total Internet households, reaching roughly 50% in CQ3:05. However, growth will likely reach an inflection point and should slow over the next several years.

Rich and Simon expect broadband penetration will likely reach ~65% of Internet households by 2010 (see Exhibits 20 and 21), and believe that 10% of Internet households will always use dial-up – the most cost-efficient way to access the Internet and, therefore, available to a wider group of users. Although dial-up has been in a steady decline, we believe there will be a floor at roughly 20MM subscribers.

Exhibit 19

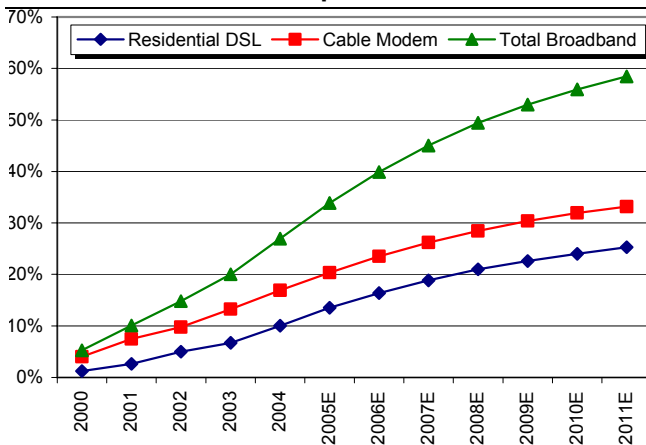
## US Internet Penetration Levels per PC Household



Source: Morgan Stanley Research, Richarch Bilotti, Benjamin Swinburne, David Gober, Hunter DuBose; E= Morgan Stanley Research Estimates

Exhibit 20

## As US Residential Broadband Continues to Grow, Cable and DSL Should Split Net Additions 50-50



Source: Morgan Stanley Research, Richarch Bilotti, Benjamin Swinburne, David Gober, Hunter DuBose; E= Morgan Stanley Research Estimates

- Broadband has steadily taken share from narrowband since 2002. We believe this trend will continue. However, narrowband will likely continue to exist for several years to come.
- Cable should retain its historical lead over DSL, but DSL will likely gain low-end subscribers as RBOCs have continued to cut rates.
- We anticipate that alternative broadband technologies will continue to account for only a small portion of broadband subscribers.
- Wireless technologies such as WiMax will likely be utilized by cable and DSL providers limiting the threat of pure wireless competitors.

**Europe** — Our European Telecom and Internet teams estimate 43MM DSL subscribers and 8MM cable modem subscribers in Europe as of the end of CQ4:05. Broadband adoption has proliferated across Europe over the past 3-4 years, with a CAGR of 14% for the market over the past 2 years (and 43% Y/Y growth in CQ4:05). By contrast, narrowband subscribers have seen very low single-digit Q/Q growth figures, as consumers who are connecting to the Internet for the first time opt for broadband, and ISPs seek to migrate subscribers from narrowband to broadband. We note that the European market is now much more competitive than it was two years ago: incumbent ISPs have seen their monopolistic market shares fall markedly as alternative ISPs have entered the space, encouraged by the potential of the broadband market and the intervention of regulators. France is a prime example, where consumers can choose among up to 10 ISPs. This has caused the prices of broadband connections to fall, the volume of connections to multiply, and bandwidth to increase substantially.

Recognizing both the threat and the opportunity, European telecom operators (PTOs) have established full control of the ISPs in which they held a controlling stake: Telefonica launched a bid for the minority shareholders of Terra Lycos earlier this year after a failed attempt in 2003; France Telecom did the same with Wanadoo in February 2004; and in October 2004 Deutsche Telekom launched a tender offer for the minorities of T-Online. This reintegration illustrates the PTOs' efforts to streamline their operations and focus on the core strategy, which sees broadband activities (both fixed-line and wireless) as the major growth drivers in the medium term.

For the medium term, we believe broadband market growth will be sustained at similar levels to those detailed above, thanks to the advent of VoIP, triple-play offerings, IPTV and many other innovations, coupled with the fact that parts of Europe still have relatively low internet penetration.

**Japan** — As of CQ4:05, Japan had 22MM broadband subscribers (46-47% of households). Although the Q/Q growth rate was down roughly +5%, the Y/Y growth rate continued its climb at +23%. DSL still has the overwhelming lead in cumulative subscribers at 65% of overall broadband subscriber, but FTTH (fibre-to-the-home) caught up gradually through C2005. DSL has been the main driver of subscriber growth so far, but this has generally been shifting to FTTH since CQ1:05. In CQ4:05, DSL had 239,000 net subscriber adds, vs. 842,000 for FTTH. Since apartments make up a large percentage of Japanese residences, it is possible to share a FTTH connection between apartments in one building at a low price to each user. FTTH providers are not only NTT, the incumbents, but also affiliated companies of electric power

companies (which own the infrastructure) and independents like USEN. These companies have been aggressive in pulling in subscribers via frequent, large-scale campaigns. We expect FTTH to drive growth in the broadband market.

**Asia-Pacific (ex. Japan)** — Our Asia-Pacific team expects total residential broadband subscribers grew 58%, from 44MM in 2004 to 70MM in 2005. South Korea accounts for roughly 35% of the total subscribers in the Asian Pacific broadband market. However, Mitchell Kim, our Korean Telecom analyst, notes that the Korean market growth rate has slowed considerably. Lina Choi, our Chinese Telecom analyst, believes China is the major growth market in the region — accounting for 65% of total Asian Pacific broadband users.

**South Korea** — Broadband penetration rate surpassed 70% of households in 2005. Monthly subscriber growth has slowed considerably to a mere 25K. Although the penetration rate is approaching saturation, competition for subscribers remains intense, as broadband operators are spending US\$100-200 for subscriber acquisition and installation costs. Competition is likely to continue intensify throughout 2006, as the government allowed a new entrant in retail broadband services. Powercomm, 45% owned by Dacom, is a network operator, which leases out its HFC (Hybrid Fiber Coax) network or cable network to cable system operators and cable modem based Internet Service Providers such as Hanaro, Thrunet and Onse. And Powercomm just recently entered the retail broadband services market in the beginning of September 2005. The entry of a new player is likely to increase marketing costs for all players but it is also likely to lead to greater market penetration, in our view.

To stay competitive, leading broadband operators are actively upgrading their subscribers to faster speed modems called VDSL (very-high-speed digital subscriber line), with speeds up to 20Mbps. VDSL covers 17% of all broadband subscribers in Korea. However, higher speed has not translated into higher revenue. Operators have been offering VDSL to retain subscribers rather than to boost ARPU.

**Latin America** — Broadband penetration remains in its early stages in most of Latin America, where only Chile shows double-digit household penetration. We see sequential growth continuing in the double digits for some quarters to come. In Brazil and Chile, greater competition is expected as fixed-line companies race for broadband customers, partly to preempt cable companies and other providers. These markets also have the most aggressive pricing strategies. In

Brazil, relatively low-bandwidth (less than 256 kbps) DSL costs roughly \$20 per month. In Chile, similar offerings cost \$25. Additionally, the Chilean unit of Telmex has launched a new broadband service – Broadband On Demand – aimed at the corporate sector, affording clients to high speed Internet access without the need to pay for a permanent dedicated broadband contract. The new service is offered via the company's IP-MPLS network and allows users to select the speed they require for each project. In Mexico, pricing remains relatively high, at about \$30 for the lowest bandwidth offering.

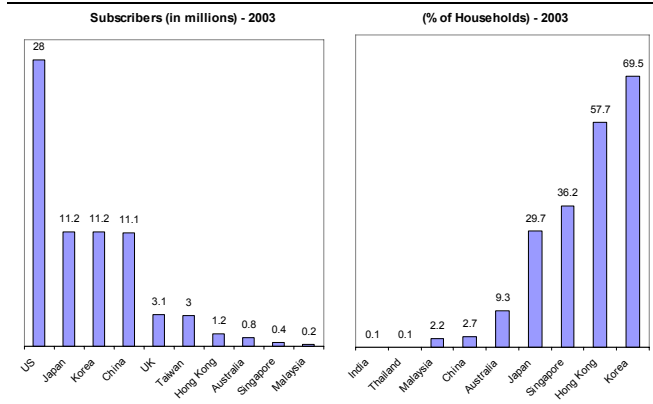
**China** — Broadband remains in its early growth stage. At 2.5% population penetration and what we estimate to be 8.5% household penetration, China adds 1-1.2MM broadband users per month, which implies a Y/Y growth rate of 25-30%. ADSL remains the key growth driver, with Ethernet and cable-modem also contribution to the increase in users.

Significant unit revenue erosion has accompanied rapid user growth. At China Telecom and China Netcom, the two dominant broadband service providers, average ARPU has fallen from US\$17-18 in 2003 to US\$10-11 currently. This implies an average annual erosion of 21%.

Both China Telecom and Netcom remain focused on raising broadband penetration and the weight of broadband services in their overall revenue portfolios. As of C2005, we estimate broadband to contribute 11% of CT and CNC's total revenue, but 30-40% of the growth rate.

Exhibit 21

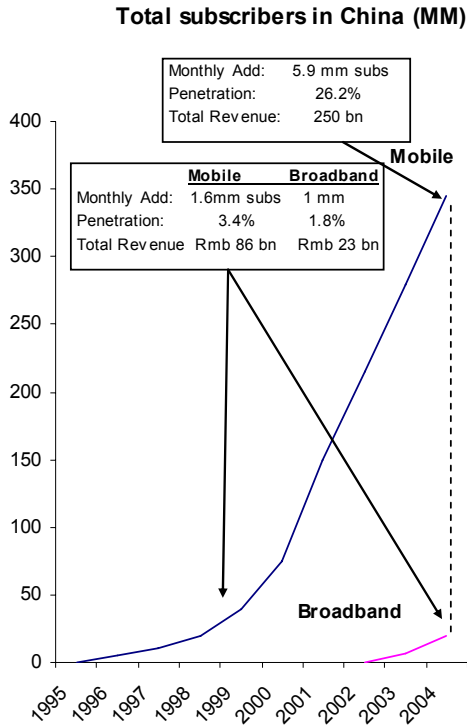
### China – Large Broadband Market, Low Penetration



Source: China Netcom

Exhibit 22

## China Broadband at Inflection Point for Growth



Source: China Netcom

Exhibit 23

## Global Broadband Subscriber Data, C2002-C2005E

	Metric Share	Quarterly												Annual			
		CQ1:03	CQ2:03	CQ3:03	CQ4:03	CQ1:04	CQ2:04	CQ3:04	CQ4:04	CQ1:05	CQ2:05	CQ3:05	CQ4:05E	C2002	C2003	C2004	C2005E
<b>Global Broadband Subscribers (000's)</b>	100%	69,585	78,609	88,046	96,309	112,051	123,286	133,992	147,699	165,802	178,471	192,796	209,112	56,550	96,309	147,699	209,112
Y/Y Growth		92%	90%	79%	70%	61%	57%	52%	53%	48%	45%	44%	42%	81%	70%	53%	42%
Q/Q Growth		23%	13%	12%	9%	16%	10%	9%	10%	12%	8%	8%	8%	--	--	--	--
<b>North America</b>	24%	22,607	24,336	26,649	28,880	31,540	33,505	36,153	38,740	41,699	43,788	46,797	49,848	20,484	28,880	38,740	49,848
Y/Y Growth		47%	43%	45%	41%	40%	38%	36%	34%	32%	31%	29%	29%	41%	41%	34%	29%
Q/Q Growth		10%	8%	10%	8%	9%	6%	8%	7%	8%	5%	7%	7%	--	--	--	--
<b>Europe</b>	29%	16,363	18,543	20,951	24,693	28,572	32,376	36,237	42,225	47,738	51,624	55,436	60,301	9,966	24,693	42,225	60,301
Y/Y Growth		331%	318%	158%	148%	75%	75%	73%	71%	67%	59%	53%	43%	247%	148%	71%	43%
Q/Q Growth		64%	13%	13%	18%	16%	13%	12%	17%	13%	8%	7%	9%	--	--	--	--
<b>Japan</b>	11%	9,397	10,939	12,256	13,641	14,917	16,238	17,304	18,295	19,488	20,428	21,398	22,479	7,806	13,641	18,295	22,479
Y/Y Growth		143%	119%	100%	75%	59%	48%	41%	34%	31%	26%	24%	23%	175%	75%	34%	23%
Q/Q Growth		20%	16%	12%	11%	9%	9%	7%	6%	7%	5%	5%	5%	--	--	--	--
<b>Asia-Pacific</b>	33%	19,762	23,132	26,243	26,836	34,426	38,090	40,645	44,115	52,032	57,228	63,157	69,896	16,991	26,836	44,115	69,896
Y/Y Growth		58%	66%	70%	58%	74%	65%	55%	64%	51%	50%	55%	58%	59%	58%	64%	58%
Q/Q Growth		16%	17%	13%	2%	28%	11%	7%	9%	18%	10%	10%	11%	--	--	--	--
<b>Latin America</b>	3%	1,457	1,659	1,947	2,259	2,596	3,077	3,653	4,324	4,847	5,403	6,008	6,588	1,304	2,259	4,324	6,588
Y/Y Growth		83%	69%	73%	73%	78%	85%	88%	91%	87%	76%	64%	52%	303%	73%	91%	52%
Q/Q Growth		12%	14%	17%	16%	15%	19%	19%	18%	12%	11%	11%	10%	--	--	--	--

Source: Morgan Stanley Research, Rich Biloti, Simon Flannery, Paul Marsch, Mitchell Kim, Nick Sebrell, Vera Rossi

E - Morgan Stanley Research estimates

## Global Internet Is Increasingly Mobile-Centric

### Global Internet Becoming More Mobile-Centric

Fast growth in mobile phone penetration, particularly in large markets like China, is making the Internet increasingly mobile-centric rather than PC-centric. There are more mobile phones than fixed telephone lines worldwide, and mobile devices are increasingly becoming gateways to the Internet. We expect this pattern to continue in large countries, where the infrastructure costs of providing telephone service far outweigh the costs of mobile phone towers. In China, as of year-end 2004, mobile phone penetration is now higher than fixed-line telephone penetration (26% to 22%). Unlike most other regions of the world, China's Internet market centers on mobile handsets rather than personal computers (PCs). China now has over 360MM mobile phone users, 3.6 times more than its Internet users. The total number of China's mobile users equals the total of the next three nations combined. For the US, that ratio holds for Internet users: the total number of Internet users in the US equals the total of the next three nations combined.

### We believe investors underappreciate the capacity of value-added mobile computing services to improve customer satisfaction and generate wealth

China, in many ways, is leading the development and monetization of mobile content (i.e., KongZhong, TOM Online) in ways that are still nascent in the US. China's users are heavier users of mobile data services, relative to other countries. This is manifest in the usage of SMS (short message service, a service that allows brief text messages to be sent and received on mobile phones): there were 652 SMS per mobile phone sent in China vs. 139 SMS per mobile phone sent in the US, in 2004.

### Mobile devices are becoming increasingly powerful devices both in their own right and in tandem with PCs

Over the next 2-3 years, we expect the relationship between PCs and mobile devices will evolve into more of a client-server environment. Users likely will spend more time on their home PCs using self-programmed products like My Yahoo! to customize the type of content that will be made available to their mobile devices.

### Mobile network speeds continue to advance, greasing the skids for innovation on the mobile platform

2.5G should enter a 'sweet spot' of sorts over the next two years, as 25% of users use the service. 2.5G allows for basic downloads, like ring tones and screensavers, and limited Web browsing. However, we believe the adoption of 3G, with speeds of 200-700 Kbps, will be key to monitor for more advanced development of the mobile Internet. As we saw with the conversion of the dial-up Internet to the broadband Internet, faster access speeds make for more compelling user experiences, and create a more feasible environment for developing applications and services. Increasingly, as mobile phone features and access speeds improve, users will expect, in effect, to use their phones as remote control devices to search and pay for products, services and information.

### The ramp-up in WiFi / WiMax, the glue for ubiquitous connectivity, may happen faster than expected

Accurate global data for WiFi hot spots and users are elusive. We estimate roughly 60 million WiFi users globally (based on Synergy's Global data of SOHO / Home Client WLAN units shipped and assuming a replacement cycle three years or longer) and about 200,000 hotspots in 2006. The leaders in the WiFi market are T-Mobile and Boingo. Various municipal initiatives may significantly accelerate the pace of the roll-out. Google's proposal to install WiFi access devices in San Francisco rests on an expectation of local advertising revenues. In addition, we would expect a number of different businesses to contribute to similar projects in order to derive a marketing benefit from rolling out WiFi access in specific neighborhoods — an "Adopt a Highway" type program.

### Revenue streams for broadband and mobile Internet now differ, but will likely grow to resemble each other

Broadband revenue typically is advertising or commission-based, whereas mobile revenue involves payments for content or services. We believe market forces are about to change that distinction. Just as mobile users have been willing to pay for à-la-carte content like ring tones, so will broadband users as they are enabled to find whatever they are looking for, anytime, anywhere. Conversely, advertising and commission-based revenue should take off in the mobile market, helped by improving access speeds, rising

acceptance of payment systems, and enhanced search-related features for mobile phones. The rapid ramp of Google's revenue and profit growth suggests that vendors find Google's on-demand online customer acquisition tools to be quite effective — and Google is just beginning to tap this opportunity in the mobile market.

## Pace of Global Innovation Is Accelerating

**The Internet is now anything but US-centric, and so will be the next round of global innovation**

Not only do North American users account for a mere 23% of global Internet users, but also we expect many of the most exciting innovations to emerge from outside the US. The US now lags in a number of areas — mobile messaging and mobile content — that we expect to spur innovations related to broadband and mobile-Internet over the next 10 years.

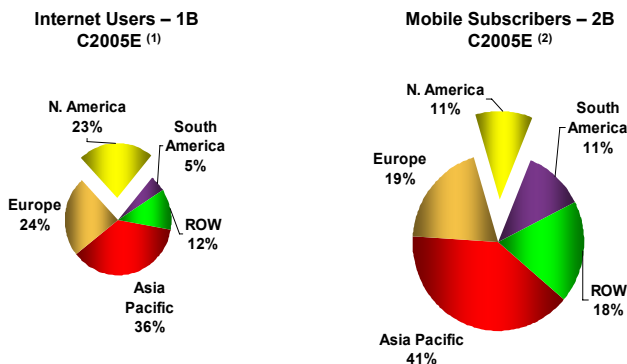
North America has fallen to the No. 3 region in terms of the number of Internet users; there are now more Internet users in Asia/Pacific and Europe than in North America. Internet user growth in China and India has proved to be stronger than we had expected, causing the number of Internet users in Asia/Pacific (including Japan) to grow to 308MM in 2004, which is 84MM more Internet users than in North America. Europe has also overtaken North America and now accounts for 26% of global Internet users in 2004 versus 25% for North America.

**US companies, at the margin, will likely continue to turn overseas for technological innovations**

The eBay/Skype acquisition, along with VeriSign/Jamba, are important examples of leading US-based technology companies purchasing leading non-US technologies that had leadership in foreign markets with the intent, in part, to bring technology into US market. We expect this trend to continue.

Exhibit 24

### US Share of Technology Usage / Innovation Falling



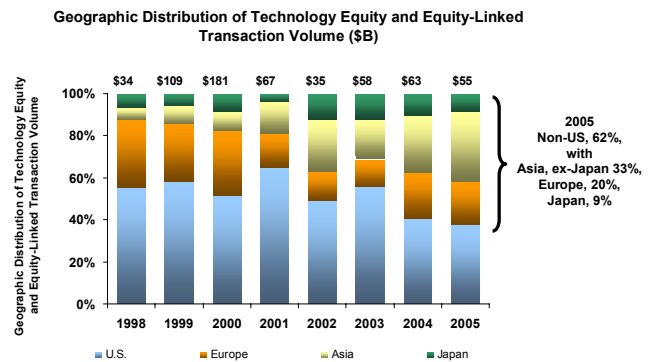
Source (1) Morgan Stanley Research. (2) Morgan Stanley Communications Equipment Research: Scott Coleman, John Marchetti.

**Global investors have been willing to commit rising amounts of capital to technology companies outside the US, particularly in Asia**

Public market financings, for non-US based companies, as a percentage of total technology financings, are at an all time high, and rising. In 2005, non-US technology company financings accounted for 62% of technology financings, versus 58% in 2004, 51% in 2003 and 39% in 1998. Non-Japan Asia has supported the highest and most consistent growth. In 2005, it accounted for 33% of total public technology financings in dollar terms.

Exhibit 25

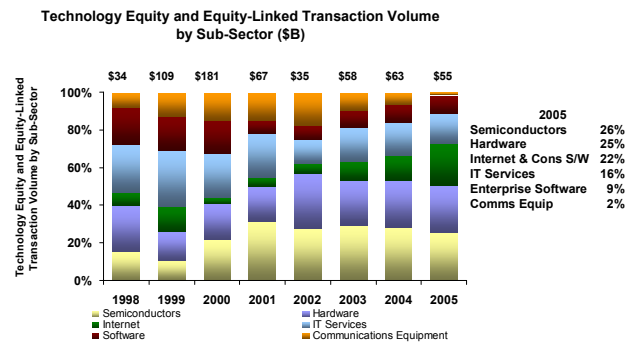
### Non-US Share of Technology Financings Rising



Source: SDC, Dealogic, Morgan Stanley.

Exhibit 26

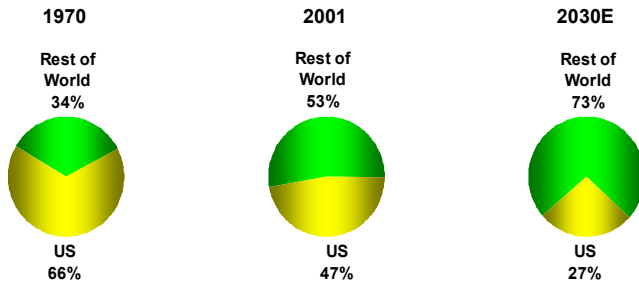
### Global Technology Financings by Sector



Source: SDC, Dealogic, Morgan Stanley.

Exhibit 27

## Global Technology Financings by Sector



Source: AXA. Projected data for C2030E calculated using the rate of growth of market capitalization for Rest of World and USA since 1970.

### Many Asian technology companies have been criticized for being 'fast followers' rather than fast innovators — but that has begun to change

A rising number of Asian technology companies have begun to ramp up focus on anticipating consumer needs. We cite Japan's NTT DoCoMo (mobile data services), KDDI (mobile data services), Toshiba (flash memory), Sharp (TFT LCDs and solar cells) and Canon (imaging); Korea's Samsung (memory) and SK Telecom (mobile data services); Taiwan's TSMC (flexible semiconductor manufacturing); India's iFlex (banking application software) and Infosys (outsourcing), Tencent (instant messaging), NetEase (online gaming), Ctrip (online and offline travel) and Tom Online (mobile value added services) as good examples.

### China will likely surprise over the next 5-10 years as a source of technological innovation

Large numbers of trained engineers and users of the Internet and mobile phones now spur innovation in China. Faced with an expectation of low-cost services, technology leaders there are striving to meet market demands.

## Internet Leaders, For Most Part, Are Well Positioned

*We determine the companies that are the market share leaders for each TMT segment for each country (see TMT Appendix for more detail).*

### **Despite intensifying intramural squabbles, Internet leaders, for the most part, remain well positioned**

We foresee an accelerated scramble among Internet leaders for control of the next-generation communications hubs. Internet leaders are observing the convergence of the Internet with other types of communications (for instance, more than 10% of Yahoo! instant messaging sessions result in a phone call), and they are reacting accordingly with plans to leverage their existing subscriber bases into new services.

### **However, the Internet leaders are not the only ones that support tens of millions — and often, hundreds of millions — of users of their core products**

The leading mobile service providers — China Mobile (with 225 million subscribers); Vodafone (171 million); China Unicom (121 million) and China Netcom (120 million) — also desire to be next-generation market leaders. They have hefty user bases and active development environments for mobile value added services (MVAS) to support their efforts.

### **How does all this get paid for?**

- *In part, through advertising.* We believe many still underestimate the potential for increased spending on online advertising. In the US, we are still at only \$145 in advertising spending per Internet household in 2004, compared to \$674 for every newspaper home.
- *In part, through a convergence of search / find / obtain (SFO) for goods and services on the Internet.* Will there always be a difference between advertising, marketing, and selling? We think that the business models being created by Amazon, eBay, Google, and Yahoo! are blurring those distinctions.
- *And in part through “\$1 content.”* Very low-price downloadable digital content (e.g., ring tones and iTunes), assisted by easy-to-use payment systems (e.g., mobile operators and PayPal), is generating billions in revenue. We believe the next exciting market will be for online video. Maybe, just maybe, if one has truly great low-price content

— and makes it very easy to search / find / obtain (SFO) — one can make it up on volume.

