

Technology Trends

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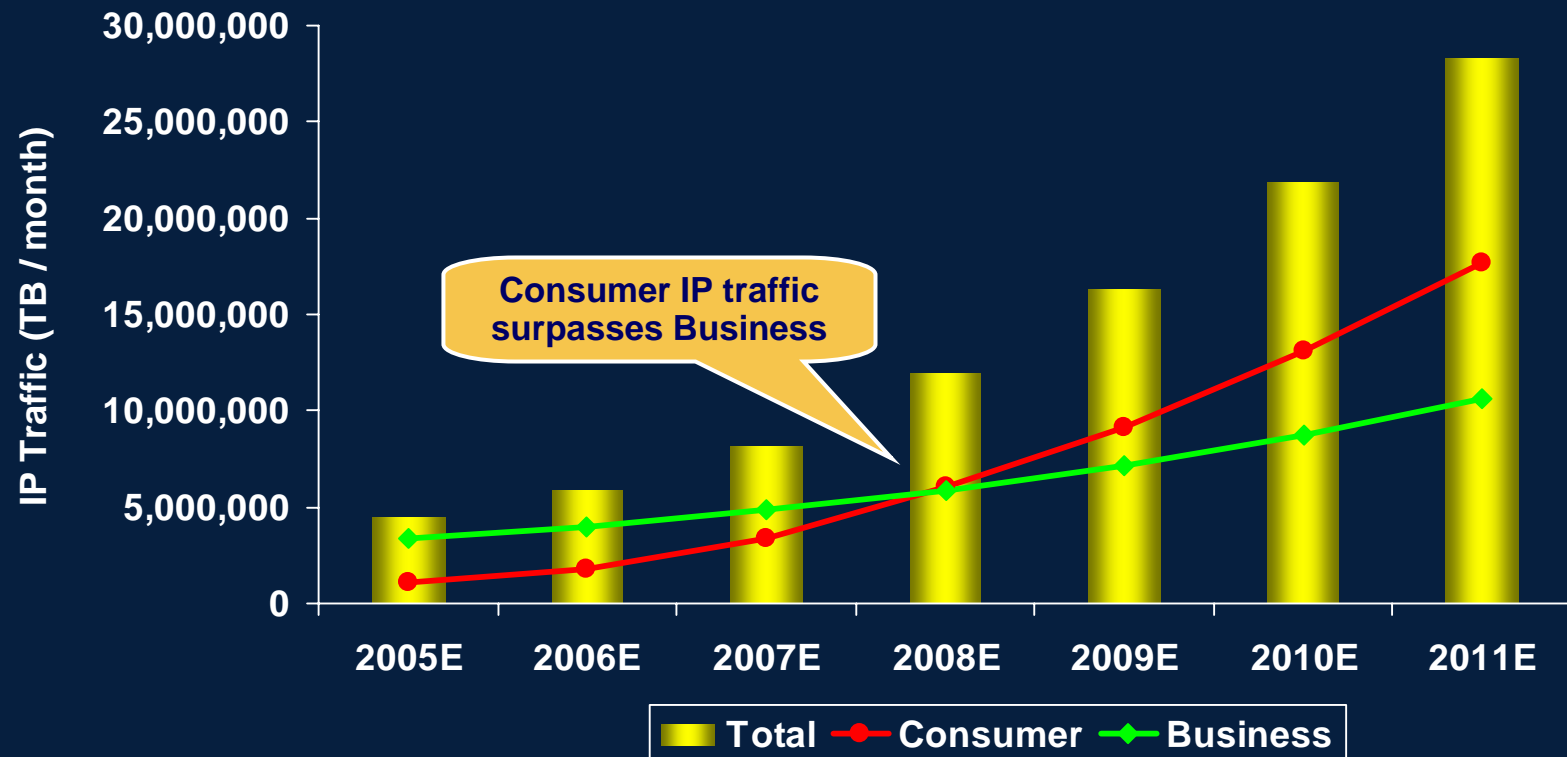
Technology Trends – Morgan Stanley Tech Research

1. **Digital Consumer** – Demand for Internet-enabled services / products is strong; enterprise playing catch up
2. **Mobile** – Innovation in wireless products is accelerating and wireless data take-up rates likely to accelerate
3. **Emerging Markets** – Pacing next wave of technology adoption
4. **Cloud Computing** – Shift to software-as-a-service (SaaS) for consumer / enterprise
5. **Next Generation Data Center** – Evolving to SaaS with virtualization
6. **Storage** – Needs continue to ramp + underlying technologies changing rapidly
7. **Recession** – Uncharted territory in the modern era

1 - Digital Consumer - Demand for Internet-enabled Services / Products Strong; Enterprise Playing Catch Up

Consumer Surpasses Business IP Traffic in 2008E – 58% IP Traffic CAGR, 2005-2011E

Global IP Traffic



Consumer Information Technology – Advancing Faster Than Enterprise

Fifteen years ago, enterprise technology was higher-quality than consumer technology. That's not true anymore. It used to be that you used enterprise technology because you wanted uptime, security and speed. None of those things are as good in enterprise software anymore [as they are in some consumer software].

Douglas Merrill

Former Google Chief Information Officer,
New President of EMI Music, Digital Business

YouTube + Facebook Page Views > Yahoo! or Google – Massive Transition in Available Ad Units & Supply > Demand

Alexa Global Traffic – Relative Page Views



Social Networking – Significant Share Gains of Internet Traffic

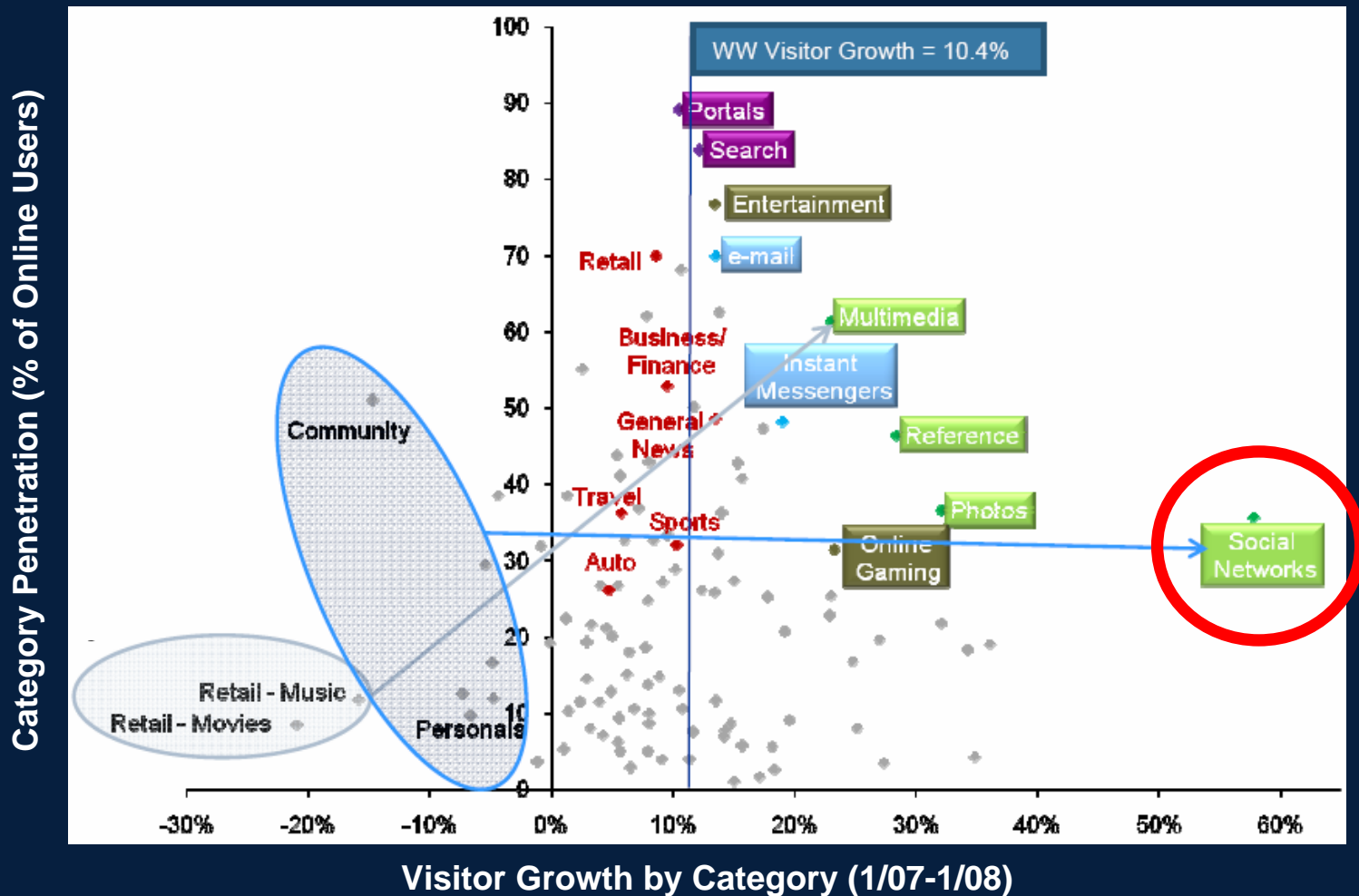
Alexa Global Traffic Rankings

2005 ⁽¹⁾		2008 ⁽²⁾	
Rank	Web site	Rank	Web site
1	yahoo.com	1	yahoo.com
2	msn.com	2	youtube.com
3	google.com	3	live.com
4	ebay.com	4	google.com
5	amazon.com	5	myspace.com
6	microsoft.com	6	facebook.com
7	myspace.com	7	msn.com
8	google.co.uk	8	hi5.com
9	aol.com	9	wikipedia.org
10	go.com	10	orkut.com

Traffic rank is based on three months of aggregated historical traffic data from Alexa Toolbar users and is a combined measure of page views / users (geometric mean of the two quantities averaged over time).

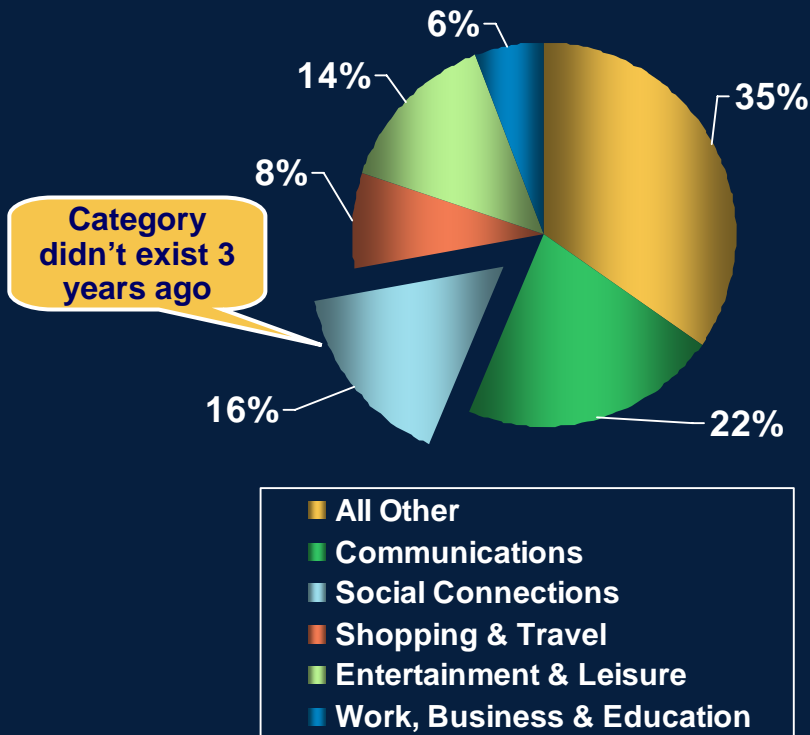
Social Networking – Fast Growth + Low Penetration

Worldwide Online Category Growth vs. Penetration

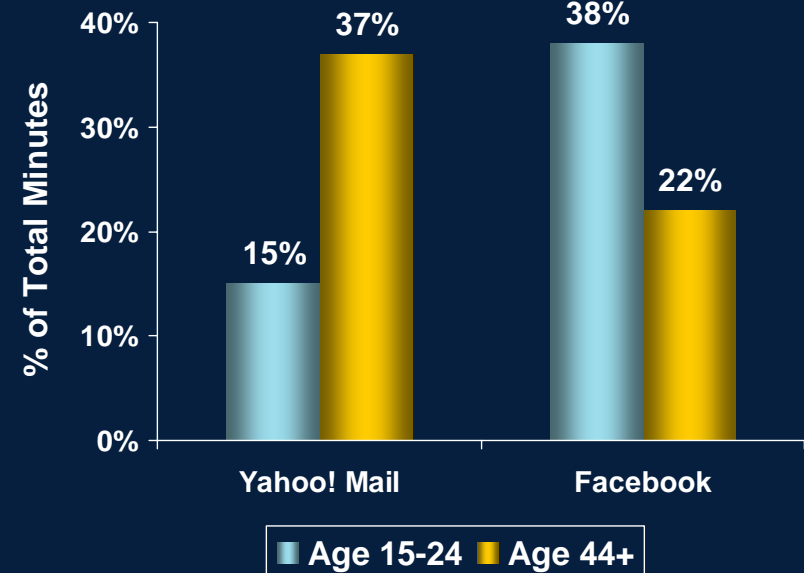


Social Networking – Connectivity Changing...Is E-Mail Archaic?





**Worldwide Share of
Online Time ⁽¹⁾**



**Connecting – Younger Users Via Social
Networks + Older Users Via E-Mail? ⁽²⁾**

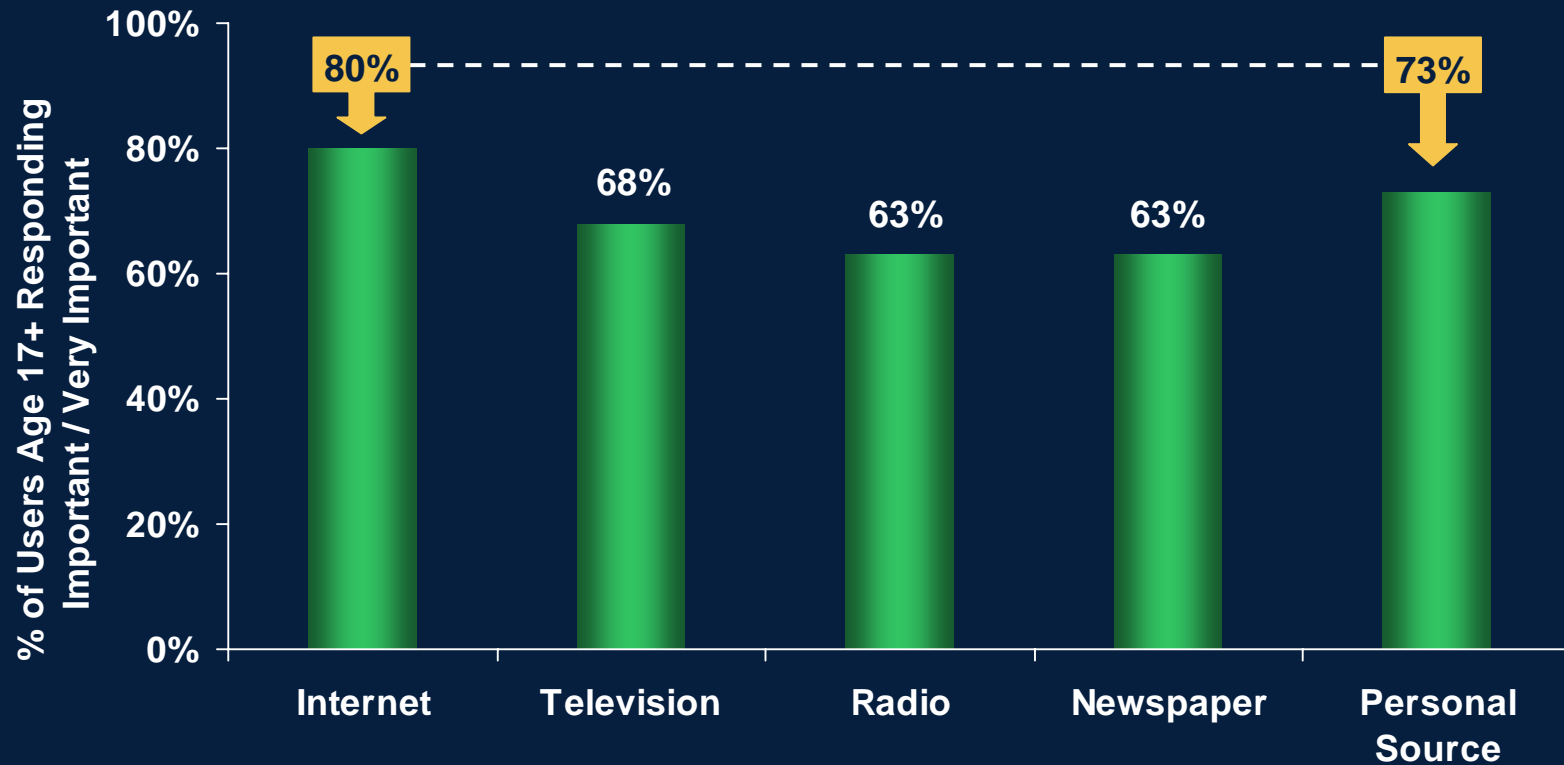


Next Generation Assets – YouTube + Facebook + Skype + PayPal

	Users	Y/Y Growth	Comments
	300MM ⁽¹⁾	+84%	#3 site in global minutes; 51% of users go to YouTube weekly or more; 50% watch all videos to the end; ongoing copyright challenges; 52% of 18-34 year-olds share videos with friends / colleagues often ^(1,3)
	116MM ⁽¹⁾	+200%	#6 site in global minutes; 70MM+ active users; 50%+ users outside of college; 22K applications + 95% of Facebook members have used at least one ^(1,4)
	309MM ⁽²⁾	+58%	\$1.63 annualized revenue per registered user (+2% Y/Y) on peer-to-peer network; 1.7B Skype Out minutes (+33% Y/Y); 14.2B Skype-to-Skype minutes (+30% Y/Y) ⁽²⁾
	60MM ⁽²⁾	+17%	Payment volume +34% Y/Y; On-eBay / off-eBay payment volume +17% / +61% Y/Y (to 46% of TPV); Average transaction size of \$68.33 (+9% Y/Y) ⁽²⁾

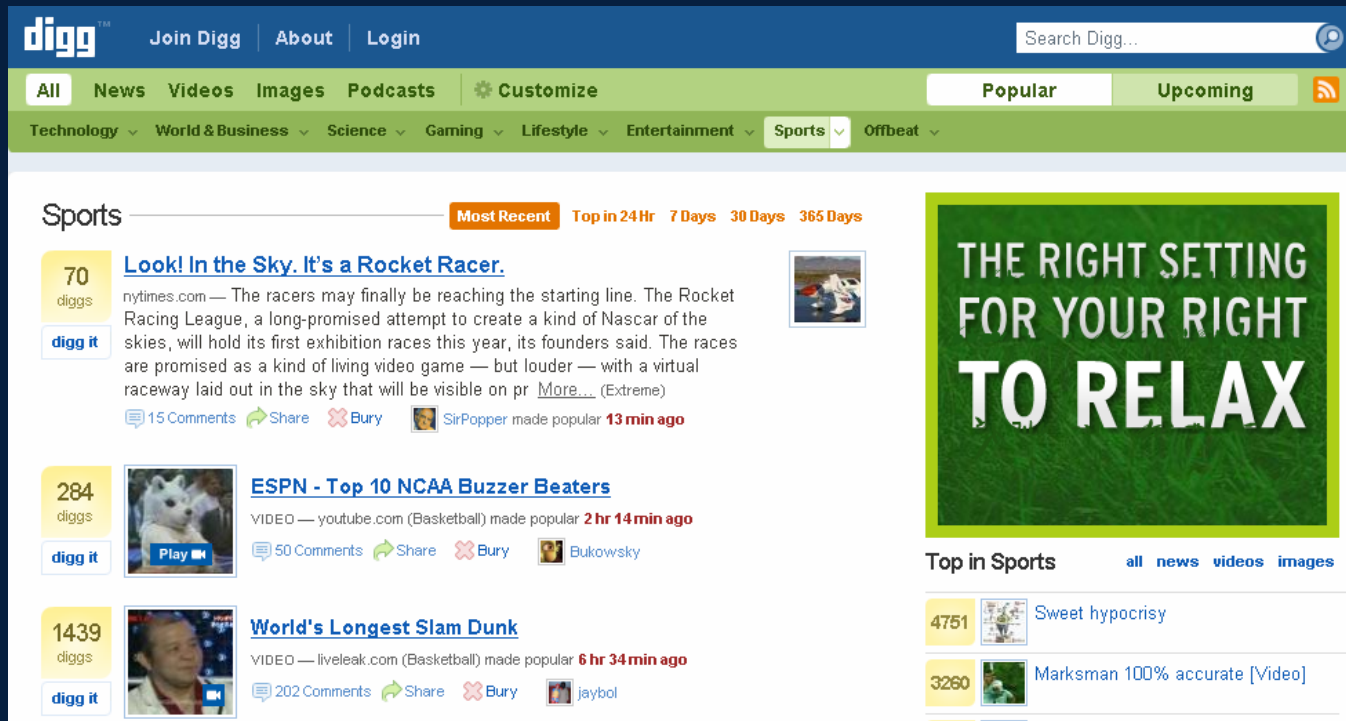
The New Social Network = Personal Sources on Internet

Importance as Source of Information



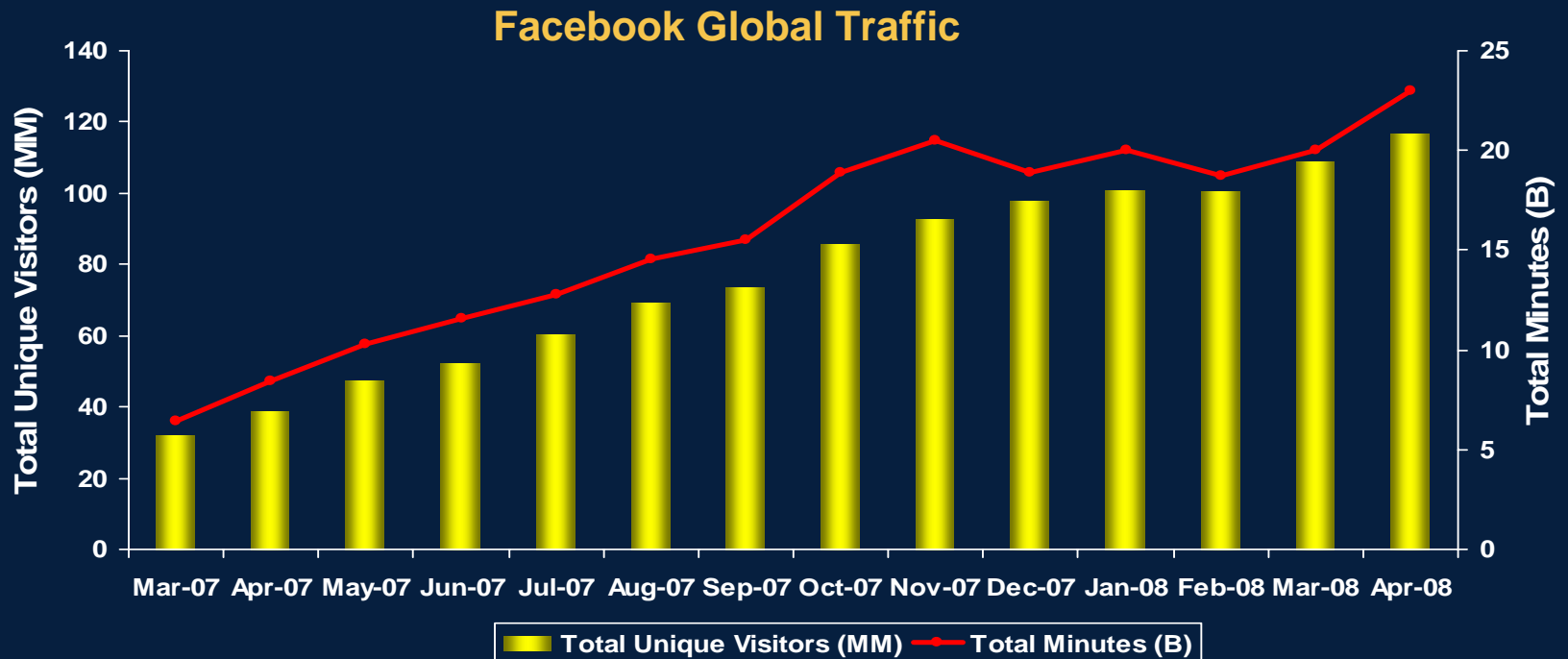
Wisdom of Crowds / Self-Supervising Communities, Users Expect Rankings + Searchability - Digg

- 13MM unique visitors, +78% Y/Y, 24MM minutes, +115% Y/Y (comScore, 3/08)
- User-driven editorial / selection of content (news, videos, images, etc.) through sharing / discovery / democratization – vs. traditional media determining front-page / lead stories
- Users in control – *search* for preferred content + *find* what others deem relevant / interesting



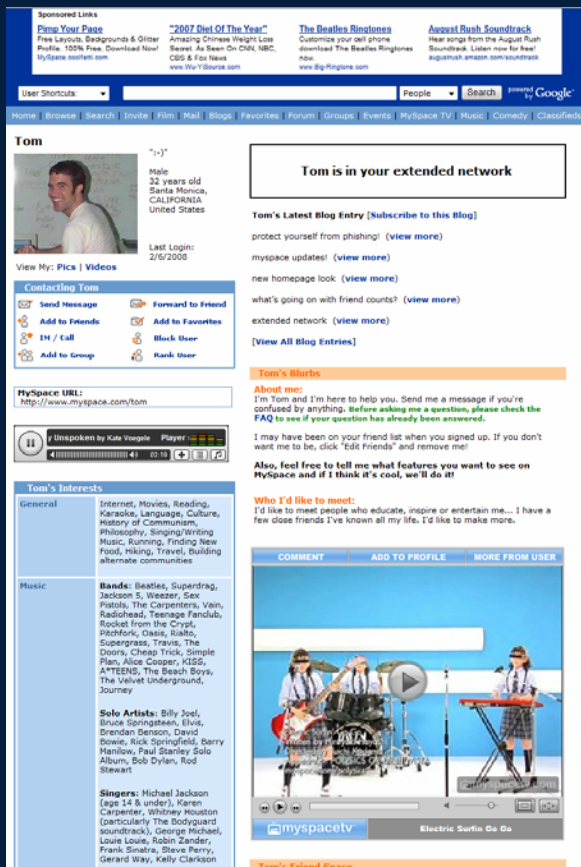
Facebook – Rapid User / Usage Growth

- 116MM visitors +200% Y/Y (70MM+ active users), 23B minutes (#6 globally behind Yahoo!, Live, YouTube, Google, and AOL), +171% Y/Y
- 55K+ regional / work-related / collegiate / high school networks (>50% outside of college); Fastest growing demographic is those 25+ years old; 85% market share of 4-year US universities
- 14MM+ photos uploaded daily; 6MM+ active user groups on site
- Top non-US active users: UK (8MM+), Canada (7MM+), Turkey, Australia, France, Sweden, Norway



Facebook – Why Growing Faster than MySpace?

