E-commerce Optimization

Shoptalk Fall: Four themes from the 2024 show

FIRST ANALYSIS QUARTERLY INSIGHTS

Integrative insights on emerging opportunities

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First Analysis

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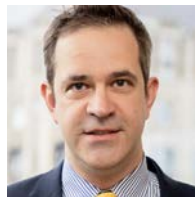*Managing Director*
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David Gearhart has worked in finance and investment for two decades and joined First Analysis in 2011. He works with entrepreneurs as an investor and as an advisor on growth transactions to help build leading Internet of Things and e-commerce software businesses. He has played a key role in building First Analysis's Internet of Things and e-commerce franchises and is a thought leader in his sectors, having authored several widely read white papers. He supports First Analysis' investments in CoolR Group, EdgeIQ, Freeosk and SmartCommerce. Prior to joining First Analysis, he was an accountant with The Northern Trust Co. and an options broker with American Option Services. He earned a bachelor's degree from Purdue University with a concentration in economics and finance and his MBA at DePaul University with a focus on finance and entrepreneurship. He is a CFA charterholder.

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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.

E-COMMERCE OPTIMIZATION

Shoptalk Fall: Four themes from the 2024 show

- Despite being smaller than the other two Shoptalks, Shoptalk Fall featured many high-quality e-commerce technology companies and knowledgeable industry participants. We identified four key themes for e-commerce tech and highlight some of the companies benefitting from them.

- First, we saw a growing recognition that the true value of AI in e-commerce lies not in AI itself, but in how it enhances offerings and plays within larger solution frameworks.

- Second, unified communication in e-commerce has become table stakes, and we think the new frontier in e-commerce communication lies in technologies that enable rich consumer experiences entirely within message formats like text and email.

- Third, the evolution toward fully converged in-store and e-commerce continues, driven mainly by brands' and retailers' acute and unmet need to precisely attribute consumer sales and engagement to sales and marketing spend.

- Lastly, while technology to address e-commerce product returns remains focused on optimizing returns processing and logistics, we think the larger, long-term opportunity lies in technologies that substantially reduce returns by addressing their root causes.

SMALLER THAN THE LAS VEGAS VERSION BUT INSIGHTFUL

We recently attended Shoptalk Fall in Chicago, the smallest of the three Shoptalk shows, which also include Shoptalk Spring (March in Las Vegas) and Shoptalk Europe (June in Barcelona). Despite its diminutive size, it featured many high-quality companies and knowledgeable industry participants, affording many opportunities to discuss current market dynamics and new and ongoing trends. Indeed, we were able to meet with dozens of e-commerce software and services companies, both exhibitors and attendees. They ranged from platform companies to point solution providers and tools and supported a wide range of e-commerce needs, including customer communication, marketing automation, order and inventory management, shoppable media, retail media networks and data attribution. Based on our meetings and observations on the show floor, we identified four themes for e-commerce. We discuss these briefly below and plan to explore a few of them in more detail in future reports.

1. AI DOWNPLAYED, NOW POSITIONED MORE REALISTICALLY FOLLOWING EARLIER HYPE

For much of the two years since the debut of OpenAI's ChatGPT, artificial intelligence (AI) has been at the center of technology discussions. Many companies, especially in e-commerce, have attempted to tap into the growing public interest in AI, highlighting their use of generative AI and large language models on their websites, in marketing collateral and at trade shows to drive inbound interest, gain business or raise capital. The hype around AI even captured our attention more than a year ago, when we published an in-depth report on generative AI for e-commerce, Generative AI to disrupt and see widespread adoption in e-commerce.

In that report, we identified the key factors driving AI's rapid adoption in e-commerce, addressed the challenges it presents for tech companies, and outlined potential future directions for generative AI. We highlighted innovative companies using generative AI to deliver added value to their clients. However, we underscored that AI, particularly generative AI, would eventually become commoditized and that the workflows and other tools built around AI had much more value.

