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TRIVARIATE RESEARCH

TEN WAYS TO LOOK AT THE SOFTWARE SELL-OFF

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RESEARCH SUMMARY

Background: A major debate among generalist portfolio managers centers on how to handle the sell-off in the Software industry. We spent all of 2023 through 2025 preferring Semiconductors to Software and made a tactical call as part of year-ahead outlook to prefer Software to Semiconductors. Our logic was that expectations and sentiment are high for Semiconductors and low for Software, and the relative EV-to-forecasted sales multiples are near highs. Boy, do we feel stupid. We have heard the bull and bear cases for Software at recent idea dinners and had thought comments from major private equity firms and select long-term Software bulls might be right – mainly that earnings season could calm investors down. Wednesday night's ServiceNow (NOW) earnings report and the subsequent sell-off yesterday of all Software has us changing our minds and reverting back to what we previously thought. The Software industry is likely to continue to underperform. Lesson learned. We shouldn't have ignored our quantitative work and tried to make a judgment call. The bottom line: the collapsing multiples likely mean the forward earnings estimates are way too high. We decided to dig into the Software industry in today's research.

The sell-off: The sharp sell-off in Software stocks over the last several months, through and including yesterday, caused us to evaluate historical Technology industry multiple contraction over a rolling six-month period. On enterprise value-to-forecasted sales, the median Software stock has seen 15% multiple contraction. The median Software company has seen the most price-to-forward earnings multiple contraction over the last six months of any Technology industry, down 21% from six-month highs.

Historical context: We compared the recent rolling six-month periods of changes in multiples and found that 10% of time of the time in the last 25 years there has been more multiple contraction on EV-to-forecasted sales for the median Software stock and only 3% of the time since 1999 for any rolling 6-month period on price-to-forward earnings. Essentially, we see this much Software multiple compression about once every 5 years on EV-to-forecasted sales, and every 15 years on earnings. To reach post-TMT bubble troughs, another 7-10% relative multiple compression would need to occur, and likely, based on recent price action, overshooting to the downside is possible.

INVESTMENT CONCLUSIONS

Multiple contraction means downward revisions: History shows that the median company's revenue turns out not to be materially impacted, but the median company's profit margin 12 months later is affected. Moreover, it is common for EV-to-Forecasted sales multiples to contract further 12 months later, as this happened five of the eight previous times where EV-to-forecasted sales multiples for the median Software company contracted as much as we have just seen on a rolling 6-month basis. If history is a guide, analysts profit margin estimates for many Software companies in 2026 are way too high. Recently, the median Software company's revision – relative to the Technology sector – has turned negative. This has not sustainably happened since before the Financial Crisis. The earnings estimates have yet to turn relatively worse than the sector, but if history implied by the recent multiple contraction is correct, imminent and material relative downward earnings revisions are likely.

With that "group" call in mind, we thought we would break the Software industry into different groups to see where fundamentals and price action are deviating to identify opportunities. We used ChatGPT to cluster Software stocks into ten distinct categories.

- **Cybersecurity & Identity**: Software/services that protect users, endpoints, networks, and cloud workloads (threat prevention/detection, zero-trust, IAM, vulnerability management).
- **Back Office / Finance / HR / Compliance**: Systems of record + workflows that run internal operations—finance/accounting, spend/payments, tax/compliance, HR, planning, enterprise admin.
- **Collaboration, Comms & Productivity**: Tools for teams to communicate and get work done—UCaaS/contact center, meetings/messaging, docs/e-sign, project/work management, content collaboration.

RESEARCH SUMMARY

- **Customer Engagement & Marketing**: Software to acquire/convert/retain customers—CRM, marketing automation, CX/support, personalization, GTM analytics and related tooling.
- **Digital Assets / Crypto Infrastructure**: Digital-asset infrastructure—mining/hosting/compute, blockchain rails, custody/wallets, and related software/services.
- **Vertical / Industry Software**: Industry-specific operating systems/workflows tailored to a particular end market (public sector, construction, hospitality, legal, etc.).
- **Data, Analytics, Observability & AI**: Platforms for data + system insight—BI/analytics, data platforms/streaming, observability/APM/logs, and AI decision/model tools.
- **DevOps, Workflow Automation & IT Management**: Software to build/run/manage IT and processes—ITSM/workflow automation, RPA, DevOps tools, device management, backup/recovery, infra ops.
- **Engineering, Design, EDA & Technical IP**: Technical design software—CAD/CAE/PLM, semiconductor EDA, and specialized IP/licensing in compute/media/wireless.
- **Emerging Tech (Quantum / Autonomy / Edge)**: Frontier software built around quantum, autonomy/robotics, edge/IoT connectivity, and other early-stage platforms.

Each category has between 12 and 25 stocks. Over the past six months, only two of the ten Software categories are up in absolute terms. The biggest winners are Crypto Infrastructure (IREN, CRCL, BMNR, etc.) and Emerging Technologies (NBISH, IOT, QBTS, etc.). The biggest loser has been Back Office (ORCL, INTU, WDAY, etc.).

RESEARCH SUMMARY

Small-cap and high-quality: Most of the ten Software categories are dominated by small caps, with Crypto Infrastructure and Emerging Tech. Software companies having no mega-/large-cap. stocks. Engineering & EDA have the lowest percentage of small-/micro-cap. stocks of the ten categories. Most Software companies are high-quality, with only Crypto Infrastructure and Emerging Tech notable exceptions.

Revenue and free cash flow growth are solid: We analyzed the forecasted revenue growth and free cash flow growth of each of the ten Software categories. Crypto infrastructure is forecasted to grow its revenue and free cash flow the most, albeit from a low base. The median Engineering and EDA stock is forecasted to grow its top line 8%, the lowest of any of the ten categories. The median company in all ten Software categories is forecasted to grow its free cash flow more than 14%, with Data, Analytics, and Observability (PLTR, MSTR, DDOG, etc.) the lowest.

