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Technology - Software & Services | Europe

3Q23 CIO Survey – 2024
budget growth set to accelerate

Our survey shows signs of optimism in the IT spending landscape, but near-term uncertainty still weighs despite increasing interest in AI. 2024 IT budgets show a modest growth acceleration to 3.4% (vs. 2.7% in 2023), but this remains below long-term averages. We are cautiously optimistic for now.

alphawise 

Accelerating growth expectations into 2024 are constructive... Our first look at 2024 CIO IT budget growth expectations point to some signs of recovery, with growth expected to step up to +3.4% y/y, up from 2023 expected growth of +2.7%, which remained stable vs. our 2Q23 survey. However, these remain below the 10-year pre-Covid average of c. 4.1%. *Read our main US CIO survey note [here](#).*

...but leading indicators suggest budgets may still be under pressure near-term:

The 1-year IT budget revision up-to-down ratio, which measures the ratio of CIOs expecting to revise budgets higher/lower, remained <1x this quarter (although it did increase slightly to 0.5x from 0.3x in 2Q23). This suggests more CIOs are expecting further downward revisions this year than those expecting budgets to tick higher.

Longer-term spending expectations look encouraging... While the near-term outlook remains somewhat muted, longer-term trends are more constructive. The 3-year up-to-down ratio nearly tripled this quarter to 6.3x (up from 2.4x in 2Q23), as more CIOs (38%) expect IT spending to increase as a percentage of revenue, rather than decrease (13%).

...bolstered by increasing CIO interest and investment into AI/LLMs: 66% of CIOs indicate that these technologies are already impacting IT investment priorities (up from 56% in 2Q and 45% in 1Q). However, few expect these projects to go into production in 2023, with the majority (58%) expecting go-lives in 2024 or beyond.

Data suggest vendor discounting is decreasing as list prices increase, influencing vendor consolidation: Our CIO survey data indicate that willingness to discount from technology vendors decreased in 3Q23 vs. 2Q23 ([Exhibit 15](#)). In addition to lower discounting, 73% of CIOs saw higher list pricing from software vendors in the first half of 2023, with 46% indicating they would consolidate onto fewer vendors to make room in their IT budgets.

Regional and sector trends: Growth expectations for 2024 remain lower among EU CIOs than in the US (2.5% vs. 3.8%, respectively); however, both regions expect growth to accelerate in 2024 (+50bps in the EU and +70bps in the US). Software is set to remain the fastest growing sector in 2024 at 3.4% (+20bps vs. 2023).

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**TECHNOLOGY - SOFTWARE & SERVICES**

Europe

Industry View

In-Line

Anita Bhardwaj is a member of Morgan Stanley's AlphaWise team. She is not a research analyst and is not expressing investment recommendations on financial instruments, industries or transactions.

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Exhibit 1: Survey Methodology



Primary Research

See what others don't.

1. Expected growth in 2023 IT budget was 2.7%, in line with the last survey. The initial reading for 2024 IT budget growth is expected to be 3.4%, up 60bps as compared to the projected 2023 growth in 3Q22.

2. The up to down ratio for potential IT budget revisions in 2023 is at 0.5x, slightly up from last survey (0.3x). For the next three years, 38% of CIOs expect IT spending to increase as % of revenue (vs. 31% in 2Q23) while only 6% expect it to decrease (vs. 13% in 2Q23); LT spending up-to-down ratio (% increase / % decrease) rises to 6.4x, from 2.4x in the last survey

3. Top prioritized projects are: 1) Security Software, 2) Artificial Intelligence / Machine Learning, 3) Cloud Computing, 4) Digital Transformation, 5) DW/BI/Analytics are the most prioritized projects.

Methodology.

Between August and September 2023, AlphaWise conducted telephone and online interviews with CIOs discussing broad IT spending trends and domain specific strategies. The survey consists of 1) Macro CIOs Survey amongst 100 respondents (67 US / 33 EU); 2) Hardware Domain Survey with 60 respondents (38 US / 22 EU); 3) Networking Domain Survey with 60 respondents (39 US / 21 EU). Their responses represent enterprise customer adoption and purchasing behaviors for Q3 2023

Team behind the analysts.

AlphaWise Primary Research gathers alternative data and generates unique insights via an innovative analytical and visualization platform.

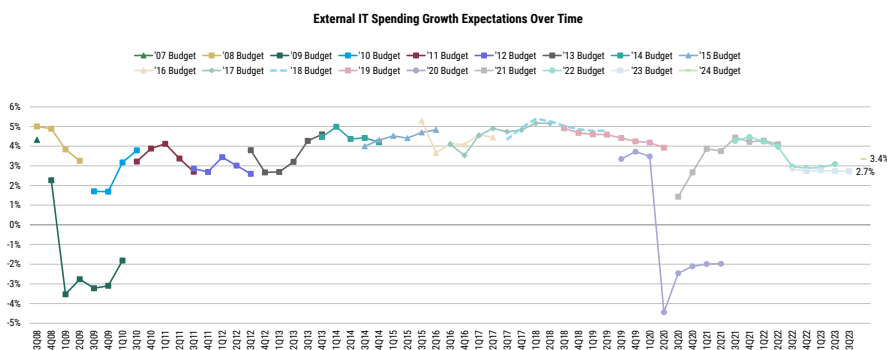
Source: AlphaWise

Macro – Key Takeaways

First look at 2024 IT budget growth expectations shows a modest y/y acceleration

What is your estimated percentage (%) growth for the external IT spending portion of your IT budget for the full year 2024 vs. 2023?

Exhibit 2: External IT spending growth expectations over time



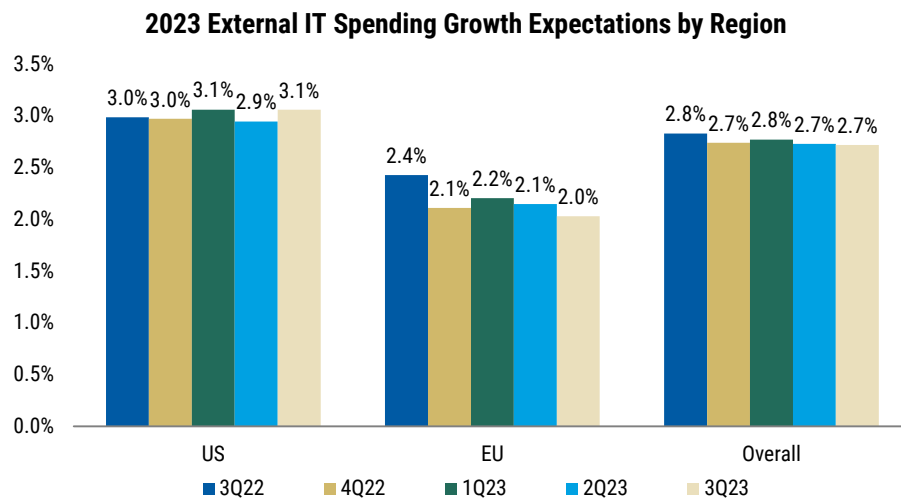
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data). Note: 3Q15 CIO survey reflects data from a different surveying vendor.

- Our first look at CIO expectations for 2024 IT budget growth came in at +3.4%, up c. 60bps y/y, while 2023 budget growth expectations were stable at +2.7% (in line with our 2Q23 survey). However, both 2024 and 2023 growth expectations remain below the 10-year pre-Covid average of c. 4.1%.
- Meanwhile, the 1-year IT budget revision up-to-down ratio (which measures the percentage of CIOs expecting an increase vs. those expecting a decrease in spending) ticked up slightly to 0.5x (from 0.3x in 2Q23), with 30% still expecting to see downward revisions to full-year budgets.
- On a 3-year outlook, things look much more constructive, with the long-term up-to-down ratio rising to 6.3x from 2.4x in 2Q23. 38% of CIOs expect IT spending to increase as a percentage of revenue vs. only 6% who expect it to decrease.

EU IT budget growth expectations still lags US in 2024

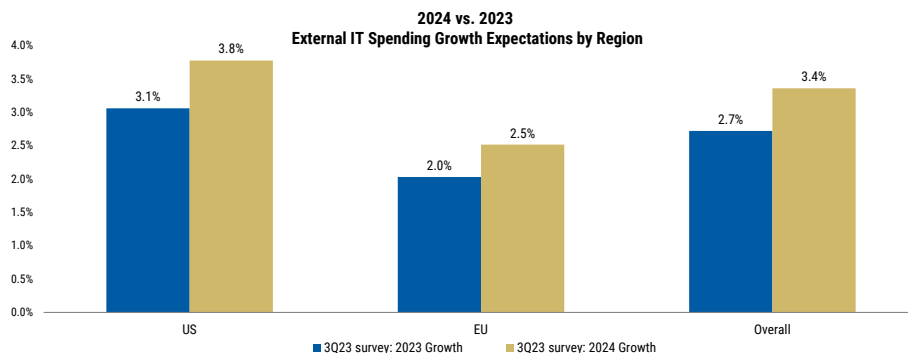
What is the estimated percentage growth for the external IT spending portion of your IT budget for the full year 2023 (vs. 2022)? What is the estimated percentage growth for the external IT spending portion of your IT budget for 2024 vs. 2022?

