

Equity Research
North America

Industry

Technology

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Industry Overview

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Morgan Stanley CIO Survey Series: Release 3.8

MSCI SECTOR INFORMATION TECHNOLOGY

US Strategist Weight	15.2%
S&P 500 Weight	15.2%

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In this survey of 225 CIOs:

- **They didn't spend it all in 2002**
39% of respondents spent all or more than their initial 2002 budget; 58% spent less than their initial budget; 43% of respondents indicated that they had revised their IT budget downward since the beginning of the year.
- **Controlling costs still major issue in 2003**
44% described 2003 as "a year of cost containment" and another 16% characterized it as "a year of cost reduction". 21% characterize 2003 as "a year of stabilization in spending after two years of belt tightening", while 19% of respondents indicate that 2003 will be "a year of new project investment".
- **IT spending outlook for 2003 looks cautious, controlled & flattish to slightly up**
Based on our last three surveys, we are forecasting budget growth of 2-3%. The median growth in the latest survey was 5%, but the commentary around it left plenty of room for a downward revision if needed (which happened in 2002).
- **But there are still new projects on the table**
41% indicated they would spend more on new projects in 2003 than in 2002. 11% indicated they might spend more on new projects but it would depend on the economy.
- **More optimism about business prospects but some concern over economy remains**
21% were negative on the economic outlook, 45% positive or slightly positive, and 34% neutral. Regarding their own company's business prospects, we saw an increase in respondents indicating positive sentiment, from 56% in October to 67% in November.



Previous releases of the Morgan Stanley CIO Survey Series, as well as other Morgan Stanley Enterprise Software research, can be viewed at: www.morganstanley.com/mrchuck. All of Morgan Stanley's equity research technology reports are available on the Internet through Client Link on www.morganstanley.com. If you wish to receive this service, please contact your institutional sales representative. Many reports can also be downloaded from www.morganstanley.com/institutional/techresearch/.

Morgan Stanley CIO Survey Series: Release 3.8

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This report contains the latest results of our ongoing CIO Survey Series, which we have conducted in its current form since the beginning of 1999. The survey is conducted by telephone and uses a respondent base of 300 IT executives, of which 225 participate in the survey for each round of interviews. The survey is conducted 10 times per year.

This report contains results from our last two rounds of surveys, conducted from October 14 to October 25, 2002 and from November 11 to November 20, 2002. All data in this report are footnoted as to when each question was asked. All responses were collected in strict confidence and were used only in combination with all others in the survey sample. The survey yields a total of 225 responses from IT executives of the Fortune 1000. We present the results of the survey in the exhibits on the following pages.

Exhibit 1

Respondents — By Company Revenues

	October	November
\$40 billion or more	14%	15%
\$30 - \$39.9 billion	8	7
\$15 - \$29.9 billion	10	9
\$10 - \$14.9 billion	8	8
\$5 - \$9.9 billion	16	16
\$2 - \$4.9 billion	16	20
\$1 - \$1.9 billion	20	17
Under \$1 billion	7	7
Not sure/Not applicable	1	1

Source: Morgan Stanley CIO Survey, October / November 2002

Exhibit 2

Respondents — By Industry

	October	November
Aerospace/Defense Contractor	4%	3%
Communications	7	6
Education	2	1
Energy	3	2
Finance	12	14
Government: Federal (include Military)	1	1
Government: State or Local	2	1
Health Care/Pharmaceuticals/Medical Services	4	6
Insurance	7	8
Manufacturing	21	23
Printing/Publishing	2	2
Service Organizations	10	7
Technology	5	7
Transportation	4	1
Utilities	2	1
Wholesale/Retail Trade	12	16
Other	4	2

Source: Morgan Stanley CIO Survey, October / November 2002

THEY DIDN'T SPEND IT ALL IN 2002

- 39% of respondents spent all or more than their initial 2002 budget.
- 58% spent less than their initial budget.
- 43% of respondents indicated that they had revised their IT budget downward since the beginning of the year.

ONE-THIRD THINK THEY ARE UNDERSPENDING ON TECHNOLOGY

- 64% said they were spending at appropriate levels in 2002.
- 34% of respondents said that they were under-spending on technology.

CONTROLLING COSTS STILL MAJOR ISSUE IN 2003

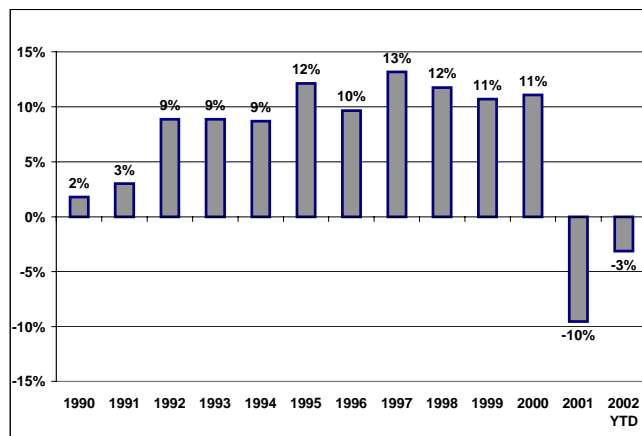
- 44% described 2003 as “a year of cost containment” and another 16% characterized it as “a year of cost reduction”.
- 21% characterize 2003 as “a year of stabilization in spending after two years of belt tightening”, while 19% of respondents indicated that 2003 will be “a year of new project investment”.

IT SPENDING OUTLOOK FOR 2003 LOOKS CAUTIOUS, CONTROLLED, AND FLATTISH TO SLIGHTLY UP

- The IT spending environment is still controlled and just in time – no return to forward buying or bulk purchases appears in sight.
- There are no signs from the CIOs of a return to aggressive technology investment over the next 12 months.
- **Based on our last three surveys, we are forecasting budget growth of 2-3%.** The median growth in the latest survey was 5%, but the commentary around it left plenty of room for a downward revision if needed (which happened in 2002).
- A mix shift in budgets to new projects because of reduced overhead could help some sectors.
- Below are recent growth figures from the Bureau of Economic Analysis that show historical growth in private fixed investment in information processing equipment and software.

Exhibit 3

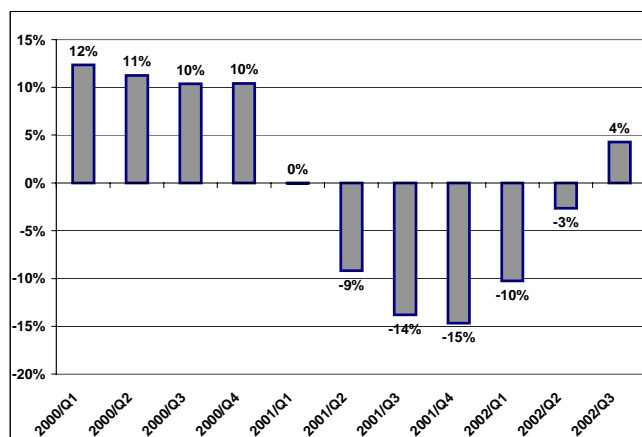
Year/Year % Growth of Private Fixed Investment in Information Processing Equipment and Software



Source: Bureau of Economic Analysis.

Exhibit 4

Year/Year % Growth of Private Fixed Investment in Information Processing Equipment and Software



Source: Bureau of Economic Analysis.

BUT THERE ARE STILL NEW PROJECTS ON THE TABLE

- 41% indicated they would spend more on new projects in 2003 than in 2002.
- 11% indicated they might spend more on new projects but it would depend on the economy.

MORE OPTIMISM ABOUT BUSINESS PROSPECTS BUT SOME CONCERN OVER ECONOMY REMAINS

- 21% were negative on the economic outlook, 45% positive or slightly positive, and 34% neutral.
- Regarding their own company's business prospects, we saw an increase in respondents indicating positive sentiment, from 56% in October to 67% in November.

IT SHOPS ARE LEANER AND MEANER

- 73% indicated that they have reduced overhead and administrative costs associated with IT.
- 41% of respondents indicated that their IT headcount had dropped from one-year ago.
- 44% indicated that people costs were 40-60% of their IT budgets, so headcount reductions make a significant difference in available budget for discretionary spending.
- Overhead costs are down, which could free up some budget for new projects even if the overall budget doesn't grow.

AND THEY CUT THE COSTS BY CENTRALIZING AND CONSOLIDATING SYSTEMS

- 65% now have centralized systems and 25% moved in that direction.

TOP SPENDING PRIORITIES FOR 2003 BY CATEGORY

- Software – Security software (40% of respondents), employee portal (36%), and document/content management software (33%).
- Hardware – Storage hardware (49% of respondents), Desktop PCs (48%), and Windows servers (37%). Linux servers registered in on the scale, but it looks like a modest improvement from a small base.
- Networking – VPN hardware/software (43% of respondents), Wireless LAN hardware/software (39%), and switches and routers (37%). IP Telephony and video applications remained low in the pecking order.
- IT Services – Consulting & systems integration (41% of respondents), offshore services (20%), and application outsourcing (15%).

Exhibit 5

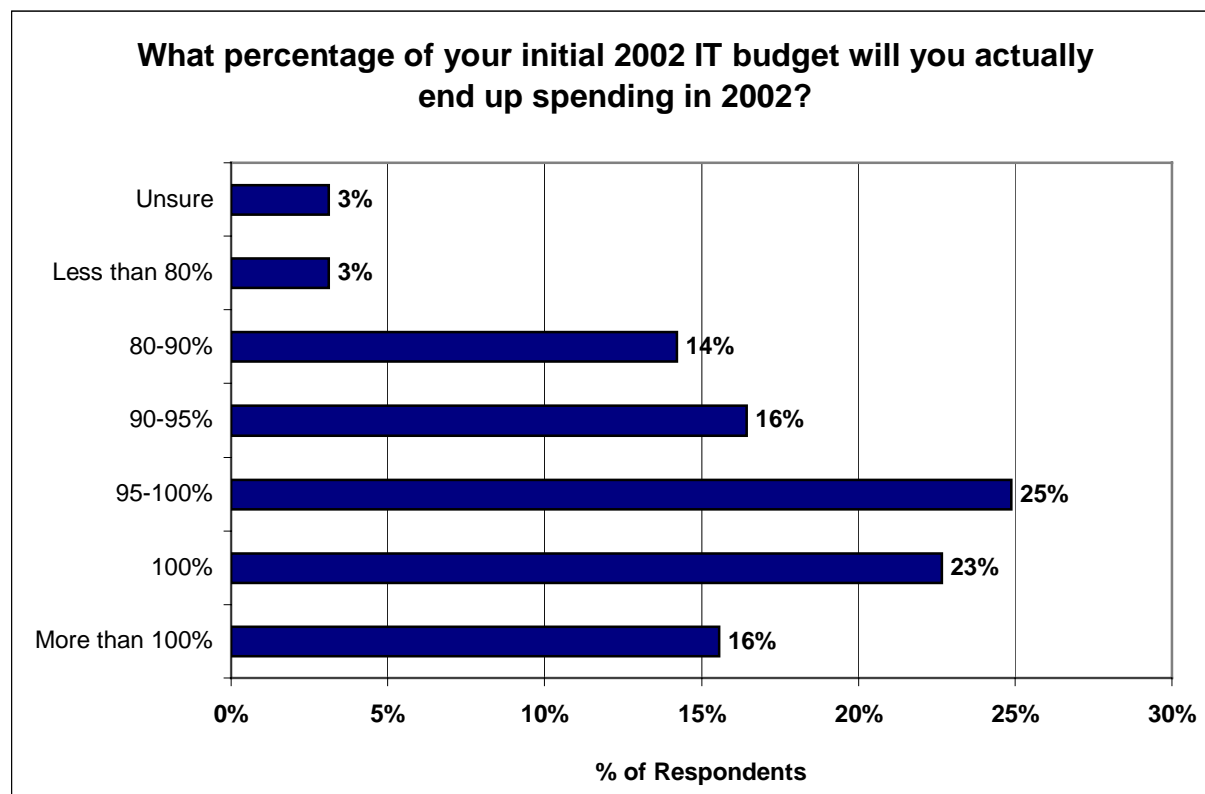
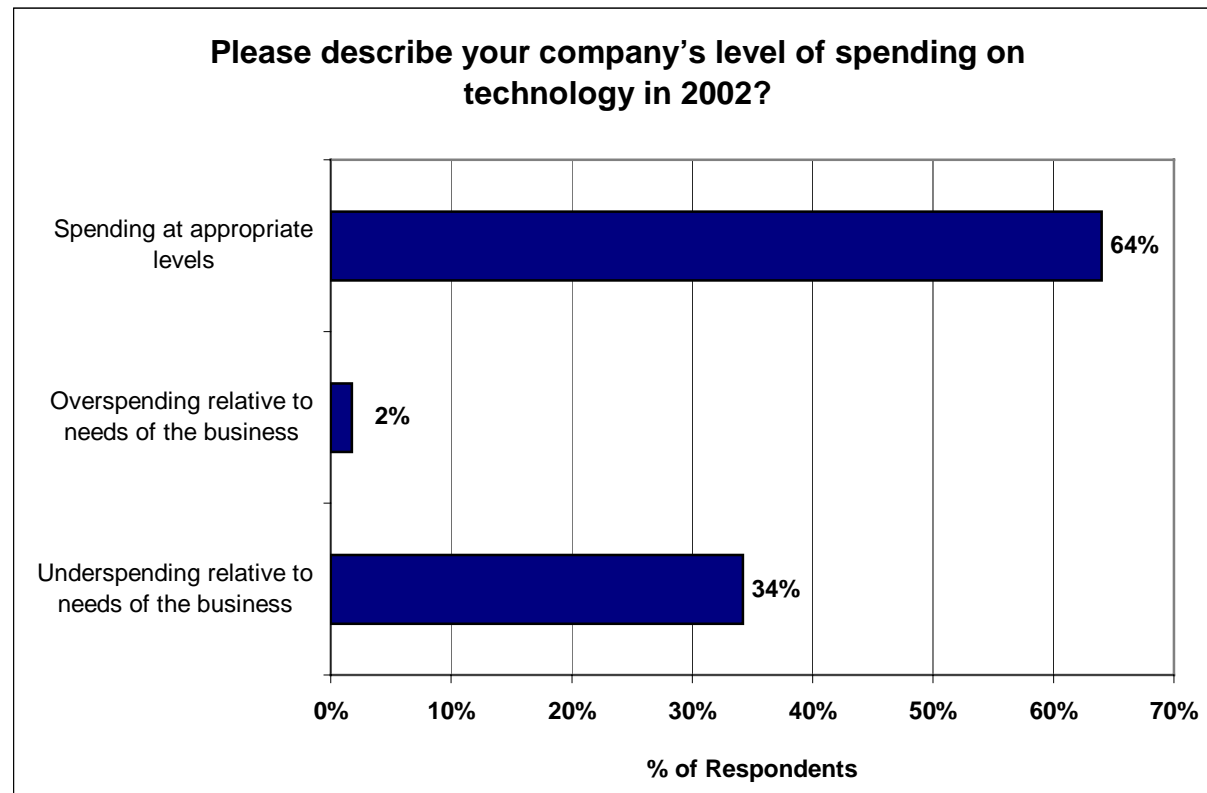
Budgets*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 6