### **Market Share Concentration in the Hands of a Few**

The key takeaway from our company analysis is that, in most TMT markets, a handful of companies dominate the market. This is especially the case with telephone lines, where often a state-operated (or formerly state-operated) company has near total market share (e.g., Deutsche Telecom (89%) in Germany (see Exhibit 29). In many cases, dominance in telephone lines translates to a leading position as an ISP, both narrowband and DSL. The US offers a strong exception to this rule though, with AOL / RoadRunner taking a leadership spot (27% US ISP market share) despite not having a telco relationship. We note the same exception in Japan, where ISP market share has remained fragmented because telecom companies have been unable to garner sufficient user traffic to acquire customers. Yahoo! Japan has this advantage and, therefore, rapidly built itself into the No. 1 ADSL ISP/portal position, ahead of telcos and electronics giants who had first-mover advantage.

In the US mobile phone services segment, market leaders are Cingular (27% share), Verizon (25%), Sprint PCS (12%), T-Mobile (10%), and Nextel (8%). In the US ISP segment, we believe market leaders are AOL / RoadRunner (27% share), Comcast (8%), NetZero/Juno (6%) and SBC Yahoo! (6%).

Some of the major corporate alliances — within countries and between countries — are not captured in this data sort, although the strong potential competitive positioning of the alliances can be drawn from the data.

### **Focusing on Leaders**

As analysts, one of our consistent objectives has been to focus on the largest market segments and the No. 1 and No. 2 players within each segment. We believe market-share leaders in the largest markets often have the greatest revenue and earnings potential. With that in mind, we note several key points from our company database:

**First, in the telephone line segment, companies with very large market shares among the top markets are Telemex in Mexico (96%), KT Corp in Korea (95% share), Deutsche Telecom in Germany (89%), Telefonica in Spain (89%), and Telia in Sweden (84%).** Telephone lines arguably are the most regulated of the segments, thus

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the very strong presence of government/quasi-government companies in this segment should not come as too much of a surprise.

**Second, as a point of contrast, the highest country market share in PCs — arguably the most competitive of the segments — belongs to Dell in the US, with a 35% share (plus 29% in the UK and 25% in Canada).** Across the other countries, the market share leaders generally have a 20+% share (e.g., Lenovo 26% in China, NEC 20% in Japan, Fujitsu Siemens 21% in Germany, and HP at roughly 20% in the US, the UK, France, Italy, Canada, Spain and Australia).

**Third, mobile handsets show slightly more concentration: Nokia has roughly a 42% share in Western Europe and 31% worldwide. In Japan, NEC has the largest share at 17%.**

**Fourth, in the ISP segments, several market leaders have close to 50% share: Wanadoo in France (45%), Belgacom in Belgium (47%), KT Corp in Korea (47%), Ingemet Grupo in Brazil (56%), T-Online in Germany (53%) and HiNet in Taiwan (56%).** On a regional basis, we think some of the more interesting data points come from Europe, where several country segment leaders (like Tiscali, TDC and Telia) have established strong presences outside of their home markets. In broadband, in Japan, Yahoo! BB-branded ISP service (Softbank group) has well over 50% market share on our estimates, a picture somewhat different from narrowband.

In addition, we note that certain TMT companies have not been included in this report: Yahoo!, which has very strong global positioning in its segment (Web portals), Amazon.com, which has a very strong global positioning in e-commerce, and eBay, which has very strong global positioning in e-commerce trading platforms. This is in part because this report does not focus specifically on new media and e-commerce categories, but several of these companies' partners rank at the top of their respective categories — for example, on the DSL Internet access front, Yahoo!'s partner in the US, SBC, is the market leader with 38% market share. Verizon (teamed up with Yahoo! and MSN) is No. 2 with 31%.

In sum, those companies that we believe are best positioned in the leading market segments are often, but certainly not always, best-positioned in global markets. Economies of scale, alliances, learning curves, and the skills that come with and help create success in highly competitive markets are all factors that we think tend to apply outside of home markets. Note, however, that cultural/language barriers are usually impediments to significant global reach.

On the following page, we include an overview of the leading TMT companies in the top 5 ranked TMT countries. Full details are provided in the TMT Appendix, but suffice it for now to say that, where sufficient data exist, we have listed the leading companies and their market shares for many of the key TMT products and services on a country-by-country basis.

Exhibit 28  
**Leading TMT Companies in Top 5 Ranked Countries**

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Phone In Use	Mobile Devices	Internet Service Providers (ISPs)	DSL	Credit/Debit Cards
1 USA Pop. 294MM	<b>184MM</b> Verizon - 36% SBC Comm. - 31% BellSouth - 14% Qwest - 9% Sprint - 5%	<b>99MM</b> Comcast - 22% DirecTV - 14% EchoStar - 11% Time Warner - 11% Cox - 6%	<b>204MM</b> Dell - 35% HP - 19% Gateway - 6% Apple - 5% Lenovo - 5%	<b>171MM</b> Cingular - 27% Verizon - 25% Sprint PCS - 12% T-Mobile - 10% Nextel - 8%	<b>141MM</b> Motorola - 35% LG - 17% Samsung - 16% Nokia - 14% Kyocera - 4%	<b>202MM users</b> AOL/RoadRunner - 27% Comcast - 8% NetZero/Juno - 6% SBC Yahoo! - 6% EarthLink - 5%	<b>5.8MM</b> SBC - 38% Verizon - 31% Bell South - 18% Qwest - 9%	<b>678MM</b> Citibank - 13% Bank One - 10% MBNA - 8% Bank of America - 8% JPMorganChase - 6%
2 China Pop. 1,300MM	<b>283MM</b> China Telecom - 60% China Netcom - 36% China TieTong - 4%	<b>128MM</b> Shanghai Cable Tianjin Cable Beijing Cable	<b>42MM</b> Lenovo - 26% Founder Elec. - 12% Tongfang - 8% Dell - 7% IBM - 5%	<b>335MM</b> China Mobile - 64% China Unicom - 36%	<b>85MM</b> Nokia - 28% Motorola - 10% Samsung - 9% Bird - 8% TCL - 6%	<b>94MM users</b> China Telecom - 15% China Unicom - 14% China Netcom - 10%	<b>3.3MM</b> ChinaNet China Netcom GBNet China Unicom	<b>685MM</b> Industrial & Commercial Bank of China - 20% Bank of China - 18% Agricultural Bank of China - 14% China Construction Bank - 10%
3 Japan Pop. 128MM	<b>78MM</b> NTT KDDI Japan Telecom	<b>21MM</b> Sky Perfect - 15% Jupiter Telecom - 8%	<b>54MM</b> NEC - 20% Fujitsu - 19% Dell - 11% Toshiba - 8% IBM - 7%	<b>85MM</b> NTT DoCoMo - 56% KDDI (au) - 22% Vodafone - 17% TU-KA - 4%	<b>49MM</b> Panasonic - 14% Sharp - 13% Sanyo - 12% Fujitsu - 11%	<b>73MM users</b> @nifty - 14% SoftbankBB(Yahoo! BB) - 13% NTT (OCN) - 12% KDDI (dion) - 8% NEC (biglobe) - 11%	<b>7MM</b> NTT Regional - 43% BB Technologies - 25% ACCA Networks - 10% e-Access - 10% Japan Telecom - 7%	<b>645MM</b> Sumitomo Mitsui - 16% UC Card - 15% Nippon Shinpan - 14% Credit Saison - 12% UFJ Card - 9%
4 Germany Pop. 83MM	<b>57MM</b> Deutsche Telecom - 89% Arcor Mobilcom	<b>26MM</b> Kabel Deutschland - 38% Ish (Kabel NRW) - 16% Premiere World - 13% Kabel Baden Wurttemberg - 9% EWT (UPC) - 8%	<b>39MM</b> Fujitsu Siemens - 21% HP - 11% Acer - 10% Medion - 10% Dell - 9%	<b>68MM</b> T-Mobile - 40% Vodafone D2 - 36% E-Plus - 13% O2 - 11%	<b>30MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>46MM users</b> T-Online - 53% freenet.de AOL Tiscalie	<b>3.1MM</b> Deutsche Telecom	<b>96MM</b> Bankgesellschaft Berlin - 7% Citibank - 6% Barclaycard - 6% Commerzbank - 5% KarstadtQuelle Bank - 4%
5 United Kingdom Pop. 60MM	<b>86MM</b> BT - 83% NTL/Telewest - 13%	<b>3MM</b> Sky Digital - 48% Freeview - 30% NTL - 13% Telewest - 9%	<b>50MM</b> Dell - 23% HP - 16% Acer - 5% NEC/Packard Bell - 5% Toshiba - 5%	<b>124MM</b> O2 - 25% T-Mobile - 24% Orange - 23% Vodafone - 23%	<b>30MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>60MM users</b> Freeserve - 9% World Online - 6% BT/Genie - 6% AOL - 5% LineOne - 5%	<b>0.55MM</b> BT	<b>0.18MM</b> Barclays Bank - 18% RBS/NatWest - 16% HSBC Bank - 6% MBNA - 6% Co-operative Bank - 4%

Source: Morgan Stanley Research

Note that for ISPs, the company market shares refer to share of the ISP market, while the boxed user numbers refer to total Internet users in the market. Since, on average, there are multiple Internet users for each ISP subscription, multiplying the ISP market share by the number of Internet users would overstate the number of ISP subscriptions.

## Methodology

### Drill Down on TMT Market Propensity Analysis / Forecasting

While past growth rates are never a perfect predictor of future growth rates, we have found that growth rates projected using our forecasting approach have had directional / relative significance. When we used 2001 growth rates to predict country-by-country TMT market positions for 2004, our correlation coefficient was a strong 0.99. For our 2007 and 2010 projections, we used the underlying 2003-2004 growth rates of our underlying TMT metrics and applied those growth rates as CAGRs (compound average growth rates) out to 2007 and 2010.

We measure 2004 market sizes and growth rates for eight core TMT metrics: 1) population; 2) nominal GDP per capita; 3) telephone lines; 4) cable subscribers; 5) installed PCs; 6) mobile phones in use; 7) Internet users and 8) credit/debit cards. We do this for the 50 most important economies, as measured in terms of population size, land mass and GDP per capita.

We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories.

For each economy, we calculate past / present / potential global market weightings across seven TMT metrics - we call this our relative weighting and we use it to measure / rank a country's propensity for TMT products and services. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.3 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, 10.6 in Internet users, and 9.6 in credit/debit cards produce a relative weighting of 9.0: For the sake of illustration, in this case, the standardized (normalized) Z-score for the US Telephone Lines is 3.4 (where  $Z = \frac{X - \mu}{\sigma}$ ) which we then adjust by 5 (simply centering the mean of the normal distribution - the 'center of the bell curve' on 5) giving the US a standardized adjusted score for GDP per capita of 8.4. In Exhibit 30, we describe this calculation and also outline the math behind the US's overall relative weighting of 9.0 (across all TMT categories).

We examine the potential for IU<sup>3</sup> (Internet users, uses, and usage) growth based on our concept of a TMT penetration gap - we compare Internet penetration levels to those for other, more mature TMT products / services (such as telephone lines) in each region.

Exhibit 29

### Sample Relative Weighting Calculation - US Telephone Lines

<p>Calculation for US Telephone Lines relative weighting:</p> $\frac{X - \mu}{\sigma} = Z - score + 5 = relative \ weighting$ $\frac{183,688 - 23,495}{47,742} = 3.4 + 5 = 8.4$ <p>Following from this, the overall US relative weighting calculation (across the seven TMT categories) for the US is 9.0, derived by the equation:</p> $[6.4 + 8.4 + 11.3 + 7.6 + 8.9 + 10.7 + 9.6] / 7 = 9.0$	<table border="1"> <thead> <tr> <th>Country</th> <th>Per Capita (US\$)</th> <th>2004 Telephone Lines (000's)</th> </tr> </thead> <tbody> <tr> <td>USA</td> <td>293,819</td> <td>183,688</td> </tr> </tbody> </table>	Country	Per Capita (US\$)	2004 Telephone Lines (000's)	USA	293,819	183,688
Country	Per Capita (US\$)	2004 Telephone Lines (000's)					
USA	293,819	183,688					

Sources: Morgan Stanley Research

## 50 Countries (from Argentina to the UK)

We ranked and analyzed 50 countries along eight categories. We chose the 50 countries based on population size and GDP. We assumed that 1) the most promising markets for IU<sup>3</sup> growth would be those where current Internet penetration levels are significantly below penetration levels for other media/communications services, such as telephones, PCs, mobile phones, and cable TV; and that 2) the most promising markets for TMT products and services would be those with the greatest purchasing power/economic strength and the potentially fastest growing (in both percentage and absolute terms) TMT segments — telephone lines, PCs, mobile phone subscribers, cable TV, and Internet users.

Based on our estimates, the roughly 150 countries not included in our study account for around 7% of telephone lines, 7% of PCs, 8% of mobile phones, 1% of cable subscriptions, and 7% of Internet users. So all in, we believe that our core 50 countries account for a very dominant percentage of total TMT demand.

## Eight Categories (Telephone Lines to Internet Users)

The eight categories are the following: 1) population; 2) GDP per capita; 3) telephone lines; 4) cable subscribers; 5) installed PCs; 6) mobile phone users; 7) Internet users; and 8) credit/debit cards in use.

We believe that the eight categories we selected are the best indicators of each region/country's propensity for TMT products and services. Population is a simple proxy for potential market size. We think GDP per capita is a good measure of consumer spending power. The number/penetration of telephone lines (both residential and commercial) is one of the most basic measures of a country's level of connectivity and provides insight as broadband services ramp. The number/penetration of cable subscribers is another measure of a country's connectivity, as well as the potential for broadband services. In our opinion, the number/penetration of installed PCs is a key indicator of potential Internet penetration, although note that we anticipate total Internet users ramping to some multiple (2–3 times) of installed PCs, given the incidence of multiple users per PC. We think the number/penetration of mobile phone users is an indicator of the market potential for connectivity and (eventually) wireless Internet services. The number/penetration of Internet users indicates the technology adoption propensity of countries. And the

number/penetration of credit/debit cards should serve as a proxy for online commerce potential.

Overall, the annual global growth rates for these categories vary widely. The newer categories have stronger growth rates. For example, the mobile phone subscriber and Internet user categories grew 14% and 18%, respectively, in 2004.

We believe that these indicators encompass both consumer and business propensity for TMT products and services adoption. In particular, telephone lines, PCs, mobile phones, and Internet users (both absolute levels and penetration rates) measure market opportunities for both consumer- and business-oriented products and services, while cable TV subscription are more of a pure consumer service.

## Penetration Levels of TMT Products/Services by Region

We sought to determine what a "natural" level of market penetration was for TMT services on a regional and country-by-country basis. Given that telephone lines, cable lines, PCs, and mobile phones have been in the market for years, we use these TMT products/services as our benchmark for the current market penetration opportunity for Internet usage.

First, we sorted the 50 countries into six regions (North America, Latin America, Europe, Asia/Pacific, Japan, and Rest of World). We then determined for each country and for each region (with a weighted average) telephone line penetration, PC penetration, mobile subscriber penetration, cable penetration, and Internet penetration. (Note that for some regions, we have included only the largest countries in our analysis.) The penetration levels were calculated using populations. For example, telephone penetration was calculated as telephone main lines divided by population (however, we note that this approach probably underestimates the penetration potential in a country like Japan, which has a large population in a relatively small surface area).

## Technology Industry Views

### United States

#### **US Systems & PC Hardware — In-Line**

Hardware demand continues to improve, albeit at a slow rate. Choppiness prevails in many markets and we believe market share leaders are best positioned to outperform.

#### **US Electronics Supply Chain — In-Line**

Visibility is limited as IT spending is in the process of bottoming. We favor the EMS stocks over the distributors given exposure to the communication end market and more extensive restructuring programs.

#### **US Internet & PC Consumer Software — Attractive**

We maintain that investors still underestimate the impact the Internet will have in changing business process and consumer behavior on a global basis. We continue to believe that, at the margin, online is gaining share from offline, that this will occur for some time to come, and should benefit the Internet leaders.

#### **US Interactive Entertainment — Attractive**

With a new hardware product cycle about to start, we believe the stocks have started to adjust for the cycle trough. The near term could still prove rocky, but we see strong drivers for Interactive Entertainment to expand its share of a growing overall entertainment industry pie. Leading publishers and companies with unified online strategies should benefit disproportionately from the slow, steady emergence of online-enabled game play.

#### **US Communications Equipment — In-Line**

Improving fundamentals, including an inflection point in carrier capex, and enterprise spending, and reasonable valuations, lead us to expect shares to outperform the S&P over the next 6-12 months.

#### **US Semiconductors— In-Line**

Although valuations are reasonable, we believe that near- to intermediate-term fundamentals will remain challenging, and the potential for additional reductions in forward revenue, margin, and earnings estimates remains high.

#### **US Semiconductor Capital Equipment — Attractive**

We are at the start of an industry downturn. Although anticipated, we conclude the depth and duration of the downturn is greater than currently discounted by the market. Investors will be disappointed at the lackluster rate of growth once the industry stabilizes, in our view. Slower industry growth means slower recovery from excess capacity.

#### **US Computer Services & IT Consulting — In-line**

Given superior free cash flow and more attractive valuations, we prefer the information processors over the IT services companies.

#### **US Specialized IT Services— In-Line**

We see an IT spending recovery at hand, though the carry-through for services vendors should be modest. We generally prefer government providers over the commercial vendors at this time.

#### **US Enterprise Software — In-Line**

We believe the industry continues to face structural challenges, which have led to slow growth so far this cycle. We expect modest improvement to growth, but less operating leverage over the next 12 months, and valuations will cap performance, in our view.

#### **US Security Software — In-Line**

Because the problem of ongoing, evolving threats likely will never be fully countered, we expect continued demand independent of economic factors — but with a focus on specific sub-segments as security efforts shift to protection of the network and data.

### Europe

#### **Europe Media & Internet — In-Line**

We believe the European media cyclicals are fully valued and that better opportunities lie in those companies that offer medium-term structural earnings and cash flow growth.

#### **Europe Software & Services — In-Line**

Industry fundamentals appear to have bottomed this cycle, as the enterprise's continued focus on lowering costs of technology means that spending growth will be subdued, we believe. Competitive positioning, execution and cash generation are key.

#### **Telecommunication Equipment — In-Line**

We fear lower than normal 4Q04 seasonality for phones and/or 1Q05 inventory build. We see slowing growth in 2005 for both infrastructure and phones, and feel our longer-term outlook for low/no growth is not reflected in share prices.

### Asia/Pacific

#### **China Technology — In-Line**

China's Technology industry benefits from the large potential market and suffers from low technology content and potential overcapacity.

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**India Software — In-Line**

We expect strong revenue growth but margin pressure. Issues such as visa availability, offshore backlash and the exchange rate could cause uncertainty.

**Taiwan Hardware Components — In-Line**

Visible end-demand and a rising outsourcing trend should fuel mid-term growth for Taiwan's handset component companies, in our view.

**Taiwan Foundry — In-Line**

Near-term cyclical concerns are largely factored in, in our view.

**Taiwan TFT LCD — In-Line**

Fundamentals industry troughed in CQ1:05, marking the end of the downturn, in our view.

**Taiwan DRAM — In-Line**

We expect a mid-cycle DRAM rebound on seasonality, within the ongoing 12-month DRAM downtrend.

**Taiwan Systems & PC Hardware — In-Line**

Near-term cyclical concerns seem to be largely factored into stock prices.

**Hong Kong Technology — Attractive**

The industry is globally competitive with a low-cost China base and global access.

**Singapore Technology — In-Line**

Fundamentals have improved but stocks appear fairly valued.

**South Korea Hardware Components — In-Line**

The industry is facing currency, low visibility, and competitive pricing issues, although we believe that most of these issues are largely reflected in stock prices.

**South Korea Semiconductors — In-Line**

Global DRAM capacity addition has been more aggressive offsetting a chance for a strong DRAM industry recovery during the current technology migration and capacity shift toward NAND flash production. We see seasonal correction in 1H06.

**South Korean Non-PC Chip Design — Attractive**

IC design is a young industry, with significant upside potential, in our view. We expect component design relating to digital TVs and handsets to grow, with the potential to expand its footprint beyond basic ICs.

**South Korea Internet Services — In-Line**

Industry offers attractive growth for premier portals; but rising competition and risks associated with overseas expansion requires investors to be selective, in our view.

**Japan****Japan Electronic Components — In-Line**

We believe Japanese components makers can maintain their high international competitiveness, but concerns include a slowing in the rate of final demand growth, falling prices, and intensified competition with Asian makers.

**Japan Consumer Electronics — In-Line**

In the mainstay digital AV device field, we look for volume growth until F2006, but the essential picture remains that shorter product cycles translate into lower prices. F2004-05 was when firms were supposed to recoup their investments on flat panel TVs and DVD recorders, but the competition for the flat panel technology crown and the lack of interest in DVD recorders overseas caused earnings to disappoint on the whole. Although we expect restructuring benefits to continue to drive earnings growth in the industry, we have not seen any improvements in the earnings structure. Still, valuations are at historical lows, so we see limited downside risk at the moment.

**Japan Computer Software & Services — Attractive**

The industry should rebound in both F05 and F06, and valuations are low. We expect the industry to enter a revenue expansion phase for the first time in four years, and stock valuations seem somewhat inexpensive.

**Japan Semiconductor Production Equipment — In-Line**

If the short-term order decline we expect materializes, we see some downside for industry shares. Although stock prices may appear to be at compelling levels, there might be another 10-15% of downside risk.

**Japan Internet Services — In-Line**

The rate of Internet penetration appears to be slowing in Japan. It is possible to expect increased earnings on user growth going forward, but we believe that Yahoo Japan's growth potential has already been discounted, and we do not expect the Internet industry overall to greatly outperform Topix.