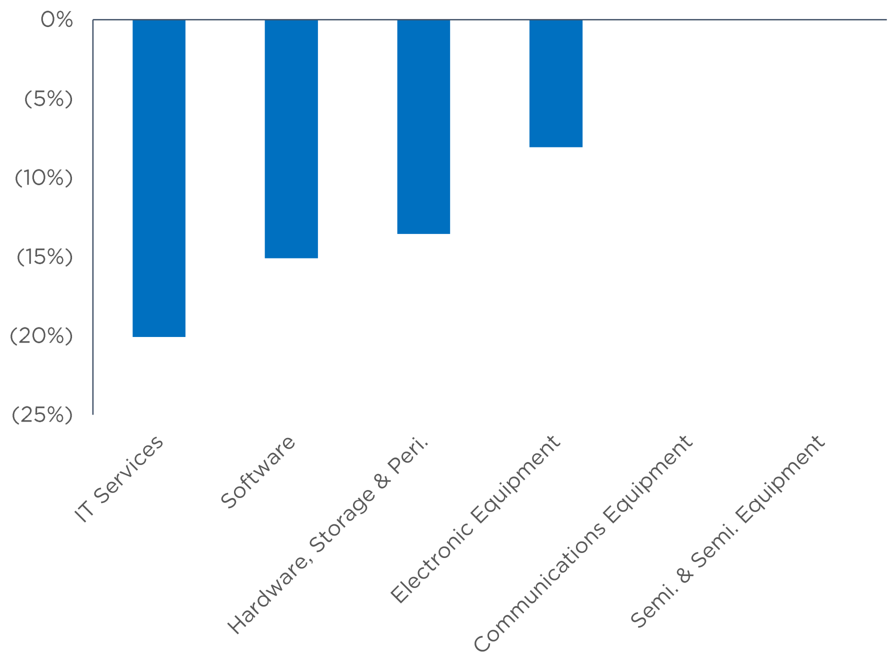
Valuation by segment – nowhere to hide: Median EV-to-forecasted sales multiples are highest in Emerging Tech and Engineering & EDA, lowest in Customer Engagement & Marketing. Nine out of the ten Software buckets have seen month-to-date multiple contraction.

History says more material negative revisions are coming: While crypto stocks have been strong, the earnings estimates have been by far the worst of any of the categories, both on earnings and sales. Four of the ten categories are seeing better recent earnings revisions, including Collaboration & Productivity, Emerging Tech., Cybersecurity & Identity, and Back Office. Half the categories are seeing better sales revisions. Our conclusion is to be cautious where price momentum has been worst. We will continue to monitor these ten separate Software categories through earnings season to see if there are any changes to the trajectory of revisions, forecasted growth, or performance. For any questions about the exact baskets, please don't hesitate to reach out.

SOFTWARE: 21% MULTIPLE CONTRACTION IN THE LAST 6 MONTHS

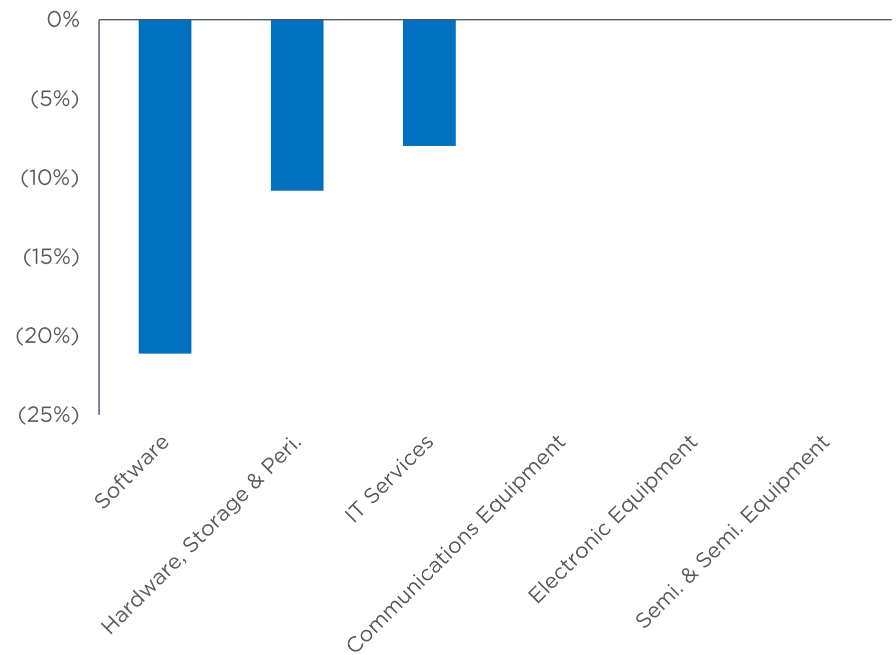
The sharp sell-off in Software stocks over the last several months, through and including yesterday, caused us to evaluate historical Technology industry multiple contraction over a rolling six-month period. On enterprise value-to-forecasted sales, the median IT services stock has seen 20% multiple contraction from its 6-month peak, slightly more than the median Software stock, which has seen 15% multiple contraction over the same time frame (left). The specter of AI disruption has caused these share sell-offs. Semiconductors and Comm. Equipment are beneficiaries and hence are at valuation highs. The same is true for price-to-forward earnings (right), though the median Software company has seen the most multiple contraction over the last six months of any Technology industry, down 21% from six-month highs.

T3000 Technology Stocks
Median Distance From Rolling 6-Month Peak
EV-to-Forecast Sales
As Of January 27th, 2026



Source: Trivariate Research

T3000 Technology Stocks
Median Distance From Rolling 6-Month Peak
Price-to-Forward Earnings
As Of January 27th, 2026