Budgets

Source: Morgan Stanley CIO Survey, October 2002

Exhibit 7

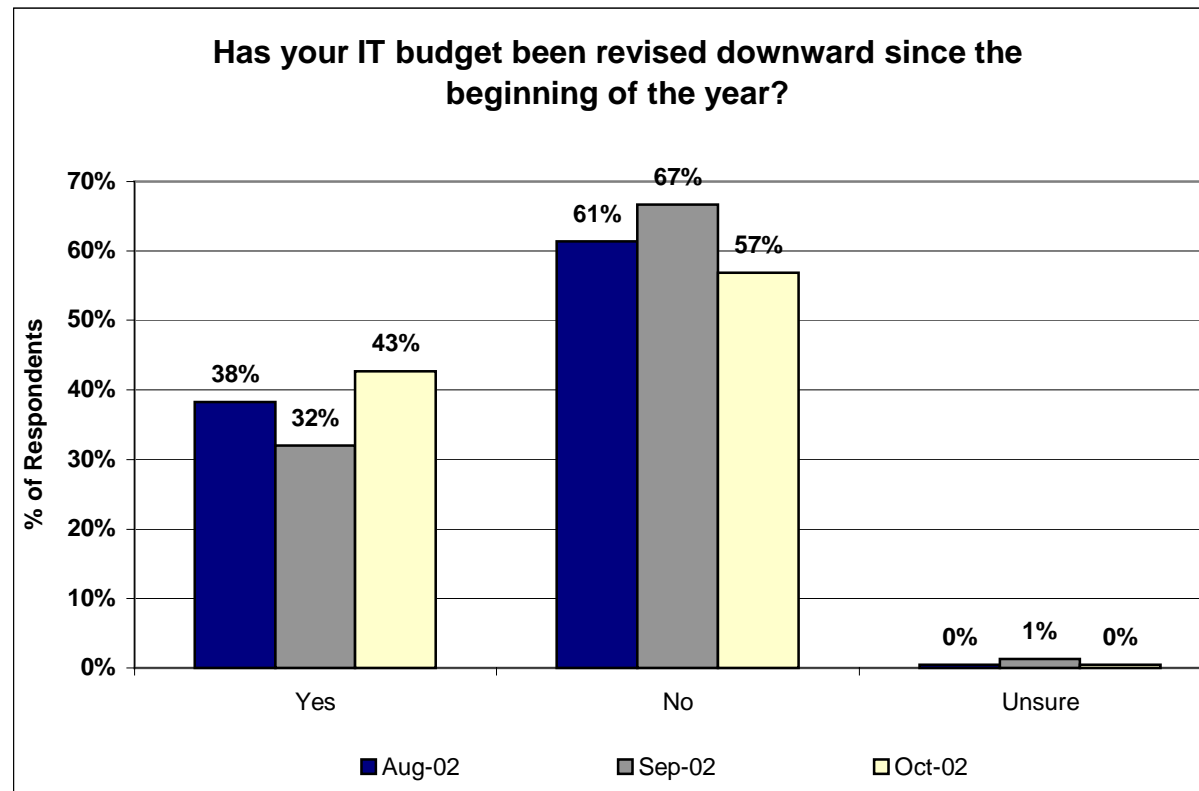
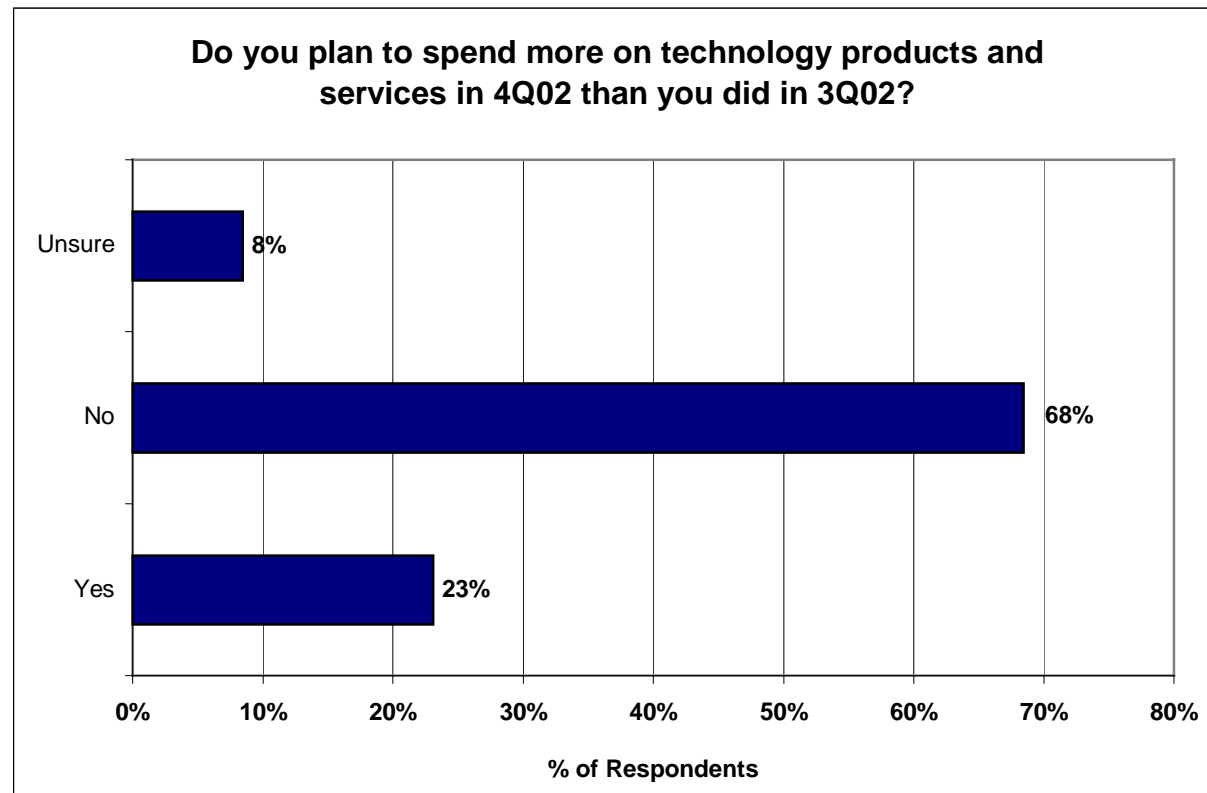
Budgets*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 8

Budgets

Source: Morgan Stanley CIO Survey, October 2002

Exhibit 9

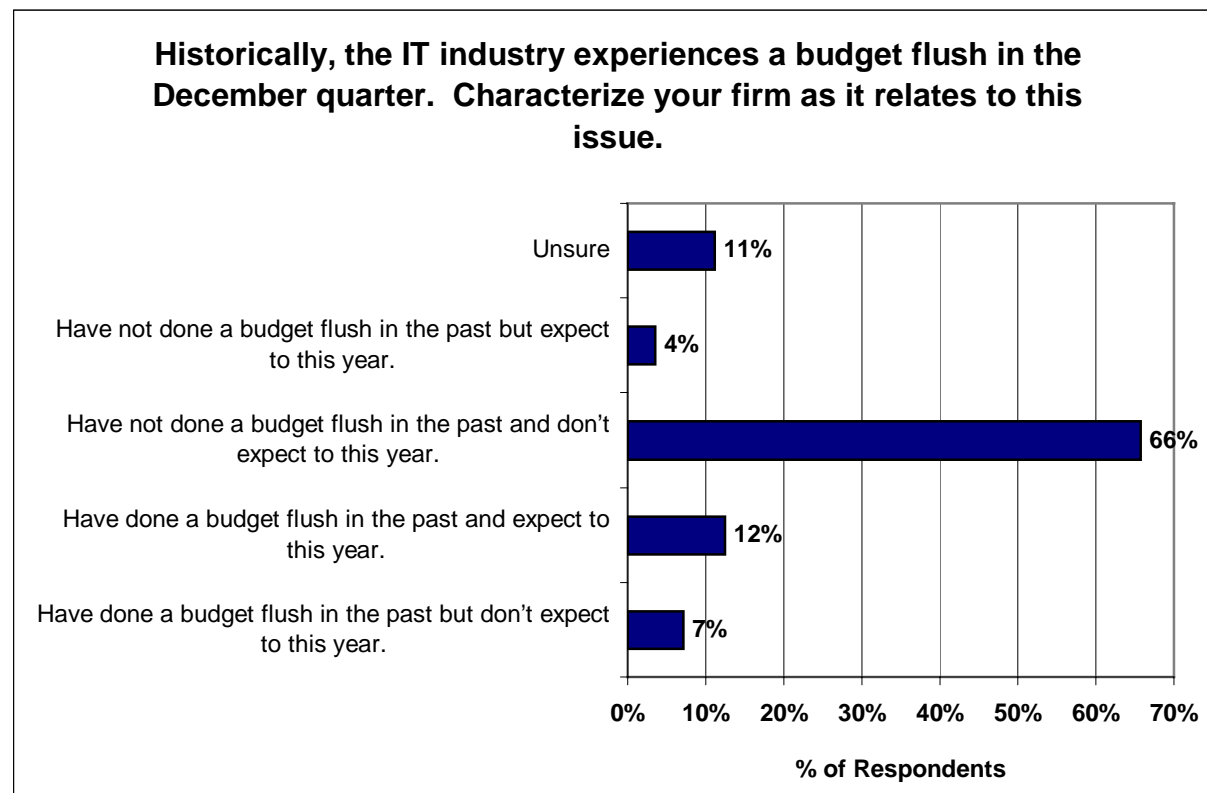
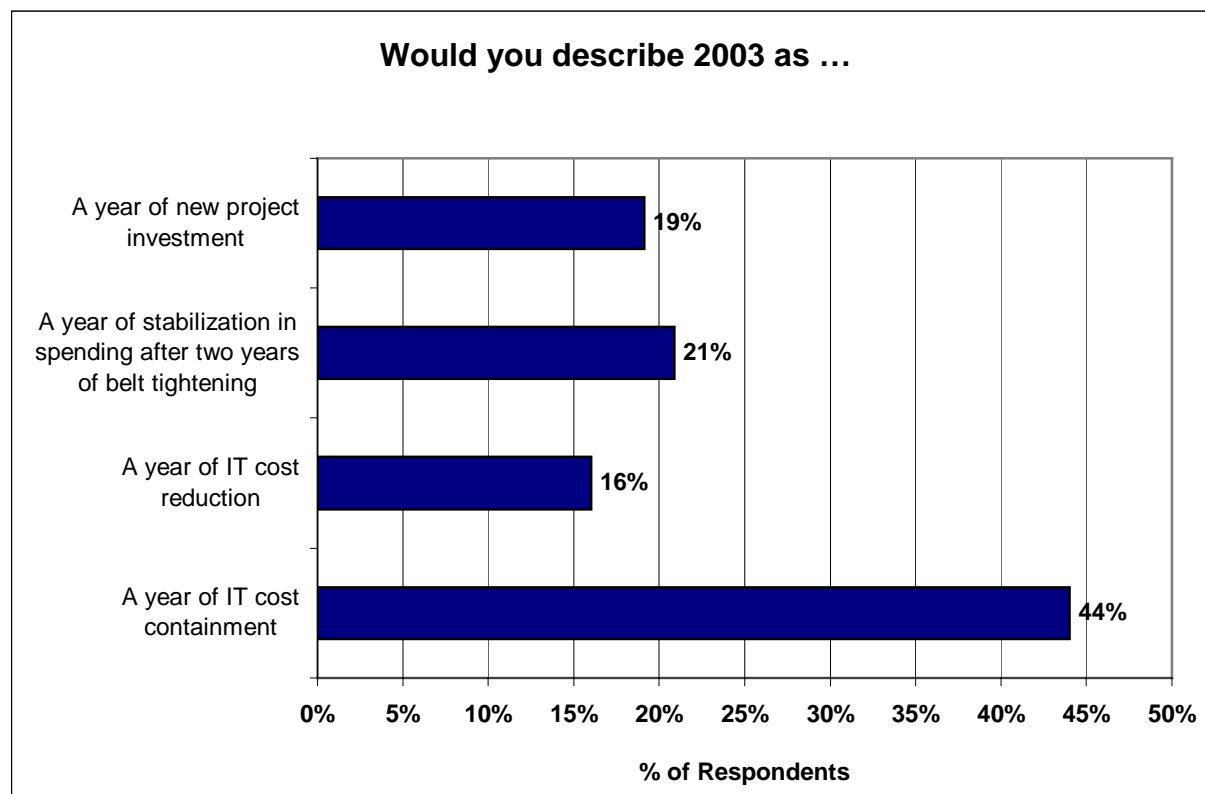
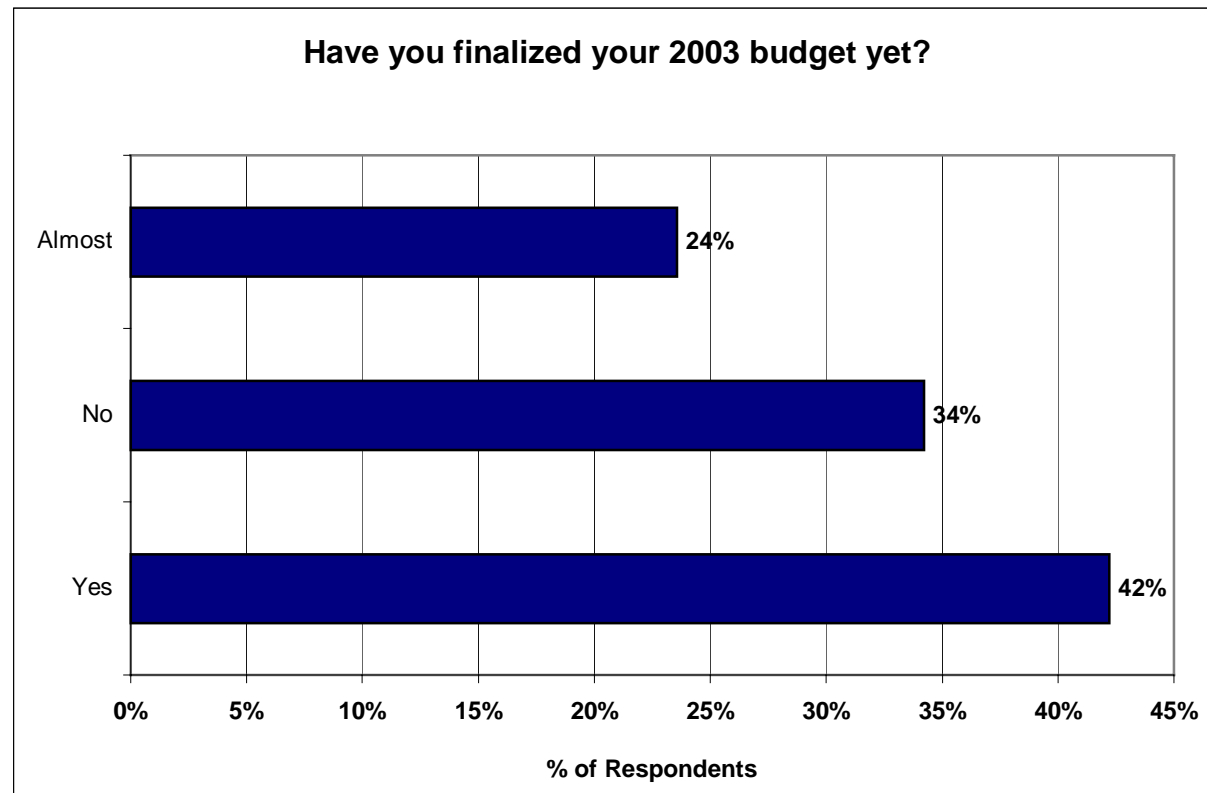
Budgets*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 10