# Technology, Media & Telecommunications (TMT) Database

## Appendix

## Appendix — Exhibits

**Exhibit 30 — Leading Telephone Line Markets**

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**Exhibit 45 — Overview of Global TMT Markets — Sorted Regionally by Mobile Phones**

**Exhibit 46 — Morgan Stanley Global Mobile Phone Estimates — 2003-2004**

**Exhibit 47 — Overview of Global TMT Markets — Sorted Regionally by Cable TV Subscriptions**

**Exhibit 48 — Morgan Stanley Global Cable Subscriber Estimates — 2003-2004**

**Exhibit 49 — Overview of Global TMT Markets — Sorted Regionally by Internet Users**

**Exhibit 50 — Morgan Stanley Global Internet User Estimates — 2003-2004**

**Exhibit 51 — Overview of Global TMT Markets — Sorted Regionally by Credit / Debit Cards**

**Exhibit 52 — Morgan Stanley Global Credit / Debit Cards Estimates — 2003-2004**

**Exhibit 53 — TMT Countries – Sorted by Relative Weighting**

**Exhibit 54 — TMT Market Propensity Ranking / Relative Weighting - 2000A**

**Exhibit 55 — TMT Market Propensity Ranking - 2000A / 2003A / 2004A vs. 2007E / 2010E**

**Exhibit 56 — Market Share Leaders; Countries Sorted by Relative Weighting**

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Exhibit 30

## Leading Telephone Line Markets

Country	2004 Telephone Lines (000's)	2004 Growth	Telephone Line Penetration	Worldwide Share
1 China	282,524	14%	22%	24%
2 USA	183,688	-1	63	15
3 Japan	77,790	2	61	6
4 Germany	56,936	3	69	5
5 India	47,188	7	4	4
6 Brazil	41,568	3	24	3
7 Russia	38,035	4	27	3
8 France	34,223	0	55	3
9 United Kingdom	33,374	-2	56	3
10 Italy	26,720	-1	46	2
11 South Korea	24,681	3	51	2
12 Canada	19,943	-1	63	2
13 Turkey	19,068	0	27	2
14 Spain	18,234	2	44	2
15 Mexico	17,280	7	17	1
16 Iran	14,806	10	22	1
17 Taiwan	13,603	2	59	1
18 Poland	12,006	2	31	1
19 Australia	11,463	3	57	1
20 Netherlands	10,006	0	61	1
21 Egypt	9,868	12	14	1
22 Indonesia	8,812	6	4	1
23 Colombia	8,394	4	19	1
24 Argentina	8,011	0	21	1
25 Thailand	7,416	7	11	1
26 Sweden	6,728	1	75	1
27 Switzerland	5,647	2	78	0
28 South Africa	5,155	3	11	0
29 Belgium	5,067	-1	49	0
30 Malaysia	4,590	-1	18	0
31 Portugal	4,368	0	43	0
32 Pakistan	4,121	6	3	0
33 Austria	3,861	-1	48	0
34 Denmark	3,825	2	71	0
35 Hong Kong, China	3,695	-2	53	0
36 Chile	3,554	1	22	0
37 Saudi Arabia	3,544	3	14	0
38 Hungary	3,514	-2	36	0
39 Philippines	3,414	1	4	0
40 Norway	3,401	1	74	0
41 Czech Republic	3,303	-5	32	0
42 Venezuela	3,116	5	12	0
43 Israel	2,952	-1	45	0
44 Finland	2,566	-3	49	0
45 Ireland	2,123	4	52	0
46 Algeria	2,091	5	6	0
47 Singapore	1,885	-1	44	0
48 Peru	1,707	1	6	0
49 New Zealand	1,662	-3	41	0
50 Nigeria	872	11	1	0
Other	85,847	4	7	7
<b>Total</b>	<b>1,198,245</b>			

Source: Morgan Stanley Research

Exhibit 31

## Leading Installed PC Markets

Country	2004 Installed PCs (000's)	2004 Growth	PC Penetration	Worldwide Share
1 USA	203,677	3%	69%	29%
2 Japan	53,569	4	42	8
3 China	41,600	17	3	6
4 Germany	39,252	1	47	6
5 South Korea	27,041	2	56	4
6 United Kingdom	25,964	4	43	4
7 France	23,138	5	37	3
8 Russia	18,935	19	13	3
9 Brazil	18,910	19	11	3
10 Canada	15,738	1	49	2
11 Italy	15,218	8	26	2
12 India	12,627	29	1	2
13 Mexico	12,126	20	12	2
14 Australia	12,088	1	60	2
15 Taiwan	10,232	5	44	1
16 Spain	9,584	9	23	1
17 Netherlands	8,375	5	51	1
18 Iran	6,174	12	9	1
19 Sweden	5,956	3	66	1
20 Switzerland	5,593	3	77	1
21 Poland	5,493	13	14	1
22 Malaysia	5,378	22	21	1
23 Saudi Arabia	5,220	32	21	1
24 South Africa	4,132	12	9	1
25 Turkey	3,935	12	6	1
26 Argentina	3,638	10	9	1
27 Indonesia	3,350	15	2	0
28 Denmark	3,310	3	61	0
29 Thailand	3,270	17	5	0
30 Austria	3,260	5	40	0
31 Hong Kong, China	3,249	6	47	0
32 Philippines	2,949	15	4	0
33 Singapore	2,854	4	66	0
34 Colombia	2,583	11	6	0
35 Norway	2,574	3	56	0
36 Belgium	2,571	8	25	0
37 Finland	2,415	2	46	0
38 Chile	2,247	11	14	0
39 Czech Republic	2,085	8	20	0
40 Ireland	1,932	7	48	0
41 Venezuela	1,822	11	7	0
42 New Zealand	1,781	4	44	0
43 Israel	1,749	4	27	0
44 Egypt	1,632	16	2	0
45 Portugal	1,605	15	16	0
46 Peru	1,516	14	5	0
47 Hungary	1,293	9	13	0
48 Nigeria	994	14	1	0
49 Pakistan	893	14	1	0
50 Algeria	316	19	1	0
Other	50,367	103	4	7
<b>Total</b>	<b>696,212</b>			

Source: Morgan Stanley Research

March 23, 2006

Internet, Technology, Media & Telecom

Exhibit 32

## Leading Internet User Markets

Country	2004 Internet Users (000's)	2004 Growth	Internet Users Penetration	Worldwide Share
1 USA	201,833	9%	69%	22%
2 China	94,000	18	7	10
3 Japan	72,677	14	57	8
4 Germany	46,312	19	56	5
5 India	39,200	57	4	4
6 United Kingdom	35,179	11	59	4
7 South Korea	31,600	5	65	4
8 Italy	28,610	25	50	3
9 France	24,848	13	40	3
10 Russia	22,300	49	16	2
11 Canada	21,850	24	68	2
12 Brazil	17,945	16	10	2
13 Australia	13,611	29	67	2
14 Spain	13,440	37	33	1
15 Mexico	12,250	33	12	1
16 Indonesia	11,906	49	5	1
17 Netherlands	10,806	16	66	1
18 Poland	10,600	18	27	1
19 Taiwan	10,205	14	44	1
20 Malaysia	9,513	7	37	1
21 Thailand	8,420	35	13	1
22 Sweden	7,364	10	82	1
23 Turkey	6,000	9	8	1
24 Belgium	5,100	17	50	1
25 Hong Kong, China	4,878	25	70	1
26 Philippines	4,829	24	6	1
27 Argentina	4,818	18	12	1
28 Iran	4,800	12	7	1
29 Switzerland	4,668	39	64	1
30 Austria	4,630	24	57	1
31 South Africa	4,373	8	9	0
32 Portugal	4,165	8	41	0
33 Chile	4,000	12	25	0
34 Denmark	3,720	6	69	0
35 Czech Republic	3,530	14	35	0
36 Finland	3,260	23	62	0
37 Colombia	3,178	16	7	0
38 Norway	3,140	4	68	0
39 Hungary	3,050	33	31	0
40 Israel	3,040	19	46	0
41 Egypt	3,000	31	4	0
42 Peru	2,924	3	10	0
43 Saudi Arabia	2,923	45	12	0
44 Singapore	2,413	12	56	0
45 Pakistan	2,387	59	2	0
46 New Zealand	2,340	11	58	0
47 Venezuela	1,551	17	6	0
48 Ireland	1,319	5	33	0
49 Nigeria	1,044	26	1	0
50 Algeria	978	55	3	0
Other	60,455	34	5	7
<b>Total</b>	<b>900,981</b>			

Source: Morgan Stanley Research

Exhibit 33

## Leading Mobile Phone Markets

Country	2004 Mobile Phones In Use (000's)	2004 Growth	Mobile Phones Penetration	Worldwide Share
1 China	334,820	25%	26%	21%
2 USA	170,723	8	58	11
3 Japan	85,147	6	67	5
4 Germany	68,121	3	82	4
5 Russia	57,620	34	40	4
6 Italy	53,964	1	94	3
7 United Kingdom	53,662	2	90	3
8 Brazil	49,171	15	28	3
9 France	41,506	2	67	3
10 India	40,323	75	4	3
11 South Korea	37,164	1	77	2
12 Mexico	36,862	15	35	2
13 Spain	36,625	3	89	2
14 Thailand	32,919	21	51	2
15 Indonesia	32,130	55	15	2
16 Turkey	29,832	10	42	2
17 Philippines	25,062	22	30	2
18 Taiwan	21,782	3	95	1
19 Poland	20,100	15	52	1
20 South Africa	17,567	11	37	1
21 Canada	14,712	9	46	1
22 Australia	14,292	6	70	1
23 Netherlands	14,060	2	86	1
24 Malaysia	13,110	16	51	1
25 Egypt	12,530	59	18	1
26 Czech Republic	9,950	4	97	1
27 Saudi Arabia	9,178	26	37	1
28 Belgium	9,168	3	89	1
29 Portugal	9,104	2	89	1
30 Argentina	8,514	12	22	1
31 Sweden	8,482	4	94	1
32 Venezuela	8,022	9	31	1
33 Chile	8,003	8	50	1
34 Hungary	7,907	4	81	0
35 Austria	6,855	1	85	0
36 Colombia	6,761	22	15	0
37 Hong Kong, China	6,612	1	95	0
38 Switzerland	6,171	2	85	0
39 Israel	6,104	4	93	0
40 Denmark	4,991	6	93	0
41 Finland	4,878	3	93	0
42 Nigeria	4,495	71	3	0
43 Iran	4,393	33	6	0
44 Norway	4,352	5	95	0
45 Peru	3,700	24	13	0
46 Singapore	3,477	1	81	0
47 Pakistan	3,305	62	2	0
48 Ireland	3,147	2	78	0
49 New Zealand	2,726	4	67	0
50 Algeria	960	59	3	0
Other	123,747	5	9	8
<b>Total</b>	<b>1,588,805</b>			

Source: Morgan Stanley Research

Exhibit 34

**Leading Cable TV Subscription Markets**

Country	2004 Cable Subscriptions	2004 Growth	Cable Penetration	Worldwide Share
	(000's)			
1 China	128,000	16%	10%	28%
2 USA	99,091	4	34	22
3 India	49,234	12	5	11
4 Germany	25,801	4	31	6
5 Japan	21,165	10	17	5
6 United Kingdom	15,148	8	25	3
7 South Korea	12,793	12	26	3
8 Canada	10,086	0	32	2
9 Russia	9,927	4	7	2
10 France	7,861	5	13	2
11 Netherlands	6,334	0	39	1
12 Poland	5,660	1	15	1
13 Taiwan	5,094	2	22	1
14 Argentina	4,810	1	12	1
15 South Africa	4,134	4	9	1
16 Belgium	4,005	1	39	1
17 Mexico	3,515	11	3	1
18 Italy	3,272	15	6	1
19 Sweden	3,088	7	34	1
20 Spain	2,905	2	7	1
21 Switzerland	2,808	1	39	1
22 Brazil	2,395	2	1	1
23 Hungary	1,998	4	20	0
24 Portugal	1,778	6	17	0
25 Colombia	1,748	14	4	0
26 Denmark	1,730	2	32	0
27 Australia	1,650	10	8	0
28 Venezuela	1,612	8	6	0
29 Malaysia	1,566	31	6	0
30 Israel	1,550	4	24	0
31 Egypt	1,465	36	2	0
32 Austria	1,229	5	15	0
33 Finland	1,173	7	22	0
34 Czech Republic	1,131	6	11	0
35 Philippines	1,095	6	1	0
36 Turkey	989	9	1	0
37 Chile	969	4	6	0
38 Nigeria	969	53	1	0
39 Norway	960	2	21	0
40 Peru	922	12	3	0
41 Ireland	856	1	21	0
42 Iran	792	49	1	0
43 Saudi Arabia	691	19	3	0
44 New Zealand	625	4	15	0
45 Hong Kong, China	622	7	9	0
46 Thailand	457	5	1	0
47 Singapore	412	8	10	0
48 Algeria	332	27	1	0
49 Indonesia	188	36	0	0
50 Pakistan	18	3	0	0
Other	2,583	8	0	0
<b>Total</b>	<b>459,236</b>			

Source: Morgan Stanley Research

Exhibit 35

Overview of Global TMT Markets — Sorted Regionally by Population

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Population

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones in Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
	(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>														
USA	293,819	39,935	183,688	63%	203,877	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada	31,908	31,134	19,943	63%	15,738	49%	14,712	46%	10,086	32%	21,850	68%	61,700	193%
<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,614</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>														
Russia	142,362	4,087	38,035	27%	18,935	13%	57,620	40%	9,927	7%	22,300	16%	24,400	17%
Germany	82,786	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
France	61,796	32,911	34,223	55%	23,138	37%	41,506	67%	7,861	13%	24,848	40%	30,200	49%
United Kingdom	59,941	35,548	33,574	56%	25,964	43%	53,662	90%	15,148	25%	35,179	59%	141,700	236%
Italy	57,521	29,014	26,720	46%	15,218	26%	53,964	94%	3,272	6%	28,610	50%	55,400	96%
Spain	41,127	25,320	18,234	44%	9,584	23%	36,625	89%	2,905	7%	13,440	33%	94,500	230%
Poland	38,829	6,344	12,006	31%	5,493	14%	20,100	52%	5,660	15%	10,600	27%	18,224	47%
Netherlands	16,320	37,326	10,006	61%	8,375	51%	14,060	86%	6,334	39%	10,806	66%	29,900	183%
Belgium	10,279	33,866	5,067	49%	2,571	25%	9,168	89%	4,005	39%	5,100	50%	14,700	143%
Czech Republic	10,214	10,485	3,303	32%	2,085	20%	9,950	97%	1,131	11%	3,530	35%	8,100	79%
Portugal	10,213	15,982	4,368	43%	1,605	16%	9,104	89%	1,778	17%	4,165	41%	22,800	221%
Hungary	9,809	10,233	3,514	36%	1,293	13%	7,907	81%	1,998	20%	3,050	31%	6,901	70%
Sweden	9,013	38,493	6,728	75%	5,956	66%	8,482	94%	3,088	34%	7,364	82%	7,383	82%
Austria	8,091	36,244	3,861	48%	3,260	40%	6,855	85%	1,229	15%	4,630	57%	8,897	110%
Switzerland	7,261	49,300	5,647	78%	5,593	77%	6,171	85%	2,808	39%	4,668	64%	8,227	113%
Denmark	5,394	44,808	3,825	71%	3,310	61%	4,991	93%	1,730	32%	3,720	69%	2,994	56%
Finland	5,219	35,666	2,566	49%	2,415	46%	4,878	93%	1,173	22%	3,260	62%	2,746	53%
Norway	4,594	54,600	3,401	74%	2,574	56%	4,352	95%	960	21%	3,140	68%	6,799	148%
Ireland	4,044	45,675	2,123	52%	1,932	48%	3,147	78%	856	21%	1,319	33%	3,066	76%
<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>														
Japan	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>														
<b>Non-Japan</b>														
China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
India	1,086,529	622	47,188	4%	12,627	1%	40,323	4%	49,234	5%	39,200	4%	38,100	4%
Indonesia	221,279	1,191	8,812	4%	3,350	2%	32,130	15%	188	0%	11,906	5%	8,900	4%
Pakistan	150,109	684	4,121	3%	893	1%	3,305	2%	18	0%	2,387	2%	0	0%
Philippines	83,986	1,010	3,414	4%	2,949	4%	25,062	30%	1,095	1%	4,829	6%	0	0%
Thailand	64,847	2,521	7,416	11%	3,270	5%	32,919	51%	457	1%	8,420	13%	11,400	18%
South Korea	48,338	14,151	24,681	51%	27,041	56%	37,164	77%	12,793	26%	31,600	65%	65,900	136%
Malaysia	25,467	4,646	4,590	18%	5,378	21%	13,110	51%	1,566	6%	9,513	37%	19,900	78%
Taiwan	23,016	13,451	13,603	59%	10,232	44%	21,782	95%	5,094	22%	10,205	44%	120,000	521%
Australia	20,286	30,682	11,463	57%	12,088	60%	14,292	70%	1,650	8%	13,611	67%	46,400	229%
Hong Kong, China	6,953	23,608	3,695	53%	3,249	47%	6,612	95%	622	9%	4,878	70%	16,200	233%
Singapore	4,318	24,740	1,885	44%	2,854	66%	3,477	81%	412	10%	2,413	56%	10,000	232%
New Zealand	4,057	23,846	1,662	41%	1,781	44%	2,726	67%	625	15%	2,340	58%	4,400	108%
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,783</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>														
Brazil	175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico	103,975	6,494	17,280	17%	12,126	12%	36,862	35%	3,515	3%	12,250	12%	49,700	48%
Colombia	45,346	2,149	8,394	19%	2,583	6%	6,761	15%	1,748	4%	3,178	7%	13,500	30%
Argentina	38,837	3,915	8,011	21%	3,638	9%	8,514	22%	4,810	12%	4,818	12%	22,100	57%
Peru	28,889	2,492	1,707	6%	1,516	5%	3,700	13%	922	3%	2,924	10%	3,540	12%
Venezuela	25,910	4,175	3,116	12%	1,822	7%	8,022	31%	1,612	6%	1,551	6%	11,700	45%
Chile	15,992	5,903	3,554	22%	2,247	14%	8,003	50%	969	6%	4,000	25%	6,500	41%
<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World (ROW)</b>														
Nigeria	142,655	500	872	1%	994	1%	4,495	3%	969	1%	1,044	1%	4,035	3%
Turkey	70,589	4,286	19,068	27%	3,935	6%	29,832	42%	989	1%	6,000	8%	55,000	78%
Egypt	69,330	1,111	9,868	14%	1,932	2%	12,530	18%	1,465	2%	3,000	4%	965	1%
Iran	68,317	2,364	14,806	22%	6,174	9%	4,393	6%	792	1%	4,800	7%	404	1%
South Africa	47,312	4,587	5,155	11%	4,132	9%	17,567	37%	4,134	9%	4,373	9%	15,900	34%
Algeria	32,313	2,655	2,091	6%	316	1%	960	3%	332	1%	978	3%	385	1%
Saudi Arabia	24,952	11,065	3,544	14%	5,220	21%	9,178	37%	691	3%	2,923	12%	11,612	47%
Israel	6,575	17,780	2,952	45%	1,749	27%	6,104	93%	1,550	24%	3,040	46%	3,500	53%
Other	1,314,583	1,325	85,847	7%	50,367	4%	123,747	9%	2,583	0%	60,455	5%	177	0%
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>	<b>6,288,463</b>		<b>28,592</b>		<b>1,198,245</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>	
<b>Growth Rate</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>	<b>19%</b>	<b>10%</b>	<b>11%</b>	<b>13%</b>	<b>25%</b>	<b>9%</b>	<b>7%</b>	<b>18%</b>	<b>14%</b>	<b>9%</b>	<b>57%</b>
<b>Average Weighted Penetration</b>														

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

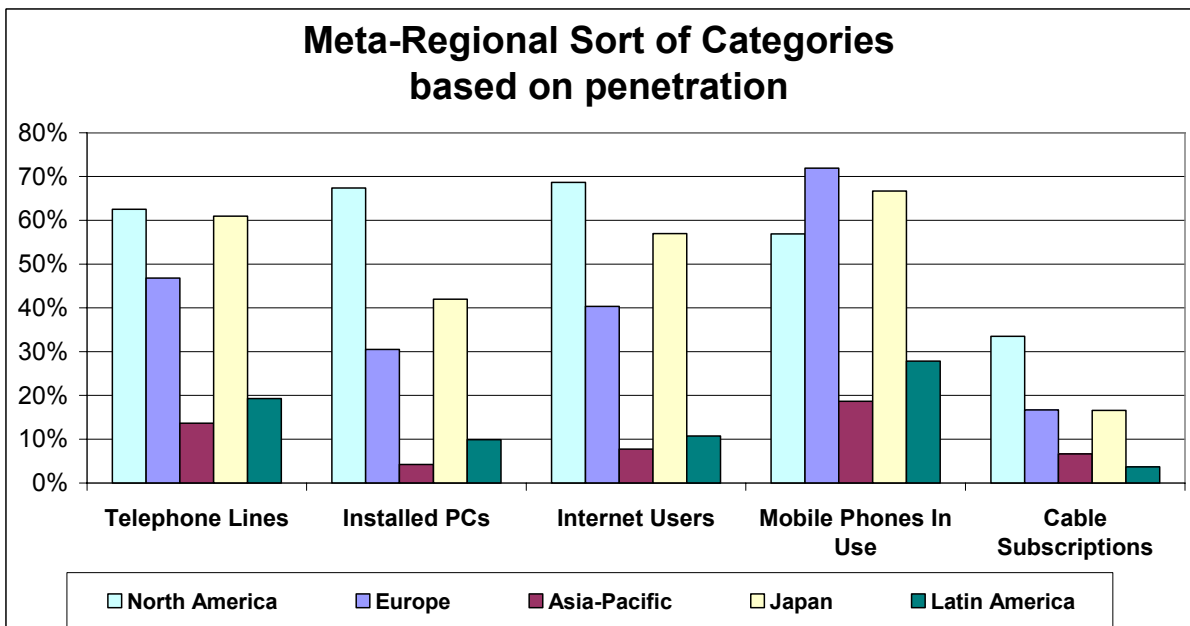
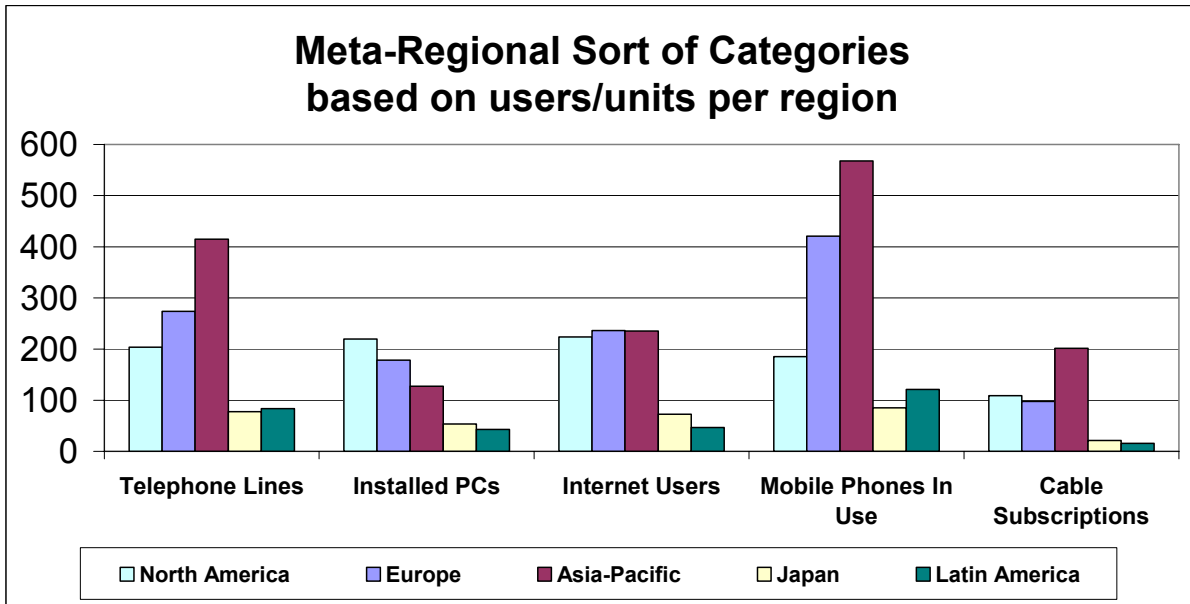
Exhibit 36

**Meta-Regional Sort of Categories — Based on Users/Units per Region and Based on Penetration**

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

**Technology, Media & Telecommunications (TMT) Regional Sorts**



Population, GDP and household data is used to calculate GDP per Capita and penetration rates: source - Morgan Stanley estimates, The CIA World Factbook 2004 & IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

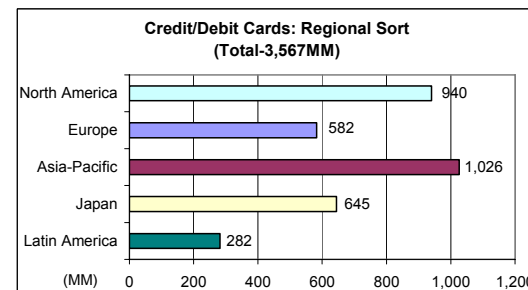
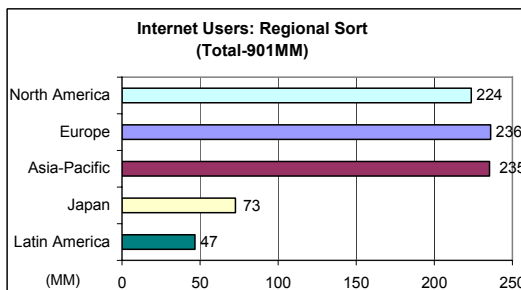
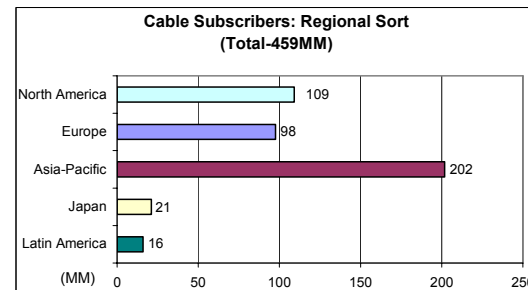
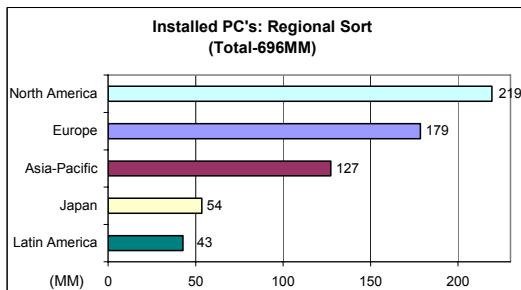
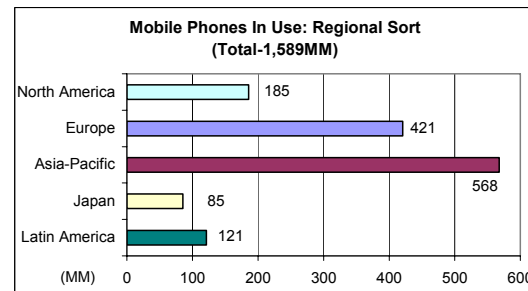
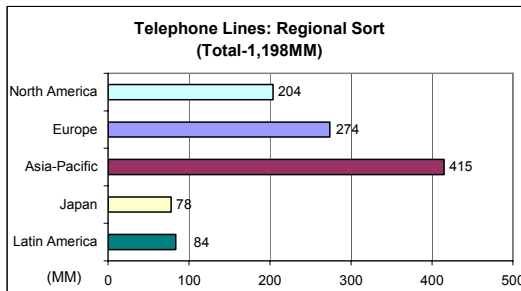
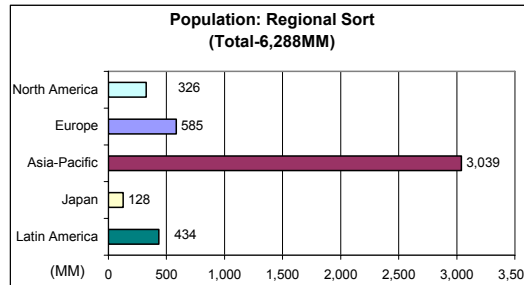
Exhibit 37