- Facebook offers social network that is both standardized + self-controlled / flexible – highly personalized first-stop portal for online connectivity – users can program their pages with growing number of drag-and-drop applications (aka widgets)
- Users like ability to express themselves + connect with friends in a protected environment where they know / trust people in their network + don't feel exploited / spammed by intrusive ads



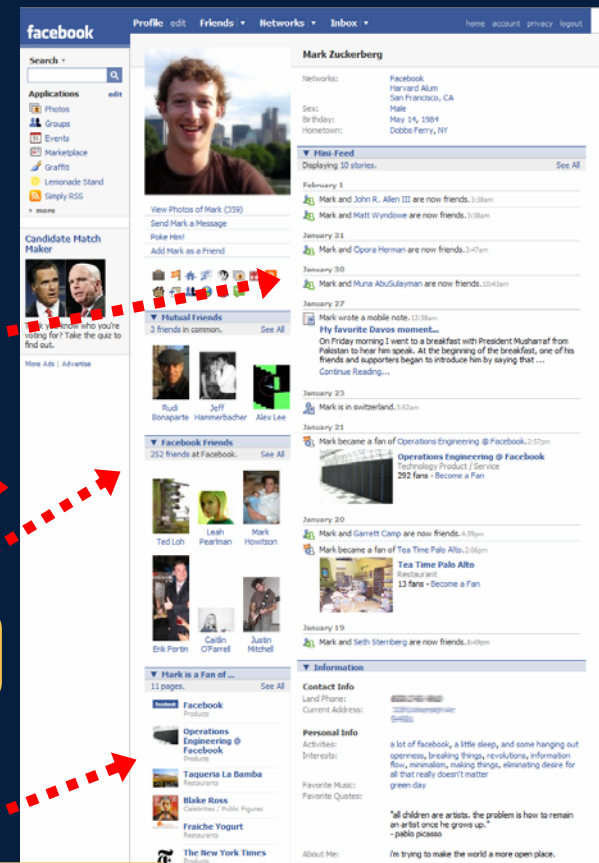
Less intrusive ads

Personalized News Feed

Cleaner UI

'Friends' section more prominent

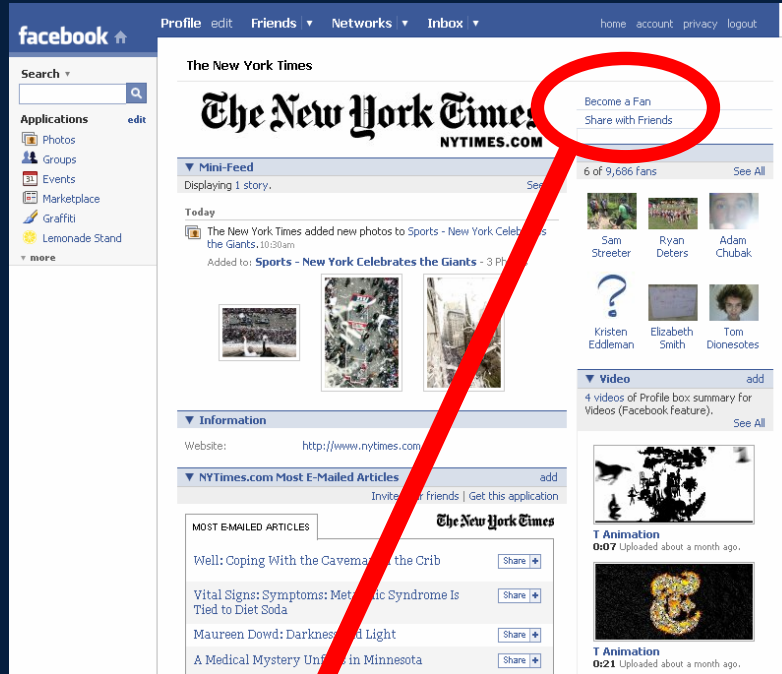
Personalized ad platform



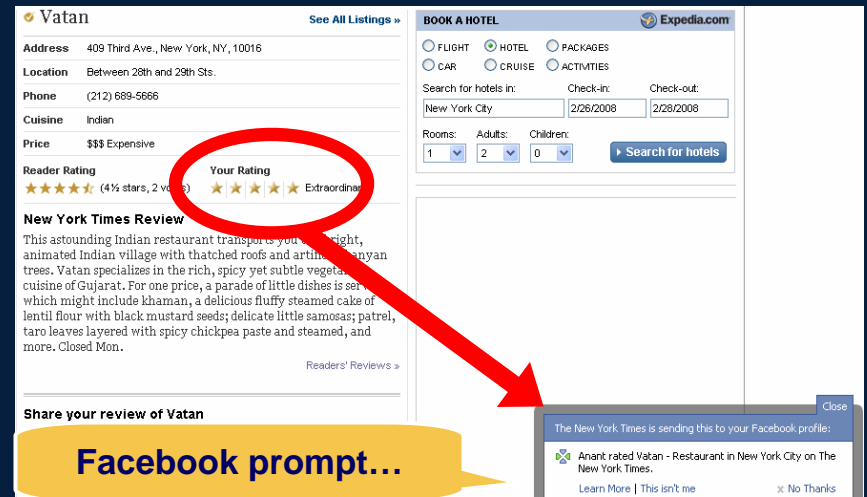
Facebook – 'Presence' Via Mobiles 24x7



Facebook – Monetizing Word of Mouth / Conversations



The New York Times



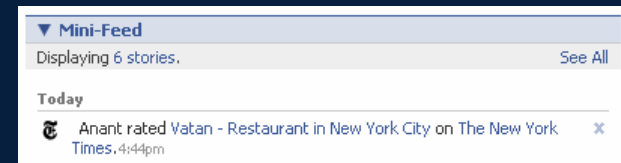
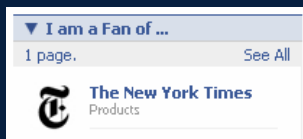
Facebook prompt...

facebook

User restaurant rating entered

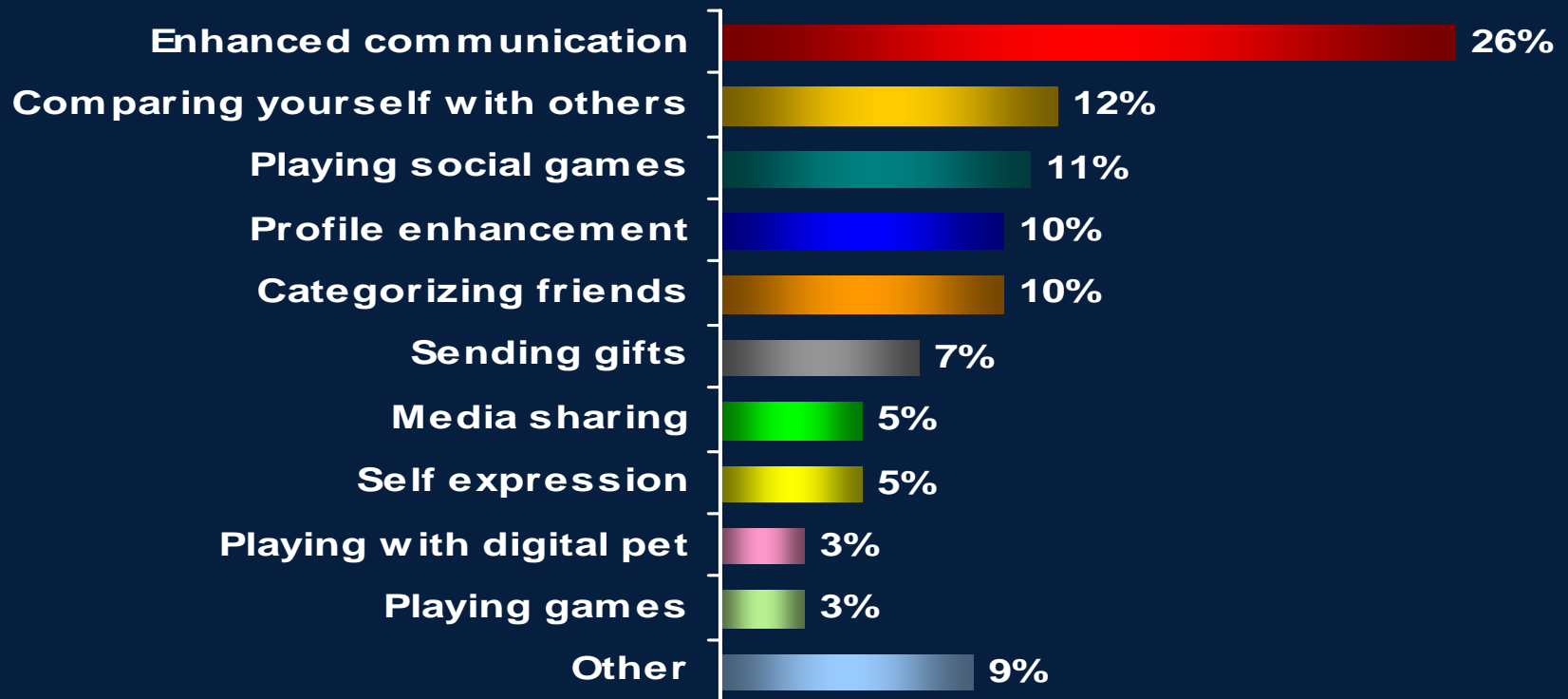
Becoming a 'fan' appears on News / Mini-Feed

...Appears on Facebook profile / News Feed



Facebook - Connecting is Key

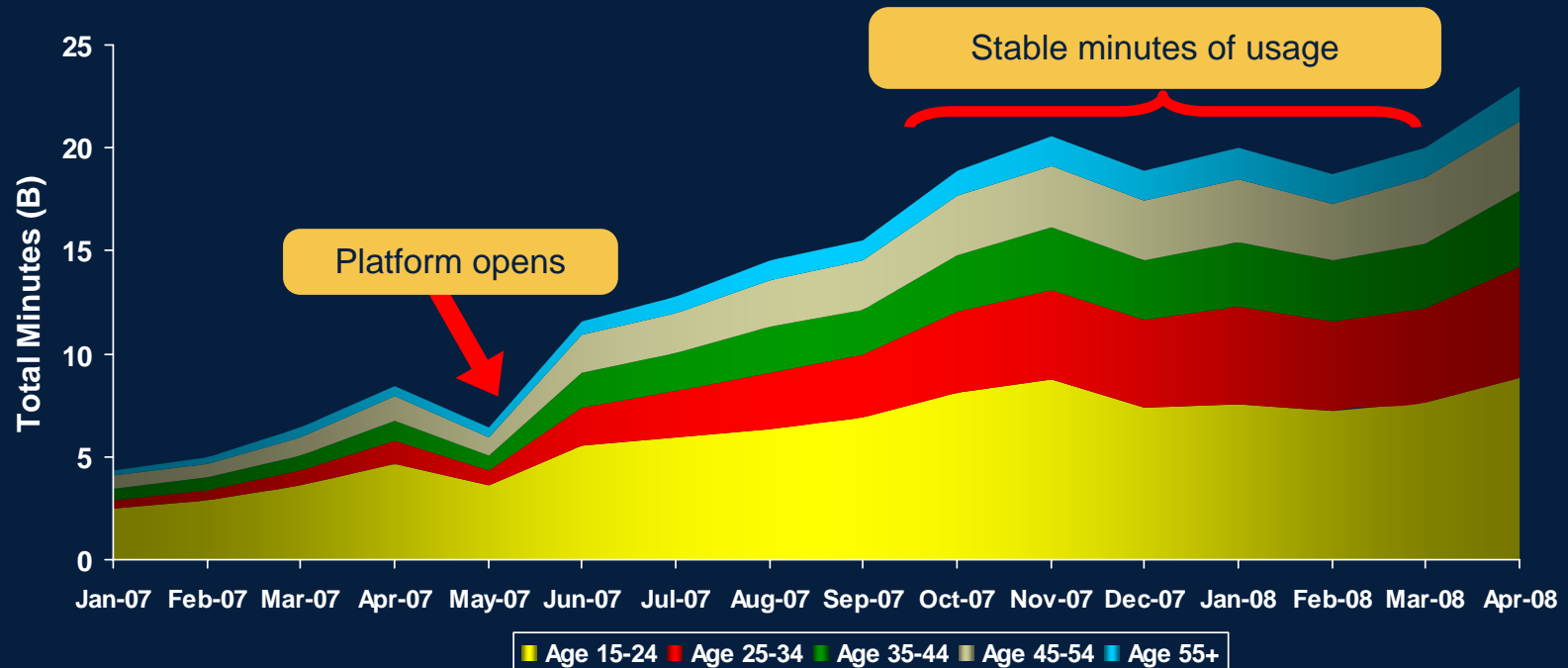
Genres of Facebook's Top Applications



Facebook – What's Next?

- Facebook is doing exceptional job of providing users with compelling / fun / social services. Go forward, it may be key to help facilitate development / integration of more traditional services related to content / commerce / business / identification.

Facebook Global Minutes by Age Group

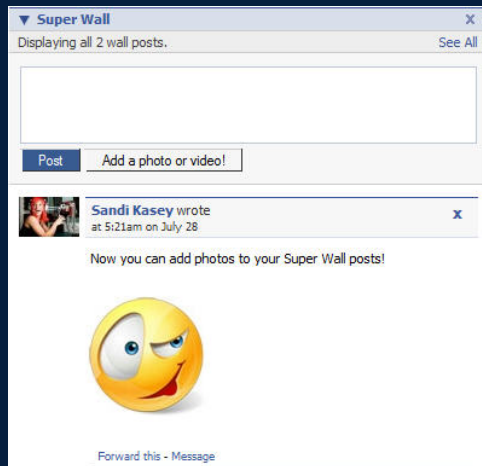


Widgets - Internet's Movable Feast

A Web widget can be best described as a mini application that can add functionality to your web page, blog, social profile, etc. If you find a widget that you like, you simply copy and paste some code and add it to the HTML of your web page. Photo galleries, news, videos, advertising, mp3 players and pregnancy countdown tickers! You name it, there is probably a widget that does it.

David Lenehan, ReadWriteWeb

Rock You – 'Super Wall' for Facebook



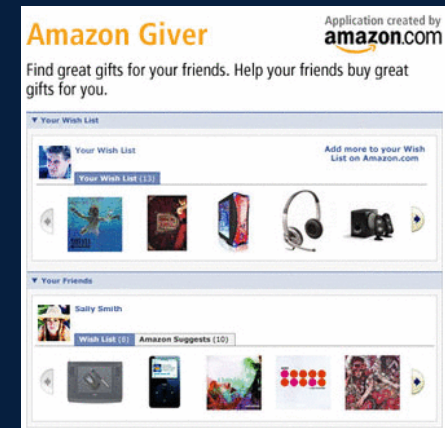
Yahoo! – Finance for iPhone



Weather Channel – Forecast for iGoogle



Amazon.com – 'Giver' for Facebook



Web 3.0

The apps are relatively small, the data is in the cloud, the apps can run on any device (PC or mobile), the apps are very fast and very customizable, and are distributed virally (social networks, email, etc).

– Eric Schmidt, CEO of Google

The implicit web is all about the value that will accrue to an Internet user when their every action is tracked, recorded, and used to provide value back to that user.

– Fred Wilson, venture capitalist / blogger

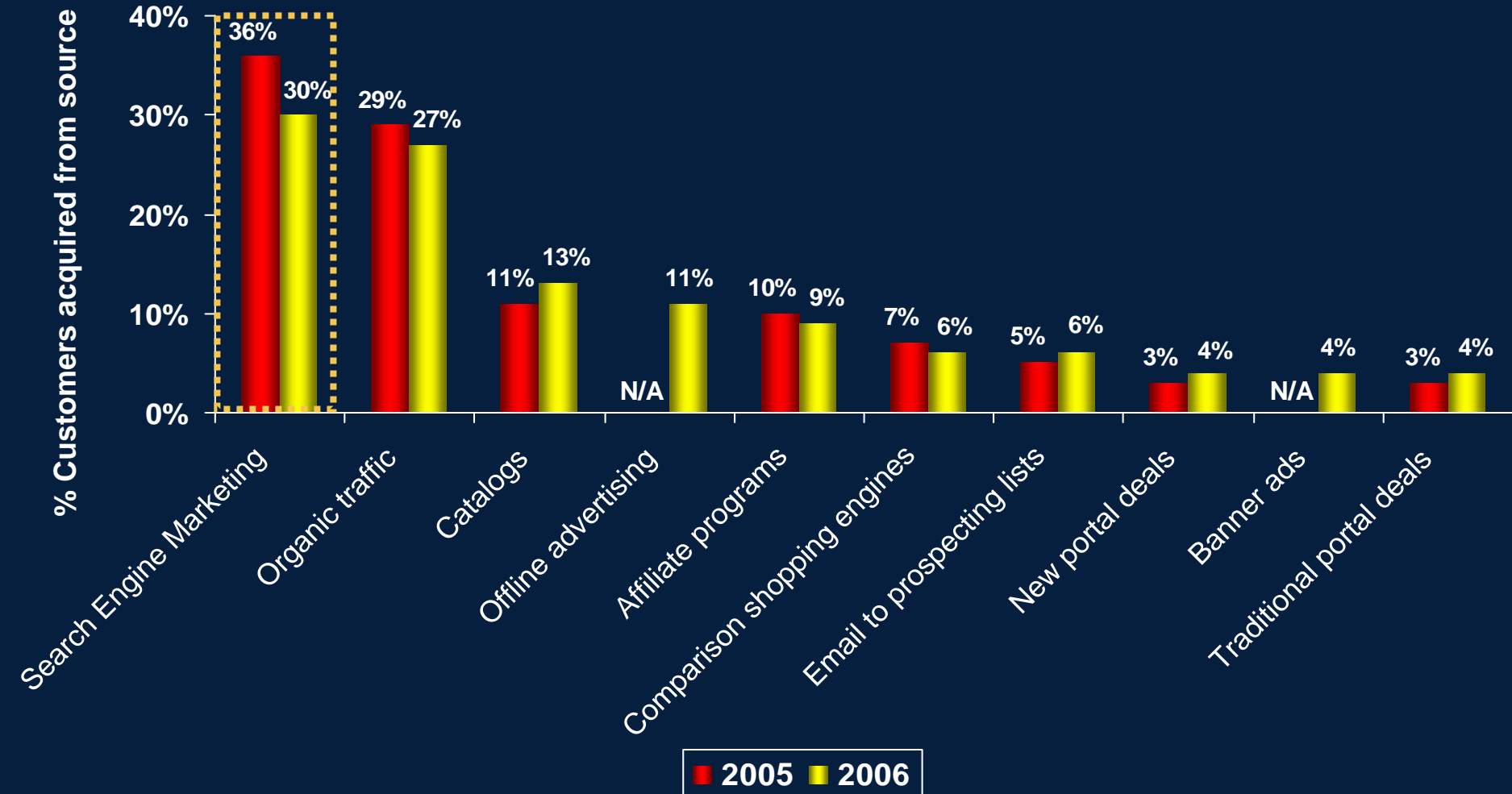
The BBC – Leads the Way!

The collage illustrates the BBC's multi-platform presence and user engagement strategies. Red arrows trace a path from the main BBC website to specialized services like iPlayer and Radio, and then to social media on Facebook.

- BBC Website (Top Center):** The main news portal featuring the headline "Baghdad bomb kills five US troops". It includes navigation links for News, Sport, Weather, and Radio, along with a search bar and a clock showing Monday 10 March 2008.
- BBC News Sidebar (Top Left):** A sidebar menu with categories like World, Americas, Europe, South Asia, UK, Business, Technology, Entertainment, and Most Emailed. It also features a "Save" button and a "Cancel" button.
- BBC Sport Sidebar (Top Right):** A sidebar menu for sports including Football, Athletics, Cricket, Snooker, Rugby Union, Horse Racing, Rugby League, Cycling, Tennis, Disability Sport, Golf, Motorsport, Olympics, and Boxing. It also has "Save" and "Cancel" buttons.
- BBC iPlayer (Bottom Left):** A screenshot of the BBC iPlayer website, showing the "BBC iPlayer" logo and a list of videos, including "BBC Sport Relief 2008".
- BBC Radio (Bottom Center):** A screenshot of the BBC Radio website, featuring the "BBC Radio 1" logo and a list of programs, including "Alan Titchmarsh".
- Facebook (Bottom Right):** A screenshot of the BBC's Facebook profile, showing the "BBC" logo, a list of friends, and a post about "BBC Radio 1".

Search – 43% Y/Y Google Query Growth (CQ1)

% of New Online Customers for Online Retailers / Marketing Spend Mix



Targeting + Personalization Improvements – Driving Material Revenue

Amazon.com recommendation engine: Leveraging data

Search inside this book
Start reading *Rick Steves' Paris 2008* (Rick Steves) on your Kindle in under a minute.
Don't have a Kindle? [Get yours here.](#)

Travel Right with Rick Steves
Discover... spots with expert guides from Rick Steves

New formats: Kindle
Also Available in: Kindle Edition (Kindle) Paperback (Rev Ed)
28 used & new from \$0.35

Better Together
Buy this book with *Streetwise Paris Map - Laminated City Street Map of Paris, France* - with integrated metro map including lines a
Buy Together Today
Add both to Cart

What Amazon recommends

Customers Who Bought This Item Also Bought

- Rick Steves' French Phrase Book and Dictionary* by Rick Steves
★★★★☆ (17) \$7.95
- Rick Steves' London 2008* (Rick Steves) by Rick Steves
★★★★☆ (6) \$12.21
- Rick Steves' France 2008* (Rick Steves) by Rick Steves
★★★★☆ (13) \$14.93

What other customers are buying

What Do Customers Ultimately Buy After Viewing This Item?