Exhibit 3: 2023 vs. 2022 external IT spending growth expectations by region



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 4: 2024 vs 2023 external IT spending growth expectations by region



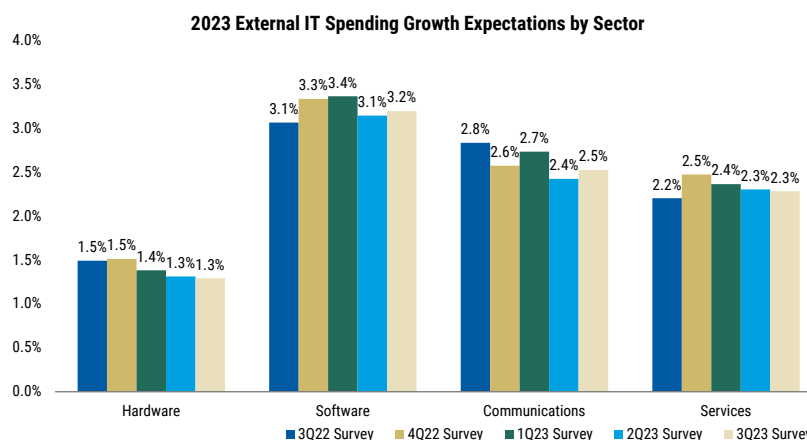
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- For 2023 budgets, US CIOs continue to expect higher growth of +3.1% (+10bps sequentially) vs. those in the EU at +2.0% (-10bps sequentially).
- Turning to 2024, growth expectations among EU CIOs remain lower than those in the US (2.5% vs. 3.8%, respectively); however, both regions expect growth to accelerate in 2024 (+50bps in the EU and +70bps in the US).

2024 IT spending growth expected to accelerate across all sectors vs. 2023

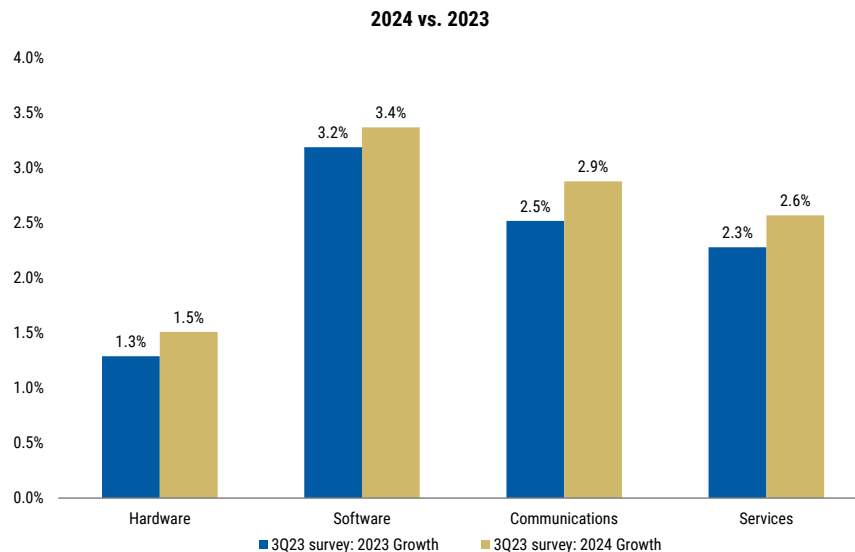
By what percentages do you expect your external IT spending to change for each of the following technology areas in 2023 vs. 2022? What is your estimated spending change for 2024 vs. 2023?

Exhibit 5: 2023 external IT spending growth expectations by sector



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 6: 2024 vs 2023 spending growth expectations by sector



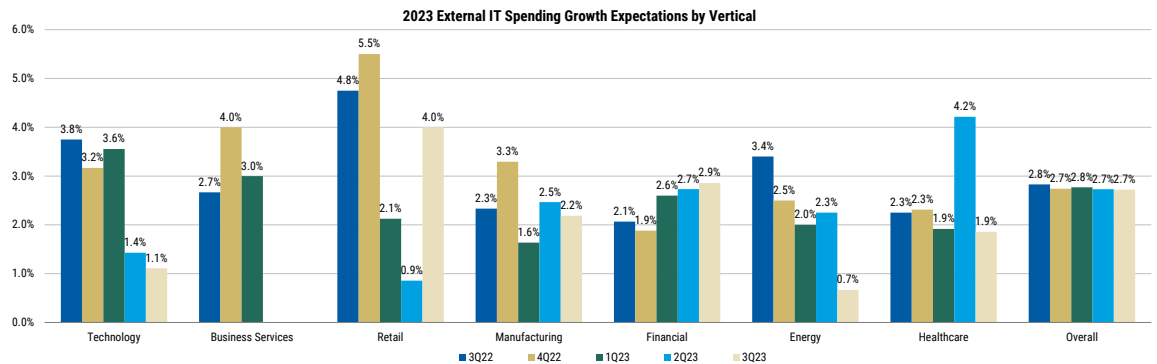
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- CIOs expect spending growth to accelerate across all sectors in 2024 vs. 2023. Software remains the fastest growing sector at 3.4% (+20bps vs. 2023), followed by Communications at 2.9% (+40bps), Services at 2.6% (+30bps) and Hardware 1.5% (c. +20bps).
- CIOs continue to expect Software to remain the fastest growing technology industry in 2023 at +3.2% growth, followed by Communications (+2.5%), Services (+2.3%) and Hardware (+1.3%). 2023 growth expectations for Hardware and Services were broadly flat vs. 2Q23, whereas Software and Communications growth expectations ticked up c. 10bps sequentially.

IT spending growth to accelerate in 2024 in all verticals except for Technology

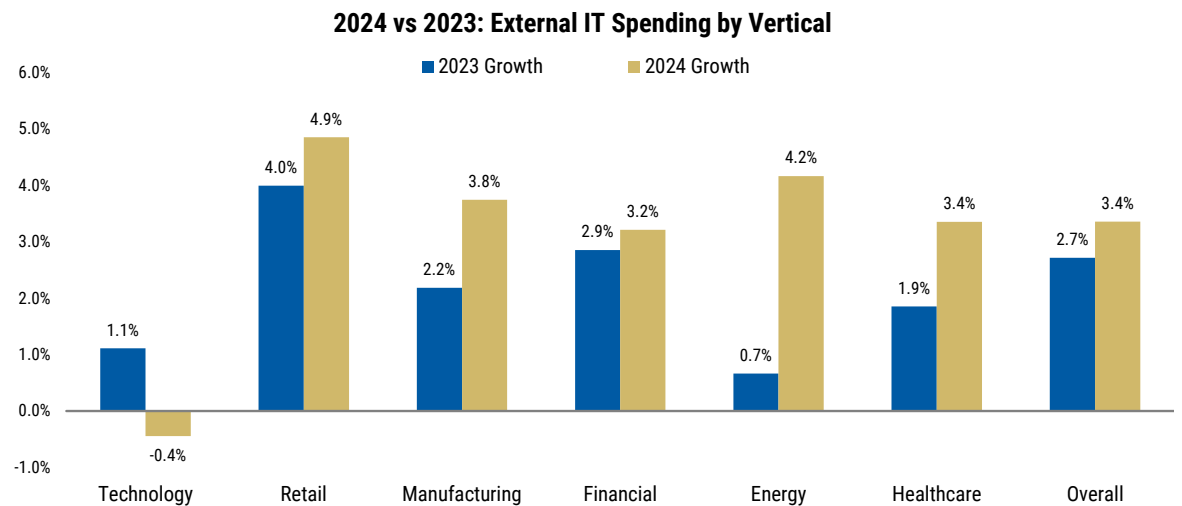
What is your estimated percentage (%) growth for the external IT spending portion of your IT budget for the full year 2023 vs. 2022? What is your estimated percentage (%) growth for the external IT spending portion of your IT budget for the full year 2024 vs. 2023?

Exhibit 7: 2023 external IT spending growth by vertical



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 8: 2024 vs 2023: external IT spending by vertical

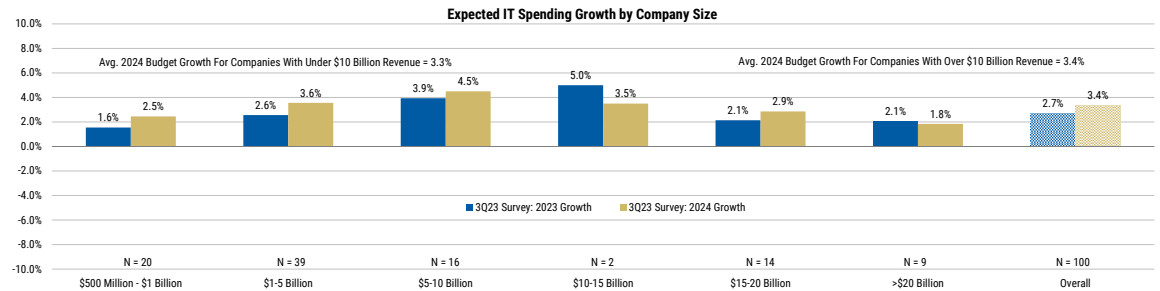


Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- Retail (+4.9%), Energy (+4.2%) and Manufacturing (+3.8%) were the top 3 verticals in terms of absolute level of IT spending growth expectations for 2024. All other verticals expect to increase spending y/y, except for Technology CIOs, who intend to decrease IT spending in 2024 vs. 2023.