TMT Regional Sorts (Broken Out by Individual TMT Category)

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

Technology, Media & Telecommunications (TMT) Regional Sorts



Population, GDP and household data is used to calculate GDP per Capita and penetration rates: source - Morgan Stanley estimates, The CIA World Factbook 2004 & IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 38

## TMT Country Penetration Levels — Sorted by Average Penetration

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

### Technology, Media & Telecommunications (TMT) Penetration Levels (Sorted By Average Penetration)

Country	Telephone Lines	Cable Subscriptions	Mobile Phones Installed	Mobile Phones In Use	Internet Users	Average Penetration
1 Sweden	75%	34%	66%	94%	82%	70%
2 Switzerland	78	39	77	85	64	69
3 Denmark	71	32	61	93	69	65
4 Netherlands	61	39	51	86	66	61
5 USA	63	34	69	58	69	58
6 Norway	74	21	56	95	68	63
7 Taiwan	59	22	44	95	44	53
8 Germany	69	31	47	82	56	57
9 South Korea	51	26	56	77	65	55
10 United Kingdom	56	25	43	90	59	54
11 Canada	63	32	49	46	68	52
12 Belgium	49	39	25	89	50	50
13 Finland	49	22	46	93	62	55
14 Israel	45	24	27	93	46	47
15 Hong Kong, China	53	9	47	95	70	55
16 Singapore	44	10	66	81	56	51
17 Australia	57	8	60	70	67	52
18 Ireland	52	21	48	78	33	46
19 Japan	61	17	42	67	57	49
20 Austria	48	15	40	85	57	49
21 New Zealand	41	15	44	67	58	45
22 Portugal	43	17	16	89	41	41
23 France	55	13	37	67	40	43
24 Italy	46	6	26	94	50	44
25 Hungary	36	20	13	81	31	36
26 Czech Republic	32	11	20	97	35	39
27 Spain	44	7	23	89	33	39
28 Poland	31	15	14	52	27	28
29 Malaysia	18	6	21	51	37	27
30 Chile	22	6	14	50	25	23
31 Russia	27	7	13	40	16	21
32 Argentina	21	12	9	22	12	15
33 Saudi Arabia	14	3	21	37	12	17
34 South Africa	11	9	9	37	9	15
35 China	22	10	3	26	7	14
36 Mexico	17	3	12	35	12	16
37 Turkey	27	1	6	42	8	17
38 Venezuela	12	6	7	31	6	12
39 Thailand	11	1	5	51	13	16
40 Brazil	24	1	11	28	10	15
41 Colombia	19	4	6	15	7	10
42 Iran	22	1	9	6	7	9
43 Peru	6	3	5	13	10	7
44 Philippines	4	1	4	30	6	9
45 Egypt	14	2	2	18	4	8
46 India	4	5	1	4	4	3
47 Indonesia	4	0	2	15	5	5
48 Algeria	6	1	1	3	3	3
49 Nigeria	1	1	1	3	1	1
50 Pakistan	3	0	1	2	2	1
51 Other	7	0	4	9	5	5

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the

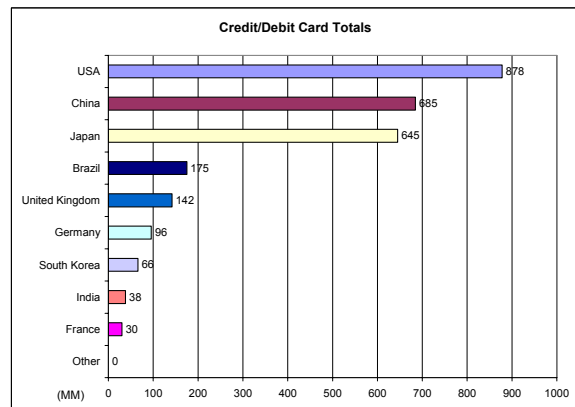
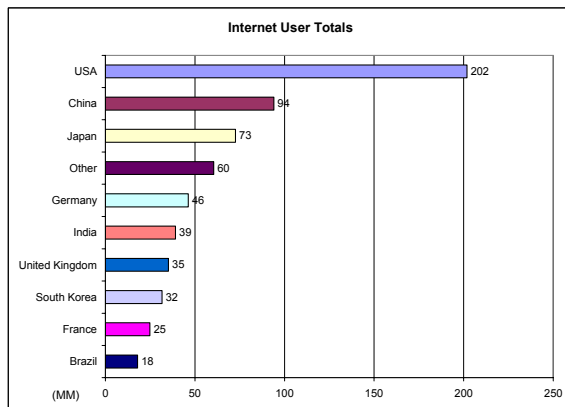
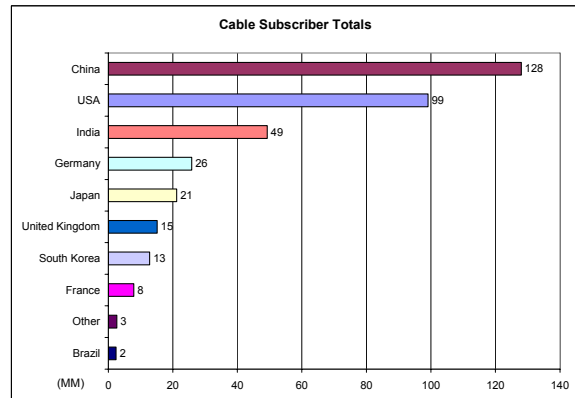
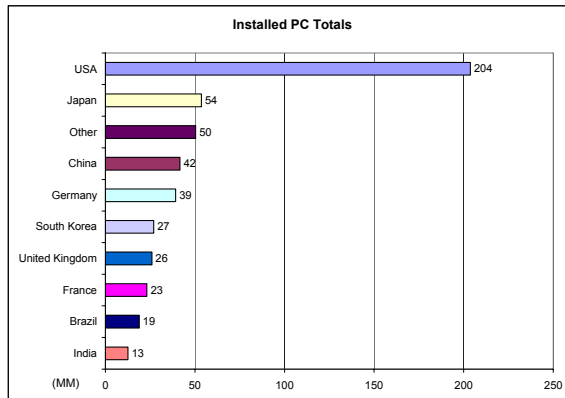
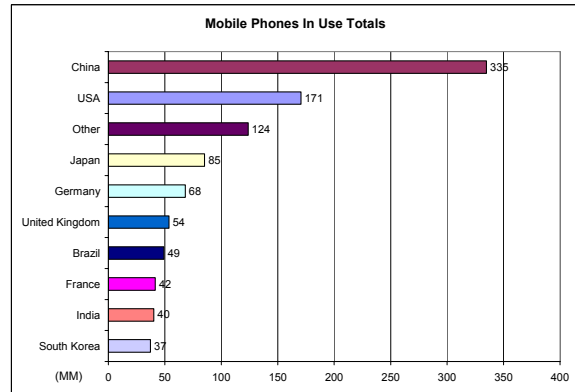
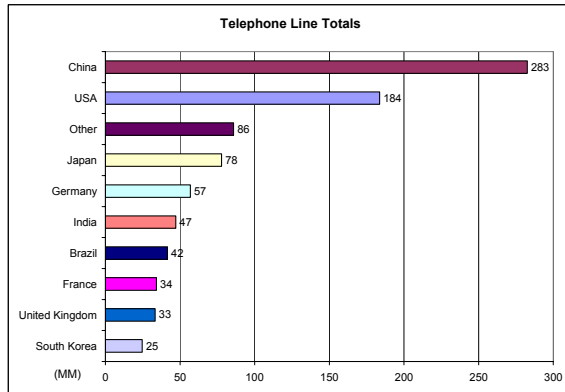
Exhibit 39

TMT Totals — Top 10 Markets by Country

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

Technology, Media & Telecommunications (TMT) Totals - Top 10 Markets by Country\*



\*Top Ten markets as ranked by our relative weighting

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

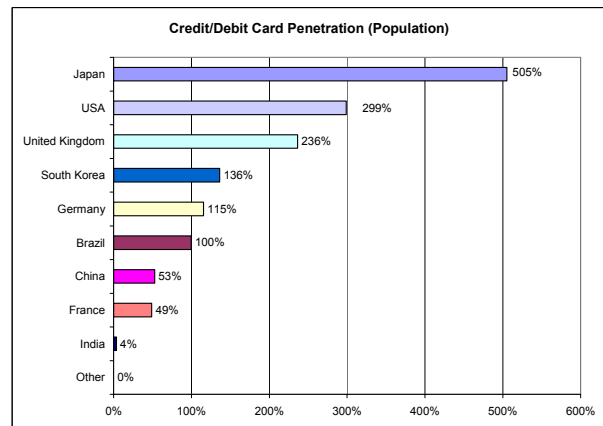
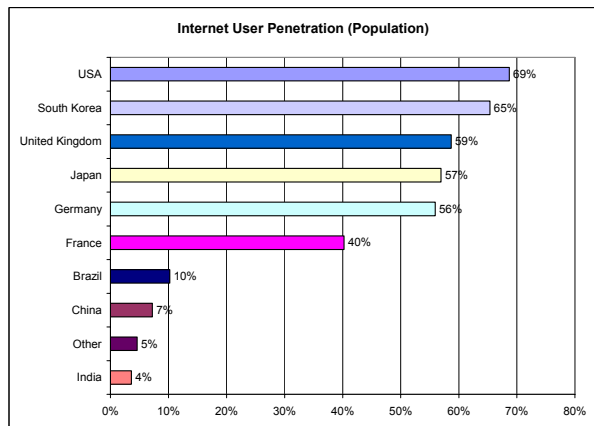
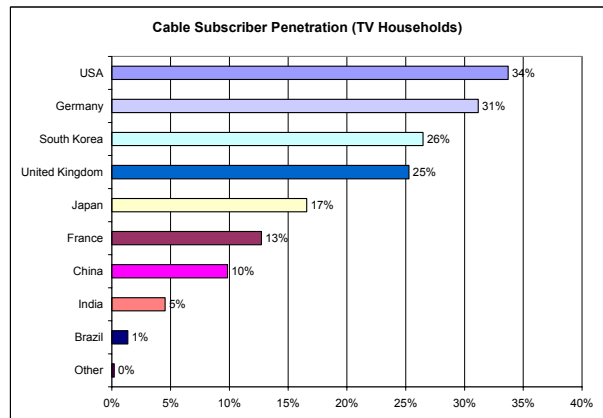
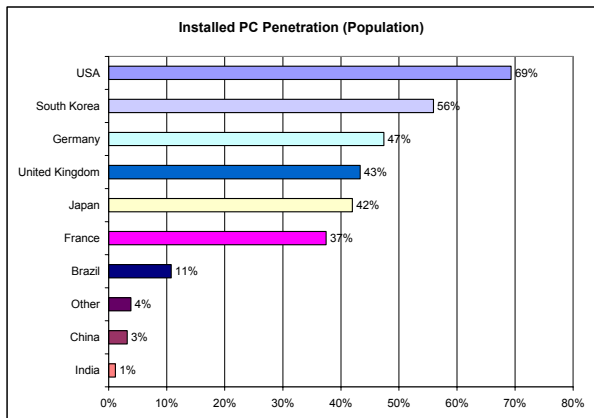
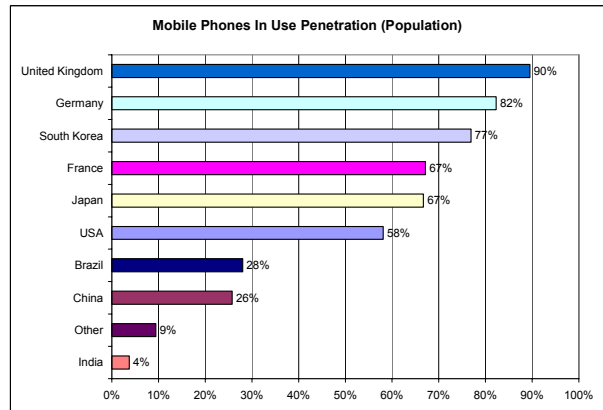
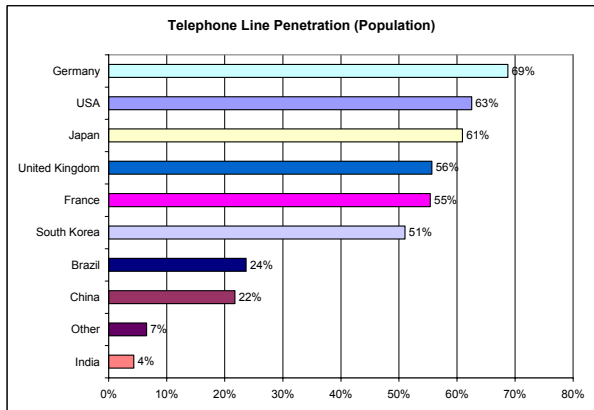
Exhibit 40

TMT Penetration Levels — Top 10 Markets by Country

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

Technology, Media & Telecommunications (TMT) Penetration Levels - Top 10 Markets by Country\*



\*Top Ten markets as ranked by our relative weighting

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 41

Overview of Global TMT Markets — Sorted Regionally by Telephone Lines

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Telephone Lines

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones In Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
	(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>														
USA	293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada	31,908	31,134	19,943	63	15,738	49	14,712	46	10,086	32	21,850	68	61,700	193
<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>														
Germany	82,786	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
Russia	142,362	4,087	38,035	27	18,935	13	57,620	40	9,927	7	22,300	16	24,400	17
France	61,786	32,911	34,223	55	23,138	37	41,506	67	7,861	13	24,848	40	30,200	49
United Kingdom	59,941	35,548	33,374	56	25,964	43	53,662	90	15,148	25	35,179	59	141,700	236
Italy	57,521	29,014	26,720	46	15,218	26	53,964	94	3,272	6	28,610	50	55,400	96
Spain	41,127	25,320	18,234	44	9,584	23	36,625	89	2,905	7	13,440	33	94,500	230
Poland	38,829	6,344	12,006	31	5,493	14	20,100	52	5,660	15	10,600	27	18,224	47
Netherlands	16,320	37,326	10,006	61	8,375	51	14,060	86	6,334	39	10,806	66	29,900	183
Sweden	9,013	38,493	6,728	75	5,956	66	8,482	94	3,088	34	7,364	82	7,383	82
Switzerland	7,261	49,300	5,647	78	5,593	77	6,171	85	2,808	39	4,668	64	8,227	113
Belgium	10,279	33,866	5,067	49	2,571	25	9,168	89	4,005	39	5,100	50	14,700	143
Portugal	10,213	15,982	4,368	43	1,605	16	9,104	89	1,778	17	4,165	41	22,600	221
Austria	8,091	36,244	3,851	48	3,260	40	6,855	85	1,229	15	4,630	57	8,897	110
Denmark	5,394	44,808	3,825	71	3,510	61	4,991	93	1,730	32	3,720	69	2,994	56
Hungary	9,809	10,233	3,514	36	1,293	13	7,907	81	1,998	20	3,050	31	6,901	70
Norway	4,594	54,600	3,401	74	2,574	56	4,352	95	960	21	3,140	68	6,799	148
Czech Republic	10,214	10,485	3,303	32	2,085	20	9,950	97	1,131	11	3,530	35	8,100	79
Finland	5,219	35,666	2,566	49	2,415	46	4,878	93	1,173	22	3,260	62	2,746	53
Ireland	4,044	45,675	2,123	52	1,932	48	3,147	78	856	21	1,319	33	3,066	76
<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>														
Japan	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>														
<b>Non-Japan</b>														
China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
India	1,086,529	622	47,188	4	12,627	1	40,323	4	49,234	5	39,200	4	38,100	4
South Korea	48,338	14,151	24,681	51	27,041	56	37,164	77	12,793	26	31,600	65	65,900	136
Taiwan	23,016	13,451	13,603	59	10,232	44	21,782	95	5,094	22	10,205	44	120,000	521
Australia	20,286	30,682	11,463	57	12,088	60	14,292	70	1,650	8	13,611	67	46,400	229
Indonesia	221,279	1,191	8,812	4	3,350	2	32,130	15	188	0	11,906	5	8,900	4
Thailand	64,847	2,521	7,416	11	3,270	5	32,919	51	457	1	8,420	13	11,400	18
Malaysia	25,467	4,646	4,590	18	5,378	21	13,110	51	1,566	6	9,513	37	19,900	78
Pakistan	150,109	684	4,121	3	893	1	3,305	2	3,005	0	2,387	2	0	0
Hong Kong, China	6,953	23,608	3,695	53	3,249	47	6,612	95	622	9	4,878	70	16,200	233
Philippines	83,986	1,010	3,414	4	2,949	4	25,062	30	1,095	1	4,829	6	0	0
Singapore	4,318	24,740	1,885	44	2,854	66	3,477	81	412	10	2,413	56	10,000	232
New Zealand	4,057	23,846	1,662	41	1,781	44	2,726	67	625	15	2,340	58	4,400	108
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>														
Brazil	175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico	103,975	6,494	17,280	17	12,126	12	36,862	35	3,515	3	12,250	12	49,700	48
Colombia	45,346	2,149	8,394	19	2,583	6	6,761	15	1,748	4	3,178	7	13,500	30
Argentina	38,837	3,915	8,011	21	3,638	9	8,514	22	4,810	12	4,818	12	22,100	57
Chile	15,992	5,903	3,554	22	2,247	14	8,003	50	969	6	4,000	25	6,500	41
Venezuela	25,910	4,175	3,116	12	1,822	7	8,022	31	1,612	6	1,551	6	11,700	45
Peru	28,889	2,492	1,707	6	1,516	5	3,700	13	922	3	2,924	10	3,540	12
<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World (ROW)</b>														
Turkey	70,589	4,286	19,068	27%	3,935	6%	29,832	42%	989	1%	6,000	8%	55,000	78%
Iran	68,317	2,364	14,806	22	6,174	9	4,393	6	792	1	4,800	7	404	1
Egypt	69,330	1,111	9,868	14	1,632	2	12,530	18	1,465	2	3,000	4	965	1
South Africa	47,312	4,587	5,155	11	4,132	9	17,567	37	4,134	9	4,373	9	15,900	34
Saudi Arabia	24,952	11,065	3,544	14	5,220	21	9,178	37	691	3	2,923	12	11,612	47
Israel	6,575	17,780	2,952	45	1,749	27	6,104	93	1,550	24	3,040	46	3,500	53
Algeria	32,313	2,655	2,091	6	316	1	960	3	332	1	978	3	385	1
Nigeria	142,655	500	872	1	994	1	4,495	3	969	1	1,044	1	4,035	3
Other	1,314,583	1,325	85,847	7	50,367	4	123,747	9	2,583	0	60,455	5	177	0
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>	<b>6,288,463</b>		<b>28,582</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>	<b>1%</b>		<b>8%</b>		<b>10%</b>		<b>13%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>	
<b>Average Weighted Penetration</b>				<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

March 23, 2006

Internet, Technology, Media & Telecom

Exhibit 42

## Morgan Stanley Global Telephone Line Estimates — 2003-2004

	Country	2003 Telephone Lines (000's)	2004 Telephone Lines (000's)	2004 Y/Y Growth Rate	2003E Main Line Population Penetration	2004E Main Line Population Penetration
<u>N. America</u>	USA	186,118	183,688	-1%	64%	63%
	Canada	20,074	19,943	-1	63	63
	<b>Total</b>	<b>206,192</b>	<b>203,631</b>	<b>-1%</b>		
	<b>Weighted Average Share of World</b>	<b>18%</b>	<b>17%</b>		<b>64%</b>	<b>63%</b>
<u>Europe</u>	Germany	55,360	56,936	3%	67%	69%
	Russia	36,731	38,035	4	26	27
	France	34,174	34,223	0	56	55
	United Kingdom	34,136	33,374	-2	57	56
	Italy	26,931	26,720	-1	47	46
	Spain	17,937	18,234	2	44	44
	Poland	11,804	12,006	2	30	31
	Netherlands	10,005	10,006	0	62	61
	Sweden	6,653	6,728	1	74	75
	Switzerland	5,533	5,647	2	76	78
	Belgium	5,094	5,067	-1	50	49
	Portugal	4,375	4,368	0	43	43
	Austria	3,895	3,861	-1	48	48
	Denmark	3,763	3,825	2	70	71
	Hungary	3,590	3,514	-2	36	36
	Norway	3,372	3,401	1	74	74
	Czech Republic	3,489	3,303	-5	34	32
Finland	2,646	2,566	-3	51	49	
Ireland	2,040	2,123	4	51	52	
<b>Total</b>	<b>271,528</b>	<b>273,936</b>	<b>1%</b>			
<b>Weighted Average Share of World</b>	<b>24%</b>	<b>23%</b>		<b>46%</b>	<b>47%</b>	
<u>Asia Non-Japan</u>	China	248,472	282,524	14%	19%	22%
	India	44,304	47,188	7	4	4
	South Korea	23,969	24,681	3	50	51
	Taiwan	13,351	13,603	2	59	59
	Australia	11,169	11,463	3	56	57
	Indonesia	8,281	8,812	6	4	4
	Thailand	6,958	7,416	7	11	11
	Malaysia	4,630	4,590	-1	19	18
	Pakistan	3,888	4,121	6	3	3
	Hong Kong, Chin	3,766	3,695	-2	55	53
	Philippines	3,381	3,414	1	4	4
	Singapore	1,906	1,885	-1	45	44
	New Zealand	1,716	1,662	-3	43	41
	<b>Total</b>	<b>375,791</b>	<b>415,055</b>	<b>10%</b>		
<b>Weighted Average Share of World</b>	<b>33%</b>	<b>35%</b>		<b>13%</b>	<b>14%</b>	
<u>Japan</u>	Japan	76,080	77,790	2%	60%	61%
<b>Share of World</b>	<b>7%</b>	<b>6%</b>				
<u>Lat. America</u>	Brazil	40,189	41,568	3%	23%	24%
	Mexico	16,111	17,280	7	16	17
	Colombia	8,068	8,394	4	18	19
	Argentina	8,049	8,011	0	21	21
	Chile	3,511	3,554	1	22	22
	Venezuela	2,979	3,116	5	12	12
	Peru	1,682	1,707	1	6	6
<b>Total</b>	<b>80,589</b>	<b>83,630</b>	<b>4%</b>			
<b>Weighted Average Share of World</b>	<b>7%</b>	<b>7%</b>		<b>19%</b>	<b>19%</b>	
<u>Rest of World(ROW)</u>	Turkey	19,012	19,068	0%	27%	27%
	Iran	13,503	14,806	10	20	22
	Egypt	8,804	9,868	12	13	14
	South Africa	4,999	5,155	3	11	11
	Saudi Arabia	3,431	3,544	3	14	14
	Israel	2,979	2,952	-1	46	45
	Algeria	2,000	2,091	5	6	6
	Nigeria	783	872	11	1	1
	Other	82,799	85,847	4	6	7
	<b>Total</b>	<b>138,310</b>	<b>144,203</b>	<b>4%</b>		
<b>Weighted Average Share of World</b>	<b>12%</b>	<b>12%</b>		<b>8%</b>	<b>8%</b>	
<u>Total</u>	<b>1,148,490</b>	<b>1,198,245</b>	<b>4%</b>	<b>18%</b>	<b>19%</b>	

