

The Mobile Internet Report

*Key Themes**

December 15, 2009

**This presentation excerpts highlights of the key themes from Morgan Stanley's Mobile Internet Report, published 12/15/09 (available at www.ms.com/techresearch).*

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Morgan Stanley Research – Contributors

US Internet

Mary Meeker	<i>mary.meeker@</i>	(212) 761-8042
Scott Devitt	<i>scott.devitt@</i>	-3365
Liang Wu	<i>liang.wu@</i>	-6320
Colter Van Domelen	<i>colter.van.domelen@</i>	-7678

US Hardware

Katy Huberty	<i>kathryn.huberty@</i>	(212) 761-6249
Mathew Schneider	<i>mathew.schneider@</i>	-3483

US Communications Equipment

Ehud Gelblum	<i>ehud.gelblum@</i>	(212) 761-8564
Avi Silver	<i>avi.silver@</i>	-4226

Japan Internet

Naoshi Nema	<i>naoshi.nema@</i>	+81 3 5424-5320
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EU Communications Equipment

James Dawson	<i>james.dawson@</i>	+44 20 7425-9646
Patrick Standaert	<i>patrick.standaert@</i>	-9290

US Semiconductors

Mark Lipacis	<i>mark.lipacis@</i>	(415) 576-2190
Sanjay Devgan	<i>sanjay.devgan@</i>	-2382

APAC Technology

Jasmine Lu	<i>jasmine.lu@</i>	+852 2239-1348
Bill Lu	<i>bill.lu@</i>	+852 2848-5214
Keon Han	<i>keon.han@</i>	+82 2 399-4933

US Telecom

Simon Flannery	<i>simon.flannery@</i>	(212) 761-6432
Sean Ittel	<i>sean.ittel@</i>	-7220

EU Telecom

Nick Delfas	<i>nick.delfas@</i>	+44 20 7425-6611
Sean Gardiner	<i>sean.gardiner@</i>	+971 4 709-7120

Japan Telecom

Hironori Tanaka	<i>hiro.tanaka@</i>	+81 3 5424-5336
-----------------	---------------------	-----------------

APAC Telecom

Navin Killa	<i>navin.killa@</i>	+852 2848-5422
Vinay Jaising	<i>vinay.jaising@</i>	+91 22 2209-7780
Yvonne Chow	<i>yvonne.chow@</i>	+852 2848-8262

China Internet

Richard Ji	<i>richard.ji@</i>	+852 2848-6926
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US Cable / Media

Benjamin Swinburne	<i>benjamin.swinburne@</i>	(212) 761-7527
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US Software

Adam Holt	<i>adam.holt@</i>	(415) 576-2320
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We acknowledge the contributions of Ravi Lath to this report.

What You are Reading – The Mobile Internet Report Key Themes

Morgan Stanley's global technology and telecom analysts set out to do a deep dive into the rapidly emerging and changing mobile Internet market. We wanted to create a data-rich, theme-based framework for thinking about how the market may develop. We intend to expand and edit the framework as the market evolves. A lot has changed since we published 'The Internet Report' in 1995 on the web (www.ms.com/techresearch). We decided to create most of this report as a PowerPoint presentation and publish it on the web, expecting that bits and pieces of it will be cut / pasted / redistributed and debated / dismissed / lauded. Our goal is to get our thoughts / data into the growing conversation about what may be the biggest technology trend ever, one that may help make us all more informed in ways that are unique to the web circa 2009, and beyond.

We present our thoughts in three ways:

- 1) 'The Mobile Internet Report Setup' – a 92-slide presentation which excerpts highlights of the key themes from the report.
- 2) 'The Mobile Internet Report Key Themes' – a 659-slide presentation which drills down on thoughts covered in 'The Mobile Internet Report.'
- 3) 'The Mobile Internet Report' – a 424-page report which explores 8 major themes in depth and includes the two aforementioned slide presentations + related text.

Each piece is available online at www.ms.com/techresearch

Morgan Stanley

Context

Apple's iPhone / iTouch / iTunes ecosystem may prove to be the fastest-ramping + most disruptive technology product / service launch the world has ever seen.

With Internet + cellular networks at its core, Apple, in effect, has empowered tens of millions (and growing rapidly) consumers with cloud-based devices that allow them to easily do "remote-controlly" type things in real time that have been in the imaginations of science fiction writers for decades.

Consumers love Apple's products and are voting with their time and money.

It's a rare business that doesn't need to take note of what Apple + consumers are doing and determine how to adapt to the mobile Internet over the coming decade.

Key Mobile Internet Themes

- 1) **Wealth Creation / Destruction is Material in New Computing Cycles – Now in Early Innings of Mobile Internet Cycle, the 5th Cycle of Last Half Century.**
- 2) **Mobile Ramping Faster than Desktop Internet Did and Will Be Bigger Than Most Think – 5 Trends Converging (3G + Social Networking + Video + VoIP + Impressive Mobile Devices).**
- 3) **Apple Leading in Mobile Innovation + Impact, for Now – Depth of App Ecosystems + User Experience + Pricing Will Likely Determine Long-Term Winners.**
- 4) **Game-Changing Communications / Commerce Platforms (Social Networking + Mobile) Emerging Very Rapidly.**
- 5) **Growth / Monetization Roadmaps Provided by Japan Mobile + Desktop Internet.**
- 6) **Massive Data Growth Driving Carrier / Equipment Transitions.**
- 7) **Compelling Opportunities in Emerging Markets.**
- 8) **Regulators Can Help Advance / Slow Mobile Internet Evolution.**

Key Mobile Internet Themes...

- 1) Wealth Creation / Destruction Is Material in New Computing Cycles – Now in Early Innings of Mobile Internet Cycle, the 5th Cycle of Last Half Century**
– History proves that massive technology changes typically shift dynamics between incumbents / attackers creating winners / losers. A handful of incumbents (like Apple, Google, Amazon.com and Skype) appear especially well positioned for mobile changes.
- 2) Mobile Ramping Faster than Desktop Internet Did and Will Be Bigger Than Most Think – 5 Trends Converging (3G + Social Networking + Video + VoIP + Impressive Mobile Devices)**
– The explosive Apple iPhone / iTouch ramp shows us that usage of mobile devices on IP-based networks should surprise to the upside for years to come. 3G adoption is hitting inflection points across many markets, enabling consumers to engage in a broad range of IP-based usage models (social networking / VoIP / video) via powerful mobile Internet-enabled devices. We predict Smartphones will out-ship the global notebook + netbook market in 2010E and out-ship the global PC market (notebook + netbook + desktop) by 2012E.

...Key Mobile Internet Themes...

- 3) **Apple Leading in Mobile Innovation + Impact, for Now – Depth of App Ecosystems + User Experience + Pricing Will Likely Determine Long-Term Winners** – Near term, Apple is driving the platform change to mobile computing and leading in user experience. Its mobile ecosystem (iPhone + iTouch + iTunes + accessories + services) market share / impact should surprise on the upside for at least the next 1-2 years. Longer term, Google Android's open / free operating system (combined with clever device manufacturers), emerging markets competition, and carrier limitations may pose challenges to Apple's market share upside. RIM may maintain enterprise lead, owing to installed base, but long-term outlook is challenged.

...Key Mobile Internet Themes...

- 4) Game-Changing Communications / Commerce Platforms (Social Networking + Mobile) Emerging Very Rapidly** – Improvements in social networking and mobile computing platforms (led by Facebook + Apple ecosystems) are fundamentally changing the ways people communicate with each other and the ways developers / advertisers / vendors can reach consumers. Mobile devices are evolving as remote controls for continually expanding types of real-time, cloud-based services – including emerging location-based services – creating opportunities + dislocations, empowering consumers in unprecedented + transformative ways.
- 5) Growth / Monetization Roadmaps Provided by Japan Mobile + Desktop Internet** – Mobile Internet development in Japan and desktop Internet business models indicate significant runways for mobile online commerce / paid services / advertising monetization; data access likely will continue to lose relative revenue share in the mobile Internet ecosystem.

...Key Mobile Internet Themes

- 6) **Massive Data Growth Driving Carrier / Equipment Transitions** – Global mobile IP traffic likely to grow 66x by 2013E (with 130% CAGR), per Cisco. Increasing 3G / smartphone penetration + emerging usage models (such as video / audio streaming) will stress carrier wireless networks. Carriers may be able to address the surge via capacity upgrade + offloading. Ultimately, they need to compete on strength of their macro networks + availability of Wi-Fi. Scale in mobile market share / full network sharing agreements / co-operation with fixed / Wi-Fi providers will be key. Pricing decisions will be driven by competitive pressure and will need to take account of potential for VoIP to erode voice revenue. Tiered data pricing (speed, quantity) will likely be critical to growing revenue long-term.

...Key Mobile Internet Themes

- 7) **Compelling Opportunities in Emerging Markets** – Emerging markets have enormous potential for mobile Internet user growth owing to low fixed-line telephone / broadband penetration + already vibrant mobile value-added services. But near-term adoption / usage catalysts are missing and 3G inflection points may be 2-3 years away.
- 8) **Regulators Can Help Advance / Slow Mobile Internet Evolution** – Inherent conflicts between wants / needs of consumers vs. incumbent TMT providers rising, creating challenges for regulators.

Key Theme #1

Key Theme #1

- 1) Wealth Creation / Destruction is Material in New Computing Cycles – Now in Early Innings of Mobile Internet Cycle, the 5th Cycle of Last Half Century.**
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Key Theme #1 – Wealth Creation / Destruction Is Material in New Computing Cycles – Now in Early Innings of Mobile Internet Cycle, the 5th Cycle of Last Half Century

History proves that massive technology changes typically shift dynamics between incumbents / attackers. A handful of incumbents (like Apple, Google, Amazon.com and Skype) appear especially well positioned for mobile changes.

If past is prologue, the impact of the mobile Internet will be bigger than the impact of desktop Internet...and personal computer...and minicomputer...and mainframe...

Paul Saffo Opined About the Internet in 1995 - Here We Are 14 Years Later

*It's a very consistent pattern in this business that collectively as a society and as individuals we all suffer from what I call macro-myopia. A pattern where our hopes and our expectations or our fears about the threatened impact of some new technology causes us to overestimate its short-term impacts and reality always fails to meet those inflated expectations. And as a result our disappointment then leads us to turn around and underestimate the long-term implications and I can guarantee you this time will be no different. **The short-term impact of this stuff [the Internet] will be less than the hype would suggest but the long-term implications will be vastly larger than we can possibly imagine today.***

- Paul Saffo, 6/12/1995

Wealth Creation / Destruction Is Material in New Computing Cycles –

*Winners of each new cycle often create more market capitalization than winners of prior cycles...
some companies adapt...but most prior winners fail to
‘Cross the Chasm’ between cycles*

Note: ‘Crossing the Chasm’ refers to a company’s ability to transition from early adoption of a technology to the mainstream market (Chasm 1.0) or from a legacy business model to a disruptive business model (Chasm 2.0). In this theme, companies that ‘crossed the chasm’ were able to bring disruptive technologies to the mass market and adapt to changes in market structure by introducing innovative business models. Source: Geoffrey Moore, “Crossing the Chasm”.

