Internet Trends 2002

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June 2002

The Internet – A Perspective

Mary Meeker

June 2002

Outline

- What Have We Lived Through?
- Where Are We Now?
- Where Are We Going?
- What Are We Watching For?
- Our Key Themes . . .
- Identifying the Winners

Source: Morgan Stanley Research

Outline

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Source: Morgan Stanley Research

Internet "Big Bang" . . . Once In A Lifetime

150MM PCs primed for ***THE BROWSER***

Aug 8th 1995

Netscape IPO

Apple, IBM, Compaq & Microsoft laid the foundation. . .

Killer Apps – **#1 – email**
#2 – browser

Source: Morgan Stanley Research

Internet-Type "Big Bangs" Rarely Occur

Big Bang	Catalyst	Inflection	Name Ten Companies?
California Gold Rush	**1848** – Gold found at Sutter's Mill, CA	**1852** - Hydraulic mining in CA *4 years later*	Anglogold, Newmont, Barrick, Gold Fields, Rio Tinto, Freeport McMoran, Placer Dome, Homestake, Normandy, Harmony *44%*

Source: Morgan Stanley Research

Internet-Type "Big Bangs" Rarely Occur

Big Bang	Catalyst	Inflection	Name Ten Companies?
Railroads	**1826** - John Stevens demon-strates steam locomotion, New Jersey	**1869** - Trans-continental railroad completed, Utah	Burlington Northern Santa Fe, Union Pacific, CSX, Norfolk Southern, Canadian National, Canadian Pacific 90%

Source: Morgan Stanley Research

Internet-Type "Big Bangs" Rarely Occur

Big Bang	Catalyst	Inflection	Name Ten Companies?
Automobile	**1886** - Benz and Daimler build first auto, Germany	**1913** - Ford assembly line, MI *27 years later*	GM, Ford, Toyota, Volkswagen, DaimlerChrysler, PSA Puegot Citroen, Nissan, Fiat-Iveco, Renault, Hyundai *78%*

Source: Morgan Stanley Research

Internet-Type "Big Bangs" Rarely Occur

Big Bang	Catalyst	Inflection	Name Ten Companies?
Internet	**1992** – NSCA creates Mosaic **1994** – Netscape founded, IPO in 1995	**2000** – AOL TWX merger **2005?** – ~50% homes broadband	???

NETSCAPE

Source: Morgan Stanley Research

What Have We Just Lived Through?

- Unprecedented Innovation . . .
- Unprecedented Technology Progress . . .
- Significant Wealth Creation . . .
- Significant Wealth Destruction . . .

Source: Morgan Stanley Research

Major "Tech Cycle" Maxims

Pattern of Company Creation

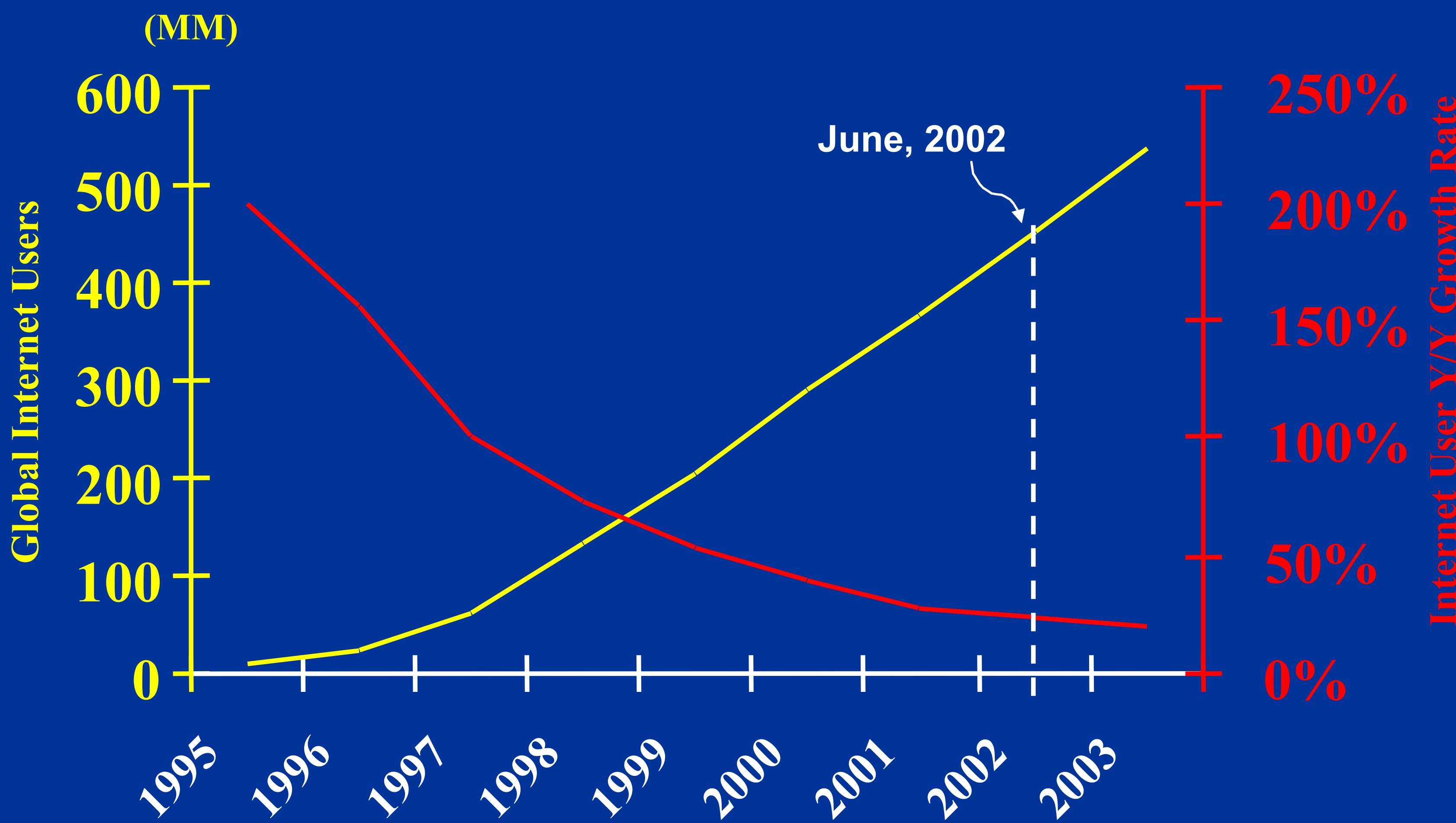
Boom (1st-2nd inning) ⇨ Bust (3rd inning) ⇨ Bust/Boomlet (4th inning)

Pattern of Wealth Creation

Boomlet (1st-2nd inning) ⇨ Bust (3rd inning) ⇨ Boom (4th inning)

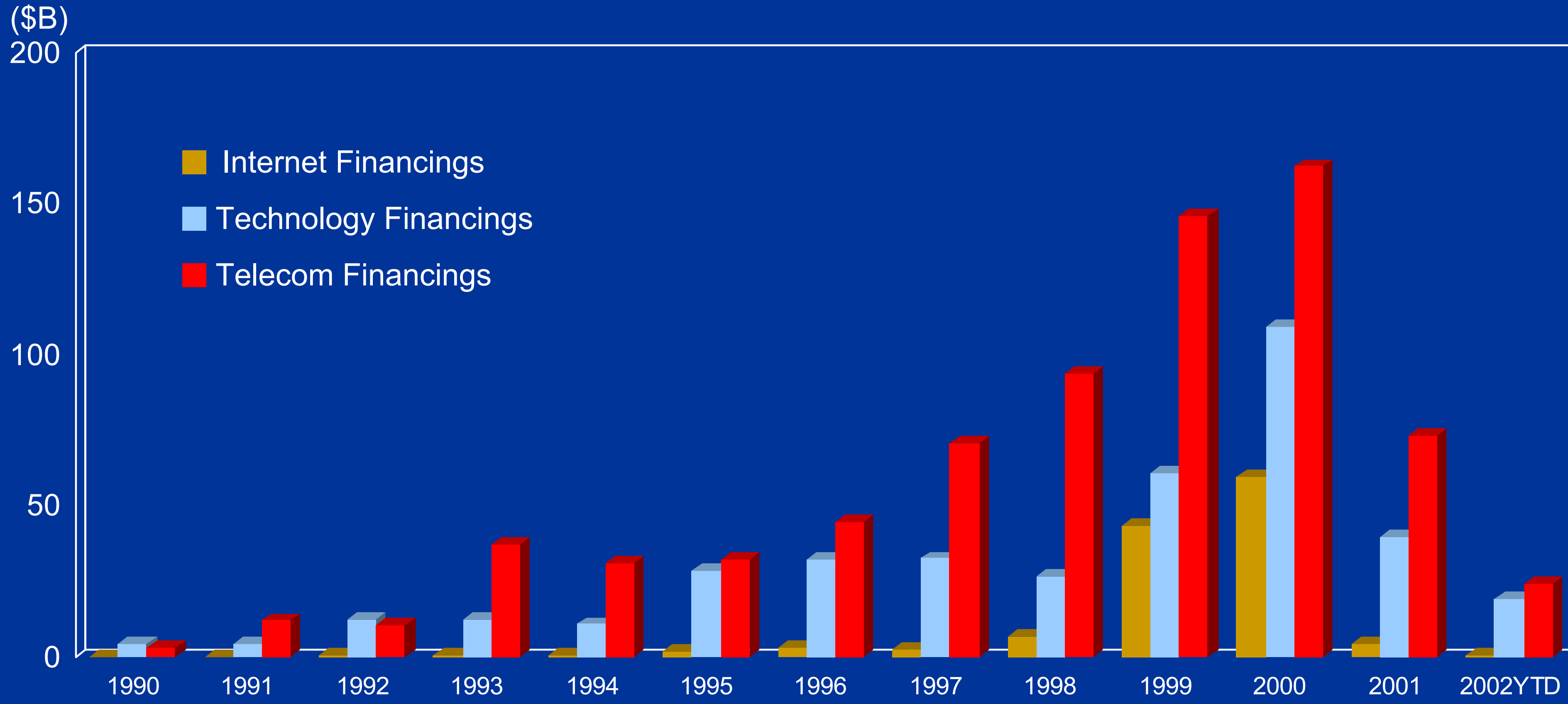
Source: Morgan Stanley Research

Growth Expectations Were Out of Line



Source: Morgan Stanley Research

Global Internet, Technology & Telecom Public Market Financings. . .



