

# Enterprise Productivity

Fraud fighters: Tech innovators address increasingly sophisticated, growing threats

## FIRST ANALYSIS QUARTERLY INSIGHTS

Integrative insights on emerging opportunities

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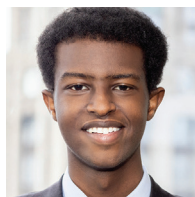
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## About the Authors



### Terry Kiwala, CFA

Terry Kiwala has worked in finance and investment for more than two decades and joined First Analysis in 2019. He works with entrepreneurs as an investor and as an advisor on growth transactions to help build leading enterprise productivity software businesses. He is a thought leader in his sector, having authored widely read industry research. He supports First Analysis' investments in Insellerate, Lender Price, PCMI, SmartCommerce and Visage. Prior to joining First Analysis, he was chief financial officer of Vokal, a software development company, senior vice president at Tribeca Flashpoint Media Arts Academy, and associate vice president at National-Louis University. Earlier, he was an investment banking analyst at Lehman Brothers. He earned a bachelor's degree in economics and government from the University of Notre Dame. He is a CFA charterholder.



### Walid Elmekki

Walid Elmekki is an associate with First Analysis. Walid joined the firm in 2021 after completing his internship. He previously interned at Wintrust Financial, supporting the commercial banking division. Walid graduated from Ohio State University with a bachelor's degree in finance and a certificate of leadership.

## About First Analysis

First Analysis has a four-decade record of serving emerging growth companies, established industry leaders, and institutional investors in emerging high-growth tech-driven sectors, both through its venture capital investments and through First Analysis Securities Corp. (FASC), which provides investment banking and related services. FASC is a FINRA-registered broker-dealer and member SIPC. First Analysis's integrative research process underpins all its efforts, combining 1) dynamic investment research on thousands of companies with 2) thousands of relationships among executives, investors, and other key participants in our focus areas, yielding a deep, comprehensive understanding of each sector's near-term and long-term potential.

# ENTERPRISE PRODUCTIVITY

## Fraud fighters: Tech innovators address increasingly sophisticated, growing threats

- At several conferences during the fourth quarter, we were astounded by the prominence of fraud as a major challenge for participants and by the proliferation of innovative technologies to combat this growing epidemic.
- Traditional fraud prevention efforts that depend on human attention can't keep pace with the frequency and velocity of today's financial crimes. Financial institutions and other businesses have concluded they need more advanced tools to combat fraud.
- Fraud-fighting businesses are increasingly stepping up to meet this demand in a market expected to grow by more than 20% annually and reach nearly \$300 billion by 2032. We briefly profile some of the best ideas we saw among fraud-fighting technology providers at these conferences.

### SIGNS POINT TO A TOUGHER, BIGGER FRAUD PROBLEM

At several conferences during the fourth quarter, including the National Multifamily Housing Council's OpTech, Money 20/20, CurqI's Venture Tech, and FOTechHub for family offices, we were astounded by the prominence of fraud as a major challenge for

participants and by the proliferation of innovative technologies to combat this growing epidemic.

### How did we get to this point?

At the height of the pandemic, the easiest and most reliable tactic for fraudsters was using phony identities to loot government stimulus programs, such as the Paycheck Protection Program, the coronavirus stimulus payment program, and the American Rescue Plan, which provided substantially higher unemployment benefits to individuals.

### Huntington users saw this greeting before being able to conduct banking activities



### Help keep your accounts safe.

Scammers may pose as Huntington and ask for your account numbers, username, password, verification codes, or PIN. If you are unsure about any request for information, please call us at (800) 480-2265.

[GOT IT >](#)

**Source:** Huntington Bank.

## First American Bank sent this email warning customers of potential employee impersonation attempts

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Contact Us →

### Beware of increase in scam attempts

We have received reports from customers about receiving calls or texts from First American Bank's Fraud Department during which the customer is asked for sensitive information like Social Security numbers or Online Banking usernames and passwords.

THESE ARE IMPERSONATION SCAMS designed to fraudulently obtain information to access your account(s) and can be used to make payments from your account(s), using debit cards, e-wallets or Zelle® payments.

If you have any doubts about a communication—a call, text, or email—that may claim to be from First American Bank, **DO NOT RESPOND, DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS.**

Simply call us at [\(847\) 952-3700](tel:847-952-3700). This is our Customer Service number; you can always find it on the back of your First American Bank debit card or a bank statement.

Remember, **WE WILL NEVER ASK YOU TO:**

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**Source:** First American Bank.

The Associated Press reported that fraudsters stole \$280 billion of COVID-19 relief funds and an additional \$123 billion was wasted or misspent. Combined, these amounted to nearly 10% of the \$4.2 trillion the federal government disbursed in COVID-19 relief aid. The federal government has prosecuted thousands of criminals in connection with these thefts.

As these pandemic programs ended, fraudsters renewed their focus on the bread and butter of their industry: individuals and businesses. And in recent years, the methods used to perpetrate fraud have become more sophisticated, fueled by easy access to artificial intelligence technology. These efforts are aimed at a broad spectrum of targets, including financial institutions, the wealthy, and ordinary consumers. Using

robocalls, romance scams, investment scams and more to perpetrate fraud via banks, fraudsters caused over \$485 billion in financial losses globally in 2023 according to Nasdaq's Global Financial Crime Report.

While organized crime and terrorist organizations are behind many fraud attempts, insiders such as bank employees and financial advisors can be just as damaging. In December, three TD Bank employees were charged with accepting bribes to open shell accounts and issue debit cards to straw owners and facilitating more than \$470 million of money laundering from drug sales to Columbia. This was one of several money laundering networks identified by investigators. TD Bank was fined \$3 billion for failure of controls that could have stopped these crimes.

Many businesses and financial entities, particularly family offices, increasingly realize they lack sufficient controls and systems to alert them to suspicious financial activity. Fraud at smaller entities and typically secretive family offices tends not to get much media attention, but these organizations can be particularly vulnerable. For example, fraudulent activity can be hard to detect at family offices, especially when they're dealing with alternative assets that involve periodic disbursements and receipts by wire transfer. Deloitte's Risk and Financial Advisory practice has urged family offices to undertake periodic risk assessments, particularly for thinly staffed family offices where one employee may have substantial control over a family's finances and is the sole conduit for communication with the family.

### MULTI-DIMENSIONAL COSTS

As noted above, businesses and individuals (and governments) suffer substantial financial losses from fraud. But for businesses, fraud damage can extend beyond monetary losses to reputational damage and regulatory penalties. Large losses can attract negative media attention that can severely damage businesses' reputations. And fraud

events attract regulatory scrutiny that can lead to costly investigations and penalties under know-your-customer and anti-money-laundering regulations.