Budgets

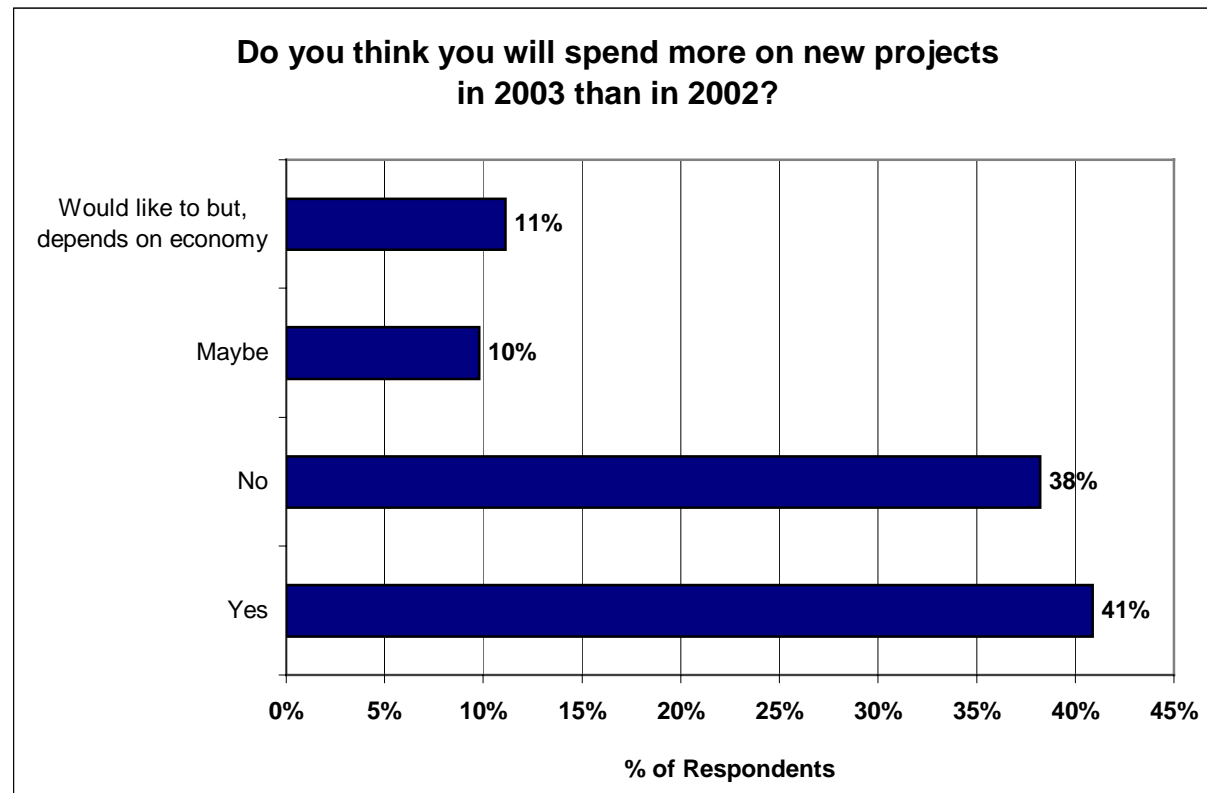
Source: Morgan Stanley CIO Survey, November 2002

Exhibit 11

Budgets

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 12

Budgets

Source: Morgan Stanley CIO Survey, November 2002

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Please see the important disclosures at the end of this report.

Exhibit 13

2003 IT Budgets — Y/Y Growth, 2003 versus 2002

Please indicate your forecasted budget growth for 2003 as compared to your actual 2002 IT spending in the follow categories:

	Hardware	Networking Equipment	Software	IT Personnel Costs	Outsourced Services	Overall IT Budget
Median	5.0%	3.0%	5.0%	4.0%	1.0%	5.0%
n=	184	172	168	185	167	198

Source: Morgan Stanley CIO Survey, November 2002

... and if the rate of spending growth is an acceleration or deceleration from 2002 in the following categories:

	Hardware	Networking Equipment	Software	IT Personnel Costs	Outsourced Services	Overall IT Budget
% Acceleration	42%	39%	42%	57%	22%	44%
% Flat	24%	43%	35%	26%	44%	29%
% Deceleration	33%	18%	23%	18%	34%	27%
n=	201	185	179	196	186	212

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 14

Hardware Purchase Plans

Please provide more detail on your **HARDWARE** purchase plans in 2003, compared to 2002?

	Up Sharply (5%+)	Up Moderately (1-4%)	Flat 0%	Down Moderately (-1-4%)	Down Sharply (-5% or more)	Not Applicable
Desktop PCs	15%	29%	42%	8%	6%	0%
Copiers	0%	12%	59%	11%	12%	5%
Unix Servers	3%	15%	52%	6%	5%	20%
Storage Hardware	16%	34%	45%	3%	1%	0%
Laptops/Notebook PCs	10%	26%	48%	10%	6%	0%
Printers	2%	21%	54%	17%	5%	0%
Linux Servers	4%	16%	37%	1%	3%	39%
Windows Servers	5%	47%	32%	9%	6%	0%

	Up	Flat	Down	Not Applicable
Desktop PCs	44%	42%	14%	0%
Copiers	12%	59%	23%	5%
Unix Servers	18%	52%	11%	20%
Storage Hardware	51%	45%	4%	0%
Laptops/Notebook PCs	36%	48%	16%	0%
Printers	24%	54%	22%	0%
Linux Servers	20%	37%	4%	39%
Windows Servers	52%	32%	16%	0%

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 15

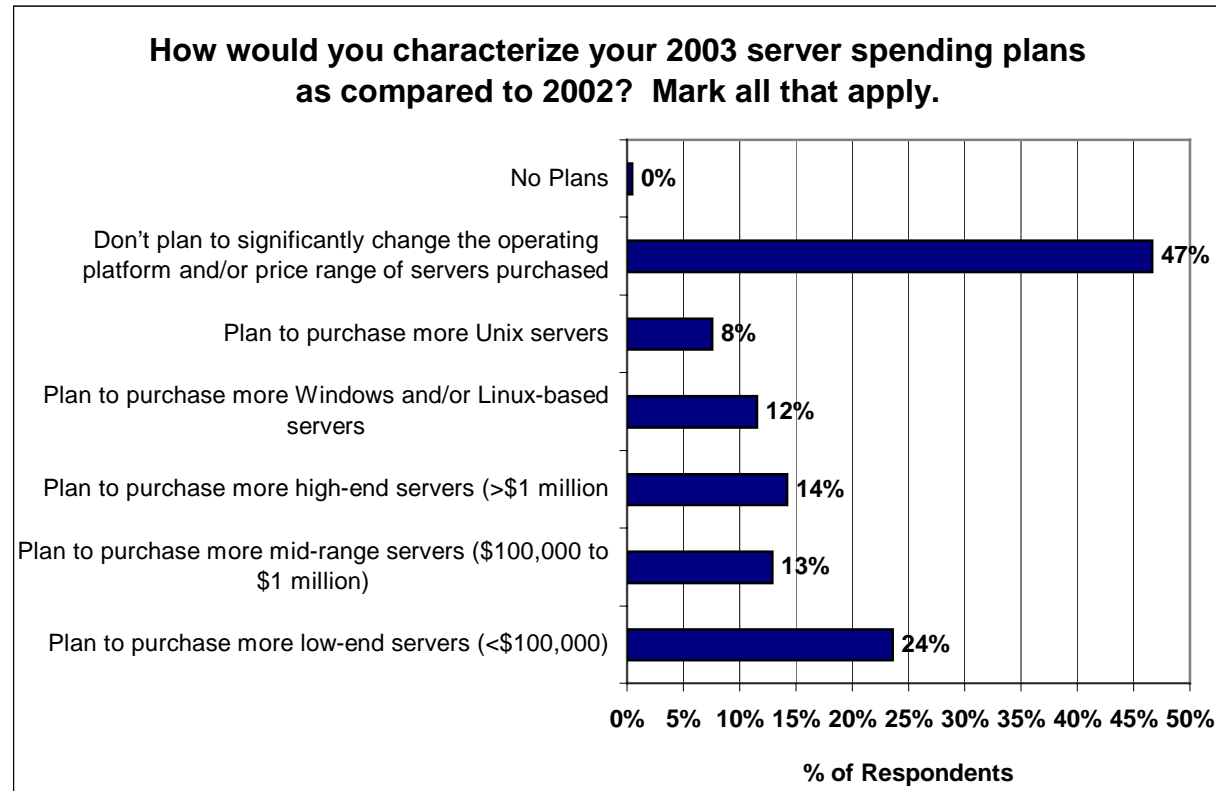
Hardware Purchase Plans*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 16

Networking Purchase Plans

	Up Sharply (5%+)	Up Moderately (1-4%)	Flat 0%	Down Moderately (-1-4%)	Down Sharply (-5% or more)	Not Applicable
Voice over IP	8%	24%	29%	0%	0%	38%
Layer-3 switching	1%	20%	56%	6%	1%	16%
Optical transport	0%	16%	51%	0%	0%	33%
LAN telephony	4%	15%	40%	4%	2%	34%
Storage Area Networks	23%	30%	37%	1%	1%	8%
Layer-2 switching	0%	20%	57%	6%	1%	15%
Routing	6%	28%	58%	4%	2%	1%
Content networking	5%	14%	48%	3%	1%	28%
Wireless LAN	10%	32%	38%	3%	0%	16%
General bandwidth upgrade	20%	44%	33%	1%	0%	2%

	Up	Flat	Down	Not Applicable
Voice over IP	33%	29%	0%	38%
Layer-3 switching	21%	56%	7%	16%
Optical transport	16%	51%	0%	33%
LAN telephony	20%	40%	6%	34%
Storage Area Networks	53%	37%	2%	8%
Layer-2 switching	21%	57%	7%	15%
Routing	34%	58%	6%	1%
Content networking	19%	48%	4%	28%
Wireless LAN	43%	38%	3%	16%
General bandwidth upgrade	64%	33%	1%	2%

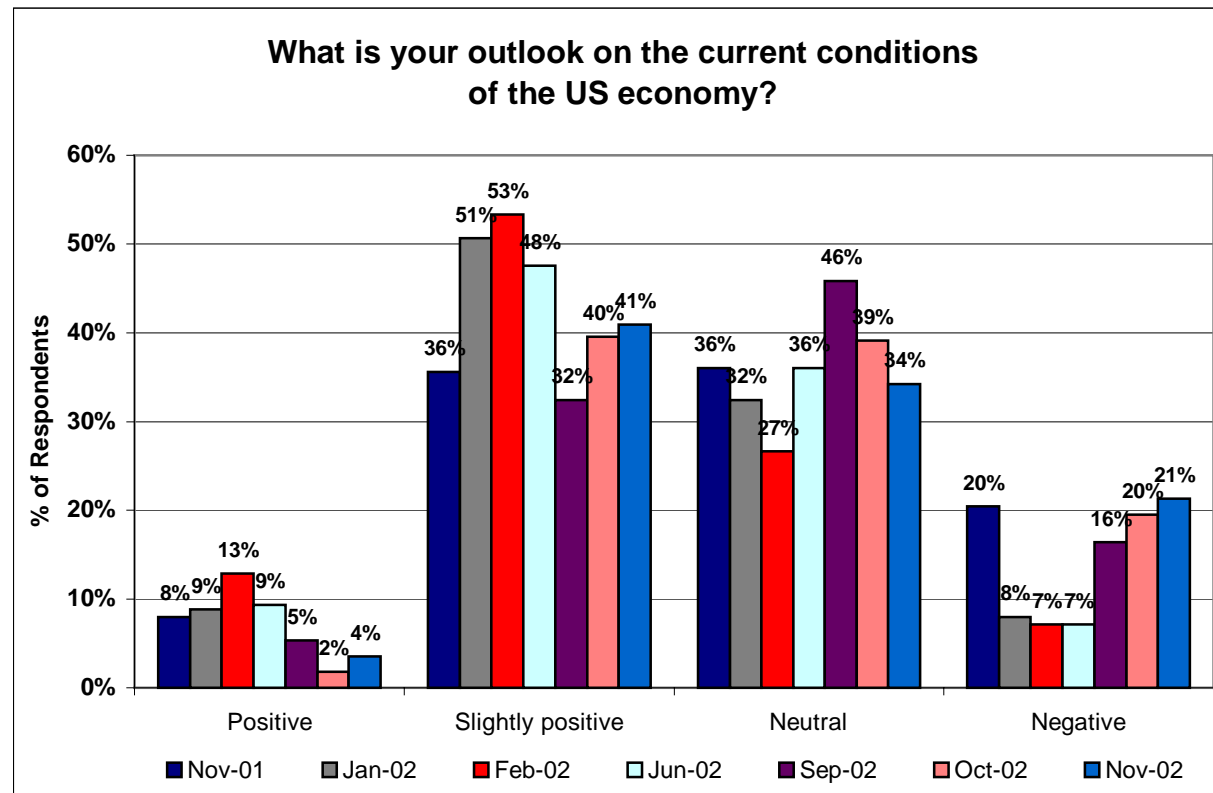
Source: Morgan Stanley CIO Survey, November 2002