Source: Thomson Financial; Securities Data Corporation -- Data as of 06/27/02; Includes public IPOs, follow-ons, convertibles and high yield deals (rated high yield by both Moody's and S&P) greater than $10MM, excluding rights offerings, limited partnerships, derivatives, and floating rate notes.

Note: “Telecom Financings” includes Telecom Service & Telecom Equipment Financings

1999 + 2000 . . .

- *70% of tech venture capital financing* over 21 years occurred in 1999/2000
- *55% of tech public financing* over 21 years occurred in 1999/2000
- *Annual IPO volume 593% higher* than the annual average for 1980-1994

Source: Morgan Stanley Research

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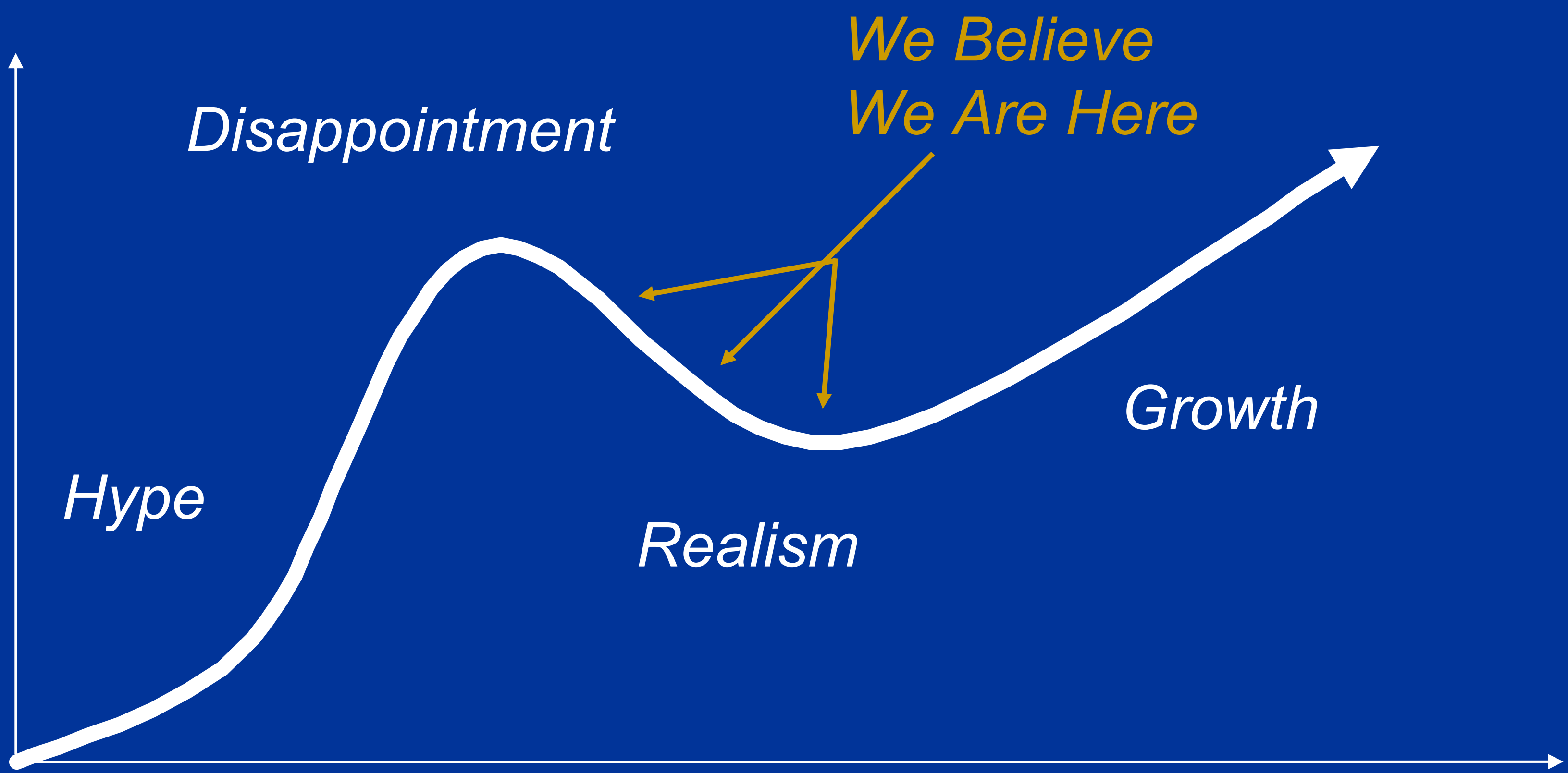
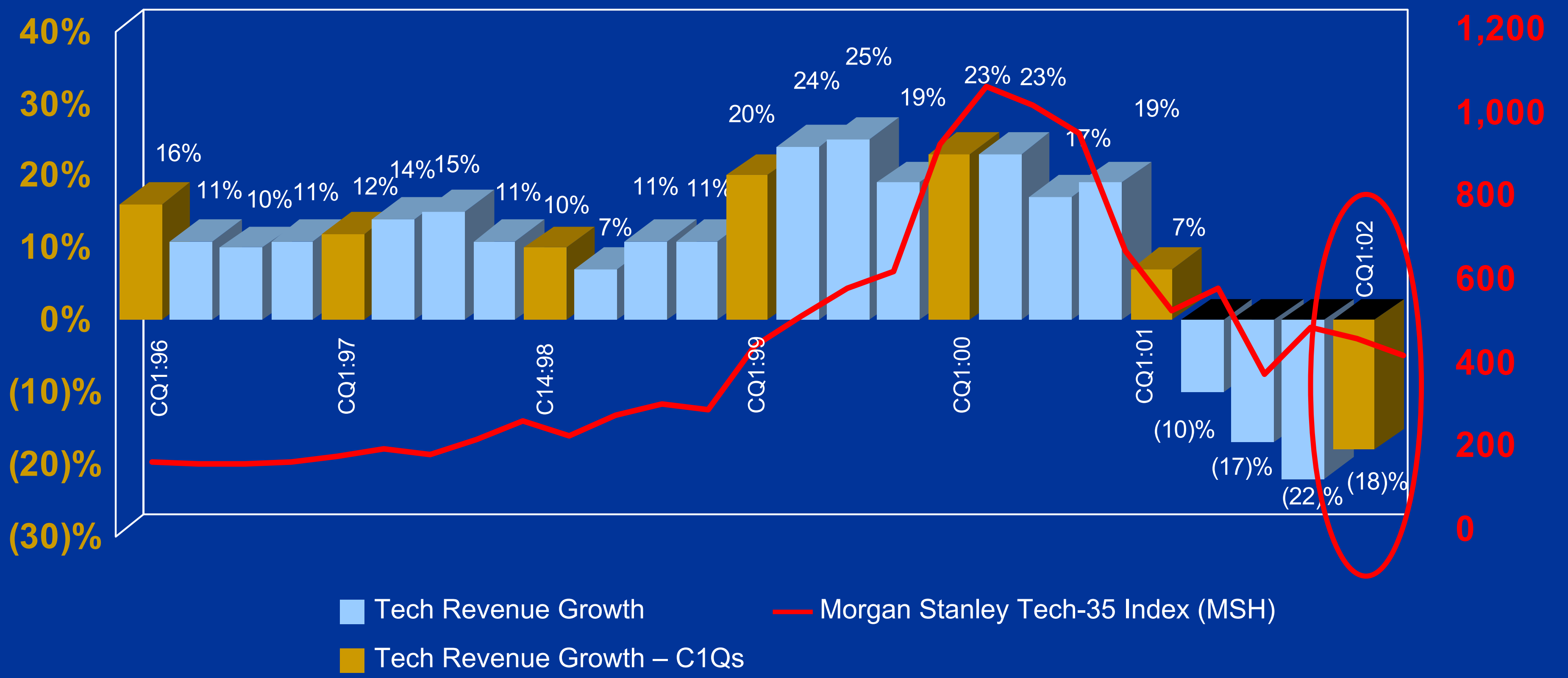
Source: Morgan Stanley Research

Tech Cycle of Change/Growth



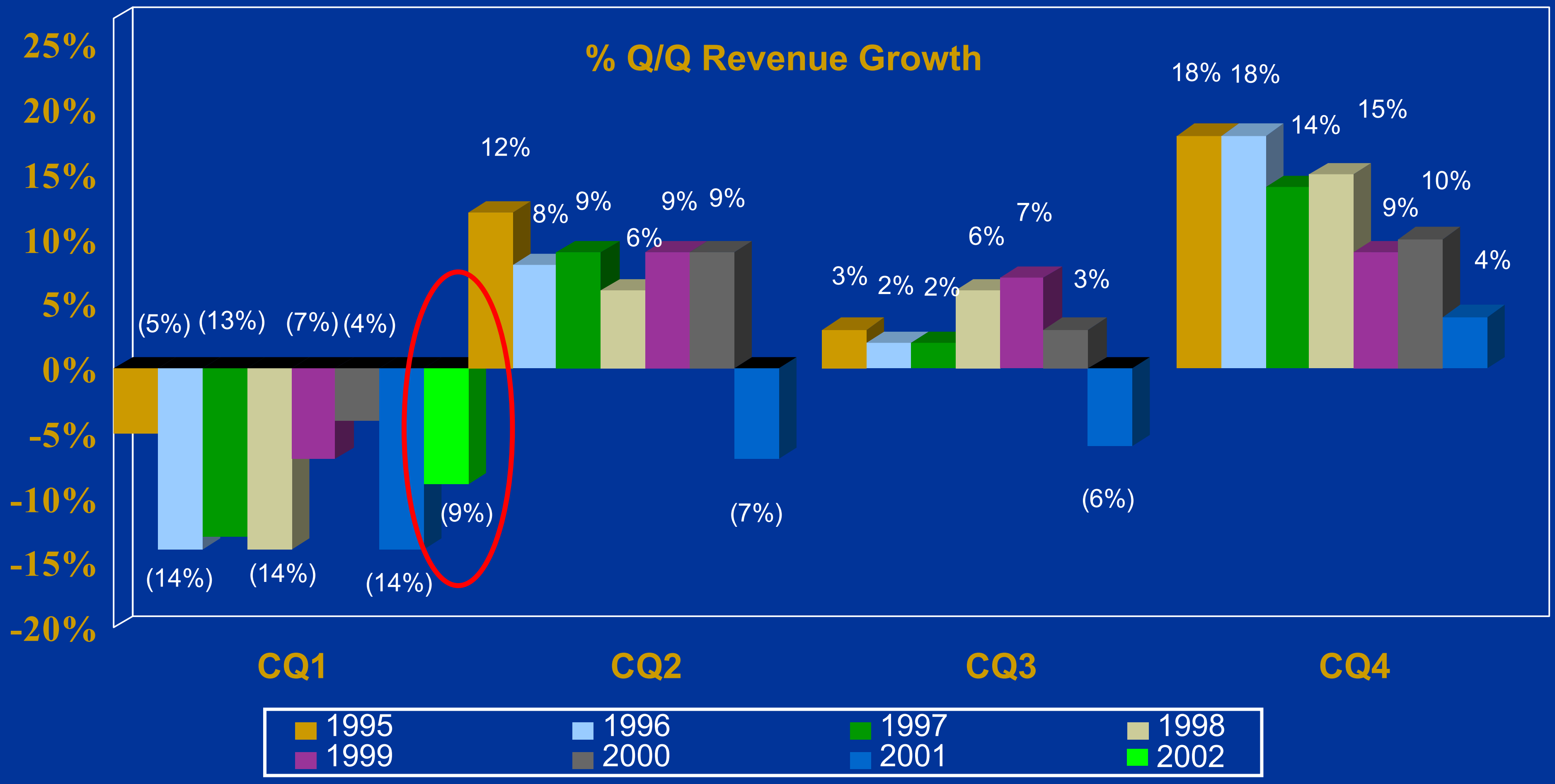
Source: Mobile Commerce Report, Durlacher