## SHORTCOMINGS OF TRADITIONAL ANTI-FRAUD TOOLS SPARK NEW SOLUTIONS

Traditional fraud prevention efforts that depend on human attention, such as including trusted contacts on brokerage accounts, can't keep pace with the frequency and velocity of today's financial crimes. And businesses that attempt to minimize fraud by warning customers to be diligent when entering logins and personally identifiable information risk diminishing their customers' trust in them. Financial institutions and other businesses have concluded they need more advanced tools to combat fraud.

Fraud-fighting businesses are increasingly stepping up to meet this demand. Straits Research valued the global total addressable market for fraud detection software at \$42.6 billion in 2023 and estimated it would grow to \$52.9 billion in 2024. Straits estimated the addressable market will grow at a 24.2% compound annual growth rate to \$299.5 billion by 2032 as additional industries realize value from these technologies. While the customers for these technologies have been mainly financial institutions (banks, credit unions and wealth managers) and financial technology platforms such as alternative lenders, we expect demand from adjacent verticals such as e-commerce and healthcare to increase in prominence. Growth rates will likely vary by geography as anti-fraud measures succeed in hardening some regions (reflecting high penetration rates for fraud-fighting technology), prompting fraudsters to refocus their efforts on regions where security and controls are laxer.

## HERE ARE SOME OF THE COMPANIES SOLVING THE FRAUD PROBLEM

Below are some of the best ideas we saw at these conferences. We think they are well positioned to benefit from the growing focus on fraud detection and loss prevention among banks, businesses, consumers and investors.



Austin, Texas-based **Abrigo** sells its fraud-detection software to financial institutions to prevent loan losses and safeguard customer funds. The platform scores loan, deposit and custodial account applicants based on their overall risk profile. Based on bank account activity and customer-provided data, Abrigo verifies customer identities and transaction integrity. Financial institutions also use Abrigo to identify instances of elder cyberfraud substantially faster than can be done by alerting interested parties on bank and brokerage accounts. Abrigo's most recent financing was in August 2021 by Carlyle Group with participation from its lead investor, Accel-KKR.



New York-based **Alloy** uses a network of 200 complementary data libraries to identify fraud in loan applications. The platform analyzes risk at the application stage and by monitoring transaction-level data for fraudulent activity once customers are onboarded. Alloy most recently raised \$52 million in a round led by Lightspeed Ventures and Avenir Growth.





New York-based **AtData** uses a network of databases to evaluate risks associated with email addresses. AtData looks at several metrics to score email address risk, including account age, transaction volume and pace, and popularity (frequency of use and acceptance across multiple platforms). AtData is used by financial institutions, financial technology companies, retailers and original equipment manufacturers for marketing campaigns. The platform integrates with major marketing campaign technology providers, including Active Campaign, Hubspot, MailChimp and Salesforce, among others, enabling AtData's customers to validate targeted emails before launching marketing campaigns. TZP Growth Partners led AtData's most recent funding in March 2018.

## Carefull

New York-based **Carefull** monitors customer transactions in bank and brokerage accounts to pinpoint potential areas of fraud, particularly for elderly account holders. Carefull's technology searches for cryptocurrency purchases, increases in recurring payments, deposits that may be from bad actors, unauthorized ATM withdrawals, recurring donations to organizations appearing as charities or politicians, fraudulent payment requests from Zelle and Venmo, and fraudulent deposits of stolen checks and money orders. It sells to financial institutions that want to provide this protection as a benefit for their depositors and wealth management clients. Carefull raised a \$16.5 million Series A funding in October 2023 led by Fin Capital with participation from Bessemer Venture Partners, TTV Capital, Commerce Ventures, Montage Ventures and Alloy Labs.



## Castellum.AI

New York-based **Castellum.AI** helps financial institutions minimize their client bases' exposure to global financial crime. Castellum is designed for institutions with global client rosters who need to determine ultimate beneficial ownership and screen for parties with adverse media coverage or that are subject to sanctions and export controls. Castellum also enables financial institutions to monitor transaction data to pinpoint irregularities and new instances of financial crimes by sanctioned individuals. In October 2023, Castellum announced a \$4 million seed round led by Spider Capital with participation from NewFund, Remarkable Ventures and Cameron Ventures.

## F E A T U R E

## S P A C E

**Featurespace** is based in Cambridge, U.K. and Atlanta, Georgia. Its ARIC Risk Hub uses machine learning to analyze customer behavior and transactions to reduce fraud and financial crime. The platform analyzes past, current and likely future customer actions and compares them to peer-group actions to pinpoint irregularities. Dynamic analytics adjust to changing customer behaviors to update normal behavior while learning new anomalies to minimize risk and loss for financial institutions. Featurespace's customers include international banks, insurance companies and gaming platforms. Featurespace was funded by a series of investors led by TTV Capital and was acquired by Visa in December 2024.



Sunnyvale, California-based **Jumio** offers an artificial-intelligence-driven identity verification platform used by worldwide brands to detect fraud and comply with anti-money-laundering and know-your-customer regulations. Jumio assesses the validity of government-issued identification provided in online transactions and then uses facial recognition and biometrics to verify the person is physically present during the transaction. For use cases where customers are required to prove addresses, Jumio assesses the validity of utility bills and bank statements. In March 2021, Jumio announced a \$150 million funding from Great Hill Partners.

## KEYNO

Fort Lauderdale, Florida-based **Keyno** offers a digital card verification value (CVV) to ensure the integrity of card-not-present credit- and debit-card transactions. Its system continuously updates to curb fraud in these transactions. Its mobile application can be incorporated into financial institutions' applications on a white-label basis. With Keyno, banks can reduce losses due to card skimming, loss and theft. Card issuers also reduce the cost of reprinting and shipping new cards for compromised customers as well as minimize revenue loss during inactivity periods and customer churn that result when consumers' cards are compromised. Keyno has not taken institutional capital.



With its database of 500 million business records, Austin, Texas-based **Markaaz** enables financial technology companies to verify the identity of small business clients and onboard and monitor them.

Markaaz keeps financial technology companies compliant with anti-money-laundering requirements and helps them identify small businesses tied to politically exposed persons, businesses with adverse media and regulatory enforcement histories, and businesses that present reputational and insolvency risk. Markaaz is used by alternative lenders that take balance sheet risk. In the past two years, the company raised \$12 million in Series A funding from private investors.



London-based **Microblink's** BlinkID mobile platform uses data extraction to verify the validity of identity documents used for opening bank accounts and in other transactions by searching for anomalies and missing security features. BlinkID's identity verification feature uses facial recognition to assess whether users' facial features match the facial features on customer-supplied identification. The platform also serves e-commerce merchants by verifying credit cards to avoid fraud losses in card-not-present transactions. Microblink has a subsidiary based in New York. Microblink raised a \$60 million Series A round in December 2020 led by Silversmith Management.



Broomfield, Colorado-based **Persona** enables its clients to design and deploy identity data collection flows optimized for their users' risk profiles. This enables its clients to offer better user experiences while deterring would-be fraudsters. Persona can verify the authenticity of government-issued identification documents across more than 200 countries and can match identity documents against authoritative databases in over 40 countries. It can also verify the authenticity of mobile driver's licenses from digital wallets. Persona has customers around the world from a variety of industries, including cryptocurrency, financial

technology, gaming, gig economy and property technology companies. Formerly known as PrivaSeek, Persona most recently raised a Series B round in December 1999 led by Safeguard Scientifics.