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Exhibit 17

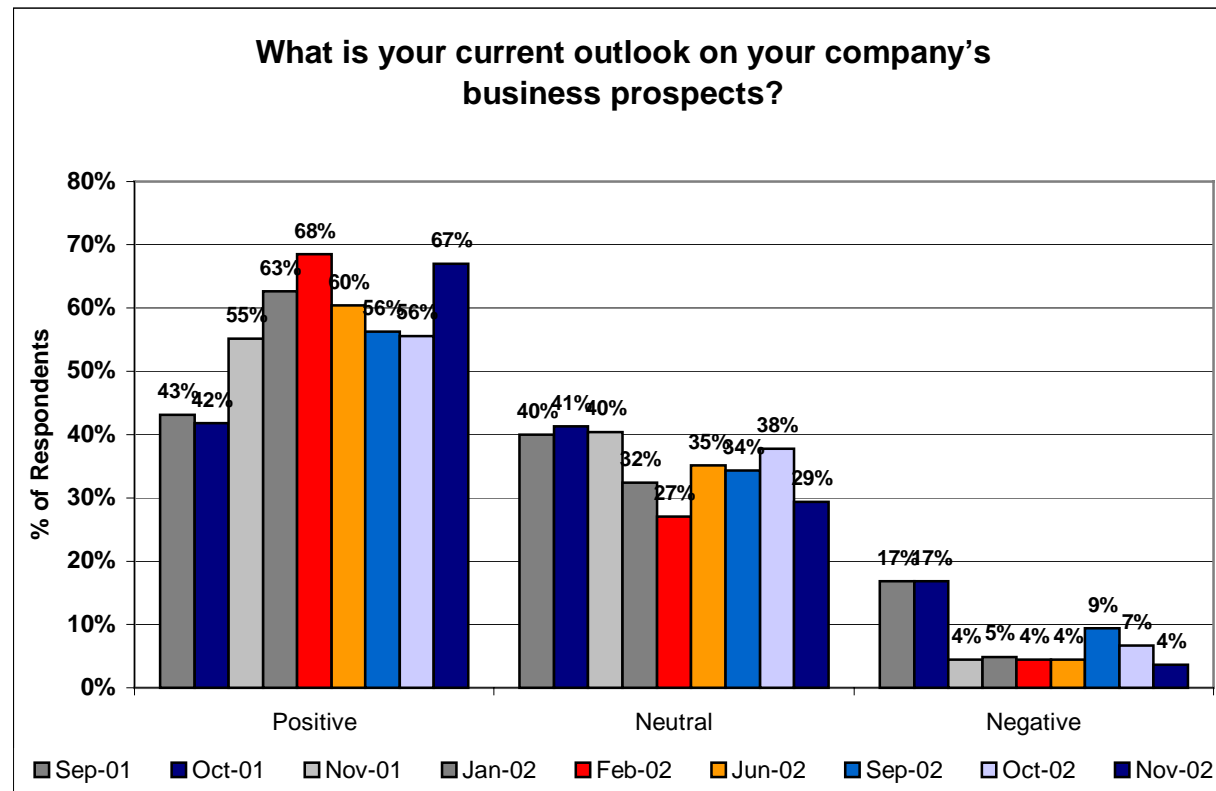
CIOs and the Economy



Source: Morgan Stanley CIO Survey, November 2002

Exhibit 18

CIOs and the Economy



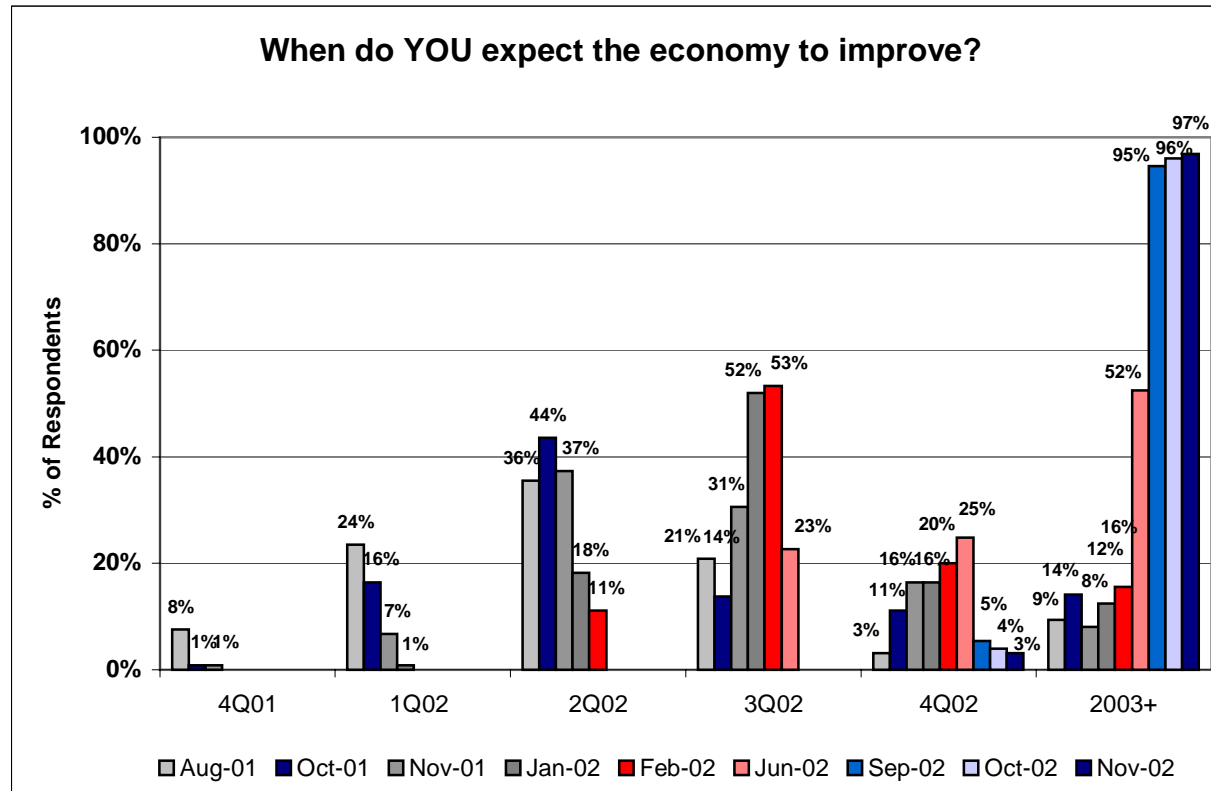
Source: Morgan Stanley CIO Survey, November 2002

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Exhibit 19

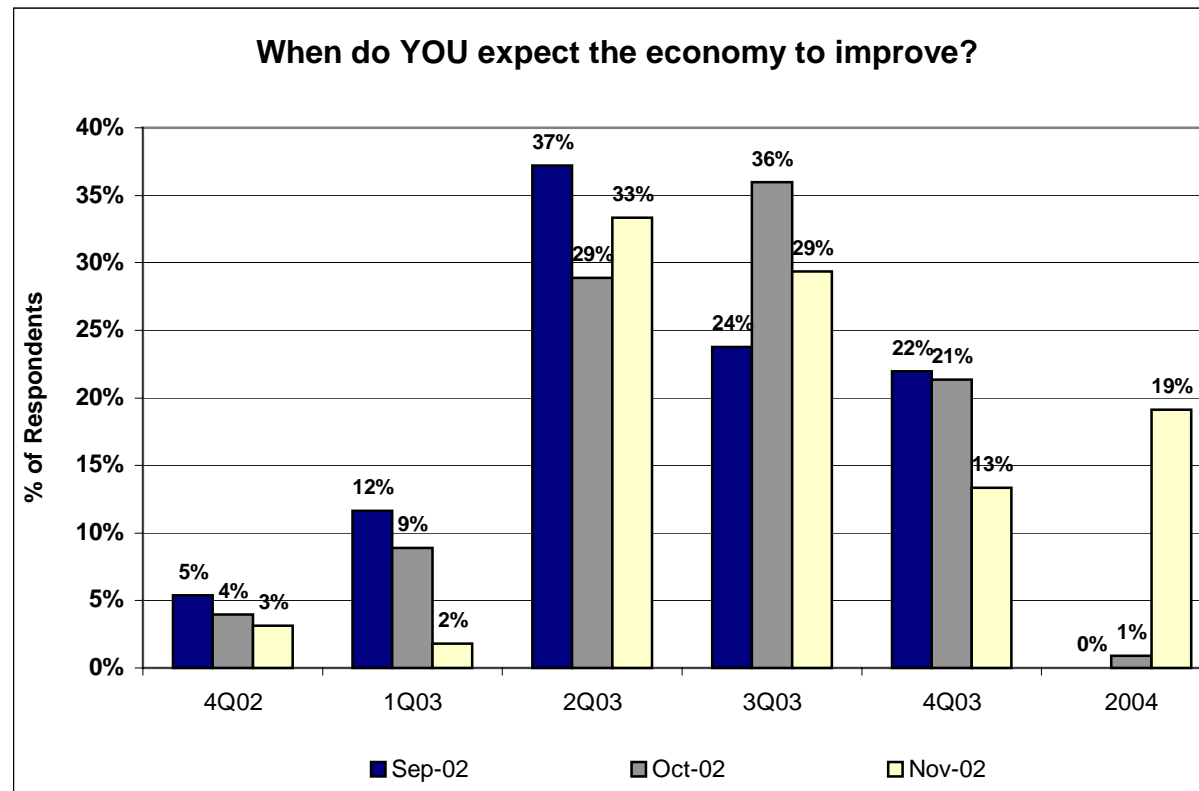
CIOs and the Economy



Source: Morgan Stanley CIO Survey, November 2002

Exhibit 20

CIOs and the Economy



Source: Morgan Stanley CIO Survey, November 2002

Exhibit 21

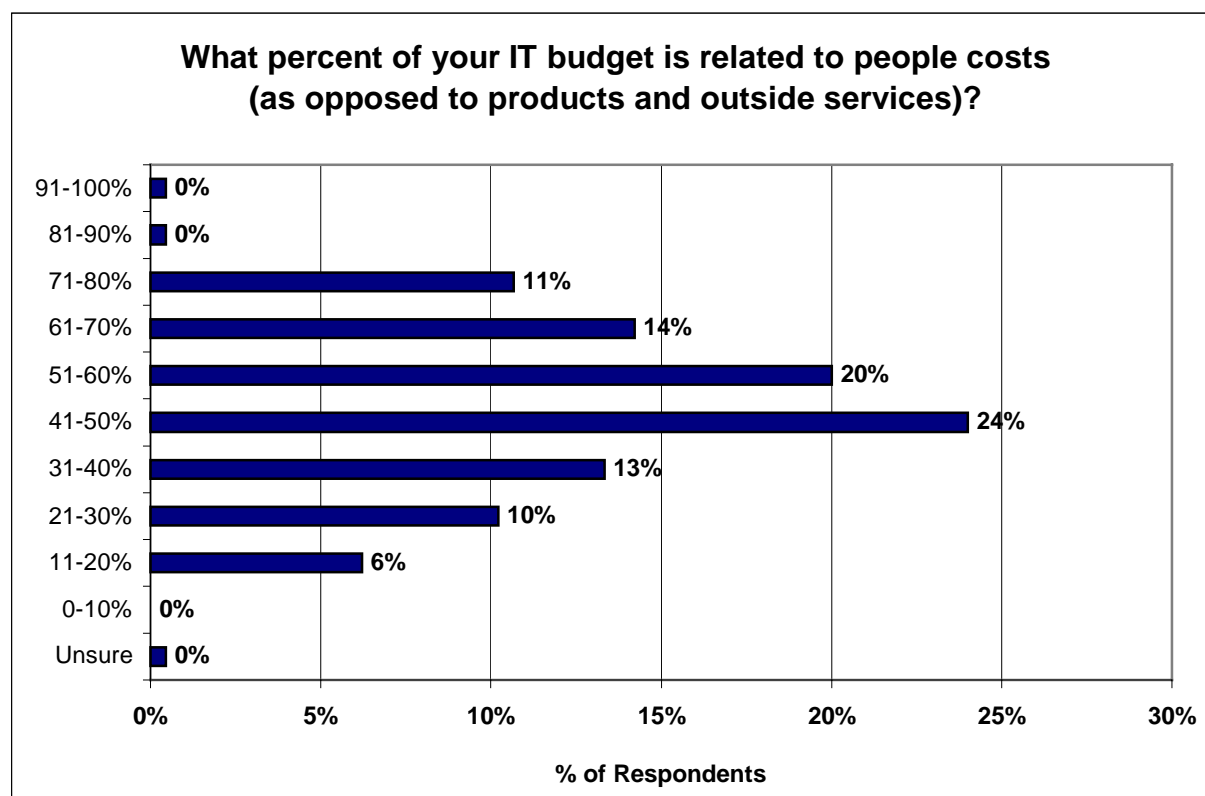
Personnel*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 22