- 83% buy the item featured on this page:
Rick Steves' Paris 2008 (Rick Steves) ★★★★★ (81) \$12.03
- 7% buy
Streetwise Paris Map - Laminated City Street Map of Paris, France - with integrated metro map including lines a
\$7.95

Customer Reviews
81 Reviews
5 star: (56)
4 star: (10)
3 star: (8)
2 star: (4)
1 star: (3)
Average Customer Review
★★★★☆ (81 customer reviews)

Most Helpful Customer Reviews
140 of 143 people found the following review helpful:
★★★★★ **The Best Published Guide for Planning a Trip to Paris**
By **James Paris "Tammoor"** (Los Angeles, CA USA) - **TOP 1000 REVIEWER** REAL NAME

Customer Discussions Beta (What's this?)
New! See recommended Discussions for You

Google ads: Improvements in relevance

Sponsored Links

750 Hotels in Paris
Good availability and great rates.
Book online now, pay at the hotel!
www.booking.com/Paris

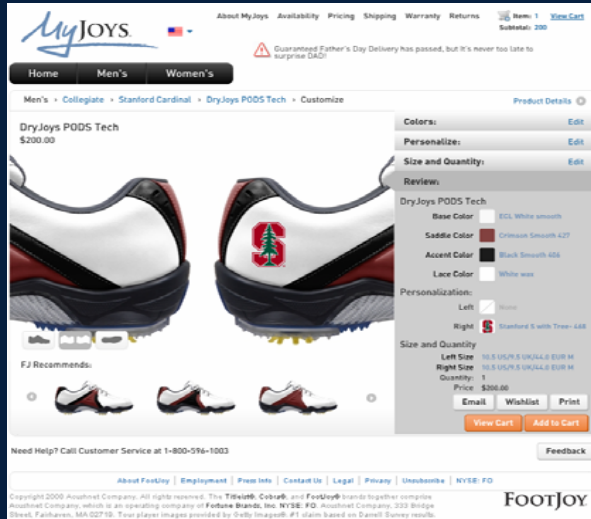
Upgrade From Coach Class
People who sit up front don't have the money. They have the brains.
FirstClassFlyer.com

Going to Paris?
Learn All About **Paris**. Check Out Videos & User-Posted Pictures.
AAAdvantageMilestones.com

Vuelos Paris
Aprovecha nuestra oferta hasta el 30 de abril 08 ¡Plazas limitadas!
www.eDreams.es

Online Consumers Expect Personalization

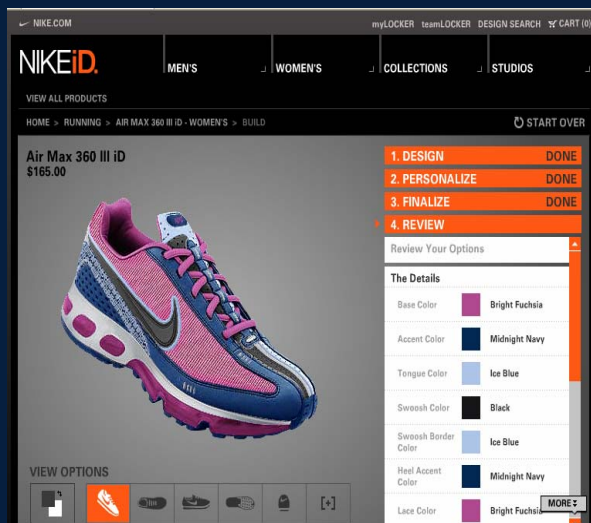
Footjoy.com – Myjoys



Picturedoor.co.uk

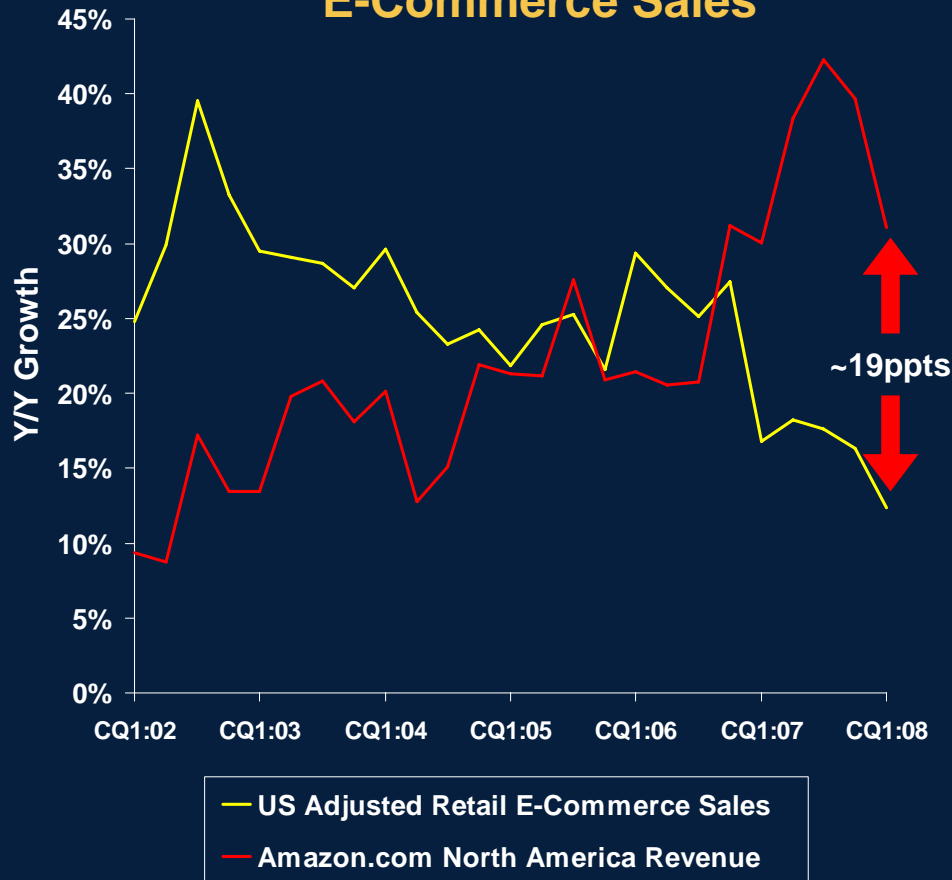


Nike.com – NikeiD



Amazon.com – Continues to Gain Online + Offline Share

Amazon.com vs. US Retail E-Commerce Sales⁽¹⁾



Key Y/Y Growth Metrics

	CQ2:07	CQ3:07	CQ4:07	CQ1:08
Revenue	35%	41%	42%	37%
Active Customers	17	17	19	19
TTM Revenue / Active Customer	13	15	17	17
Units	25	32	33	31

(1) Adjusted for eBay by adding eBay US gross merchandise volume and subtracting eBay US transaction revenue;
Source: Amazon.com (CQ1:08), US Dept. of Commerce (CQ1:08), Morgan Stanley Research

While Only 13% of Top 15 Online Retailers are Internet Pure-Plays, Biggest \$ Grower = Amazon.com

2007 Rank	Company	2007 Online Global Sales (US\$MM)	Y/Y Growth	2007 Online Global Sales as % of Total Sales
1	Amazon.com	\$14,800	38%	100%
2	Staples	5,600	14	27
3	Office Depot	4,900	14	29
4	Dell	4,200 *	6	7
5	HP Home & Home Office	3,361 *	10	3
6	OfficeMax	3,162 *	11	32
7	Apple	2,700 *	33	6
8	Sears Holdings	1,590 *	8	4
9	CDW	2,408	21	29
10	Newegg.com	1,900	27	100
11	QVC	1,881 *	14	18
12	Best Buy	1,781 *	25	5
13	SonyStyle.com	1,774 *	5	3
14	Wal-Mart	1,575 *	25	0.4
15	J.C. Penney	1,500	15	7

Amazon.com – Following Its Customers By Leading With Technology

Amazon TextBuyIt

- Search on any keyword (e.g. item name, author, artist, etc.) or ISBN / UPC code

1

Text search keywords to 'AMAZON' (262966)



2

Reply with 1 or 2 to buy an item from search results

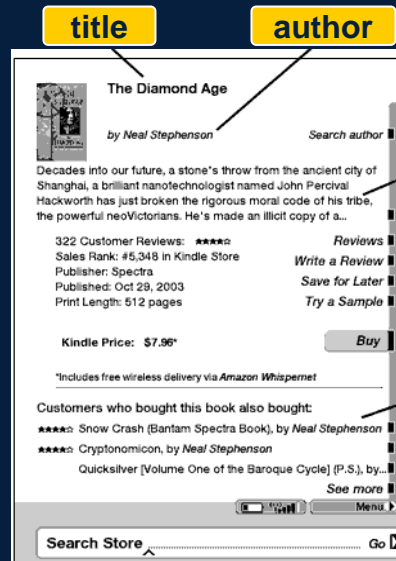


3

Answer call to hear details + confirm order



Amazon Kindle



Amazon iPhone beta site

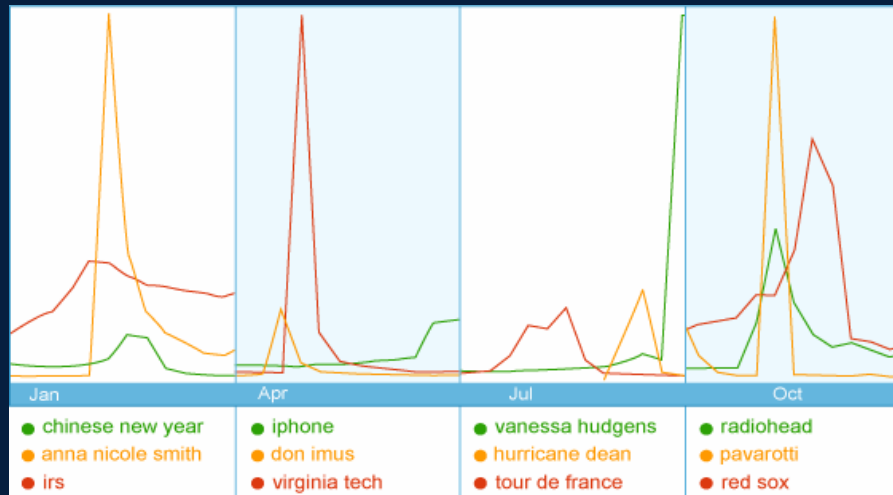


Google Zeitgeist – Predictive Power of Data is Underutilized

Fastest Rising (global)

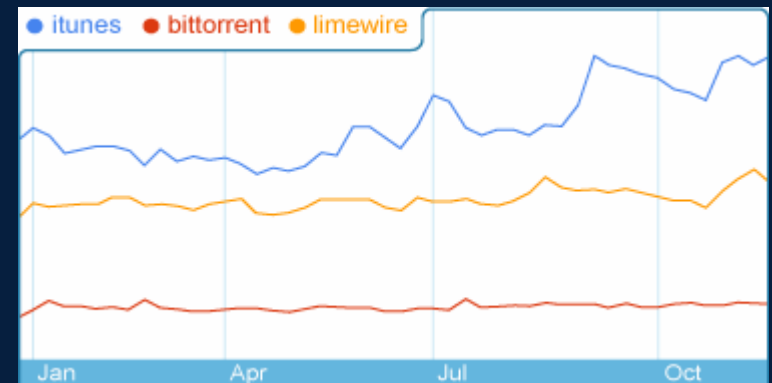
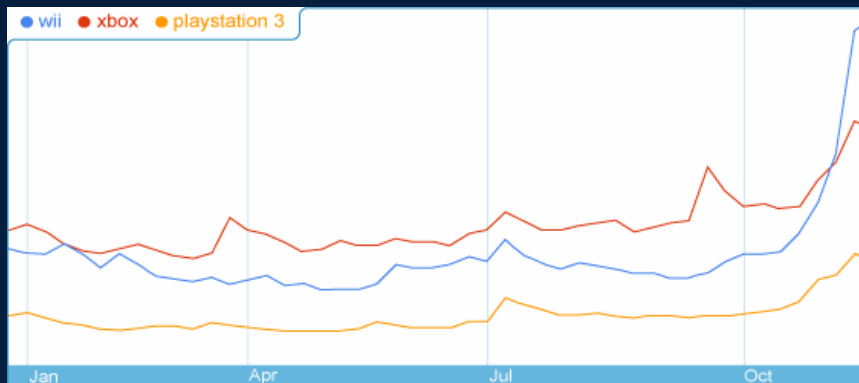
1. iphone
2. badoo
3. facebook
4. dailymotion
5. webkinz
6. youtube
7. ebuddy
8. second life
9. hi5
10. club penguin

Fast Gainers by Quarter - 2007



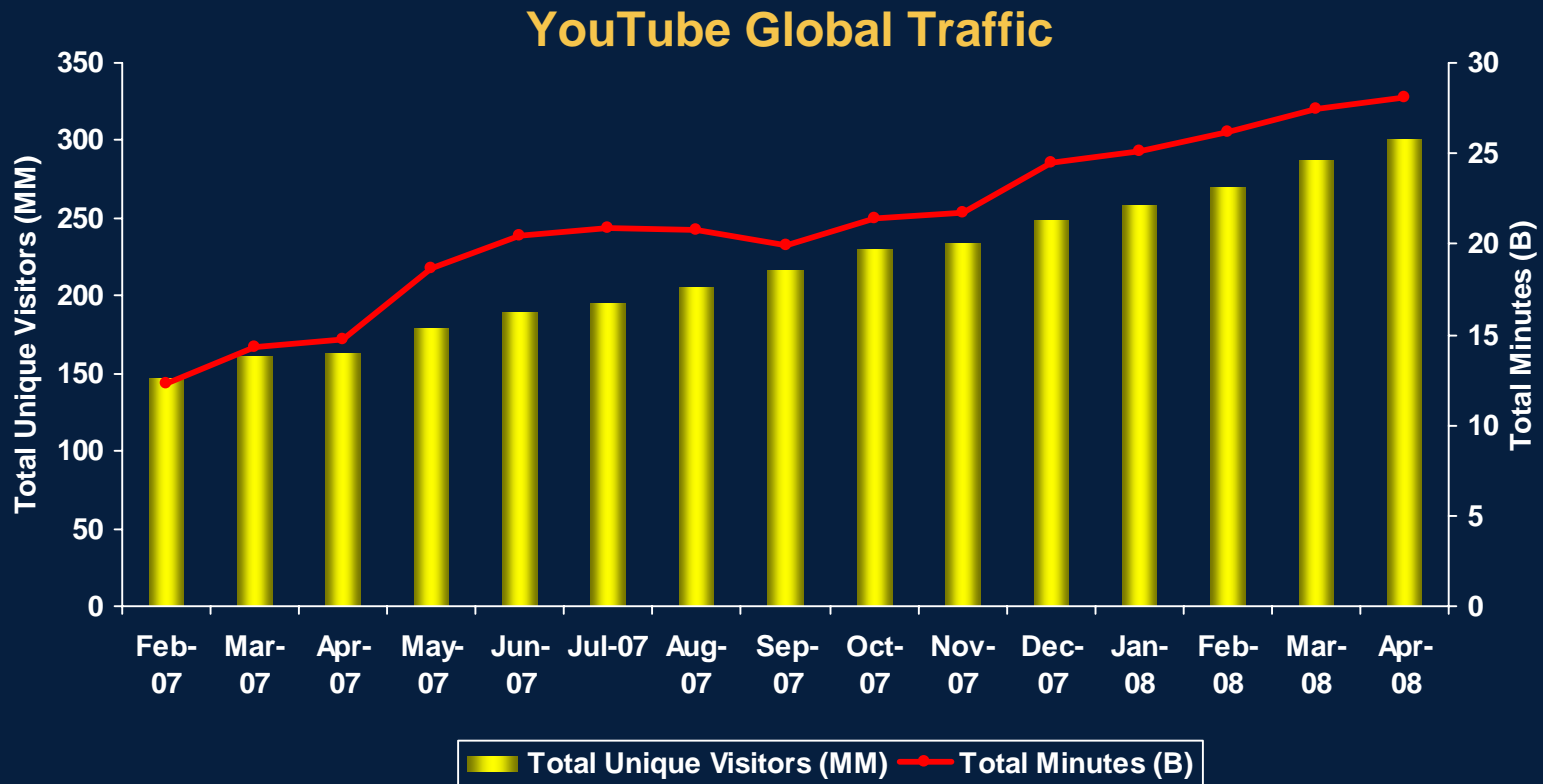
Fastest Rising (US)

1. iphone
2. webkinz
3. tmz
4. transformers
5. youtube
6. club penguin
7. myspace
8. heroes
9. facebook
10. anna nicole smith



Online Video – Traction High + Increasing

- YouTube - 300MM unique global visitors, +84% Y/Y, 28B minutes, +90% Y/Y⁽¹⁾; other video distribution models: Hulu, Fancast, veoh, Joost, Sling Media, VUDU...
- YouTube = 62% of unique US video viewers + 38% of videos watched online, 3/08⁽²⁾



YouTube = Video Distribution Channel + Social Network – Pro + Semi-Pro + Amateur + Combos

Most Viewed Videos

The screenshot shows the YouTube homepage with the 'Videos' tab selected. The 'All - Most Viewed (All Time)' section is active, displaying a grid of video thumbnails. A large 'Spotlight' for 'A Parable on Friendship' is featured at the top. A 'Tide-to-Go' advertisement is visible on the right side of the video grid.

Video Title	Views	Duration	Rating
A Parable on Friendship	73,881,712	06:00	★★★★★
Evolution of Dance	73,881,712	06:00	★★★★★
Avril Lavigne - Girlfriend	71,441,168	03:47	★★★★★
Lo que tú Quieras Or	57,382,120	10:15	★★★★★
Timbaland - Apologize - Official..	48,350,042	03:14	★★★★★
My Chemical Romance - Famous	47,534,737	02:51	★★★★★
IMVU - www.IMVU.com	42,067,153	01:08	★★★★★
My Chemical Romance - Famous	42,067,153	04:27	★★★★★
Timbaland - The Way I Are OFFICIAL..	39,173,603	03:36	★★★★★
Akon - "Don't Matter"	38,814,625	04:16	★★★★★
Sean Kingston - Beautiful Girls	37,240,721	05:20	★★★★★
Sean Kingston - Beautiful Girls	36,797,797	04:17	★★★★★
Hahaha	36,680,456	01:40	★★★★★
xxx	36,536,558	03:30	★★★★★
-YouTube Worst Video of All Time...	34,738,409	06:06	★★★★★
Timbaland - Apologize (feat..	33,961,245	03:24	★★★★★
Potter Puppet Pals in "The..."	32,955,609	02:06	★★★★★

Most Viewed Channels

The screenshot shows the YouTube homepage with the 'Channels' tab selected. The 'All' section is active, displaying a grid of channel thumbnails. A large 'Ask.com' advertisement is visible on the right side of the channel grid.

Channel Name	Type	Views	Style
universalmusic...	Director	995,753,981	VLogging
sonytrng	Musician	168,914,606	Pop
CBS	Director	162,636,995	Pop
warnerbrosrecords	Musician	146,663,034	Miscellaneous
SouljaBoy	Musician	133,728,597	Rap
myChemicalRomance	Musician	112,861,591	Pop
linkinparktv	Musician	101,796,705	Rock
smosh	Director	98,389,267	Variety
ludonlaibly	Standard	74,186,494	---
ChrisBrownTV	Musician	72,353,857	VLogging
lonelygirl15	Director	71,442,316	VLogging
MondoMedia	Director	69,596,104	---
NBA	Director	68,596,104	---



The screenshot shows the YouTube page for 'THE ROYAL CHANNEL', the official channel of the British Monarchy. The page features a banner image of the Royal Palace and a video thumbnail showing a royal guard.

YouTube – The New Portal(s)?

- ‘Organize the world’s information and make it universally accessible and useful’ – in the most effective way for high customer satisfaction – sort by most active / discussed / recent / responded / viewed / etc.. More / more content providers should get on board, after all, users are voting it’s what they want.
- Monetize away litigation - with new ad formats + finger printing advances + revenue shares?

News & Politics - Most Viewed

The screenshot shows the YouTube interface for the 'News & Politics - Most Viewed (Today)' category. The top navigation bar includes 'Home', 'Videos', 'Channels', and 'Community'. Below the navigation bar, the 'Videos' section is highlighted with a red border. The 'News & Politics - Most Viewed (Today)' section is displayed, featuring a grid of video thumbnails. The first video is 'Obama Speech: "A More Perfect Union..."' by BarackObama, with 705 views and a 37:39 duration. Other videos include 'Hillary Clinton: Questions on Iraq' and 'President Lech Kaczynski's arrest'.

YouTube
Broadcast Yourself™

Sign Up | Account | History | Help | Log In | Site

Home Videos Channels Community

Videos Search settings Upload

Videos **News & Politics - Most Viewed (Today)**

Featured | Most Active | Most Discussed | Most Recent | Most Responded | **Most Viewed** | Previously Popular | Top Favorites | Top Rated

All
Autos & Vehicles
Comedy
Education
Entertainment
Film & Animation
Howto & Style
Music
News & Politics
People & Blogs
Pets & Animals
Science & Technology
Sports
Travel & Events

RSS this page

CITIZEN TUBE
NORTH'S POLITICAL BLOG

Best in

Spotlight: UnCultured Project

Shawn Ahmed has a simple mission: to help end extreme poverty around the globe. These videos provide a window into his work.
Watch [The Young Hardworking Poor of Ru...](#)

Editor's Picks

Today | This Week | This Month | All Time

Display: [icon]

Obama Speech: "A More Perfect Union..."
From: BarackObama...
Views: 705
37:39 ★★★★★

チベット問題を宮崎と藤谷がズバット断罪
From: momovamaman
Views: 58,112
07:38 ★★★★★

Bear Stearns, Jim Cramer, The Fe...
From: donharold
Views: 52,078
09:59 ★★★★★

チベット問題を宮崎と藤谷がズバット断罪
From: momovamaman
Views: 49,561
07:33 ★★★★★

Hillary Clinton: Questions on Iraq
From: BarackObama...
Views: 44,949
01:25 ★★★★★

「サービス残業はウソだ」 民主党議員
From: kikanou8
Views: 29,802
01:38 ★★★★★

Prezydent Lech Kaczynski o raty...
From: mirekgrodzki
Views: 40,946
05:06 ★★★☆☆

UNMIK & KFOR arrests Serbs ...
From: Nenad555
Views: 34,891
01:56 ★★★★★

Get it now >

Samsung t439
w/ free shipping

- 1.3 MP camera
- Bluetooth® connectivity
- Music player

Sports - Most Viewed

The screenshot shows the YouTube interface for the 'Sports - Most Viewed (Today)' category. The top navigation bar includes 'Home', 'Videos', 'Channels', and 'Community'. Below the navigation bar, the 'Videos' section is highlighted with a red border. The 'Sports - Most Viewed (Today)' section is displayed, featuring a grid of video thumbnails. The first video is 'Kid Chocolate' by roundtv, with 26,369 views and a 03:48 duration. Other videos include '3/16 TNA Today With Rock N Rave...', 'NBA TV Top 10: March 16th', and 'Tiger Woods - Bay Hill 2008:191...'.

YouTube
Broadcast Yourself™

Sign Up | Account | History | Help | Log In | Site

Home Videos Channels Community

Videos Search settings Upload

Videos **Sports - Most Viewed (Today)**

Featured | Most Active | Most Discussed | Most Recent | Most Responded | **Most Viewed** | Previously Popular | Top Favorites | Top Rated

All
Autos & Vehicles
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Vote For Your Favorite Comedy Video!

Decide who gets a shot at \$40,000 in cash and prizes from Toyota Corolla!

SKETCHES II
Sketch Comedy Contest

Vote Now!