-18% Y/Y Tech Revenue Growth – CQ1:02



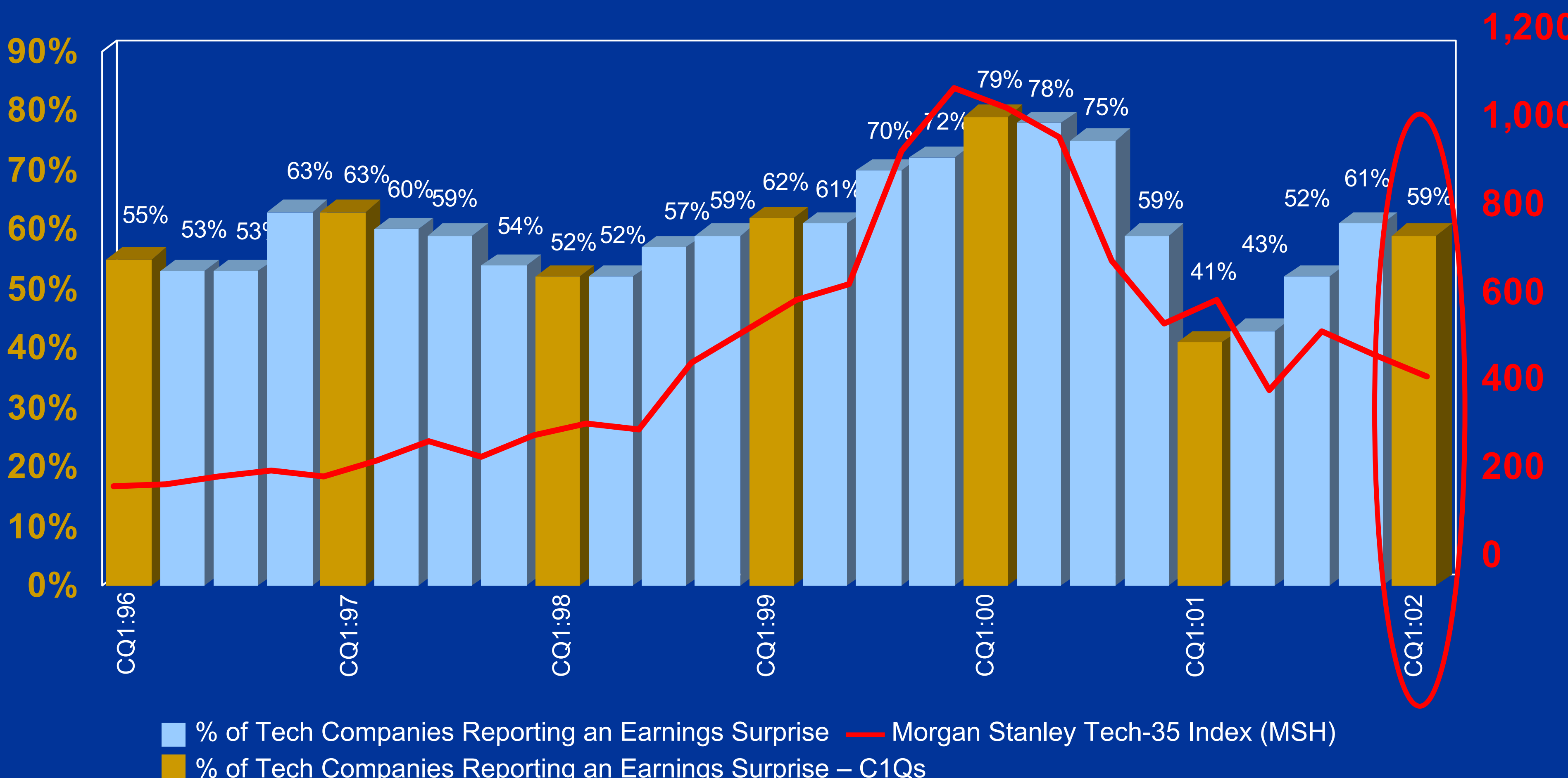
Source: FactSet, Morgan Stanley Research -- Data from 358 U.S.Technology Companies, 1996-2001

-9% Q/Q Tech Revenue Growth – CQ1:02



Source: FactSet, Morgan Stanley Research -- Data from 351 U.S. Technology Companies, 1995-2001

59% of Tech Beat EPS Estimates in CQ1; EPS Misses at 22%



Source: FactSet, Morgan Stanley Research -- Data from 354 U.S. Technology Companies, 1995-2001

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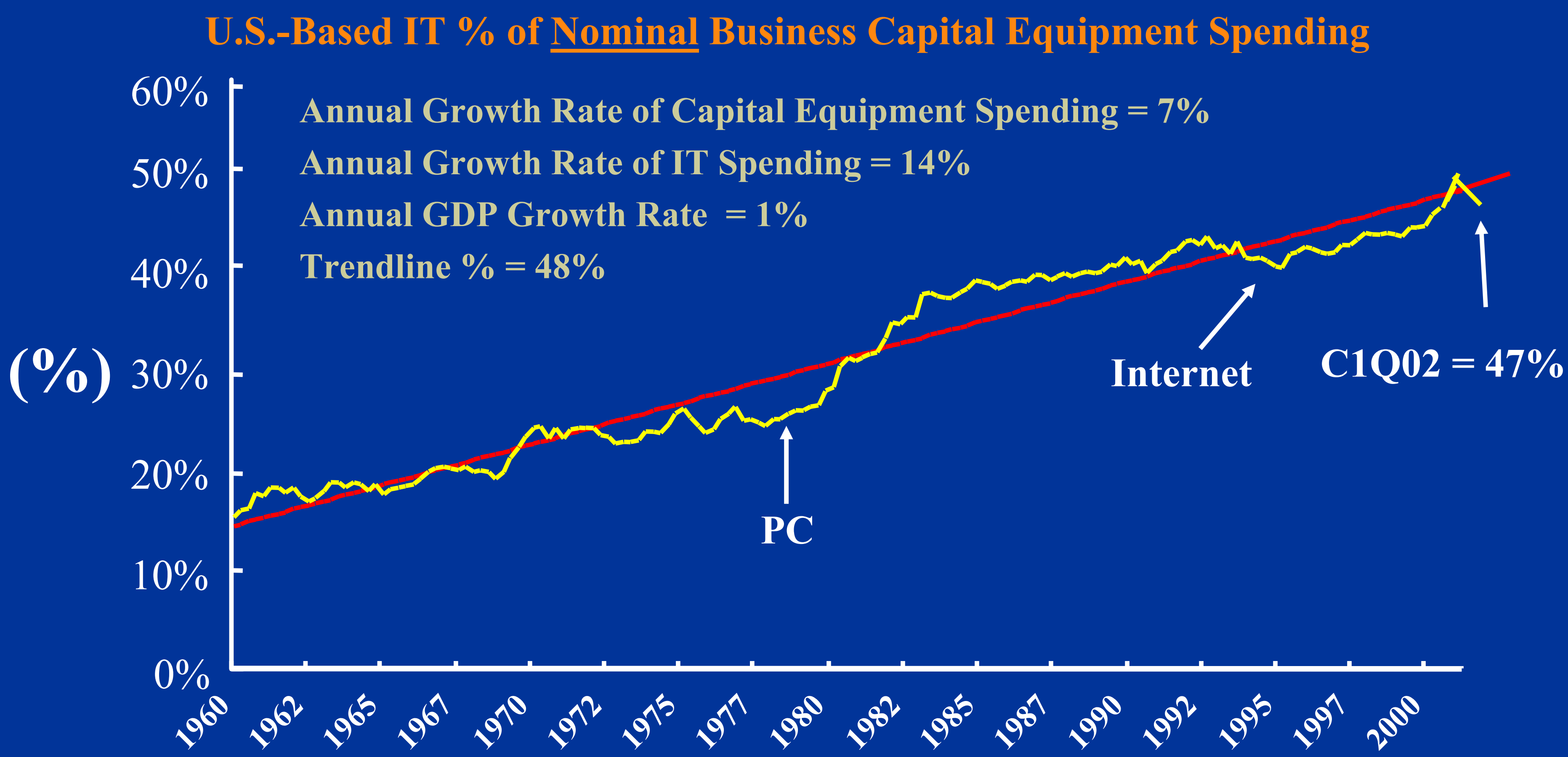
Source: Morgan Stanley Research

Economy (U.S. GDP) Continues To Slow…

	C2001	C2002	C2003
Jan 2000	3.6%^{E}	4.2%^{E}	4.0%*
May 2002	1.2%^{A}	2.8%^{E}	3.7%^{E}