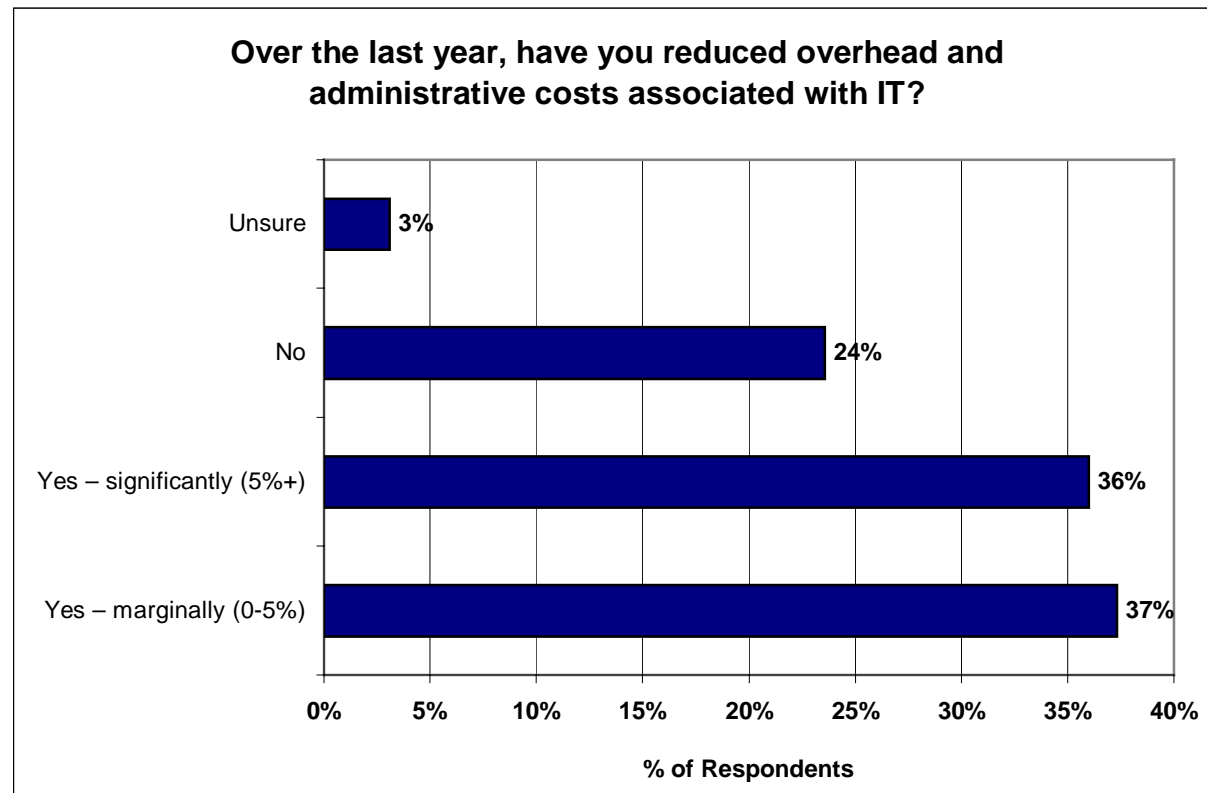
Personnel*Source: Morgan Stanley CIO Survey, November 2002**Technology – December 9, 2002***Please see the important disclosures at the end of this report.**

Exhibit 23

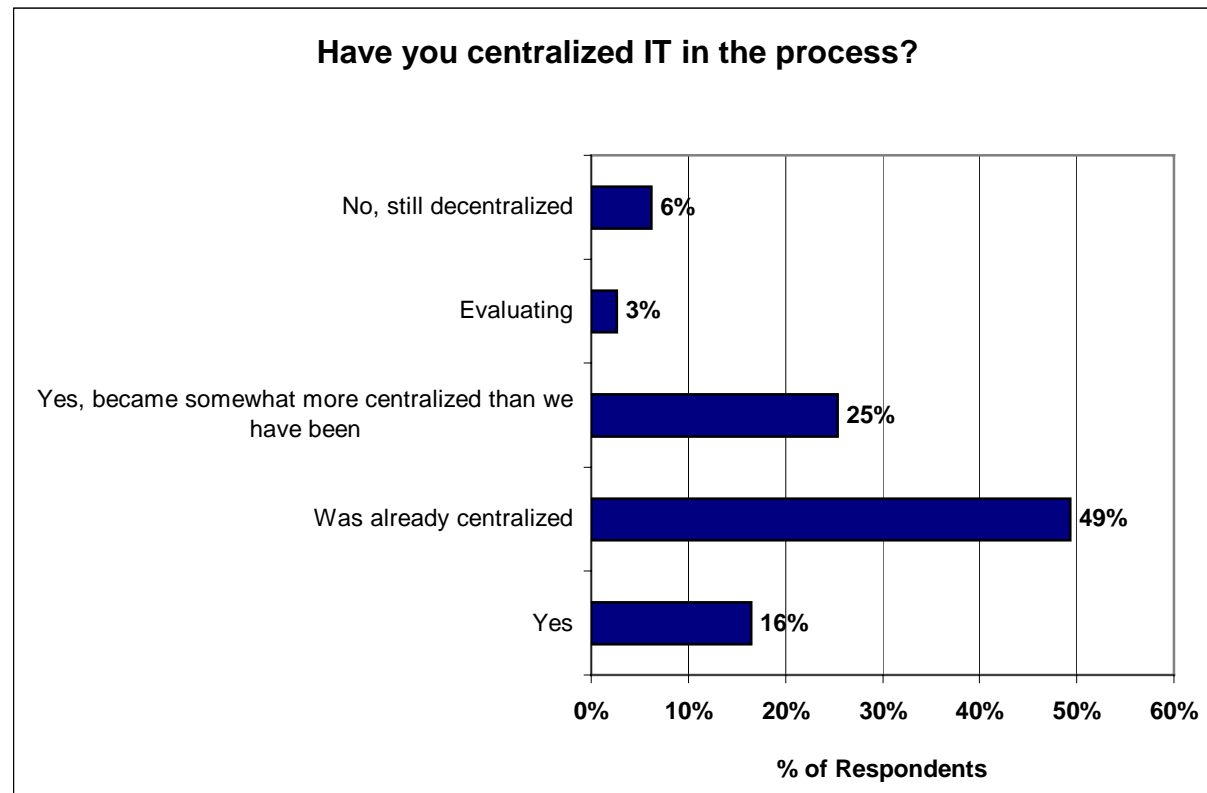
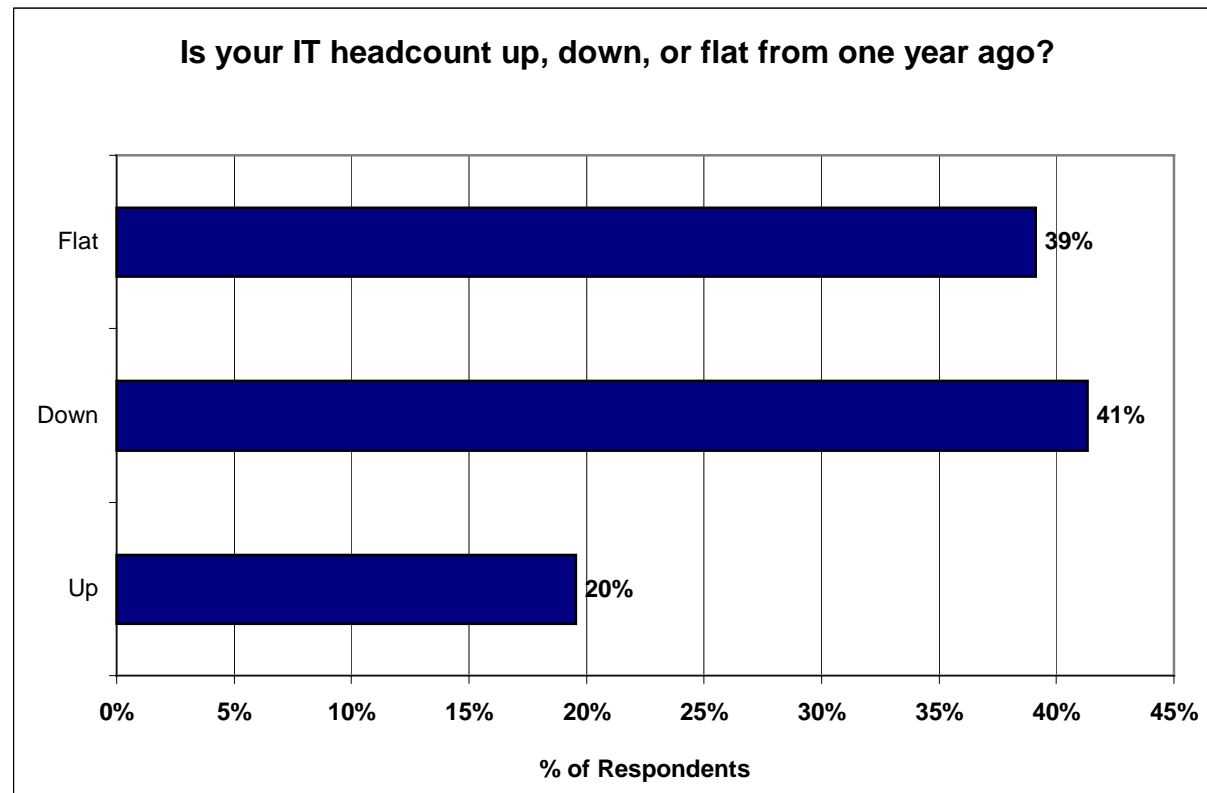
Personnel*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 24

Personnel

Source: Morgan Stanley CIO Survey, October 2002

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Please see the important disclosures at the end of this report.

Exhibit 25

2003 Spending Priorities

Please select which areas represent SOFTWARE spending priorities in 2003 for your organization?

	# of Respondents	% of Respondents	Rank
Security software	89	40%	1
Employee portal	82	36%	2
Document/Content Management software	75	33%	3
Windows 2000/XP upgrade – desktop	74	33%	4
Windows 2000 upgrade - server	70	31%	5
Web services	68	30%	6
Customer portals	64	28%	7
Microsoft .Net	61	27%	8
Customer Relationship Management (CRM) software	57	25%	9
Enterprise Resource Planning (ERP) software	54	24%	10
Storage software	51	23%	11
Microsoft Office upgrade	49	22%	12
New Custom-built Line of Business application	43	19%	13
Application integration software	39	17%	14
Supplier portals	36	16%	15
Supply Chain Management (SCM) software	32	14%	16
Java application servers	25	11%	17
Mainframe software infrastructure	21	9%	18
Database server software	20	9%	19
CAD/CAM, EDA software	18	8%	20
Procurement software	17	8%	21

Source: Morgan Stanley CIO Survey, November 2002

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Please see the important disclosures at the end of this report.

Exhibit 26

2003 Spending Priorities

Please select which areas represent **HARDWARE** spending priorities in 2003 for your organization?

	# of Respondents	% of Respondents	Rank
Storage hardware	111	49%	1
Desktop PCs	108	48%	2
Windows servers	84	37%	3
Notebook PCs	71	32%	4
Intel servers	59	26%	5
UNIX servers	37	16%	6
Linux servers	30	13%	7
Printers	29	13%	8
Mainframe hardware	21	9%	9
Copiers	19	8%	10

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 27

2003 Spending Priorities

Please select which areas represent **NETWORKING** spending priorities in 2003 for your organization?

	# of Respondents	% of Respondents	Rank
VPN hardware/software	96	43%	1
Wireless LAN hardware/software	87	39%	2
Switches and routers	83	37%	3
WAN connectivity	73	32%	4
Network and application management software	63	28%	5
LAN/IP telephony	46	20%	6
Video communications	38	17%	7

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 28

2003 Spending Priorities

Please select which areas represent IT SERVICES spending priorities in 2003 for your organization?

	# of Respondents	% of Respondents	Rank
Consulting & Systems Integration	93	41%	1
Offshore Services	46	20%	2
Application Outsourcing	34	15%	3
Infrastructure Outsourcing	27	12%	4
Other IT Outsourcing	23	10%	5
Business Process Outsourcing	13	6%	6

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 29

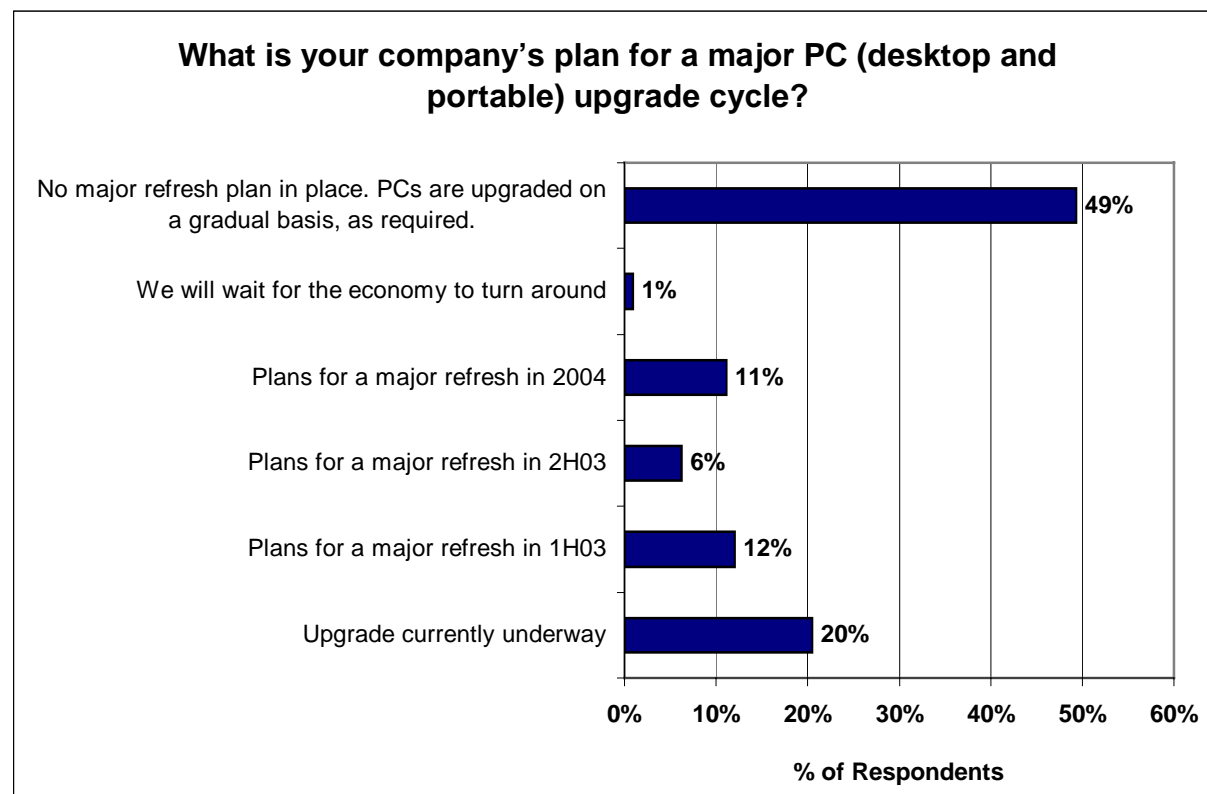
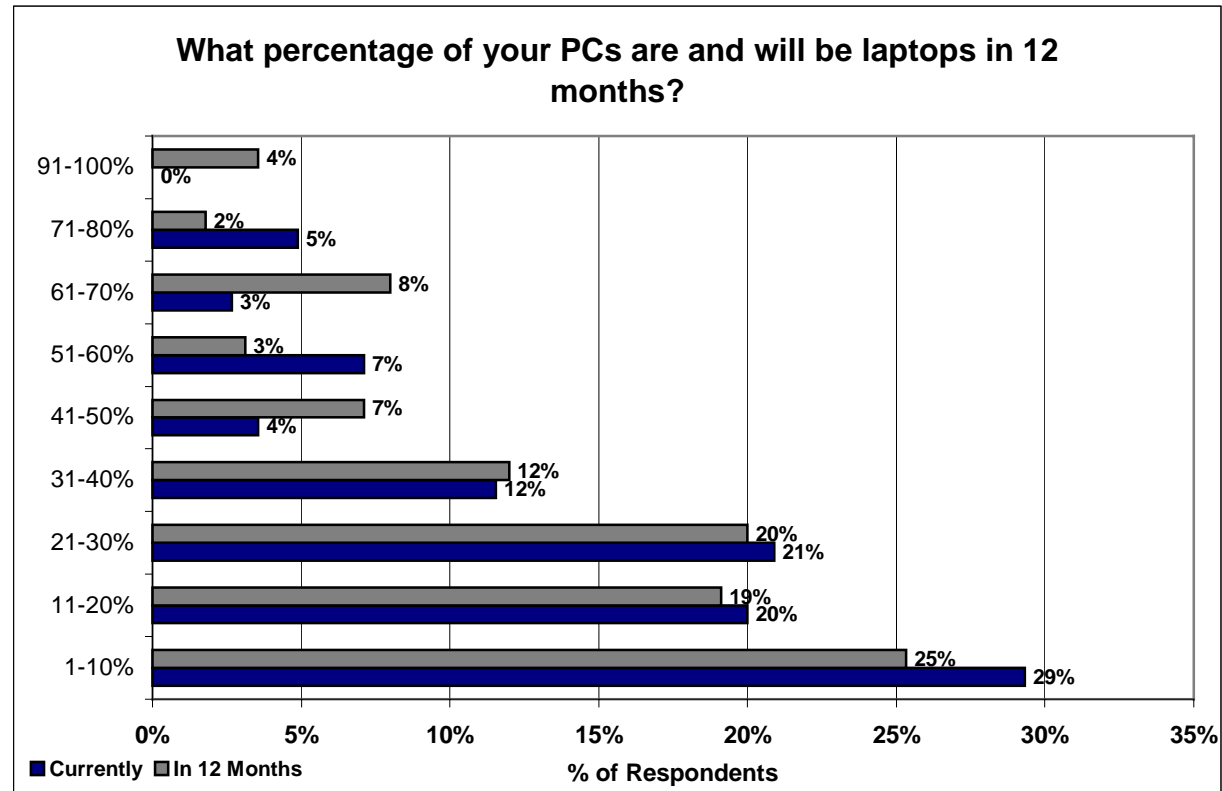
Personal Computers — Upgrade Cycle*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 30