2024 IT spending growth expectations consistent across both smaller and larger companies

Exhibit 9: Expected IT spending growth by company size



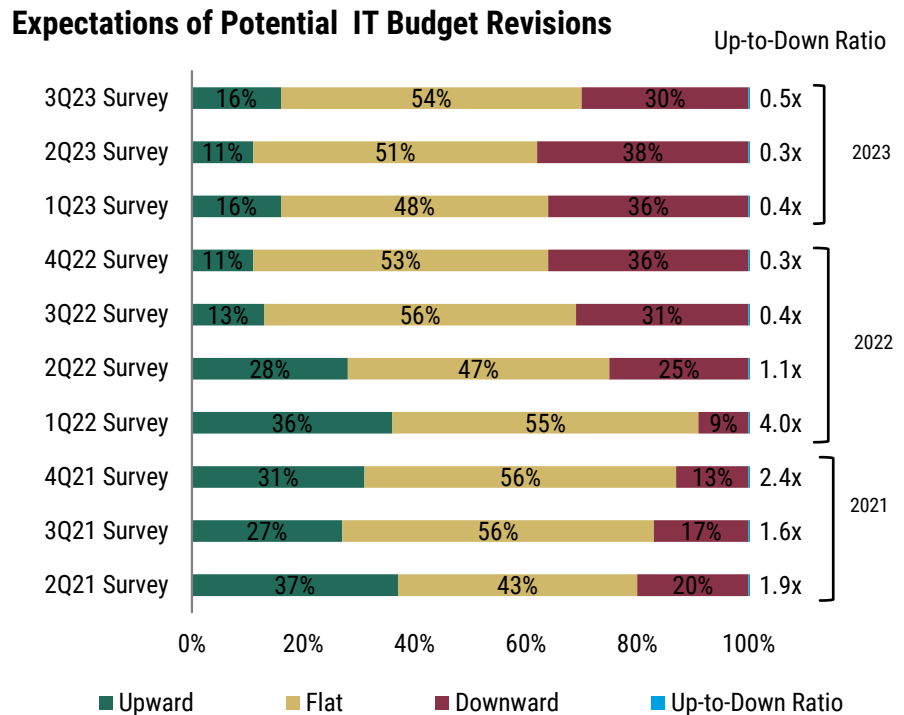
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- Our 3Q23 CIO survey suggests a similar expected average 2024 IT budget growth rate amongst companies with under \$10bn in revenue at 3.3% vs. those with over \$10bn in revenue at 3.4%.

IT budget revision up-to-down ratio remains <1x, suggesting further revisions are likely

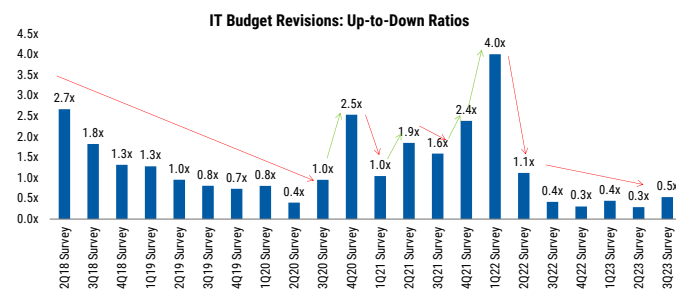
What are your expectations regarding potential future revisions to your current 2023 IT budget plans?

Exhibit 10: Expectations of potential IT budget revisions



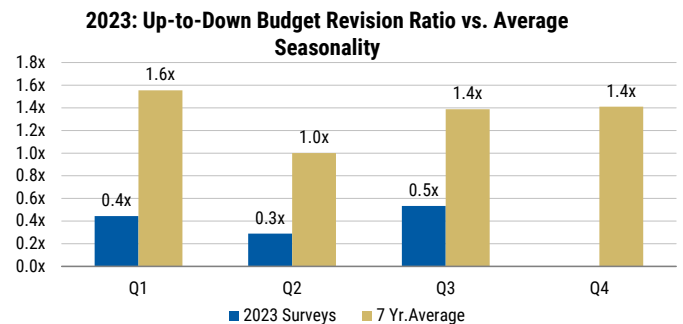
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 11: Up-to-down ratio remains stable at 0.5x...



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data)

Exhibit 12: ...although this is still significantly below the 7-year 3Q average



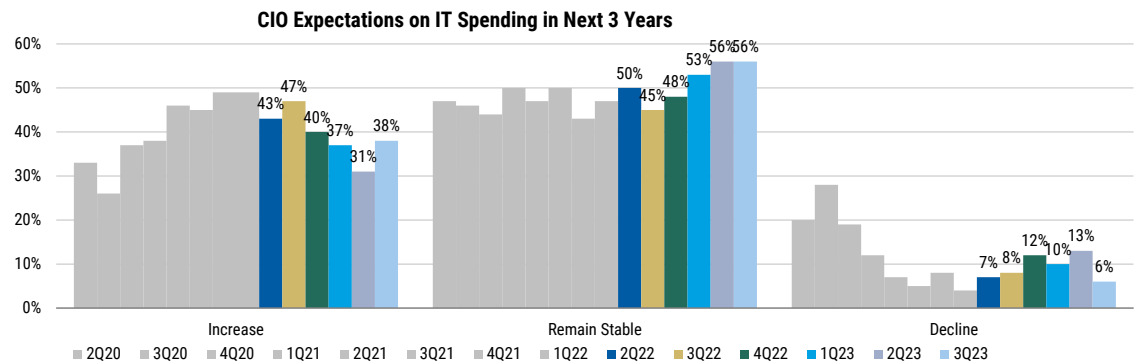
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data)

- The 2023 up-to-down ratio (measuring budget revision expectations) ticked up modestly to 0.5x (from 0.3x) this quarter, although this remains below the 7-year Q3 average of 1.4x. This means that more CIOs expect further downward revisions to 2023 IT budgets. Within this, 30% of surveyed CIOs expect to revise their 2023 IT budgets lower, whereas only 16% expect further upward revisions this year.

Three-year IT spending expectations step up significantly from 2Q, suggesting a more constructive medium-term spending environment

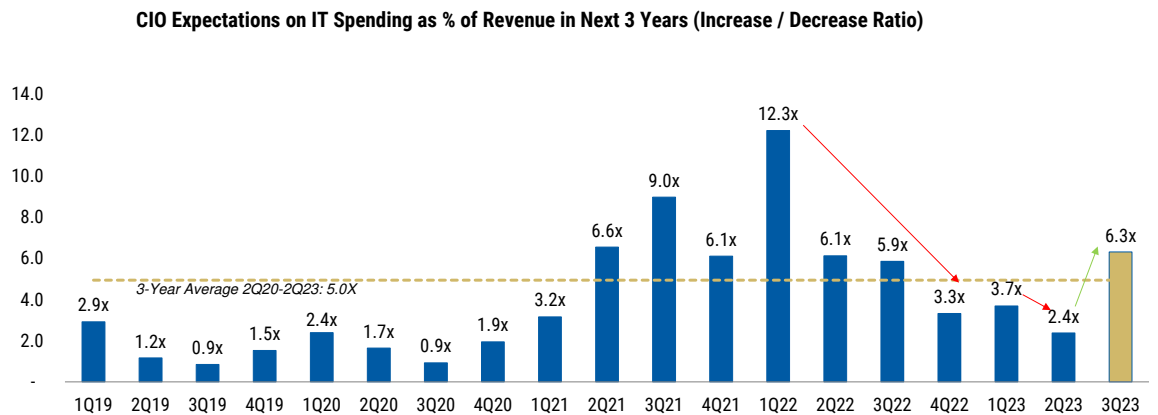
Over the next three years, how do you expect IT spending as a percentage of total revenues to change within your organisation?