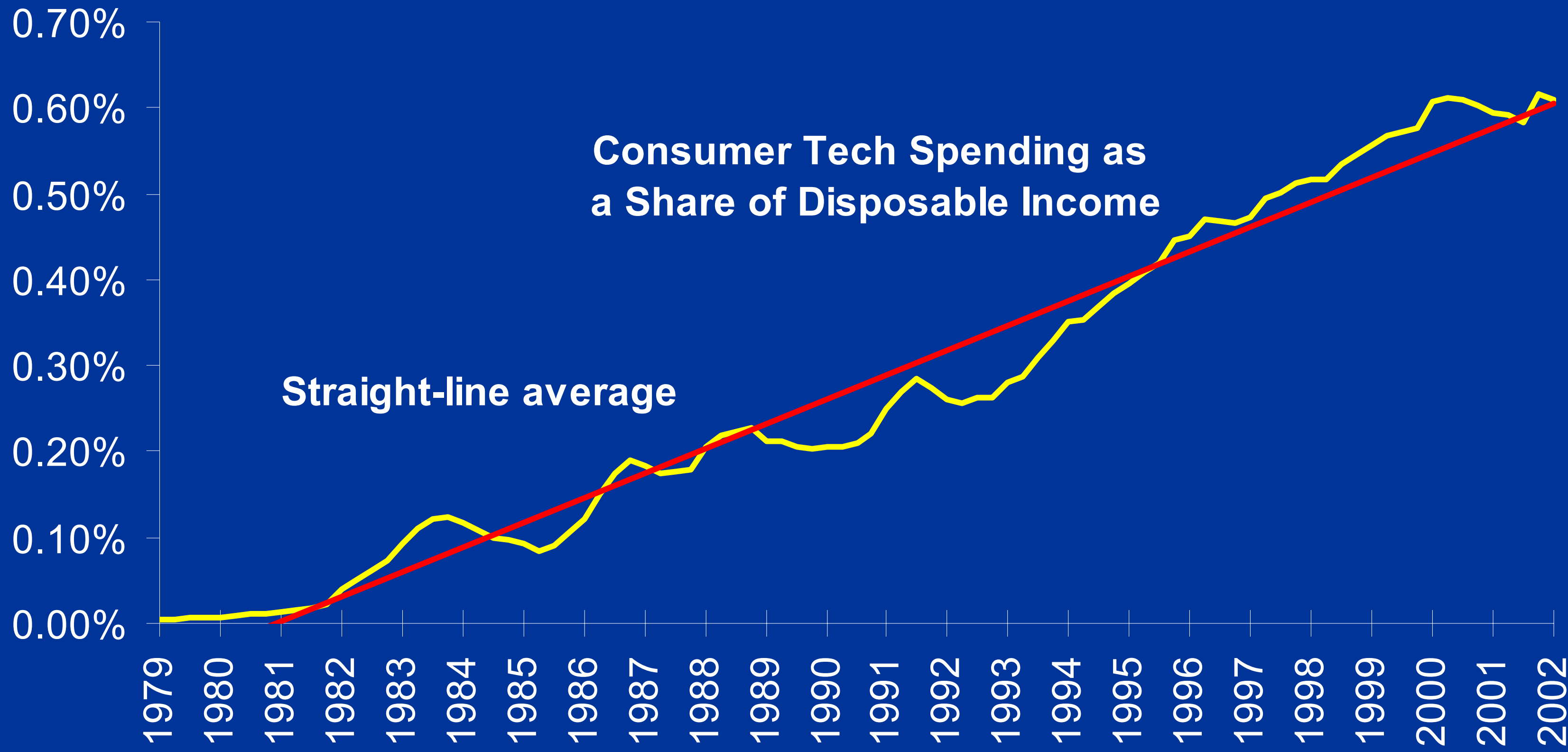
Source: Morgan Stanley; Data as of 05/07/02; *C2003E figures initiated on 12/10/2001
E – Morgan Stanley Estimate; A – Actual

Tech Has Become Large Part Of The Economy



Source: Morgan Stanley Research; Data as of 05/09/02

Consumer Tech Spending Remains Solid



Source: Morgan Stanley Research; Data as of 06/19/02

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Source: Morgan Stanley Research

What Are We Watching For?

- Revenue Stabilization
- Seasonality
- Economic Recovery
- Increasing Power of Microsoft
- Importance of Category Leadership
- Consolidation/Rationalization
- Financial Leverage
- Ongoing Share Gains by Online vs. Offline…
- Increasing Customer Monetization

Source: Morgan Stanley Research

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Source: Morgan Stanley Research

CQ2:02 Internet & PC Applications Software -- Preview and Industry Overview

Industry Investment Thesis (Attractive):

- ***The Internet is becoming a central communications, information, commerce, and entertainment medium.***

- ***There are 450MM+ Internet users worldwide*** using the Internet about ***30 minutes per day*****. We continue to expect *the number of Internet users to grow at 20%+ annually* for the next several years with stronger growth in non-U.S. markets. And we estimate that usage growth should continue to be higher.** Thus demonstrating relatively compelling underlying growth trends.

- Given this robust underlying growth, the ***leading Internet companies should, over time, be able to generate strong double-digit top line growth***, and as financial models scale towards higher long-term margins, should be able to generate even stronger earnings growth -- *aka leverage*. If the leaders (#1 players in respective categories) execute to their opportunities they appear to have classic growth stock undervaluation characteristics.

Source: Morgan Stanley Research

CQ2:02 Internet & PC Applications Software -- Preview and Industry Overview *(continued)*

In general, near-term, we remain focused on several key underlying positive trends:

1) ***Strong underlying growth*** **rates for global** ***Internet users/usage***
2) ***Online market share gains*** **from offline markets**
3) ***'Mind share' well above 'market share'*** **demonstrates growth opportunity**
4) **Online retail trends are particularly impressive with** ***online shopper growth accelerating***
5) **Consumer seems to be alive and well for** ***key technology-related purchases***
6) ***Convenience*****, low** ***prices*****, strong customer** ***service*****, and extensive** ***selection***
7) ***Online advertising trends could surprise*** **on the upside in next 12 months**
8) ***Sector leaders gaining share***
9) **Operating** ***leverage with inherently scalable models*** **is powerful. . .**
10) ***Positive revenue and earnings surprises*** **are followed by** ***improving operating margins*****, and** ***revenue growth acceleration***

Source: Morgan Stanley Research

Perspective on Stock Price Movements

U.S. stocks, at the margin, move up/down based on many dynamics, but, key drivers/thoughts are:

1) U.S. Asset Allocation for Taxable U.S. and Non-U.S. Investors
2) The direction of global markets and the economy
3) Generally, if the overall market is weak, stocks are likely to perform poorly and vice versa
4) Individual company execution (beat/make/miss) versus company (and Wall Street) earnings estimates
5) Revenue growth changes and related earnings estimate revisions
6) The discounting time horizon used for valuing companies can change

Source: Morgan Stanley Research

Perspective on Stock Price Movements *(cont.)*

U.S. stocks, at the margin, move up/down based on many dynamics, but, key drivers/thoughts are:

7) High beta (volatile) stocks have wider valuation ranges and price swings than low beta companies
8) Performance of the S&P Composite was very strong in the 1980s and was especially strong in 1995-1999
9) Tech stocks significantly outperformed many other stocks from 1995-1999 and underperformed from 2000-2002YTD
10) Wealth destruction from 2000-2002 (5/1/02) has not been isolated to Internet companies
11) Performance for technology stocks was especially challenging in 2000 and beyond

Source: Morgan Stanley Research

Perspective on Stock Price Movements *(cont.)*

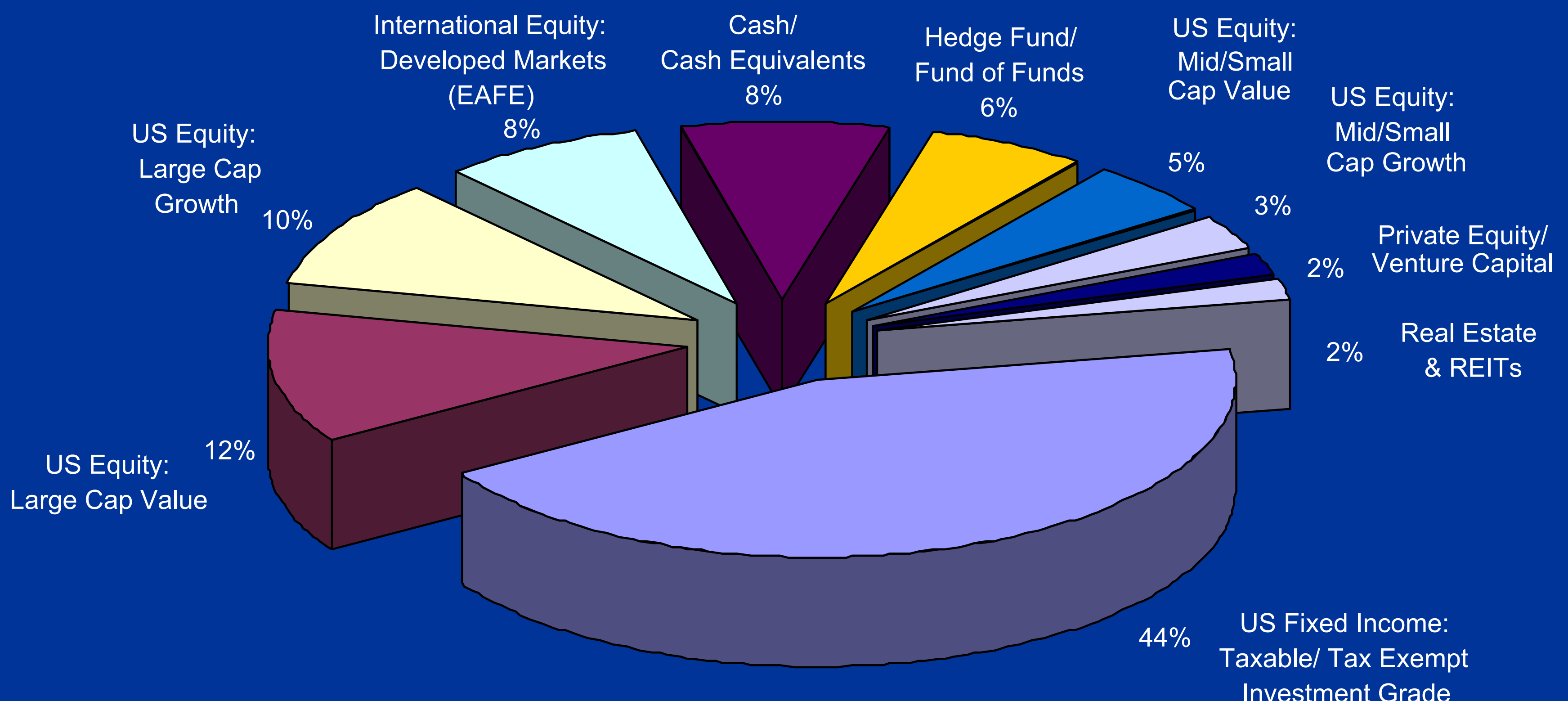
U.S. stocks, at the margin, move up/down based on many dynamics, but, key drivers/thoughts are:

12) Stock price declines for many companies were significant from 1999-2001
13) Two isolated quarters (CQ4:99 and CQ4:00) accounted for a significant portion of the upward and downward moves in technology and Internet companies
14) Some believe that the impact of increased news flow and the impact of the ease of electronic day trading amplified the volatility of stock markets from 1998-2002
15) Down cycles can be negative for even the best growth companies/stocks which ultimately recover

Source: Morgan Stanley Research

Recommended U.S. Asset Allocation for Taxable U.S. and Non-U.S. Investors (U.S. Dollar/U.S.-Oriented)

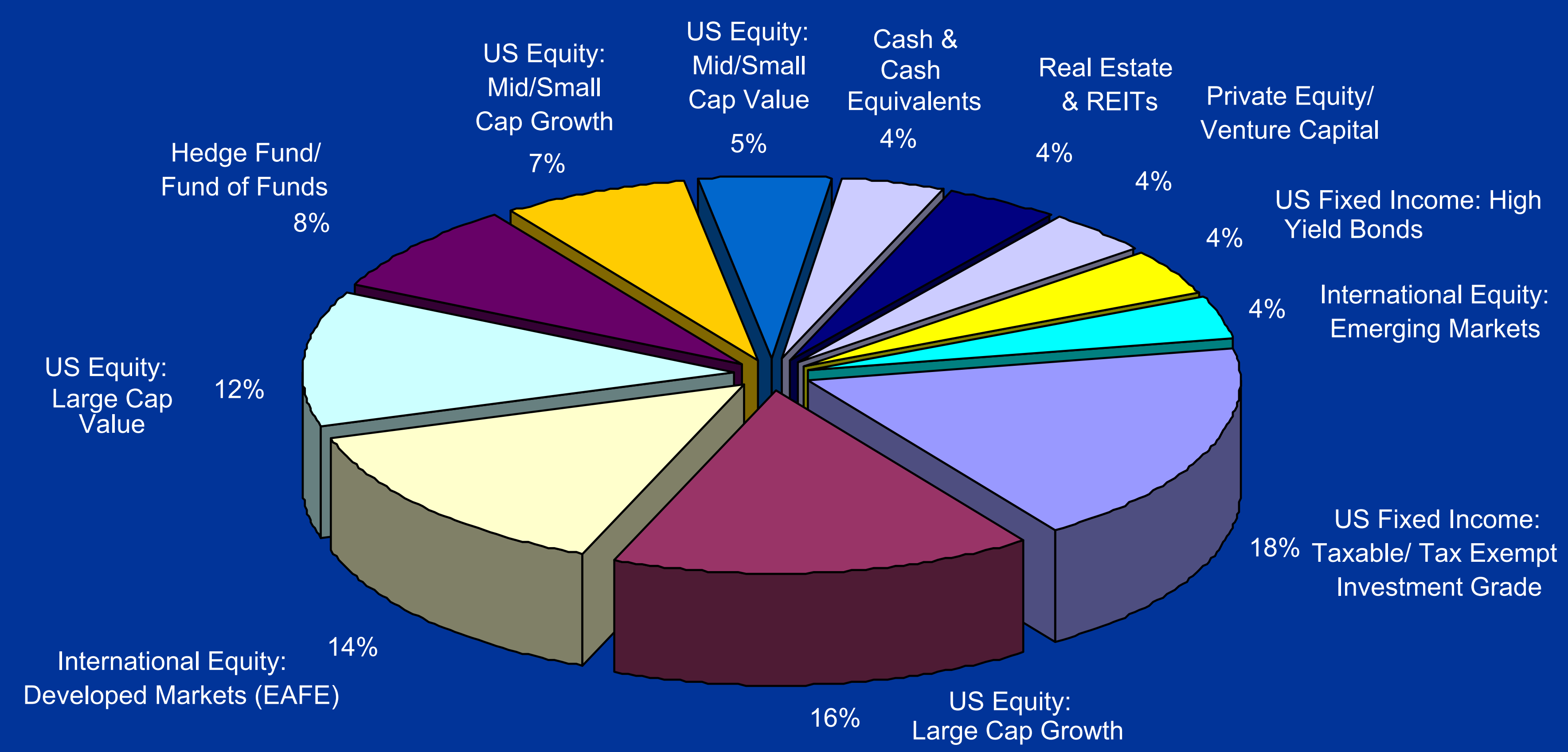
6/02 - "Strategic Conservative/Balanced Approach"



Sources: Morgan Stanley Investment Management; and Morgan Stanley Private Wealth Management Asset Allocation Group

Recommended U.S. Asset Allocation for Taxable U.S. and Non-U.S. Investors (U.S. Dollar/U.S.-Oriented)

6/02 - "Strategic Aggressive/Balanced Approach"



Sources: Morgan Stanley Investment Management; and Morgan Stanley Private Wealth Management Asset Allocation Group

Direction of Global Markets and the Economy

The direction of the economy, over time, plays a role in the direction of stock prices. Economy began to weaken in CQ3:00 and U.S. GDP growth of 1.2% in C2001 was well below forecasts in early 2000 of growth of 4.1%.

U.S. GDP Growth Forecasts — Estimated vs. Actual, C1999-C2003E

	C1999	C2000	C2001	C2002	C2003
Actual	4.1%	4.1%	1.2%		
Jan-99	4.1%	3.4%			
Jan-00		4.3%	3.6%		
Jan-01			1.1%	3.4%	
Jan-02				1.0%	3.4%
Jan 02				2.8%	2.8%

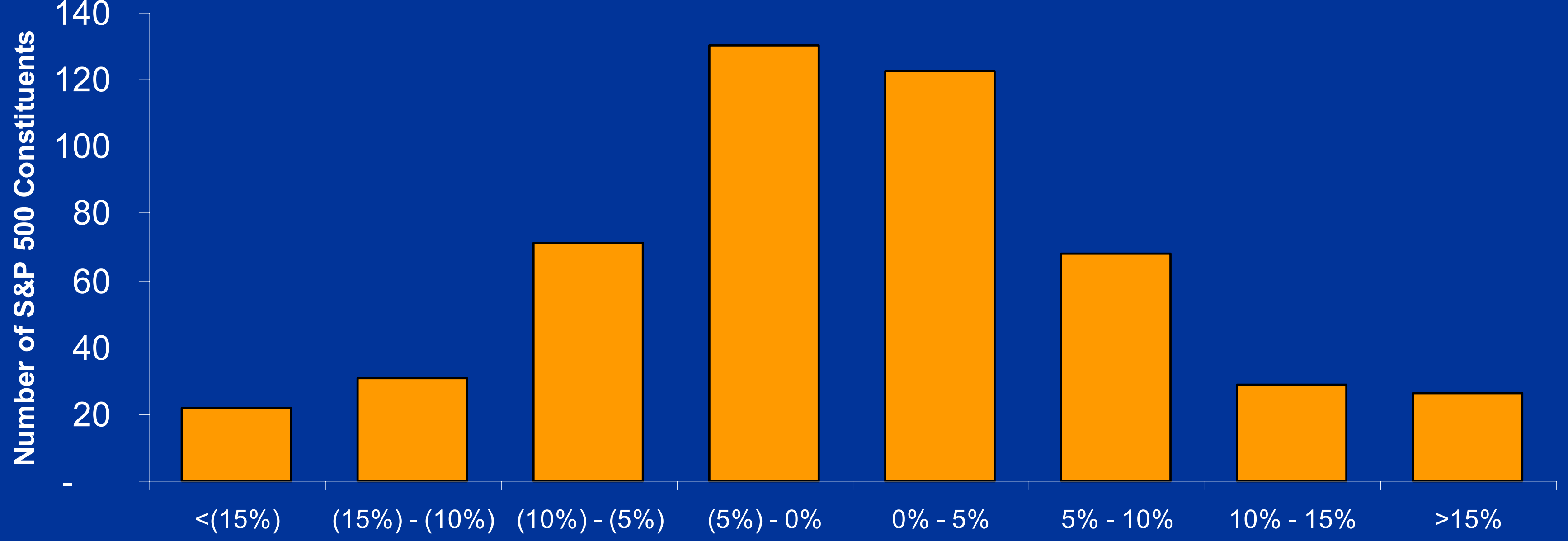
Yellow values are actual values. White values are Morgan Stanley estimates. Red values are Blue Chip consensus estimates.

Source: Morgan Stanley Research

Generally, if the Overall Market is Weak, Stocks are Likely to Perform Poorly and Vice Versa

Equity markets usually have a normal return distribution with about half of stocks performing within 5% of the index.

Average Distribution of Relative Price Performance for the S&P 500 1991-2001



Source: Morgan Stanley Research

Morgan Stanley

Individual Company Execution (beat/make/miss) versus Company (and Wall Street) Earnings Estimates

A primary reason cited by companies for missing earnings estimates was a deterioration in the economy