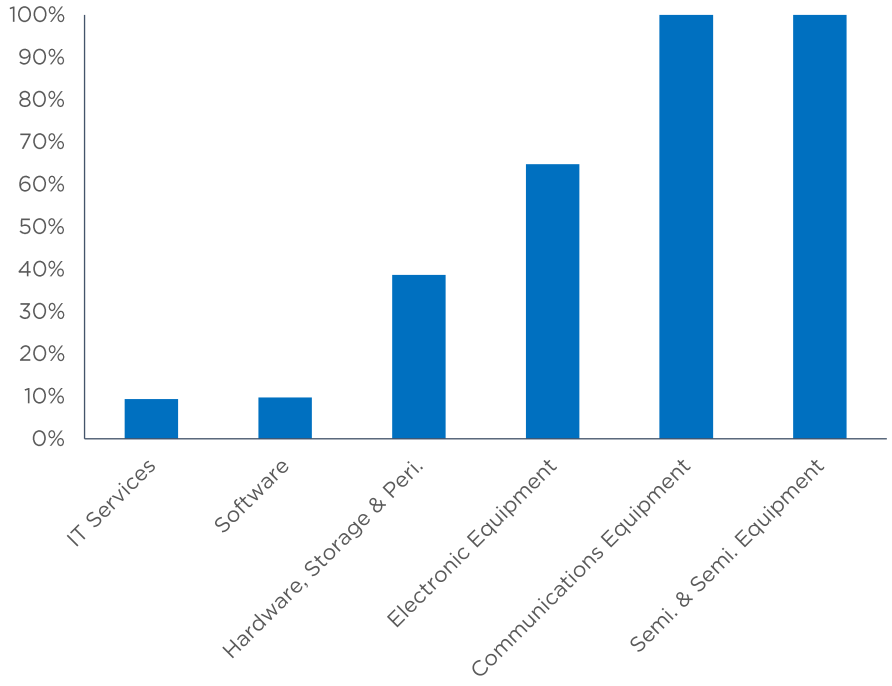


Source: Trivariate Research

RECENT MULTIPLE COMPRESSION HAPPENS ONCE EVERY 5 YEARS

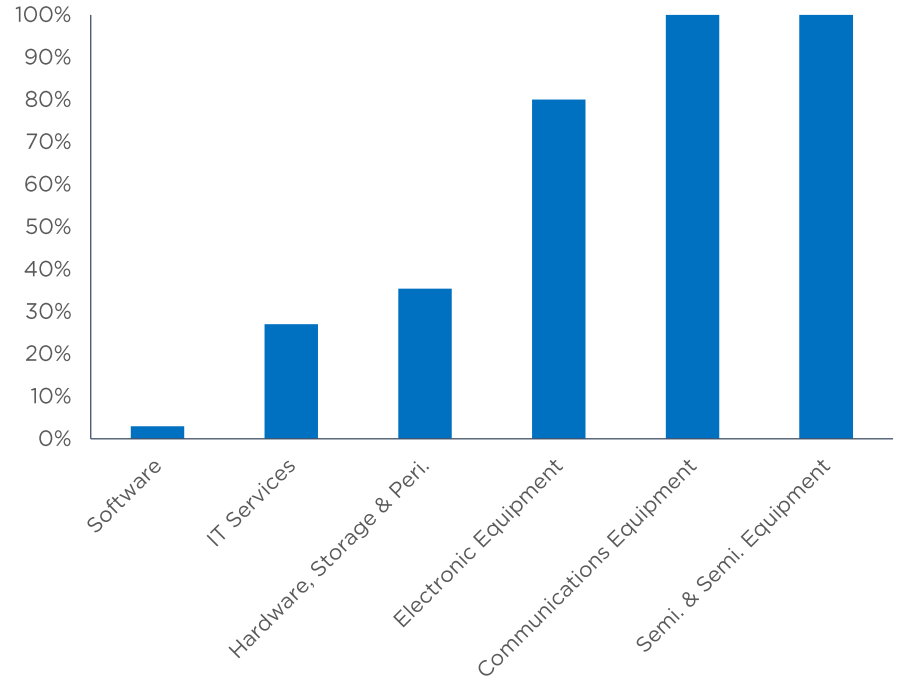
We compared the recent rolling 6-month periods of changes in multiples and found that 10% of the time in the last 25 years there has been more multiple contraction on EV-to-forecasted sales for the median Software stock (left). It is rarer on price-to-forward earnings to see this much multiple contraction for the median Software stock, as this has happened only 3% of the time since 1999 for any rolling 6-month period (right). The multiple contraction in IT services has also been extreme vs. history. Essentially, we see this much Software multiple compression about once every 5 years.

Percentile of Distance From Rolling 6-Month Peak
Sector-Relative EV-to-Forecast Sales
1999 Through January 27th, 2026



Source: Trivariate Research

Percentile of Distance From Rolling 6-Month Peak
Sector-Relative Price-to-Forward Earnings
1999 Through January 27th, 2026

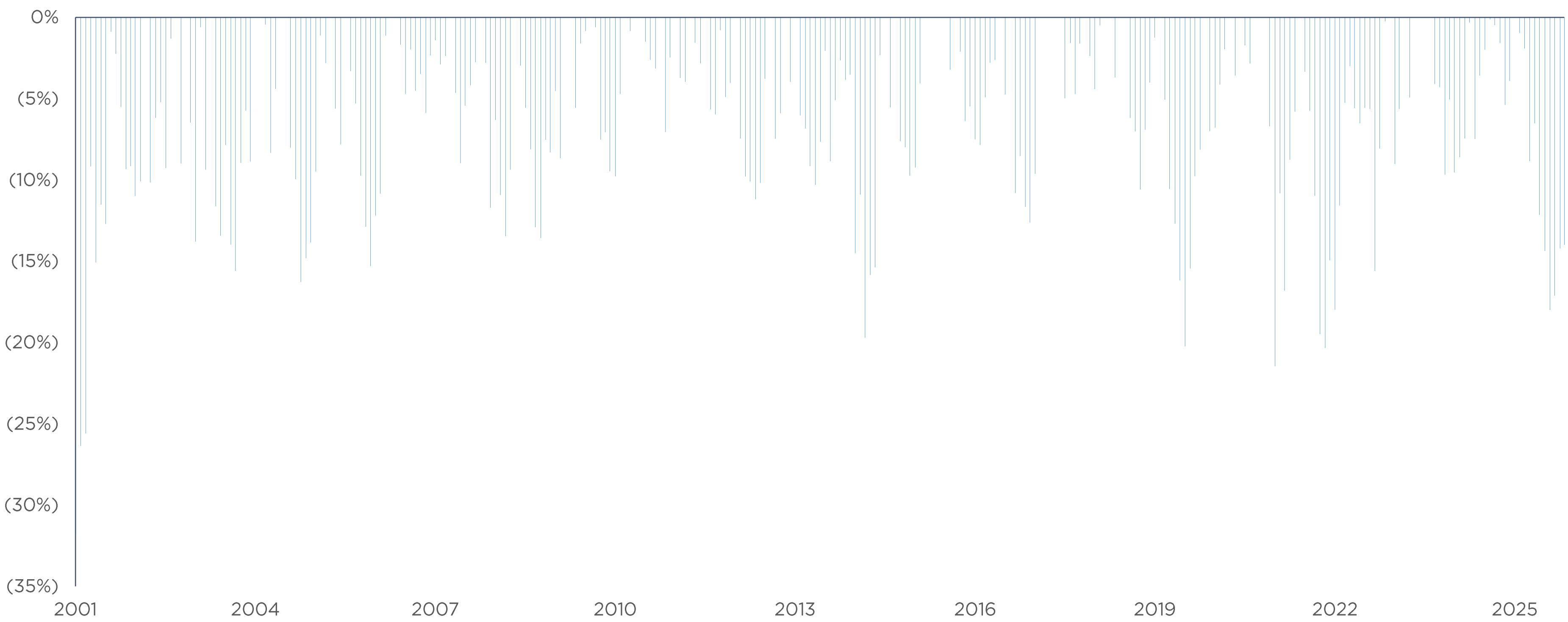


Source: Trivariate Research

10% RELATIVE FURTHER MULTIPLE COMPRESSION HAS PRECEDENT

Below, we examine Software stocks among the top 3,000 by market capitalization and their median distance from rolling six-month peaks in sector-relative enterprise value to forward sales. While the recent valuation compression has been sharp, it is not without precedent outside of the TMT bubble unwind—an episode during which Software significantly underperformed the broader Technology sector. To reach post-TMT bubble trough levels, an additional 7–10% of relative multiple compression would be required, and based on recent price action, an overshoot to the downside remains a possibility.