## OSCILAR

Palo Alto, Calif.-based **Oscilar** enables banks and financial technology companies to identify compromised accounts and curtail fraudulent transactions. Oscilar detects unusual account login patterns and flags suspicious location changes. The platform also identifies card testing attempts to curtail fraudulent card use and chargeback fraud. For deposit accounts, the platform identifies and blocks suspicious transfers and “money muling” (transfers of illegally acquired monies on behalf of a third party). Oscilar received \$20 million of funding in July 2021 from its two co-founders and has not taken institutional capital.

## RISCLARITY



Through a series of integrations, Denver-based **Risclarity** serves family offices, registered investment advisers, and financial institutions with its DataHub platform, which ingests and reconciles investment-related data from a variety of sources, including family office general ledgers and contact relationship management, investment reporting, custodian, and alternative asset systems. As part of its financial reporting capabilities, the platform identifies, investigates and helps resolve anomalies. Risclarity specializes in internal risks, including compromised logins and employee theft. Wealth managers such as Schwab offer Risclarity as an additional service to their client bases. Founded in 2013, Risclarity, has not raised institutional capital.

## Shufti

London-based **Shufti** provides its customers with anti-money-laundering and know-your-customer capabilities (encompassing consumers, businesses and investors) for multiple industries. For consumer applications, Shufti validates consumer identities using facial biometrics, physical document verification, electronic identification verification, and video verification. For business applications, the platform uses numerous libraries to verify business identities and conduct anti-money-laundering screening. For investment applications, the platform uses a combination of the above tools to verify investor identities and satisfy know-your-customer and anti-money-laundering requirements. The company serves clients in the gaming, foreign exchange, e-commerce, social media and cryptocurrency industries. Shufti recently launched its Fast ID offering, which enables buy-now, pay-later and e-commerce merchants to verify consumer identities prior to completing high-value transactions. Shufti received a \$20 million Series A funding in March 2022, led by Udata.

## sift

San Francisco-based **Sift** is an artificial-intelligence-powered fraud detection platform that analyzes over 1 trillion data elements to score consumers and help businesses, particularly those with capital assets, manage risk. Using these data elements, Sift scores its clients' customers according to its clients' desired risk measures, and clients can report instances of loss and fraud through the platform. Sift also encourages collaboration among clients to share data and insights, thereby promoting best practices and knowledge sharing that help its clients curb fraud. Sift raised a \$50 million Series E round in April 2021, led by Insight Partners with participation from Union Square Ventures and Stripes.





San Jose, California-based **Signifyd** offers a platform for global brands to verify the legitimacy of customer transactions that use loyalty accounts with saved data to purchase products. Signifyd analyzes individual account transactions and monitors for large-scale automated account takeover attempts where criminals use emails and passwords from prior data breaches to log into customer accounts. For brands and merchants, the Signifyd platform enables brands to minimize reputation-damaging account takeovers, avoid erroneously identifying legitimate transactions as fraud, and reduce chargebacks (it offers a 100% chargeback guarantee). In 2021, Signifyd raised a \$205 million Series E round led by Owl Rock Capital with participation from financial services provider FIS.



Austin, Texas-based **Trinsic Technologies** verifies identities by integrating with a partner network of digital identification platforms. Trinsic connects its customers' users with verifications those users have already completed, regardless of the network where they were first verified. Its partners include CLEAR, Yoti and Airside. When one of its partners' users visits an application powered by Trinsic, they can click "verify with CLEAR" or "verify with Yoti" to speed through the onboarding flow. Trinsic's partner network has 95 million verified identities. Trinsic can be used in applications such as opening bank and brokerage accounts. Using a digital form of identification reduces fraud related to physical document manipulation. In June 2022, Trinsic raised \$8.5 million in a seed funding led by Georgian with participation from

Kickstart Seed Fund, Founder's Co-op, Osage Venture Partners, Forward VC and others.

## Trulioo

Vancouver-based **Trulioo** is a compliance platform that supports know-your-customer and anti-money-laundering compliance for individuals and businesses by validating government-issued identification and other documents against biometrics and data libraries. Trulioo also compares phone numbers, email addresses, and personal and business identification against 6,000 global watchlists and 20,000 media sources to enhance know-your-customer and anti-money-laundering compliance. In June 2021, Trulioo raised \$394 million in a funding led by TCV that valued the company at \$1.75 billion.



**Veriff**, headquartered in Tallinn, Estonia, with several other offices worldwide, including New York City, provides identity verification and age validation services to customers in over 48 countries. Users take photos of government-issued identification documents and a selfie. The platform verifies the integrity of the government identification and confirms identity by comparing the photo on the identification and the selfie. Veriff is used in financial services for anti-money-laundering and know-your-customer applications. It is also used in the gaming, dating, e-commerce, education and healthcare industries. In January 2022, Veriff raised a \$100 million Series C round led by Tiger Global and Alkeon, with participation from existing investors Accel and Institutional Venture Partners in a round that valued the business at \$1.5 billion.



San Jose, California-based **Zumigo** offers a platform that validates customers' identities and then monitors data to ensure continued integrity of the contacts. Zumigo first verifies customer information by comparing against databases of personally identifiable information. The platform presents trust scores and risk factors its clients can incorporate into their decision-making processes. It integrates with several partners, including TransUnion, Telesign, Equifax, LexisNexis and EnStream to continuously monitor individuals and thereby minimize transaction risk. Zumigo's customers include e-commerce retailers such as

BigCommerce and Shopify. Zumigo raised a \$6 million Series B round in August 2014 led by Intel Capital.

## **ABUNDANT OPPORTUNITY IN BATTLE AGAINST FRAUD**

As in other areas where an endemic foe constantly adapts to circumvent established defenses, the business of fighting fraudsters is likely to present evergreen opportunities for innovative companies to help businesses protect themselves more effectively with attractive return on investment. It seems unlikely the fraud problem will ever disappear, but a thriving market for fraud-fighting technologies promises to greatly diminish fraudsters' economic damage.

# Tide trends up for the First Analysis Enterprise Productivity Index

After losing value for much of the one-year period through Jan. 14, the First Analysis Enterprise Productivity Index moved into positive territory in November and ended the period with a 12.2% increase. This

lagged the S&P 500's 23% gain and the Nasdaq's 27% gain, but the performance gap narrowed substantially relative to the gap we saw in our June report.