Source: Morgan Stanley Research

Exhibit 43

Overview of Global TMT Markets — Sorted Regionally by Installed PCs

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Country		2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones In Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
		(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>															
USA		293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada		31,908	31,134	19,943	63	15,738	49	14,712	46	10,086	32	21,850	68	61,700	193
<b>Total</b>		<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>			<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>															
Germany		82,786	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
United Kingdom		59,941	35,548	33,374	56	25,964	43	53,662	90	15,148	25	35,179	59	141,700	236
France		61,786	32,911	34,223	55	23,136	37	41,506	67	7,861	13	24,848	40	30,200	49
Russia		142,362	4,087	38,035	27	18,935	13	57,820	40	9,927	7	22,300	16	24,400	17
Italy		57,521	29,014	26,720	46	15,218	26	53,964	94	3,272	6	28,610	50	55,400	96
Spain		41,127	25,320	18,234	44	9,584	23	36,625	89	2,905	7	13,440	33	94,500	230
Netherlands		16,320	37,326	10,006	61	8,375	51	14,060	86	6,334	39	10,806	66	29,900	183
Sweden		9,013	38,493	6,728	75	5,956	66	8,482	94	3,088	34	7,364	82	7,383	82
Switzerland		7,261	49,300	5,647	78	5,593	77	6,171	85	2,808	39	4,668	64	8,227	113
Poland		38,829	6,344	12,006	31	5,493	14	20,100	52	5,660	15	10,600	27	18,224	47
Denmark		5,394	44,808	3,825	71	3,310	61	4,991	93	3,720	32	7,200	69	2,994	56
Austria		8,091	36,244	3,861	48	3,260	40	6,855	85	1,229	15	4,630	57	8,897	110
Norway		4,594	54,600	3,401	74	2,574	56	4,352	95	960	21	3,140	68	6,799	148
Belgium		10,279	33,866	5,067	49	2,571	25	9,188	89	4,005	39	5,100	50	14,700	143
Finland		5,219	35,666	2,566	49	2,415	46	4,878	93	1,173	22	3,260	62	2,746	53
Czech Republic		10,214	10,485	3,303	32	2,085	20	9,950	97	1,131	11	3,530	35	8,100	79
Ireland		4,044	45,875	2,123	52	1,832	48	3,147	78	856	21	1,319	33	3,066	76
Portugal		10,213	15,982	4,368	43	1,605	16	9,104	89	1,778	17	4,165	41	22,600	271
Hungary		9,809	10,233	3,514	36	1,293	13	7,907	81	1,998	20	3,050	31	6,901	70
<b>Total</b>		<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>			<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>															
Japan		127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>															
China		1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
South Korea		48,338	14,151	24,681	51	27,041	56	37,164	77	12,793	26	31,600	65	65,900	136
India		1,086,529	622	47,188	4	12,627	1	40,323	4	49,234	5	39,200	4	38,100	4
Australia		20,286	30,682	11,463	57	12,088	60	14,292	70	1,650	8	13,611	67	46,400	229
Taiwan		23,016	13,451	13,603	59	10,232	44	21,782	95	5,094	22	10,205	44	120,000	521
Malaysia		25,467	4,646	4,590	18	5,378	21	13,110	51	1,568	6	9,513	37	19,900	78
Indonesia		221,279	1,191	8,812	4	3,350	2	32,130	15	189	0	11,906	5	8,900	4
Thailand		64,847	2,521	7,416	11	3,270	5	32,919	51	457	1	8,420	13	11,400	18
Hong Kong, China		6,953	23,608	3,695	53	3,249	47	6,612	95	622	9	4,878	70	16,200	233
Philippines		83,986	1,010	3,414	4	2,949	4	25,062	30	1,095	1	4,829	6	0	0
Singapore		4,318	24,740	1,885	44	2,854	66	3,477	81	412	10	2,413	56	10,000	232
New Zealand		4,057	23,846	1,662	41	1,781	44	2,786	67	625	15	2,340	58	4,400	108
Pakistan		150,109	684	4,121	3	893	1	3,305	2	18	0	2,387	2	0	0
<b>Total</b>		<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>			<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>															
Brazil		175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico		103,975	6,494	17,280	17	12,126	12	36,862	35	3,515	3	12,250	12	49,700	48
Argentina		38,837	3,915	8,011	21	3,638	9	8,514	22	4,810	12	4,818	12	22,100	57
Colombia		45,346	2,149	8,394	19	2,583	6	6,761	15	1,748	4	3,178	7	13,500	30
Chile		15,992	5,903	3,554	22	2,247	14	8,003	50	969	6	4,000	25	6,500	41
Venezuela		25,910	4,175	3,116	12	1,822	7	8,022	31	1,612	6	1,551	6	11,700	45
Peru		28,889	2,492	1,707	6	1,516	5	3,700	13	922	3	2,924	10	3,540	12
<b>Total</b>		<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>			<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World/ROW</b>															
Iran		68,317	2,364	14,806	22%	6,174	9%	4,393	6%	792	1%	4,800	7%	404	1%
Saudi Arabia		24,952	11,065	3,544	14	5,220	21	9,178	37	691	3	2,923	12	11,612	47
South Africa		47,312	4,587	5,155	11	4,132	9	17,567	37	4,134	9	4,373	9	15,900	34
Turkey		70,589	4,286	19,068	27	3,935	6	29,832	42	989	1	6,000	8	55,000	78
Israel		6,575	17,780	2,952	45	1,749	27	6,104	93	1,550	24	3,040	46	3,500	53
Egypt		69,330	1,111	9,868	14	1,632	2	12,530	18	1,465	2	3,000	4	965	1
Nigeria		142,655	500	872	1	994	1	4,495	3	969	1	1,044	1	4,035	3
Algeria		32,313	2,655	2,091	6	316	1	960	3	332	1	978	3	385	1
Other		1,314,583	1,325	85,847	7	50,367	4	123,747	9	2,583	0	60,455	5	177	0
<b>Total</b>		<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>			<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>		<b>6,288,463</b>		<b>2,582,458</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>			<b>8%</b>		<b>4%</b>		<b>10%</b>		<b>13%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>
<b>Average Weighted Penetration</b>					<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 44

**Morgan Stanley Global PC Installed Base Estimates — 2003-2004**

	Country	2003 Installed PCs (000's)	2004 Installed PCs (000's)	2004 Y/Y Growth Rate	2003E PC Population Penetration	2004E PC Population Penetration
<u>N. America</u>	USA	197,607	203,677	3%	68%	69%
	Canada	15,521	15,738	1	49	49
	<b>Total</b>	<b>213,128</b>	<b>219,414</b>	<b>3%</b>		
	<b>Weighted Average Share of World</b>	<b>34%</b>	<b>32%</b>		<b>66%</b>	<b>67%</b>
<u>Europe</u>	Germany	38,933	39,252	1%	47%	47%
	United Kingdom	25,015	25,964	4	42	43
	France	22,132	23,138	5	36	37
	Russia	15,962	18,935	19	11	13
	Italy	14,125	15,218	8	25	26
	Spain	8,788	9,584	9	21	23
	Netherlands	7,994	8,375	5	49	51
	Sweden	5,770	5,956	3	64	66
	Switzerland	5,447	5,593	3	75	77
	Poland	4,880	5,493	13	13	14
	Denmark	3,212	3,310	3	60	61
	Austria	3,114	3,260	5	40	40
	Norway	2,496	2,574	3	55	56
	Belgium	2,392	2,571	8	23	25
	Finland	2,362	2,415	2	45	46
	Czech Republic	1,923	2,085	8	19	20
	Ireland	1,806	1,932	7	45	48
	Portugal	1,398	1,605	15	14	16
Hungary	1,186	1,293	9	12	13	
<b>Total</b>	<b>168,935</b>	<b>178,554</b>	<b>6%</b>			
<b>Weighted Average Share of World</b>	<b>27%</b>	<b>26%</b>		<b>29%</b>	<b>31%</b>	
<u>Asia Non-Japan</u>	China	35,500	41,600	17%	3%	3%
	South Korea	26,431	27,041	2	55	56
	India	9,755	12,627	29	1	1
	Australia	12,000	12,088	1	60	60
	Taiwan	9,751	10,232	5	43	44
	Malaysia	4,419	5,378	22	18	21
	Indonesia	2,912	3,350	15	1	2
	Thailand	2,803	3,270	17	4	5
	Hong Kong, Chin	3,064	3,249	6	45	47
	Philippines	2,554	2,949	15	3	4
	Singapore	2,731	2,854	4	64	66
	New Zealand	1,707	1,781	4	42	44
	Pakistan	785	893	14	1	1
	<b>Total</b>	<b>114,412</b>	<b>127,312</b>	<b>11%</b>		
	<b>Weighted Average Share of World</b>	<b>18%</b>	<b>18%</b>		<b>4%</b>	<b>4%</b>
<u>Japan</u>	Japan	<b>51,570</b>	<b>53,569</b>	<b>4%</b>	<b>40%</b>	<b>42%</b>
<b>Share of World</b>	<b>8%</b>	<b>8%</b>				
<u>Lat. America</u>	Brazil	15,845	18,910	19%	9%	11%
	Mexico	10,071	12,126	20	10	12
	Argentina	3,322	3,638	10	9	9
	Colombia	2,325	2,583	11	5	6
	Chile	2,028	2,247	11	13	14
	Venezuela	1,649	1,822	11	6	7
	Peru	1,328	1,516	14	5	5
<b>Total</b>	<b>36,569</b>	<b>42,843</b>	<b>17%</b>			
<b>Weighted Average Share of World</b>	<b>6%</b>	<b>6%</b>		<b>9%</b>	<b>10%</b>	
<u>Rest of World (ROW)</u>	Iran	5,498	6,174	12%	8%	9%
	Saudi Arabia	3,942	5,220	32	16	21
	South Africa	3,698	4,132	12	8	9
	Turkey	3,508	3,935	12	5	6
	Israel	1,684	1,749	4	26	27
	Egypt	1,404	1,632	16	2	2
	Nigeria	870	994	14	1	1
	Algeria	265	316	19	1	1
	Other	24,854	50,367	103	2	4
	<b>Total</b>	<b>45,722</b>	<b>74,519</b>	<b>63%</b>		
	<b>Weighted Average Share of World</b>	<b>7%</b>	<b>11%</b>		<b>3%</b>	<b>4%</b>
<b>Total</b>	<b>630,336</b>	<b>696,212</b>	<b>10%</b>	<b>10%</b>	<b>11%</b>	

Source: Morgan Stanley Research

Exhibit 45

Overview of Global TMT Markets — Sorted Regionally by Mobile Phones

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Mobile Phone Subscriptions

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones In Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
	(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>														
USA	293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada	31,908	31,134	19,943	63	15,738	49	14,712	4611%	10,086	32	21,850	68	61,700	193
<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>														
Germany	82,786	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
Russia	142,362	4,087	38,035	27	18,935	13	57,620	4047%	9,927	7	22,300	16	24,400	17
Italy	57,521	29,014	26,720	46	15,218	26	53,964	9382%	3,272	6	28,610	50	55,400	96
United Kingdom	59,941	35,548	33,374	56	25,964	43	53,662	8952%	15,148	25	35,179	59	141,700	236
France	61,786	32,911	34,223	55	23,138	37	41,506	6718%	7,861	13	24,848	40	30,200	49
Spain	41,127	25,320	18,234	44	9,584	23	36,625	8905%	2,905	7	13,440	33	94,500	230
Poland	38,829	6,344	12,006	31	5,493	14	20,100	5177%	5,660	15	10,600	27	18,224	47
Netherlands	16,320	37,326	10,006	61	8,375	51	14,060	8615%	6,334	39	10,806	66	29,900	183
Czech Republic	10,214	10,485	3,303	32	2,085	20	9,950	9741%	1,131	11	3,530	35	8,100	79
Belgium	10,279	33,866	5,067	49	2,571	25	9,168	8919%	4,005	39	5,100	50	14,700	143
Portugal	10,213	15,982	4,368	43	1,605	16	9,104	8914%	1,778	17	4,165	41	22,600	221
Sweden	9,013	38,493	6,728	75	5,956	66	8,482	9411%	3,088	34	7,364	82	7,383	82
Hungary	9,809	10,233	3,514	36	1,293	13	7,907	8062%	1,998	20	3,050	31	6,901	70
Austria	8,091	36,244	3,961	48	3,260	40	6,852	8473%	1,229	15	4,630	57	8,897	110
Switzerland	7,261	49,300	5,647	78	5,593	77	6,171	8499%	2,808	39	4,668	64	8,227	113
Denmark	5,394	44,808	3,825	71	3,310	61	4,991	9252%	1,730	32	3,720	69	2,994	56
Finland	5,219	35,666	2,566	49	2,415	46	4,878	9346%	1,173	22	3,260	62	2,746	53
Norway	4,594	54,600	3,401	74	2,574	56	4,352	9475%	960	21	3,140	68	6,799	148
Ireland	4,044	45,675	2,123	52	1,932	48	3,147	7782%	856	21	1,319	33	3,066	76
<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>														
China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
India	1,086,529	622	47,188	4	12,627	1	40,323	371%	49,234	5	39,200	4	38,100	4
South Korea	48,338	14,151	24,681	51	27,041	56	37,164	7688%	12,793	26	31,600	65	65,900	136
Thailand	64,847	2,521	7,416	11	3,270	5	32,919	5076%	457	1	8,420	13	11,400	18
Indonesia	221,279	1,191	8,812	4	3,350	2	32,130	1452%	188	0	11,906	5	8,900	4
Philippines	83,986	1,010	3,414	4	2,949	4	25,062	2984%	1,095	1	4,829	6	0	0
Taiwan	23,016	13,451	13,603	59	10,232	44	21,782	9464%	5,094	22	10,205	44	120,000	521
Australia	20,286	30,882	11,463	57	12,088	60	14,292	7045%	1,650	8	13,611	67	46,400	229
Malaysia	25,467	4,646	4,590	18	5,378	21	13,110	5148%	1,566	6	9,513	37	19,900	78
Hong Kong, China	6,953	23,608	3,695	53	3,249	47	6,612	9510%	622	9	4,878	70	16,200	233
Singapore	4,318	24,740	1,885	44	2,854	66	3,477	8053%	412	10	2,413	56	10,000	232
Pakistan	150,109	684	4,121	3	893	1	3,305	220%	18	0	2,387	2	0	0
New Zealand	4,057	23,846	1,662	41	1,781	44	2,726	6717%	625	15	2,340	58	4,400	108
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>														
Brazil	175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico	103,975	6,494	17,280	17	12,126	12	36,862	3545%	3,515	3	12,250	12	49,700	48
Argentina	38,837	3,915	8,011	21	3,638	9	8,514	2192%	4,810	12	4,818	12	22,100	57
Venezuela	25,910	4,175	3,116	12	1,822	7	8,022	3096%	1,612	6	1,551	6	11,700	45
Chile	15,992	5,903	3,554	22	2,247	14	8,003	5004%	969	6	4,000	25	6,500	41
Colombia	45,346	2,149	8,394	19	2,583	6	6,761	1491%	1,748	4	3,178	7	13,500	30
Peru	28,889	2,492	1,707	6	1,516	5	3,700	1281%	922	3	2,924	10	3,540	12
<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World (ROW)</b>														
Turkey	70,589	4,286	19,068	27%	3,935	6%	29,832	42%	989	1%	6,000	8%	55,000	78%
South Africa	47,312	4,587	5,155	11	4,132	9	17,567	3713%	4,134	9	4,373	9	15,900	34
Egypt	69,330	1,111	9,868	14	1,632	2	12,530	1807%	1,465	2	3,000	4	965	1
Saudi Arabia	24,952	11,065	3,544	14	5,220	21	9,178	3678%	691	3	2,923	12	11,612	47
Israel	6,575	17,780	2,952	45	1,749	27	6,104	9285%	1,550	24	3,040	46	3,500	53
Nigeria	142,655	500	872	1	994	1	4,495	315%	969	1	1,044	1	4,035	3
Iran	68,317	2,364	14,806	22	6,174	9	4,393	643%	792	1	4,800	7	404	1
Algeria	32,313	2,655	2,091	6	316	1	960	297%	332	1	978	3	385	1
Other	1,314,583	1,325	85,847	7	50,367	4	123,747	941%	2,583	0	60,455	5	177	0
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>	<b>6,288,463</b>		<b>1,198,245</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>		<b>10%</b>		<b>13%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>	
<b>Average Weighted Penetration</b>				<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 46

## Morgan Stanley Global Mobile Phone Estimates — 2003-2004

	Country	2003 Mobile Phones In Use (000's)	2004 Mobile Phones In Use (000's)	2004 Y/Y Growth Rate	2003E Mobile Phone Population Penetration	2004E Mobile Phone Population Penetration
<b><u>N. America</u></b>	USA	158,416	170,723	8%	54%	58%
	Canada	13,494	14,712	9	43	46
	<b>Total</b>	<b>171,910</b>	<b>185,435</b>	<b>8%</b>	<b>53%</b>	<b>57%</b>
	<b>Weighted Average Share of World</b>	<b>12%</b>	<b>12%</b>			
<b><u>Europe</u></b>	Germany	66,381	68,121	3%	80%	82%
	Russia	42,889	57,620	34	30	40
	Italy	53,681	53,964	1	93	94
	United Kingdom	52,791	53,662	2	89	90
	France	40,731	41,506	2	66	67
	Spain	35,723	36,625	3	87	89
	Poland	17,487	20,100	15	45	52
	Netherlands	13,749	14,060	2	85	86
	Czech Republic	9,581	9,950	4	94	97
	Belgium	8,924	9,168	3	87	89
	Portugal	8,928	9,104	2	88	89
	Sweden	8,119	8,482	4	90	94
	Hungary	7,597	7,907	4	77	81
	Austria	6,808	6,855	1	84	85
	Switzerland	6,048	6,171	2	83	85
	Denmark	4,707	4,991	6	87	93
	Finland	4,726	4,878	3	91	93
	Norway	4,163	4,352	5	91	95
Ireland	3,094	3,147	2	78	78	
<b>Total</b>	<b>396,126</b>	<b>420,663</b>	<b>6%</b>	<b>68%</b>	<b>72%</b>	
<b>Weighted Average Share of World</b>	<b>28%</b>	<b>26%</b>				
<b><u>Asia Non-Japan</u></b>	China	268,745	334,820	25%	21%	26%
	India	23,001	40,323	75	2	4
	South Korea	36,653	37,164	1	76	77
	Thailand	27,191	32,919	21	42	51
	Indonesia	20,772	32,130	55	10	15
	Philippines	20,474	25,062	22	25	30
	Taiwan	21,117	21,782	3	93	95
	Australia	13,466	14,292	6	67	70
	Malaysia	11,266	13,110	16	45	51
	Hong Kong, Chin	6,515	6,612	1	95	95
	Singapore	3,427	3,477	1	81	81
	Pakistan	2,037	3,305	62	1	2
	New Zealand	2,612	2,726	4	65	67
	<b>Total</b>	<b>457,276</b>	<b>567,721</b>	<b>24%</b>	<b>15%</b>	<b>19%</b>
<b>Weighted Average Share of World</b>	<b>33%</b>	<b>36%</b>				
<b><u>Japan</u></b>	<b>Japan</b>	<b>80,104</b>	<b>85,147</b>	<b>6%</b>	<b>63%</b>	<b>67%</b>
<b>Share of World</b>	<b>6%</b>	<b>5%</b>				
<b><u>Lat. America</u></b>	Brazil	42,606	49,171	15%	25%	28%
	Mexico	32,131	36,862	15	31	35
	Argentina	7,603	8,514	12	20	22
	Venezuela	7,348	8,022	9	29	31
	Chile	7,405	8,003	8	47	50
	Colombia	5,541	6,761	22	12	15
	Peru	2,979	3,700	24	10	13
<b>Total</b>	<b>105,613</b>	<b>121,033</b>	<b>15%</b>	<b>25%</b>	<b>28%</b>	
<b>Weighted Average Share of World</b>	<b>8%</b>	<b>8%</b>				
<b><u>Rest of World(ROW)</u></b>	Turkey	27,205	29,832	10%	39%	42%
	South Africa	15,837	17,567	11	34	37
	Egypt	7,878	12,530	59	12	18
	Saudi Arabia	7,270	9,178	26	30	37
	Israel	5,878	6,104	4	91	93
	Nigeria	2,624	4,495	71	2	3
	Iran	3,298	4,393	33	5	6
	Algeria	604	960	59	2	3
	Other	118,299	123,747	5	9	9
	<b>Total</b>	<b>188,894</b>	<b>208,807</b>	<b>11%</b>	<b>11%</b>	<b>12%</b>
<b>Weighted Average Share of World</b>	<b>13%</b>	<b>13%</b>				
<b>Total</b>	<b>1,399,923</b>	<b>1,588,805</b>	<b>13%</b>	<b>23%</b>	<b>25%</b>	

Source: Morgan Stanley Research

Exhibit 47

Overview of Global TMT Markets — Sorted Regionally by Cable TV Subscriptions

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Cable TV Subscriptions

	Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones In Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
		(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>	USA	293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
	Canada	31,908	31,134	19,943	63	15,738	49	14,712	46	10,086	32	21,850	68	61,700	193
	<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
	<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>	Germany	82,786	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
	United Kingdom	59,941	35,548	33,374	56	25,964	43	53,662	90	15,148	25	35,179	59	141,700	236
	Russia	142,362	4,087	38,035	27	18,935	13	57,620	40	9,927	7	22,300	16	24,400	17
	France	61,786	32,911	34,223	55	23,138	37	41,506	67	7,861	13	24,848	40	30,200	49
	Netherlands	16,320	37,326	10,006	61	8,375	51	14,060	86	6,334	39	10,806	66	29,900	183
	Poland	38,829	6,344	12,006	31	5,493	14	20,100	52	5,660	15	10,600	27	18,224	47
	Belgium	10,279	33,866	5,067	49	2,571	25	9,168	89	4,005	39	5,100	50	14,700	143
	Italy	57,521	29,014	26,720	46	15,218	26	53,964	94	3,272	6	28,610	50	55,400	96
	Sweden	9,013	38,493	6,728	75	5,956	66	8,482	94	3,088	34	7,364	82	7,383	82
	Spain	41,127	25,320	18,234	44	9,584	23	36,625	89	2,905	7	13,440	33	94,500	230
	Switzerland	7,261	49,300	5,647	78	5,593	77	6,171	85	2,808	39	4,668	64	8,227	113
	Hungary	9,809	10,233	3,514	36	1,293	13	7,907	81	1,998	20	3,050	31	6,901	70
	Portugal	10,213	15,982	4,368	43	1,605	16	9,104	89	1,778	17	4,165	41	22,600	221
	Denmark	5,394	44,808	3,825	71	3,310	61	4,991	93	1,730	32	3,720	69	2,994	56
	Austria	8,091	36,244	3,961	48	3,260	40	6,855	85	1,229	15	4,630	57	8,897	110
	Finland	5,219	35,666	2,568	49	2,415	46	4,878	93	1,173	22	3,260	62	2,746	53
	Czech Republic	10,214	10,485	3,303	32	2,085	20	9,950	97	1,131	11	3,530	35	8,100	79
	Norway	4,594	54,600	3,401	74	2,574	56	4,352	95	960	21	3,140	68	6,799	148
	Ireland	4,044	45,675	2,123	52	1,932	48	3,147	78	856	21	1,319	33	3,066	76
	<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
	<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>	Japan	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>	China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
	India	1,086,529	622	47,188	4	12,627	1	40,323	4	49,234	5	39,200	4	38,100	4
	South Korea	48,338	14,151	24,681	51	27,041	56	37,164	77	12,793	26	31,600	65	65,900	136
	Taiwan	23,016	13,451	13,603	59	10,232	44	21,782	95	5,094	22	10,205	44	120,000	521
	Australia	20,286	30,682	11,463	57	12,088	60	14,292	70	1,650	8	13,611	67	46,400	229
	Malaysia	25,467	4,646	4,590	18	5,378	21	13,110	51	1,566	6	9,513	37	19,900	78
	Philippines	83,986	1,010	3,414	4	2,949	4	25,062	30	1,095	1	4,829	6	0	0
	New Zealand	4,057	23,846	1,662	41	1,781	44	2,726	67	625	15	2,340	58	4,400	108
	Hong Kong, China	6,953	23,608	3,695	53	3,249	47	6,612	95	622	9	4,878	70	16,200	233
	Thailand	64,847	2,521	7,416	11	3,270	5	32,919	51	457	1	8,420	13	11,400	18
	Singapore	4,318	24,740	1,885	44	2,854	66	3,477	81	412	10	2,413	56	10,000	232
	Indonesia	221,279	1,191	8,812	4	3,350	2	32,330	15	188	0	11,906	5	8,900	4
	Pakistan	150,109	684	4,121	3	893	1	3,305	2	18	0	2,387	2	0	0
	<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
	<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>	Argentina	38,837	3,915	8,011	21%	3,638	9%	8,514	22%	4,810	12%	4,818	12%	22,100	57%
	Mexico	103,975	6,494	17,280	17	12,126	12	36,862	35	3,515	3	12,250	12	49,700	48
	Brazil	175,507	3,325	41,568	24	18,910	11	49,171	28	2,395	1	17,945	10	175,000	100
	Colombia	45,346	2,149	8,394	19	2,583	6	6,761	15	1,748	4	3,178	7	13,500	30
	Venezuela	25,910	4,175	3,116	12	1,822	7	8,022	31	1,612	6	1,551	6	11,700	45
	Chile	15,992	5,903	3,554	22	2,247	14	8,003	50	969	6	4,000	25	6,500	41
	Peru	28,889	2,492	1,707	6	1,516	5	3,700	13	922	3	2,924	10	3,540	12
	<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
	<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World/ROW</b>	South Africa	47,312	4,587	5,155	11%	4,132	9%	17,567	37%	4,134	9%	4,373	9%	15,900	34%
	Israel	6,575	17,780	2,952	45	1,749	27	6,104	93	1,550	24	3,040	46	3,500	53
	Egypt	69,330	1,111	9,868	14	1,632	2	12,530	18	1,465	2	3,000	4	965	1
	Turkey	70,589	4,286	19,068	27	3,935	6	29,832	42	989	1	6,000	8	55,000	78
	Nigeria	142,655	500	872	1	994	1	4,495	3	969	1	1,044	1	4,035	3
	Iran	68,317	2,364	14,806	22	6,174	9	4,393	6	792	1	4,800	7	404	1
	Saudi Arabia	24,952	11,065	3,544	14	5,220	21	9,178	37	691	3	2,923	12	11,612	47
	Algeria	32,313	2,655	2,091	6	316	1	960	3	332	1	978	3	385	1
	Other	1,314,583	1,325	85,847	7	50,367	4	123,747	9	2,583	0	60,455	5	177	0
	<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
	<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>		<b>6,288,463</b>		<b>28,582</b>		<b>1,198,245</b>		<b>696,212</b>		<b>1,588,805</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>		<b>1%</b>		<b>8%</b>		<b>4%</b>		<b>10%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>	
<b>Average Weighted Penetration</b>					<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