Voting ends March 19th

Sponsored by

Corolla the X

Spotlight: Kid Chocolate

Go behind the scenes on fight night with Peter "Kid Chocolate" Quillin, a super middleweight fighter from Chicago with a powerful left hook.
Watch [The Undercard: Kid Chocolate](#)

Added: 2 weeks ago
From: roundtv
Views: 26,369
03:48 ★★★★★

Today | This Week | This Month | All Time

Display: [icon]

3/16 TNA Today With Rock N Rave...
From: TNAtwisting
Views: 107,677
05:57 ★★★★★

NBA TV Top 10: March 16th
From: NBA
Views: 87,253
02:03 ★★★★★

Tiger Woods - Bay Hill 2008:191...
From: JAVAME007
Views: 62,223
03:55 ★★★★★

Rockets Reach New Heights: No. 22
From: NBA
Views: 56,049
02:07 ★★★★★

Jason Maxiell Stonewalls Tyson C...
From: NBA
Views: 41,518
00:32 ★★★★★

FC Utrecht - az 2008 (zwaaien na...
From: greatski
Views: 38,812
00:38 ★★★★★

Skip 2 My Lou toys with Sasha Vu...
From: creativeth
Views: 44,999
01:06 ★★★★★

Rafer goes "a little Skip T..."
From: clutchnas
Views: 27,848
00:52 ★★★★★

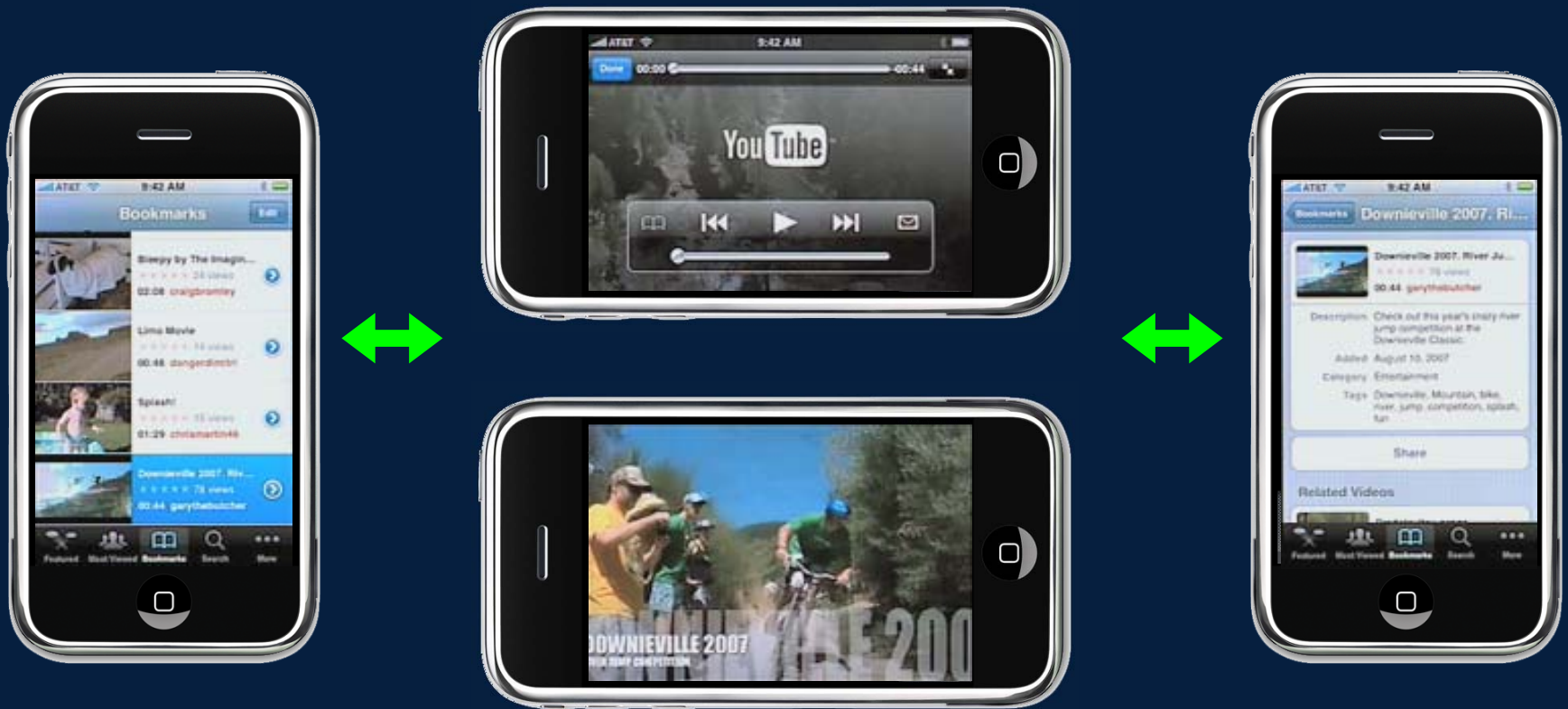
What Traditional Media / Video Companies Want

We want to monetize our copyrights, whether they be old programs or whatever, and not have someone else do it. We want to control distribution as much as is reasonable.

[Regarding YouTube] we came down to the view in the end that it was doing more to promote our shows than it was to hurt them.

– Rupert Murdoch, Chairman & CEO, News Corp. Interview with Kara Swisher & Walt Mossberg @ All Things Digital

YouTube – A Killer App of Mobile?



US Internet Ad Spend = \$288 Per Home vs. \$818 for Newspapers?

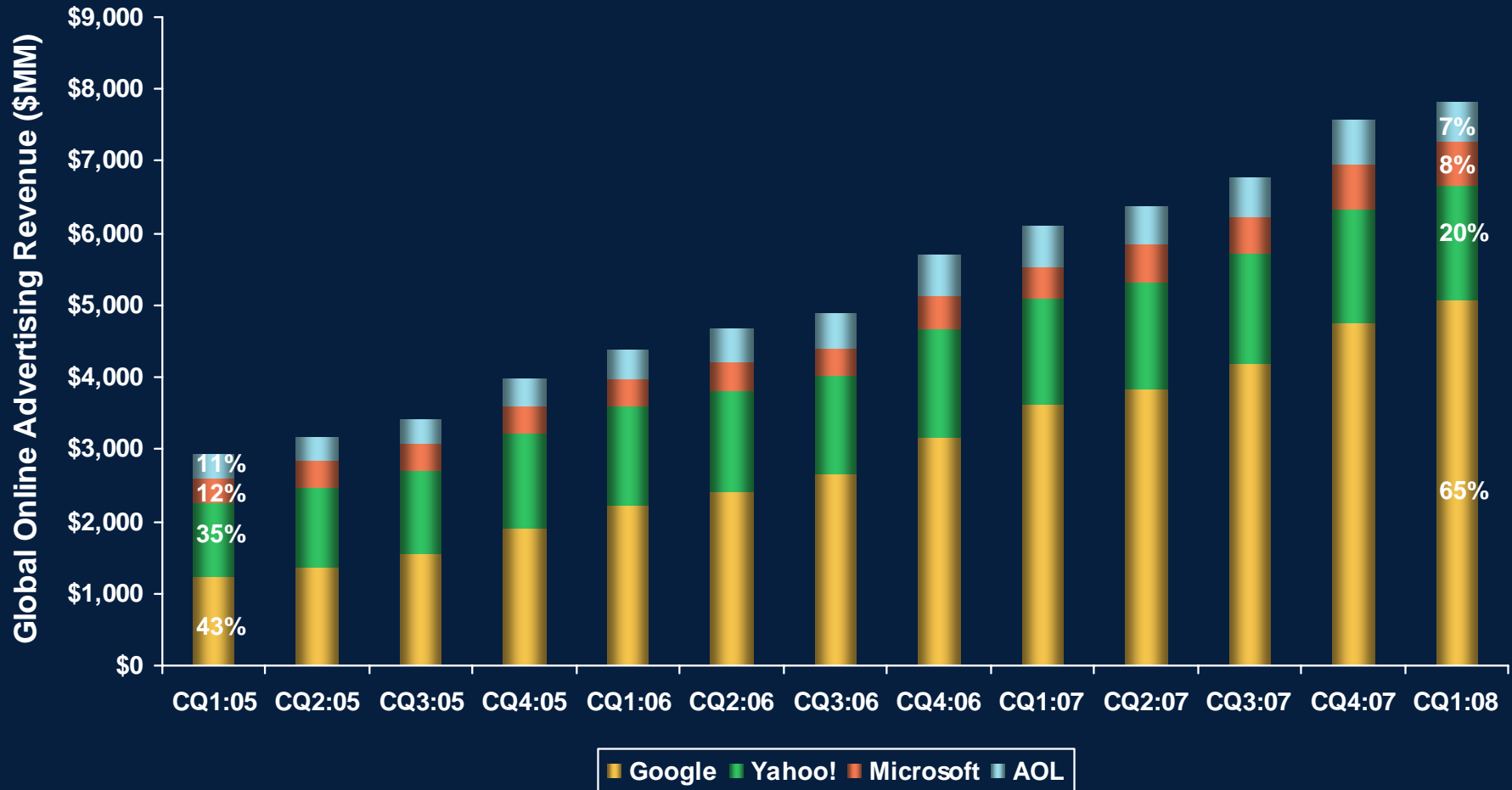
Medium	2007 Advertising Spending (\$B)	Y/Y Growth	Households (MM)	Ad Spending / Household (\$)
Direct Telephone	\$110	7%	107	\$1,032
Promotions	116	5	115	1,011
Newspapers	46	-7	56	818
Classifieds	15	-14	56	260
Direct Mail	61	4	114	532
Broadcast TV	44	-5	112	390
Cable TV	27	6	80	327
Internet / Online	21 ↑	26 ↑	71 ↑	288 ↑
Radio	20	-3	113	172
Yellow Pages	16	1	114	141
Outdoor	7	7	114	63
Total	\$469	3%		\$4,774
Average	47			477

Newspapers include Classifieds. Promotions (\$116B) include: incentives (\$30B), promotional products (\$27B), point-of-purchase (\$19B), specialty printing (\$9B), coupons (\$7B), premiums (\$7B), promotional licensing (\$7B), promotional fulfillment (\$6B), product sampling (\$2B), and in-store marketing (\$2B). Households may use multiple advertising mediums.

Online Ad Leaders –

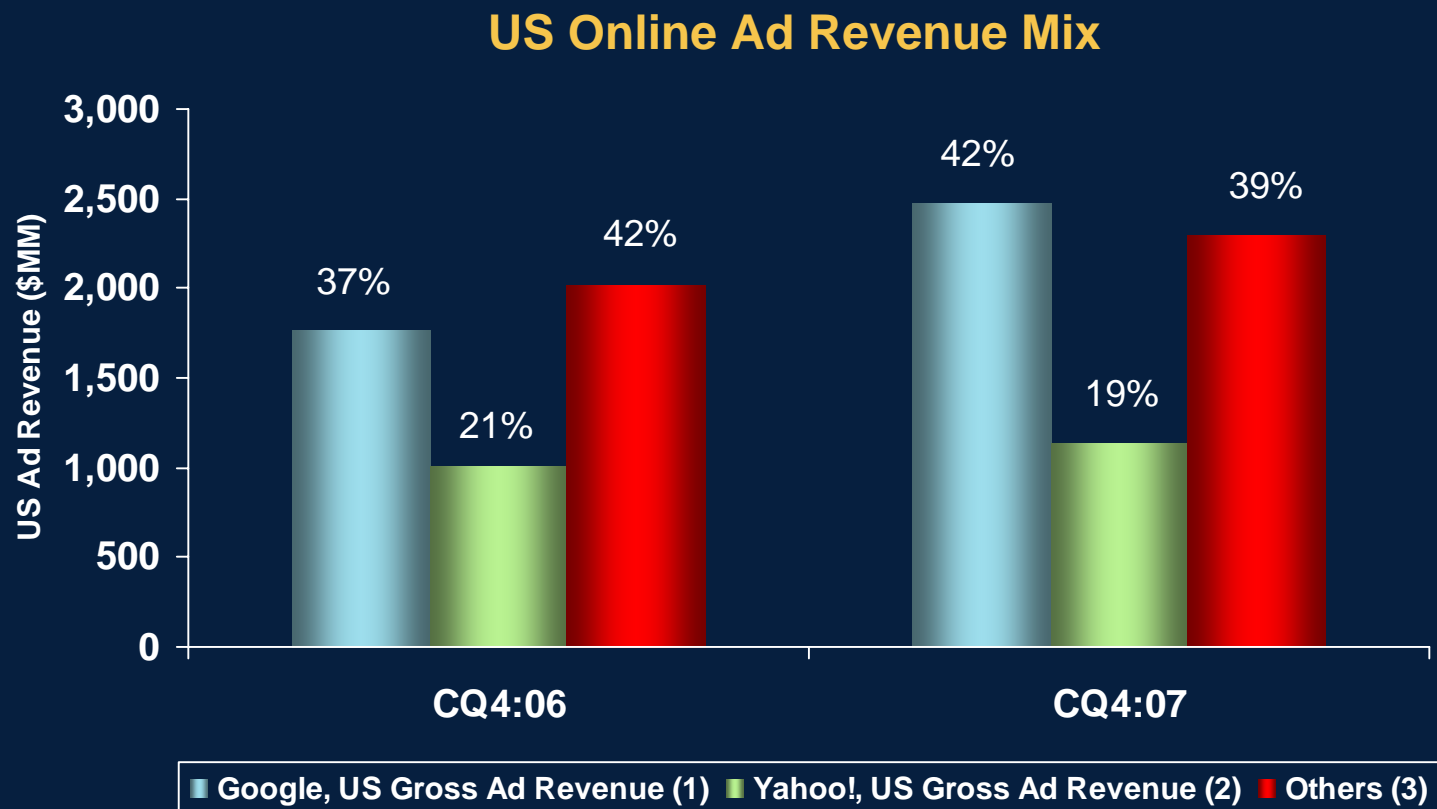
Google Share = 65% in CQ1:08 vs. 43% in CQ1:05

Global Online Advertising Revenue ⁽¹⁾



(1) Google and Yahoo! include TAC; Source: Company Reports, Morgan Stanley Research

Google + Yahoo! = ~61% of US Online Ad Revenue - 'Others' Grew ~20% (vs. ~14%) Owing to Google / Yahoo! Affiliate Assist, CQ4



Source: (1) Google, Morgan Stanley Research (calculated as reported gross ad revenue multiplied by US % share of gross revenue)
(2) Yahoo!, Morgan Stanley Research (calculated as gross Marketing Services revenue multiplied by US % share of gross revenue);
(3) Internet Advertising Bureau (IAB) / PriceWaterhouseCoopers (PWC) Internet Advertising Revenue Reports (calculated as difference between total IAB US ad revenue and sum of Google, Yahoo! gross ad revenue), Morgan Stanley Research. Assuming that TAC of Google and Yahoo! was included in others total, this segment would have been up ~20% Y/Y

Google + Yahoo! Share Significant Portion of Revenue with Partners + Affiliates

- Google generated \$4.8B in gross ad revenue in CQ4; it **PAID OUT** \$1.4B (29%) to 1,000s of partners like AOL, Ask Jeeves, EarthLink, + HowStuffWorks⁽¹⁾
- Yahoo! generated \$1.6B in gross ad revenue in CQ4; it **PAID OUT** \$429MM (27%) to partners like CNN, ESPN, + *The Wall Street Journal*⁽²⁾

Source: (1) Google gross Advertising revenue, Morgan Stanley Research; (2) Yahoo! gross Marketing Services revenue, Morgan Stanley Research; (3) Internet Advertising Bureau (IAB) / PriceWaterhouseCoopers (PWC) Internet Advertising Revenue Reports (calculated as difference between total IAB US ad revenue and sum of Google, Yahoo! gross ad revenue), Morgan Stanley Research

Ad Inventory Monetization – Upside Potential Though Lots of ‘New’ Inventory (Social Networking + Video) to Process

	CQ4E Unique Users (000s)	CQ4E Total Pages Viewed (MM)	CQ4E Total Minutes (MM)	CQ4E Annualized Global Ad Revenue per User	CQ4E Annualized Global Ad Revenue per 1,000 Page Views
Total Internet	810,374	6,027,795	3,694,281	\$44.42 ⁽¹⁾	\$1.54 ⁽¹⁾
Y/Y Growth	10%	16%	18%	20%	22%
Google ex. You Tube ⁽³⁾	561,946	421,676	171,916	\$21.93 ⁽²⁾	\$29.23 ⁽²⁾
Y/Y Growth	20%	56%	71%	31%	1%
Yahoo! ⁽⁴⁾	490,198	315,210	336,659	\$8.33 ⁽²⁾	\$12.95 ⁽²⁾
Y/Y Growth	3%	-1%	11%	17%	22%
MySpace	107,003	141,988	49,479	\$5.47 ⁽²⁾	\$4.12 ⁽²⁾
Y/Y Growth	27%	14%	7%	361%	414%
Microsoft	536,912	236,056	480,186	\$4.64	\$10.56
Y/Y Growth	6%	6%	24%	27%	27%
Time Warner	273,547	66,793	133,309	\$4.45	\$18.21
Y/Y Growth	17%	5%	10%	-19%	-11%
eBay	253,466	89,824	57,967	\$1.31	\$3.70
Y/Y Growth	3%	-13%	2%	107%	144%
YouTube	237,189	79,785	67,612	\$0.68	\$2.01
Y/Y Growth	121%	266%	190%	41%	-15%



Comparison of Typical US CPMs for Adults ⁽⁴⁾



Source: (1) ZenithOptimedia C2007E, 12/07; (2) Net revenue estimates (ex-TAC); Time Warner excludes Advertising.com; (3) comScore unique users figure for core Google; (4) Yahoo! reported 500MM unique users (+18% Y/Y) at the end of CQ3, excl. Yahoo! Japan. We use comScore data for consistent comparisons across companies; (4) Media Dynamics; comScore global 12/07 (note: based on ages 15+); Google, Yahoo!, Time Warner, Microsoft, eBay, Morgan Stanley Research

2 - Mobile – Innovation in Wireless Products Accelerating + Wireless Data Take-up Rates Likely to Accelerate

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, for now...**
 - 85% of mobile subscribers, 87% of mobile data subscribers in non-US markets (2007E); China #1 in both
- **Uncharted / new sources of usage generated for / from Mobile Internet platform**
 - Killer application(s) for mobile? email...SMS...web access...search...music...video...camera...news / blogs...games...maps / GPS / location-based services...social networking / presence...
- **Why now? 1) handsets becoming small functional computers; 2) cheaper / faster / more data; 3) more content; 4) better user-interfaces**
 - 2.9B subscribers with <2.5G (~50Kbps) network access; 311MM 3G subscribers, 2007E
 - Mobile content improving steadily - consumers spending billions on it

Lots of Compelling Mobile Data Points

- Apple iPhone, 3 Skype Phone, Amazon Kindle, Google Android...
- 3G+ = 10% of 3.2B global mobile subscribers in C2007E – 21% (critical mass inflection point) of 3.9B in C2009E (iSuppli)
- Japan's mobile data traffic nearly 50% higher than any region...by 2011, rest of Asia-Pacific should surpass Japan (Cisco)
- 91% of mobile users keep phone within 1 meter reach 24x7 (China Mobile 50K survey)
- 15-20% of mobiles have GPS, 50% within 5 years (Morgan Stanley Research)
- Watch for new generation of Internet leaders to capitalize on growing access to fast Internet access on mobiles
- Incumbent carriers + handset manufacturers still desire to control markets - financial dislocations / costs / opportunities may be substantive as wireless industry evolves over next 2-5 years
- ATT CQ1 - Wireless data revenue up 57% Y/Y to 22% of wireless service revenue vs. 16% Y/Y. ~13% of devices are 3G and carry 20% higher ARPU than 2G base + iPhone ARPU 2x AT&T average

Mobile / Wireless Devices – Coming in All Shapes / Sizes With Easy-to-Use Interfaces

Nintendo Wii

24MM consoles since 11/06 launch
– raised bar with motion sensors +
playability



Apple iPhone

4MM units in < 200 days; browser
market share already 50% > Windows
Mobile – raised bar with ease-of-use +
functionality



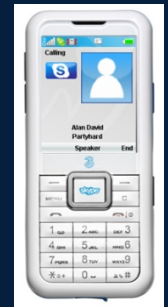
Microsoft Xbox 360

10MM Xbox Live members (+100%
Y/Y) since 11/02 launch – raised
bar with online playability



3 Skype Phone

500K+ units <200 days. Leverage large
Skype user base of 309MM (+58%Y/Y)
+ create a true web-enabled VoIP,
social networking, digital presence
phone



Amazon.com Kindle

With free EV-DO + 125K titles +
newspaper / magazine / blog
subscriptions. Amazon may do with
books what Apple did with tunes.
Kindle accounts 6% of AMZN's
sales for titles available on Kindle.



Garmin + TomTom + Dash PND

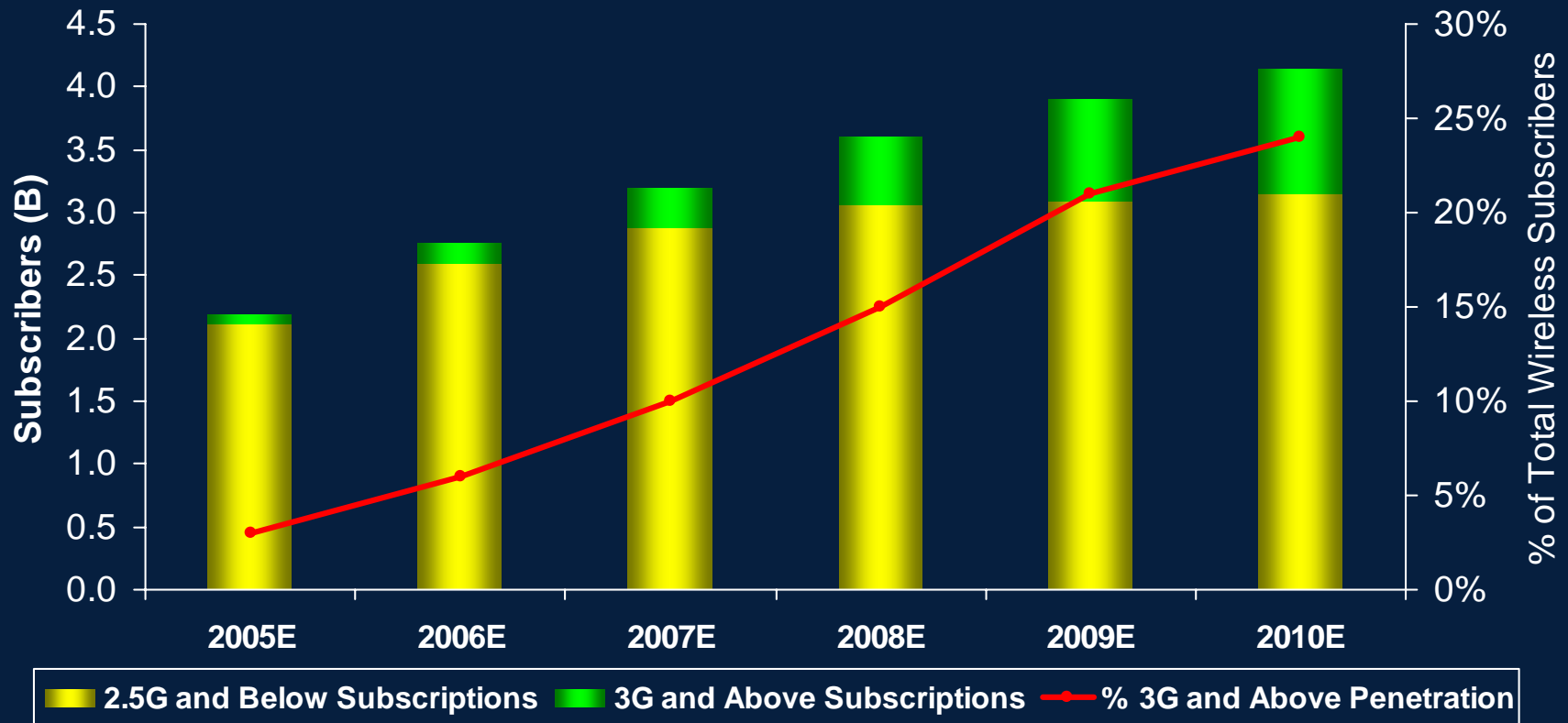
18MM+ units sold in C2007 (+125%
Y/Y) – lower price points + innovative
features such as spoken street names
have driven NA / Western Europe PND
penetration of 11% in C2007



Source: Nintendo (CQ1), Microsoft, Amazon.com, Apple, 3, eBay (CQ1),
Garmin, TomTom, Net Applications 12/07, Morgan Stanley Research

Still Early in 3G+ Ramp But... 2009 Should Be Inflection Point @ ~20% of Subscribers

Global 3G+ Penetration

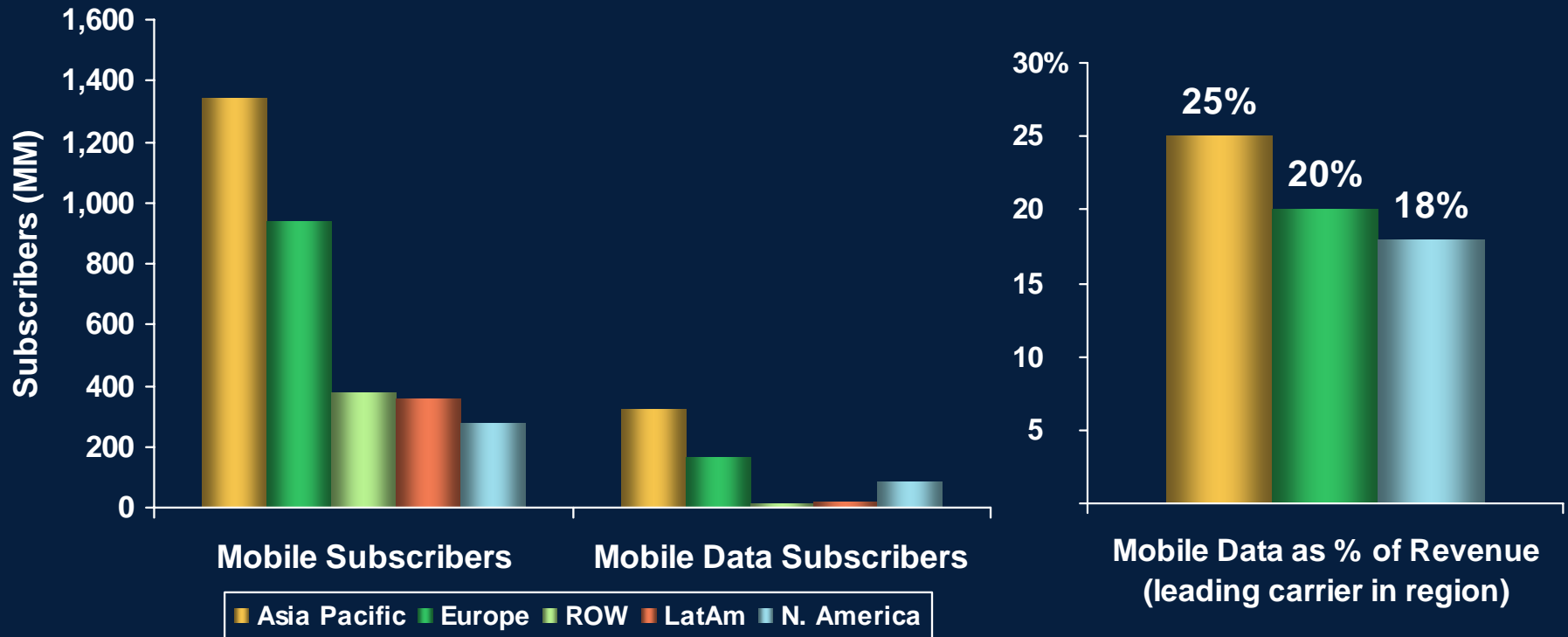


*Note: 2.5G can be compared to 'narrowband' Internet access, while 3G can be compared to 'broadband' Internet access.
2G: Analog & TDMA, cdmaONE, PDC, iDEN; 2.5G: GPRS/EDGE, CDMA 2000-1x;
3G: W-CDMA/HSDPA/HSUPA, CDMA 2000-1x-EV-DO/Rev A, TD-SCDMA
Source: iSuppli*

Notebooks Retrofitting to Cloud Via 3G – PCs Retrofitted to Internet Via Dial-Up ~1995 Deja Vu?!