Personal Computers — Laptops



Source: Morgan Stanley CIO Survey, November 2002

Exhibit 31

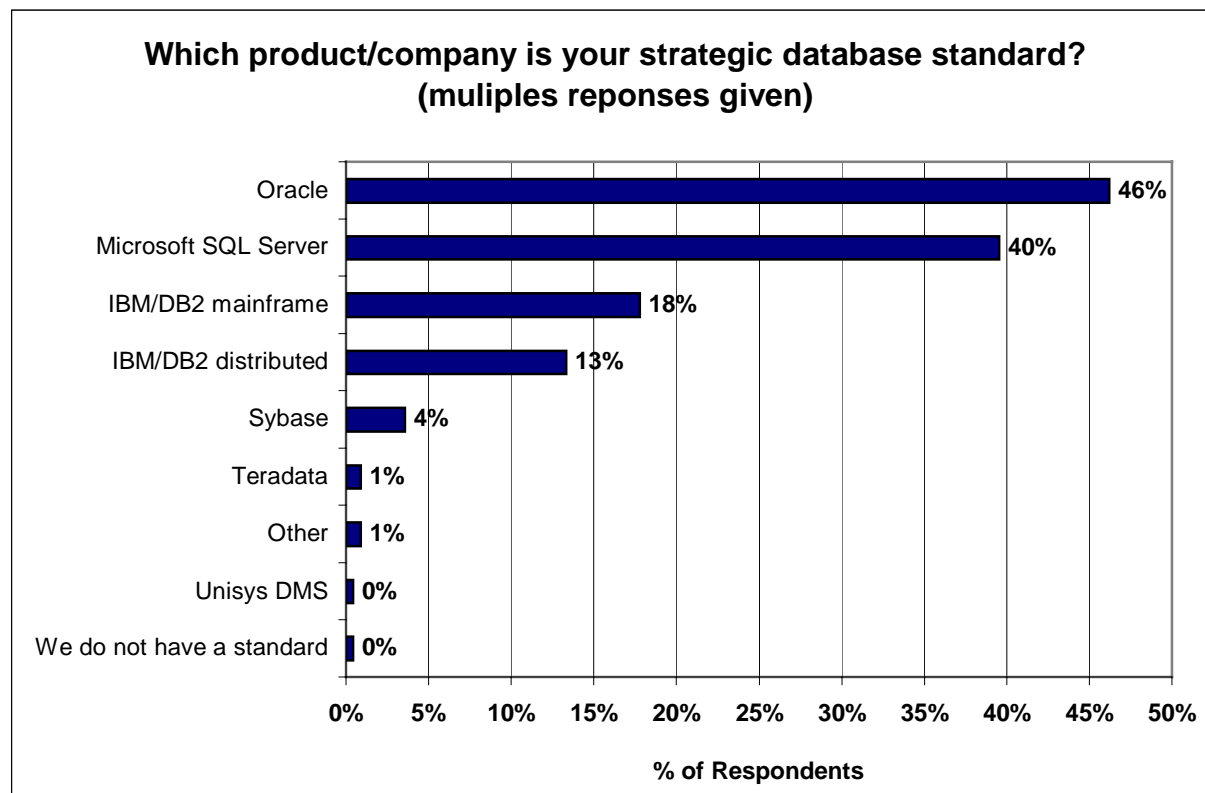
Database Standard*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 32

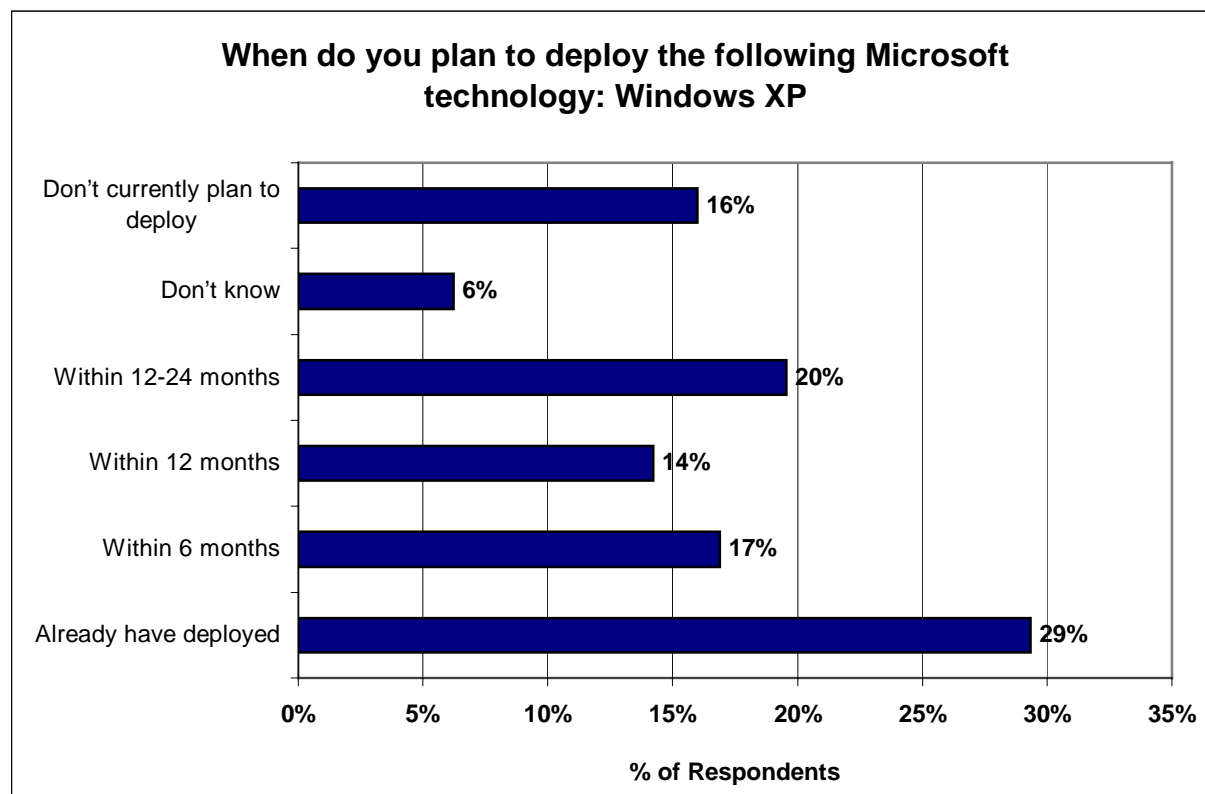
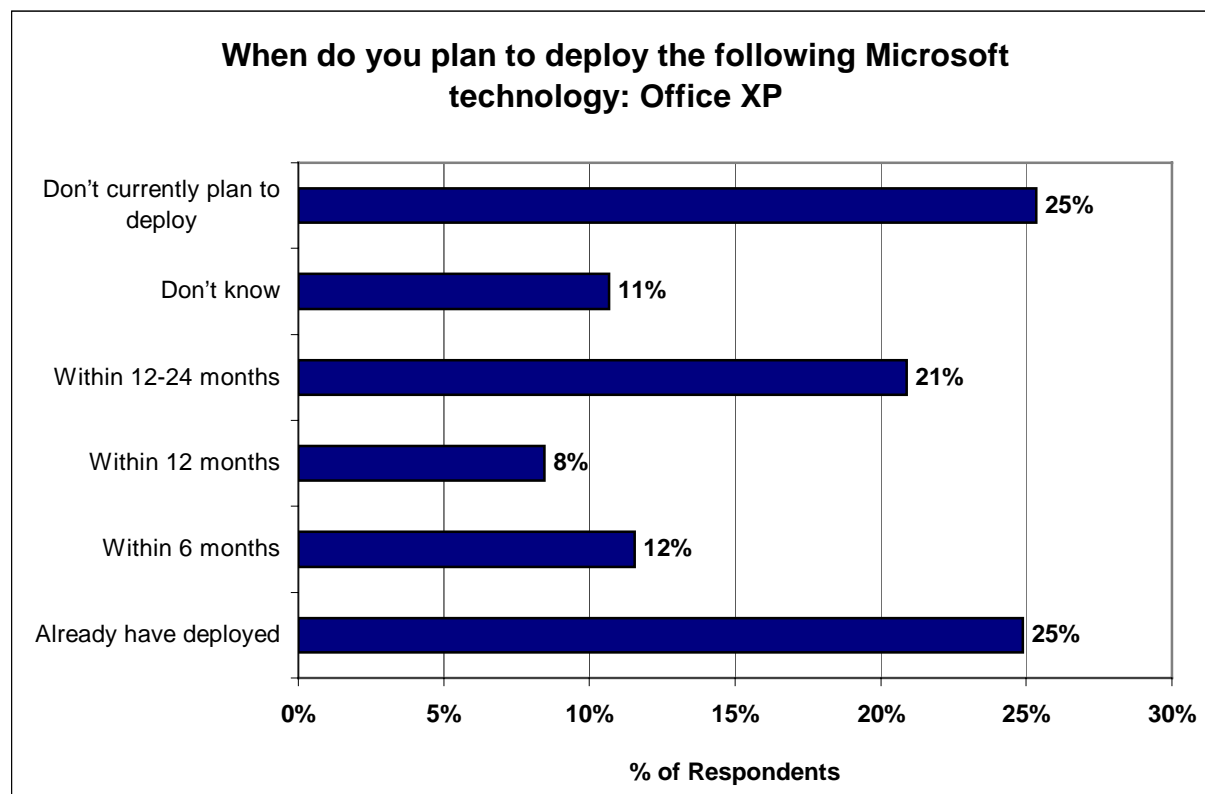
Microsoft*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 33