T3000 Software
Median Distance From Rolling 6-Month Peak
Sector-Relative EV-to-Forecast Sales
Through January 27th, 2026



Source: Trivariate Research

USUALLY MARGINS AND MULTIPLES ARE LOWER A YEAR LATER

<u>Multiple contraction means downward revisions:</u> History shows that the median company's revenue turns out not to be materially impacted, but the median company's profit margin 12 months later is affected. Moreover, it is common for EV-to-Forecasted sales multiples to contract further 12 months later, as this happened five of the eight previous times where EV-to-forecasted sales multiples for the median Software company contracted as much as we have just seen on a rolling 6-month basis. <u>If history is a guide, the analysts profit margin estimates for many Software companies in 2026 are way too high, but the revenue estimates are likely reasonable.</u>

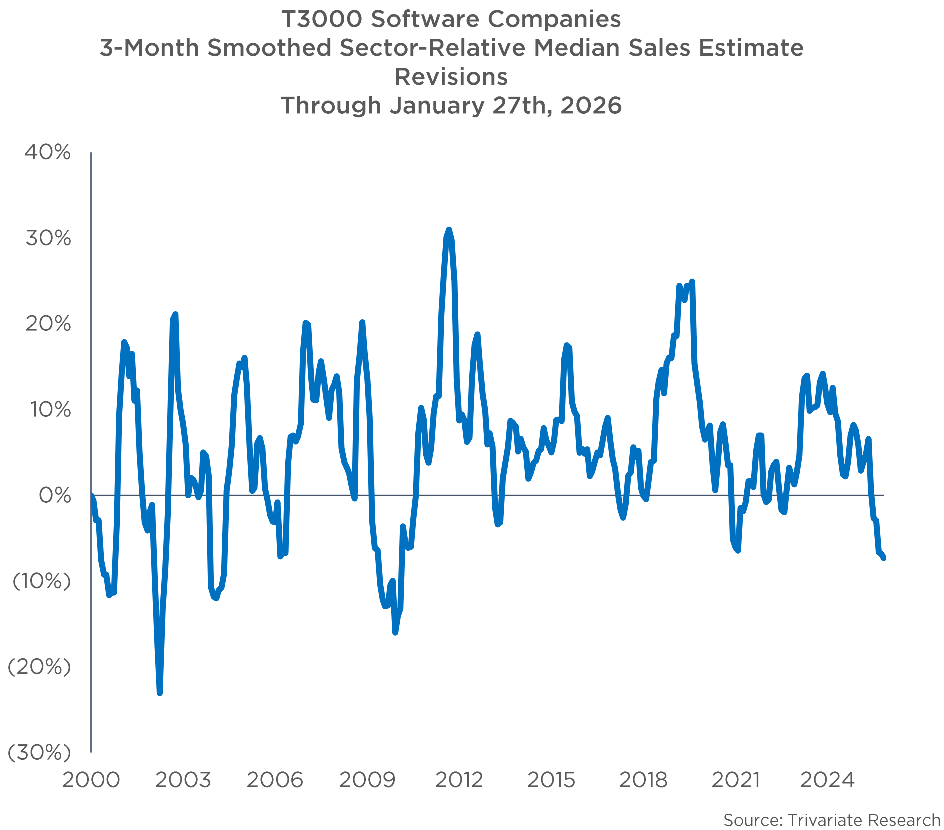
T3000 Software Stocks
Median Forecasted Fundamental Metrics after Multiple Contraction and Realized Value 12 Months Later
As of January 27th, 2026

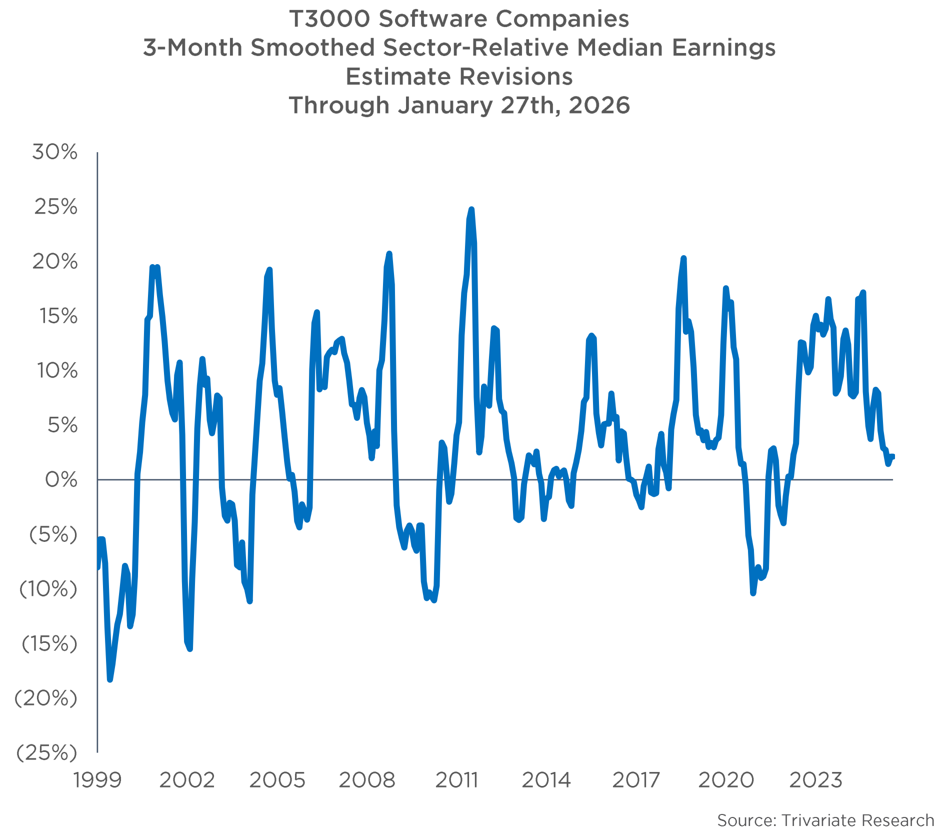
		Revenue Growth			Net Margin			Ev-to-Forecast Sales		
Trough Date	Distance From 6-Month Peak	Forecasted	Realized After 12m	Difference	Forecasted	Realized After 12m	Difference	Present	12-Month Later	Ratio
2001-05-31	(25.6%)	15.1%	3.6%	(11.4%)		(5.0%)		3.4x	2.3x	0.7x
2003-11-28	(15.6%)	11.5%	13.3%	1.8%		7.4%		2.9x	2.6x	0.9x
2004-12-31	(16.3%)	13.1%	14.5%	1.4%		8.8%		2.5x	2.4x	1.0x
2006-02-28	(15.3%)	12.8%	15.9%	3.1%	13.6%	7.9%	(5.7%)	2.4x	2.6x	1.1x
2014-07-31	(15.4%)	10.7%	11.8%	1.2%	11.6%	2.8%	(8.8%)	3.0x	3.7x	1.2x
2019-10-31	(15.4%)	21.0%	17.6%	(3.4%)	11.2%	(2.5%)	(13.7%)	5.4x	6.6x	1.2x
2021-05-28	(16.8%)	13.0%	23.2%	10.2%	9.9%	(11.4%)	(21.3%)	8.3x	5.6x	0.7x
2022-03-31	(18.0%)	18.8%	19.3%	0.5%	8.5%	(14.3%)	(22.8%)	6.2x	4.9x	0.8x
2026-01-27	(14.0%)	15.1%			18.8%			4.3x		

Source: Trivariate Research

IMMINENT DOWNWARD EARNINGS REVISIONS ARE LIKELY

Recently, the median Software company's revision – relative to the Technology sector – has turned negative (left). This has not sustainably occurred since before the Financial Crisis. The earnings estimates have yet to turn relatively worse than the sector (right), but if history implied by the recent multiple contraction is correct, imminent and material relative downward earnings revisions are likely.