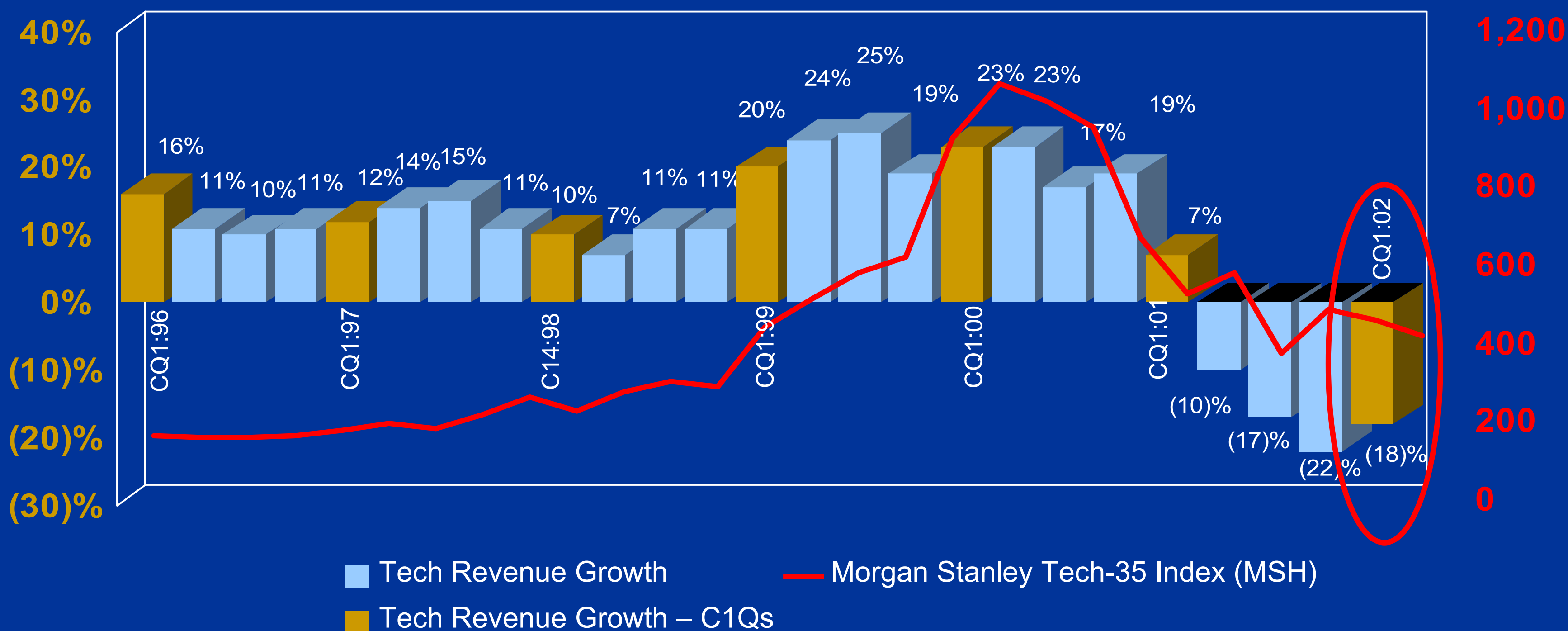
	companies within the S&P 500 which have missed (downside) earnings at least once between 1999 - 2001	companies within the S&P 500
Consumer Discretionary	84	87
Consumer Staples	33	34
Energy	25	25
Financials	74	76
Health Care	41	46
Information Technology	77	78
Industrials	64	68
Materials	37	37
Telecommunication Services	12	12
Utilities	36	37
	483 (97%)	500

Note that an estimated 62% of the 483 companies that missed estimates did so post the introduction of Reg FD on 10/23/00*

Source: Morgan Stanley Research; EPS estimates about 2 months before release date; * 62%l looking at 5 qtrs before Reg FD and 5 qtrs after Reg FD

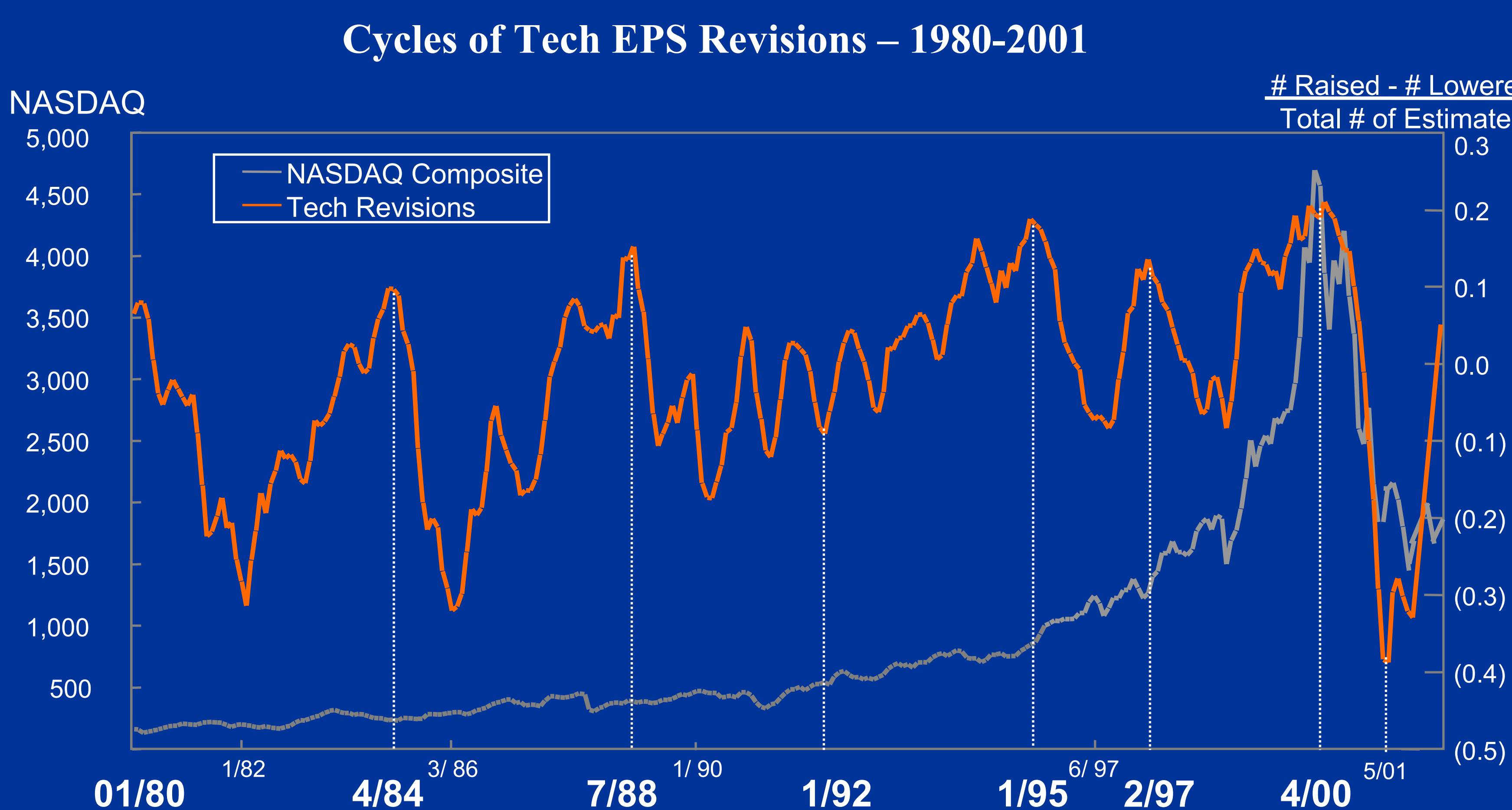
Revenue Growth Deterioration and Earnings Estimate Revisions Have Been Especially Acute for Technology Companies

After rising at average Y/Y quarterly rate of 15% from 1996-2000, technology revenue growth began to decelerate and decline hitting a low level of a 22% Y/Y revenue decline in CQ4:01



Source: FactSet, Morgan Stanley Research -- Data from 358 U.S.Technology Companies, 1996-2001

As Revenue Growth Rates Declined Downward Earnings Estimate Revisions Increased to Very High Levels



Source: IBES, Morgan Stanley Research 3 month moving average of the ratio of upward revisions to downward revisions for the stocks in the S&P 500 tech sector. The gray overlay is the NASDAQ composite. Updated as of 03/06/02

The Discounting Time Horizon Used for Valuing Companies Can Change

In positive environments, public market investors typically have used *2-5+ year forecasting time horizons* to value companies. *In negative environments*, the market has used *1-12 month forecasting time horizons* to value companies. Typically when investors have longer time horizons, valuations are higher and vice versa.

The turnover in the NASDAQ *during 1998-2000 rose from 100% to well over 300%*, implying that the market, on average in 2000, had close to a *90-day investment horizon.*

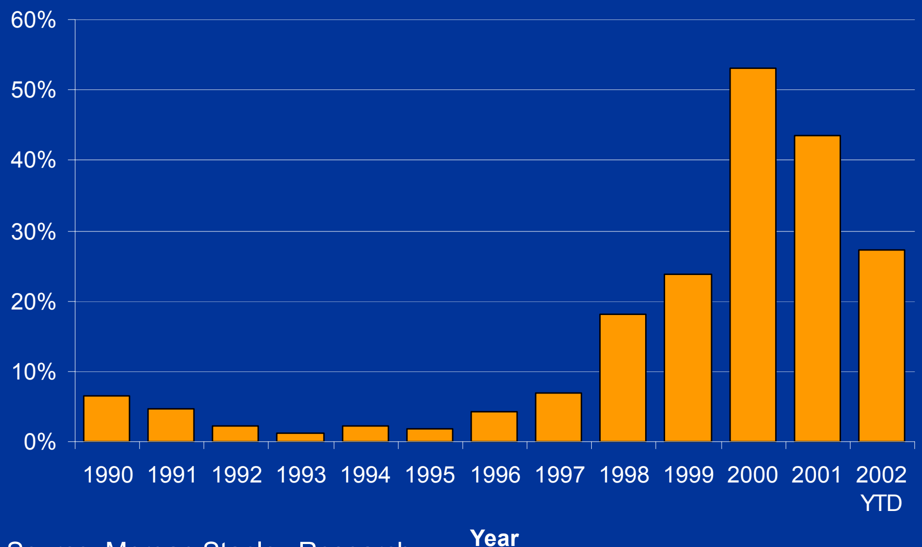
Source: Morgan Stanley Research

High Beta (volatile) Stocks have Wider Valuation Ranges and Price Swings than Low Beta Companies...

In 2000, on average, NASDAQ stocks traded up/down 2%+ on 53% of the trading days. This compares with 15% for S&P500 stocks.