March 23, 2006  
Internet, Technology, Media & Telecom

Exhibit 48

## Morgan Stanley Global Cable Subscriber Estimates — 2003-2004

	Country	2003 Cable Subscribers (000's)	2004 Cable Subscribers (000's)	2004 Y/Y Growth Rate	2003E Cable Sub TV Penetration	2004E Cable Sub TV Penetration
<b><u>N. America</u></b>	USA	95,702	99,091	4%	33%	34%
	Canada	10,065	10,086	0	32	32
	<b>Total</b>	<b>105,767</b>	<b>109,177</b>	<b>3%</b>		
	<b>Weighted Average Share of World</b>	<b>25%</b>	<b>24%</b>		<b>33%</b>	<b>34%</b>
<b><u>Europe</u></b>	Germany	24,871	25,801	4%	30%	31%
	United Kingdom	14,002	15,148	8	23	25
	Russia	9,500	9,927	4	7	7
	France	7,513	7,861	5	12	13
	Netherlands	6,331	6,334	0	39	39
	Poland	5,615	5,660	1	14	15
	Belgium	3,950	4,005	1	38	39
	Italy	2,854	3,272	15	5	6
	Sweden	2,890	3,088	7	32	34
	Spain	2,846	2,905	2	7	7
	Switzerland	2,782	2,808	1	38	39
	Hungary	1,923	1,998	4	20	20
	Portugal	1,682	1,778	6	16	17
	Denmark	1,695	1,730	2	32	32
	Austria	1,175	1,229	5	15	15
	Finland	1,099	1,173	7	21	22
	Czech Republic	1,072	1,131	6	10	11
	Norway	943	960	2	21	21
Ireland	848	856	1	21	21	
<b>Total</b>	<b>93,591</b>	<b>97,665</b>	<b>4%</b>			
<b>Weighted Average Share of World</b>	<b>22%</b>	<b>21%</b>		<b>16%</b>	<b>17%</b>	
<b><u>Asia Non-Japan</u></b>	China	110,050	128,000	16%	9%	10%
	India	44,000	49,234	12	4	5
	South Korea	11,443	12,793	12	24	26
	Taiwan	5,013	5,094	2	22	22
	Australia	1,500	1,650	10	8	8
	Malaysia	1,200	1,566	31	5	6
	Philippines	1,036	1,095	6	1	1
	New Zealand	600	625	4	15	15
	Hong Kong, Chin	583	622	7	8	9
	Thailand	435	457	5	1	1
	Singapore	380	412	8	9	10
	Indonesia	138	188	36	0	0
	Pakistan	17	18	3	0	0
	<b>Total</b>	<b>176,395</b>	<b>201,753</b>	<b>14%</b>		
	<b>Weighted Average Share of World</b>	<b>42%</b>	<b>44%</b>		<b>6%</b>	<b>7%</b>
<b><u>Japan</u></b>	<b>Japan</b>	<b>19,218</b>	<b>21,165</b>	<b>10%</b>	<b>15%</b>	<b>17%</b>
<b>Share of World</b>	<b>5%</b>	<b>5%</b>				
<b><u>Lat. America</u></b>	Argentina	4,750	4,810	1%	12%	12%
	Mexico	3,167	3,515	11	3	3
	Brazil	2,348	2,395	2	1	1
	Colombia	1,530	1,748	14	3	4
	Venezuela	1,497	1,612	8	6	6
	Chile	930	969	4	6	6
	Peru	822	922	12	3	3
<b>Total</b>	<b>15,045</b>	<b>15,971</b>	<b>6%</b>			
<b>Weighted Average Share of World</b>	<b>4%</b>	<b>3%</b>		<b>4%</b>	<b>4%</b>	
<b><u>Rest of World (ROW)</u></b>	South Africa	3,966	4,134	4%	9%	9%
	Israel	1,495	1,550	4	23	24
	Egypt	1,075	1,465	36	2	2
	Turkey	911	989	9	1	1
	Nigeria	634	969	53	0	1
	Iran	532	792	49	1	1
	Saudi Arabia	580	691	19	2	3
	Algeria	263	332	27	1	1
	Other	2,392	2,583	8	0	0
	<b>Total</b>	<b>11,848</b>	<b>13,505</b>	<b>14%</b>		
<b>Weighted Average Share of World</b>	<b>3%</b>	<b>3%</b>		<b>1%</b>	<b>1%</b>	
<b>Total</b>	<b>421,863</b>	<b>459,236</b>	<b>9%</b>	<b>7%</b>	<b>7%</b>	

Source: Morgan Stanley Research

Exhibit 49

Overview of Global TMT Markets — Sorted Regionally by Internet Users

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Internet Users

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones In Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
	(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>														
USA	293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada	31,908	31,134	19,943	63	15,738	49	14,712	46	10,086	32	21,850	68	61,700	193
<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>														
Germany	82,788	33,390	56,936	69%	39,252	47%	68,121	82%	25,801	31%	46,312	56%	95,600	115%
United Kingdom	59,941	35,548	33,374	7	25,964	0	53,662	1	15,148	0	35,179	1	141,700	2
Italy	57,521	29,014	26,720	46	15,218	26	53,964	94	3,272	6	28,610	50	55,400	96
France	61,786	32,911	34,223	55	23,138	37	41,506	67	7,861	13	24,848	40	30,200	49
Russia	142,362	4,087	38,035	27	18,935	13	57,620	40	9,927	7	22,300	16	24,400	17
Spain	41,127	25,320	18,234	44	9,584	23	36,625	89	2,905	7	13,440	33	94,500	230
Netherlands	16,320	37,326	10,006	61	8,375	51	14,060	86	6,334	39	10,806	66	29,900	183
Poland	38,829	6,344	12,006	31	5,493	14	20,100	52	5,660	15	10,600	27	18,224	47
Sweden	9,013	38,493	6,728	75	5,956	66	8,482	94	3,088	34	7,364	82	7,383	82
Belgium	10,279	33,866	5,067	49	2,571	25	9,168	89	4,005	39	5,100	50	14,700	143
Switzerland	7,261	49,300	5,647	78	5,593	77	6,171	85	2,808	39	4,668	64	8,227	113
Austria	8,091	36,244	3,861	48	3,260	40	6,855	85	1,229	15	4,630	57	8,897	110
Portugal	10,213	15,982	4,368	43	1,605	16	9,104	89	1,778	17	4,165	41	22,600	221
Denmark	5,394	44,808	3,825	71	3,310	61	4,991	93	1,730	32	3,720	69	2,994	56
Czech Republic	10,214	10,485	3,303	32	2,085	20	9,950	97	1,131	11	3,530	35	8,100	79
Finland	5,219	35,666	2,568	49	2,415	46	4,878	93	1,173	22	3,260	62	2,748	53
Norway	4,594	54,600	3,401	74	2,574	56	4,352	95	960	21	3,140	68	6,799	148
Hungary	9,809	10,233	3,514	36	1,293	13	7,907	81	1,998	20	3,050	31	6,901	70
Ireland	4,044	45,675	2,123	52	1,932	48	3,147	78	856	21	1,319	33	3,066	76
<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>														
Japan	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>														
<b>Non-Japan</b>														
China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
India	1,086,529	622	47,188	4	12,627	1	40,323	4	49,234	5	39,200	4	38,100	4
South Korea	48,338	14,151	24,681	51	27,041	56	37,164	77	12,793	26	31,600	65	65,900	136
Australia	20,286	30,682	11,463	57	12,088	60	14,292	70	1,650	8	13,611	67	46,400	229
Indonesia	221,279	1,191	8,812	4	3,950	2	32,130	15	188	0	11,906	5	8,900	4
Taiwan	23,016	13,451	13,603	59	10,232	44	21,782	95	5,094	22	10,205	44	120,000	521
Malaysia	25,467	4,646	4,590	18	5,378	21	13,110	51	1,566	6	9,513	37	19,900	78
Thailand	64,847	2,521	7,416	11	3,270	5	32,919	51	457	1	8,420	13	11,400	18
Hong Kong, China	6,953	23,608	3,695	53	3,249	47	6,612	95	622	9	4,878	70	16,200	233
Philippines	83,986	1,010	3,414	4	2,949	4	25,062	30	1,095	1	4,829	6	0	0
Singapore	4,318	24,740	1,885	44	2,854	66	3,477	81	412	10	2,413	56	10,000	232
Pakistan	150,109	684	4,121	3	893	1	3,305	2	18	0	2,387	2	0	0
New Zealand	4,057	23,846	1,662	41	1,781	44	2,726	67	625	15	2,340	58	4,400	108
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>														
Brazil	175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico	103,975	6,494	17,280	17	12,126	12	36,862	35	3,515	3	12,250	12	49,700	48
Argentina	38,837	3,915	8,011	21	3,638	9	8,514	22	4,810	12	4,818	12	22,100	57
Chile	15,992	5,903	3,554	22	2,247	14	8,003	50	969	6	4,000	25	6,500	41
Colombia	45,346	2,149	8,394	19	2,583	6	6,761	15	1,748	4	3,178	7	13,500	30
Peru	28,889	2,492	1,707	6	1,516	5	3,700	13	922	3	2,924	10	3,540	12
Venezuela	25,910	4,175	3,116	12	1,822	7	8,022	31	1,612	6	1,551	6	11,700	45
<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World (ROW)</b>														
Turkey	70,589	4,286	19,068	27%	3,935	6%	29,832	42%	989	1%	6,000	8%	55,000	78%
Iran	68,317	2,364	14,806	22	6,174	9	4,393	6	792	1	4,800	7	404	1
South Africa	47,312	4,587	5,155	11	4,132	9	17,567	37	4,134	9	4,373	9	15,900	34
Israel	6,575	17,780	2,952	45	1,749	27	6,104	93	1,550	24	3,040	46	3,500	53
Egypt	69,330	1,111	9,868	14	1,632	2	12,530	18	1,465	2	3,000	4	965	1
Saudi Arabia	24,952	11,065	3,544	14	5,220	21	9,178	37	691	3	2,923	12	11,612	47
Nigeria	142,655	500	872	1	994	1	4,495	3	969	1	1,044	1	4,035	3
Algeria	32,313	2,655	2,091	6	316	1	960	3	332	1	978	3	385	1
Other	1,314,583	1,325	85,847	7	50,367	4	123,747	9	2,583	0	60,455	5	177	0
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>	<b>6,288,463</b>	<b>28,582</b>	<b>1,198,245</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>		<b>10%</b>		<b>13%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>	
<b>Average Weighted Penetration</b>				<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 50

Morgan Stanley Global Internet User Estimates — 2003-2004

	Country	2003 Internet Users (000's)	2004 Internet Users (000's)	2004 Y/Y Growth Rate	2003E Internet Population Penetration	2004E Internet Population Penetration
<u>N. America</u>	USA	185,668	201,833	9%	64%	69%
	Canada	17,640	21,850	24	56	68
	<b>Total</b>	<b>203,308</b>	<b>223,683</b>	<b>10%</b>		
	<b>Weighted Average Share of World</b>	<b>27%</b>	<b>25%</b>		<b>63%</b>	<b>69%</b>
<u>Europe</u>	Germany	39,000	46,312	19%	47%	56%
	United Kingdom	31,736	35,179	11	53	59
	Italy	22,852	28,610	25	40	50
	France	21,900	24,848	13	36	40
	Russia	14,932	22,300	49	10	16
	Spain	9,829	13,440	37	24	33
	Netherlands	9,300	10,806	16	57	66
	Poland	8,970	10,600	18	23	27
	Sweden	6,668	7,364	10	74	82
	Belgium	4,350	5,100	17	42	50
	Switzerland	3,348	4,668	39	46	64
	Austria	3,730	4,630	24	57	57
	Portugal	3,872	4,165	8	38	41
	Denmark	3,504	3,720	6	65	69
	Czech Republic	3,100	3,530	14	30	35
	Finland	2,650	3,260	23	51	62
	Norway	3,033	3,140	4	66	68
	Hungary	2,299	3,050	33	23	31
	Ireland	1,260	1,319	5	32	33
<b>Total</b>	<b>196,334</b>	<b>236,041</b>	<b>20%</b>			
<b>Weighted Average Share of World</b>	<b>26%</b>	<b>26%</b>		<b>34%</b>	<b>40%</b>	
<u>Asia</u> <u>Non-Japan</u>	China	79,500	94,000	18%	6%	7%
	India	24,981	39,200	57	2	4
	South Korea	30,220	31,600	5	63	65
	Australia	10,572	13,611	29	53	67
	Indonesia	8,000	11,906	49	4	5
	Taiwan	8,930	10,205	14	39	44
	Malaysia	8,892	9,513	7	36	37
	Thailand	6,231	8,420	35	10	13
	Hong Kong, Chin	3,913	4,878	25	57	70
	Philippines	3,900	4,829	24	5	6
	Singapore	2,150	2,413	12	51	56
	Pakistan	1,500	2,387	59	1	2
	New Zealand	2,110	2,340	11	53	58
	<b>Total</b>	<b>190,899</b>	<b>235,301</b>	<b>23%</b>		
	<b>Weighted Average Share of World</b>	<b>25%</b>	<b>26%</b>		<b>6%</b>	<b>8%</b>
<u>Japan</u>	Japan	<b>63,900</b>	<b>72,677</b>	<b>14%</b>	50%	57%
	<b>Share of World</b>	<b>8%</b>	<b>8%</b>			
<u>Lat. America</u>	Brazil	15,464	17,945	16%	9%	10%
	Mexico	9,243	12,250	33	9	12
	Argentina	4,100	4,818	18	11	12
	Chile	3,575	4,000	12	23	25
	Colombia	2,732	3,178	16	6	7
	Peru	2,850	2,924	3	10	10
	Venezuela	1,325	1,551	17	5	6
<b>Total</b>	<b>39,290</b>	<b>46,665</b>	<b>19%</b>			
<b>Weighted Average Share of World</b>	<b>5%</b>	<b>5%</b>		<b>9%</b>	<b>11%</b>	
<u>Rest of World (ROW)</u>	Turkey	5,500	6,000	9%	8%	8%
	Iran	4,300	4,800	12	6	7
	South Africa	4,050	4,373	8	9	9
	Israel	2,549	3,040	19	40	46
	Egypt	2,293	3,000	31	3	4
	Saudi Arabia	2,010	2,923	45	8	12
	Nigeria	828	1,044	26	1	1
	Algeria	630	978	55	2	3
	Other	45,229	60,455	34	4	5
	<b>Total</b>	<b>67,389</b>	<b>86,613</b>	<b>29%</b>		
	<b>Weighted Average Share of World</b>	<b>9%</b>	<b>10%</b>		<b>4%</b>	<b>5%</b>
<b>Total</b>	<b>761,119</b>	<b>900,981</b>	<b>18%</b>	<b>12%</b>	<b>14%</b>	

Source: Morgan Stanley Research

Exhibit 51

Overview of Global TMT Markets — Sorted Regionally by Credit / Debit Cards

MORGAN STANLEY TECHNOLOGY RESEARCH

Mar-06

Overview of Global TMT Markets - Sorted Regionally by Mobile Phone Subscriptions

Country	2004 Population	2004 GDP Per Capita	2004 Telephone Lines	Telephone Line Penetration	2004 Installed PCs	PC Penetration	2004 Mobile Phones in Use	Mobile Phones Penetration	2004 Cable Subscriptions	Cable Penetration	2004 Internet Users	Internet Users Penetration	2004 Credit/Debit Cards	Credit/Debit Card Penetration
	(000's)	(US\$)	(000's)		(000's)		(000's)		(000's)		(000's)		(000's)	
<b>N. America</b>														
USA	293,819	39,935	183,688	63%	203,677	69%	170,723	58%	99,091	34%	201,833	69%	878,000	299%
Canada	31,908	31,134	19,943	63	15,738	49	14,712	46	10,086	32	21,850	68	61,700	193
<b>Total</b>	<b>325,728</b>		<b>203,631</b>		<b>219,414</b>		<b>185,435</b>		<b>109,177</b>		<b>223,683</b>		<b>939,700</b>	
<b>Weighted Average</b>		<b>39,248</b>		<b>63%</b>		<b>67%</b>		<b>57%</b>		<b>34%</b>		<b>69%</b>		<b>288%</b>
<b>Europe</b>														
United Kingdom	59,941	35,548	33,374	56%	25,984	43%	53,662	90%	15,148	25%	35,179	59%	141,700	236%
Germany	82,786	33,390	56,936	69	39,252	47	68,121	82	25,801	31	46,312	56	95,600	115
Spain	41,127	25,320	18,234	44	9,584	23	36,625	89	2,905	7	13,440	33	94,500	230
Italy	57,521	29,014	26,720	46	15,218	26	53,964	94	3,272	6	28,810	50	55,400	96
France	61,786	32,911	34,223	55	23,138	37	41,506	67	7,861	13	24,848	40	30,200	49
Netherlands	16,320	37,326	10,006	61	8,375	51	14,060	86	6,334	39	10,806	66	29,900	183
Russia	142,362	4,087	38,035	27	18,935	13	57,620	40	9,927	7	22,300	16	24,400	17
Portugal	10,213	15,982	4,368	43	1,605	16	9,104	89	1,778	17	4,165	41	22,600	221
Poland	38,829	6,344	12,006	31	5,493	14	20,100	52	5,660	15	10,600	27	18,224	47
Belgium	10,279	33,866	5,067	49	2,571	25	9,168	89	4,005	39	5,100	50	14,700	143
Austria	8,091	36,244	3,861	48	3,260	40	6,855	85	1,229	15	4,630	57	8,897	110
Switzerland	7,261	49,300	5,647	78	5,593	77	6,171	85	2,808	39	4,668	64	8,227	113
Czech Republic	10,214	10,485	3,303	32	2,085	20	9,950	97	1,131	11	3,530	35	8,100	79
Sweden	9,013	38,493	6,728	75	5,956	66	8,482	94	3,088	34	7,364	82	7,383	82
Hungary	9,809	10,233	3,514	36	1,293	13	7,907	81	1,998	20	3,050	31	6,901	70
Norway	4,594	54,600	3,401	74	2,574	56	4,352	95	960	21	3,140	68	6,799	148
Ireland	4,044	45,675	2,123	52	1,932	48	3,147	78	856	21	1,319	33	3,066	76
Denmark	5,394	44,808	3,825	71	3,310	61	4,991	93	1,730	32	3,720	69	2,994	56
Finland	5,219	35,666	2,566	49	2,415	46	4,878	93	1,173	22	3,260	62	2,746	53
<b>Total</b>	<b>584,802</b>		<b>273,936</b>		<b>178,554</b>		<b>420,663</b>		<b>97,665</b>		<b>236,041</b>		<b>582,338</b>	
<b>Weighted Average</b>		<b>31,797</b>		<b>47%</b>		<b>31%</b>		<b>72%</b>		<b>17%</b>		<b>40%</b>		<b>100%</b>
<b>Japan</b>														
Japan	127,641	36,596	77,790	61%	53,569	42%	85,147	67%	21,165	17%	72,677	57%	644,700	505%
<b>Asia</b>														
<b>Non-Japan</b>														
China	1,300,024	1,272	282,524	22%	41,600	3%	334,820	26%	128,000	10%	94,000	7%	684,700	53%
Taiwan	23,016	13,451	13,603	59	10,232	44	21,782	95	5,094	22	10,205	44	120,000	521
South Korea	48,338	14,151	24,681	51	27,041	56	37,164	77	12,793	26	31,600	65	65,900	136
Australia	20,286	30,682	11,463	57	12,088	60	14,292	70	1,650	8	13,511	67	46,400	229
India	1,086,529	622	47,188	4	12,627	1	40,323	4	49,234	5	39,200	4	38,100	4
Malaysia	25,467	4,646	4,590	18	5,378	21	13,110	51	1,566	6	9,513	37	19,900	78
Hong Kong, China	6,953	23,608	3,695	53	3,249	47	6,612	95	622	9	4,878	70	16,200	233
Thailand	64,847	2,521	7,416	11	3,270	5	32,919	51	457	1	8,420	13	11,400	18
Singapore	4,318	24,740	1,885	44	2,854	66	3,477	81	412	10	2,413	56	10,000	232
Indonesia	221,279	1,191	8,812	4	3,350	2	32,130	15	188	0	11,906	5	8,900	4
New Zealand	4,057	23,846	1,662	41	1,781	44	2,726	67	625	15	2,340	58	4,400	108
Pakistan	150,109	684	4,121	3	893	1	3,305	2	18	0	2,387	2	0	0
Philippines	83,986	1,010	3,414	4	2,949	4	25,062	30	1,095	1	4,829	6	0	0
<b>Total</b>	<b>3,039,209</b>		<b>415,055</b>		<b>127,312</b>		<b>567,721</b>		<b>201,753</b>		<b>235,301</b>		<b>1,025,900</b>	
<b>Weighted Average</b>		<b>9,060</b>		<b>14%</b>		<b>4%</b>		<b>19%</b>		<b>7%</b>		<b>8%</b>		<b>34%</b>
<b>Lat. America</b>														
Brazil	175,507	3,325	41,568	24%	18,910	11%	49,171	28%	2,395	1%	17,945	10%	175,000	100%
Mexico	103,975	6,494	17,280	17	12,126	12	36,862	35	3,515	3	12,250	12	49,700	48
Argentina	38,837	3,915	8,011	21	3,638	9	8,514	22	4,810	12	4,818	12	22,100	57
Colombia	45,346	2,149	8,394	19	2,583	6	6,761	15	1,748	4	3,178	7	13,500	30
Venezuela	25,910	4,175	3,116	12	1,822	7	8,022	31	1,612	6	1,551	6	11,700	45
Chile	15,992	5,903	3,554	22	2,247	14	8,003	50	969	6	4,000	25	6,500	41
Peru	28,889	2,492	1,707	6	1,516	5	3,700	13	922	3	2,924	10	3,540	12
<b>Total</b>	<b>434,455</b>		<b>83,630</b>		<b>42,843</b>		<b>121,033</b>		<b>15,971</b>		<b>46,665</b>		<b>282,040</b>	
<b>Weighted Average</b>		<b>4,655</b>		<b>19%</b>		<b>10%</b>		<b>28%</b>		<b>4%</b>		<b>11%</b>		<b>65%</b>
<b>Rest of World (ROW)</b>														
Turkey	70,589	4,286	19,068	27%	3,935	6%	29,832	42%	989	1%	6,000	8%	55,000	78%
South Africa	47,312	4,587	5,155	11	4,132	9	17,567	37	4,134	9	4,373	9	15,900	34
Saudi Arabia	21,065	11,065	3,544	14	5,220	21	9,178	37	691	3	2,923	12	11,612	47
Nigeria	142,655	500	872	1	994	1	4,495	3	969	1	1,044	1	4,035	3
Israel	6,575	17,780	2,952	45	1,749	27	6,104	93	1,550	24	3,040	46	3,500	53
Egypt	69,330	1,111	9,868	14	1,632	2	12,530	18	1,465	2	3,000	4	965	1
Iran	68,317	2,364	14,806	22	6,174	9	4,393	6	792	1	4,800	7	404	1
Algeria	32,313	2,655	2,091	6	316	1	960	3	332	1	978	3	385	1
Other	1,314,583	1,325	85,847	7	50,367	4	123,747	9	2,583	0	60,455	5	177	0
<b>Total</b>	<b>1,776,628</b>		<b>144,203</b>		<b>74,519</b>		<b>208,807</b>		<b>13,505</b>		<b>86,613</b>		<b>91,978</b>	
<b>Weighted Average</b>		<b>3,366</b>		<b>8%</b>		<b>4%</b>		<b>12%</b>		<b>1%</b>		<b>5%</b>		<b>5%</b>
<b>TOTAL</b>	<b>6,288,463</b>		<b>2,882,245</b>		<b>696,212</b>		<b>1,588,805</b>		<b>459,236</b>		<b>900,981</b>		<b>3,566,655</b>	
<b>Growth Rate</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>		<b>10%</b>		<b>13%</b>		<b>9%</b>		<b>18%</b>		<b>9%</b>	
<b>Average Weighted Penetration</b>				<b>19%</b>		<b>11%</b>		<b>25%</b>		<b>7%</b>		<b>14%</b>		<b>57%</b>

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscriptions is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once): source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 52