USING CHATGPT WE CLUSTERED SOFTWARE INTO 10 CATEGORIES

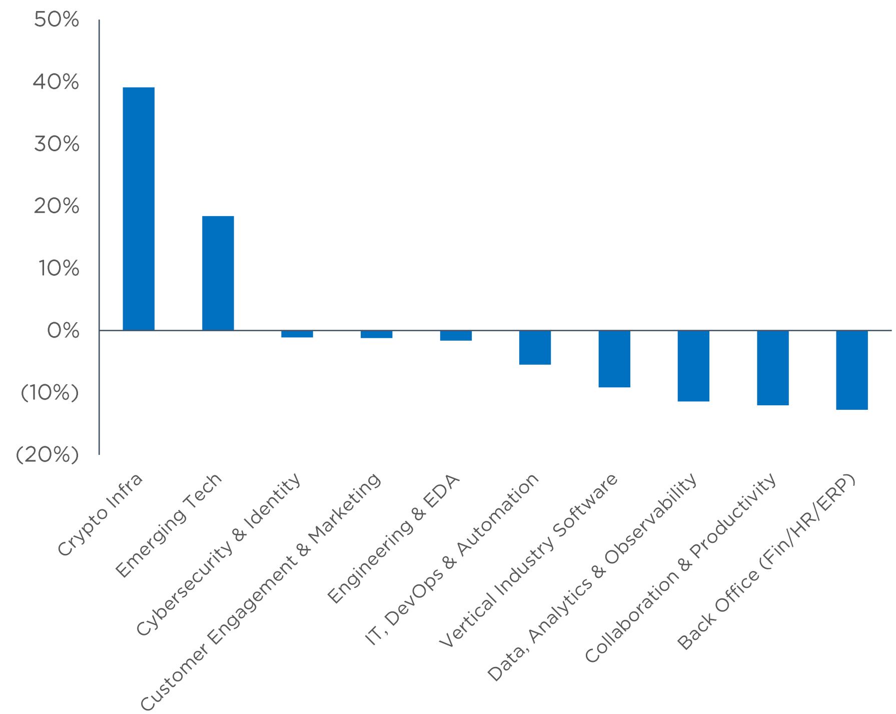
With that "group" call in mind, we thought we would break the Software industry into different groups to see where fundamentals and price action are deviating to locate any opportunities. We used ChatGPT to cluster Software stocks into ten distinct categories (left). Each category has between 12 and 25 stocks. Over the past six months, only two of the ten Software categories are up in absolute terms. The biggest winners are Crypto Infrastructure (IREN, CRCL, BMNR, etc.) and Emerging Technologies (NBISH, IOT, QBTS, etc.). The biggest loser (right) has been Back Office (ORCL, INTU, WDAY, etc.).

T3000 Software Stocks Categoriezed by Core Business/Product Type
As of January 27, 2025

Category	Company Count	Sample Tickers
Cybersecurity & Identity	25	PANW, CRWD, FTNT, ZS, CYBR
Back Office (Fin/HR/ERP)	19	ORCL, INTU, WDAY, FICO, GWRE
Collaboration & Productivity	19	MSFT, TEAM, ZM, DOCU, OTEX
Customer Engagement & Marketing	17	CRM, APP, HUBS, KVYO, ZETA
Crypto Infra	16	IREN, CRCL, BMNR, CIFR, HUT
Vertical Industry Software	16	ROP, TYL, PCOR, TTAN, CCC
Data, Analytics & Observability	15	PLTR, MSTR, DDOG, DT, CFLT
IT, DevOps & Automation	14	NOW, U, NTNX, PEGA, PATH
Emerging Tech	12	NBIS, IOT, QBTS, AUR, LIF
Engineering & EDA	12	ADBE, SNPS, CDNS, ADSK, PTC

Source: Trivariate Research

6-Month Cumulative Return by Software Categories
As Of January 27th, 2026



Source: Trivariate Research

MOST SOFTWARE COMPANIES ARE SMALL-CAP AND HIGH-QUALITY

Most of the categories are dominated by small caps, with Crypto Infrastructure and Emerging Tech. Software companies having no mega-/large-cap. stocks. Engineering & EDA have the fewest percentage of small-/micro-cap. stocks of the ten categories (left). Most Software companies are high-quality (right), with only Crypto Infrastructure and Emerging Tech notable exceptions.

T3000 Software Stocks Categoriezed by Core Business/Product Type
Count and Proportion by Size Bucket
As of January 27, 2025

Category	Mega / Large Cap.	Mid Cap.	Small / Micro Cap.
Cybersecurity & Identity	4 (16%)	5 (20%)	16 (64%)
Back Office (Fin/HR/ERP)	4 (21%)	3 (16%)	12 (63%)
Collaboration & Productivity	2 (11%)	5 (26%)	12 (63%)
Customer Engagement & Marketing	2 (12%)	2 (12%)	13 (76%)
Crypto Infra	0 (0%)	3 (19%)	13 (81%)
Vertical Industry Software	1 (6%)	3 (19%)	12 (75%)
Data, Analytics & Observability	3 (20%)	4 (27%)	8 (53%)
IT, DevOps & Automation	1 (7%)	5 (36%)	8 (57%)
Emerging Tech	0 (0%)	5 (42%)	7 (58%)
Engineering & EDA	4 (33%)	4 (33%)	4 (33%)

Source: Trivariate Research

T3000 Software Stocks Categoriezed by Core Business/Product Type
Count and Proportion by Quality Bucket
As of January 27, 2025