Technology Cycles - Wealth Creation / Destruction

New Companies Often Win Big in New Cycles While Incumbents Often Falter

**Mainframe
Computing
1960s**

New Winners

IBM
NCR
Control Data
Sperry
Honeywell
Burroughs

**Mini
Computing
1970s**

New Winners

Digital Equipment
Data General
HP
Prime
Computervision
Wang Labs

**Personal
Computing
1980s**

New Winners

Microsoft
Cisco
Intel
Apple
Oracle
EMC
Dell
Compaq

**Desktop Internet
Computing
1990s**

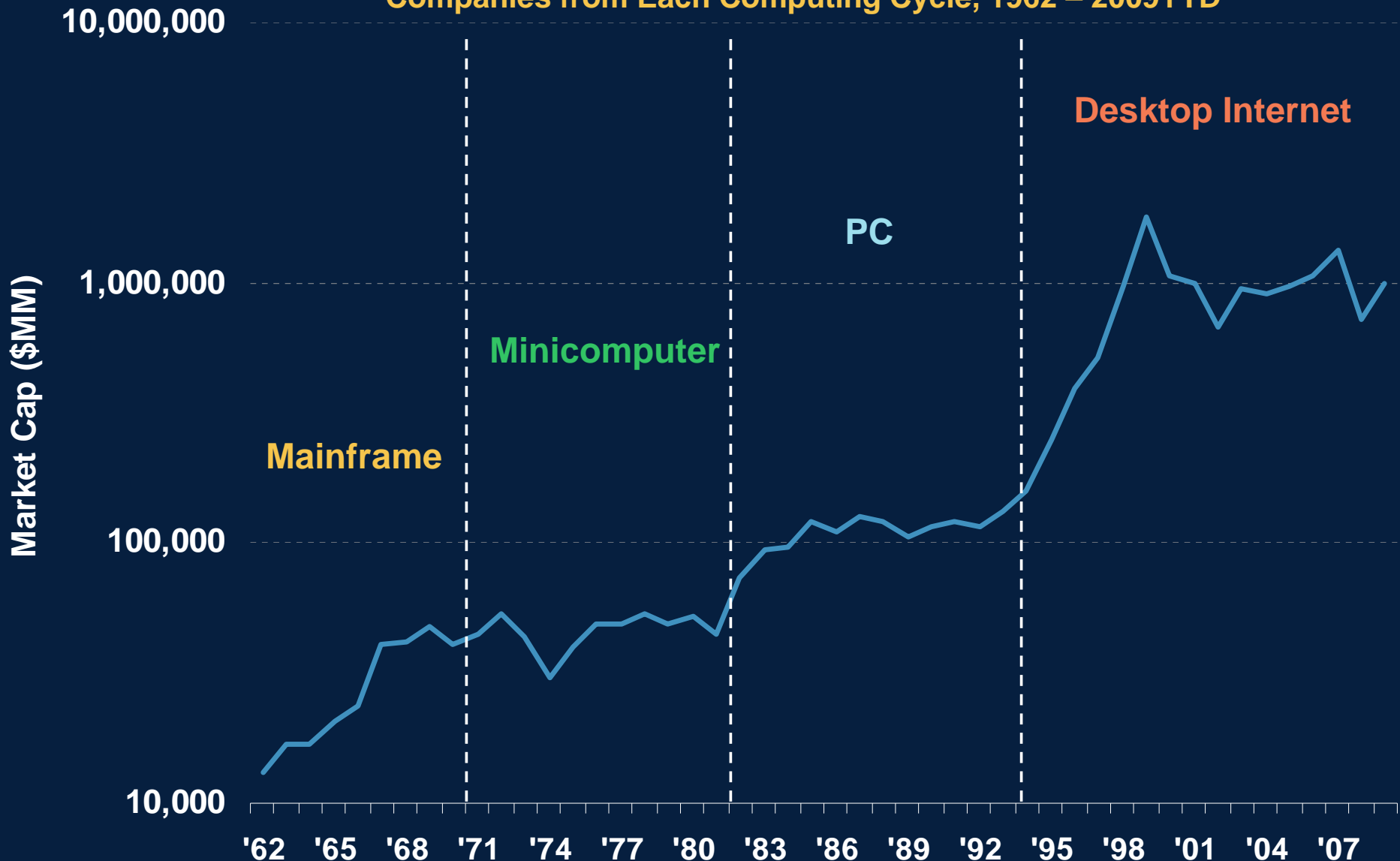
New Winners

Google
AOL
eBay
Yahoo!
Yahoo! Japan
Amazon.com
Tencent
Alibaba
Baidu
Rakuten

**Mobile Internet
Computing
2000s**

Winners of Each New Cycle Often Create More Market Capitalization than Winners of Prior Cycles

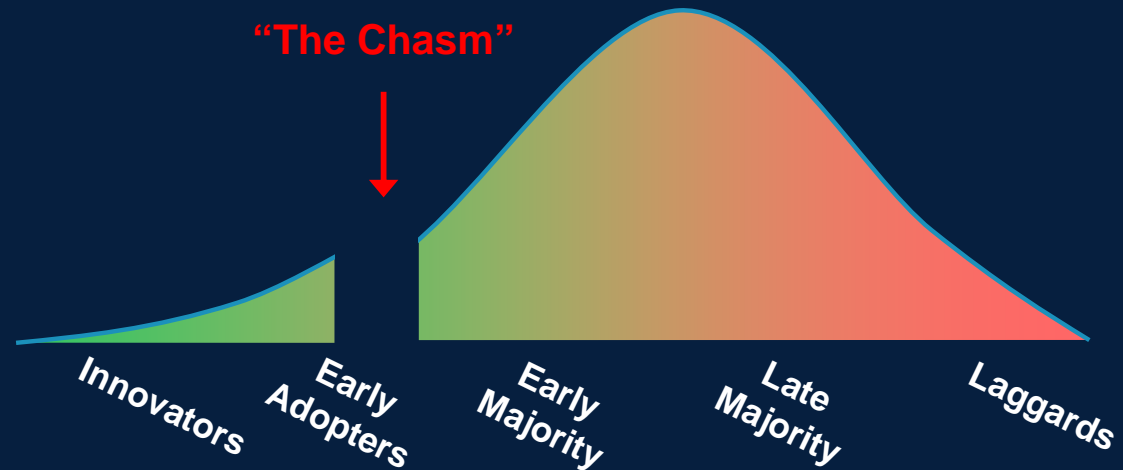
Cumulative Market Capitalization of Top 5 Computing Companies from Each Computing Cycle, 1962 – 2009YTD



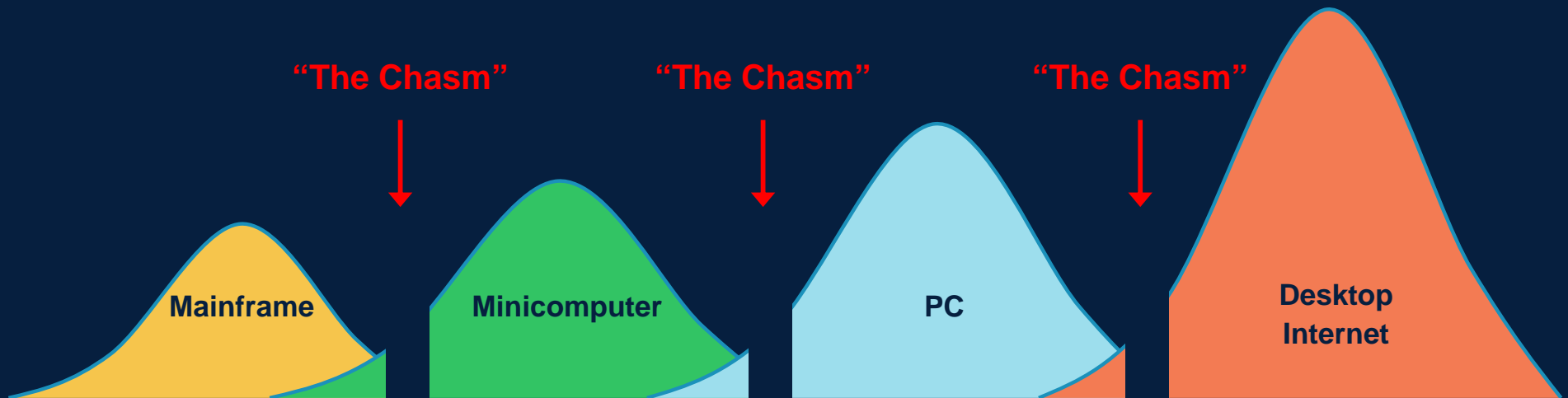
Note: Dashed lines indicate when new cycle becomes wealth creation driver (in reality, cycles overlap somewhat). Companies include: Mainframe – IBM, Sperry, Honeywell, NCR, Unisys; Minicomputer – IBM, Honeywell, HP, DEC, Wang Labs; PC – IBM, Microsoft, Intel, Cisco, Sun Microsystems; Internet – IBM, Microsoft, Google, Apple, Yahoo!. Source: FactSet, Bloomberg, S&P Stock Guide, Morgan Stanley Research.