Exhibit 13: IT spending expectations for the next 3 years



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 14: CIO expectations on IT spending in next 3 years up-to-down ratio



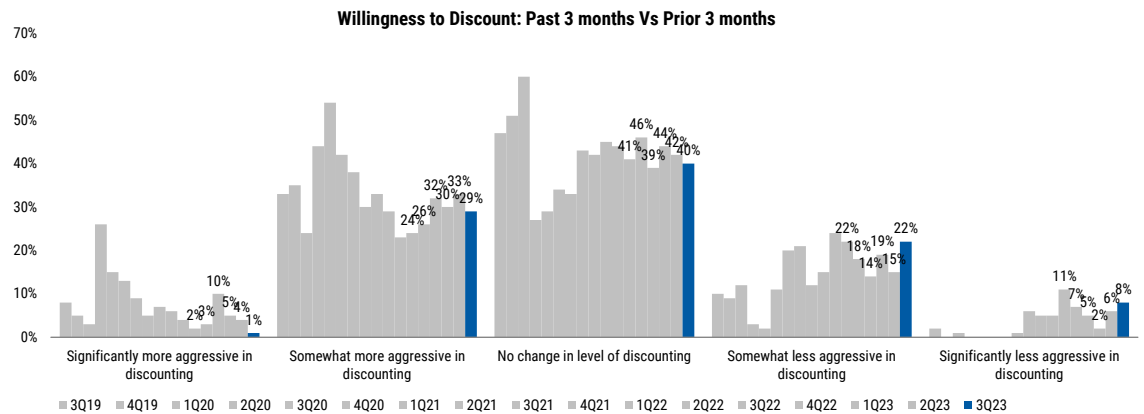
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- On a 3-year outlook, things look much more constructive, with the long-term up-to-down ratio rising to 6.3x from 2.4x in 2Q23. 38% of CIOs expect IT spending to increase as a percentage of revenue vs. only 6% who expect it to decrease.

Survey data suggest vendor discounting is coming down as list prices increase, influencing vendor consolidation

How do you perceive technology vendors' willingness to discount in the past 3 months versus prior 3 months (i.e. in 3Q23 versus 2Q23)?

Exhibit 15: Technology vendors' willingness to provide discount: past 3 months vs prior 3 months

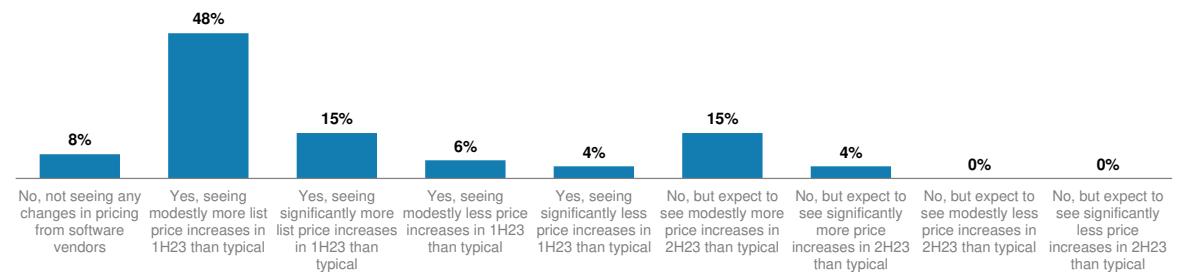


Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Multiple large software vendors have recently announced increases in list prices. Has your organisation been seeing higher list pricing from new and/or existing software vendors in 2023?

Exhibit 16: 73% of CIOs have seen higher list pricing from software vendors in the first half of 2023...

Seeing Higher List Pricing from New And/Or Existing SW Vendors in 2023

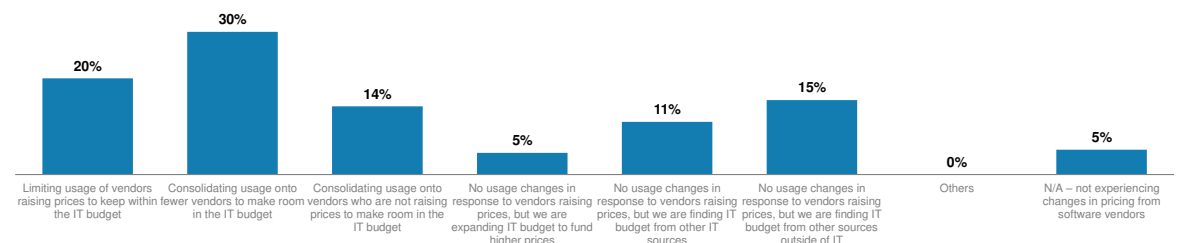


Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data)

How are you responding to/planning to respond to software vendors' changing list prices?

Exhibit 17: ...in response, nearly half (~46%) of CIOs reported consolidating onto fewer vendors

Response to SW Vendors' Changing List Prices



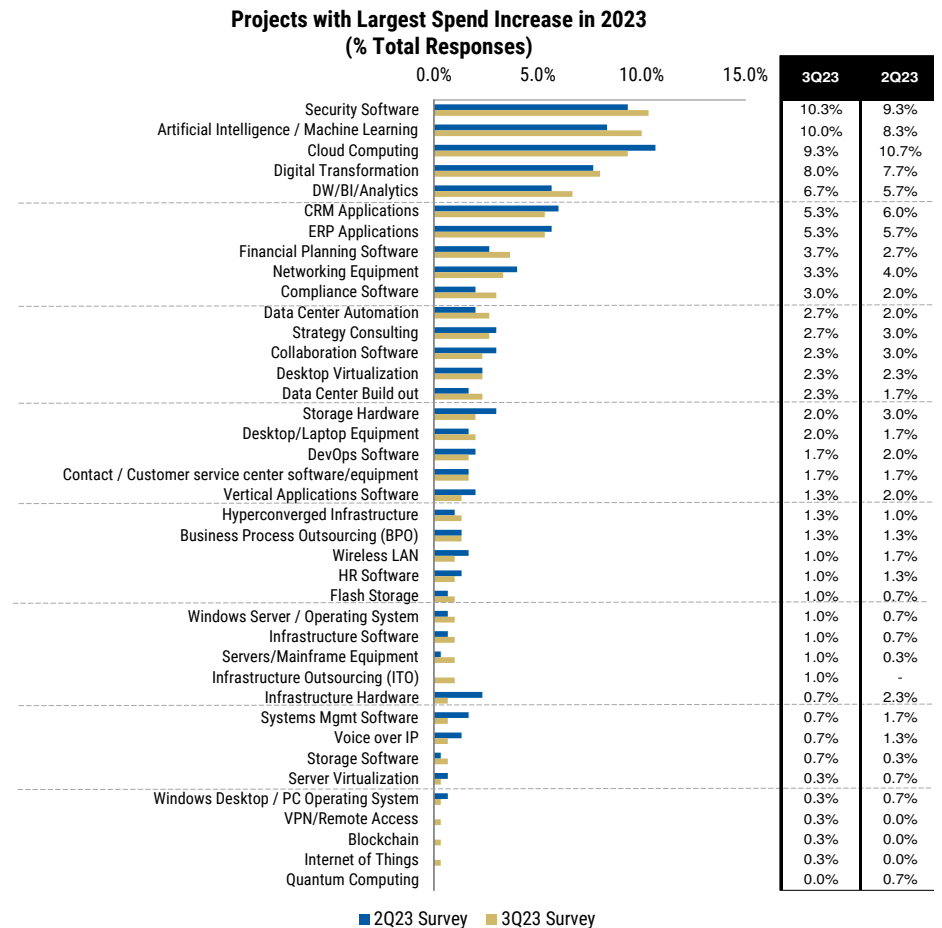
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data)

- Our CIO survey data indicate that the willingness to discount from technology vendors decreased in 3Q23 vs. 2Q23, suggesting the level of vendor discounting is decreasing. 30% of CIOs say vendors are now more inclined to discount (down from 37% in 2Q23), in line with the proportion (30%) that say vendors are less inclined to discount (up slightly from 21%).
- In addition to lower discounting, 73% of CIOs saw higher list pricing from software vendors in the first half of 2023, with 63% seeing modestly/significantly more list price increases than typical. 19% of CIOs have not yet experienced price increases, but expect to see them in the second half of 2023.
- In response to software vendors' changing list prices, approximately half of CIOs indicated they would (~46%) consolidate usage onto fewer vendors to make room in the IT budget, while nearly one-third (~31%) would limit usage of vendors raising prices to keep within the IT budget.

Security software, artificial intelligence/machine learning, and cloud computing are the top 3 CIO priorities

Which three external IT spending projects will see the largest percentage increase in spending in 2023?

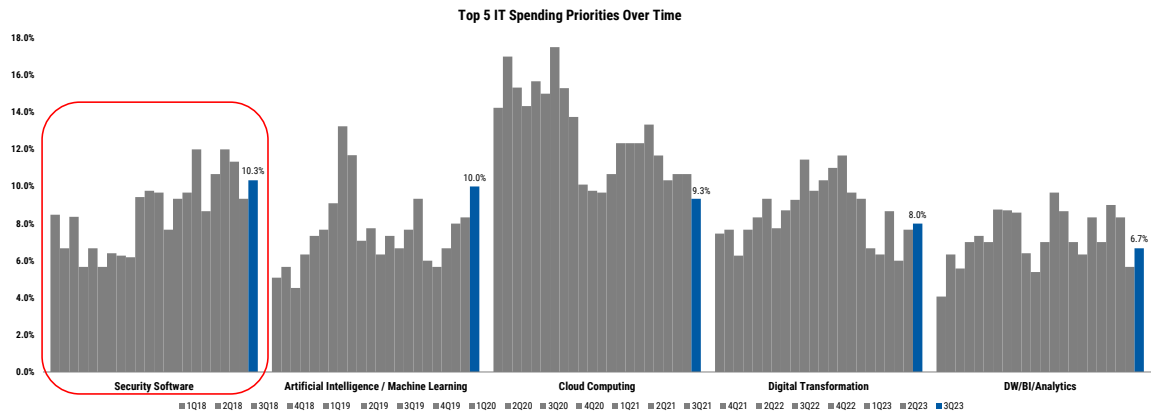
Exhibit 18: Projects with largest spend increase in 2023 (% total responses)



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- The top 2023 CIO priorities in 3Q23 are 1) security software (10.3% of CIOs), 2) artificial intelligence / machine learning (10.0%), 3) cloud computing (9.3%), 4) digital transformation (8.0%), 5) DW/BI/analytics (6.7%).
- Artificial intelligence/machine learning saw the largest sequential increase (+170 bps), while infrastructure hardware saw the largest decrease (-160 bps).
- We see demand in these areas as a positive for companies exposed to these areas, including **Exclusive Networks** and **Darktrace** (security software), and **Capgemini**, **Dassault Systèmes** and **SAP** (cloud computing/digital transformation, DW/BI/analytics).