- Global cellular modem to rise from 5MM in 2006E to 68MM+ shipments in 2012E (53% CAGR), ABI Research, 5/07
- 64% of new broadband subscribers in Austria used cellular modems, CQ2:07 – speed comparable to DSL
- Global WiFi unit shipments estimated at 66MM in C2007E, Synergy Research

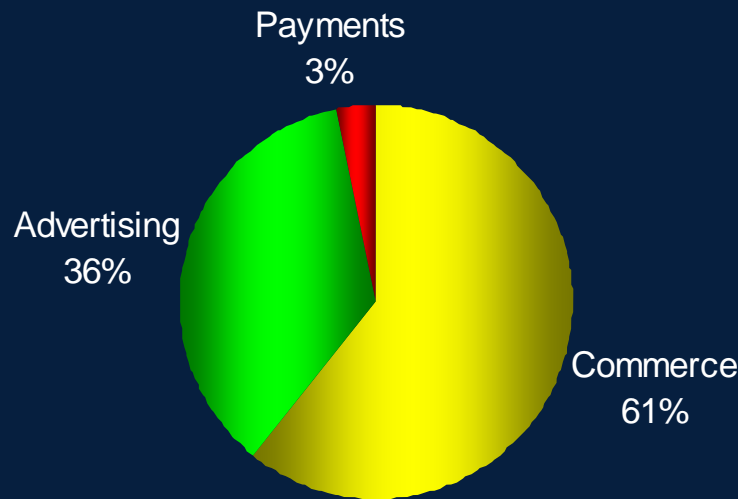
Asia / Europe Lead – Mobile Data 25% of Carrier Revenue in Asia vs. 18% in US



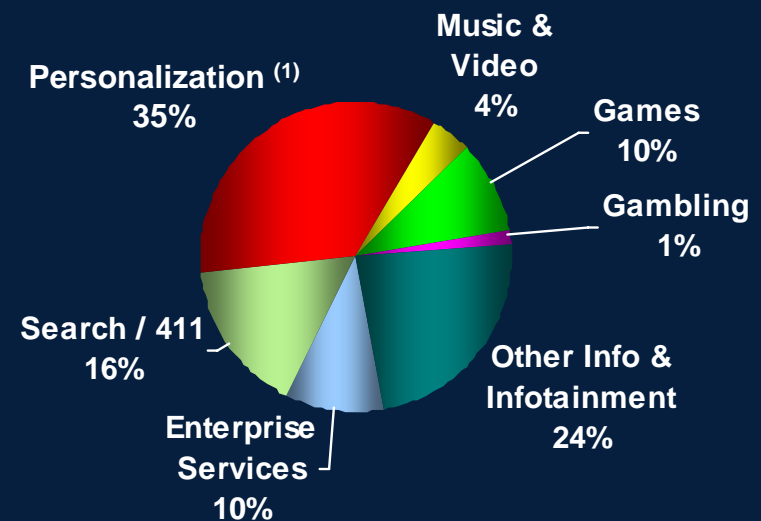
Source: Informa, Company Reports. Includes SMS; (1) Leading carriers by wireless subscribers in Asia Pacific, Europe, and North America are: China Mobile, Vodafone (Europe only), and AT&T, respectively.

Broadband – Vendor / Seller Pays Mobile – User Pays...Make Up on Volume?!

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



**Mobile Internet - Revenue Composition
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. CQ4:05 annualized revenue for Rakuten, and T-Online. Right Chart – Morgan Stanley Research estimates, Global Data. Informa (5/05), Ovum (5/05). Data excludes IVR. (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.

Apple Changed Mobile Game...With Awesome UI + 2.5G!

i – NOT – A - Phone



3G iPhone – Better / Faster / More

iPhone 3G
21 Seconds



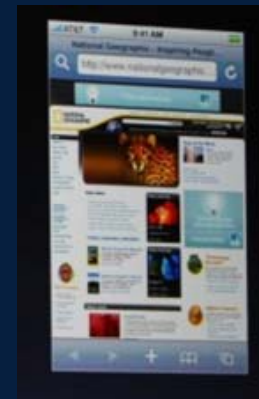
iPhone 2.5G (EDGE)
59 Seconds



Nokia N95 (3G)
33 Seconds



Treo 750 (3G)
34 Seconds

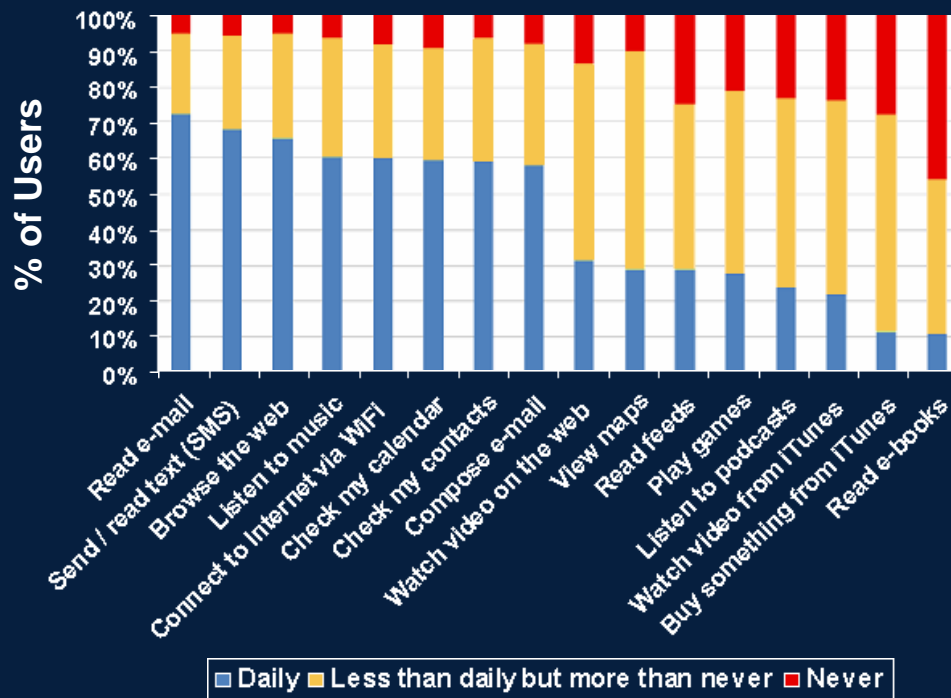


WiFi
17 Seconds

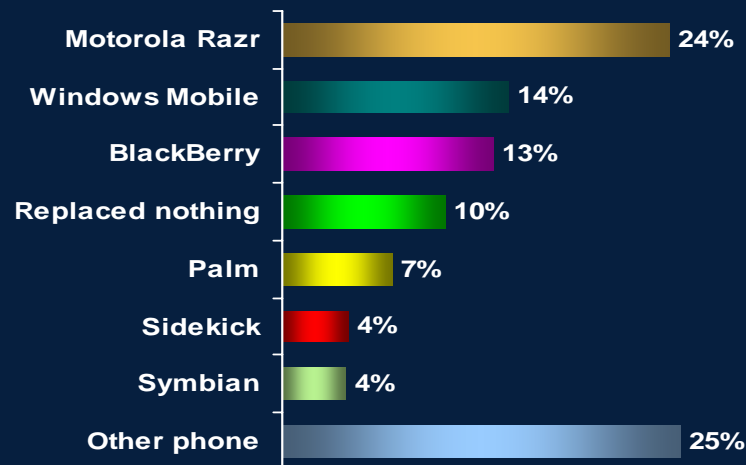
iPhone Usage Shows What Mobile Users Want – Ease-of-Use + Control

- ~80% users = satisfied
- 55% = do more browsing vs. previous mobile
- 53% = changed carriers
- 33% = carry 2 phones

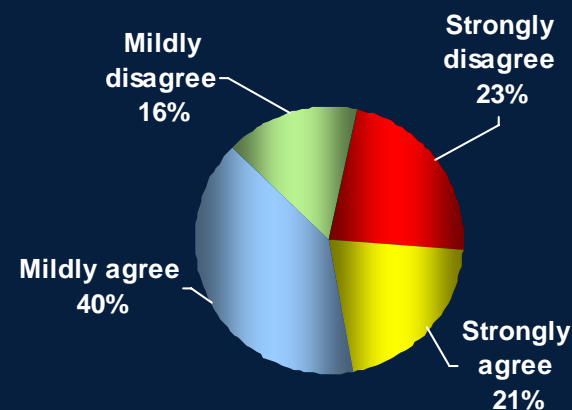
What are most used iPhone functions?



What did iPhone replace?



"I often carry my iPhone instead of notebook computer."



Apple App Store – Easy-to-Find + Use Products / Services for iPhone

- 250K Software Development Kits (SDKs) downloaded since 3/08 debut, 25K apps submitted – Apple accepted 4K (6/08)
- Prices set by developers, estimated ~70% of apps will be free

Super Monkey Ball



Loopt



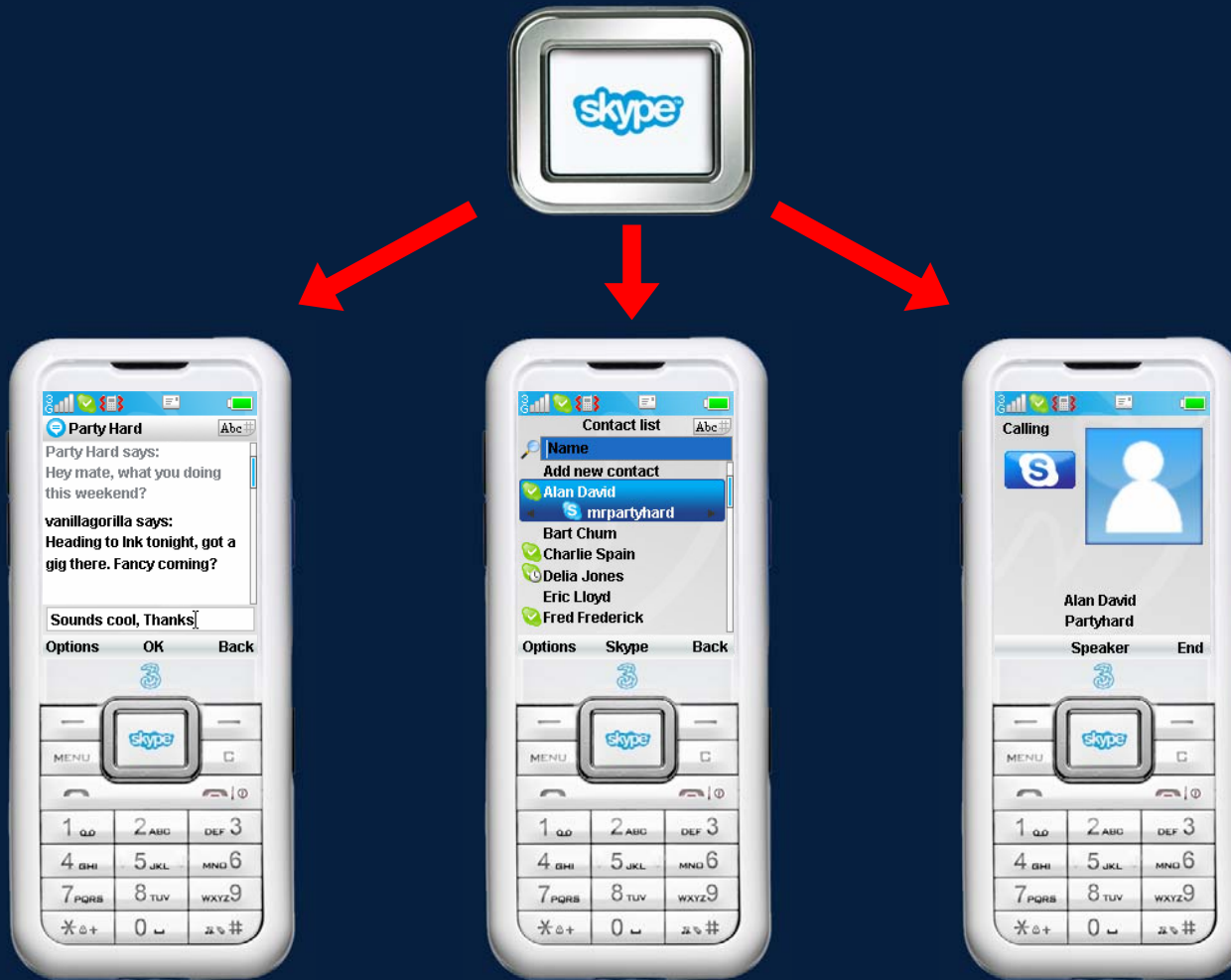
MLB.com



eBay



3 Skype Phone 'Launcher' – 'Presence' is Key

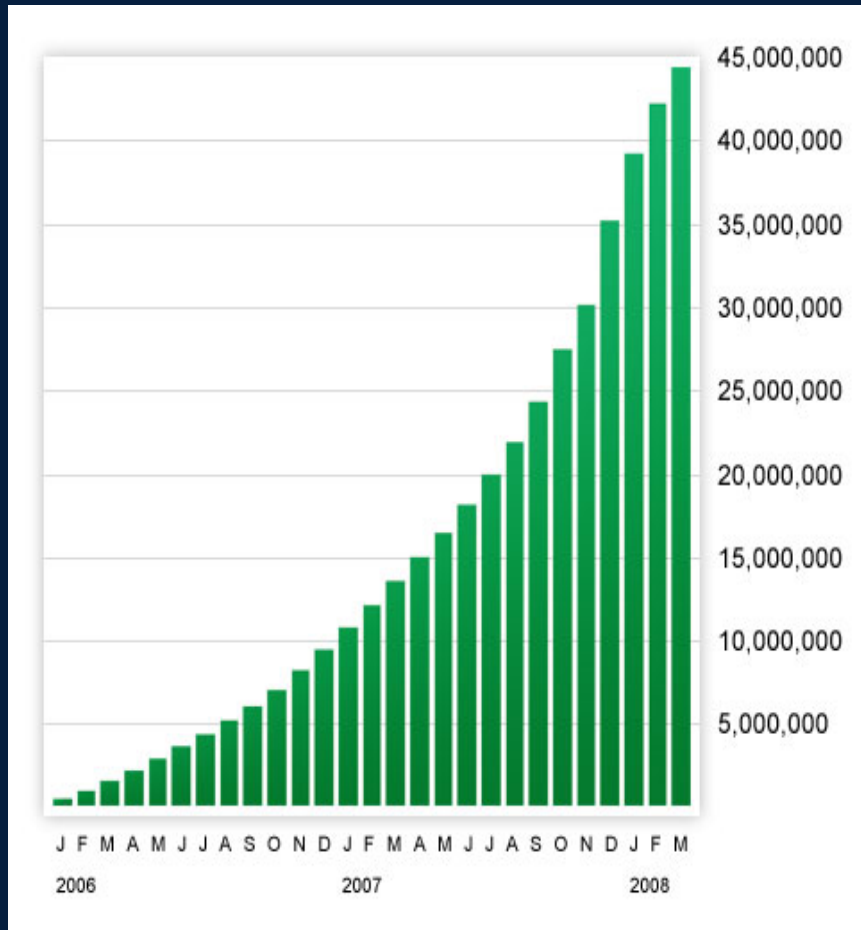


Chat

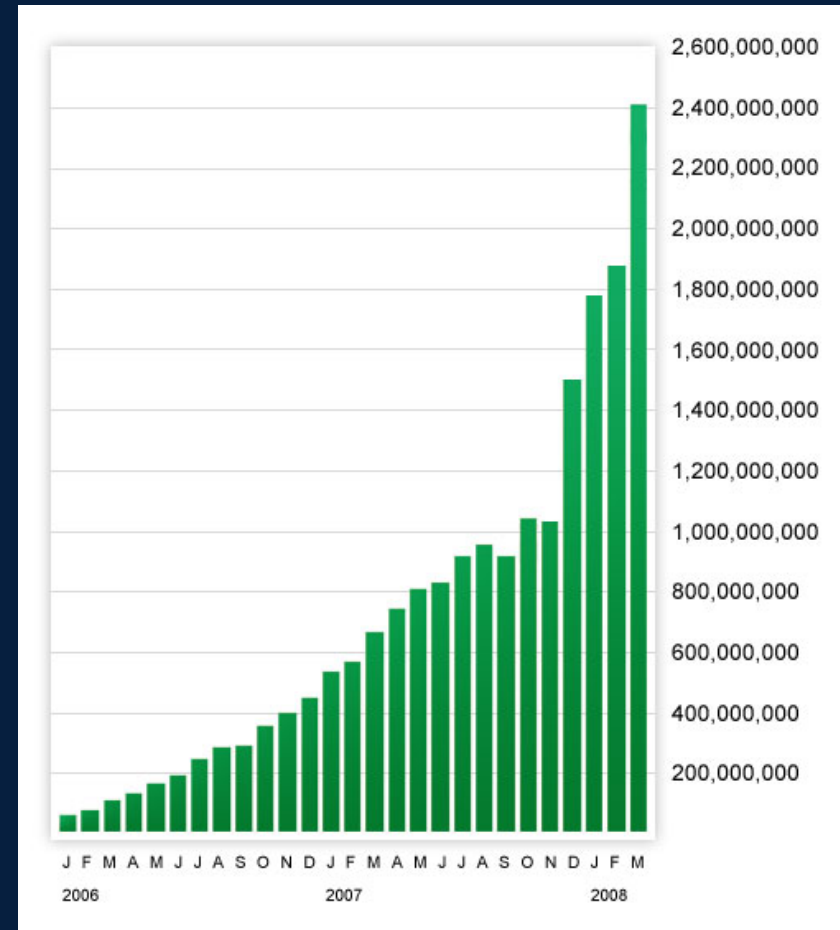
Contacts

Call

Opera's Mobile Web Browser - A Mobile Internet UI - ~12MM Users, +26% Q/Q with +57% Page Growth, 3/08



Cumulative downloads



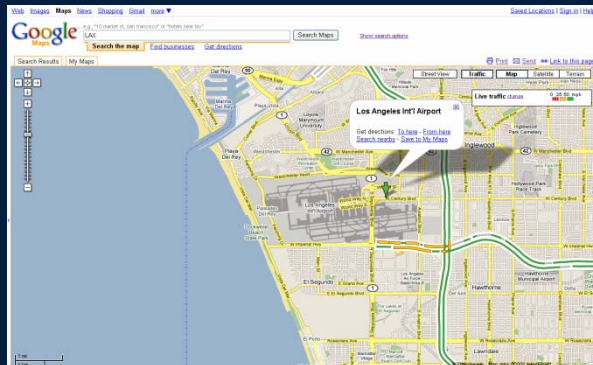
Pages transcoded per month

Mobile-PC as New Client-Server Model?

Wireless Plug & Play / Syncing

Server = PC

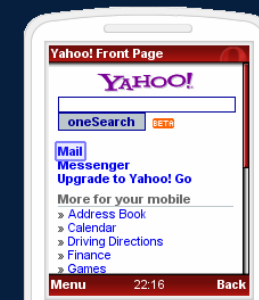
Client = Mobile



Internet content available
on mobile devices and
connected with PC +
Cloud.

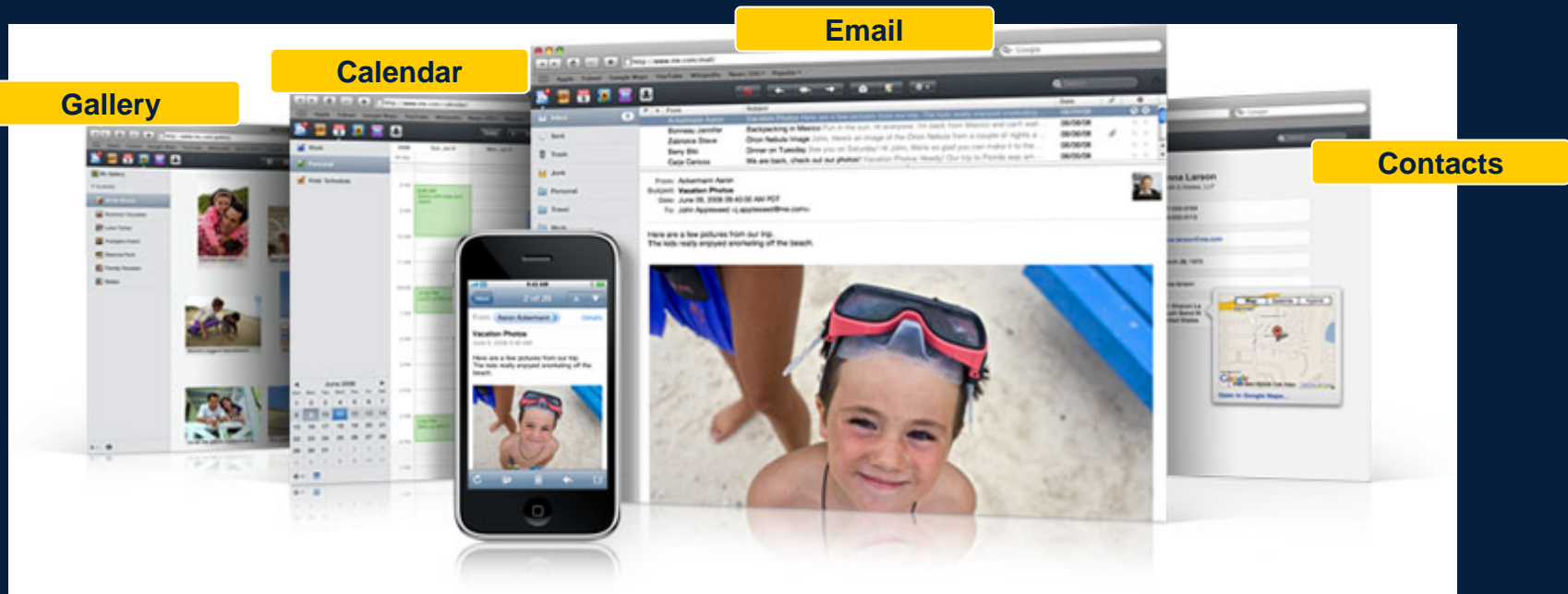


Increasingly, mobile
devices will also become
'dongles' – USB devices
that also connect PCs to
Internet via wireless
networks.