We have attended several shows over the past two years since the AI hype began, including CES in January (CES now a key B2B IoT forum: Six themes from the 2024 show). AI took center stage at each as organizers and exhibitors clearly promoted it to generate buzz. By contrast, Shoptalk Fall was surprising. It was the first show we attended where AI was significantly downplayed. AI was still mentioned on exhibitor displays and in conversations, but its presence was muted relative to other shows. Instead, many solution providers and technology vendors highlighted their workflows, tools and special capabilities built on top of or complementing AI models as differentiators. With AI having become less novel and readily available and accessible by businesses through integrations, generative AI and large language models were positioned as table stakes or checkbox items. To be clear, AI's utility in accelerating processes such as content generation and customer interactions, which ultimately streamlines operations, means it's still important. But multiple vendors distinctly recognized AI is no longer sufficient on its own to win business. This change is refreshing as it signals a maturation in the industry and a growing recognition that true value lies not in AI itself, but in how it enhances offerings and plays within larger solution frameworks.

Cloudinary content-aware encoding
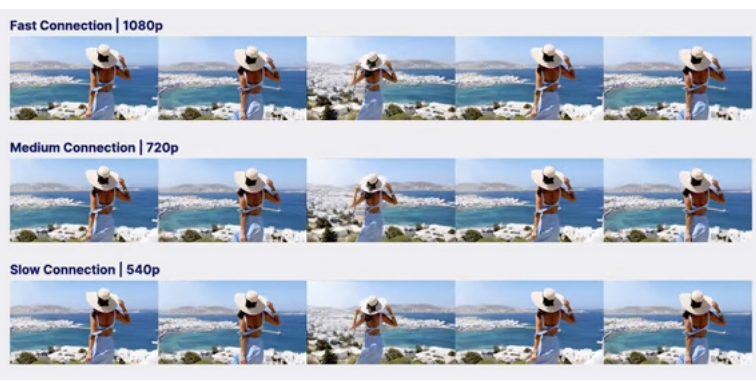
One company exemplifying this theme is **Cloudinary**, a data asset management company. With Cloudinary, brands and agencies can upload, manage and deliver images, videos and sound content at scale. The company noted it has some AI capabilities that are used for content generation, image editing, tagging and metadata management, and content moderation. But the company also underscored that its primary value proposition is in processing images and videos; it cleans, formats and compresses files, taking into account web

Cloudinary generative AI in action
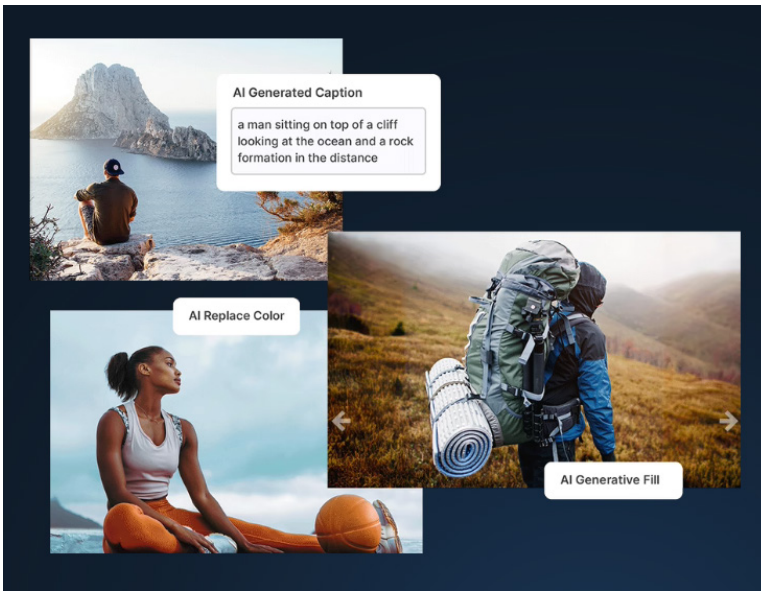
Source: Cloudinary.

browser, device type and available bandwidth to enable optimal viewing experiences.

2. UNIFIED COMMUNICATIONS PLATFORMS MORE COMMON; NEXT EVOLUTION OF OFFERINGS IN FOCUS

We have been following communication platform companies for years, as communication is critical for all e-commerce offerings. In the course of ongoing business and customer support, e-commerce companies need to send, and customers need to reliably receive, marketing messages and transactional messages (confirmations, notifications, password resets, receipts). Because building and maintaining communication layers in tech stacks is expensive and because it's challenging to achieve high message delivery rates at scale, many e-commerce players have outsourced their communication needs to point solution providers. Historically, such providers built their platforms around single communication channels where they had domain expertise, such as email, short message service (SMS, or text), and push (notifica-

tions); however, some eventually partnered with other channel enablers to create more holistic offerings.