Exhibit 19: IT spending priorities over time

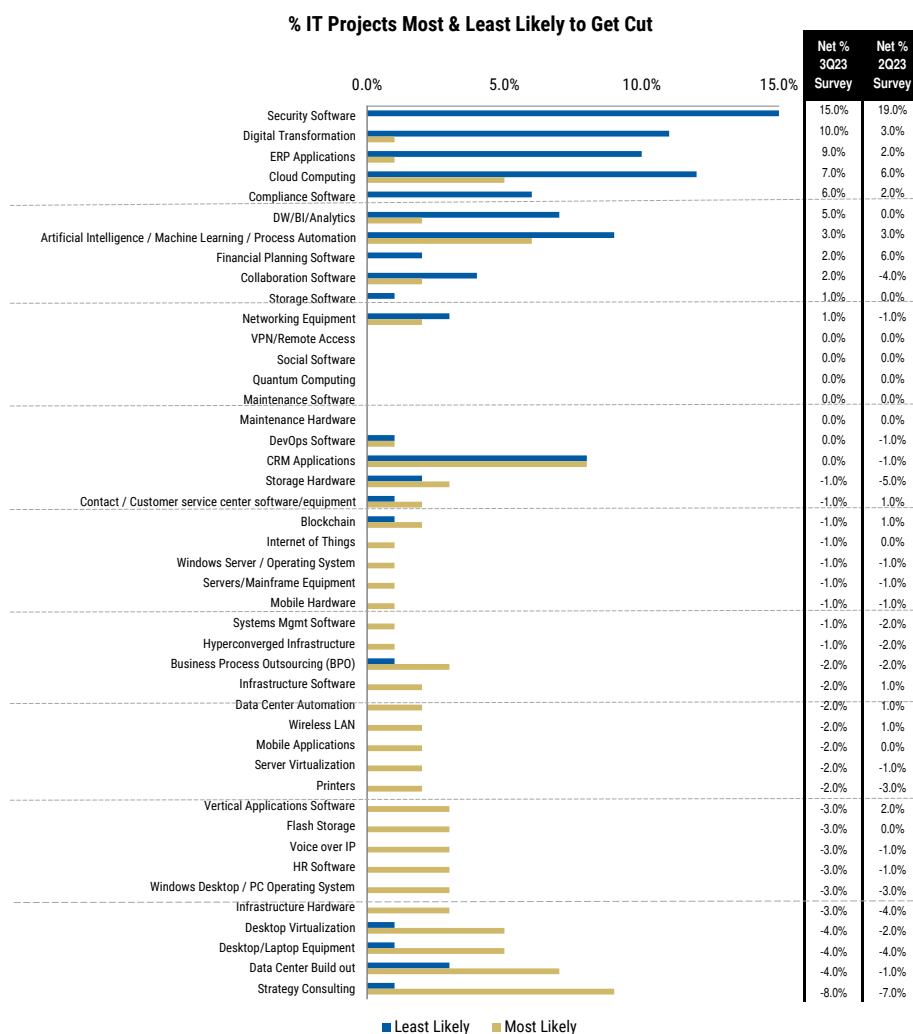


Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Security software, digital transformation and ERP application projects also top the list of most defensive projects

If the economy worsens significantly in 2023, what spending project is most likely to get cut? What spending project is least likely to get cut?

Exhibit 20: IT projects least and most likely to get cut in the event of economic downturn



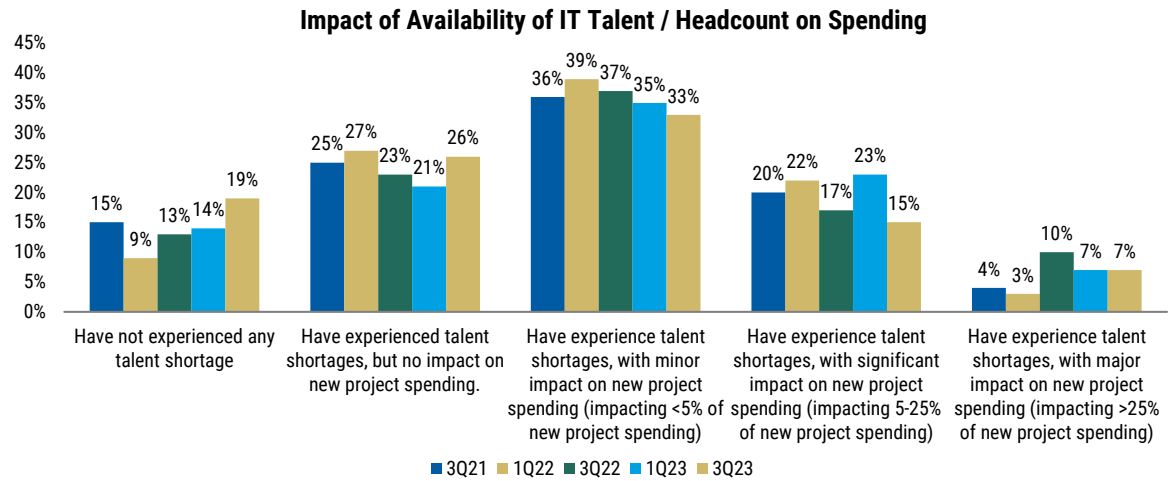
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- According to our surveyed CIOs, the top 5 most defensive areas of IT spending are 1) security software (15%), 2) digital transformation (10%), 3) ERP applications (9%), 4) cloud computing (7%), and 5) compliance software (6%).
- We view ERP project defensibility as a positive for **SAP**, which reinforces our confidence in the durability of the S/4HANA ERP upgrade cycle.
- The least defensive areas are in strategy consulting (-8.0%), data centre build-out (-4.0%), and desktop/laptop equipment (-4.0%) – which means they are relatively more exposed to budget cuts.

81% of CIOs say talent shortages are having an impact on new project spending, down 5pps from 2Q23

Has the availability of IT talent / headcount impacted spending on new projects?

Exhibit 21: Impact of availability of IT talent / headcount on spending



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

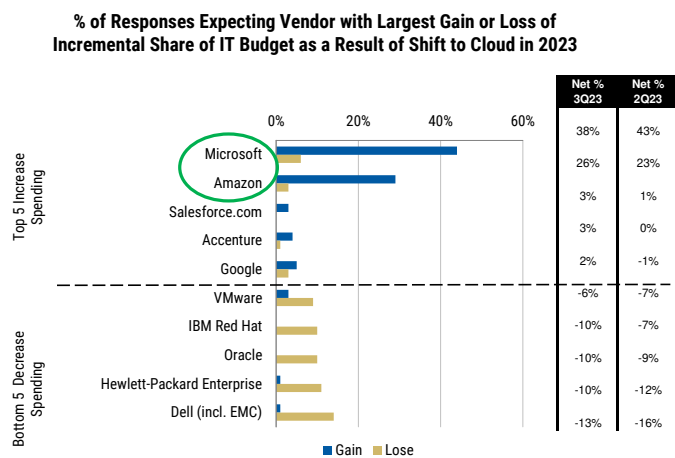
- 81% of surveyed CIOs indicate that they have experienced talent shortages, 26% of whom indicate this has had no impact on new project spending (up from 21% in 2Q23). 33% have experienced minor impacts on new project spending (i.e. <5% of new project spending), down from 35% in 2Q23. 22% have seen >5% impact of new project spending, down from 30% in 2Q23.