## Enterprise productivity public comparables\*

(\$ in millions)

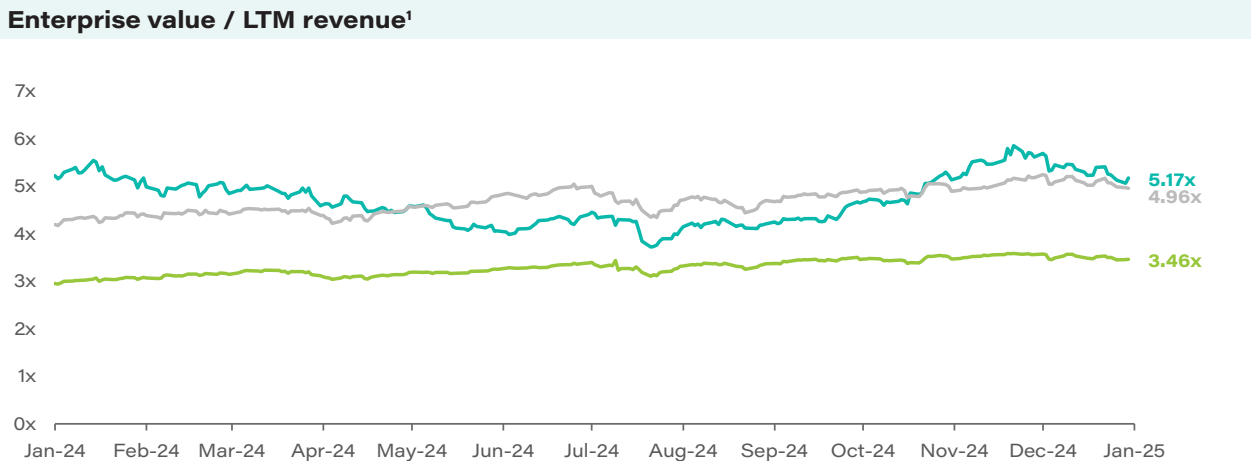
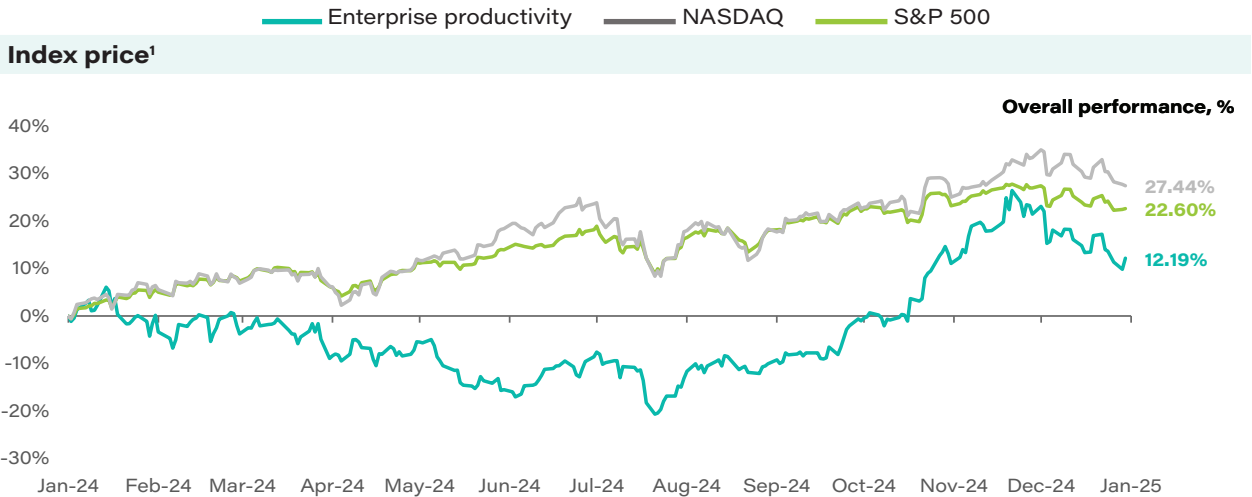
Company	Revenue growth					Enterprise value /			
	LTM revenue	2023A-2024E	2024E-2025E	LTM gross margin	LTM EBITDA margin	Revenue		EBITDA <sup>1</sup>	
						2024E	2025E	2024E	2025E
Asana (ASAN)	\$706.7	10.9%	10.9%	89.4%	(36.4%)	5.67x	5.11x	NMF	NMF
Atlassian Corp. (TEAM)	\$4,568.6	22.0%	17.3%	81.5%	(1.0%)	13.31x	11.35x	NMF	NMF
AvidXchange (AVDX)	\$427.6	15.1%	10.2%	71.5%	6.6%	3.95x	3.58x	21.9x	17.0x
Bentley Systems (BSY)	\$1,313.9	10.3%	11.0%	80.8%	26.6%	11.84x	10.66x	33.9x	29.3x
Bill.com (BILL)	\$1,343.6	16.2%	12.2%	85.2%	(0.6%)	5.79x	5.16x	30.7x	34.3x
BlackLine (BL)	\$639.6	10.5%	9.0%	75.3%	9.4%	5.73x	5.26x	23.2x	20.8x
Block (SQ)	\$23,861.5	11.5%	11.6%	36.4%	5.3%	2.03x	1.82x	16.6x	13.3x
Box (BOX)	\$1,073.5	5.0%	6.4%	78.4%	8.8%	4.64x	4.36x	15.6x	13.6x
Clearwater Analytics (CWAN)	\$424.4	21.1%	19.7%	72.2%	9.8%	13.59x	11.36x	NMF	33.5x
DocuSign (DOCU)	\$2,912.9	7.2%	6.4%	80.2%	8.0%	5.87x	5.52x	18.0x	15.9x
Dropbox (DBX)	\$2,539.6	1.7%	0.5%	82.3%	24.1%	4.11x	4.09x	9.9x	9.5x
Dynatrace (DT)	\$1,563.3	19.1%	14.0%	82.4%	12.2%	8.84x	7.76x	30.1x	26.7x
Expensify (EXFY)	\$137.4	(8.3%)	6.6%	54.5%	(4.5%)	1.81x	1.70x	6.8x	6.4x
GitLab (GTLB)	\$711.6	30.0%	24.9%	89.0%	(20.8%)	12.02x	9.62x	NMF	NMF
HashiCorp (HCP)	\$654.9	14.0%	15.3%	82.2%	(23.6%)	8.56x	7.42x	NMF	NMF
JFrog (FROG)	\$409.7	21.9%	17.2%	78.0%	(14.2%)	7.29x	6.22x	NMF	NMF
Marqeta (MQ)	\$490.0	(25.5%)	16.6%	68.7%	(5.9%)	1.57x	1.35x	32.6x	17.0x
monday.com (MNDY)	\$906.6	32.3%	26.4%	89.5%	(2.6%)	10.02x	7.93x	NMF	NMF
Paymentus (PAY)	\$778.7	36.0%	22.6%	28.5%	6.3%	4.32x	3.52x	NMF	32.1x
Pegasystems (PEGA)	\$1,480.6	3.1%	7.1%	74.4%	12.8%	5.36x	5.01x	24.4x	21.0x
Smartsheet (SMAR)	\$1,083.2	17.2%	15.0%	81.7%	(2.0%)	6.38x	5.55x	33.1x	27.3x
Workiva (WK)	\$705.4	16.5%	16.1%	76.7%	(5.1%)	8.32x	7.16x	NMF	NMF
Zuora (ZUO)	\$452.8	6.3%	7.0%	69.5%	(3.1%)	3.01x	2.81x	12.4x	11.7x
<b>Average</b>	<b>\$2,138.5</b>	<b>12.8%</b>	<b>13.2%</b>	<b>74.3%</b>	<b>0.4%</b>	<b>6.70x</b>	<b>5.84x</b>	<b>22.1x</b>	<b>20.6x</b>
<b>Median</b>	<b>\$778.7</b>	<b>14.0%</b>	<b>12.2%</b>	<b>78.4%</b>	<b>(0.6%)</b>	<b>5.79x</b>	<b>5.26x</b>	<b>22.5x</b>	<b>18.9x</b>

Source: Capital IQ, First Analysis.