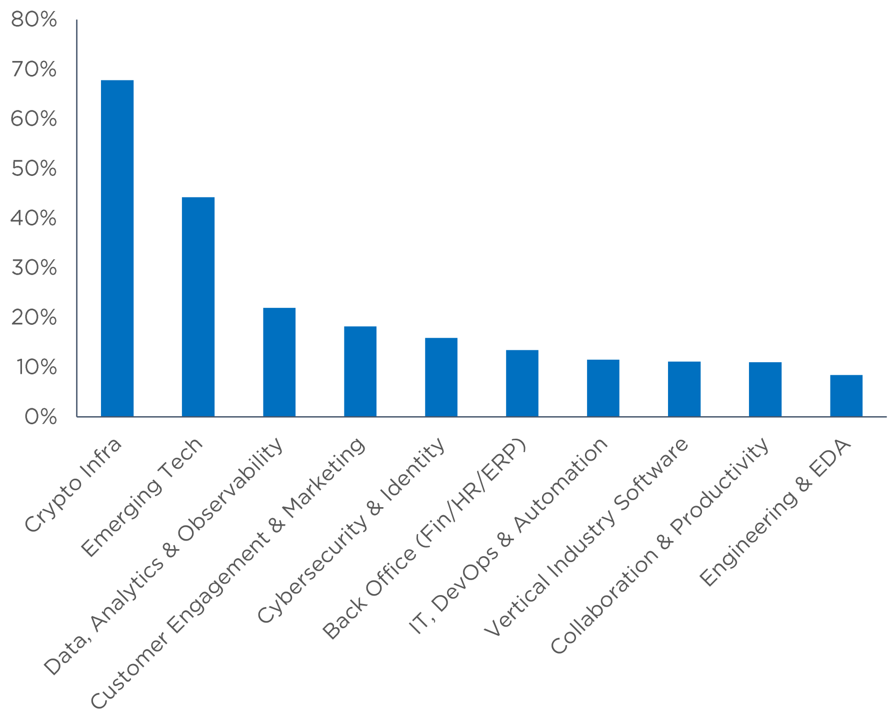
Category	High Quality	Mid Quality	Low Quality	Junk Quality
Cybersecurity & Identity	17 (68%)	4 (16%)	3 (12%)	1 (4%)
Back Office (Fin/HR/ERP)	9 (47%)	6 (32%)	2 (11%)	2 (11%)
Collaboration & Productivity	17 (89%)	2 (11%)	0 (0%)	0 (0%)
Customer Engagement & Marketing	13 (76%)	3 (18%)	0 (0%)	1 (6%)
Crypto Infra	0 (0%)	2 (12%)	1 (6%)	13 (81%)
Vertical Industry Software	10 (62%)	4 (25%)	1 (6%)	1 (6%)
Data, Analytics & Observability	7 (47%)	1 (7%)	5 (33%)	2 (13%)
IT, DevOps & Automation	10 (71%)	3 (21%)	0 (0%)	1 (7%)
Emerging Tech	3 (27%)	2 (18%)	5 (45%)	1 (9%)
Engineering & EDA	8 (67%)	2 (17%)	2 (17%)	0 (0%)

Source: Trivariate Research

CRYPTO FASTEST GROWER, FCF GROWTH IS >14% ACROSS THE BOARD

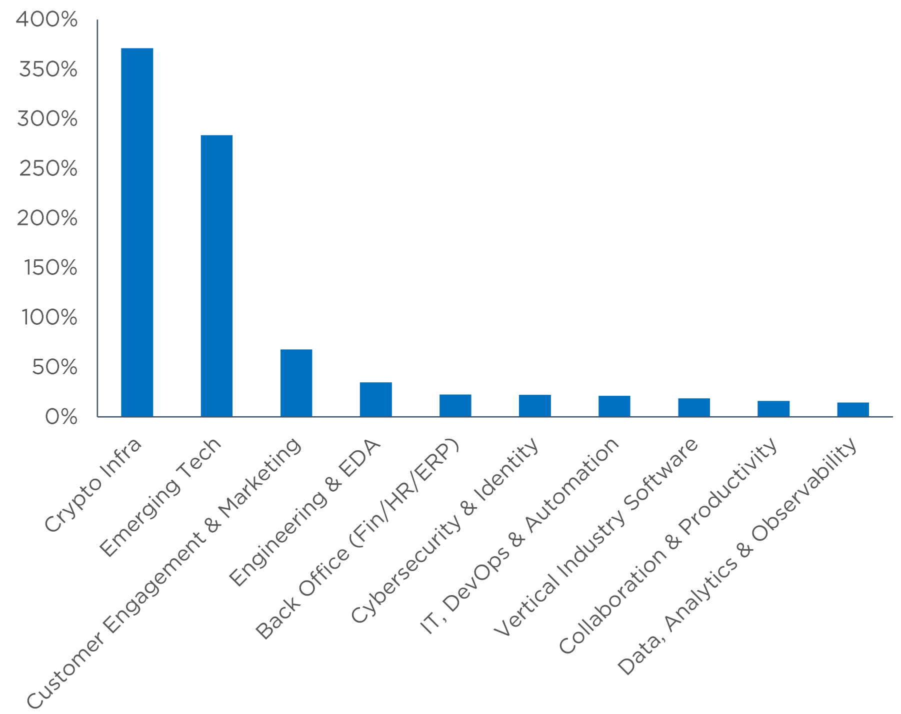
We analyzed the forecasted revenue growth (left) and free cash flow growth (right) of each of the ten Software categories. Crypto infrastructure is forecasted to grow its revenue and free cash flow the most, albeit from a low base. The median Engineering and EDA stock is forecasted to grow its top line 8%, the lowest of any of the ten categories. The median company in all ten Software categories is forecasted to grow its free cash flow more than 14%, with Data, Analytics, and Observability (PLTR, MSTR, DDOG, etc.) the lowest.

Median Forecast Revenue Growth by Category As Of January 27th, 2026



Source: Trivariate Research

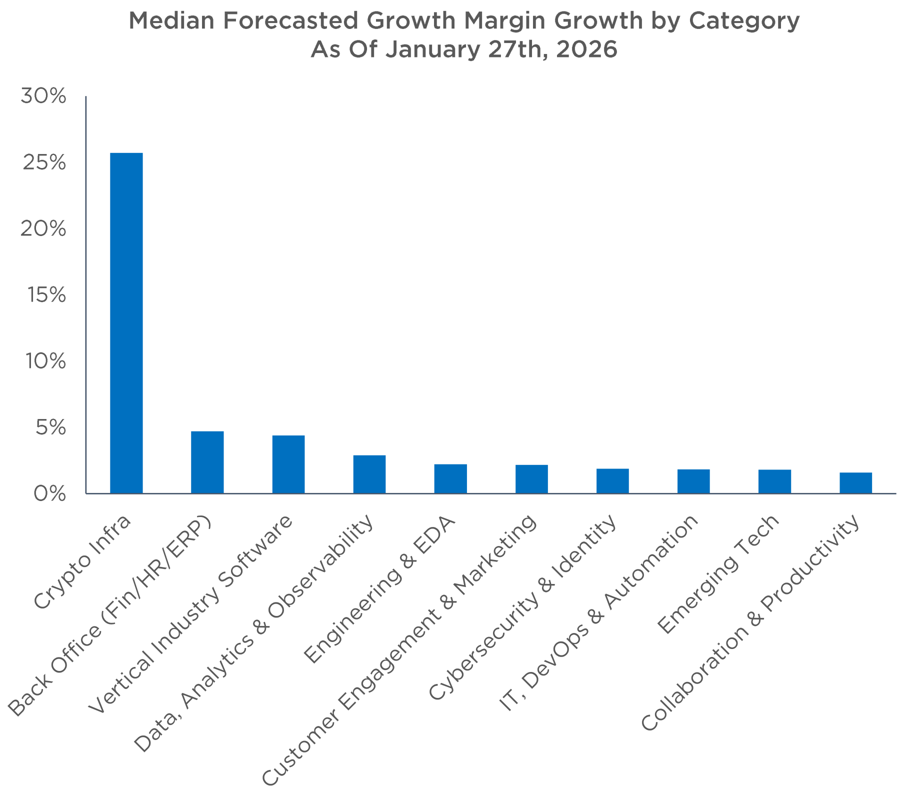
Median Free Cash Flow Growth by Category As Of January 27th, 2026