Winners of Each New Cycle Often Create More Market Capitalization than Winners of Prior Cycles

Geoffrey Moore's "Revised Technology Adoption Life Cycle"

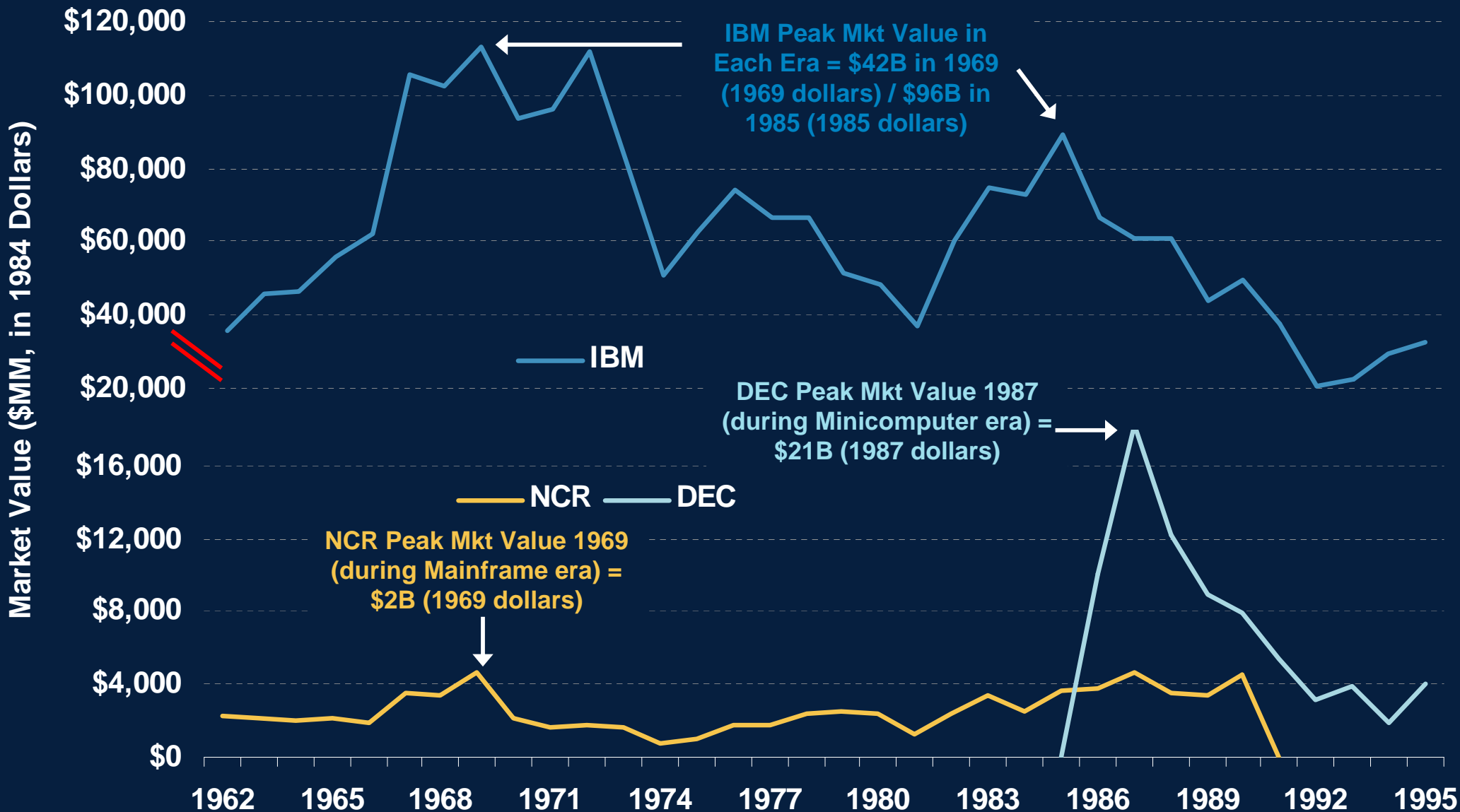


Morgan Stanley's "Computing Technology Adoption Life Cycle"



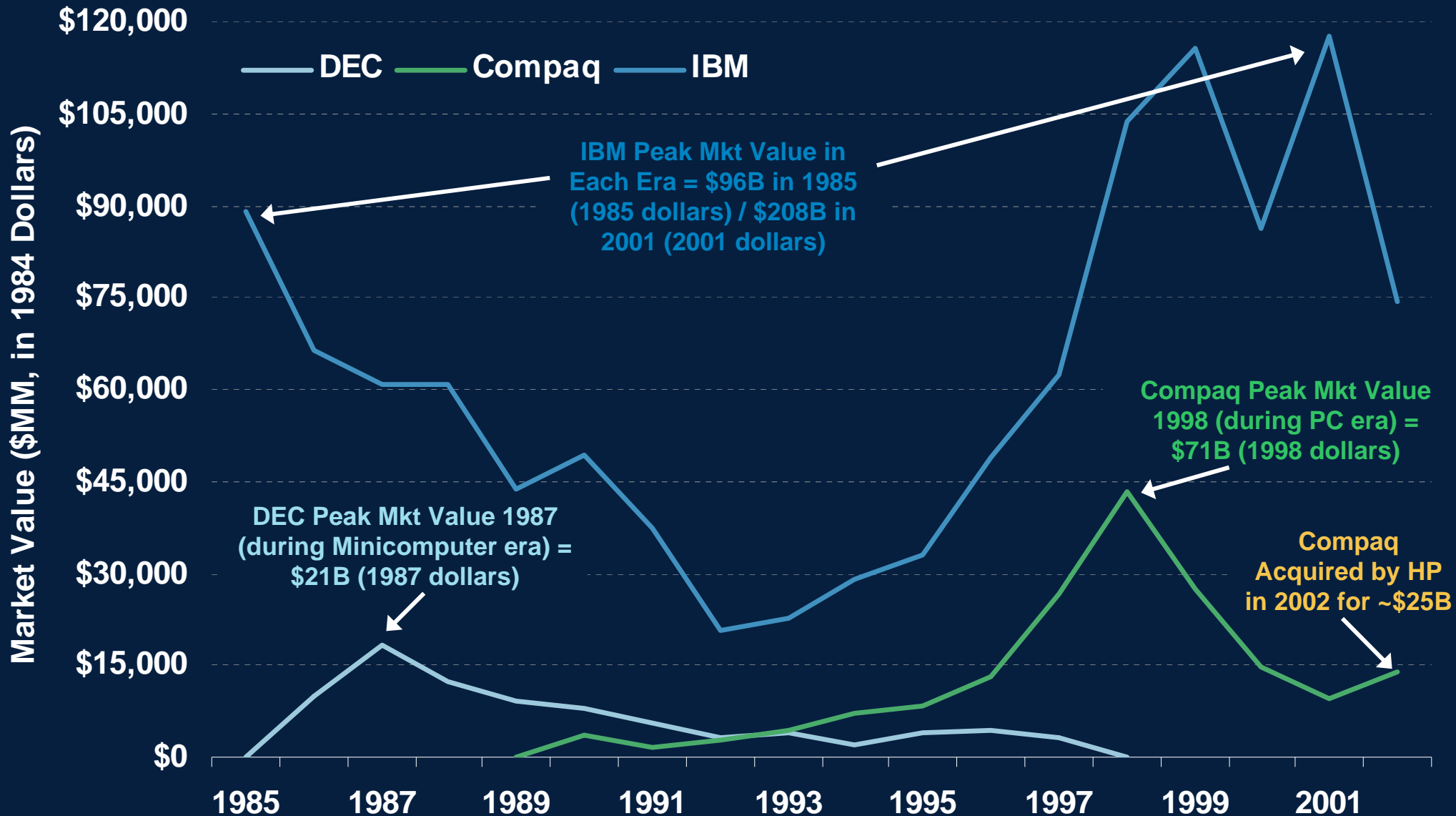
NCR Won Big in Mainframe Era, DEC Won Big in Minicomputer Era, IBM Crossed Chasm

Mainframe to Minicomputer Technology Cycle –
Market Value of NCR / DEC / IBM, 1962-1995



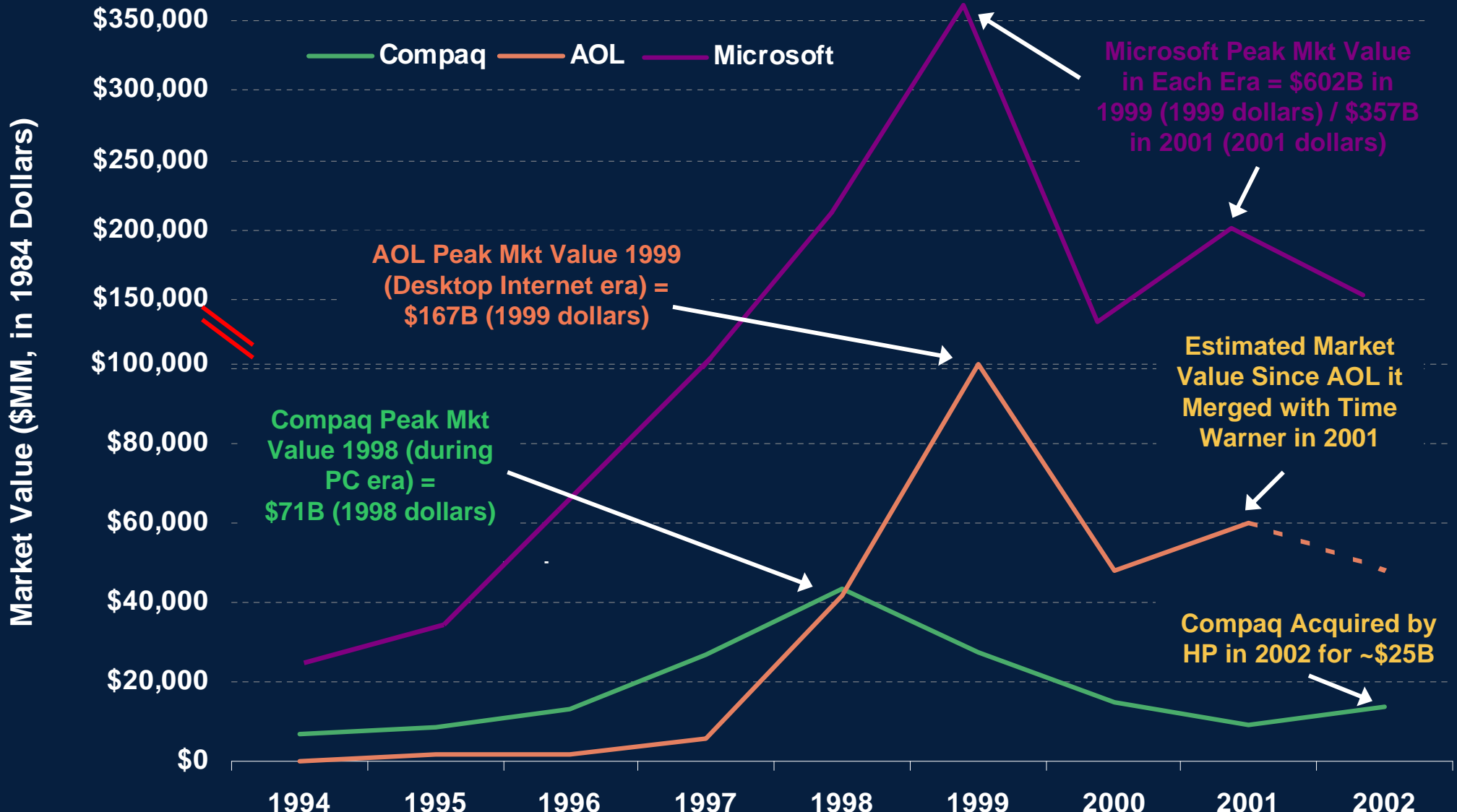
DEC Won Big in Minicomputer Era, Compaq + Microsoft Won Big in PC Era, IBM Crossed Chasm