Notes: \* Public comparable company data shown above is as of Jan. 15, 2025.

(1) EBITDA multiples less than 0 and greater than 35 labeled "not meaningful" (NMF). LTM = last 12 months. EBITDA = earnings before interest, taxes, depreciation and amortization.

## First Analysis Enterprise Productivity Index 1-year performance\*



**Source:** Capital IQ.

**Notes:** \* For the period from Jan. 16, 2024, through Jan. 14, 2025.

(1) Index performance is weighted by market cap.

The prices of 16 of the 23 companies in the enterprise productivity group were up over the one-year period, led by Pegasystems (PEGA) with a 102% increase and Paymentus (PAY) with an 80% increase. Marqeta (MQ), which represents under 2% of the index's market capitalization declined 38% over the period, the biggest decline in the group. Square (SQ, up 27%), DocuSign (DOCU, up 44%) and Pegasystems together accounted for nearly three-quarters of the index's gain.

The index's enterprise value multiple of trailing-12-month revenue was 5.2 on Jan. 14, up from 4.2 in our June report. Looking at forward multiples, the average and median enterprise value multiples of 2025 estimated revenue were 5.8 and 5.3 as of Jan 14. That compares to 4.7 and 3.7 in our June report. Revenue growth for 2025 is now expected to be 13.2% on average, down from 14.5% in our June report.

# Enterprise productivity M&A: Notable transactions include SafeSend and Zuora

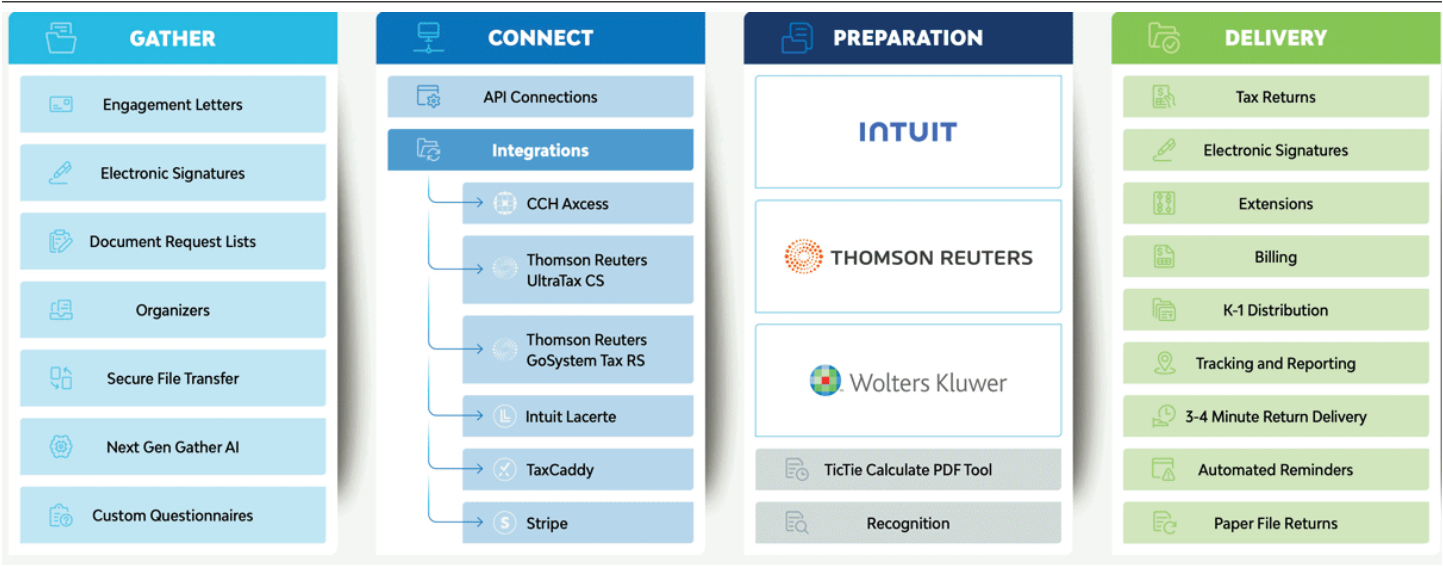
We highlight two noteworthy recent enterprise productivity merger and acquisition transactions relevant to some of the emerging trends we've written about in past reports.

On Jan. 2, Thomson Reuters announced it acquired SafeSend, which provides cloud-based e-signature and workflow automation software for certified public accountants and tax preparers, for \$600 million, or about 10 times estimated 2025 revenue. SafeSend automates the last mile of the tax return process, including assembly, review, taxpayer e-signature and delivery.

SafeSend's revenue is expected to grow by more than 25% annually in the next few years. The acquisition complements Thomson Reuters' substantial existing offerings for tax and accounting professionals.

In mid-October, Zuora (ZUO) announced it would be acquired by private equity firm Silver Lake and Singapore sovereign wealth fund GIC for \$1.7 billion, or about 3.7 times estimated fiscal 2025 (January) revenue and 3.5 times estimated fiscal 2026 revenue, which assumed 7% revenue growth. Zuora provides enterprises