Given that history, we were somewhat surprised to find that each of the five communication platform companies we encountered at Shoptalk supports multiple communication channels – all within unified offerings. Nonetheless, we thought it was only a matter of time before such unified offerings would become more common. It makes sense for email, text and push notification capabilities to be provided within single platforms, as each channel addresses the same underlying need to send and receive transactional and marketing messages, powered by common underlying data sets. By bringing together the key channels, e-commerce players can flexibly support their end-customers' communication preferences and capture more economics while collecting and combining associated engagement data across all channels. SMS platform provider Twilio arguably kicked off the shift to unified platforms with its acquisition of SendGrid in February 2019.

This inevitability has seemingly played out. The unified communication platforms attending, including **Attentive, Bloomreach, Cordial, Listrak and MessageGears**, appear to have reached parity with each other. So, it's time to identify the next technologies, capabilities and initiatives that will enable these and other unified communication platforms to differentiate over the medium term. The most promising direction highlighted in our conversations is bringing the richer e-commerce experiences seen in desktop and mobile apps to messages or messaging services themselves. Some unified platform providers
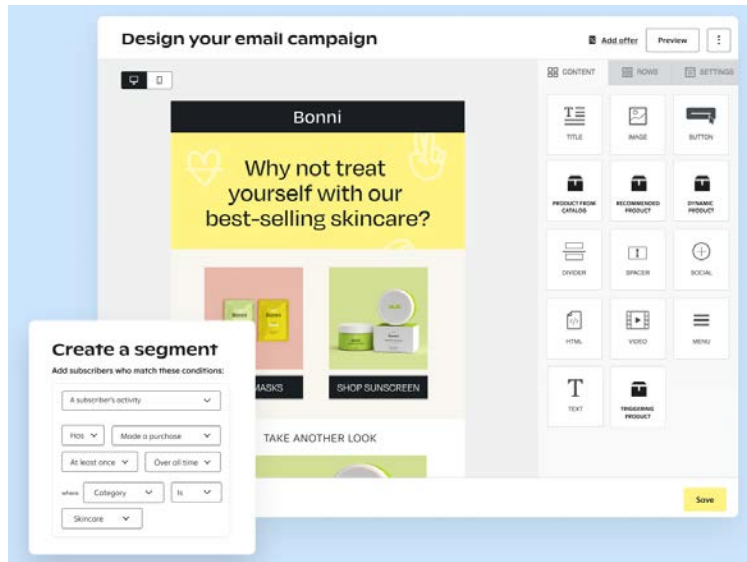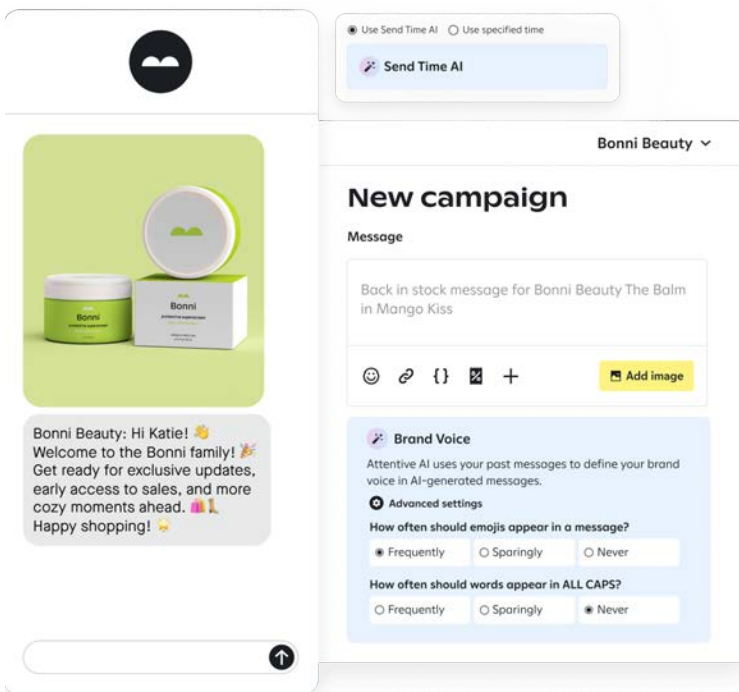
Email campaign builder UI
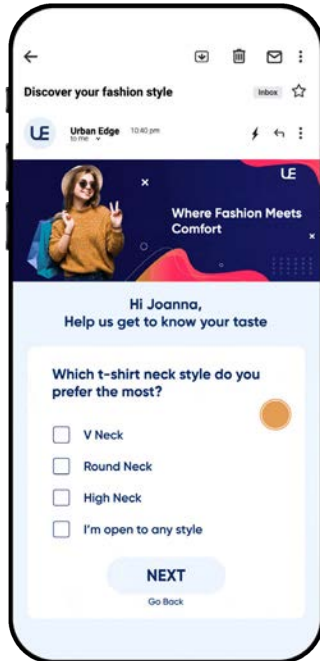