Cloud and AI/ML key takeaways

Microsoft (#1) and Amazon (#2) remain greatest beneficiaries from increased spend on shift to cloud

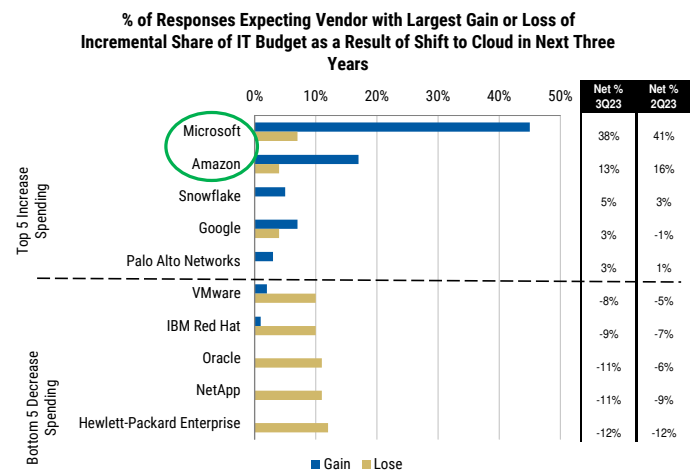
As you shift workloads from on-premise to the cloud, which of these vendors are you using or likely to use in managing your hybrid cloud environment?

Exhibit 22: % of responses expecting vendor with largest gain or loss of incremental share of IT budget as a result of shift to cloud in 2023 vs 2022



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

Exhibit 23: % of responses expecting vendor with largest gain or loss of incremental share of IT budget as a result of shift to cloud in next 3 years



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

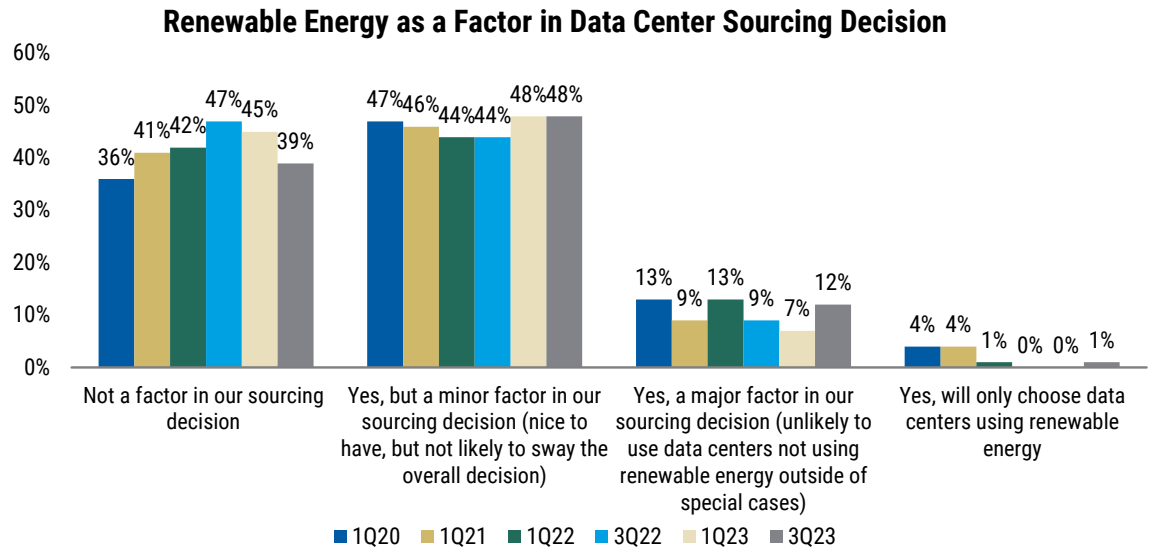
- Consistent with previous surveys, **Microsoft (#1)** and **Amazon (#2)** are expected to be the top net wallet share gainers from the increased spend on the shift to cloud both in 2023 and on a 3-year view. **Salesforce.com**, **Accenture** and **Google** also screen as 2023 share gainers, although the scale of this share is minor compared to Microsoft and Amazon.
- On the flip side, our survey suggests that **Dell**, **Hewlett Packard**, **Oracle**, **IBM**, and **VMWare** face the highest risks of losing incremental budget share in 2023 as a result of the shift to the cloud. The mix is similar on a 3-year view, but also includes **NetApp**.

(Note: Microsoft, Oracle, Salesforce.com and VMWare are covered by our US colleague Keith Weiss, Amazon and Google by Brian Nowak, and Accenture by James Faucette. Dell and IBM are covered by Erik Woodring, Hewlett Packard and NetApp by Meta Marshall.)

Renewable energy is a factor in data centre sourcing decisions for the majority of CIOs surveyed, but is only a minor factor for most

When choosing a data centre provider, is the data centre's use of renewable energy an input into your decision?

Exhibit 24: The majority of CIOs consider renewable energy as a factor in data centre sourcing decisions



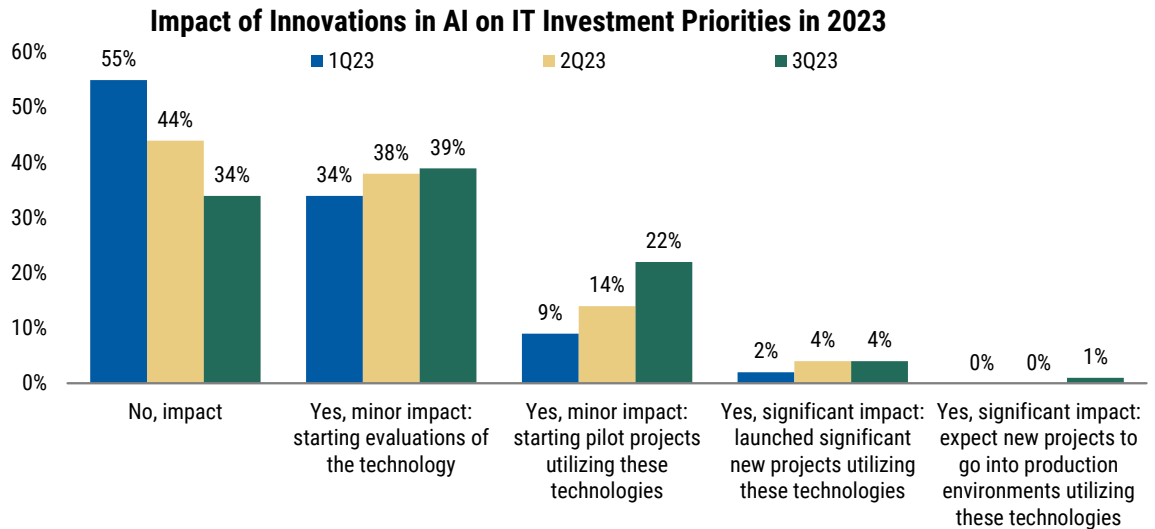
Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- The majority (61%) of surveyed CIOs indicate that renewable energy is a factor considered in data centre sourcing decisions. Among these, 48% think that it is a minor factor in the decision (nice to have, but not likely to sway the decision overall). Only 12% view this as a major factor in decision-making.

Majority of CIOs indicate that AI is having an impact of IT investment priorities

Have recent innovations in artificial intelligence around large language models (e.g. ChatGPT) or generative design (e.g. Dall-e) had any impact on your IT investment priorities in 2023?

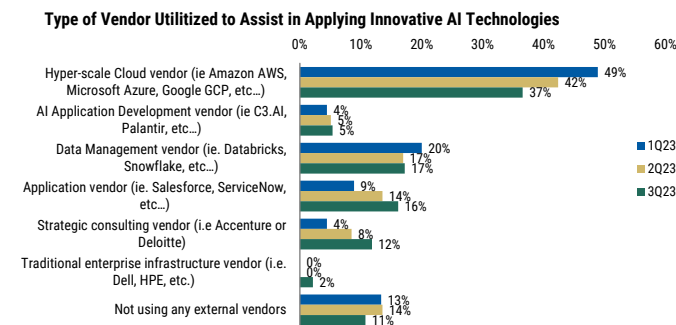
Exhibit 25: An increasing proportion of CIOs say that recent AI innovations are having an impact on IT investment priorities in 2023



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

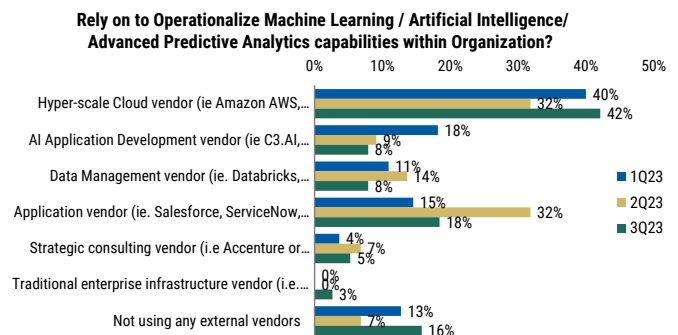
What type of vendor are/would you utilising/utilise to assist in applying these technologies?

Exhibit 26: Among those that have seen an impact, 37% are using hyperscalers to implement AI/ML



Source: AlphaWise, Morgan Stanley Research. n=45 (US and EU data).

Exhibit 27: For those that haven't seen an impact, the hyperscalers are also regarded as the most common vendor to assist in applying these technologies (42%)



Source: AlphaWise, Morgan Stanley Research. n=55 (US and EU data).