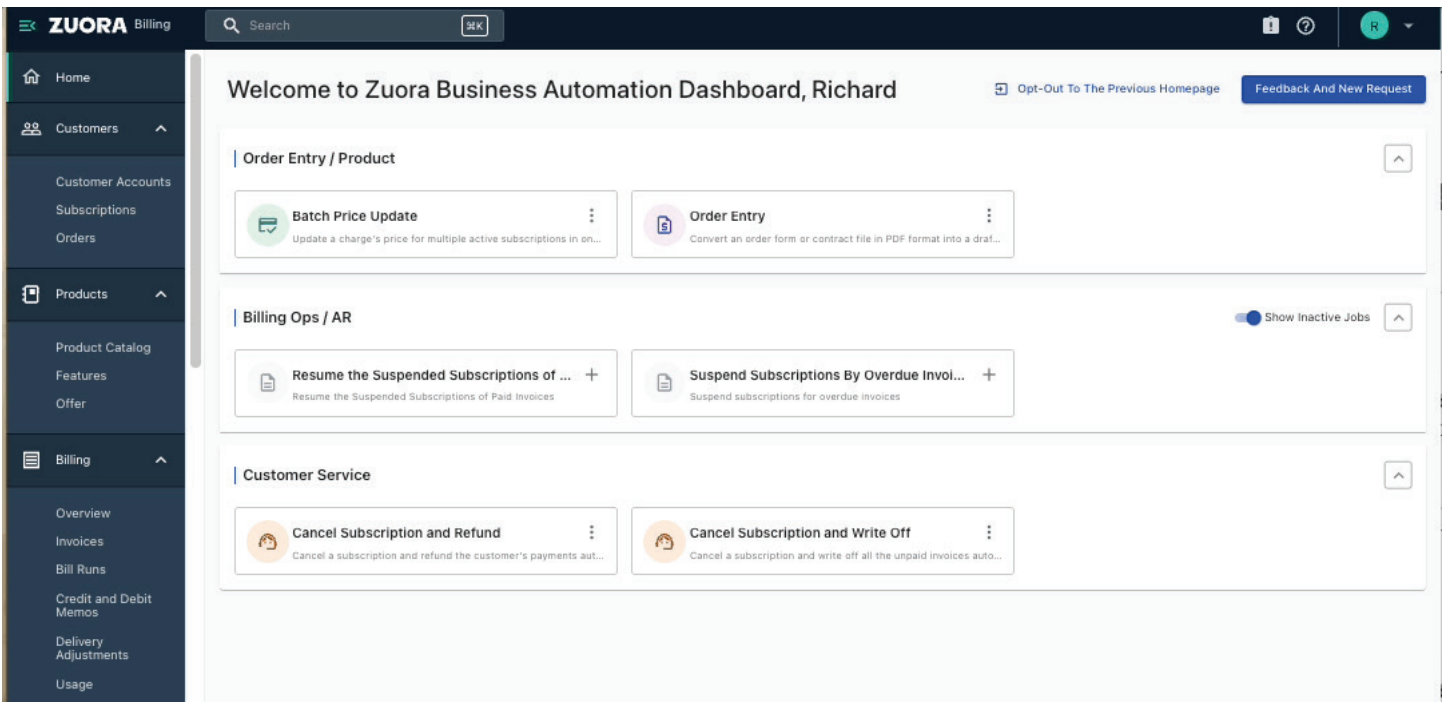
## SafeSend's all-in-one solution for the entire tax process



Source: SafeSend.



## Zuora's OAuth client setup



Source: Zuora.

with software to support usage-based, subscription-based, and similar revenue models. Tien Tzuo, Zuora's founder, CEO and chairman, will roll over a majority of his

existing ownership and will continue to lead the company. The transaction is expected to close this quarter.

## Select recent M&A transactions (sorted by date of announcement)

(\$ in millions)

Date	Target	Target business description	Buyer	Enterprise value (EV)	EV/ Revenue
1/2/2025	SafeSend	Cloud-based e-signature and workflow automation technology for certified public accountants and tax preparers	Thomson Reuters	\$600.0	10.0x
12/19/2024	Bonifii	Proprietary blockchain distributed ledger network for credit unions	Metallicus	\$20.0	Undisclosed
12/19/2024	Summit Wealth Systems	Cloud-based software for wealth managers and their clients	Orion	Undisclosed	Undisclosed
12/13/2024	Ackroo	Online loyalty and rewards platform that enables businesses to design and execute customer transaction, engagement, and retention strategies	Paystone	\$15.1	3.2x
11/26/2024	Dassian	Program management software including project planning and earned value composite applications	Omegro	Undisclosed	Undisclosed
11/20/2024	Datavolo	Multimodal data pipelines for generative AI	Snowflake (SNOW)	\$170.0	Undisclosed
11/19/2024	RepTrak	Provides businesses with data analytics to help them understand, improve, and protect corporate reputations	Periscope Equity	Undisclosed	Undisclosed
11/13/2024	Prevedere	External data and predictive analytics software for predictive planning	Board	Undisclosed	Undisclosed
11/13/2024	Resolve Debt	AI-based platform for debt collection and accounts receivable automation	AI Unlimited Group	Undisclosed	Undisclosed
11/12/2024	Price Intelligently	Business intelligence platform focusing on subscription businesses	SBI	Undisclosed	Undisclosed
11/12/2024	vCom	Cloud-based telecom management software for small and mid-size businesses	AppDirect	Undisclosed	Undisclosed
11/4/2024	Surefyre	Cloud-based insurance policy management software for insurers, agents and policyholders	Vertafore	Undisclosed	Undisclosed
10/31/2024	Causal	Business planning platform to build models, visualize data and communicate with numbers	Lucanet	Undisclosed	Undisclosed
10/22/2024	Contract Logix	Contract life cycle management software that offers tools and integrations for legal, finance, procurement and sales teams to mitigate risk, ensure compliance and finalize business	Legal Sifter	Undisclosed	Undisclosed
10/17/2024	Zuora (ZUO)	Provides enterprises with software to support usage-based, subscription-based, and similar revenue models	Silver Lake; GIC	\$1,700.0	3.5x
10/17/2024	Seattle Technology Group	Enterprise software for managing higher education conferencing and events	StarRez	Undisclosed	Undisclosed
10/9/2024	Solifi	Asset finance software solutions for origination, pricing, lease and loan management, vendor financing, asset-based lending, and factoring for the banking sector	TA Associates	Undisclosed	Undisclosed
10/9/2024	Logitix	Pricing, analytics and inventory management software	Victory Live	Undisclosed	Undisclosed
10/1/2024	Turbine	Inventory management and accounting reconciliation platform	Settle	Undisclosed	Undisclosed