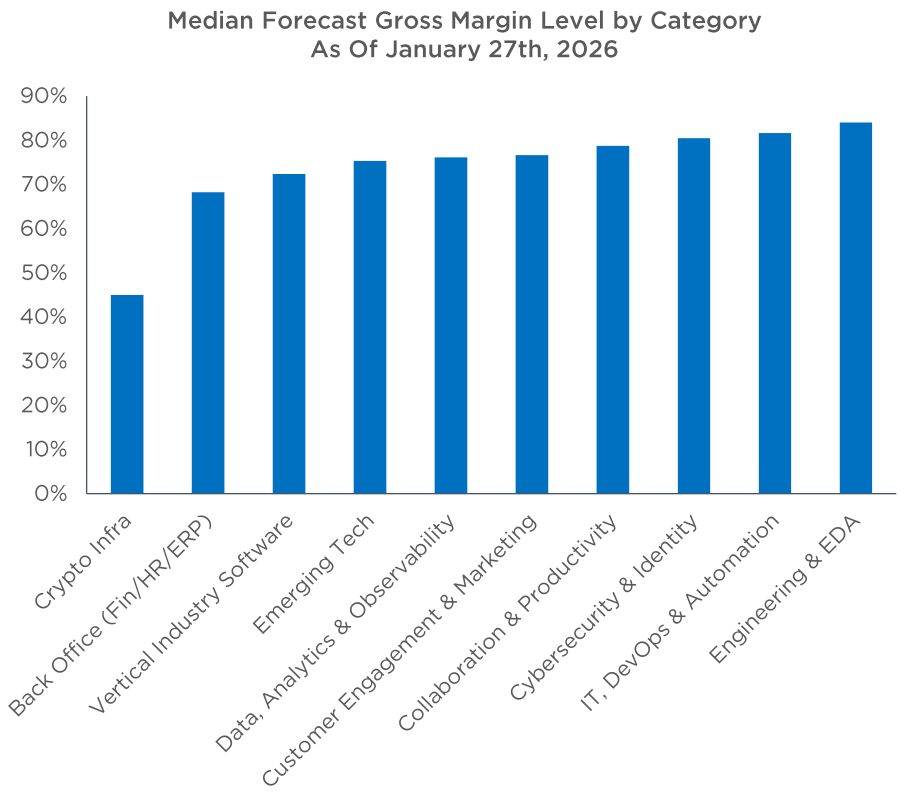
Source: Trivariate Research

THE MEDIAN STOCK IN 8/10 CATEGORIES HAS GROSS MARGINS > 70%

We show the median forecasted gross margin growth (left) and level (right) for the median stock in each of the ten categories. Again, growth is forecasted to be highest in Crypto, but this is from a base of lower margins than nearly every other category. The median stock in all but Crypto and Back Office is higher than 70%.