**Morgan Stanley Global Credit / Debit Cards Estimates — 2003-2004**

	Country	2003 Credit/Debit Cards (000's)	2004 Credit/Debit Cards (000's)	2004 Y/Y Growth Rate	2003E Credit/Debit Card Penetration	2004E Credit/Debit Card Penetration	
<b><u>N. America</u></b>	USA	819,757	878,000	7%	282%	299%	
	Canada	59,868	61,700	3	189	193	
	<b>Total</b>	<b>879,625</b>	<b>939,700</b>	<b>7%</b>	<b>273%</b>	<b>288%</b>	
	<b>Weighted Average Share of World</b>	<b>27%</b>	<b>26%</b>				
<b><u>Europe</u></b>	United Kingdom	127,691	141,700	11%	214%	236%	
	Germany	94,368	95,600	1	114	115	
	Spain	83,750	94,500	13	205	230	
	Italy	49,023	55,400	13	85	96	
	France	28,250	30,200	7	46	49	
	Netherlands	28,855	29,900	4	178	183	
	Russia	18,490	24,400	32	13	17	
	Portugal	20,190	22,600	12	198	221	
	Poland	16,582	18,224	10	43	47	
	Belgium	14,396	14,700	2	140	143	
	Austria	8,088	8,897	10	110	110	
	Switzerland	7,479	8,227	10	103	113	
	Czech Republic	7,134	8,100	14	70	79	
	Sweden	6,712	7,383	10	75	82	
	Hungary	6,248	6,901	10	63	70	
	Norway	6,181	6,799	10	135	148	
	Ireland	2,787	3,066	10	70	76	
	Denmark	2,722	2,994	10	51	56	
Finland	2,497	2,746	10	48	53		
	<b>Total</b>	<b>531,444</b>	<b>582,338</b>	<b>10%</b>	<b>91%</b>	<b>100%</b>	
	<b>Weighted Average Share of World</b>	<b>16%</b>	<b>16%</b>				
<b><u>Asia</u></b>	China	620,425	684,700	10%	48%	53%	
	Taiwan	91,567	120,000	31	401	521	
	South Korea	62,694	65,900	5	131	136	
	Australia	43,344	46,400	7	217	229	
	India	22,500	38,100	69	2	4	
	Malaysia	18,154	19,900	10	73	78	
	Hong Kong, Chin	15,808	16,200	2	230	233	
	Thailand	9,866	11,400	16	15	18	
	Singapore	9,484	10,000	5	223	232	
	Indonesia	--	8,900	--	--	4	
	Pakistan	--	--	--	--	--	
	Philippines	--	--	--	--	--	
	New Zealand	4,000	4,400	10	100	108	
		<b>Total</b>	<b>897,840</b>	<b>1,025,900</b>	<b>14%</b>	<b>30%</b>	<b>34%</b>
	<b>Weighted Average Share of World</b>	<b>28%</b>	<b>29%</b>				
<b><u>Japan</u></b>	Japan	627,356	644,700	3%	492%	505%	
	<b>Share of World</b>	<b>19%</b>	<b>18%</b>				
<b><u>Lat. America</u></b>	Brazil	146,036	175,000	20%	84%	100%	
	Mexico	45,190	49,700	10	44	48	
	Argentina	21,299	22,100	4	55	57	
	Colombia	12,125	13,500	11	27	30	
	Venezuela	10,722	11,700	9	42	45	
	Chile	6,066	6,500	7	38	41	
	Peru	3,218	3,540	10	11	12	
	<b>Total</b>	<b>244,657</b>	<b>282,040</b>	<b>15%</b>	<b>57%</b>	<b>65%</b>	
	<b>Weighted Average Share of World</b>	<b>8%</b>	<b>8%</b>				
<b><u>Rest of World (ROW)</u></b>	Turkey	44,030	55,000	25%	63%	78%	
	South Africa	15,443	15,900	3	33	34	
	Saudi Arabia	10,330	11,612	12	43	47	
	Nigeria	3,669	4,035	10	3	3	
	Israel	3,399	3,500	3	53	53	
	Egypt	878	965	10	1	1	
	Iran	367	404	10	1	1	
	Algeria	350	385	10	1	1	
	Other	161	177	10	0	0	
		<b>Total</b>	<b>78,626</b>	<b>91,978</b>	<b>17%</b>	<b>5%</b>	<b>5%</b>
		<b>Weighted Average Share of World</b>	<b>2%</b>	<b>3%</b>			
<b>Total</b>		<b>3,259,547</b>	<b>3,566,655</b>	<b>9%</b>	<b>52%</b>	<b>57%</b>	

Source: Morgan Stanley Research

Exhibit 53

## TMT Countries – Sorted by Relative Weighting (4 pages)

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

### Technology, Media & Telecommunications (TMT) Database - Countries Sorted by Relative Weight

Below is our list of 50 countries ranked by our relative weighting, equally considering 8 factors (Population, GNP per Capita, Telephone Lines, Cable Subscribers, PCs, Mobile Phone Subscribers, Internet Users, and Credit/Debit Cards). We have included both credit and debit cards within this category.

**Description of Relative Weighting:** We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.4 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, 8.9 in internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0.

In addition we have listed (and ranked) the countries based on an arithmetic average rank, and a median rank (which does not consider the highest and lowest rankings). For these two columns, absolute rank (relative to the TMT universe) is listed above the actual rank. For example, a relative weighting of .25 shared by a number of countries give each one the same absolute ranking.

Rank Relative to 50 Countries

Actual Number

Country/Population	GDP Per Capita	Tel. Lines
1 USA Pop. 294MM	5 \$39,934	2 184MM

In this sort we place the rank (relative to the 50 TMT countries) above the respective absolute values.

	Country/ Population	GDP Per Capita	Tel. Lines	Installed PCs	Mobile Phones In Use	Cable Subs.	Internet Users	Credit/Debit Cards	AVERAGE RANK	MEDIAN RANK	RANK & RELATIVE WEIGHTING
1	USA Pop. 294MM	5 \$39,935	2 184MM	1 204MM	2 171MM	2 99MM	1 202MM	1 878MM	1 2.00	1 2	1 9.01
2	China Pop. 1,300MM	44 \$1,272	1 283MM	3 42MM	1 335MM	1 128MM	2 94MM	2 685MM	5 7.71	1 2	2 8.17
3	Japan Pop. 128MM	8 \$36,596	3 78MM	2 54MM	3 85MM	5 21MM	3 73MM	3 645MM	2 3.86	3 3	3 6.46
4	Germany Pop. 83MM	13 \$33,390	4 57MM	4 39MM	4 68MM	4 26MM	4 46MM	7 96MM	3 5.71	4 4	4 5.72
5	United Kingdom Pop. 60MM	11 \$35,548	9 86MM	6 50MM	7 124MM	6 3MM	6 60MM	5 0.18MM	4 7.14	5 6	5 5.49
6	India Pop. 1,087MM	49 \$622	5 47MM	12 13MM	10 40MM	3 49MM	5 39MM	15 38MM	11 14.14	10 10	6 5.27
7	France Pop. 62MM	14 \$32,911	8 34MM	7 23MM	9 42MM	10 8MM	9 25MM	16 30MM	6 10.43	6 9	7 5.24
8	Italy Pop. 58MM	17 \$29,014	10 27MM	11 15MM	6 54MM	18 3MM	8 29MM	11 55MM	8 11.57	11 11	8 5.19
9	South Korea Pop. 48MM	24 \$14,151	11 25MM	5 27MM	11 37MM	7 13MM	7 32MM	9 66MM	7 10.57	6 9	9 5.15
10	Canada Pop. 32MM	15 \$31,134	12 20MM	10 16MM	21 15MM	8 10MM	11 22MM	10 62MM	9 12.43	11 11	10 5.10
11	Brazil Pop. 176MM	38 \$3,325	6 42MM	9 19MM	8 49MM	22 2MM	12 18MM	4 175MM	11 14.14	6 9	11 5.06
12	Russia Pop. 142MM	36 \$4,087	7 38MM	8 19MM	5 58MM	9 10MM	10 22MM	18 24MM	10 13.29	6 9	12 5.02
13	Spain Pop. 41MM	18 \$25,320	14 18MM	16 10MM	13 37MM	20 3MM	14 13MM	8 95MM	13 14.71	13 14	13 5.02
14	Netherlands Pop. 16MM	7 \$37,326	20 6MM	17 6MM	23 6MM	11 3MM	17 5MM	17 8MM	14 16.00	16 17	14 4.99

## Technology, Media & Telecommunications (TMT) Database - Countries Sorted by Relative Weight

Below is our list of 50 countries ranked by our relative weighting, equally considering 8 factors (Population, GNP per Capita, Telephone Lines, Cable Subscribers, PCs, Mobile Phone Subscribers, Internet Users, and Credit/Debit Cards). We have included both credit and debit cards within this category.

**Description of Relative Weighting:** We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.4 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, and 10.7 in internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0.

In addition we have listed (and ranked) the countries based on an arithmetic average rank, and a median rank (which does not consider the highest and lowest rankings). For these two columns, absolute rank (relative to the TMT universe) is listed above the actual rank. For example, a relative weighting of .25 shared by a number of countries give each one the same absolute ranking.

Rank Relative to 50 Countries

Country/Population      GDP Per Capita      Actual Number      Tel. Lines

1	USA	5	2
	Pop. 294MM	\$39,934	184MM

In this sort we place the rank (relative to the 50 TMT countries) above the respective absolute values.

	Country/ Population	GDP Per Capita	Tel. Lines	Installed PCs	Mobile Phones In Use	Cable Subs.	Internet Users	Credit/Debit Cards	AVERAGE RANK	MEDIAN RANK	RANK & RELATIVE WEIGHTING
15	Norway	1	40	35	44	39	38	37	34	40	15
	Pop. 5MM	\$54,600	10MM	8MM	14MM	6MM	11MM	30MM	33.43	38	4.98
16	Switzerland	2	27	20	38	21	29	33	21	25	16
	Pop. 7MM	\$49,300	3MM	3MM	4MM	1MM	3MM	7MM	24.29	27	4.98
17	Australia	16	19	14	22	27	13	14	17	15	17
	Pop. 20MM	\$30,682	11MM	12MM	14MM	2MM	14MM	46MM	17.86	16	4.95
18	Sweden	6	26	19	31	19	22	35	19	19	18
	Pop. 9MM	\$38,493	7MM	6MM	8MM	3MM	7MM	7MM	22.57	22	4.91
19	Denmark	4	34	28	40	26	34	44	30	32	19
	Pop. 5MM	\$44,808	4MM	3MM	5MM	2MM	4MM	3MM	30.00	34	4.91
20	Taiwan	25	17	15	18	13	19	6	15	16	20
	Pop. 23MM	\$13,451	14MM	10MM	22MM	5MM	10MM	120MM	16.14	17	4.89
21	Ireland	3	45	40	48	41	48	43	45	45	21
	Pop. 4MM	\$45,675	2MM	2MM	3MM	0.86MM	1MM	3MM	38.29	43	4.88
22	Belgium	12	29	36	28	16	24	25	21	23	22
	Pop. 10MM	\$33,866	5MM	3MM	9MM	4MM	5MM	15MM	24.29	25	4.85
23	Austria	9	33	30	35	32	30	32	26	31	23
	Pop. 8MM	\$36,244	4MM	3MM	7MM	1MM	5MM	9MM	28.71	32	4.84
24	Mexico	29	15	13	12	17	15	13	16	14	24
	Pop. 104MM	\$6,494	17MM	12MM	37MM	4MM	12MM	50MM	16.29	15	4.83
25	Finland	10	44	37	41	33	36	45	39	39	25
	Pop. 5MM	\$35,666	3MM	2MM	5MM	1MM	3MM	3MM	35.14	37	4.81
26	Hong Kong, China	21	35	31	37	45	25	23	31	30	26
	Pop. 7MM	\$23,608	4MM	3MM	7MM	0.62MM	5MM	16MM	31.00	31	4.74
27	Turkey	34	13	25	16	36	23	12	20	20	27
	Pop. 71MM	\$4,286	19MM	4MM	30MM	1MM	6MM	55MM	22.71	23	4.72
28	Poland	30	18	21	19	12	18	22	18	18	28
	Pop. 39MM	\$6,344	2MM	3MM	3MM	0.41MM	2MM	10MM	20.00	19	4.71

## Technology, Media & Telecommunications (TMT) Database - Countries Sorted by Relative Weight

Below is our list of 50 countries ranked by our relative weighting, equally considering 8 factors (Population, GNP per Capita, Telephone Lines, Cable Subscribers, PCs, Mobile Phone Subscribers, Internet Users, and Credit/Debit Cards). We have included both credit and debit cards within this category.

**Description of Relative Weighting:** We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.4 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, and 10.7 in Internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0.

In addition we have listed (and ranked) the countries based on an arithmetic average rank, and a median rank (which does not consider the highest and lowest rankings). For these two columns, absolute rank (relative to the TMT universe) is listed above the actual rank. For example, a relative weighting of .25 shared by a number of countries give each one the same absolute ranking.

Rank Relative to 50 Countries

Country/ Population	GDP Per Capita	Tel. Lines
1 USA Pop. 294MM	6 \$39,934	2 184MM

Actual Number

In this sort we place the rank (relative to the 50 TMT countries) above the respective absolute values.

	Country/ Population	GDP Per Capita	Tel. Lines	Installed PCs	Mobile Phones In Use	Cable Subs.	Internet Users	Credit/Debit Cards	AVERAGE RANK	MEDIAN RANK	RANK & RELATIVE WEIGHTING
29	Singapore Pop. 4MM	19 \$24,740	47 12MM	33 5MM	46 20MM	47 6MM	44 11MM	30 18MM	44 38.00	46 44	29 4.71
30	New Zealand Pop. 4MM	20 \$23,846	49 2MM	42 2MM	49 3MM	44 0.63MM	46 2MM	39 4MM	46 41.29	46 44	30 4.69
31	Portugal Pop. 10MM	23 \$15,982	31 4MM	45 2MM	29 9MM	24 2MM	32 4MM	19 23MM	27 29.00	28 29	31 4.68
32	Israel Pop. 7MM	22 \$17,780	43 3MM	43 2MM	39 6MM	30 2MM	40 3MM	42 4MM	43 37.00	41 40	32 4.66
33	Indonesia Pop. 221MM	45 \$1,191	22 9MM	27 3MM	15 32MM	49 0.19MM	16 12MM	31 9MM	29 29.29	25 27	33 4.65
34	Thailand Pop. 65MM	40 \$2,521	25 7MM	29 3MM	14 33MM	46 0.46MM	21 8MM	29 11MM	28 29.14	28 29	34 4.64
35	Saudi Arabia Pop. 25MM	26 \$11,065	37 5MM	23 4MM	27 18MM	43 4MM	43 4MM	28 16MM	33 32.43	27 28	35 4.63
36	Malaysia Pop. 25MM	32 \$4,646	30 4MM	22 5MM	24 9MM	29 0.69MM	20 3MM	21 12MM	24 25.43	21 24	36 4.63
37	South Africa Pop. 47MM	33 \$4,587	28 5MM	24 5MM	20 13MM	15 2MM	31 10MM	24 20MM	23 25.00	21 24	37 4.63
38	Czech Republic Pop. 10MM	27 \$10,485	41 3MM	39 2MM	26 10MM	34 1MM	35 4MM	34 8MM	35 33.71	32 34	38 4.61
39	Argentina Pop. 39MM	37 \$3,915	24 5MM	26 5MM	30 13MM	14 2MM	27 10MM	20 20MM	24 25.43	24 26	39 4.61
40	Hungary Pop. 10MM	28 \$10,233	38 4MM	47 1MM	34 8MM	23 2MM	39 3MM	36 7MM	37 35.00	37 36	40 4.60
41	Iran Pop. 68MM	42 \$2,364	16 15MM	18 6MM	43 4MM	42 0.79MM	28 5MM	47 0.4MM	35 33.71	43 42	41 4.58
42	Philippines Pop. 84MM	47 \$1,010	39 3MM	32 3MM	17 25MM	35 1MM	26 5MM	49 --	37 35.00	35 35	42 4.57

## Technology, Media & Telecommunications (TMT) Database - Countries Sorted by Relative Weight

Below is our list of 50 countries ranked by our relative weighting, equally considering 8 factors (Population, GNP per Capita, Telephone Lines, Cable Subscribers, PCs, Mobile Phone Subscribers, Internet Users, and Credit/Debit Cards). We have included both credit and debit cards within this category.

**Description of Relative Weighting:** We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.4 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, and 10.7 in Internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0.

In addition we have listed (and ranked) the countries based on an arithmetic average rank, and a median rank (which does not consider the highest and lowest rankings). For these two columns, absolute rank (relative to the TMT universe) is listed above the actual rank. For example, a relative weighting of .25 shared by a number of countries give each one the same absolute ranking.

Country/ Population	GDP Per Capita	Tel. Lines
1 USA Pop. 294MM	5 \$39,934	2 184MM

In this sort we place the rank (relative to the 50 TMT countries) above the respective absolute values.

	Country/ Population	GDP Per Capita	Tel. Lines	Installed PCs	Mobile Phones In Use	Cable Subs.	Internet Users	Credit/Debit Cards	AVERAGE RANK	MEDIAN RANK	RANK & RELATIVE WEIGHTING
43	Chile Pop. 16MM	31 \$5,903	36 4MM	38 2MM	33 8MM	37 1MM	33 4MM	38 7MM	39 35.14	37 36	43 4.57
44	Colombia Pop. 45MM	43 \$2,149	23 8MM	34 3MM	36 7MM	25 2MM	37 3MM	26 14MM	32 32.00	32 34	44 4.55
45	Egypt Pop. 69MM	46 \$1,111	21 10MM	44 2MM	25 13MM	31 1MM	41 3MM	46 1MM	42 36.29	42 41	45 4.55
46	Venezuela Pop. 26MM	35 \$4,175	42 3MM	41 2MM	32 8MM	28 2MM	47 2MM	27 12MM	41 36.00	35 35	46 4.55
47	Peru Pop. 29MM	41 \$2,492	48 2MM	46 2MM	45 4MM	40 1MM	42 3MM	41 4MM	47 43.29	43 42	47 4.51
48	Pakistan Pop. 150MM	48 \$684	32 4MM	49 0.89MM	47 3MM	50 0.02MM	45 2MM	49 --	49 45.71	48 48	48 4.49
49	Algeria Pop. 32MM	39 \$2,655	46 2MM	50 0.32MM	50 1MM	48 0.33MM	50 1MM	48 0.38MM	50 47.29	48 48	49 4.48
50	Nigeria Pop. 143MM	50 \$500	50 0.87MM	48 1MM	42 4MM	38 1MM	49 1MM	40 4MM	48 45.29	48 48	50 4.48

Population, GDP and household data is used to calculate GDP per Capita and penetration rates: source - Morgan Stanley estimates, The CIA World Factbook 2004 & IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Exhibit 54

**TMT Market Propensity Ranking / Relative Weighting - 2000A**

	<b>2000</b>
<b>Country</b>	<b>Relative Weighting</b>
1 USA	9.81
2 China	7.02
3 Japan	6.78
4 Germany	5.93
5 United Kingdom	5.62
6 Italy	5.29
7 France	5.30
8 South Korea	5.24
9 Canada	5.19
10 Spain	5.02
11 Netherlands	5.02
12 Taiwan	4.95
13 Australia	4.94
14 Brazil	4.99
15 Norway	4.98
16 India	4.96
17 Switzerland	4.99
18 Belgium	4.86
19 Sweden	4.93
20 Denmark	4.90
21 Austria	4.84
22 Ireland	4.80
23 Hong Kong, China	4.85
24 Russia	4.80
25 Finland	4.80
26 Singapore	4.78
27 Mexico	4.78
28 Israel	4.75
29 Turkey	4.74
30 Portugal	4.68
31 Argentina	4.71
32 Poland	4.67
33 New Zealand	4.65
34 South Africa	4.63
35 Czech Republic	4.58
36 Malaysia	4.60
37 Hungary	4.56
38 Saudi Arabia	4.60
39 Chile	4.58
40 Thailand	4.55
41 Colombia	4.54
42 Iran	4.54
43 Venezuela	4.58
44 Philippines	4.54
45 Indonesia	4.53
46 Peru	4.52
47 Egypt	4.50
48 Algeria	4.47
49 Pakistan	4.47
50 Nigeria	4.46
Other	5.17

Source: Morgan Stanley Research

March 23, 2006

Internet, Technology, Media & Telecom

Exhibit 55

## TMT Market Propensity Ranking - 2000A / 2003A / 2004A vs. 2007E / 2010E

Country	Rank					Relative Weighting					
	2000A	2003A	2004A	2007E	2010E	2000A	2003A	2004A	2003-2004 Y/Y Change	2007E*	2010E*
1 USA	1	1	1	2	2	9.8	9.2	9.0	-2.2%	8.4	7.7
2 China	2	2	2	1	1	7.0	8.0	8.1	2.3	8.6	8.7
3 Japan	3	3	3	3	4	6.8	6.5	6.5	-1.1	6.2	5.9
4 Germany	4	4	4	5	5	5.9	5.8	5.7	-0.9	5.6	5.3
5 United Kingdom	5	5	5	6	6	5.6	5.5	5.5	-0.4	5.4	5.2
6 India	15	9	6	4	3	5.0	5.2	5.3	2.0	5.9	7.0
7 France	6	6	7	8	8	5.3	5.3	5.2	-0.5	5.2	5.1
8 Italy	7	7	8	9	12	5.3	5.2	5.2	-0.3	5.1	5.0
9 South Korea	8	8	9	10	10	5.2	5.2	5.1	-0.7	5.1	5.0
10 Canada	9	10	10	11	11	5.2	5.1	5.1	-0.2	5.1	5.0
11 Brazil	12	11	11	12	9	5.0	5.0	5.0	0.3	5.1	5.1
12 Spain	11	12	12	13	13	5.0	5.0	5.0	0.0	5.0	5.0
13 Russia	25	16	13	7	7	4.8	5.0	5.0	1.0	5.2	5.2
14 Netherlands	10	13	14	16	19	5.0	5.0	5.0	-0.3	4.9	4.9
15 Norway	14	15	15	14	14	5.0	5.0	5.0	-0.1	5.0	5.0
16 Switzerland	13	14	16	17	18	5.0	5.0	5.0	-0.2	4.9	4.9
17 Australia	17	17	17	15	15	4.9	4.9	4.9	0.2	4.9	4.9
18 Sweden	18	18	18	21	22	4.9	4.9	4.9	-0.1	4.9	4.8
19 Denmark	19	19	19	19	21	4.9	4.9	4.9	-0.1	4.9	4.9
20 Taiwan	16	20	20	22	23	4.9	4.9	4.9	-0.1	4.8	4.8
21 Ireland	24	21	21	18	16	4.8	4.9	4.9	0.1	4.9	4.9
22 Belgium	20	22	22	23	25	4.9	4.8	4.8	0.0	4.8	4.8
23 Austria	22	23	23	24	24	4.8	4.8	4.8	0.0	4.8	4.8
24 Mexico	27	24	24	20	17	4.8	4.8	4.8	0.1	4.9	4.9
25 Finland	23	25	25	26	27	4.8	4.8	4.8	0.0	4.8	4.8
26 Hong Kong, China	21	26	26	27	29	4.8	4.7	4.7	-0.5	4.7	4.7
27 Turkey	29	27	27	31	33	4.7	4.7	4.7	-0.1	4.7	4.7
28 Poland	32	28	28	29	30	4.7	4.7	4.7	-0.1	4.7	4.7
29 Singapore	26	29	29	28	28	4.8	4.7	4.7	-0.1	4.7	4.8
30 New Zealand	33	31	30	32	31	4.6	4.7	4.7	0.2	4.7	4.7
31 Portugal	31	30	31	34	36	4.7	4.7	4.7	-0.2	4.7	4.6
32 Israel	28	32	32	35	37	4.7	4.7	4.7	-0.4	4.6	4.6
33 Indonesia	45	39	33	25	20	4.5	4.6	4.6	0.8	4.8	4.9
34 Thailand	41	33	34	33	32	4.5	4.6	4.6	0.2	4.7	4.7
35 Saudi Arabia	35	36	35	30	26	4.6	4.6	4.6	0.2	4.7	4.8
36 Malaysia	36	34	36	36	34	4.6	4.6	4.6	0.0	4.6	4.7
37 South Africa	34	35	37	39	42	4.6	4.6	4.6	-0.1	4.6	4.6
38 Czech Republic	38	38	38	40	40	4.6	4.6	4.6	-0.1	4.6	4.6
39 Argentina	30	37	39	41	43	4.7	4.6	4.6	-0.1	4.6	4.6
40 Hungary	40	40	40	37	39	4.6	4.6	4.6	0.0	4.6	4.6
41 Iran	43	41	41	42	35	4.5	4.6	4.6	0.1	4.6	4.6
42 Philippines	44	42	42	43	44	4.5	4.6	4.6	0.0	4.6	4.6
43 Chile	39	43	43	44	47	4.6	4.6	4.6	0.0	4.6	4.6
44 Colombia	42	44	44	46	48	4.5	4.5	4.5	0.0	4.6	4.6
45 Egypt	47	46	45	38	41	4.5	4.5	4.5	0.2	4.6	4.6
46 Venezuela	37	45	46	45	45	4.6	4.5	4.5	0.0	4.6	4.6
47 Peru	46	47	47	49	50	4.5	4.5	4.5	-0.1	4.5	4.5
48 Pakistan	49	48	48	48	46	4.5	4.5	4.5	0.1	4.5	4.6
49 Algeria	48	49	49	50	49	4.5	4.5	4.5	0.0	4.5	4.5
50 Nigeria	50	50	50	47	38	4.5	4.5	4.5	0.1	4.5	4.6

Source: Morgan Stanley Research; \*Relative weights extrapolated using 2003-2004 growth rates applied as CARG to underlying TMT metrics to computed forecasts and backcasts.  
E = Morgan Stanley Research Estimates.