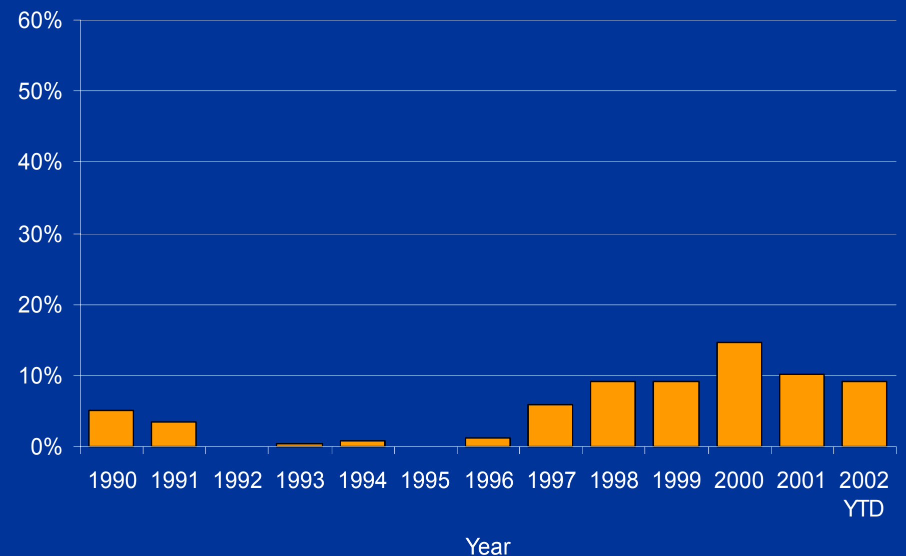
NASDAQ Trading Volatility

% of trading days stocks traded up/down 2%+, 1990-2002YTD (6/20/02)



S&P 500 Trading Volatility

% of trading days stocks traded up/down 2%+, 1990-2002YTD (6/20/02)



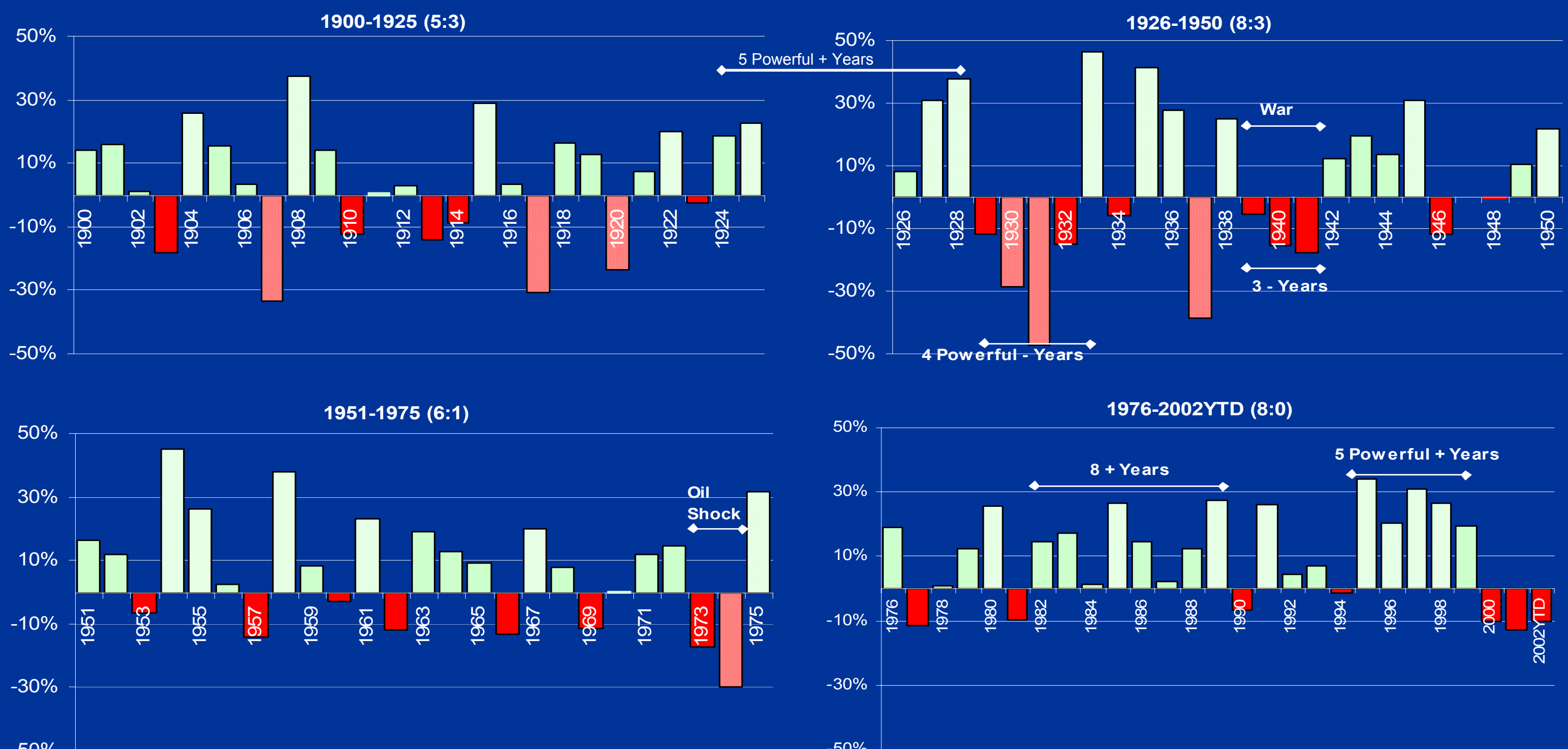
Source: Morgan Stanley Research

Morgan Stanley

Performance of the S&P Composite was Very Strong in the 1980s and was Especially Strong in 1995-1999

From 1995-1999 period the S&P Composite averaged a 25% compound annual return — the highest consecutive returns from 1900-2002YTD (the only close comparison was 1924-1928 when the average compound annual return was 24%). The 13% decline in 2001 was the greatest annual decline in a quarter of a century (since 1974 when the oil shock occurred).

S&P Composite Stock Price Returns, 1900-2002YTD (6/18/02)



Diagonal hash bar denotes year when S&P Composite rose/fell in excess of 20%. Also noted ratios equal number of years during period that S&P Composite rose 20%+ compared with number of years S&P Composite declined by 20%+.

Source: Morgan Stanley Research

Morgan Stanley

Tech Stocks Significantly Outperformed Many Other Stocks from 1995-1999…

Annual Index Performance - 1995-1999

	1995	1996	1997	1998	1999
S&P 500	34%	20%	31%	27%	20%
NASDAQ 100 (Tech)	43%	43%	21%	85%	102%

Source: Factset; As of 6/21/02

Source: Morgan Stanley Research

… and Underperformed from 2000-2002YTD

Annual Index Performance - 2000-2002YTD

	2000	2001	2002YTD
S&P 500	-10%	-13%	-10%
NASDAQ 100 (Tech)	-37%	-33%	-28%

Source: Factset; As of 6/21/02

Source: Morgan Stanley Research

Wealth Destruction from 2000-2001 has not been Isolated to Internet Companies

Internet Pure-Plays

301 Internet companies

Mkt Cap 12/31/99	$1,142B	~$820B
Mkt Cap 12/31/01	322B	
Wealth Destruction	**(820)B**	

S&P Non-Tech Companies

16 companies…

AT&T, GE, WorldCom, Ford, Wal-Mart, Proctor & Gamble, Sprint FON, Home Depot, SBC, Nextel, Bristol Myers, Gap, American Express, Coca-Cola, Sprint PCS, Du Pont.

Mkt Cap 12/31/99	$2,528B	~$820B
Mkt Cap 12/31/01	1,491B	
Wealth Destruction	**(820)B**	

Source: Morgan Stanley Research, Data as of 12/31/01

A Look at Internet Leaders

USER INTERFACE:	AOL Time Warner Microsoft Yahoo!
COMMERCE:	eBay Amazon.com
INFRASTRUCTURE:	VeriSign Cisco Sun Microsystems Dell
VERTICALS:	Expedia CNET Networks FreeMarkets TMP Worldwide

Aggregate Value -- @ Netscape IPO (8/95) → ~ $100 B

Aggregate Value -- @ Now (05/02) → ~ $544 B

Greater than the following S&P Sectors:

Communication Services, Utility, Basic Materials, and Transportation

Source: Morgan Stanley Internet Research Estimates.

Performance for Technology Stocks was Especially Challenging in 2000 and Beyond

Average performance of 176 specialty technology mutual funds fell by *33% in 2000*, following a *136% rise in 1999* and a *53% rise in 1998.*

Challenging Market in 2000: -33% Average Return for 176 Specialty Tech Mutual Funds

Specialty Tech Mutual Funds	% Annual Return			
	2000	**1999**	**1998**	**1997**
Number of Specialty Tech Mutual Funds	167	96	70	54
Equal Weighted Average	**-33%**	**136%**	**53%**	**10%**

Source: Morningstar

Technology Companies in the S&P500 Declined by 41% in 2000, and the Utility Sector Declined by 33% in 2001 Demonstrating the Breadth of Declines in the Stock Market…

	Change				
S&P Sector	**1999**	**2000**	**2001**	**2002YTD**	**Mkt Cap Leaders**
Consumer Staples	(17)%	15%	(8)%	10%	Coca-Cola, Proctor & Gamble
Basic Materials	23	(18)	1	7	DuPont, Dow Chemical
Transportation	(11)	17	(1)	2	FedEx, Union Pacific
Energy	16	13	(12)	1	Exxon, Royal Dutch
Financials	2	23	(11)	(4)	Citigroup, AIG
Health Care	(12)	36	(13)	(15)	Pfizer, Johnson & Johnson
Utility	(13)	52	(33)	(15)	Duke, Southern
Capital Goods	29	4	(11)	(17)	GE, Minnesota Mining
Technology	78	(41)	(26)	(32)	Microsoft, Intel
Comm Services	17	(40)	(14)	(36)	Verizon, SBC
S&P 500	**20%**	**(10%)**	**(13%)**	**(14)%**	