Text campaign builder UI

Source: Attentive.

plan to support rich communication services (RCS), an open instant messaging protocol standard that is expected to substitute for text and mobile messaging services, such as WhatsApp, delivered over cellular networks. RCS, sometimes called SMS+ or Message+, has long been in the works and is finally ready for broader use, as the major cellular network operators have built out requisite network infrastructure, and Google and Apple have enabled native RCS support on Android and iOS. Notably, using RCS does not require account registration and downloading an app. Further, its general features make it compelling for consumers and brands to adopt it. These features include high resolution image support; video support; typing indicators; read receipts; chat and audio messaging; branding functions; title card support; carousels (galleries of content presented in sliding blocks); chatbots; agent-based calling; pre-defined responses, suggestions and workflows; catalog search and shopping carts. We expect most of the unified communication platforms to embrace RCS over time, supporting it on their platforms and attempting to put their own spins on it to differentiate their offerings before RCS becomes widespread.

Netcore

Customer engagement platform **Netcore** offers another less visible but, we believe, potentially equally disruptive direction for e-commerce communication. Its AMP interactive email solution delivers website and app experiences within emails. At a high level, Netcore's coding and integrations facilitate real-time connections and access to brands' e-commerce platforms to power their offerings in the email environment.

Inbox commerce example

With Netcore, brands can support real-time shopping cart, checkout, catalog, search, live feed, and chatbot functions within the body of an email and without redirecting users to website landing pages. We found

Traditional vs. inbox commerce

the demo striking: The functionality was seamless and effortless, almost understated, and it made us think all e-commerce-related emails should function this way. Netcore noted the technology is primarily being used in Asia, as U.S. and European brands tend to prefer using links in emails to take customers to landing pages. However, Netcore believes uptake will increase in the U.S. and European markets in a year or so. Given the ubiquity of email and Netcore's advantages in collecting first and zero-party and attribution data and in engaging and converting prospects, we agree.

3. GREATER CONVERGENCE OF PHYSICAL AND DIGITAL (E-COMMERCE) RETAIL COMING, KEY TO ATTRIBUTION

Our interactions and observations at Shoptalk reinforced our expectation that platform companies and point solution providers will increasingly pursue multi-channel convergence in the years ahead. Tremendous value can be realized from supporting omnichannel strategies that integrate previously siloed data and systems and yield insights that drive better decisions and efficiencies affecting both revenue and costs. Brick-and-mortar retail stores and online e-commerce typically have been viewed and managed as separate and distinct. In-store and online software vendors likewise often focused only on one or the other. There are some pockets where solution providers have enabled limited convergence, such as in systems for placing orders online and picking them up in stores, for returning online orders to stores, and for unifying order and inventory management. To date, we think the challenges involved have kept such convergence from advancing to the point of being truly disruptive. These systems are complex, require substantial time, expense and technical talent to develop, and entail challenging efforts to secure access to data held by multiple stakeholders. Nonetheless, the number of companies offering or planning converged solutions is growing, suggesting these challenges may be diminishing.