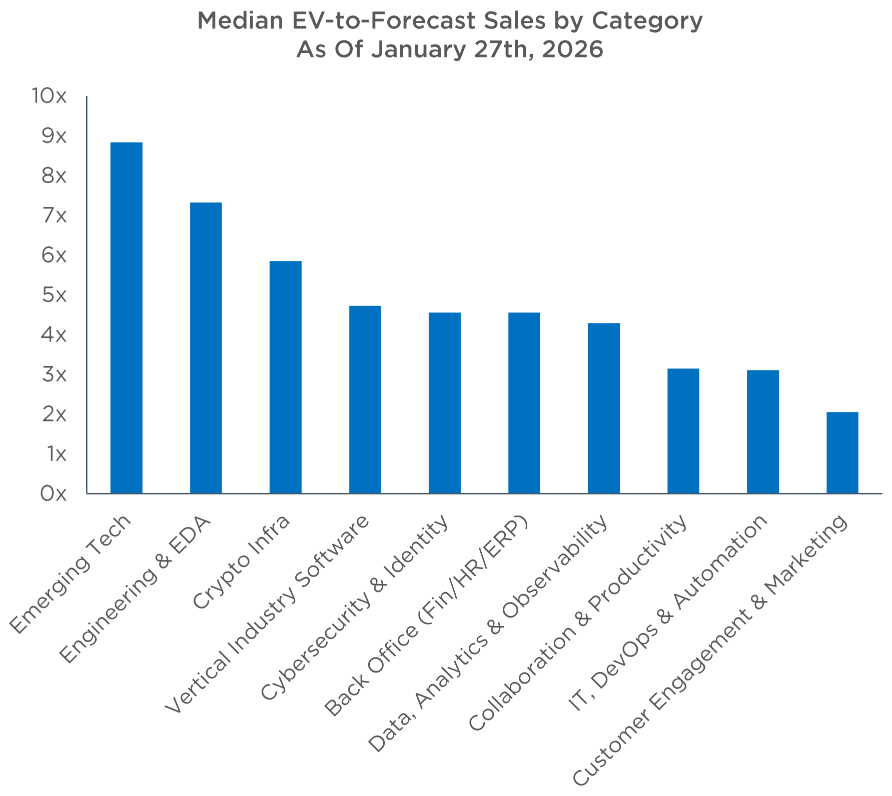
Source: Trivariate Research



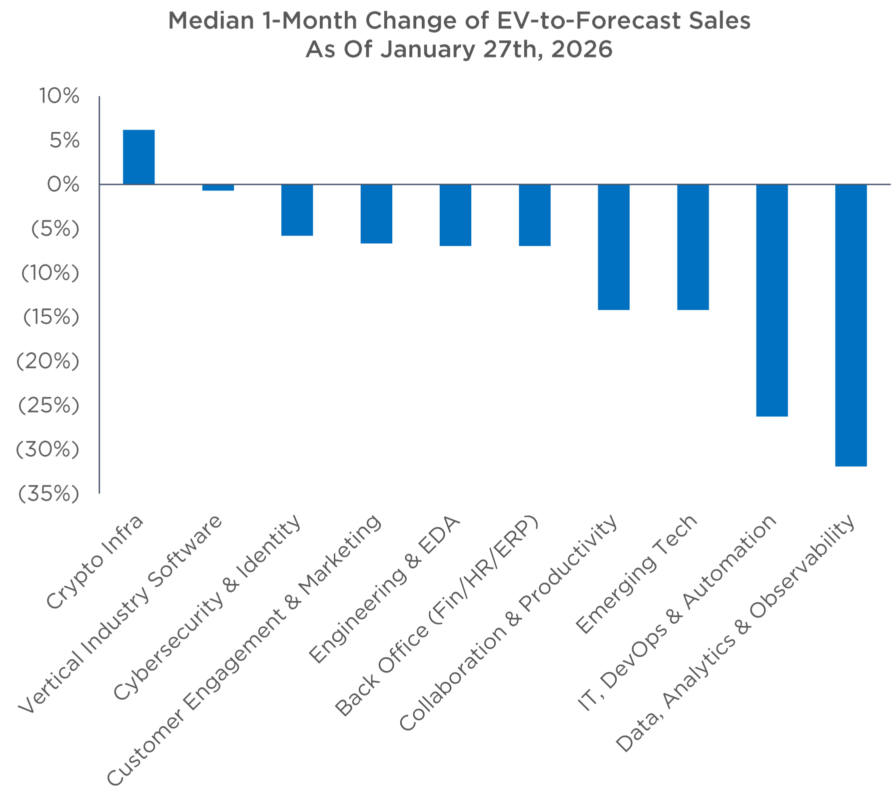
Source: Trivariate Research

9 OUT OF 10 CATEGORIES HAVE SEEN MULTIPLE CONTRACTION YTD

Median EV-to-forecasted sales multiples are highest in Emerging Tech and Engineering & EDA, lowest in Customer Engagement & Marketing (left). All but Crypto have seen material multiple contraction this month (right) with Data, Analytics, and Observability (PLTR, MSTR, DDOG, etc.) seeing the most month-to-date contraction.



Source: Trivariate Research

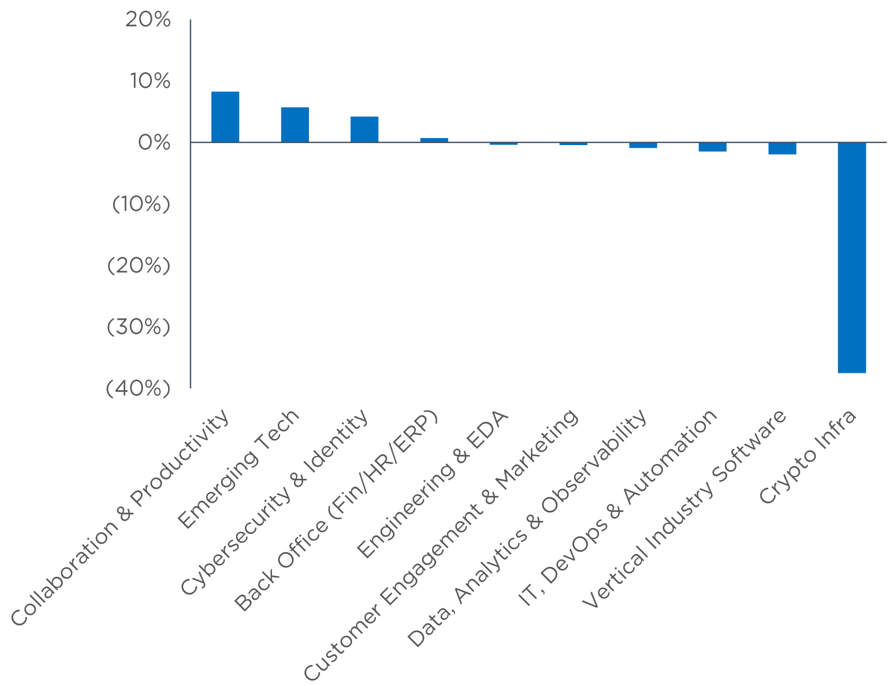


Source: Trivariate Research

SO FAR RELATIVE REVISIONS HAVE BEEN ABOUT AVG. WITH ALL TECH.

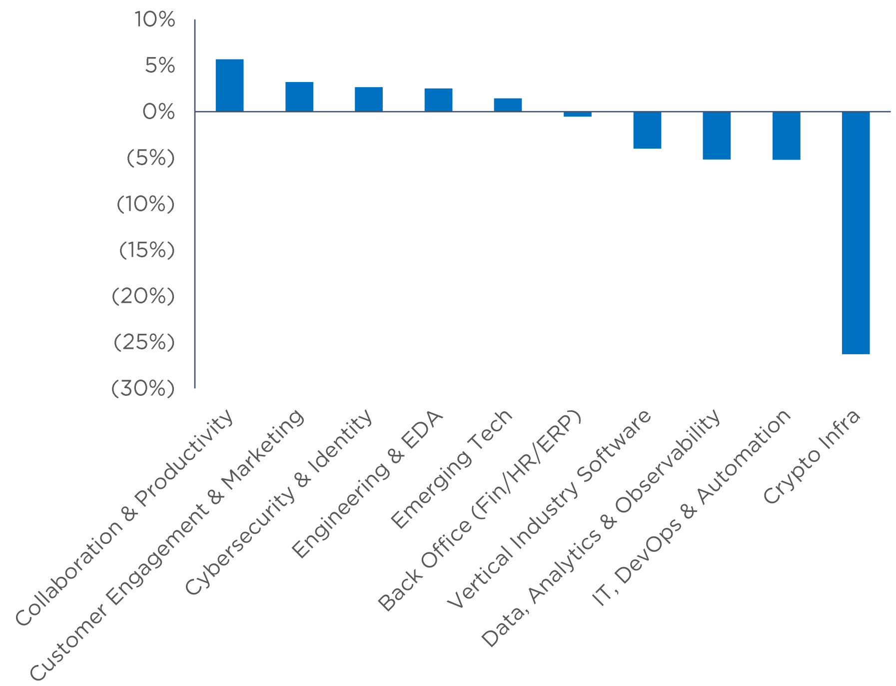
While crypto stocks have been strong, the earnings estimates have been by far the worst of any of the categories, both on earnings (left) and sales (right). Four of the ten categories are seeing better recent earnings revisions, including Collaboration & Productivity, Emerging Tech., Cybersecurity & Identity, and Back Office. Half the categories are seeing better sales revisions.

Average Sector-Relative Earnings Estimate Revisions by Category
As Of January 27th, 2026



Source: Trivariate Research

Average Sector-Relative Sales Estimate Revisions by Category
As Of January 27th, 2026



Source: Trivariate Research

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