Source: Morgan Stanley Research As of 06/21/02

Stock Price Declines for Many Companies were Significant from 1999-2001

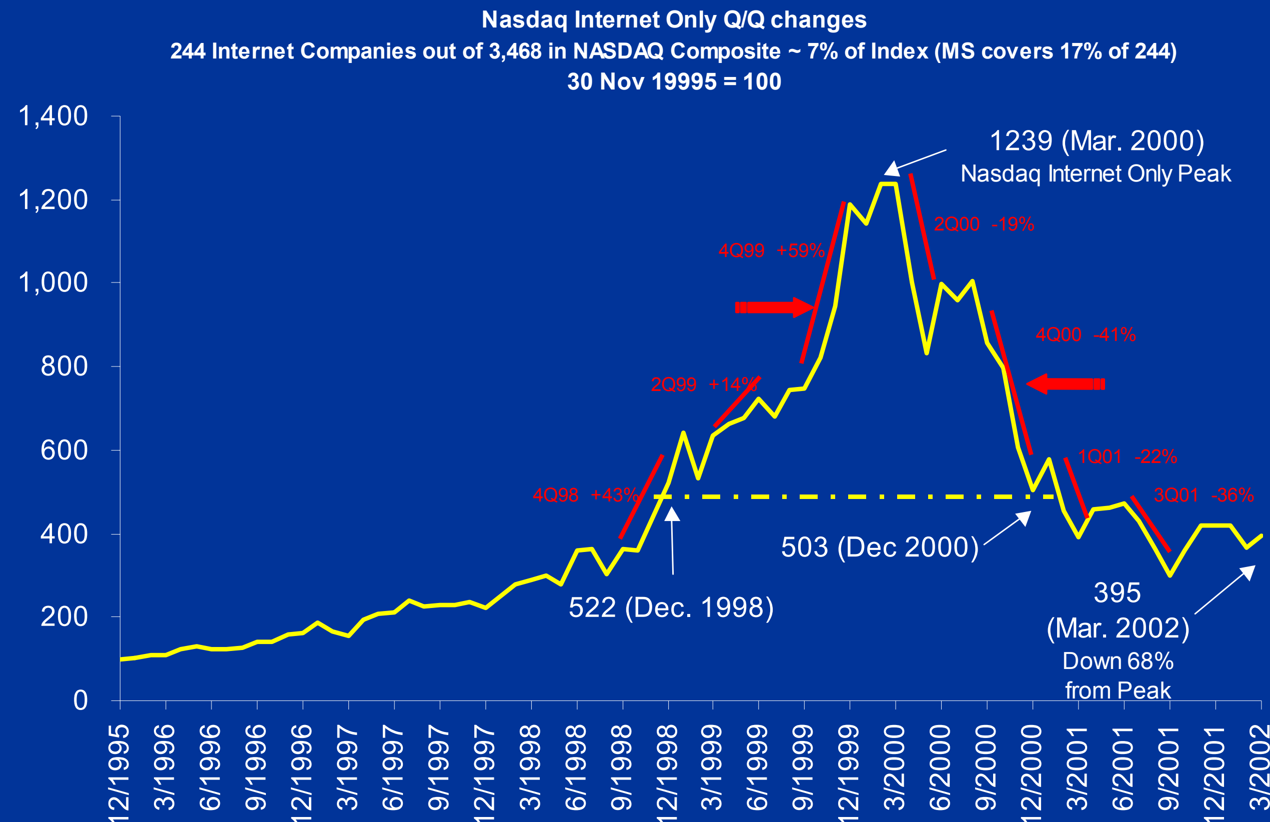
87% of the 78 technology companies in the S&P 500 experienced a *50%+ stock price decline within a six month period* from 1999-2001 while *28% of all stocks in the S&P 500* experienced a 50%+ decline.

And, *499 of the stocks of companies in the S&P 500* experienced a *20%+ decline during a six month period from* 1999-2001.

Source: Morgan Stanley Research

Two Isolated Quarters (CQ4:99 and CQ4:00) Accounted for a Significant Portion of the Upward and Downward Moves in Technology and Internet Companies…

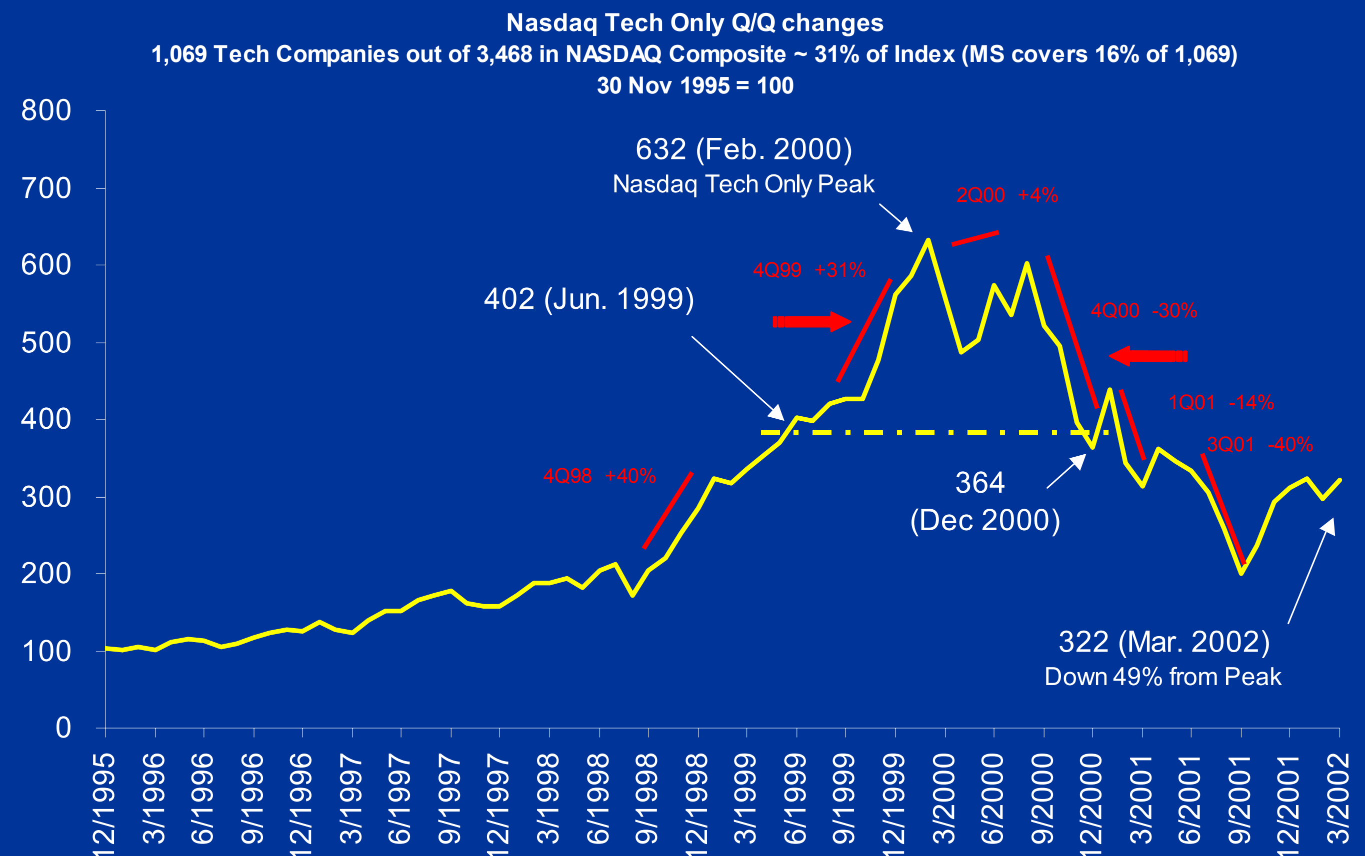
Internet stocks in the NASDAQ in CQ4:99 rose by 59% Q/Q while they fell in CQ4:00 by 41%.



Source: Morgan Stanley Research

Two Isolated Quarters (CQ4:99 and CQ4:00) Accounted for a Significant Portion of the Upward and Downward Moves in Technology and Internet Companies…

Technology stocks in the NASDAQ in CQ4:99 rose by 31% Q/Q while they fell in CQ4:00 by 30%.



Source: Morgan Stanley Research

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Some believe that the *impact of increased news flow* and *the impact of the ease of electronic day trading* amplified the volatility of stock markets from 1998-2002.

Source: Morgan Stanley Research

Down Cycles can be Negative for Even the Best Growth Companies/Stocks Which Ultimately Recover

Oracle – Oct '90 – down 81% to $0.13
now at $8 . . . **up 6,054%**

Compaq – Dec '91 – down 71% to $1.40
now at $11 . . . **up 686%**

Dell – Jun '92 – down 45% to $0.24
now at $24 . . . **up 9,900%**

Cisco – Jul '94 – down 51% to $1.09
now at $14 . . . **up 1,184%**

America Online – Oct '96 – down 68% to $1.42
now at $15 . . . **up 956%**

Source: Morgan Stanley Research, Data as of 06/21/02; Compaq price as of 050302

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Source: Morgan Stanley Research

Checklist of Tech Winner Attributes

1) *Large market opportunities* - better to have 10%, and rising, market share of a $1B market than 100% of a $100M market

2) *Good technology/service* that offers a significant *value/service proposition* to its customers…*disruptive technologies* are a plus

3) Simple, direct *mission* and strong *culture*

4) *Missionary* (not mercenary), *passionate*, maniacally-*focused* founder(s)

5) *Technology magnets* (never underestimate the power of a Bill Joy . . . a Jim Clark)

6) Great *management team*/board of *directors*/committed *partners*

Source: Morgan Stanley Research

Checklist of Tech Winner Attributes (continued)

7) Ability to *lead change* and *embrace chaos*

8) Leading/sustainable *market position* with *first-mover advantage…weak competitors are a plus*

9) *Brand leadership* - leading reach and market share

10) *Global* presence

11) Insane *customer focus* and rapidly *growing customer base… never underestimate the power of a loyal installed base of high quality customers*

12) *Stickiness* and customer *loyalty*

Source: Morgan Stanley Research

Checklist of Tech Winner Attributes (continued)

13) *Extensible product line(s)* with focus on constant improvement

14) Clear, broad *distribution plans*

15) Opportunity to increase customer *"touch points"* - viral business can be especially attractive

16) *Strong* business and milestone *momentum*

17) *Annuity-like* business with sustainable *operating leverage* assisted by *barriers-to-entry*

18) High *gross margins*

19) Path to *improving operating margins*

20) *Low cost* infrastructure and development efforts

Source: Morgan Stanley Research

'The Three CEOs of a Startup'

Randy Komisar

1) *The Retriever:* Assembles core team, product or service, the market direction - all around a coherent vision. Raises money and crucial early customers and partners. Tenacious and inventive.

2) *The Bloodhound:* Finds the market and proves the business. Builds operating team and establishes market beachhead. Keen sense of direction and company-building skills.

3) *The Husky:* Leads the team, pulls an operating company that grows heavier by the day with people and public company responsibilities. Constancy and scalability.

Source: Morgan Stanley Research

General Thoughts for Startup Management Teams

1) Build *Frameworks* and *Food Chains*
2) *Diversified teams* are key - Have *"Free Rangers"* and *competitive discussions*
3) *Leadership, character, courage,* and *selflessness* can't be underestimated
4) *Run your business/division like it's a public company* – quarterly updates with mission . . .be sure everyone knows the agenda
5) *Listen to your customers* – they'll tell you where you need to go
6) Treat *employees like partners*
7) Hire people who are *better than you* are
8) Assume your business will *derail and anticipate*

Source: Morgan Stanley Research

A Look At Some of The Biggest Winners of Our Day

- Why is there only one Michael Jordan, one Tiger Woods?
- It's all about the entrepreneur… *and it's REALLY hard to be a great entrepreneur*
- It's also about *the people and the team…*

Source: Morgan Stanley Research

Key Points...

- Standalone, the value of a business is the present value of the *future cash flows*. . . And, over time, stock prices *always reflect EXECUTION* . . .

- *"Never forget a defeat. Defeat can be the key to victory."*
  -- Mike Krzyzewski, Coach, Duke Basketball

- Swinging for the Fences, and NOT Swinging for the Fences - *Learn from experience, but don't let it paralyze you!*

Source: Morgan Stanley Research

Disclaimer

V = More volatile. 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 "volatile" can still perform in that manner.

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