Minicomputer to PC Technology Cycle –
Market Value of DEC / Compaq / IBM, 1985 - 2002



Compaq + Microsoft Won Big in PC Era, AOL + Microsoft Won Big in Desktop Internet Era (Part 1), Microsoft Crossed Chasm

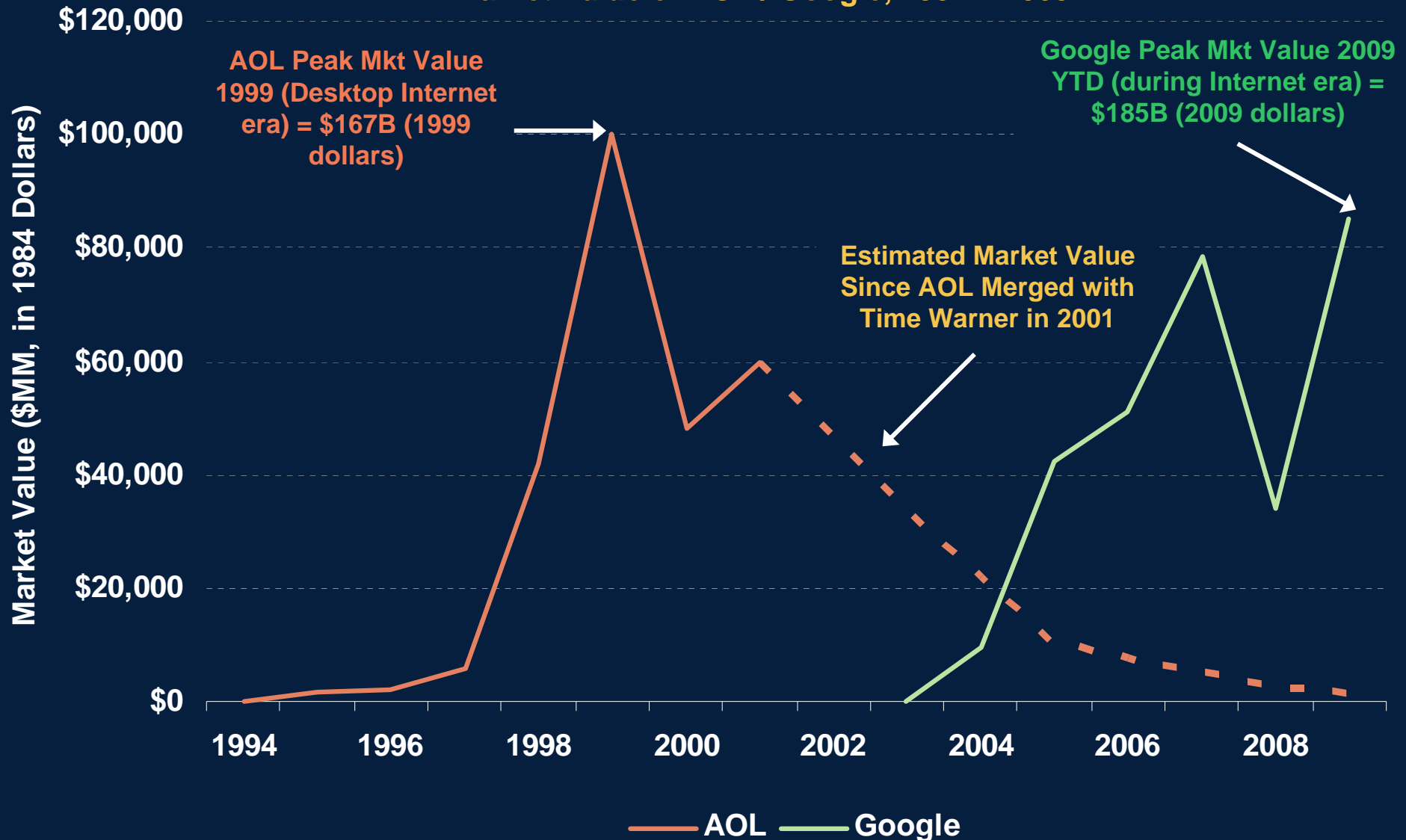
PC to Desktop Internet Technology Cycle, Part 1 –
Market Value of Compaq / AOL / Microsoft, 1994 - 2002



Note: AOL estimated market value after it merged with Time Warner (\$106B deal) in 2001 is based on Google's purchase of 1% in 12/05 (valued AOL at \$20B), Google's write-down in 1/09 (valued AOL at ~\$5B), and current market cap of \$2.49B as of 12/10/09. Inflation adjustments made using CPI, normalized with 1984 dollars = 1.0. Market cap figures taken from last trading day of the given year. Source: FactSet, Bloomberg, S&P Stock Guide, Morgan Stanley Research.

AOL Won Big in Desktop Internet Era (Part 1), Google Won Big in Desktop Internet Era (Part 2)

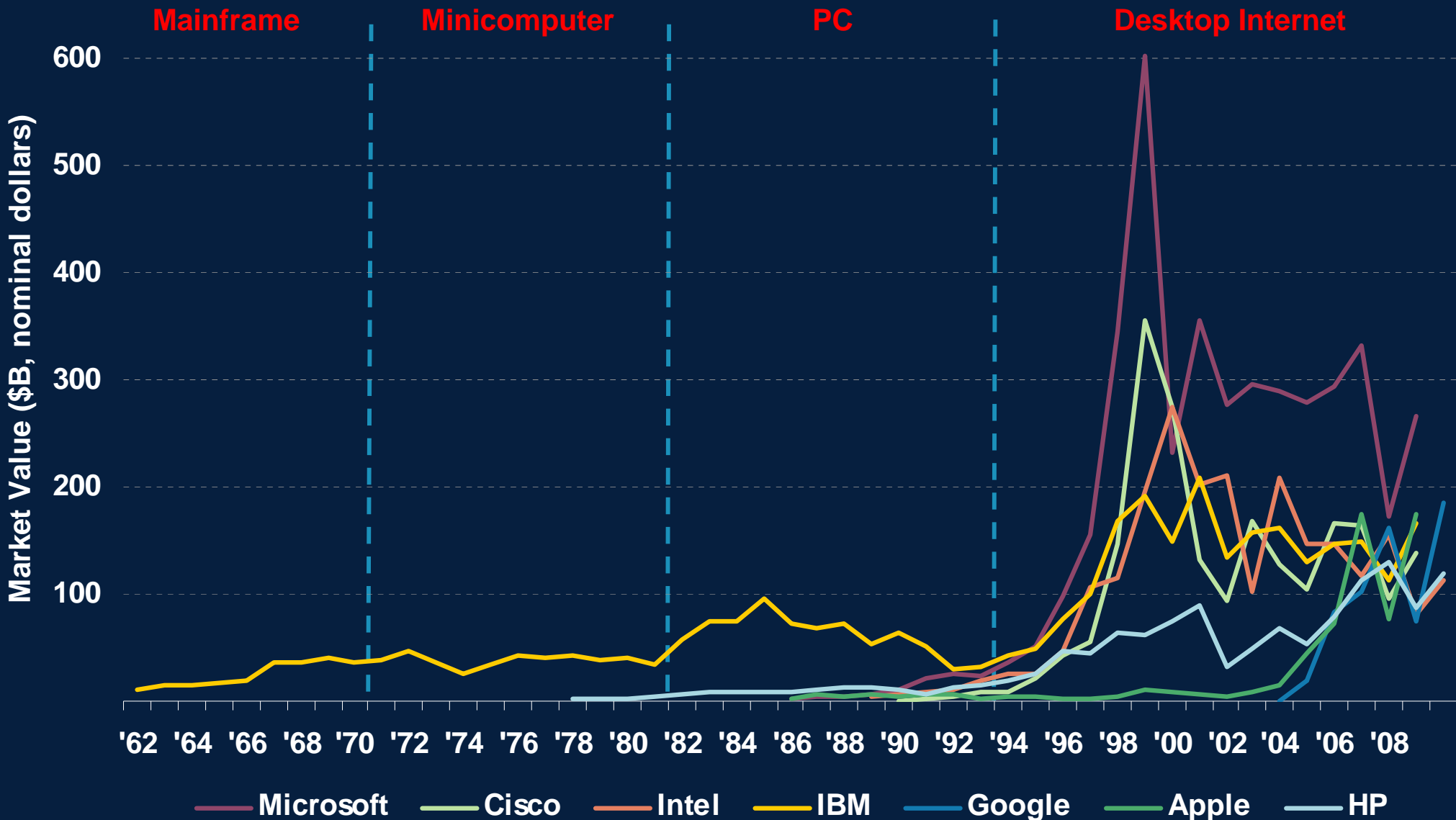
PC to Desktop Internet Technology Cycle, Part 2 –
Market Value of AOL / Google, 1994 – 2009 YTD



Note: AOL estimated market value after it merged with Time Warner (\$106B deal) in 2001 is based on Google's purchase of 1% in 12/05 (valued AOL at \$20B), Google's write-down in 1/09 (valued AOL at ~\$5B), and current market cap of \$2.49B as of 12/10/09. Inflation adjustments made using CPI, normalized with 1984 dollars = 1.0. Market cap figures taken from last trading day of the given year. Source: FactSet, Bloomberg, S&P Stock Guide, Morgan Stanley Research.