Microsoft

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 34

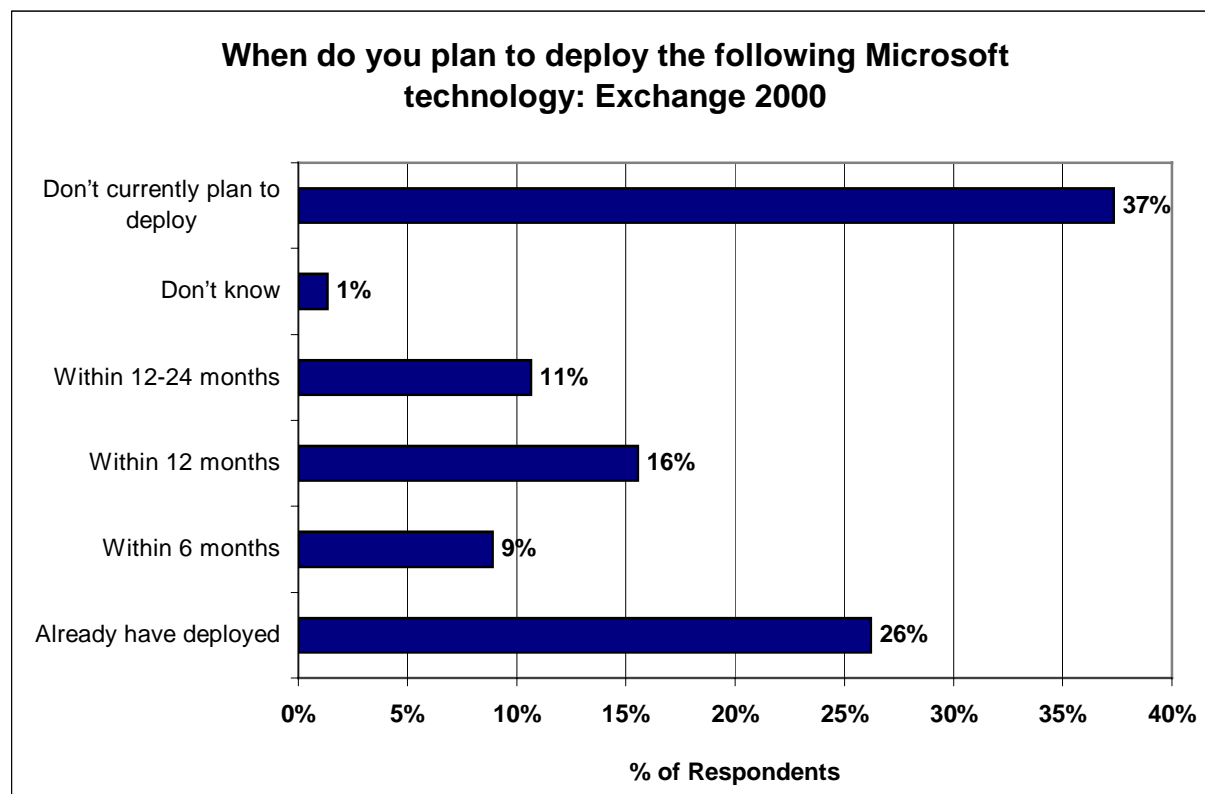
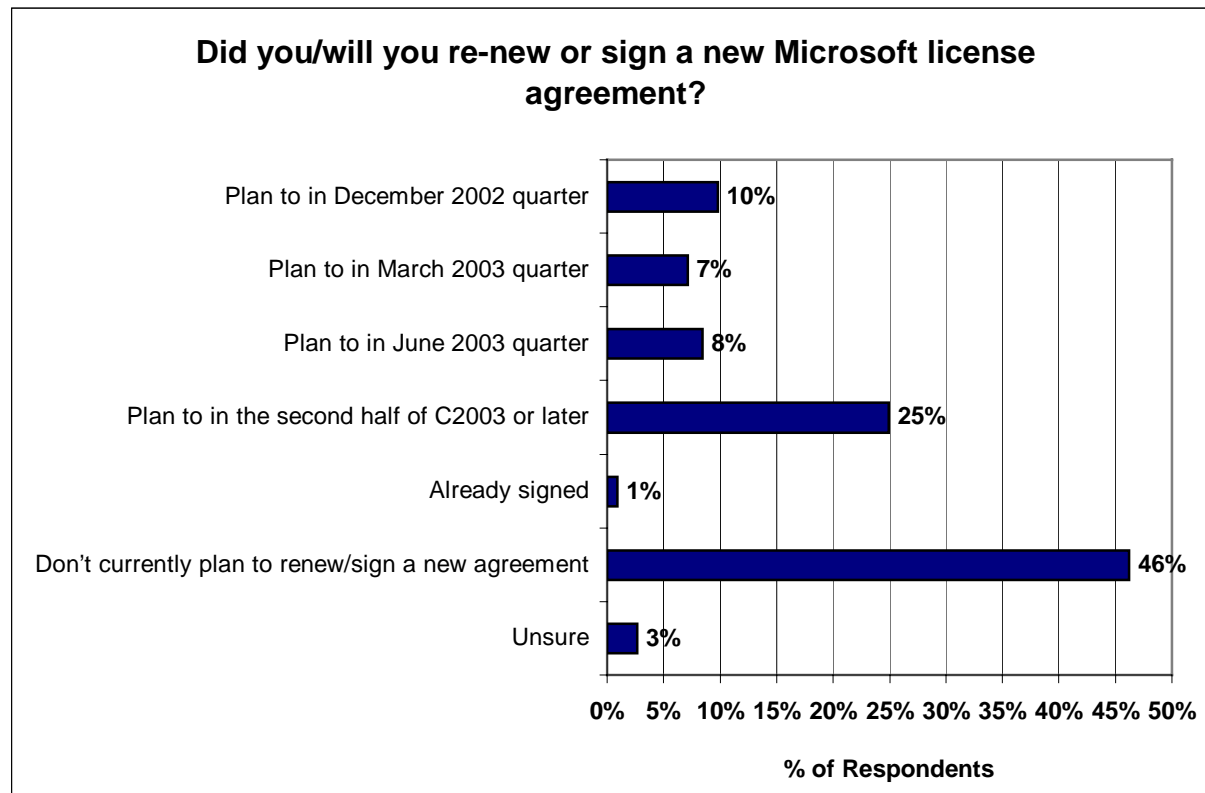
Microsoft*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 35

Microsoft

Source: Morgan Stanley CIO Survey, November 2002

Exhibit 36

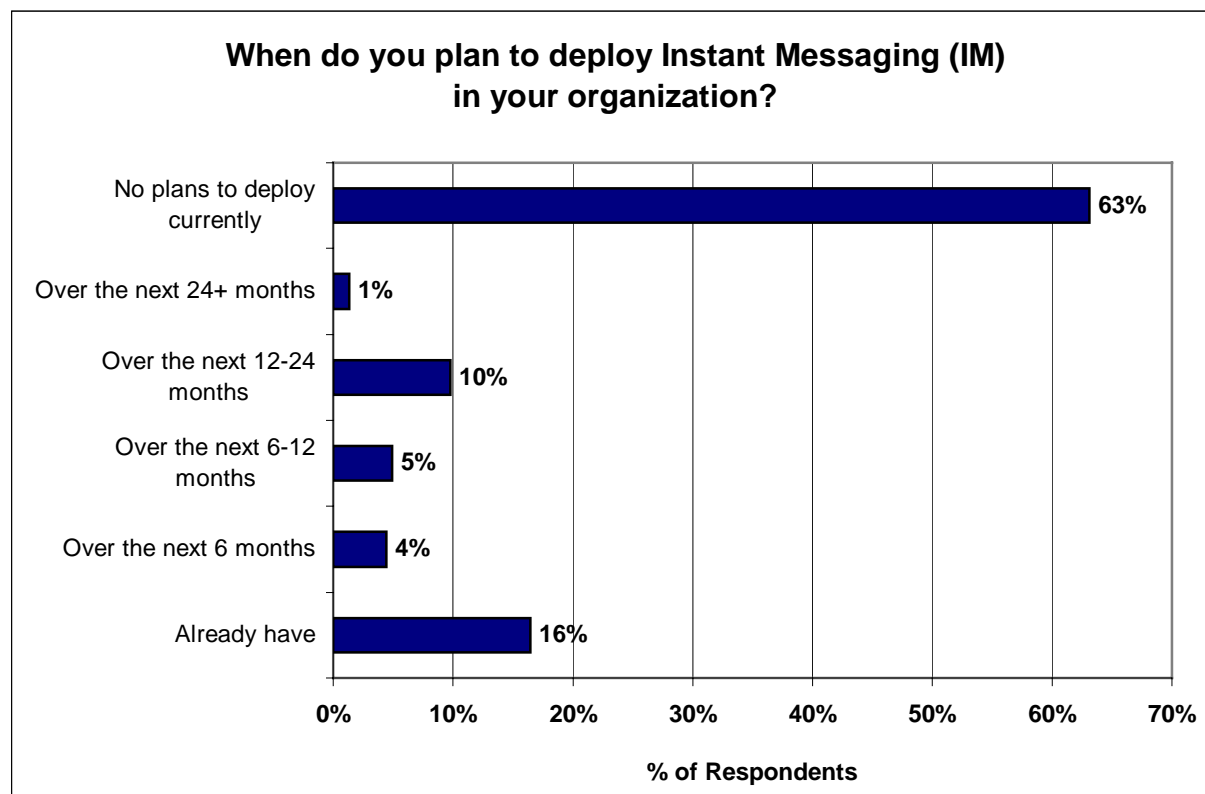
Instant Messaging*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 37

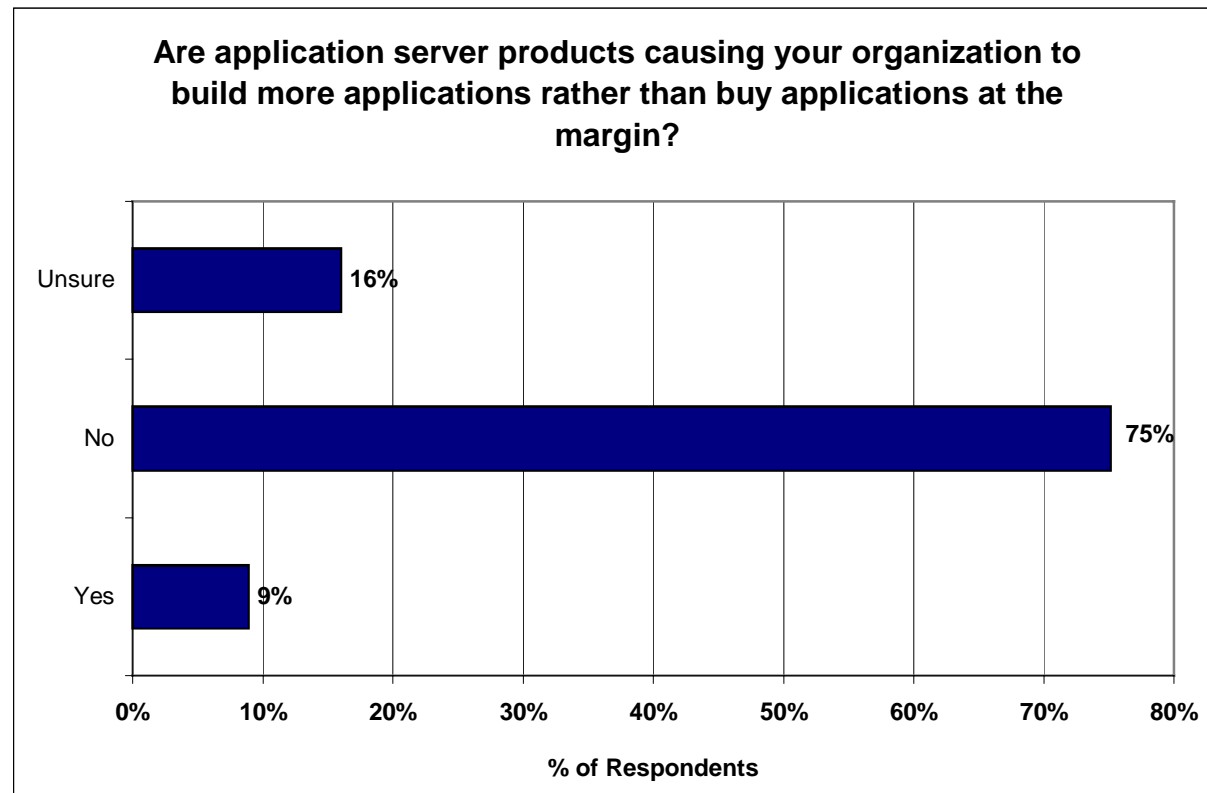
Applications: Build vs. Buy*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 38

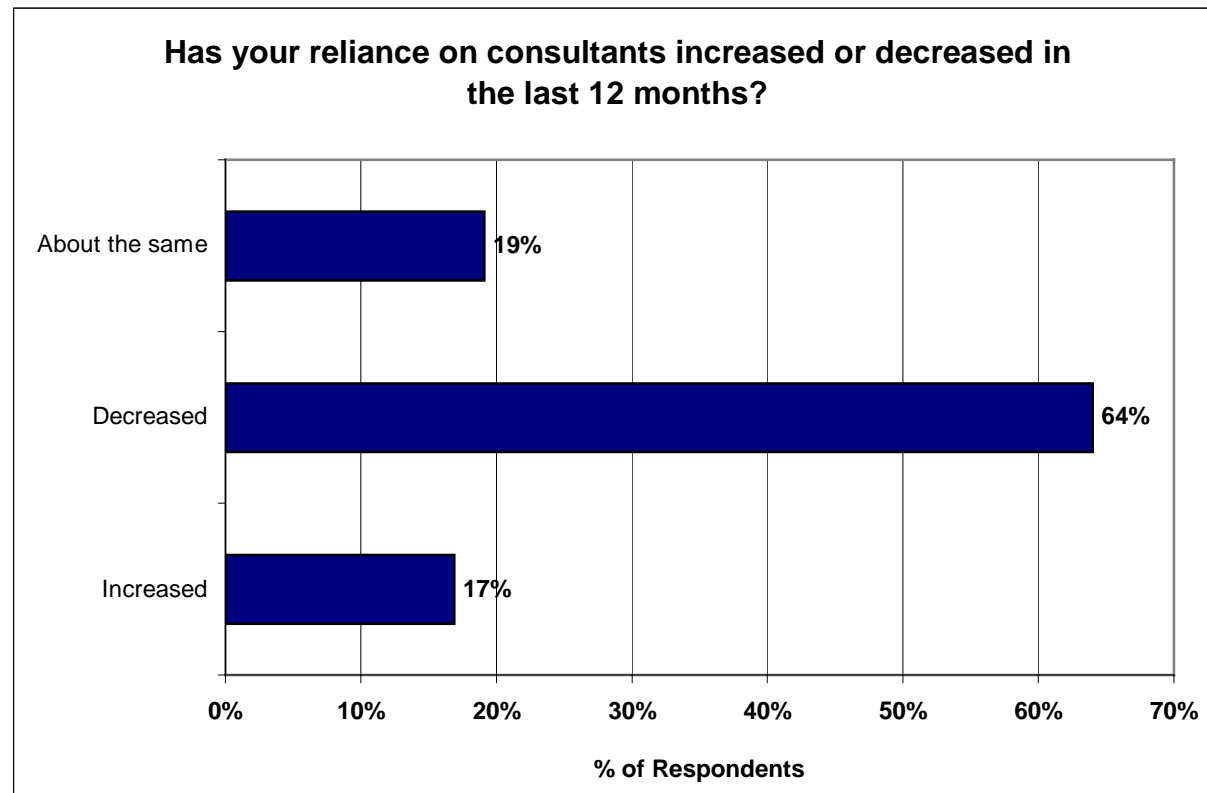
Consultants*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 39