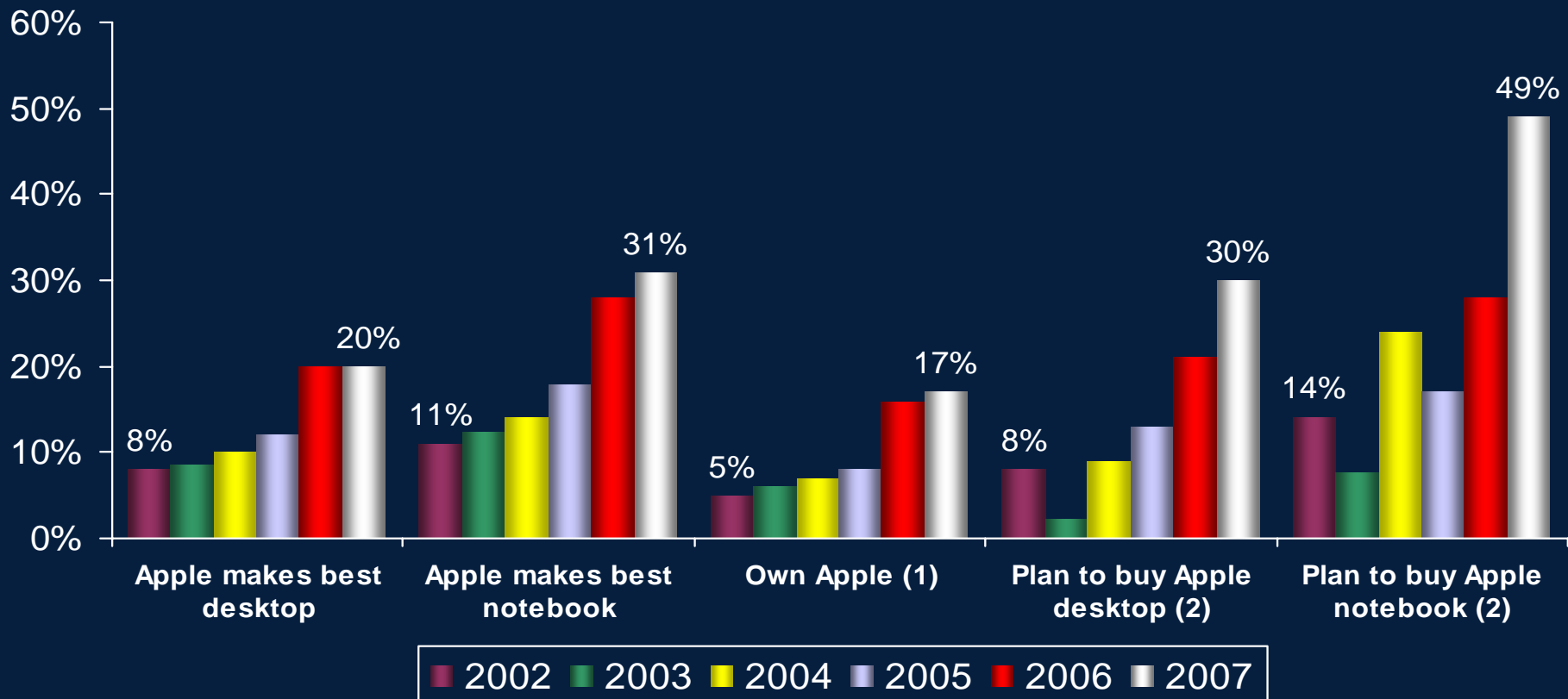
MobileMe – Apple Advances Cloud Across Devices

- Will store personal information (email, calendar, contacts, photos...) on Apple servers and automatically sync between devices - Macintosh, iPhone, iPod Touch, PC with Outlook / XP / Vista...
- \$99 per year



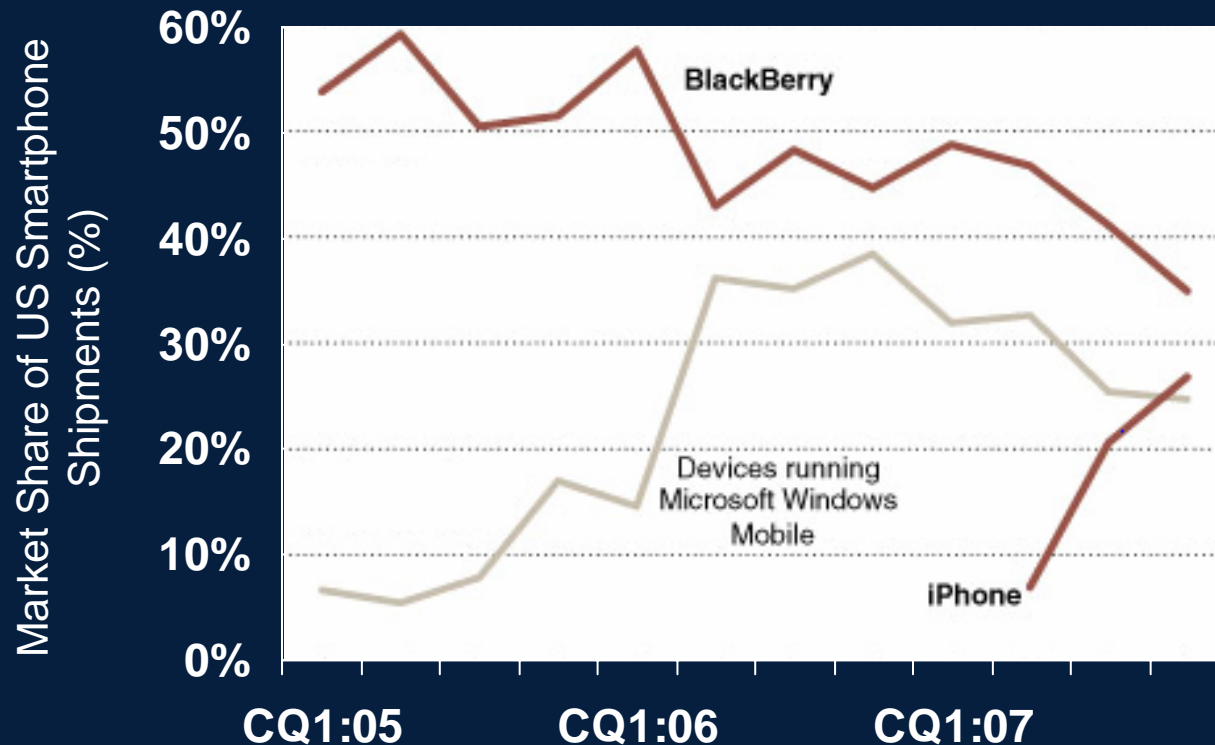
Kids Typically Lead Internet Future – 30-49% Plan to Buy Apple

Student Monitor – Lifestyle & Media Fall 2007 Survey



Impressive iPhone Share Gains – 3G + Low ASP (\$199) Doesn't Begin Until 7/11/08

Market Share of US Smartphone Shipments



Global Mobile Awards 2008 Winners – Name That Company?! Typical of New Technology Waves

Best Mobile Handset or Device

SonyEricsson: W910 Walkman Phone

3UK: 3 Skypephone - Highly Commended

Best Mobile Advertising

Crossmedia Avenue: AMF Pension – the MMS campaign

Best Use of Mobile for Social & Economic Development

Grameenphone: CellBazaar

Best Network Quality Initiative

RAD Data Communications: LA-130 Cell Gateway - Cost-Effective HSPA Backhaul

Best Service Delivery Platform

Aepona: Aepona Telecom Web Services Platform

Best Billing and Customer Solution

Bharti Airtel: mChek on Airtel – Mobile Payments Service

Best Roaming Product or Service

Syniverse Technologies: Syniverse Datanet

Best Mobile Game

Cellufun: Call of the Pharaoh

Glu Mobile: My Hangman

Best Mobile Music Service

Omnifone: MusicStation

Best Mobile Video Service

mywaves: mywaves

Best Mobile Social Networking Service

BuzzCity: myGamma.com

Best Mobile Infotainment Portal for News / Entertainment

Yahoo! Connected Life: Yahoo! Go for Mobile 2.0

Best Mobile Enterprise Product or Service

Microsoft: Windows Mobile 6

Best Mobile Messaging Service

Seven: System Seven 7.0

The GSMA Chairman's Award

Sunil Bharti Mittal, Founder, Chairman & Group
CEO Bharti Enterprise

Mobile GPS – We Have Liftoff

- 715MM GPS-enabled mobile phones estimated to ship globally in 2012, Gartner estimate. 157MM shipped in 2007E (+43% Y/Y)
- Directions (Google Maps, TeleNav...), local search, location-based social networking...



**Which friends
are nearby?**

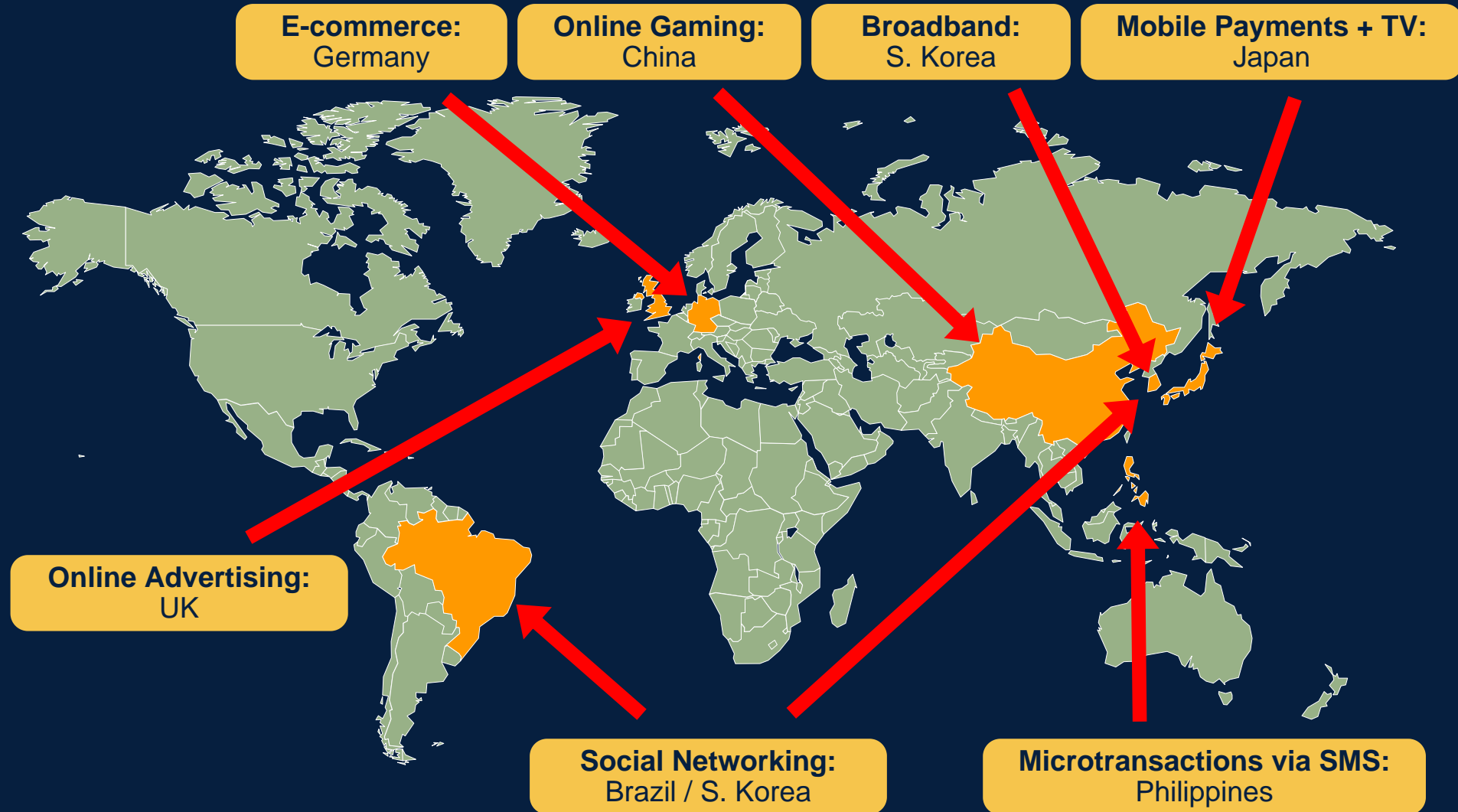
Proximity Marketing for Local Merchants – Proof of Concept Success For Intera Group

- Install Bluetooth transmitters (with 200 feet range) in busy areas
- Send ads / offers to phones of passers-by with Bluetooth discovery setting enabled
- Hard Rock Cafe in San Francisco = 25% conversion of people who received promotion (spend \$25 and get souvenir) in first test
- Intera's goal = cover >1K locations in the top 10 DMAs (designated market areas) by year-end 2008



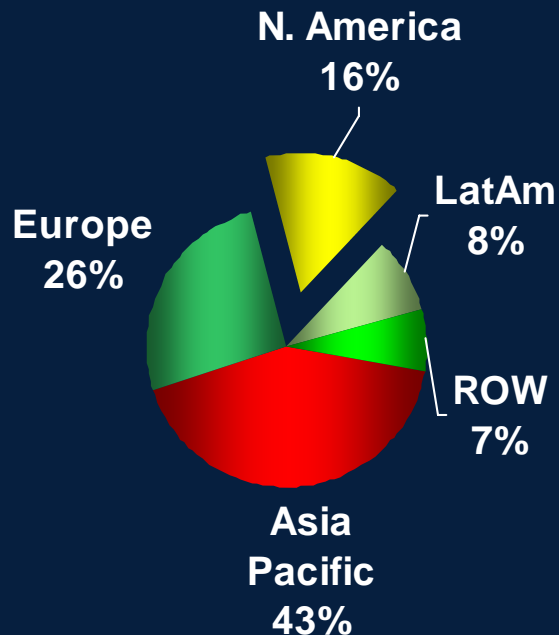
3 - Emerging Markets – Pacing Next Wave of Technology Adoption

Non-US Markets Lead Usage Penetration in Many Categories

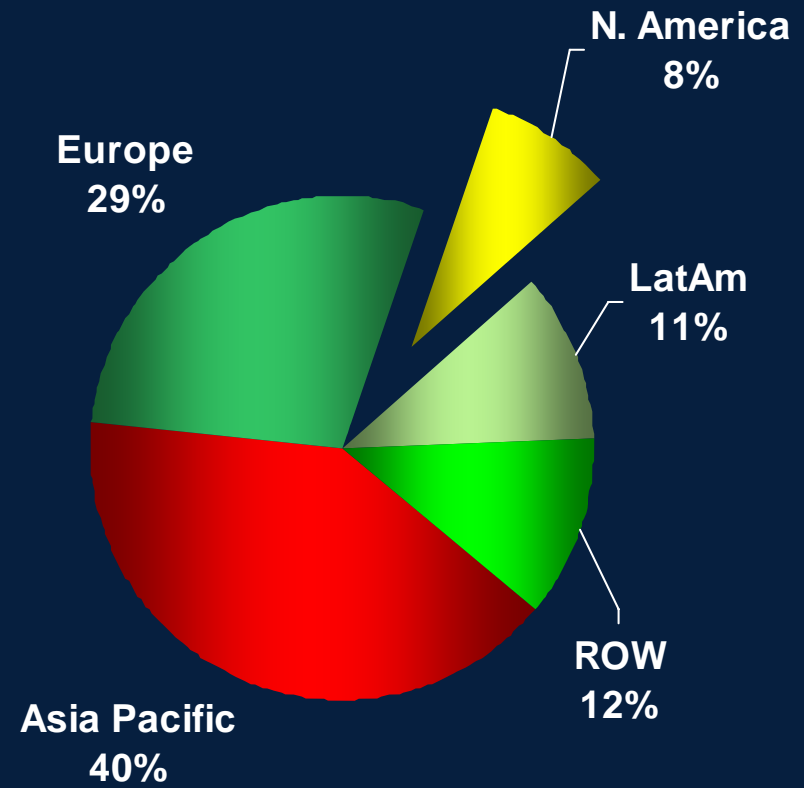


Mobile Users 2x+ > Than Internet Users – N. America = 8% of Mobile / 16% of Internet Users

Internet Users – 1.3B
C2007E (1)



Mobile Subscribers – 3.3B
C2007E (2)



Leading TMT Markets by Category

Category	2007 Growth Rate	Market Size
Mobile Subscribers	20%	3,285MM
Internet Users	21	1,467MM
Credit/Debit Cards in Use	12	7,966MM
Installed PCs	8	883MM
GDP per Capita (PPP)	6	\$10,009
Telephone Lines	(1)	1,279MM
Cable / Satellite TV Subscriptions	5	699MM
Population	1	6,501MM

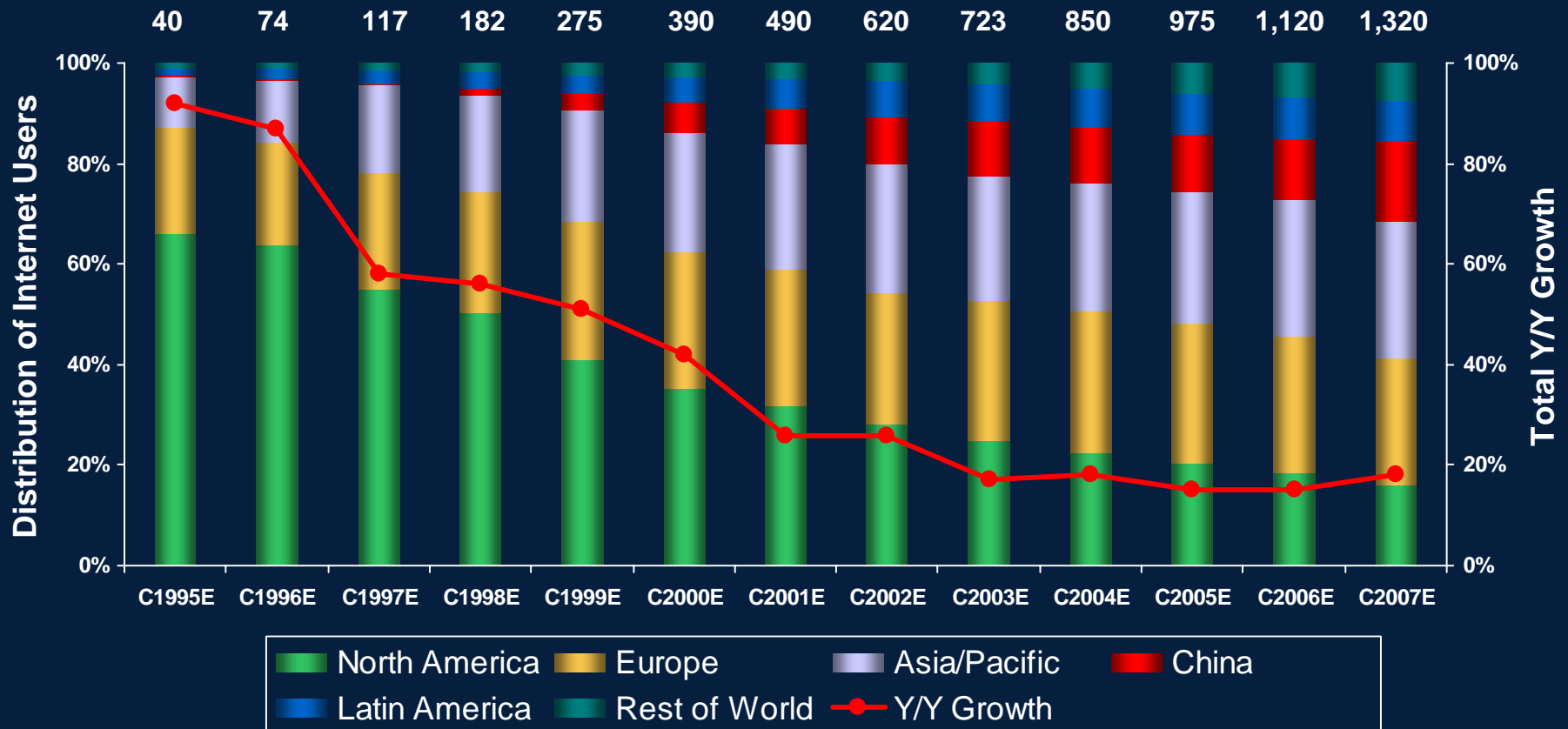
China Led in TMT Users in Many Categories - 2007

Category	Market Leader	Leader Number (000)	China Rank (2007)	China Number (000)	China Rank (2001)
Population	China	1,321,052	1	--	1
GDP (PPP) per Capita	Norway	53,037	46	\$5,292	46
Credit / Debit Cards	USA	2,610,926	2	1,472,052	3
Mobile Subscriptions	China	547,286	1	--	1
Telephone Lines	China	365,448	1	--	2
Installed PCs	USA	216,446	2	126,323	4
Internet Users	USA	220,000	2	210,000	3
Cable / Satellite TV Subs.	China	168,309	1	--	1

China = Now Global Internet User Leader

16% of total vs. <1% in 1995

Geographic Distribution of Internet Users (MM)



TMT (Technology / Media / Telecom) Update = China / India / Russia / Brazil Gaining Ground

2004			2006		
Rank	Country	Relative Weighting	Rank	Country	Relative Weighting
1	USA	9.0	1	USA	8.7
2	China	8.2	2	China	8.7
3	Japan	6.5	3	Japan	6.3
4	Germany	5.7	4	Germany	5.7
5	UK	5.5	5	India	5.5
6	India	5.3	6	UK	5.4
7	France	5.2	7	France	5.3
8	Italy	5.2	8	Brazil	5.3
9	S. Korea	5.1	9	Russia	5.3
10	Canada	5.1	10	Italy	5.2

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 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 determined by calculating an average of z-scores across categories. For example, in the United States in 2004, 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 category to 2010, and ensuring category penetrations were not exceeded.

Note: Red indicates countries moving out of the top 10 TMT countries;
Green indicates countries moving into the top 10 and highlights China / India
Source: Morgan Stanley Research

4 - Cloud Computing – Shift to Software-as-a-Service (SaaS) for Consumer / Enterprise

SaaS – Consumer + Enterprise Adoption

Amazon.com

The screenshot shows the Amazon.com homepage with a blue header. The main navigation bar includes 'Shop All Departments' with a list of categories like Books, Movies, Music & Games, Digital Downloads, Electronics & Computers, Home & Garden, Grocery, Toys, Kids & Baby, Apparel, Shoes & Jewelry, Health & Beauty, Sports & Outdoors, and Tools, Auto & Industrial. The central banner features the 'Kindle: Amazon's Revolutionary Wireless Reading Device' with an image of the device and a description. To the right, there's a 'Check Out This New Release' section for 'Ghost Squad' and a 'Daily BLOG' section. Below the banner, there's a 'New For You' section with various products like 'Mario Kart: Prima Official Game Guide' and 'Hill Fit Balance Board'. A 'Recommended for You' section is at the bottom. The footer includes 'Features & Services' like 'Selling on Amazon' and 'Amazon Prime'.