Net, New Computing Cycles Create / Destroy Wealth Though Some Players Able to Adapt & Create Superior Value as Cycles Change

Market Value of IBM / HP / Intel / Microsoft / Cisco / Apple / Google, 1962-2009YTD



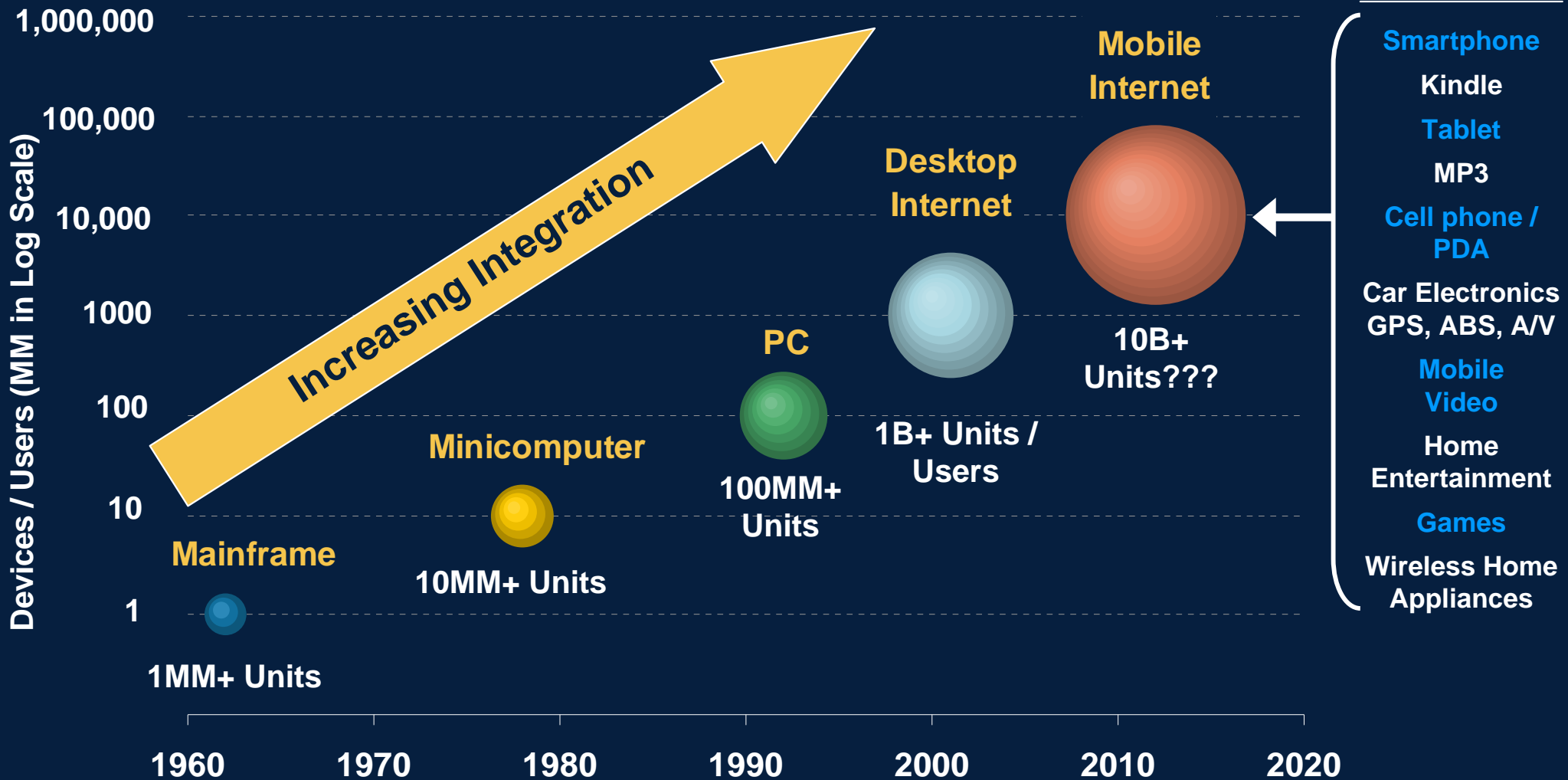
History suggests the mobile Internet has potential to create / destroy more wealth than prior computing cycles based on 10x user multiplier effect (from cycle to cycle, the number of users / units increases tenfold).

Regarding pace of change, more users will likely connect to the Internet via mobile devices than desktop PCs within 5 years.

New Computing Cycle Characteristics

Reduce Usage Friction Via Better Processing Power + Improved User Interface +
Smaller Form Factor + Lower Prices + Expanded Services = 10x More Devices

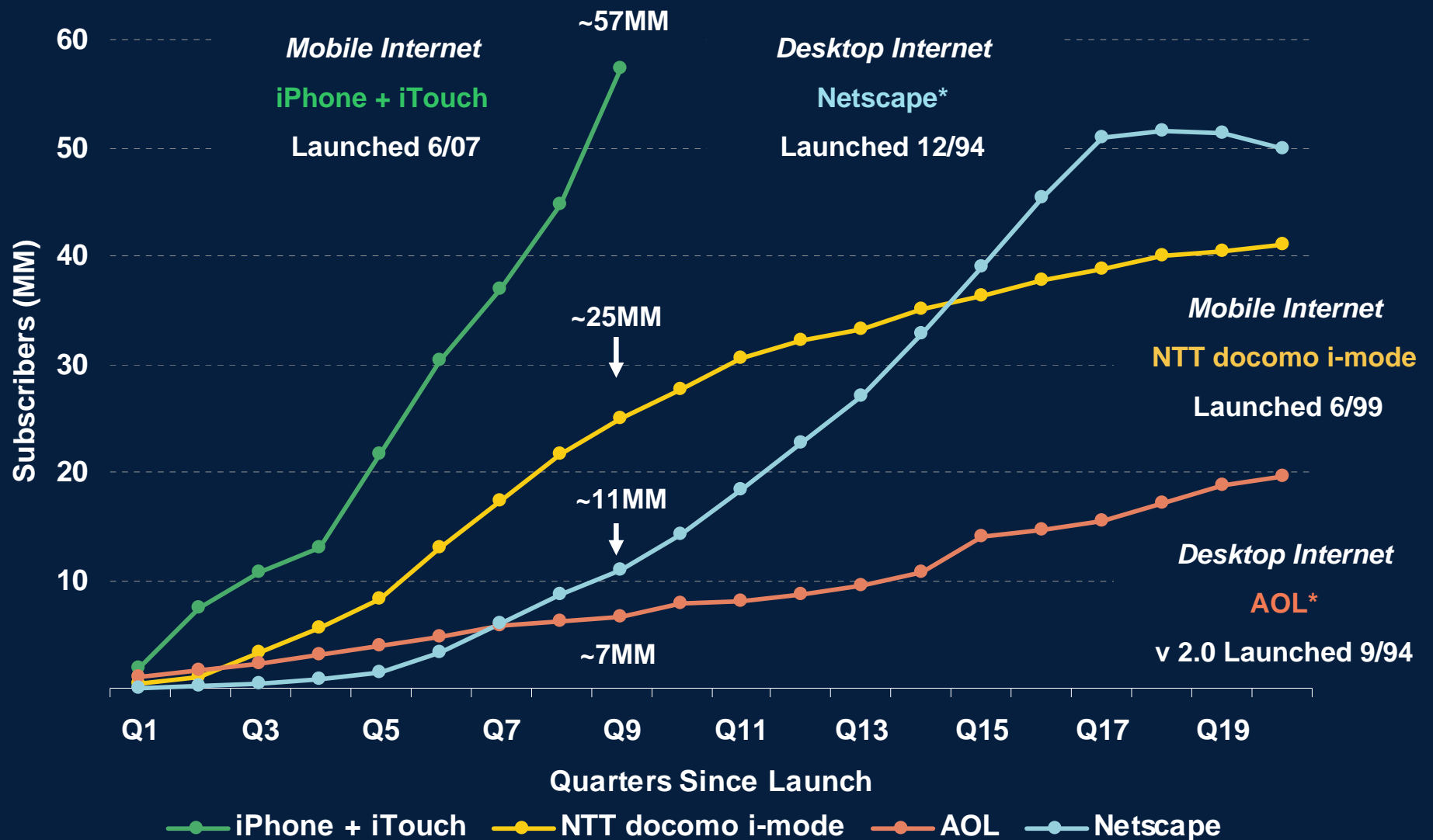
Computing Growth Drivers Over Time, 1960 – 2020E



Mobile Internet Outpaces Desktop Internet Adoption

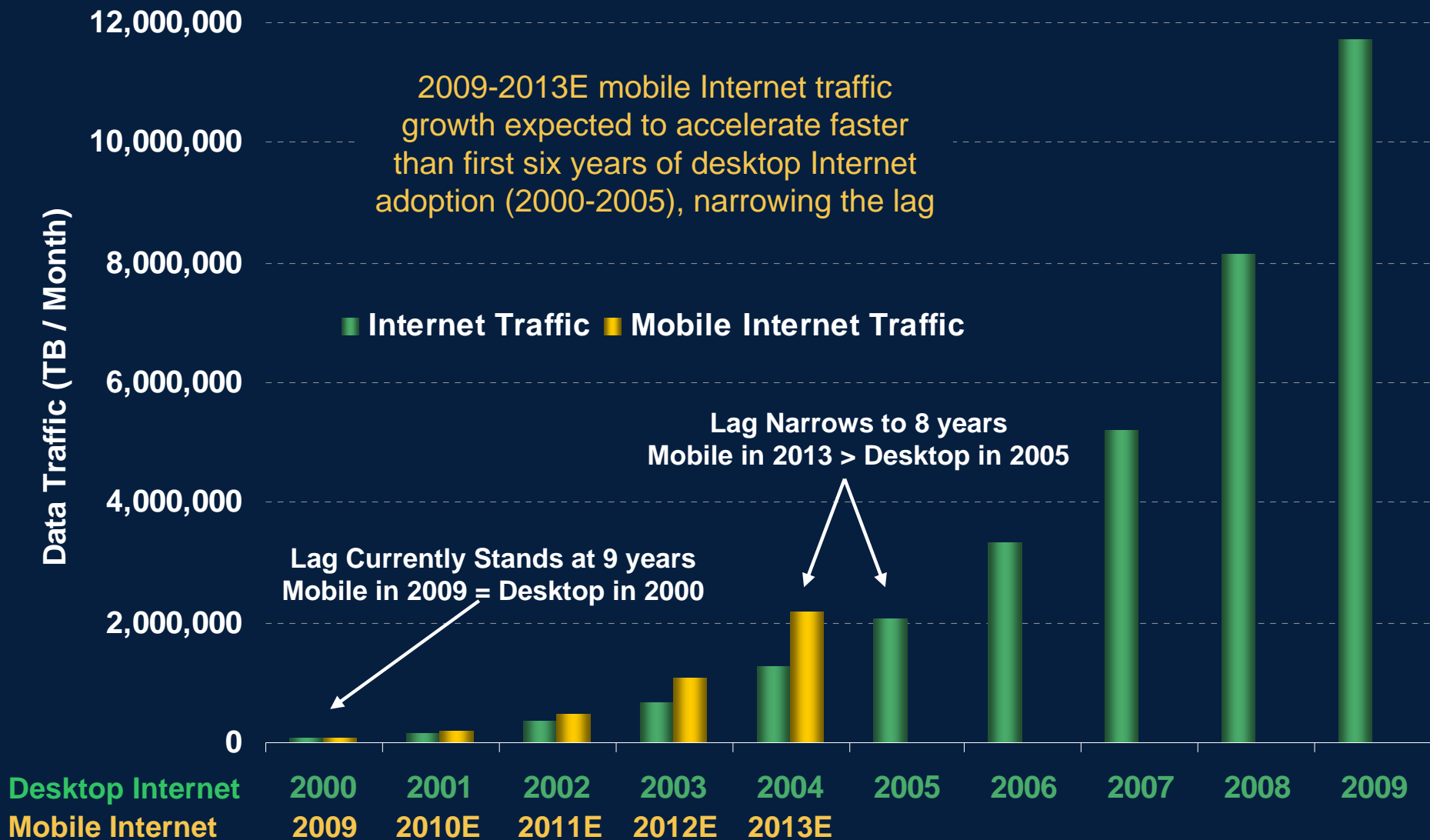
iPhone + iTouch Users = 8x AOL Users 9 Quarters After Launch

iPhone + iTouch vs. NTT docomo i-mode vs. AOL vs. Netscape Users
First 20 Quarters Since Launch