**Source:** Capital IQ, First Analysis.

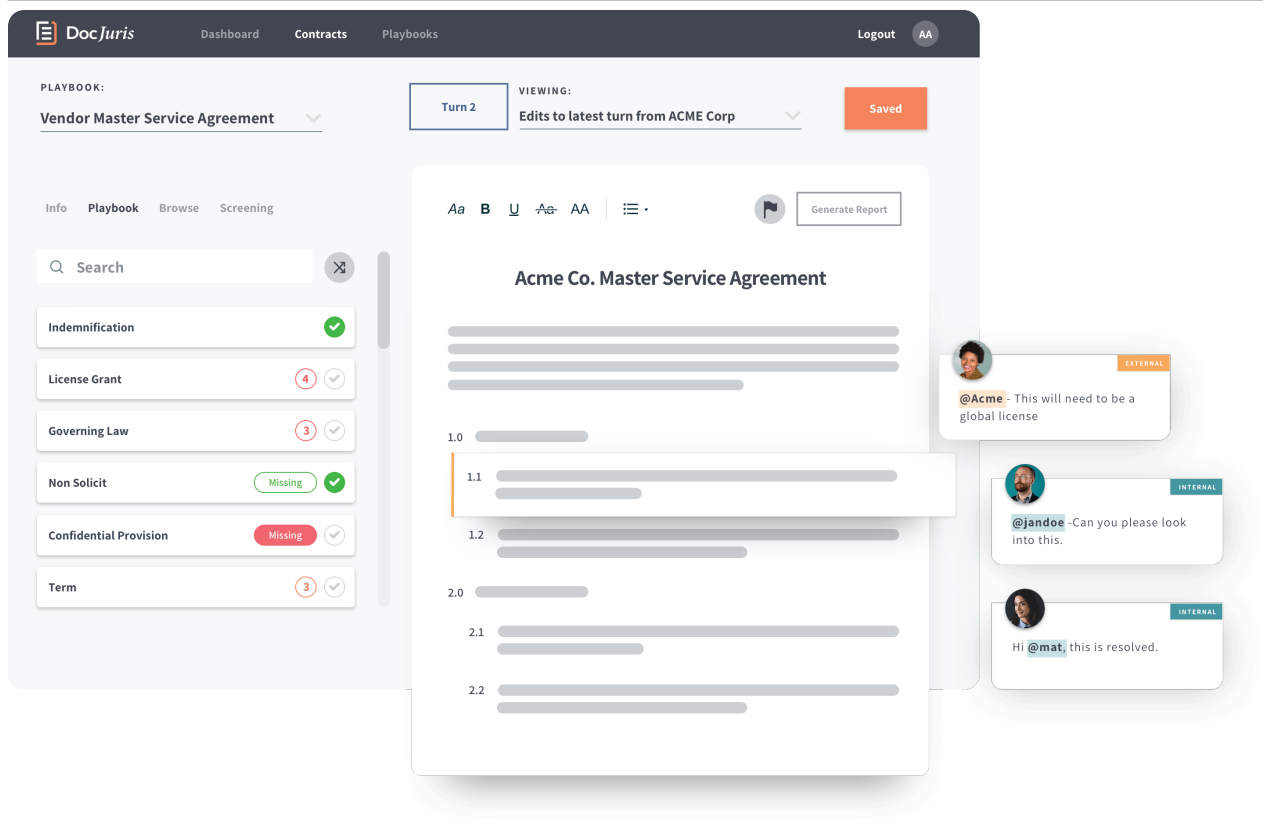
# Enterprise productivity private placements: Notable transactions include Chargezoom and DocJuris

We highlight two noteworthy recent enterprise productivity private placements relevant to some of the emerging trends we've written about in our past reports.

On Oct. 1, DocJuris announced an \$8 million Series A funding led by Silverton Partners with participation from previous investors Watertower Ventures, Surface

Ventures and Seed Round Capital. The transaction brought total capital raised to date to \$11.2 million. DocJuris's artificial-intelligence-powered contract negotiation software automates key tasks during the review, redlining, and negotiation of contracts. This helps its enterprise clients optimize contract review processes, assure policy alignment, and reduce contract

## DocJuris contract management tools and software



Source: DocJuris.

## Chargezoom dashboard

The screenshot displays the Chargezoom dashboard interface. On the left is a dark sidebar with navigation icons and labels: Dashboard, Customers, Invoices, Payments, Transactions, Subscriptions, Products & Services, and Reports. The main content area is white and features the Chargezoom logo at the top left. To the right of the logo are a menu icon, a notification bell, and a user profile for Tim Rousseau. Below this, the invoice details are shown for 'Invoice Number: 10006' with 'Customer Name: John Jon'. Two buttons are present: 'Download PDF' and 'Email invoice'. A table-like section displays 'Invoice Date' and 'Invoice Due Date', both set to 10/01/2023. Below this, the 'Invoice status' is 'Paid', 'Email Status' is 'Viewed', and 'Payment Method' is 'Credit Card'. A 'Preview Invoice page' link points to <https://sunshine.payportal.com>.

**Source:** Chargezoom.

negotiation time frames. DocJuris plans to use the investment to enhance its AI-driven platform and expand its customer success team to serve its growing user base.

In mid-December, Chargezoom announced it raised an \$11.5 million Series A funding led by Salt Lake City's Kickstart Fund and including new investors Motley Fool Ventures, Early Light Ventures, Frazier VC and Adly. Previously, the company closed a \$2 million seed round in July 2021. Chargezoom's software automates business-to-business payments and accounts receivable processes for small and medium-size businesses, offering integrations with QuickBooks and FreshBooks.

## Select recent private placements (sorted by date of announcement)

(\$ in millions)

Date	Company	Business description	Investors	Raise type	Amount raised	Total amount raised
12/20/2024	Skopos Labs	AI platform to turn unstructured data into predictions of risk and opportunity for companies and financial markets	S&P Global; Atypical Ventures	Growth	Undisclosed	Undisclosed
12/6/2024	Chargezoom	Integrated customer payments management platform	Okapi Venture; Appletree Capital; ADLY; Kickstart; SaaS Venture; Stout Street; Motley Fool Ventures; Early Light Ventures	Series A	\$11.5	Undisclosed
12/4/2024	Sunbound	Financial solutions for senior living operators, focusing on accounts receivable automation and working capital solutions	Live Oak Ventures	Venture	Undisclosed	Undisclosed
11/19/2024	Certinia	Services-as-a-business platform that connects all aspects of services operations, from services estimation and delivery to customer success management and financial planning and accounting	TA Associates	Growth	Undisclosed	Undisclosed
11/13/2024	JobNimbus	CRM, project management and billing software for contractors	Mainsail Partners; Sumeru	Growth	\$330.0	\$383.0
11/4/2024	SingleOps	Business management and cloud-based scheduling software	FTV; Five Elms	Growth	\$74.0	\$82.6
10/31/2024	MagicDoor	AI powered property management software for landlords and real estate managers	Shadow Ventures	Pre-Seed	\$2.0	\$2.0
10/29/2024	Table22	Suite of subscription tools that allows restaurants to create new revenue streams, such as meal kits, recipes, content and events	Lightspeed Ventures; Forerunner Ventures; Footwork; Alt Capital	Series A	\$11.0	\$11.0
10/28/2024	Wildfire Systems	Performance- and commerce-based software solutions for rewards and cashback offerings	Intuit (INTU); DLA Piper; TTV Capital; QED Investors; Mucker Capital; Citi Ventures.; B Capital.; Samsung NEXT; Moonshots Capital; Gaingels; Evolution VC; Cohen Circle	Series B	\$16.0	\$31.0
10/24/2024	Finix Payments	B2B payment processing software that is designed to let businesses own, manage, and monetize their payments	Insight Partners; Tribeca Venture; Lightspeed Ventures; Citi Ventures; Homebrew; Leap Innovations; Inspired Capital; Acrew Capital; Cap Table Coalition	Series C	\$75.0	\$198.7
10/18/2024	Zip	Platform to provide an intake-to-procure solution for any employee to initiate a purchase or vendor request	Adams Street Partners; Charles River Venture; DST Global; Alkeon Capital; Y Combinator; Bond Capital	Series D	\$190.0	\$333.7
10/16/2024	Corfix	Cloud-based safety management software designed for businesses in the construction industry	Reformation Partners	Series A	\$3.6	\$3.6