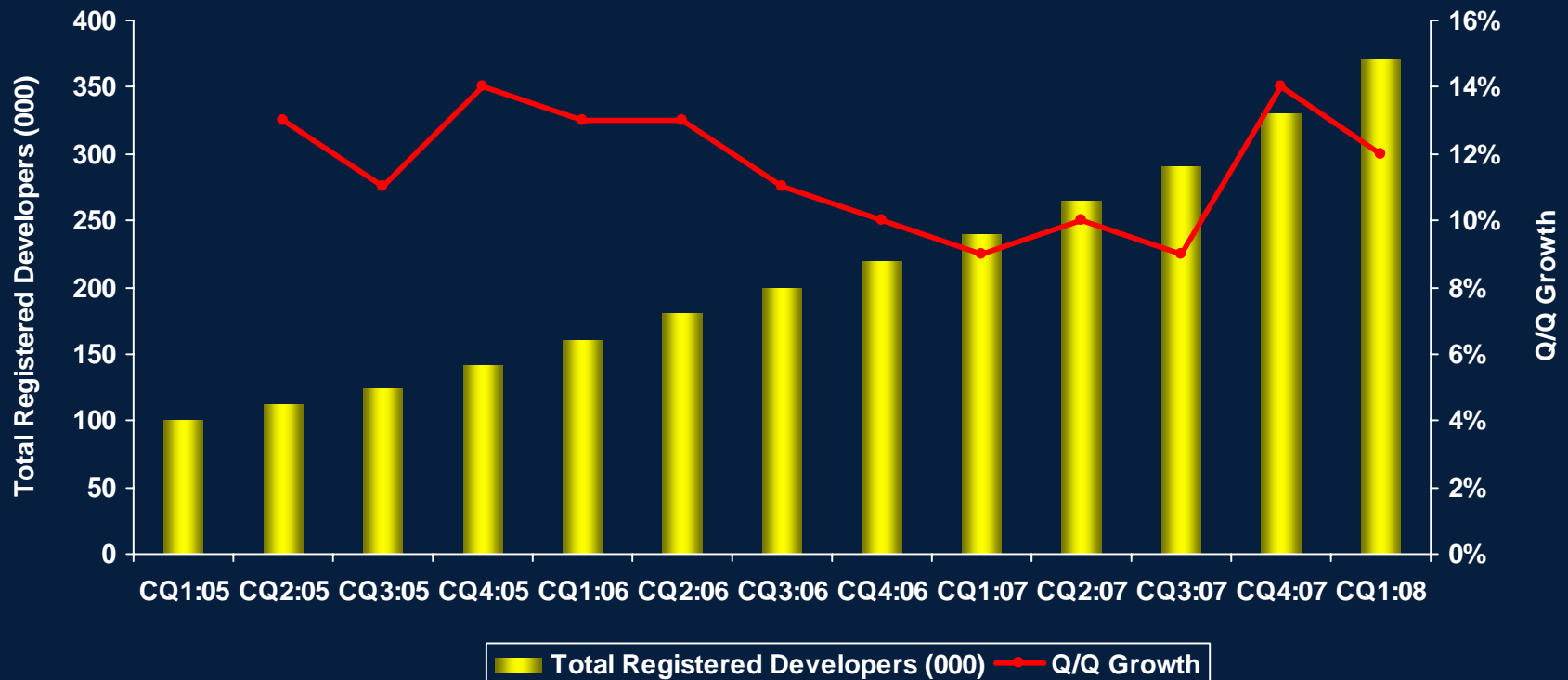
Salesforce.com

The screenshot shows the Salesforce.com homepage with a blue header. The main navigation bar includes 'Applications', 'Platform', 'Services', 'Customers', 'Partners', 'Events', 'Company', 'Foundation', 'Customer Login', and 'International Sites'. The central banner features the 'Salesforce ideas' logo and the text 'Let the best ideas bubble up to the top.' with an image of a Starbucks cup. Below the banner, there's a section titled 'The Leader in On-Demand Customer Relationship Management (CRM)' with a price list: 'As Little as \$9/User/Month for Group Edition | Full-Featured CRM Starting at \$65/User/Month'. To the right, there's a 'FREE TRIAL' button. Below the main section, there are several sub-sections: 'CRM Software as a Service', 'Business Mgrs', 'IT Professionals', and 'Developers'. Each sub-section has a brief description and a 'Learn More' link. The footer includes 'Next Steps' with links like 'View Demo', 'Contact Me', and 'Resource Center', and 'Announcements' with a link to 'Upcoming Events'.

Amazon Web Services – 350K+ Users, +12% Q/Q, CQ1

- **Simple Storage Service (S3)** – Provides a simple web services interface that can be used to store (\$0.15 per GB per mo.) / retrieve any amount of data, at any time, from anywhere – gives developer access to same data storage infrastructure Amazon uses to run its own network sites.
- **Elastic Compute Cloud (EC2)** – Provides resizable compute capacity in the cloud, with users paying only for capacity they actually use (starting \$0.10 / instance-hour).

Amazon Web Services



5 - Next Generation Data Center – Evolving to SaaS with Virtualization

'A Giant Supercomputer' *Lots of Servers...Lots of Interactions...Lots of Data*

Google Data Center – The Dalles, Oregon



Cloud Computing / Data Center Evolving to SaaS Model

- As users integrate digital technology into daily lives, number of access points increases as does importance of reliability + speed - IT effectiveness increasingly becomes competitive weapon
- New compute / storage architectures emerging quickly – virtualization + data duplication + thin computing...
- Google - cumulative capex = \$6.5B @ 23% of CQ1 net revenue
- VMWare - 69% Y/Y revenue growth in CQ1 - grew from <\$100MM to \$1B+ in revenue in 4 years

Next-Generation Data Center Implications

Today

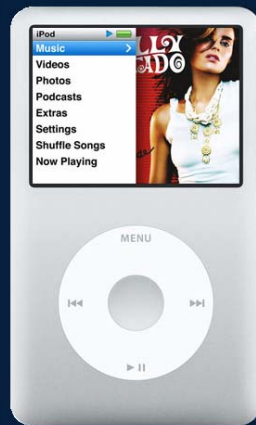
- More fully configured systems
 - Benefits: Hewlett-Packard, IBM; Challenges Dell volume model
- Accelerated adoption of networked storage
 - Benefits: EMC, NetApp; Challenges Direct-Attached Storage, Tape, low value-add Storage Area Network
- Requires more robust software platform
 - Benefits: Data Domain, Netezza, Isilon Systems; Challenges under-invested software portfolios
- Requires Changes in Network Architecture and Bandwidth
 - Benefits: Cisco, Juniper, and other high-end switch and Wide Area Network networking vendors

Go Forward

- From systems-level to data center-level consolidation
 - Compute, storage and network assets converging
- Are opex savings reinvested in IT as competitive weapon?

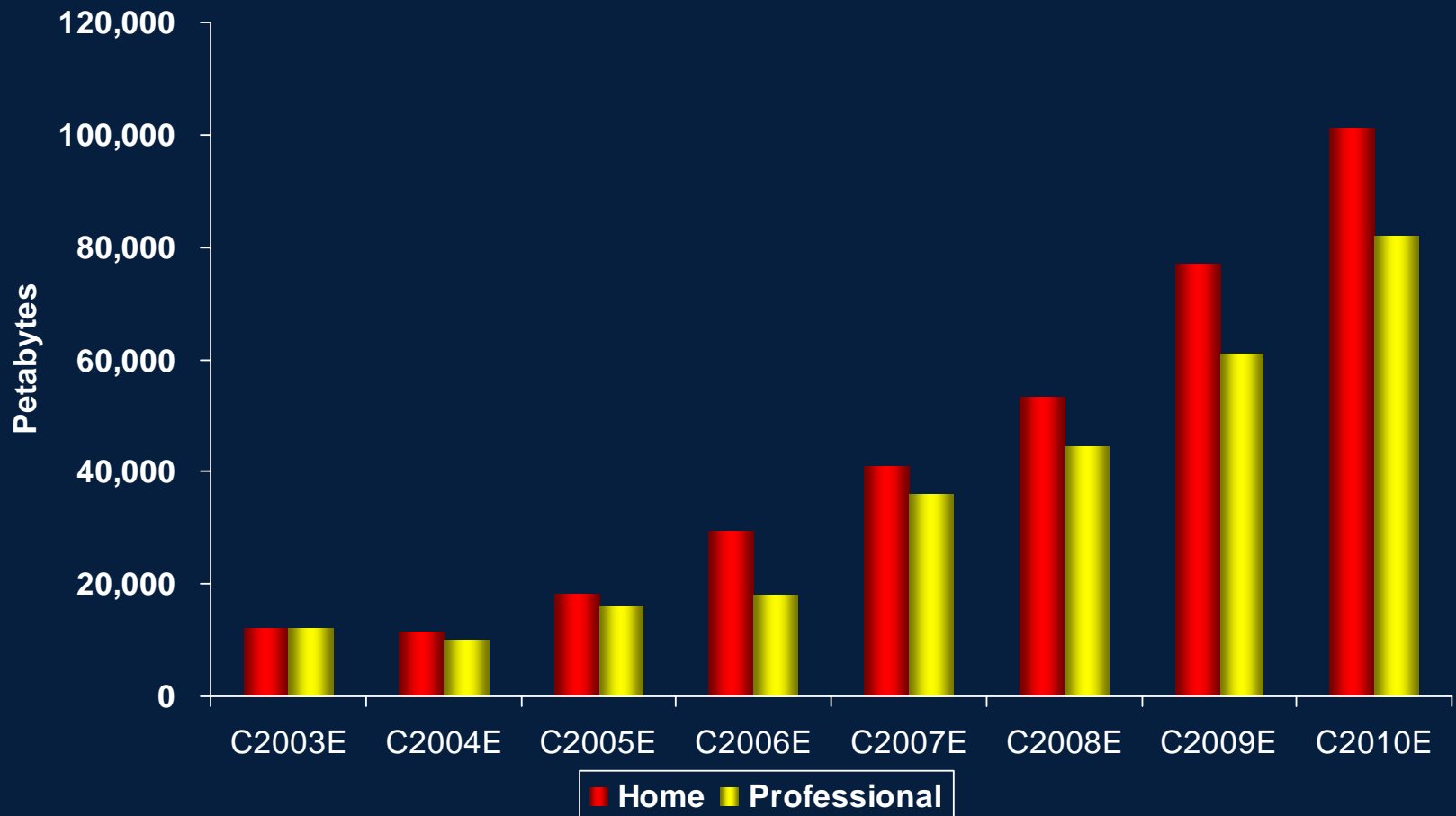
6 – Storage – Needs Continue to Ramp + Underlying Tech Changing

- Consumers expect to connect AND carry mobile devices
- ~100MM iPods with 4GB+ storage in use since 9/05 launch (K. Huberty)
- ~15MM mobile phones with 1GB+ storage, up 100%+ Y/Y
- High definition content presents next major step-up in storage capacity requirements – ~40x more bandwidth required to stream DVD-quality movie than mp3 file (K. Huberty)
- Low cost hardware, improved bandwidth and new compute architectures - e.g. virtualization and thin-computing - are combining to make utility computing a reality and more readily available to masses



Storage Growth +62% in 2007E – Consumer > Professional Demand

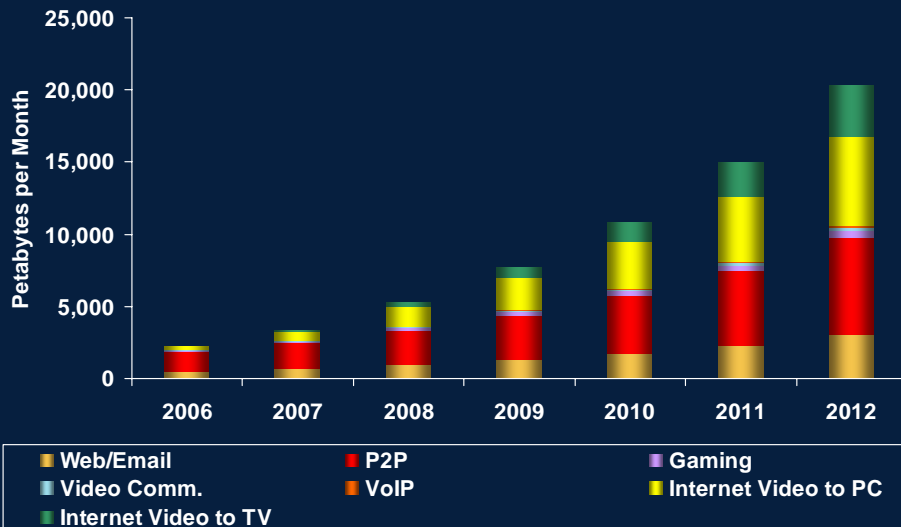
Global Storage Sold Annually



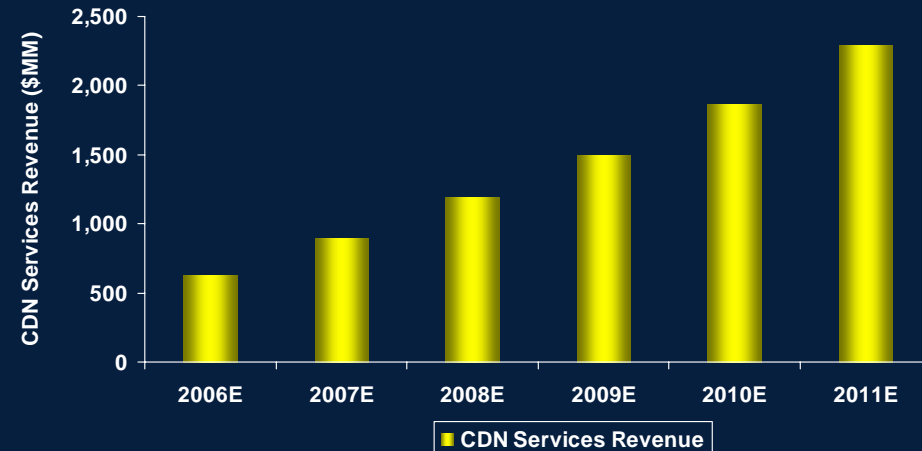
Content Delivery Networks – Watch for Peer-to-Peer Innovation

- Top CDNs – Akamai (\$636MM= 2007 revs, + 48%) / Limelight (\$103MM) / CDNetworks (\$53MM)
- Given ramp in online video usage (+ related costs), P2P CDN innovation effort rising
- P2P traffic expected to increase to 6,740 petabytes in 2012 from 1,358 in 2006 (Cisco)
- Eventually video content owners will likely look to CDN-P2P hybrids to improve speed / price / quality of content delivery service (IDC)

Global IP Traffic



CDN Services Revenue, Global

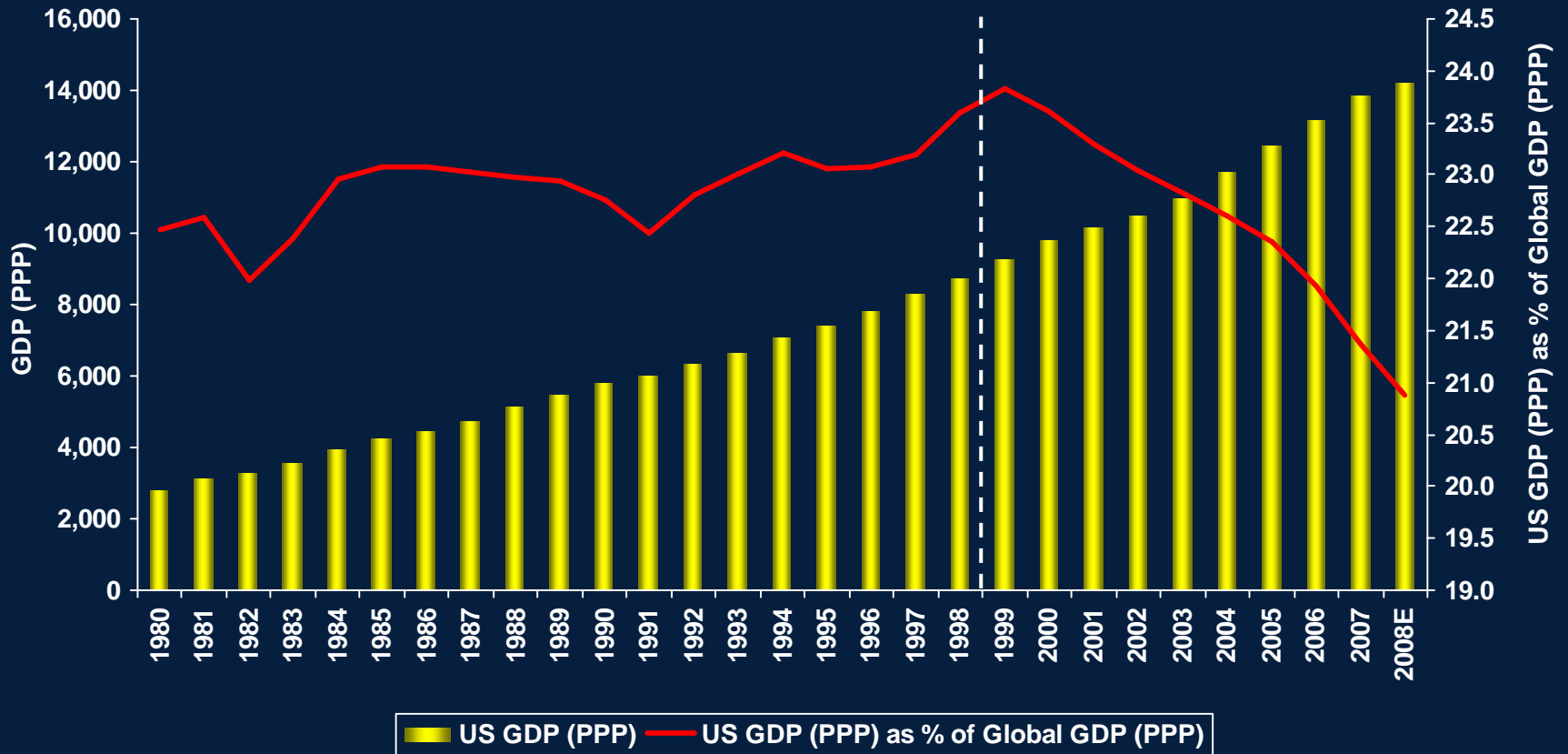


7 – Recession – Uncharted Territory in the Modern Era

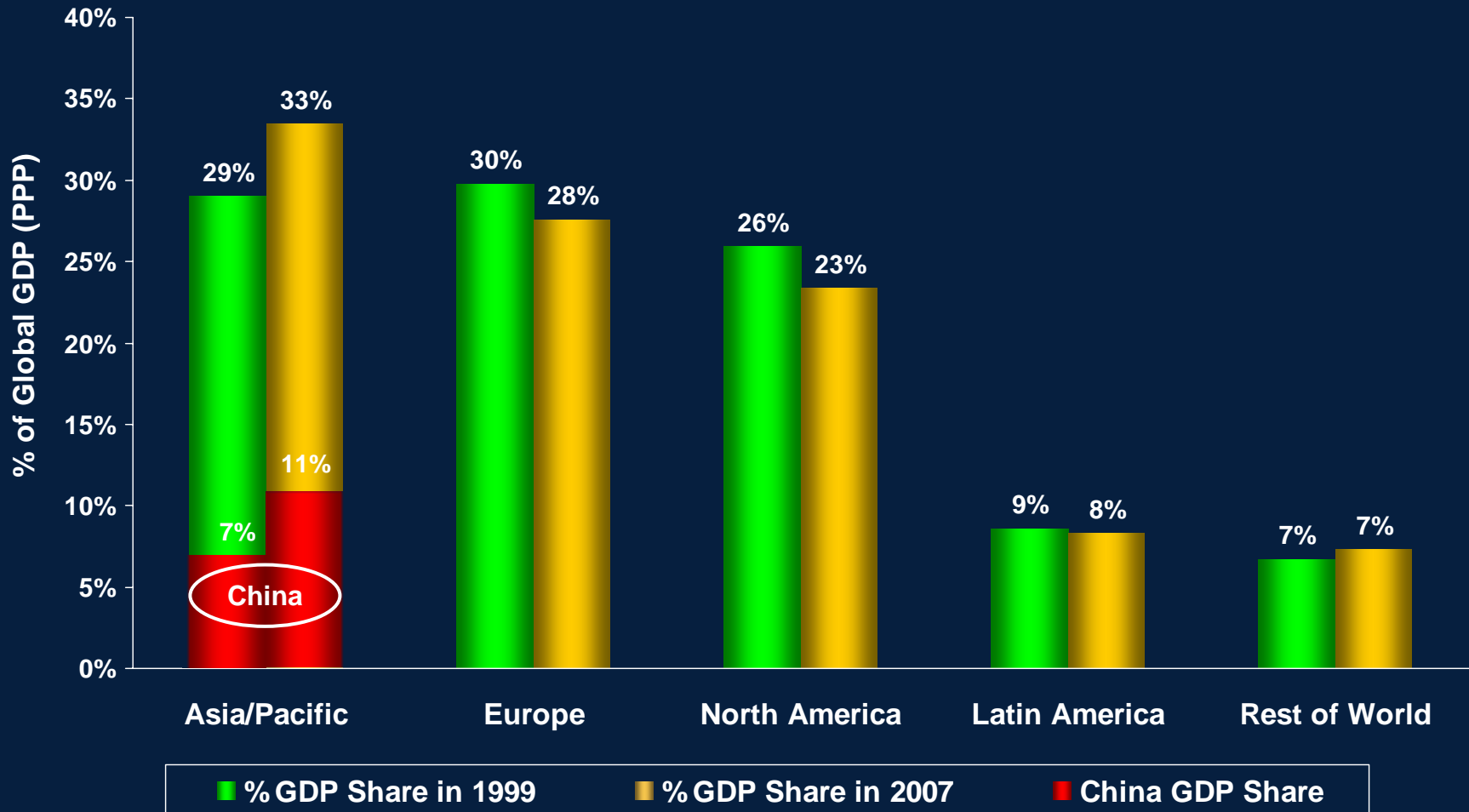
- Impact of US subprime woes / tightening credit / rising commodity prices / global unrest should not be underestimated – depth / duration may surprise on downside + revenue should become increasingly difficult to garner. Leading Internet companies will be stress-tested to prove competitive advantages vs. offline companies – measurability / transparency / customer satisfaction should assist.
- Average GDP growth rate forecasts for 2008E have fallen to 1.1% from 3.0% in 6/07 – a 63% reduction in rate of growth. Average annual GDP growth over past decade = 3.1%. When first car of a moving train slows...the cars that trail follow...
- US less relevant to global economy - US share of global GDP has declined steadily since 1999 from 24% of GDP to 21% in 2007