Exhibit 56

## Market Share Leaders; Countries Sorted by Relative Weighting

MORGAN STANLEY TECHNOLOGY RESEARCH

March 2006

### Technology, Media & Telecommunications (TMT) Database - Leading Market Share by Country & Category

Below is our list of the top 25 countries ranked by our relative weighting, equally considering 7 factors -- GDP per Capita, Telephone Lines, Cable Subscribers, PCs, Mobile Phone Subscribers, Internet Users, and Credit Cards (includes both credit and debit cards). In certain markets, like the UK, debit cards are widely used in ecommerce transactions. In other markets, like Germany and France, they are not. There is no single rule of thumb across all countries for whether they are an indicator of ecommerce potential. Erring on the conservative side, we have included debit cards for now.

Description of Relative Weighting: We standardized each country's position in the global market in each category and adjusted the values to reflect a positive scale. The relative ratings and ranks were then determined by calculating an average of z-scores across categories. For example, in the United States, standardized and adjusted values of 6.4 in GDP per capita, 8.4 in telephone lines, 11.3 in installed PCs, 7.6 in mobile subscribers, 8.9 in cable subscribers, and 10.7 in Internet users, and 9.6 in credit/debit cards produces a relative weighting of 9.0.

	Telephone Lines	Cable Subscriptions	Market Share
<b>Absolute Value</b>	<b>184MM</b>	<b>99MM</b>	
1 USA	Verizon - 36% SBC Comm. - 31% BellSouth - 14% Qwest - 9% Sprint - 5%	Comcast - 22% DirecTV - 14% EchoStar - 11% Time Warner - 11% Cox - 6%	
Pop. 294MM			

In this sort we place a box around the absolute values for the respective categories in the top 25 TMT countries (based on our relative weighting). Where available, the leading market share leaders are listed with their market share percentages.

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Phone In Use	Mobile Devices	Internet Service Providers (ISPs)	DSL	Credit/Debit Cards
1 USA	<b>184MM</b> Verizon - 36% SBC Comm. - 31% BellSouth - 14% Qwest - 9% Sprint - 5%	<b>99MM</b> Comcast - 22% DirecTV - 14% EchoStar - 11% Time Warner - 11% Cox - 6%	<b>204MM</b> Dell - 35% HP - 19% Gateway - 6% Apple - 5% Lenovo - 5%	<b>171MM</b> Cingular - 27% Verizon - 25% Sprint PCS - 12% T-Mobile - 10% Nextel - 8%	<b>141MM</b> Motorola - 35% LG - 17% Samsung - 16% Nokia - 14% Kyocera - 4%	<b>202MM users</b> AOL/RoadRunner - 27% Comcast - 8% Sprint Juno - 6% SBC Yahoo! - 6% EarthLink - 5%	<b>5.8MM</b> SBC - 38% Verizon - 31% Bell South - 18% Qwest - 9%	<b>878MM</b> Citibank - 13% Bank One - 10% MBNA - 8% Bank of America - 8% JPMorganChase - 6%
2 China	<b>283MM</b> China Telecom - 60% China Netcom - 36% China TieTong - 4%	<b>128MM</b> Shanghai Cable Tianjin Cable Beijing Cable	<b>42MM</b> Lenovo - 26% Founder Elec. - 12% Tongfang - 8% Dell - 7% IBM - 5%	<b>335MM</b> China Mobile - 64% China Unicom - 36%	<b>85MM</b> Nokia - 26% Motorola - 10% Samsung - 9% Bird - 8% TCL - 6%	<b>94MM users</b> China Telecom - 15% China Unicom - 14% China Netcom - 10%	<b>3.3MM</b> ChinaNet China Netcom GBNet China Unicom	<b>685MM</b> Industrial & Commercial Bank of China - 20% Bank of China - 18% Agricultural Bank of China - 14% China Construction Bank - 10%
3 Japan	<b>78MM</b> NTT KDDI Japan Telecom	<b>21MM</b> Sky Perfect - 15% Jupiter Telecom - 8%	<b>54MM</b> NEC - 20% Fujitsu - 19% Dell - 11% Toshiba - 8% IBM - 7%	<b>85MM</b> NTT DoCoMo - 56% KDDI (au) - 22% Vodafone - 17% TU-KA - 4%	<b>49MM</b> NEC - 17% Panasonic - 14% Sharp - 13% Sanyo - 12% Fujitsu - 11%	<b>73MM users</b> @nifty - 14% SoftbankBB(Yahoo! BB) - 13% NTT (OCN) - 12% KDDI (dion) - 8% NEC (biglobe) - 11%	<b>7MM</b> NTT Regional - 43% BB Technologies - 25% ACCA Networks - 10% e-Access - 10% Japan Telecom - 7%	<b>645MM</b> Sumitomo Mitsui - 16% UC Card - 15% Nippon Shinpan - 14% Credit Saison - 12% UFJ Card - 9%
4 Germany	<b>57MM</b> Deutsche Telecom - 89% Arcor Mobilcom	<b>26MM</b> Kabel Deutschland - 38% Ish (Kabel NRW) - 16% Premiere World - 13% Kabel Baden Wurttemberg - 9% EWT (UPC) - 8%	<b>39MM</b> Fujitsu Siemens - 21% HP - 11% Acer - 10% Medion - 10% Dell - 9%	<b>68MM</b> T-Mobile - 40% Vodafone D2 - 36% E-Plus - 13% O2 - 11%	<b>30MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>46MM users</b> T-Online - 53% freenet.de AOL Tiscalie	<b>3.1MM</b> Deutsche Telecom	<b>96MM</b> Bankgesellschaft Berlin - 7% Citibank - 6% Barclaycard - 6% Commerzbank - 5% KarstadtQuelle Bank - 4%
5 United Kingdom	<b>86MM</b> BT - 83% NTL/Telewest - 13%	<b>3MM</b> Sky Digital - 48% Freeview - 30% NTL - 13% Telewest - 9%	<b>50MM</b> Dell - 29% HP - 16% Acer - 5% NEC/Packard Bell - 5% Toshiba - 5%	<b>124MM</b> O2 - 25% T-Mobile - 24% Orange - 23% Vodafone - 23%	<b>30MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>60MM users</b> Freemove - 9% World Online - 6% BT/Genie - 6% AOL - 5% LineOne - 5%	<b>0.55MM</b> BT	<b>0.18MM</b> Barclays Bank - 18% RBS/NatWest - 16% HSBC Bank - 6% MBNA - 6% Co-operative Bank - 4%

**Technology, Media & Telecommunications (TMT) Database - Leading Market Share by Country & Category**

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Phone In Use	Mobile Devices	Internet Service Providers (ISPs)	DSL	Credit/Debit Cards
6 India Pop. 1.087MM	<b>47MM</b> DoT - 79% MTNL - 9%	<b>49MM</b> Siti Cable - 14% INCablenet - 11% Hathway - 7%	<b>13MM</b> HP - 13% HCL - 13% IBM - 7% Dell - 4% Acer - 4%	<b>40MM</b> Reliance - 20% Bharti - 21% BSNL - 18% Hutchinson - 15% IDEA - 10%	<b>34MM</b> Nokia - 34% Samsung - 15% Motorola - 11% LG - 5% Sony Ericsson - 5%	<b>39MM users</b> BSNL - 33% MTNL - 18% Satyam - 15% VSNL - 13% Reliance - 4%	-- VSNL Satyam Dishnet Bharti	<b>38MM</b> Standard Chartered - 8% ICICI - 3% HDFC - 1%
7 France Pop. 62MM	<b>34MM</b> France Telecom - 65% Cegetel	<b>8MM</b> Canal Satellite - 38% UPC France - 19% TPS - 17% France Télécom - 11% NC Numéricable - 10%	<b>23MM</b> HP - 21% NEC/Packard Bell - 16% Dell - 14% Fujitsu Siemens - 7% Acer - 6%	<b>42MM</b> Orange - 47% SFR - 36% Bouygues - 17%	<b>18MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>25MM users</b> Wanadoo - 45% Tiscali AOL Club Internet	<b>1.3MM</b> France Telecom	<b>30MM</b> Crédit Agricole - 21% Caisse d'Épargne - 14% Société Générale - 11% BNP Paribas - 9% Crédit Lyonnais - 6%
8 Italy Pop. 58MM	<b>27MM</b> DoT MTNL	<b>3MM</b> Sky Italia - 95% Fastweb - 5%	<b>15MM</b> Acer - 22% HP - 18% Fujitsu Siemens - 7% IBM - 5% Toshiba - 5%	<b>54MM</b> TIM - 41% Omnitel Vodafone - 33% Wind - 20%	<b>15MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>54MM users</b> Wind tin.it Tiscali	<b>5.6MM</b> Telecom Italia Comm2000 Unidata	<b>55MM</b> CartaSi - 68% Deutsche Bank d'Italia - 9% Unicredito - 2% Credem - 1%
9 South Korea Pop. 48MM	<b>25MM</b> KT Business - 95% Hanaro - 5%	<b>13MM</b> Sky Life - 13% C&M - 9% Daeho - 5% Hanvit - 3%	<b>27MM</b> Samsung Elec. - 32% TriGem - 14% LG-IBM - 10% Fujitsu - 9% Joooyontech - 6%	<b>37MM</b> SK Telecom - 51% KTF - 32% LG Telecom - 16%	<b>22MM</b> Samsung - 47% LG - 20% Curitel - 19%	<b>37MM users</b> Korea Telecom - 51% Hanaro - 24% Korea Thrunet Dacom	<b>0.58MM</b> Korea Telecom Hanaro Telecom	<b>66MM</b> LG Card - 27% BC Card - 20% Kookmin Card - 16% Samsung Card - 12% Shinhan Card - 3%
10 Canada Pop. 32MM	<b>20MM</b> Bell Canada TELUS Manitoba AT&T Canada	<b>10MM</b> Rogers - 22% Shaw - 21% Bell ExpressVu - 15% Videotron - 14% Cogeco - 8%	<b>16MM</b> Dell - 25% HP - 20% IBM - 11% Toshiba - 6% Acer 5%	<b>15MM</b> Rogers Wireless - 37% Bell Mobility - 28% Telus Mobility - 26% Aliant Telecom - 4%	<b>9MM</b> Motorola - 35% LG - 17% Samsung - 16% Nokia - 14% Kyocera - 4%	<b>22MM users</b> Bell Canada - 30% Shaw - 18% Rogers - 16% Telus - 16% Videotron Ltee. - 9%	<b>.85MM</b> Bell Canada TELUS Manitoba Telecom AT&T Canada	<b>62MM</b> CIBC - 29% Royal Bank - 16% Bank of Montreal - 12% TD Canada Trust - 10% Scotiabank - 7%
11 Brazil Pop. 176MM	<b>42MM</b> Telemar - 38% Telefonica - 31% Brasil Telecom - 24% GVT - 2%	<b>2MM</b> NET - 59% TVA - 12% Vivax - 12%	<b>19MM</b> Positivo Informatica - 4% Dell - 4% HP - 3% Toshiba - 3% IBM - 2%	<b>49MM</b> Vivo - 41% TIM - 21% Telecom Americas - AM - 20% Oi - Telemar - 11% Telemig Celular - 4%	<b>26MM</b> Motorola - 35% Nokia - 30% Siemens - 10% Samsung - 8% Sony Ericsson - 5%	<b>18MM users</b> Ingermet Grupo de Brasil - 56% UOL - 14% Terra Networks - 12% AOL - 7% Inter.net - 2%	<b>1.7MM</b> Telefonica Telemar Brasil Telecom	<b>175MM</b> Banco de Brasil - 7% Bradesco - 7% Banco Itau - 4% Credicard - 4% Unibanco - 3%
12 Russia Pop. 142MM	<b>38MM</b> Rostelecom - 25% Transtelecom	<b>10MM</b> Kosmos TV ComCor-TV (CCTV) CentreTelecom	<b>19MM</b> HP - 7% Formoza - 7% Aquarius - 6% Kraftway - 4% K-Systems - 4%	<b>58MM</b> Delta Telecom Uralsvyazinform VolgaTelecom CenterTelecom	<b>39MM</b> Nokia - 50% Samsung - 14% Siemens - 10% Motorola - 7% Sony Ericsson - 5%	<b>22MM users</b> Golden Telecom MTU Inform	-- Sistema	<b>24MM</b> Citigroup - 19% Savings Bank of Russian Fed. - 18%
13 Spain Pop. 41MM	<b>18MM</b> Telefonica - 89% Retelevision - 4%	<b>3MM</b> Digital + - 57% Aunacable - 23% ONO - 15%	<b>10MM</b> HP - 20% Acer - 15% Dell - 8% Airis Computer - 6% Toshiba - 5%	<b>37MM</b> Telefonica Moviles - 49% Vodafone Spain - 26% Amena - 25%	<b>14MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>13MM users</b> Terra Lycos Eresmas Ya.com Wanadoo	<b>0.95MM</b> Telefonica	<b>95MM</b> La Caixa - 19% BBVA - 17% Caja Madrid - 12% Santander Central Hispano - 10% Banco Popular Espanol - 4%

## Technology, Media & Telecommunications (TMT) Database - Leading Market Share by Country & Category

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Phone In Use	Mobile Devices	Internet Service Providers (ISPs)	DSL	Credit/Debit Cards
14 Netherlands Pop. 16MM	<b>6MM</b> KPN Telecom - 90%	<b>3MM</b> UPC - 36% Essent - 27% Casema - 21% Mutikabel - 5% Zekatel - 3%	<b>6MM</b>	<b>6MM</b> KPN Mobile - 36% Vodafone Libertel - 23% Telfort - 16% T-Mobile - 15% Orange - 11%	<b>7MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>6MM users</b> Planet Internet World Online SURFnet @ Home Nederland bART	<b>0.31MM</b> Cistron Versatel KPN Telecom KPNQwest	<b>8MM</b> Postbank - 3%
15 Norway Pop. 5MM	<b>10MM</b> Telstra - 95% Optus - 5%	<b>6MM</b> Foxtel - 70% Austar - 30%	<b>8MM</b> HP - 17% Dell - 14% Acer - 10% IBM - 7% Toshiba - 7%	<b>14MM</b> Telstra - 52% Optus - 38% Vodafone - 16% Hutchinson - 6%	<b>6MM</b> Noka - 34% Samsung - 15% Motorola - 11% LG - 5% Sony Ericsson - 5%	<b>14MM users</b> Telstra Big Pond - 25% OzEmail - 18% Cable & Wireless Optus - 8% iPrimus TPG Internet	<b>2.1MM</b> Telstra Optus	<b>30MM</b> ANZ - 22% Commonwealth Bank - 20% National Australia - 14% Westpac - 6% Heritage Building Soc. - 1%
16 Switzerland Pop. 7MM	<b>3MM</b> Swisscom - 67% TDC Switzerland - 19% Tele2 - 12%	<b>1MM</b> Cablecom - 53%	<b>3MM</b>	<b>4MM</b> Swisscom - 63% TDC Switzerland - Sunrise - 19% Organ - 18%	<b>8MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>4MM users</b> Swisscom NTL Sunrise dAx Datacom	<b>--</b> Swisscom	<b>7MM</b> UBS - 38% Swisscard - 30% VISECA - 18% Corner Bank - 14%
17 Australia Pop. 20MM	<b>11MM</b> Telenor - 86% Tele2 Norge - 15% Ventelo - 4%	<b>2MM</b> Canal Digital Kabel - 42% UPC - 36%	<b>12MM</b>	<b>14MM</b> Telenor - 63% NetCom - 37%	<b>2MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>14MM users</b> Telenor Tele2 Norge Telia Norge UPC	<b>0.09MM</b> Telenor UPC	<b>46MM</b> Den Norske Bank - 3%
18 Sweden Pop. 9MM	<b>7MM</b> Telia - 84% Tele2 - 7% Telenordia - 2%	<b>3MM</b> Com.hem - 45% Boxer - 12% UPC - 9% Canal Digital - 7% Kabelvision - 6%	<b>6MM</b>	<b>8MM</b> TeliaSonera - 46% Comviq - 36% Vodafone - 15%	<b>2MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>8MM users</b> Telia Tele2 Spray Utfors Scandinavia Online	<b>0.22MM</b> Telia	<b>7MM</b> Swedbank - 42% SEB - 22% Svenska Handelsbanken - 10%
19 Denmark Pop. 5MM	<b>4MM</b> TDC - 82% Tele2 - 6% Telia - 4%	<b>2MM</b> TDC KabelTV/On Cable - 57% Telia Stofa - 12%	<b>3MM</b>	<b>5MM</b> TDC Mobile - 48% Sonofon - 28% Telia - 22% 3 - 3%	<b>2MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>5MM users</b> TeleDanmark Get2Net CyberCity Image	<b>0.22MM</b> TeleDanmark Tele2 Dansk Internet Adgang	<b>3MM</b>
20 Taiwan Pop. 23MM	<b>14MM</b> Chungwa Telecom - 80% Eastern Broadband New Century Taiwan Fixed Network	<b>5MM</b> EMC - 23% CNS - 23% TBC - 11% Pacific B'band - 11%	<b>10MM</b> ASUS - 13% Acer - 12% HP - 11% IBM - 9% Synnex - 6%	<b>22MM</b> Chunghwa - 38% Taiwan Mobile - 22% Far EastOne - 19% KG - 10% TransAsia - 7%	<b>4MM</b> Noka - 34% Samsung - 15% Motorola - 11% LG - 5% Sony Ericsson - 5%	<b>22MM users</b> HiNet - 48% Seednet TTN Infoserve APOL	<b>0.32M</b> Chunghwa Telecom	<b>120MM</b> China Trust Commercial - 20% Citibank - 13% Fubon Commercial - 4% HSBC - 3% Union Bank - 3%
21 Ireland Pop. 4MM	<b>2MM</b> Eircom Digiweb	<b>0.86MM</b> Sky Digital - 41% NTL - 38%	<b>2MM</b>	<b>3MM</b> Vodafone - 50% O2 - 40% Meteor - 10%	<b>2MM</b> Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	<b>3MM users</b>	<b>0.09MM</b>	<b>3MM</b> Bank of Ireland - 35% Ulster Bank Direct - 5% TSB - 4%

**Technology, Media & Telecommunications (TMT) Database - Leading Market Share by Country & Category**

	Telephone Lines	Cable Subscriptions	Installed PCs	Mobile Phone In Use	Mobile Devices	Internet Service Providers (ISPs)	DSL	Credit/Debit Cards
22 Belgium Pop. 10MM	5MM Belgacom - 75%	4MM Telenet - 40% Brutele - 8% Integan - 6% UPC - 3%	3MM	9MM Belgacom - 49% Mobistar - 33% BASE - 18%	4MM Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	9MM users Belgacom Wanadoo Planet Internet World Online BT Belgium	0.52MM Belgacom	15MM Fortis Bank - 33% KBC Bank - 16% Dexia Bank - 12% ING - 10% Citibank - 2%
23 Austria Pop. 8MM	4MM Telekom Austria- 54% Tele2 - 14% UTA - 12%	1MM UPC - 41% Liwest - 8%	3MM	7MM mobilkom - 41% T-Mobile - 25% Connect Austria - 19% tele.ring - 11% Hutchison - 3%	3MM Nokia - 33% Samsung - 16% Motorola - 13% Siemens - 9% Sony Ericsson - 8%	7MM users	0.28MM	9MM Bank Austria Creditanstalt - 34% Raiffeisen Zentralbank - 25%
24 Mexico Pop. 104MM	17MM Telmex - 96%	4MM MVS Multivision - 21% Megacable - 13% Cablevision - 10%	12MM HP - 16% Dell - 12% Sony - 4% IBM - 3% Toshiba - 2%	37MM Telcel (America Movil) - 77% TEM Mexico (Telefonica) - 15% Iusacell (Grupo Salinas) - 4% Unefon (Grupo Salinas) - 4%	3MM Motorola - 35% Nokia - 30% Siemens - 10% Samsung - 8% Sony Ericsson - 5%	37MM users Telmex - 32% Terra - 20% AOL - 11% Avantel - 4% Inter.net - 2%	0.07MM Telefonos de Mexico	50MM BBVA Bancomer - 35% Banamex - 27% HSBC - 15% Santander Serfin - 7% Banaca Promex - 3%
25 Finland Pop. 5MM	3MM	1MM HTV - 63% TeliaSonera - 37%	2MM HP - 17% Dell - 14% Acer - 10% IBM - 7% Toshiba - 7%	5MM	15MM Noka Samsung Motorola LG Sony Ericsson	3MM users TeliaSonera Elisa Saunalahti	-- TeliaSonera Elisa	3MM

Population, GDP, and household data sourced from Morgan Stanley Research, The CIA World Factbook 2004/2005 & the IMF - Telephone lines represent total (business & commercial) lines in use: source - World Bank, Euromonitor, Morgan Stanley estimates. The numbers for Cable Subscribers is based on information from The World Bank and Euromonitor, cross referenced with Kagan World Media Ltd and Informa Media Group: source - World Bank, Morgan Stanley estimates, Kagan, Informa Media Group. PC numbers represent the raw total (business and commercial) PC figures, both desktop and laptop: source - World Bank, Euromonitor, Morgan Stanley estimates, IDC. Mobile Phone subscriptions data is sourced from the World Bank, Morgan Stanley estimates, The International Telecommunication Union, Euromonitor, and IDC. Internet users reflect the number of users accessing the Web (users may share/use multiple devices, users accessing the web from home and work are counted only once); source - Morgan Stanley estimates, InternetWorldStats.com, ETC New Media Review, IDC. Credit Card figures include debit cards: source - Morgan Stanley estimates, The Nilson Report (DRI/McGraw Hill), Euromonitor. Penetration figures are calculated by dividing the relevant data point by the population.

Following footnotes refer to company-specific data only.

Telephone line data represent 2004 figures, or most recent data available. Source: World Market Research Centre, Morgan Stanley Research. Cable data represent 2004 figures, or most recent data available. Source: World Market Research Centre, Morgan Stanley Research. PC data represent 2004 figures, or most recent data available. Figures derived from shipment data. Source: Gartner Dataquest, IDC, Morgan Stanley Research. Mobile subscriber data represent 2004 figures, or most recent data available. Source: World Market Research Centre, Morgan Stanley Research. Mobile handset data represent 2004 figures, or most recent data available. Western Europe figures are reported on a regional basis therefore countries in Western Europe will show the same market share. Separate figures are not reported for Latin America, Eastern Europe and Canada; worldwide figures are used in these countries. Figures derived from shipment data. Source: Morgan Stanley Research. ISP data represent 2004 figures, or most recent data available. Source: Morgan Stanley Research. Handheld device data represent 2004 figures, or most recent data available. Western Europe and Latin America figures are reported on a regional basis therefore countries in those regions will show the same market share. Separate

recent data available. Source: Morgan Stanley Research. Credit card data represent 2004 figures, or most recent data available. Source: Morgan Stanley Research. If market share percentages are not included, data was not sufficient. Where available, relative ranking data was updated from 2004 TMT Report.



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	Count	% of Total	Count	% of Total	% of Rating Category
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Equal-weight/Hold	937	45%	323	47%	34%
Underweight/Sell	400	19%	95	14%	24%
<b>Total</b>	<b>2,081</b>		<b>694</b>		

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Unless otherwise specified, the time frame for price targets included in this report is 12 to 18 months.

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**Industry Coverage: Internet & Consumer Software**

Company (Ticker)	Rating (as of)	Price (12/13/2005)
<b>Brian Pitz</b>		
GSI COMMERCE (GSIC.O)	E (08/05/2005)	\$16.00
<b>Mary Meeker</b>		
Amazon.com (AMZN.O)	O-V (03/18/2002)	\$49.50
CNET (CNET.O)	E-V (03/18/2002)	\$14.91
drugstore.com (DSCM.O)	E (03/18/2002)	\$2.99
eBay (EBAY.O)	O-V (07/10/2002)	\$45.36
Google (GOOG.O)	O-V (09/28/2004)	\$417.49
Intuit (INTU.O)	O-V (03/18/2002)	\$55.57
Microsoft (MSFT.O)	O-V (03/18/2002)	\$27.13
priceline.com (PCLN.O)	E (03/18/2002)	\$23.82
Yahoo! (YHOO.O)	O-V (03/18/2002)	\$41.20

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