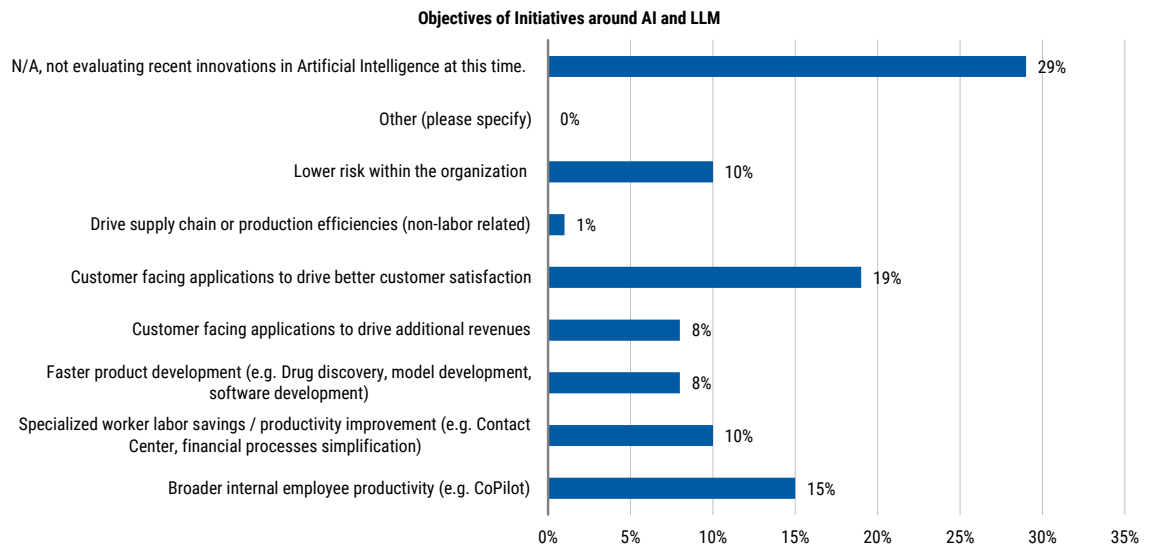
- 66% of CIOs reported that the recent innovations in AI around large language models (e.g. ChatGPT) or generative design (e.g. Dall-e) have had an impact on IT investment priorities in 2023 (+9pps vs. 2Q23). However, only 4% have seen significant impacts, launching new projects using these technologies near term.
- While hyperscalers continue to be the most common type of technology vendor used for assisting in applying these new AI technologies, as mentioned by 37%

(down from 42% in 2Q23), CIOs are increasingly leveraging application vendors (such as **SAP** or **Salesforce**, for example). 16% of CIOs are using application vendors, up from 14% in 2Q23.

AI initiatives are most commonly being funded by net new IT budget dollars

What are the objectives of your initiatives around recent innovations in artificial intelligence and large language models?

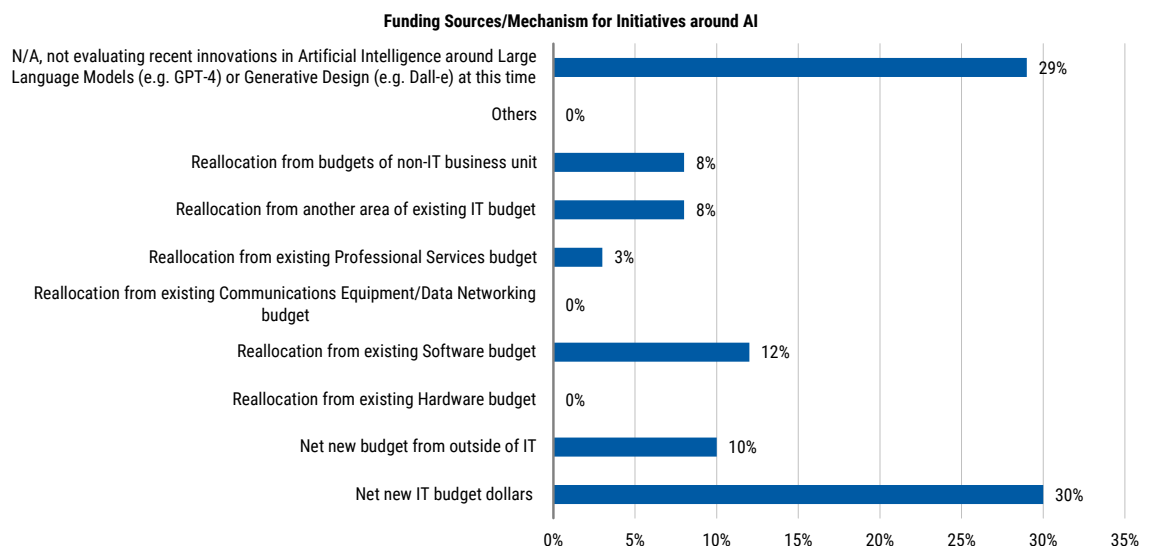
Exhibit 28: The top CIO objectives around AI and LLMs are customer satisfaction, internal productivity/worker savings, and internal risk management



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

If evaluating or using recent innovations in artificial intelligence around large language models (e.g. GPT-4) or generative design (e.g. Dall-e), which of the following best describes how these initiatives are funded?

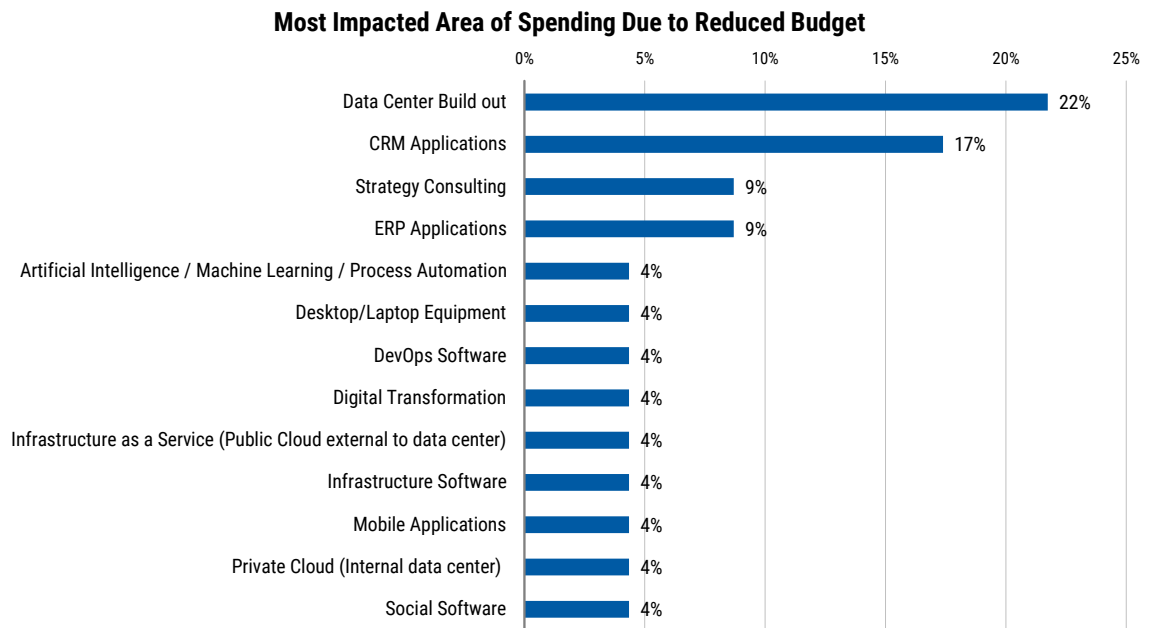
Exhibit 29: While 30% of CIOs are funding AI initiatives with net new IT budget dollars, 12% indicate the reallocation of existing budget...



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

If reallocating budget dollars from other areas of your IT budget to fund new projects around innovations in artificial intelligence around large language models (e.g. GPT-4) or generative design (e.g. Dall-e), what project is being cut?

Exhibit 30: ...with data centre build-out, CRM applications and strategy consulting projects being most impacted

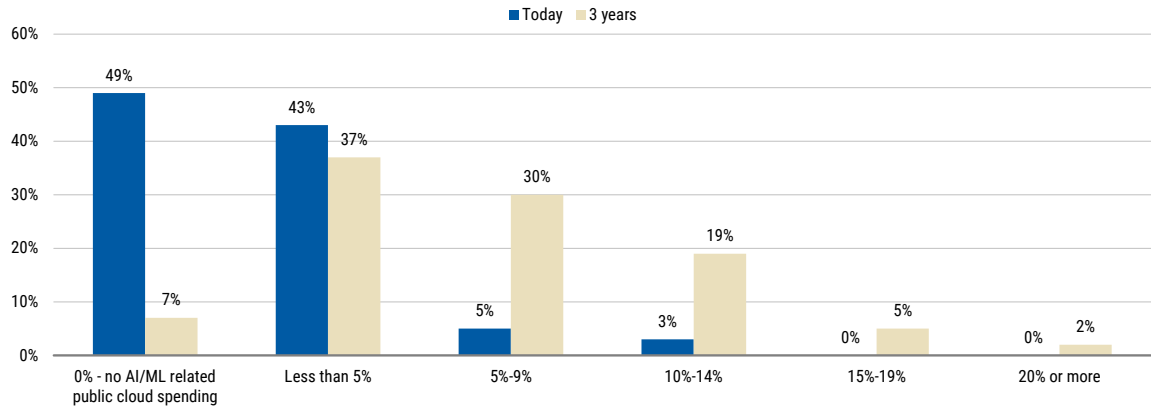


Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- The top 3 objectives of CIO initiatives around innovations in AI and large language models are customer satisfaction (19%), employee productivity (15%) and worker labour savings/productivity improvement (10%).
- 30% of CIOs are leveraging net new IT budget dollars in order to fund their AI initiatives, followed by reallocating funds from existing software budgets (12% of CIOs), and using net new budget from outside of IT (10%).
- Of those that cited reallocating spending from existing budgets, 22% flagged data centre build-out as a project area to cut, followed by CRM application (17%) and strategy consulting (9%).