US Falling as % of Global GDP

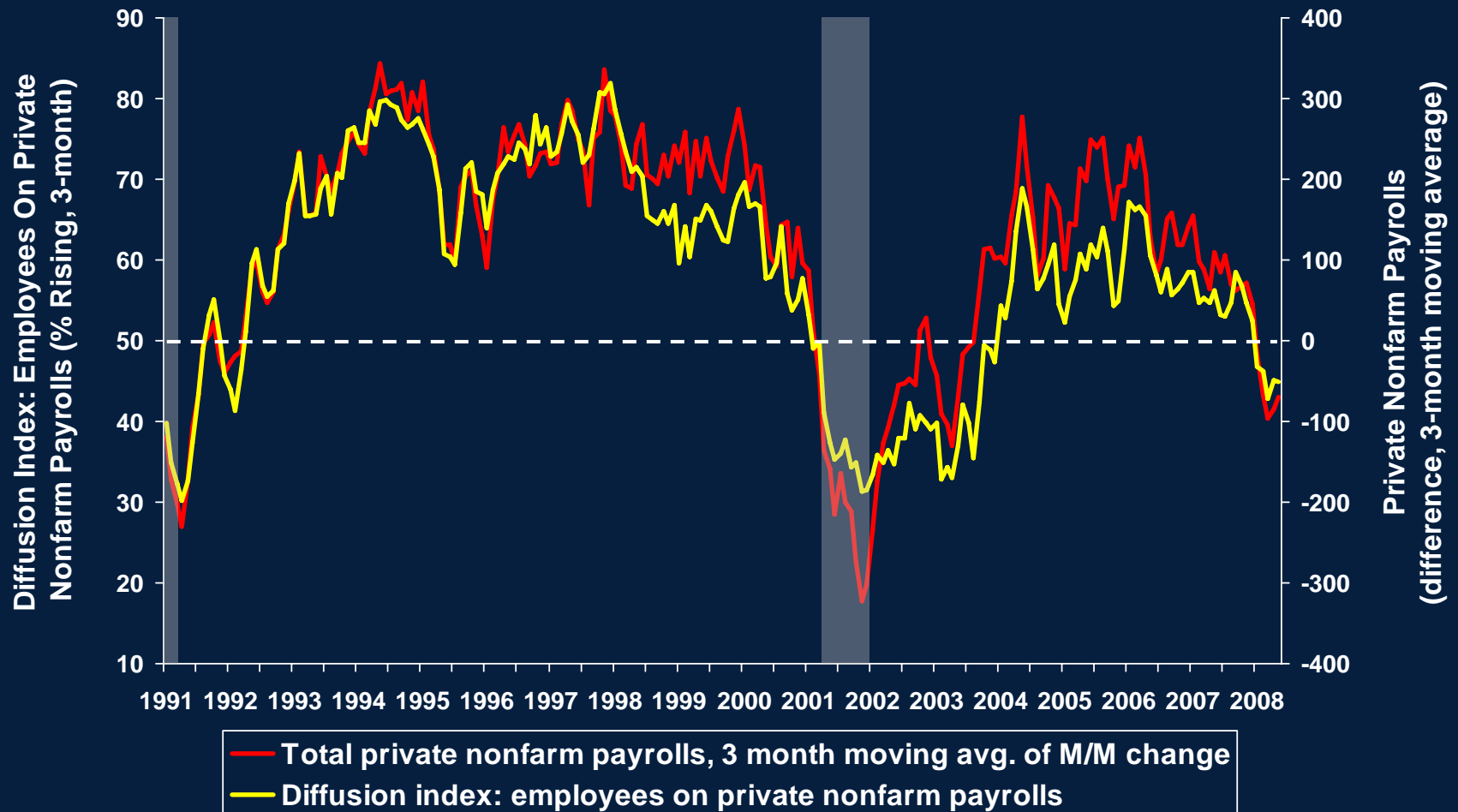
US GDP Declining as % of Global GDP



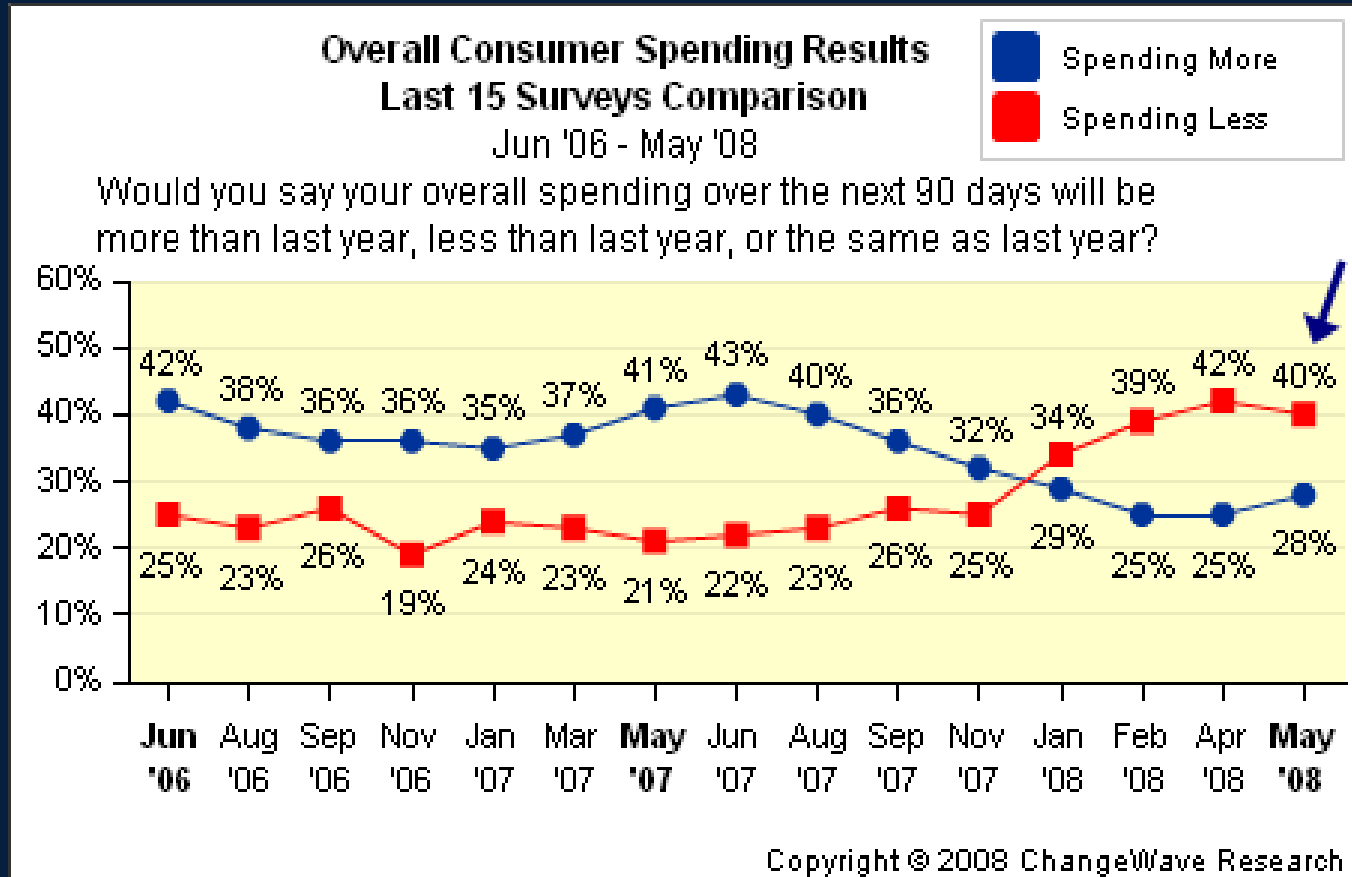
Asia / China Rising as % of Global GDP



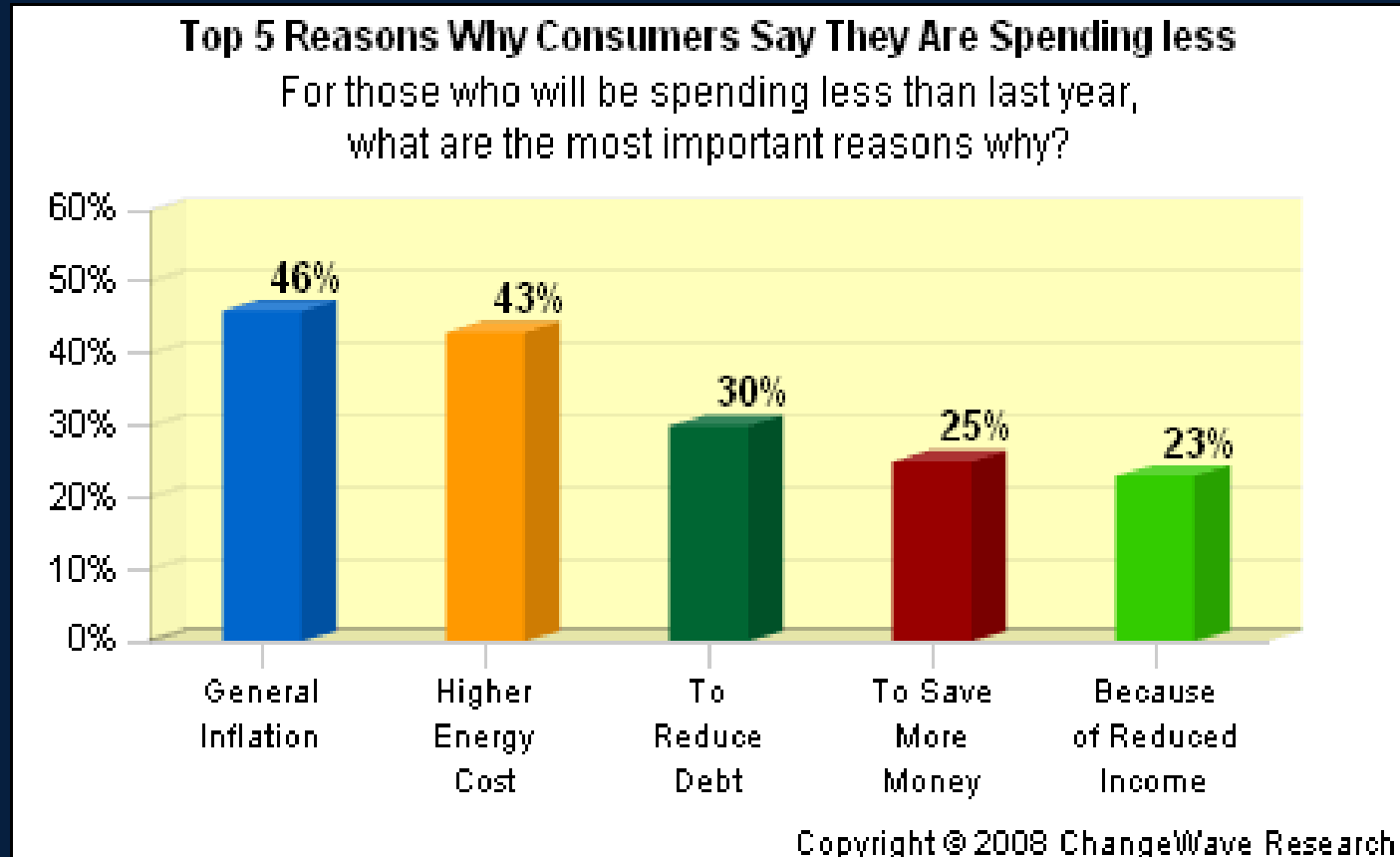
US Payrolls Moved Into Recession Territory in CQ1



Consumer Spending Trending Lower



Inflation + Energy Costs Impacting Consumer Spending



2% of Public Tech Companies Create 100% of Wealth* – A Look at Some of Biggest Winners of Our Day

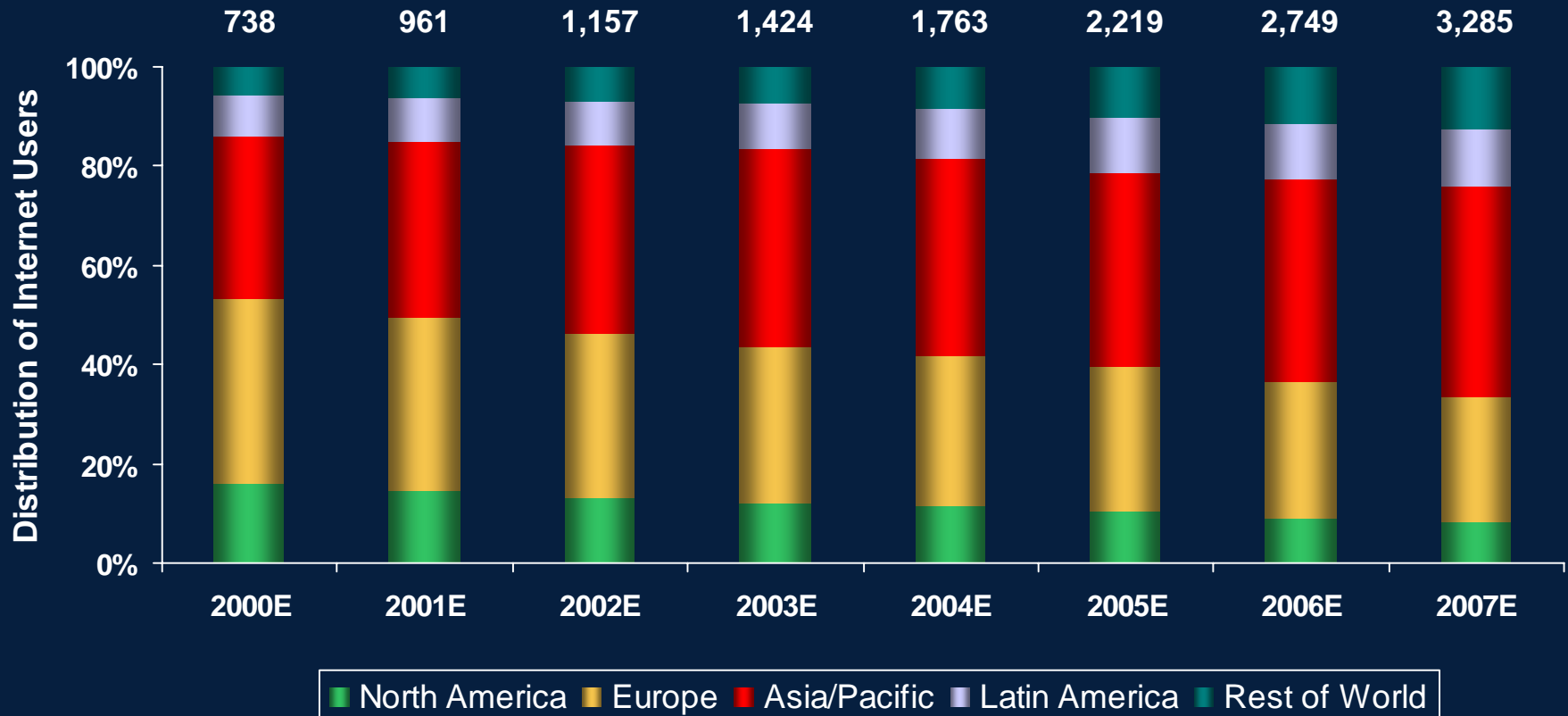
	Huge Market	Simple, Focused Mission	Active, Missionary Founders	Great Management Team, Culture	Constant Improvement	Insane Customer Focus	Big Gross Margin ⁽¹⁾	Annuity -Like Model	Strong Board
Apple	X	X	X	X	XX	X	34	X	X
Cisco	X	X	O	X	X	X	65	X	X
Dell	X	X	X	X	X	X	18	X	X
eBay	X	X	X	X	X	X	77	X	X
Google	XX	XX	X	X	X	X	83	X	X
Intel	X	X	X	X	X	X	56	X	X
Microsoft	X	X	X	X	X	X	79	XX	X
Yahoo!	X	X	X	X	X	X	81	X	X

Source: (1) F2009E for Dell; F2008E for Apple, Cisco, eBay, Google, Intel; F2007A for Microsoft, Yahoo!
Morgan Stanley Research, Morgan Stanley "The Technology IPO Yearbook"

Appendix

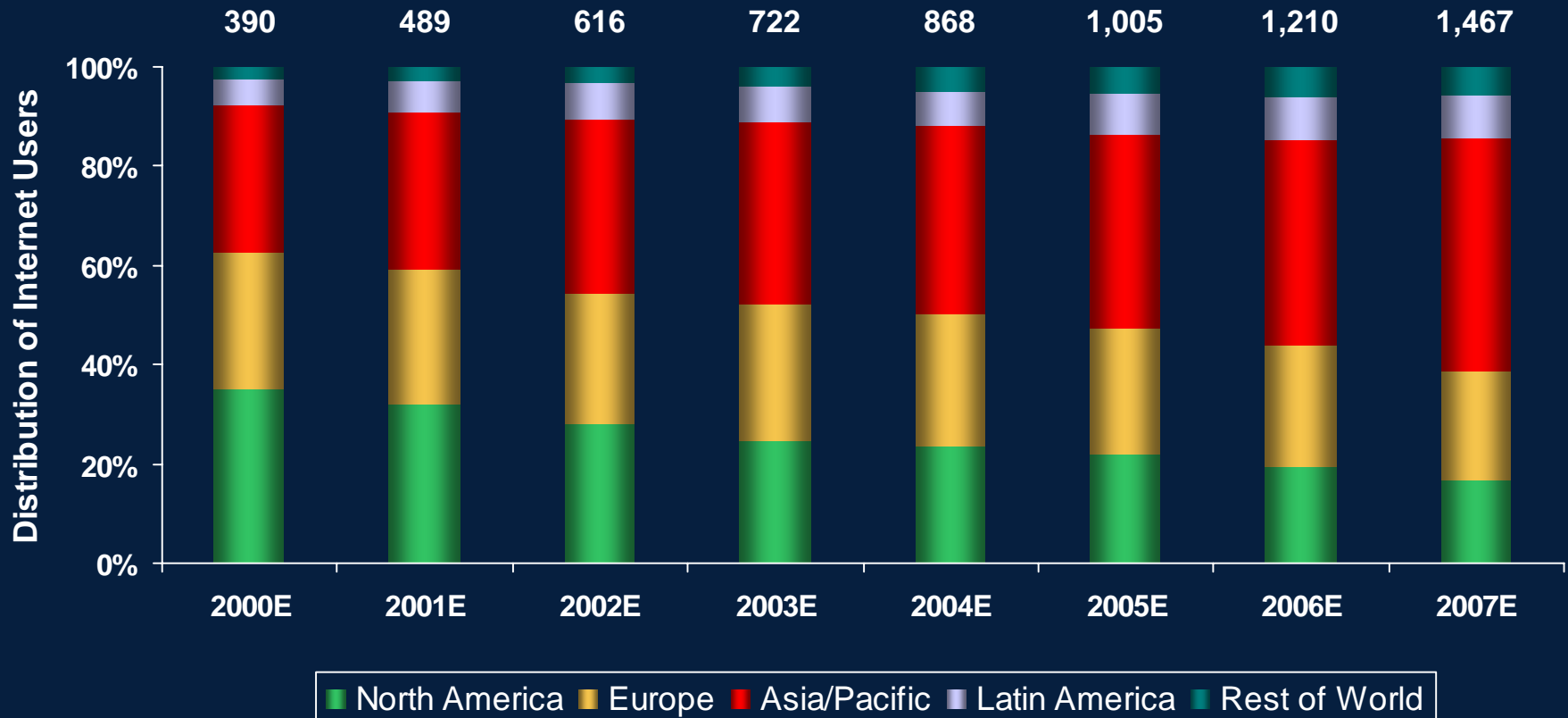
43% of Global Mobile Subscribers in Asia,
8% in N. America (vs. 33% / 16% in 2000)

Geographic Distribution of Mobile Subscribers (MM)



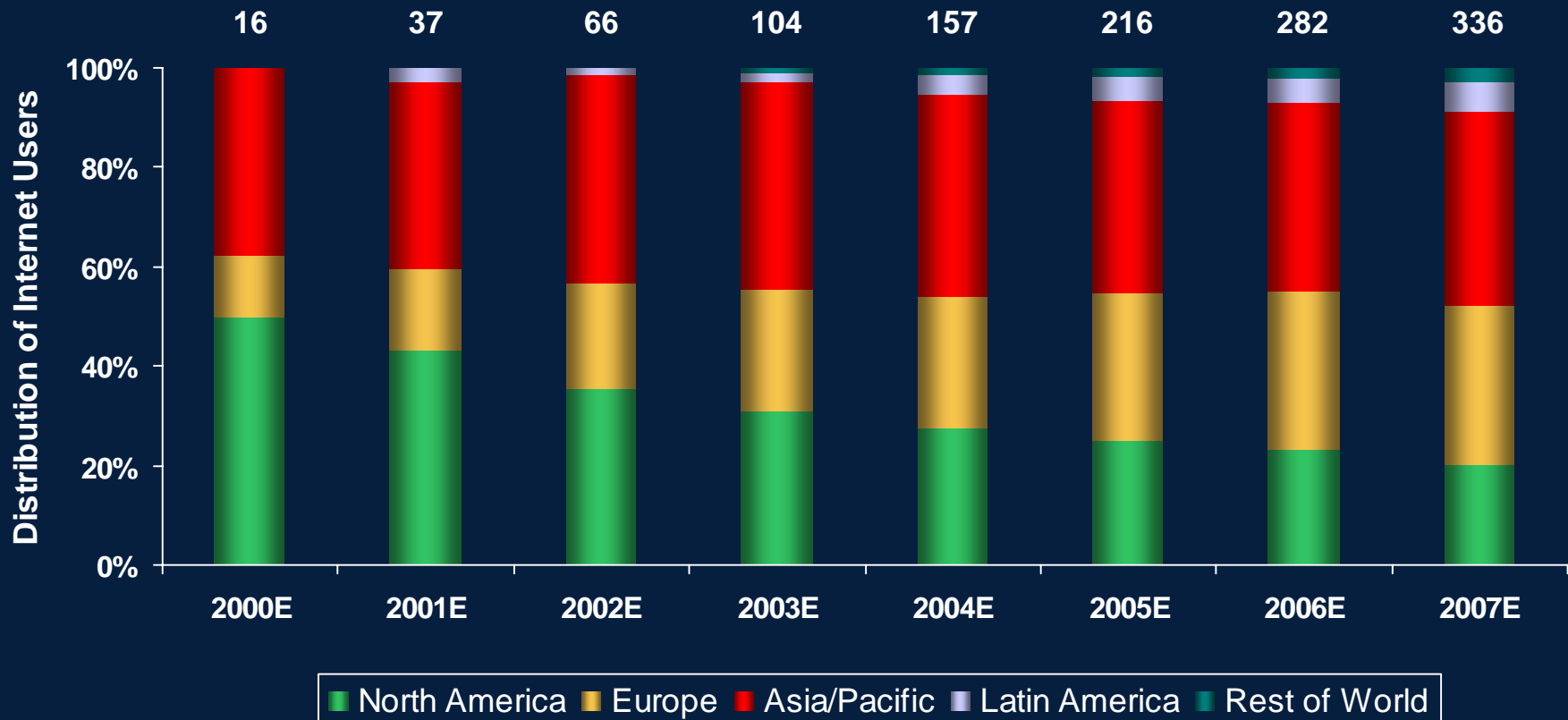
47% of Global Internet Users in Asia,
17% in N. America (vs. 30% / 35% in 2000)

Geographic Distribution of Internet Users (MM)

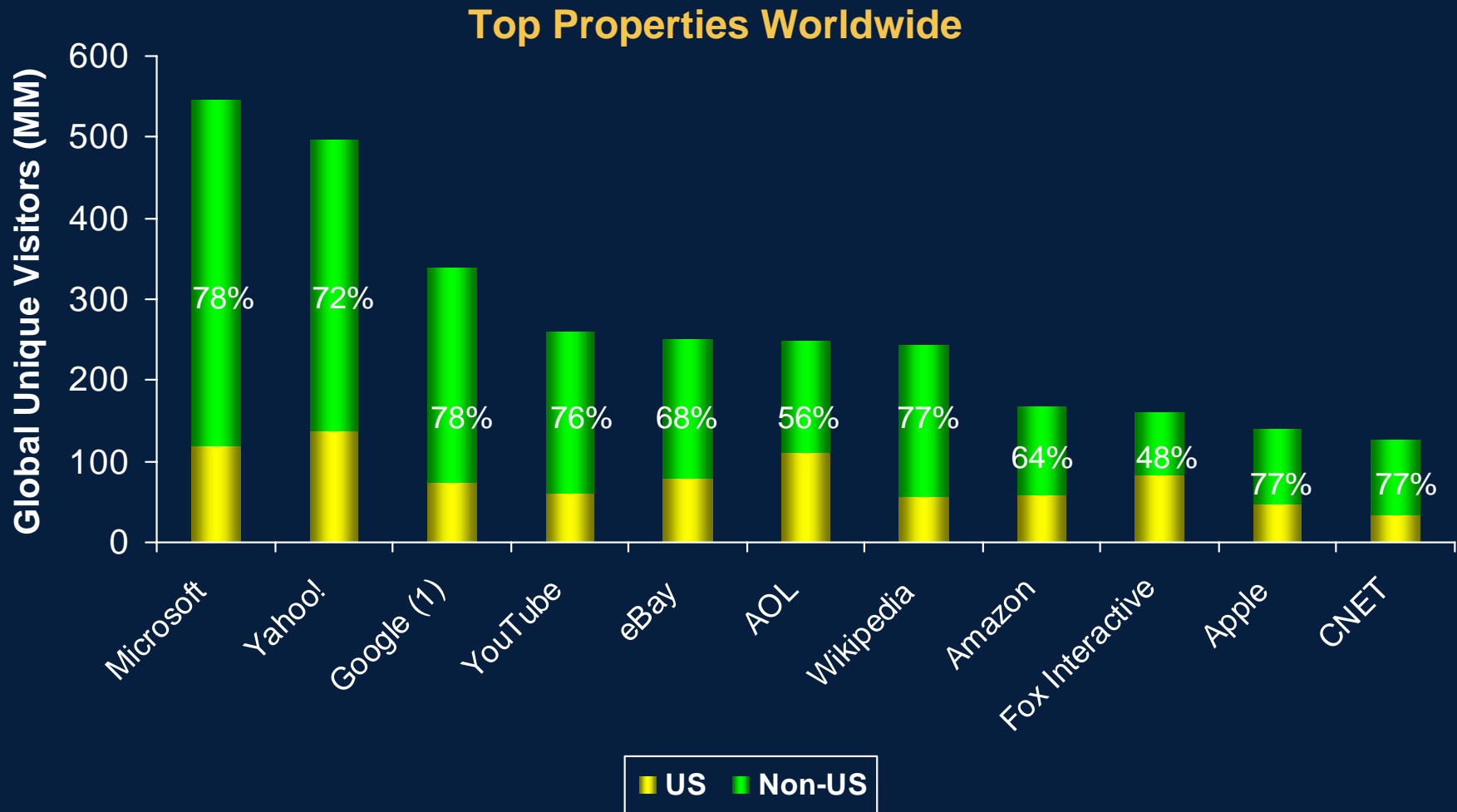


39% of Global Broadband Users in Asia,
20% in N. America (vs. 38% / 50% in 2000)

Geographic Distribution of Broadband Subscribers (MM)



Majority of Visitors To Top Global Web Sites = From Outside US



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	Coverage Universe		Investment Banking Clients (IBC)		
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category
Overweight/Buy	931	43%	297	46%	32%
Equal-weight/Hold	897	41%	261	40%	28%
Underweight/Sell	349	16%	92	14%	26%
Total	2,177		650		

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
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More volatile (V). We estimate that this stock has more than a 25% chance of a price move (up or down) of more than 25% in a month, based on a quantitative assessment of historical data, or in the analyst's view, it is likely to become materially more volatile over the next 1-12 months compared with the past three years. Stocks with less than one year of trading history are automatically rated as more volatile (unless otherwise noted). We note that securities that we do not currently consider "more volatile" can still perform in that manner.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
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