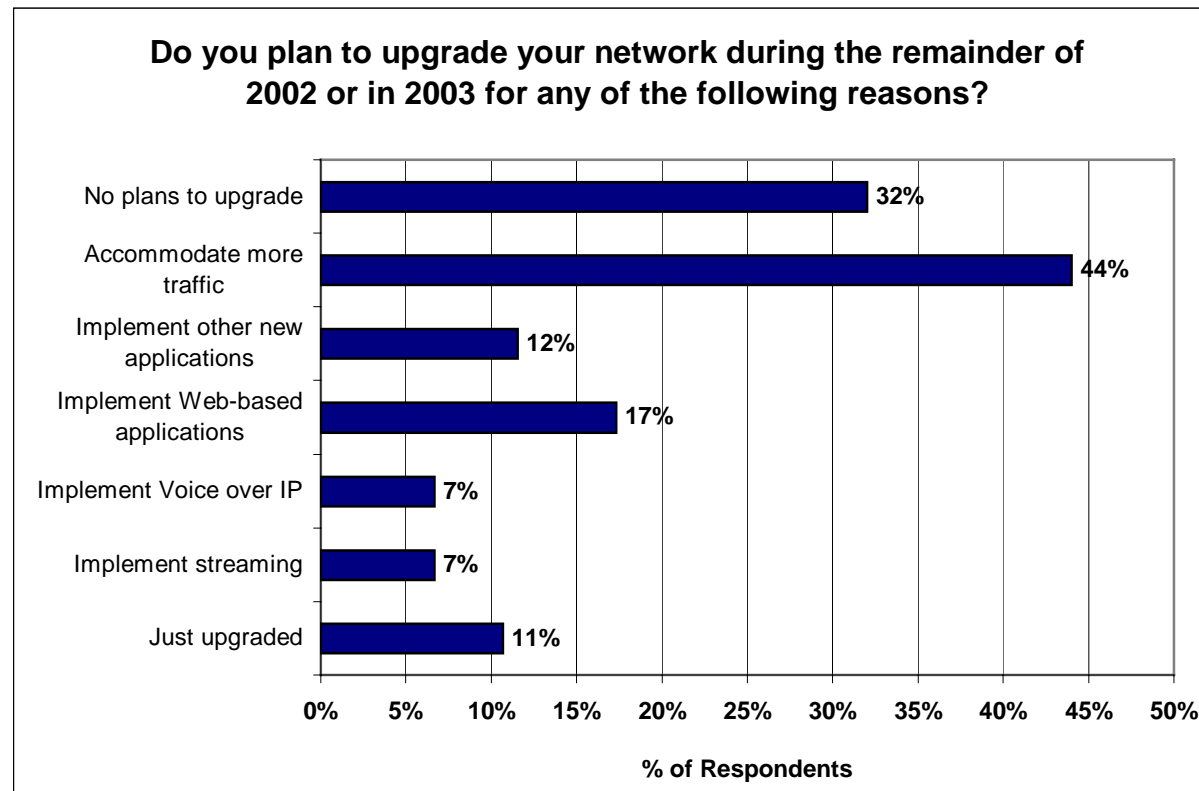
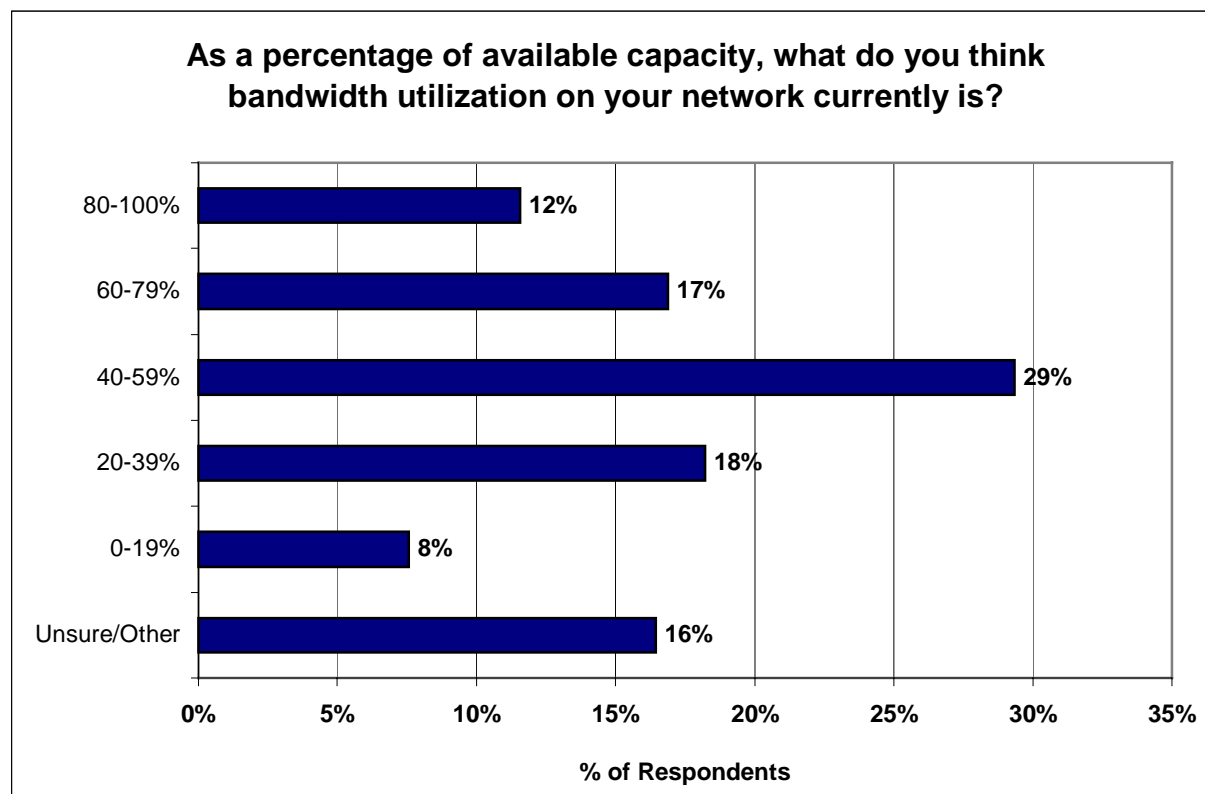
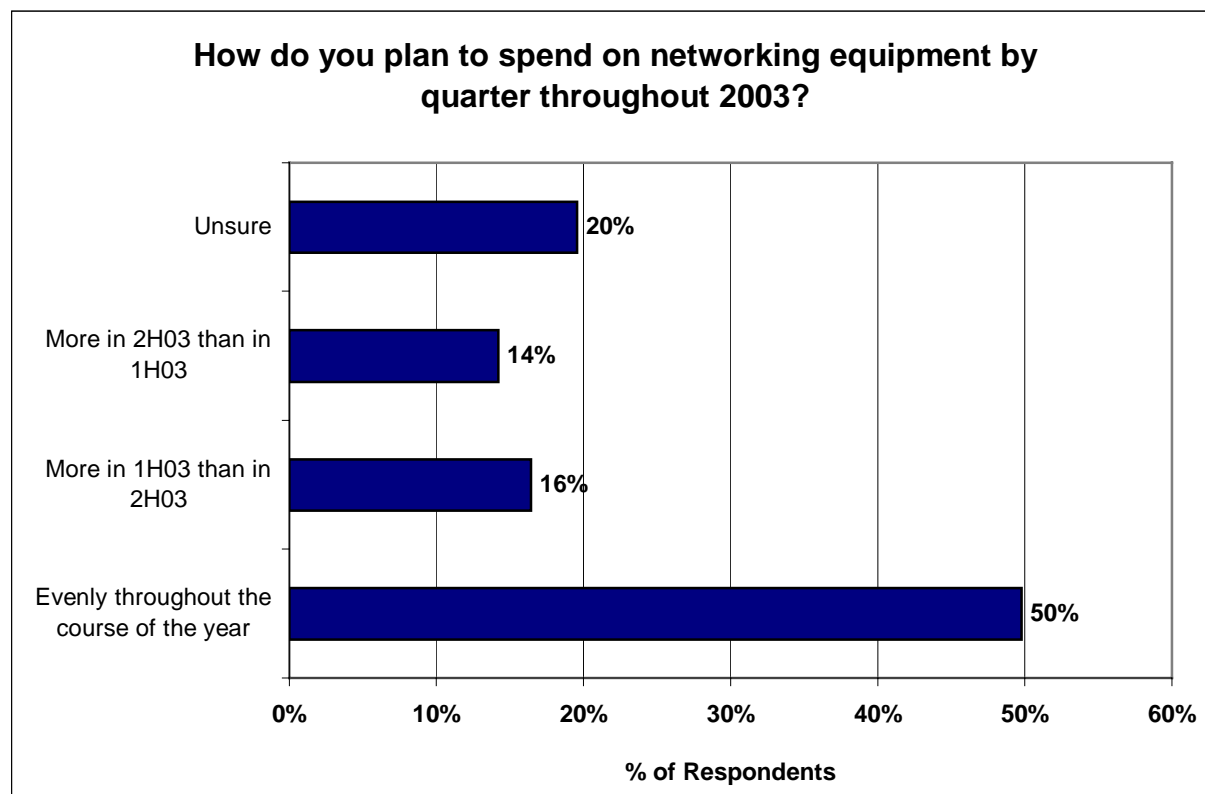
Networking*Source: Morgan Stanley CIO Survey, November 2002*

Exhibit 40

Networking

Source: Morgan Stanley CIO Survey, October 2002

Exhibit 41

Networking

Source: Morgan Stanley CIO Survey, October 2002

Exhibit 42

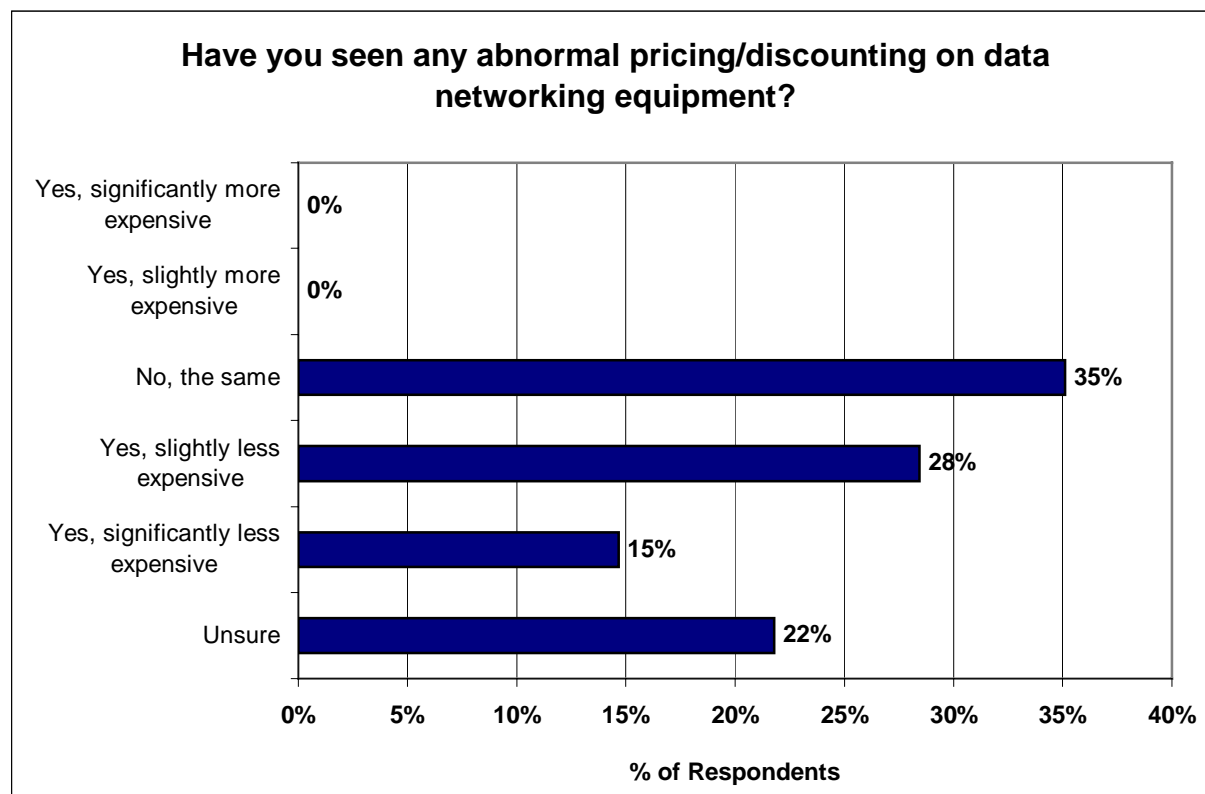
Networking*Source: Morgan Stanley CIO Survey, October 2002*

Exhibit 43

Vendor Opinion

Please describe how your overall opinion of the following vendors changed over the last 12 months?

	More Positive	Same	More Negative	Not Applicable	No Response	Total
Accenture	6%	50%	24%	5%	15%	100%
BEA Systems	8%	67%	1%	9%	15%	100%
Bearing Point (KPMG)	2%	68%	8%	7%	15%	100%
BMC	8%	72%	1%	6%	13%	100%
Cisco	27%	54%	15%	0%	4%	100%
Computer Associates	10%	44%	30%	3%	13%	100%
Dell	40%	45%	9%	0%	7%	100%
EDS	3%	52%	28%	5%	12%	100%
EMC	9%	60%	20%	1%	10%	100%
Hewlett Packard	18%	56%	17%	0%	8%	100%
i2 Technologies	1%	65%	11%	8%	15%	100%
IBM	36%	50%	4%	0%	9%	100%
Intel	19%	64%	7%	2%	9%	100%
Microsoft	14%	59%	23%	0%	4%	100%
Oracle	5%	59%	29%	1%	6%	100%
PeopleSoft	6%	67%	11%	3%	14%	100%
SAP	10%	61%	10%	4%	14%	100%
Siebel Systems	12%	55%	16%	4%	14%	100%
Sun Microsystems	12%	48%	23%	5%	12%	100%
Veritas	12%	65%	11%	4%	8%	100%

Source: Morgan Stanley CIO Survey, November 2002

Technology – December 9, 2002

Please see the important disclosures at the end of this report.

Global Stock Ratings Distribution

(as of November 30, 2002)

Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)		
	Count	% of Total	Count	% of Total IBC	% of Rating Category
Overweight	607	31%	240	37%	40%
Equal-weight	954	48%	301	46%	32%
Underweight	427	21%	110	17%	26%
Total	1,988		651		

Data include common stock and ADRs currently assigned ratings. For disclosure purposes (in accordance with NASD and NYSE requirements), we note that Overweight, our most positive stock rating, most closely corresponds to a buy recommendation; Equal-weight and Underweight most closely correspond to neutral and sell recommendations, respectively. However, Overweight, Equal-weight, and Underweight are not the equivalent of buy, neutral, and sell but represent recommended relative weightings (see definitions below). An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

ANALYST STOCK RATINGS

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.

Underweight (U). The stock's total return is expected to be below 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.

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.

Ratings prior to March 18, 2002: SB=Strong Buy; OP=Outperform; N=Neutral; UP=Underperform. For definitions, please go to www.morganstanley.com/companycharts.

ANALYST INDUSTRY VIEWS

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

In-Line (I). The analyst expects the performance of his or her industry coverage universe to be in line with the relevant broad market benchmark over the next 12-18 months.

Cautious (C). The analyst views the performance of his or her industry coverage universe with caution vs. the relevant broad market benchmark over the next 12-18 months.

Stock price charts and rating histories for companies discussed in this report are also available at www.morganstanley.com/companycharts. You may also request this information by writing to Morgan Stanley at 1585 Broadway, 14th Floor (Attention: Research Disclosures), New York, NY, 10036 USA.

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