Mobile Internet Traffic Lags Desktop by ~9 Years, Gap Expected to Narrow

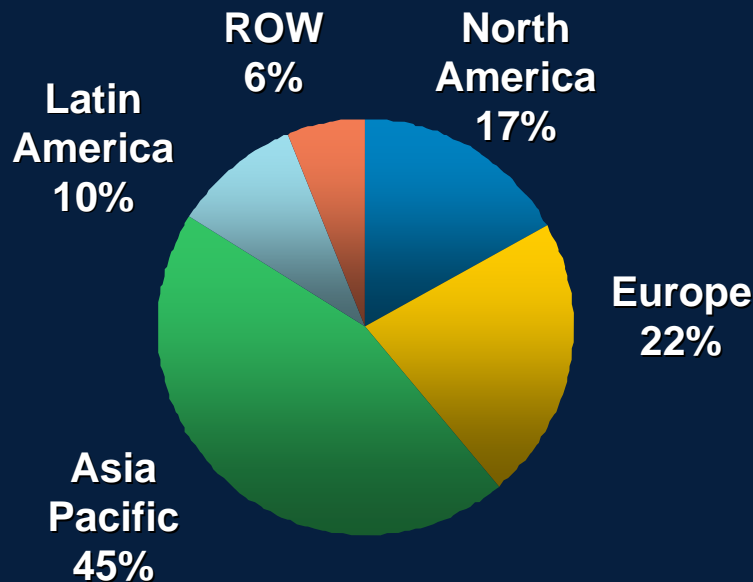
Desktop Internet Traffic Growth, 2000 – 2009 vs. Mobile Traffic Growth 2009 – 2013E



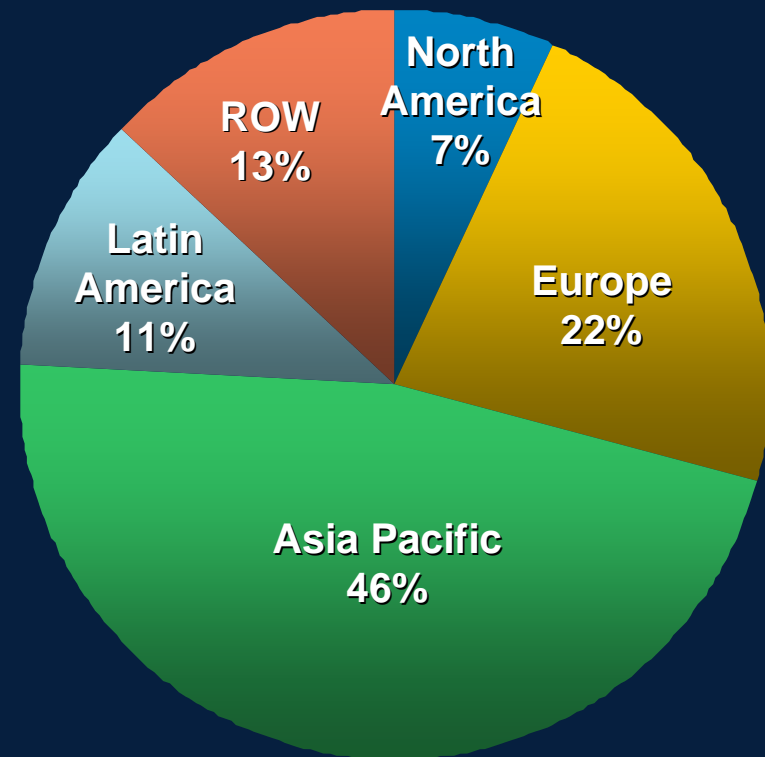
Mobile Internet Market Will Be at Least 2x Size of Desktop Internet, Based on Simple Math Comparing Internet Users with Mobile Subscribers

- Global mobile subscribers exceed Internet users by > 2x
- As mobile Internet usage penetration increases, we expect mobile subscriber and Internet user figures to converge
- Smartphone users may rise 3x over 5 years – to ~1B, up from 288MM in 2008E

**Internet Users – 1.6B
2008**



**Mobile Subscribers – 4.1B
2008**



Pace of company change related to mobile Internet is evolving at a very rapid clip

Rapid Pace of Corporate 'Announcements' Related to Mobile Internet

Date Important Announcements in the Mobile Industry

12/02/09	Intel releases software developer kit for its netbook app store
11/06/09	Motorola Droid launches on Verizon, running the Android 2.0 OS
10/06/09	AT&T announces that it will allow VoIP apps on the iPhone
10/06/09	Verizon and Google announce strategic partnership to bring Android phones to Verizon network.
9/28/09	Apple's App Store downloads top two billion.
9/21/09	FCC Chairman Julius Genachowski outlines a proposal for Net Neutrality rules.
9/10/09	Motorola announces first Android-powered smartphone with MotoBlur customization.
7/27/09	Google Voice app blocked from the iPhone App Store.
6/22/09	Apple sold over one million iPhone 3GS models within 3 days of global launch.
2/17/09	Nokia to bundle Skype on its high-end N-series smartphones.
2/16/09	Nokia announces Ovi Store for mobile application / content downloads.
1/08/09	Palm announces Palm Pre, based on the brand-new WebOS operating system.
12/05/08	3 UK launches INQ1, the world's first social networking phone, with 50,000 pre-registration
10/01/08	Apple drops the non-disclosure agreement (NDA) for iPhone application developers.
9/30/08	Nokia to acquire leading consumer email and instant messaging provider OZ Communications.
9/24/08	Google, T-Mobile and HTC launch G1, the first phone based on Google's Android open mobile platform.
7/11/08	Apple and AT&T launch iPhone 3G in the U.S.
6/24/08	Nokia acquires Symbian Limited and establishes the Symbian Foundation.
5/12/08	RIM, RBC and Thomson Reuters launches a \$150MM BlackBerry Partner Fund focused on developing mobile applications.
5/08/08	Apple, KPCB launches \$100MM iFund venture capital pool to support iPhone / iPod Touch application development.

Rapid Pace of Corporate M&A Related to Mobile Internet

Mobile Internet M&A Timeline – Past 4 Months



9/1 Private equity syndicate purchased Skype (VoIP) for \$2.75B



9/24 Computer Associates (IT management software + services) acquired Net QoS (network performance management software + services) for \$200MM



10/20 Loopt (mobile / location-based social networking) acquired GraffitiGeo (mobile social networking + gaming) for undisclosed sum



10/22 Tellabs, a telecom equipment maker acquired WiChorus, a mobile Internet equipment maker for \$165MM



11/23 Ciena (networking software + services) won auction for Nortel's Metro Ethernet Networks business (optical + carrier Ethernet) with \$769MM bid



8/10 VMware (virtualization) acquired SpringSource (cloud computing platform for Java developers) for \$420MM



9/15 Nokia's NAVTEQ (mobile mapping and advertising) acquired Acuity Mobile (location-based mobile advertising) for undisclosed sum



10/13 Cisco (networking equipment and services) acquired Starent (mobile infrastructure) for \$2.9B



10/21 Equinix (data center services) acquired Switch & Data (data center and Internet exchange services) for \$689MM



11/9 Google (online search + advertising / mobile OS) acquired AdMob (mobile advertising marketplace) for \$750MM

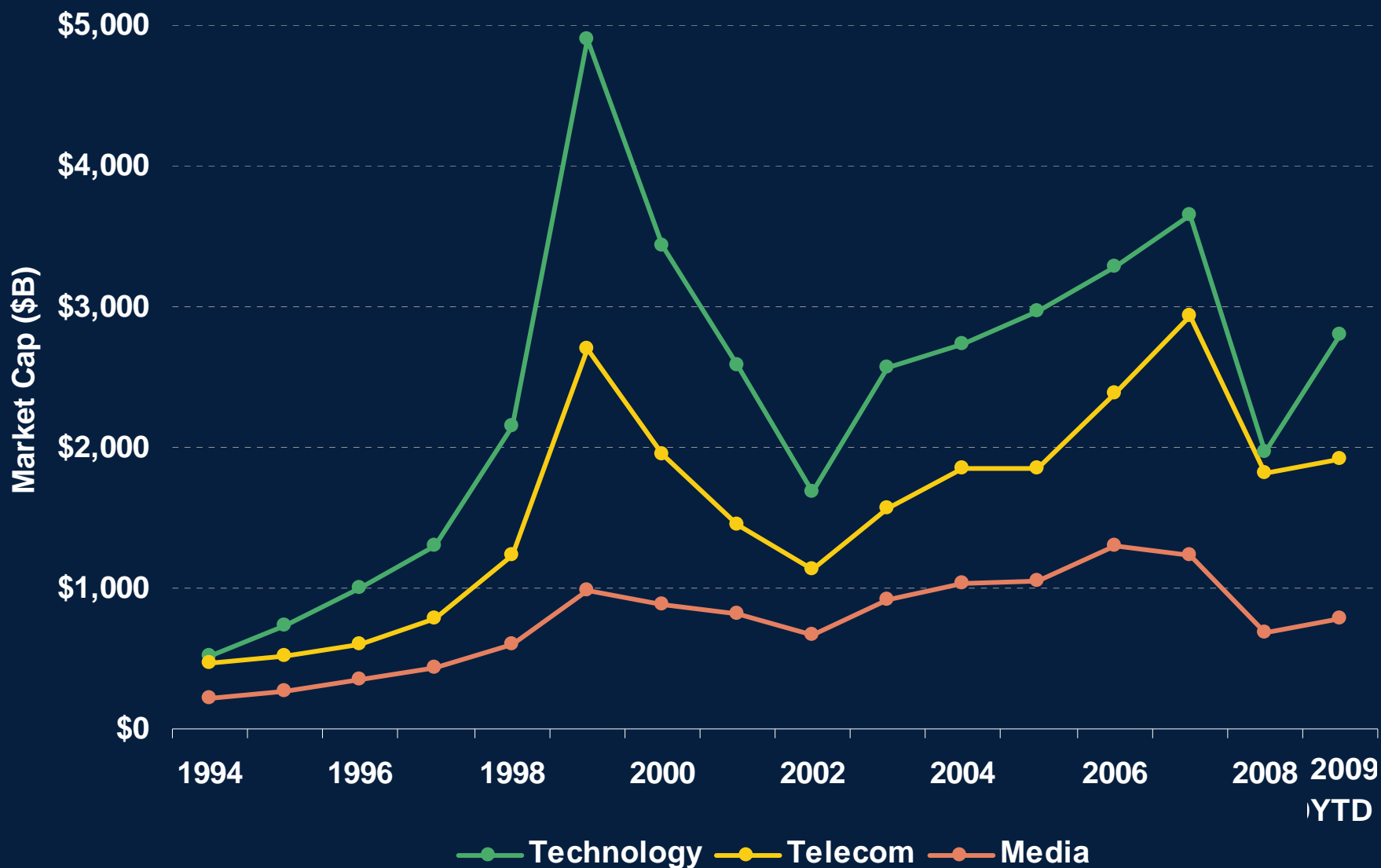


While many telecoms did quite well over past 15 years, technology companies created more wealth than telecom & media companies over past 15 years as global desktop Internet + voice / texting mobile markets developed –

Technology companies may once again garner outsized relative gains as the mobile Internet market develops and a large portion of incremental profits go to the companies that drive innovation and gain scale

Technology Companies Created > Wealth than Telecom & Media Companies as Global Desktop Internet + Voice / Texting Mobile Markets Developed

Global Technology / Media / Telecom Companies Market Value, 1994 – 2009YTD



TMT Wealth Creation Over Past 15 Years Driven by Internet (Microsoft + Google + Apple + Cisco...) & Wireless (China Mobile + Telefonica + AT&T + Vodafone...)