What percentage of your public cloud spending, if any, is related to AI/ML (artificial intelligence/machine learning) today? What percentage do you expect 3 years from now?

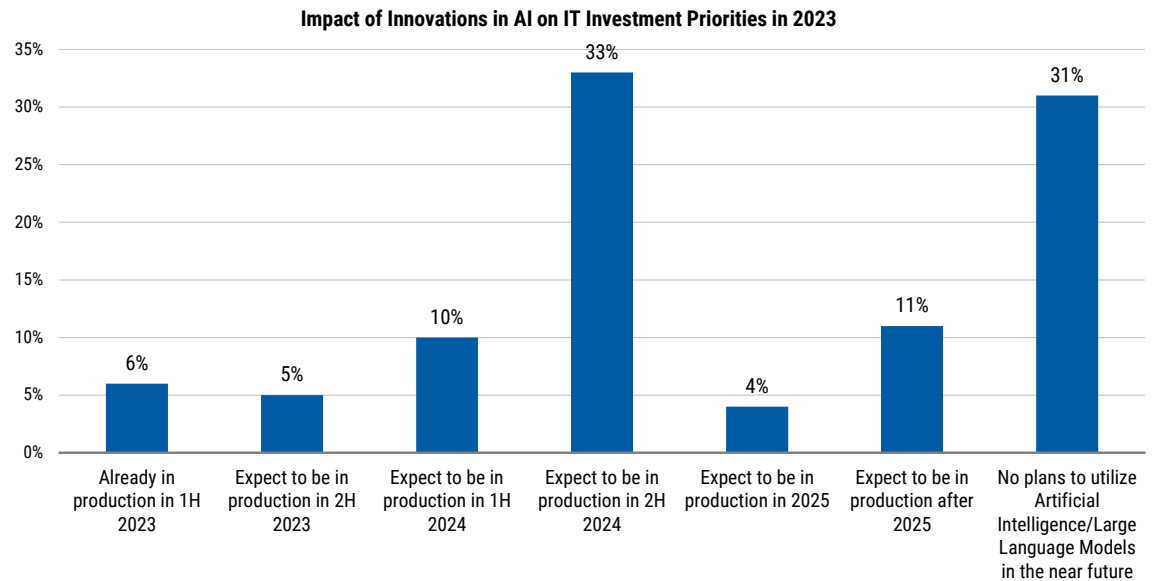
Exhibit 31: CIOs expect the share of AI/ML spending in public cloud spending to grow over the next 3 years



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

When do you expect to have first project with recent innovations around artificial intelligence/large language models in production?

Exhibit 32: Of the 69% of CIOs that expect AI projects to be deployed in the near term, the majority expect it to be in production in 2024 (43%)



Source: AlphaWise, Morgan Stanley Research. n=100 (US and EU data).

- CIOs indicate that the AI/ML related public cloud spending is relatively small, with 49% of respondents stating that none of their public cloud spending is related to AI/ML. However, CIOs expect this share to grow significantly over the next 3 years, with 46% expecting to allocate >5% of their public cloud spending to AI/ML in 3 years' time.
- Of the 69% of CIOs that expect AI projects to be deployed in the near term, 11% either have AI projects in production or expect to by the end of 2023, while 43% expect this to be by 2024. 31% have no plans to use AI/LLMs in the near future.

Morgan Stanley AlphaWise CIO Survey Methodology

This report contains the results of our CIO Survey. The survey is conducted by telephone and online interviews with 100 decision makers, representing 100 enterprise Information Technology organisations, between August and September 2023. 67 of respondents are from the US and 33 are from Europe. Survey respondents hold responsibility for purchasing, integrating and maintaining technology. Their responses represent enterprise customer adoption and purchasing behaviours for 3Q 2023.

Exhibit 33: By revenue

Revenue		
Total Respondents = 100		
US Respondents = 67		
\$500 Million - \$1 Billion	14	21%
\$1-5 Billion	27	40%
\$5-10 Billion	10	15%
\$10-15 Billion	1	1%
\$15-20 Billion	7	10%
>\$20 Billion	8	12%
Europe Respondents = 33		
\$500 Million - \$1 Billion	6	18%
\$1-5 Billion	12	36%
\$5-10 Billion	6	18%
\$10-15 Billion	1	3%
\$15-20 Billion	7	21%
>\$20 Billion	1	3%

Source: AlphaWise, Morgan Stanley Research

Exhibit 34: By industry vertical

Vertical		
Total Respondents = 100		
Aerospace / Defense	1	1%
Business services	0	0%
Communications	4	4%
Consumer Goods	7	7%
Education	8	8%
Energy	6	6%
Financial	14	14%
Healthcare	14	14%
Legal	1	1%
Manufacturing	16	16%
Pharmaceuticals	4	4%
Retail	7	7%
Services	6	6%
Technology	9	9%
Transportation	2	2%
Wholesale / Distribution	1	1%
US Respondents = 67		
Aerospace / Defense	1	1%
Business services	0	0%
Communications	1	1%
Consumer Goods	2	3%
Education	6	9%
Energy	3	4%
Financial	8	12%
Healthcare	12	18%
Legal	1	1%
Manufacturing	12	18%
Pharmaceuticals	2	3%
Retail	5	7%
Services	6	9%
Technology	5	7%
Transportation	2	3%
Wholesale / Distribution	1	1%
Europe Respondents = 33		
Aerospace / Defense	0	0%
Business services	0	0%
Communications	3	9%
Consumer Goods	5	15%
Education	2	6%
Energy	3	9%
Financial	6	18%
Healthcare	2	6%
Legal	0	0%
Manufacturing	4	12%
Pharmaceuticals	2	6%
Retail	2	6%
Services	0	0%
Technology	4	12%
Transportation	0	0%
Wholesale / Distribution	0	0%

Source: AlphaWise, Morgan Stanley Research

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(as of September 30, 2023)

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	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
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Equal-weight/Hold	1673	46%	303	46%	18%	709	46%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	608	17%	68	10%	11%	225	15%
Total	3,634		652			1543	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Adam Wood		
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Atos SA (ATOS.PA)	U (12/08/2021)	€5.09
Capgemini (CAPP.PA)	E (12/12/2022)	€164.05
Dassault Systemes SA (DAST.PA)	O (09/26/2019)	€35.82
Hexagon AB (HEXAb.ST)	U (03/20/2020)	SKr 93.86
Indra (IDR.MC)	E (03/25/2022)	€13.34
Sage (SGE.L)	O (12/08/2021)	985p
SAP SE (SAPG.DE)	O (03/20/2020)	€122.24
Temenos Group AG (TEMN.S)	U (12/15/2017)	SFr 63.08
Trustpilot (TRST.L)	O (12/08/2021)	107p
Alastair P Nolan		
Computacenter PLC (CCC.L)	E (03/09/2021)	2,554p
Exclusive Networks (EXN.PA)	O (09/27/2022)	€16.84
Softcat PLC (SCTS.L)	E (12/08/2021)	1,419p
Software AG (SOWGn.DE)	E (03/03/2023)	€31.50
Softwareone Holding AG (SWON.S)	E (03/04/2022)	SFr 17.57
George W Webb		
Darktrace PLC (DARK.L)	O (01/25/2023)	390p
IONOS Group SE (IOSn.DE)	O (06/14/2023)	€13.98
Nemetschek SE (NEKG.DE)	E (07/13/2022)	€60.62
Netcompany Group A/S (NETCG.CO)	E (01/26/2023)	DKr 254.60
OVH GROUPE SAS (OVH.PA)	U (03/25/2022)	€7.53
TeamViewer AG (TMV.DE)	U (12/12/2022)	€15.84
Laura C Metayer		
CompuGroup Medical SE & Co KgaA (COP1n.DE)	U (06/14/2023)	€35.88
Sinch AB (SINCH.ST)	E (05/03/2023)	SKr 20.33
Sopra Steria Group (SOPR.PA)	E (07/28/2023)	€185.40
Suse SA (SUSEG.DE)	E (09/16/2022)	€10.86

Mark Hyatt

Fortnox AB (FNOX.ST)	U (10/06/2023)	SKr 51.64
Tietoevry Oyj (Tieto.HE)	E (03/10/2021)	€20.88

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.

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