## Select recent private placements (sorted by date of announcement)

(\$ in millions)

<b>Date</b>	<b>Company</b>	<b>Business description</b>	<b>Investors</b>	<b>Raise type</b>	<b>Amount raised</b>	<b>Total amount raised</b>
10/15/2024	Galileo	Data intelligence tools for unstructured data to allow data scientists to inspect, discover and fix critical machine learning data errors	Battery Ventures; Scale Management; Citi; Premji-Invest; American Express; ServiceNow; Factory HQ; Databricks; Walden Catalyst; SentinelOne	Series B	\$45.0	\$68.1
10/10/2024	Numeric	Accounting software designed to automate the month-end close process for high-growth companies	Institutional Venture Partners; Menlo Ventures; Access Industries; The Founders Fund; 8VC; Socii Capital; Long Journey; Friends & Family Capital; Fifth Down Capital	Series A	\$28.0	\$38.0
10/1/2024	DocJuris	Contract negotiation platform that powers contracting for growing startups and large enterprises	Silverton Partners; Water-tower Ventures; Surface Venture; Seed Round Capital	Series A	\$8.0	\$11.2

**Source:** Capital IQ, First Analysis.

## Enterprise productivity public comparables appendix\*

(\$ in millions)

Company	Market cap	Enterprise value	LTM revenue	Revenue growth		LTM gross margin	LTM EBITDA margin	Enterprise value /			
				2023A-2024E	2024E - 2025E			Revenue		EBITDA <sup>1</sup>	
								2024E	2025E	2024E	2025E
Asana (ASAN)	\$4,281.7	\$4,100.4	\$706.7	10.9%	10.9%	89.4%	(36.4%)	5.67x	5.11x	NMF	NMF
Atlassian Corp. (TEAM)	\$64,170.8	\$63,198.8	\$4,568.6	22.0%	17.3%	81.5%	(1.0%)	13.31x	11.35x	NMF	NMF
AvidXchange (AVDX)	\$2,042.9	\$1,729.5	\$427.6	15.1%	10.2%	71.5%	6.6%	3.95x	3.58x	21.9x	17.0x
Bentley Systems (BSY)	\$14,648.2	\$16,035.6	\$1,313.9	10.3%	11.0%	80.8%	26.6%	11.84x	10.66x	33.9x	29.3x
Bill.com (BILL)	\$8,518.8	\$8,021.1	\$1,343.6	16.2%	12.2%	85.2%	(0.6%)	5.79x	5.16x	30.7x	34.3x
BlackLine (BL)	\$3,637.3	\$3,738.2	\$639.6	10.5%	9.0%	75.3%	9.4%	5.73x	5.26x	23.2x	20.8x
Block (SQ)	\$51,078.0	\$49,613.6	\$23,861.5	11.5%	11.6%	36.4%	5.3%	2.03x	1.82x	16.6x	13.3x
Box (BOX)	\$4,506.6	\$5,055.6	\$1,073.5	5.0%	6.4%	78.4%	8.8%	4.64x	4.36x	15.6x	13.6x
Clearwater Analytics (CWAN)	\$6,240.9	\$6,058.9	\$424.4	21.1%	19.7%	72.2%	9.8%	13.59x	11.36x	NMF	33.5x
DocuSign (DOCU)	\$18,197.6	\$17,385.8	\$2,912.9	7.2%	6.4%	80.2%	8.0%	5.87x	5.52x	18.0x	15.9x
Dropbox (DBX)	\$9,319.8	\$10,452.1	\$2,539.6	1.7%	0.5%	82.3%	24.1%	4.11x	4.09x	9.9x	9.5x
Dynatrace (DT)	\$15,294.3	\$14,369.9	\$1,563.3	19.1%	14.0%	82.4%	12.2%	8.84x	7.76x	30.1x	26.7x
Expensify (EXFY)	\$282.9	\$250.3	\$137.4	(8.3%)	6.6%	54.5%	(4.5%)	1.81x	1.70x	6.8x	6.4x
GitLab (GTLB)	\$9,936.0	\$9,064.8	\$711.6	30.0%	24.9%	89.0%	(20.8%)	12.02x	9.62x	NMF	NMF
HashiCorp (HCP)	\$7,026.9	\$5,689.0	\$654.9	14.0%	15.3%	82.2%	(23.6%)	8.56x	7.42x	NMF	NMF
JFrog (FROG)	\$3,562.2	\$3,110.3	\$409.7	21.9%	17.2%	78.0%	(14.2%)	7.29x	6.22x	NMF	NMF
Marqeta (MQ)	\$1,889.0	\$791.6	\$490.0	(25.5%)	16.6%	68.7%	(5.9%)	1.57x	1.35x	32.6x	17.0x
monday.com (MNDY)	\$10,976.9	\$9,680.2	\$906.6	32.3%	26.4%	89.5%	(2.6%)	10.02x	7.93x	NMF	NMF
Paymentus (PAY)	\$3,787.6	\$3,609.3	\$778.7	36.0%	22.6%	28.5%	6.3%	4.32x	3.52x	NMF	32.1x
Pegasystems (PEGA)	\$8,041.1	\$7,921.1	\$1,480.6	3.1%	7.1%	74.4%	12.8%	5.36x	5.01x	24.4x	21.0x
Smartsheet (SMAR)	\$7,890.5	\$7,169.3	\$1,083.2	17.2%	15.0%	81.7%	(2.0%)	6.38x	5.55x	33.1x	27.3x
Workiva (WK)	\$6,093.0	\$6,107.2	\$705.4	16.5%	16.1%	76.7%	(5.1%)	8.32x	7.16x	NMF	NMF
Zuora (ZUO)	\$1,532.6	\$1,381.0	\$452.8	6.3%	7.0%	69.5%	(3.1%)	3.01x	2.81x	12.4x	11.7x
<b>Average</b>	<b>\$11,432.9</b>	<b>\$11,066.7</b>	<b>\$2,138.5</b>	<b>12.8%</b>	<b>13.2%</b>	<b>74.3%</b>	<b>0.4%</b>	<b>6.70x</b>	<b>5.84x</b>	<b>22.1x</b>	<b>20.6x</b>
<b>Median</b>	<b>\$7,026.9</b>	<b>\$6,107.2</b>	<b>\$778.7</b>	<b>14.0%</b>	<b>12.2%</b>	<b>78.4%</b>	<b>(0.6%)</b>	<b>5.79x</b>	<b>5.26x</b>	<b>22.5x</b>	<b>18.9x</b>

Source: Capital IQ, First Analysis.

Notes: \* Public comparable company data shown above is as of Jan. 14, 2025.

(1) EBITDA multiples less than 0 and greater than 35 labeled "not meaningful" (NMF). LTM = last 12 months. EBITDA = earnings before interest, taxes, depreciation and amortization.

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