Technology

Telecom

Media

Rank	Company	Market Value		Company	Market Value		Company	Market Value	
		Change (\$B) Since 12/30/1994	Current Market Value (\$B)		Change (\$B) Since 12/30/1994	Current Market Value (\$B)		Change (\$B) Since 12/30/1994	Current Market Value (\$B)
1	Microsoft	\$232	\$267	China Mobile	\$189	\$189	Comcast	\$39	\$46
2	Google	\$185	\$185	AT&T	\$138	\$163	Vivendi	\$37	\$37
3	Apple	\$169	\$174	Telefonica	\$137	\$137	Time Warner	\$36	\$37
4	Cisco	\$130	\$139	Vodafone	\$121	\$121	Walt Disney	\$32	\$56
5	IBM	\$123	\$167	Verizon	\$72	\$93	News Corp	\$22	\$32
6	Oracle	\$102	\$114	France Telecom	\$70	\$70	DirectTV	\$20	\$31
7	Samsung	\$98	\$98	Deutsche Telekom	\$68	\$68	Thomson Reuters	\$20	\$27
8	HP	\$93	\$119	NTT	\$67	\$67	Viacom	\$18	\$18
9	Intel	\$86	\$113	NTT docomo	\$64	\$64	BSkyB	\$16	\$16
10	Qualcomm	\$74	\$75	America Movil	\$49	\$49	Time Warner Cable	\$15	\$15
11	Amazon.com	\$60	\$60	Telstra	\$39	\$39	WPP Group	\$12	\$12
12	SAP	\$56	\$56	Singtel	\$34	\$34	Pearson	\$11	\$11
13	Canon	\$56	\$56	TeliaSonera	\$33	\$33	Omnicom	\$10	\$11
14	TSMC	\$50	\$50	KPN	\$30	\$30	DISH Network	\$9	\$9
15	Nokia	\$47	\$47	MTN	\$29	\$29	Reed Elsevier	\$9	\$9
Total		\$1,561	\$1,721		\$1,139	\$1,186		\$307	\$368

Top Internet-Related Tech Wealth Creators Over Past 15 Years Did Quite Well

- **Microsoft** (+\$232B in market cap created) – benefitted from selling PC operating system (Windows) as Internet usage drove growth in PC usage.
- **Google** (+\$185B) – benefitted from providing front-end tool (search engine) to access Internet and selling ads related to searches.
- **Apple** (+\$169B) – benefitted from selling easy-to-use wireless Internet access devices including Macintosh computers + iTouch / iPhone mobile devices + digital products / services (via iTunes store) in addition to iPod entertainment devices.
- **Cisco** (+\$130B) – benefitted from selling connectivity products (switches / routers) and networking services to enterprises and Internet infrastructure providers and from acquisitions of parallel businesses.

Top Wireless-Related Telecom Wealth Creators Over Past 15 Years Did Quite Well

- **China Mobile** (+\$189B in market cap created) – benefitted from selling handsets / mobile services to China’s increasingly affluent citizens.
- **AT&T** (+\$138B) – benefitted from selling handsets / mobile services to an increasingly data-centric USA subscriber basis and iPhone exclusivity.
- **Telefonica** (+\$137B) – benefitted from selling handsets / mobile services to a developed Spanish market and emerging Latin American markets.
- **Vodafone** (+\$121B) – benefitted from selling handsets / mobile services to the world’s second largest subscriber base in developed and emerging markets (including India, South Africa, Turkey, and Egypt)

*We Know What Happened Over Past 15 Years,
Who Wins Big Over Next 5+ Years as Internet Meets
Mobile?*

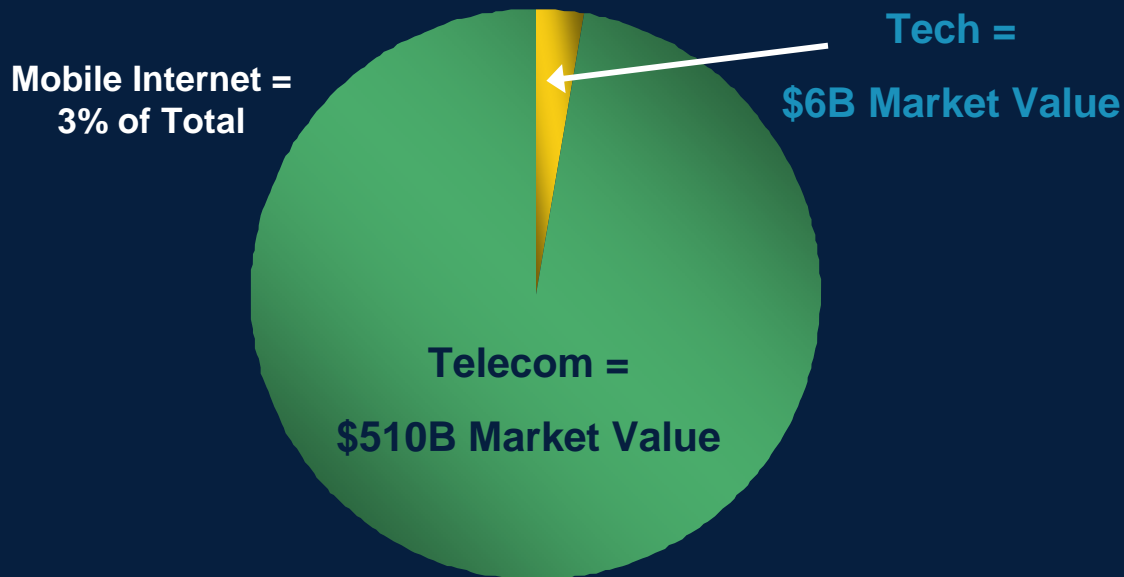
*We know execution is key and it's extremely difficult to
predict human error...*

Japan as Proxy for Technology's Role as Relative Wealth Creator of Mobile Internet Era?

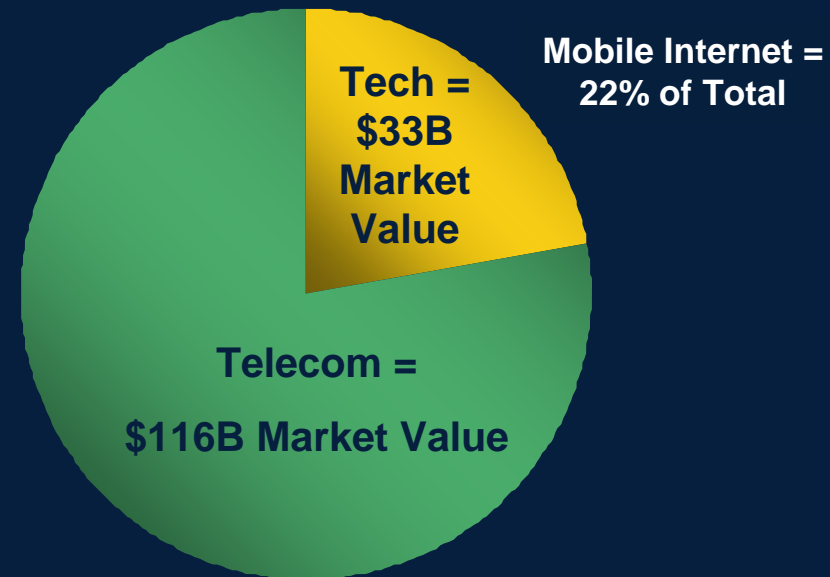
- Telecom lost relative market value to online commerce / paid services / advertising companies as mobile Internet became mainstream
- Japan's mobile Internet companies, including Yahoo! Japan (advertising), Rakuten (online commerce), DeNA / Mixi / Gree (advertising + virtual goods) have grown to \$33B in market value, up from \$6B in 2000 and account for 22% of total market value of the mobile Internet ecosystem.
- Japan's wireless telecom industry (including NTT docomo, KDDI and SoftBank) has experienced a market value decline from \$510B in 2000 (97% of mobile Internet ecosystem) to \$116B in 2009 YTD (78% of mobile Internet ecosystem).

Japan Internet & Wireless Telecom Companies' Market Value Share, 2000 + 2009 YTD

2000 - Telecom Dominates Early Mobile Internet Market Value Creation



2009 YTD - Tech Taking Share in New Rounds of Wealth Creation

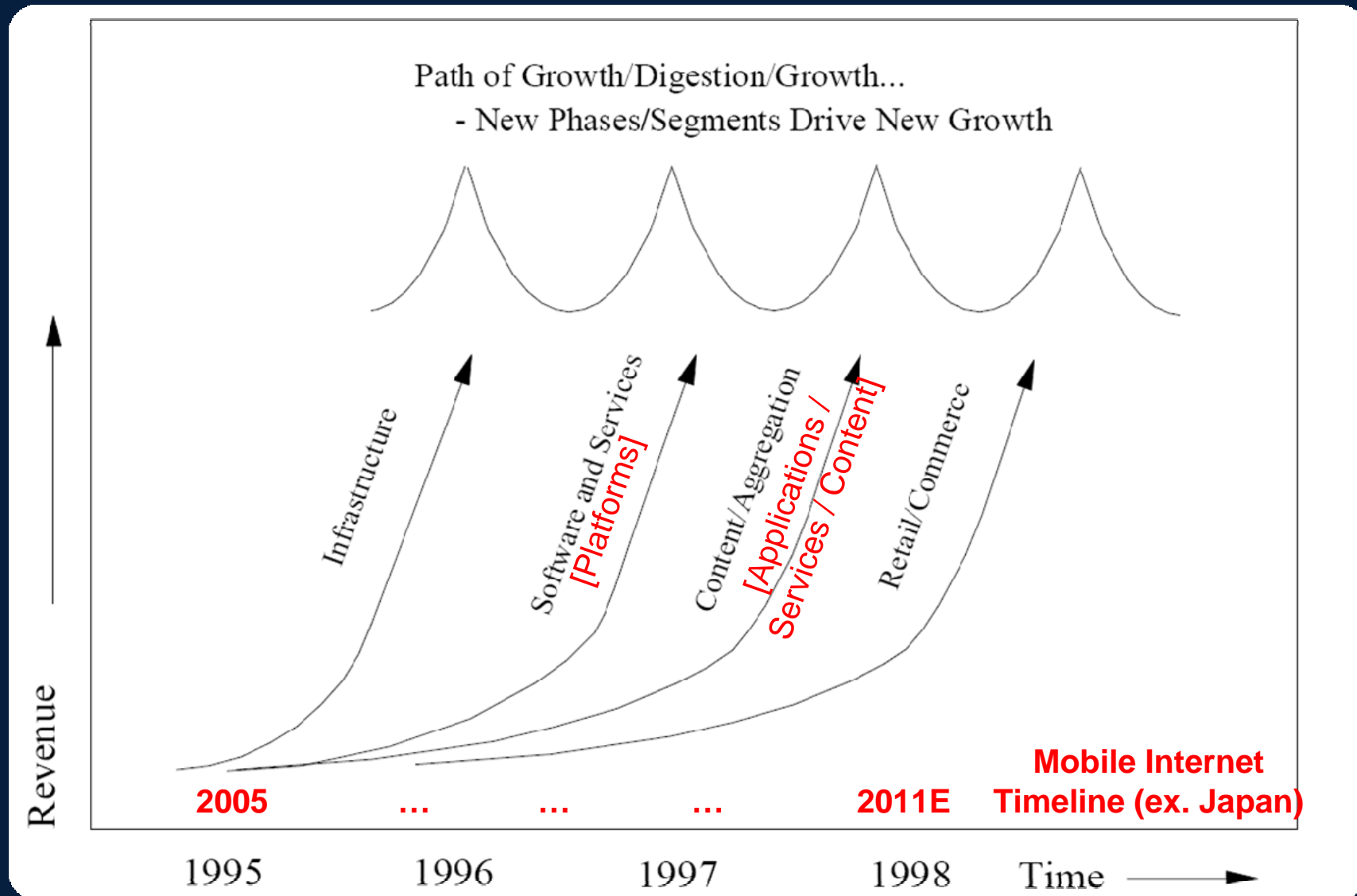


■ Technology ■ Telecom

■ Technology ■ Telecom

Mobile Internet Likely to Follow Timing & Development Patterns of Desktop Internet Market

Timing & Development of Internet Market Segment – From Our 1996 Internet Retailing Report



Shareholder Value Creation / Destruction – Pattern Recognition

- Balance of power / profitability likely to shift away from carriers over the short-term and away from infrastructure / device manufacturers over long-term to software / service providers
- As information is democratized / decentralized, users will increasingly be in control – amplifying a trend which has been in place for more than a decade – this should benefit innovative service providers while marginalizing / commoditizing slow-moving incumbents

2009 Global Top 30 TMT Companies by Market Value – USA Technology Companies Led Rankings

Market Value Rank	Company	Type	Region	Country	Mkt Val (\$MM) 11/31/2009	3-Month Average Trade Vol. (\$MM)	12-Month Price		2009 YTD		2009 YTD Operating Margin
							Change (%)	Price 11/31/2009	Sales (\$MM)	Y/Y Growth	
1	Microsoft	Tech	N. America	USA	\$260,058	\$1,658	43%	\$29	\$39,667	-13%	35%
2	China Mobile	Telecom	Asia / Pacific	China	185,690	257	5%	9	31,208	15%	35
3	Google	Tech	N. America	USA	183,746	1,545	98%	580	16,938	5%	34
4	Apple	Tech	N. America	USA	180,492	3,548	111%	201	26,370	15%	22
5	IBM	Tech	N. America	USA	165,120	856	54%	126	68,527	-11%	17
6	AT&T	Telecom	N. America	USA	159,241	778	-5%	27	92,160	-1%	17
7	Telefonica	Telecom	Europe	Spain	136,076	1,742	44%	29	58,329	-11%	24
8	Cisco	Tech	N. America	USA	134,458	1,045	43%	23	25,786	-14%	18
9	Vodafone	Telecom	Europe	UK	120,033	287	17%	2	34,826	-2%	31
10	HP	Tech	N. America	USA	116,885	710	39%	49	83,602	-1%	9
11	Oracle	Tech	N. America	USA	110,715	710	37%	22	17,368	-3%	35
12	Intel	Tech	N. America	USA	105,487	1,210	37%	19	24,558	-16%	28
13	Verizon	Telecom	N. America	USA	89,850	590	-3%	32	80,717	11%	18
14	Samsung	Tech	Asia / Pacific	S. Korea	89,227	268	89%	606	83,560	14%	7
15	America Movil	Telecom	Latin America	Mexico	77,972	84	57%	2	21,179	-10%	27
16	Qualcomm	Tech	N. America	USA	75,088	806	34%	45	7,898	-9%	22
17	France Telecom	Telecom	Europe	France	68,720	232	1%	26	35,709	-14%	20
18	NTT DoCoMo	Telecom	Asia / Pacific	Japan	65,389	106	-13%	1,488	33,919	2%	22
19	Deutsche Telekom	Telecom	Europe	Germany	64,314	240	3%	15	67,659	-2%	13
20	SAP	Tech	Europe	Germany	58,925	239	38%	48	10,463	-15%	25
21	Amazon.com	Tech	N. America	USA	57,043	1,137	200%	132	14,989	20%	5
22	NTT	Telecom	Asia / Pacific	Japan	55,859	98	-9%	42	80,963	5%	13
23	Walt Disney	Media	N. America	USA	55,185	374	35%	30	26,550	-3%	16
24	Nokia	Tech	Europe	Finland	49,255	284	-7%	13	40,555	-30%	5
25	Canon	Tech	Asia / Pacific	Japan	49,225	148	24%	37	23,831	-20%	8
26	TSMC	Tech	Asia / Pacific	Taiwan	47,588	105	59%	2	6,224	-28%	36
27	Comcast	Media	N. America	USA	42,478	380	-11%	15	26,575	4%	19
28	Telstra	Telecom	Asia / Pacific	Australia	38,234	204	14%	3	10,236	-13%	28
29	Time Warner	Media	N. America	USA	36,125	226	19%	31	20,889	-7%	20
30	Hon Hai Precision	Tech	Asia / Pacific	Taiwan	35,851	124	174%	4	41,122	-8%	4
Total					\$2,914,331	\$19,991			\$1,152,378	-2%	16
15	Technology				1,719,164	14,393			531,459	-5%	12
11	Telecom				1,061,378	4,618			546,905	0%	17
4	Media				133,788	980			74,014	-2%	13

1994 Global Top 30 TMT Companies by Market Value – USA Technology Companies Led Rankings

Market Value Rank	Company	Type	Region	Country	Mkt Val (\$MM) 12/31/1994	3-Month Average Trade Vol. (\$MM)	12-Month Price Change (%)	Price 12/31/1994	1994 Sales (\$MM)	Y/Y Growth	1994 Operating Margin
1	IBM	Tech	N. America	USA	\$43,197	\$7,107	30%	\$18	\$64,052	2%	8%
2	Microsoft	Tech	N. America	USA	35,514	17,570	52%	4	4,649	24%	37%
3	Motorola	Tech	N. America	USA	34,104	2,671	26%	17	22,245	31%	12%
4	Intel	Tech	N. America	USA	26,380	15,766	3%	4	11,521	31%	29%
5	Hewlett-Packard	Tech	N. America	USA	25,451	3,104	26%	10	24,991	23%	10%
6	AT&T	Telecom	N. America	USA	24,592	3,479	-3%	20	11,619	9%	24%
7	Walt Disney	Media	N. America	USA	23,800	2,082	8%	15	10,055	18%	18%
8	Verizon	Telecom	N. America	USA	21,700	2,687	-16%	24	13,791	6%	20%
9	HKT	Telecom	Asia / Pacific	Hong Kong	21,330	20	-8%	19	3,140	N/A	36%
10	NYNEX	Telecom	N. America	USA	15,567	68	-8%	37	13,307	-1%	13%
11	CBS	Media	N. America	USA	14,617	785	-9%	15	7,363	267%	8%
12	Oracle	Tech	N. America	USA	12,641	6,263	53%	2	2,001	33%	21%
13	MCI	Telecom	N. America	USA	12,495	358	-35%	18	13,338	12%	11%
14	PacTel	Telecom	N. America	USA	12,086	50	-10%	29	9,235	0%	24%
15	Telecom Italia	Telecom	Europe	Italy	10,671	30	24%	1	17,686	25%	17%
16	Xerox	Tech	N. America	USA	10,493	884	11%	17	17,837	3%	9%
17	Vodafone	Telecom	Europe	Germany	9,971	181	12%	27	18,250	9%	-2%
18	Bell Canada	Telecom	N. America	Canada	9,950	509	-8%	4	15,449	3%	13%
19	News Corp.	Media	N. America	USA	9,906	609	-21%	7	8,058	-25%	5%
20	Sprint	Telecom	N. America	USA	9,622	2,011	-21%	9	12,662	11%	14%
21	Cisco	Tech	N. America	USA	9,176	13,243	9%	2	1,243	92%	39%
22	Computer Associates	Tech	N. America	USA	7,760	959	21%	14	2,148	17%	29%
23	Gannett	Media	N. America	USA	7,443	791	-7%	27	3,825	5%	21%
24	Comcast	Media	N. America	USA	7,350	1,448	-37%	5	1,375	3%	17%
25	Samsung	Tech	Asia / Pacific	South Korea	7,275	1,605	97%	77	14,918	38%	15%
26	Thomson	Media	N. America	Canada	7,200	172	0%	12	6,207	9%	11%
27	Texas Instruments	Tech	N. America	USA	6,940	3,612	18%	5	10,315	21%	12%
28	Corning Inc.	Tech	N. America	USA	6,817	1,715	7%	8	4,771	19%	14%
29	KDDI	Telecom	Japan	Japan	6,320	25	0%	98	2,531	16%	8%
30	Novell	Tech	N. America	USA	6,240	447	-17%	17	1,998	78%	23%
Total					\$456,607	\$90,251			\$350,579	18%	13%
13	Technology				231,988	74,945			182,689	17%	13%
11	Telecom				154,302	9,419			131,007	9%	14%
6	Media				70,317	5,887			36,883	55%	12%

Morgan Stanley

Note: All data as of 12/31/1994. Source: FactSet, Morgan Stanley Research.