Daasity dashboard
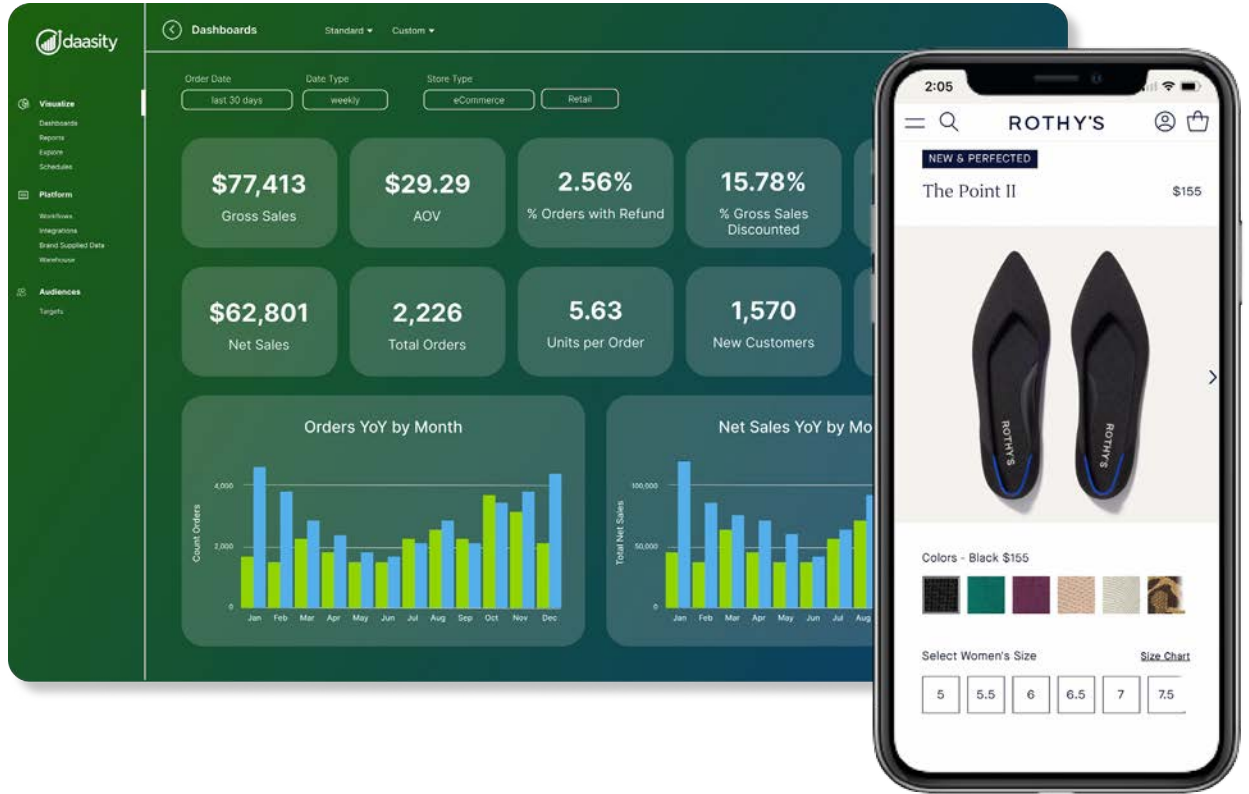
For example, **Daasity** has built a comprehensive analytics platform used by brands

Considering data from across the business

and agencies to measure performance across channels. Daasity collects the prerequisite data through a robust suite of integrations, which includes e-commerce platforms such as **Shopify** and **BigCommerce**, inventory and order management systems and enterprise resource planning systems such as **Netsuite**, sales and marketing platforms such as **Emarsys** and **Klaviyo**, point of sale providers such as **SPINS**, shipping and fulfillment solutions such as **Shipstation**, returns enablers such as **Narvar** and **Loop Returns**, and survey platforms such as **Fairing**, among others. Daasity can analyze data from e-commerce and retail systems separately or together. By leveraging Daasity's platform, staff – including marketing, operations and finance – eliminate manual analysis that was typically done in spreadsheets. Daasity continuously updates analytics through real-time data feeds to identify trends, forecast outcomes and make informed decisions.

profitmind
from **NETAIL**

Another company, **Profitmind**, analyzes the impact of price changes on sales and many other attributes, providing visibility into new opportunities. It brings together data from its integrations with disparate channels including inventory supply chains and websites. It uses AI to help predict sales volume, taking into account key factors such as inventory availability, competitor pricing responses, and product substitutions.

Convergence of digital and physical retail

Source: Newstore.

NEWSTORE

Newstore, which enables omnichannel order and inventory management, also creates smartphone shopping apps for its brand customers. End customers can activate these apps in-store to access special offers, scan products, and experience products more immersively. This hybrid in-store and mobile experience provides brands additional visibility into customers' activity and engagement.

Based on our conversations over the past year, we believe the need to attribute consumer sales and engagement to sales and marketing investments is the primary tailwind for increased convergence. Facing budget constraints and pressure to demonstrate tangible benefit from investments, brands and retailers increasingly want (and in some cases, are demanding) greater visibility into the return from their marketing and sales investments. They increasingly recognize the granular data they want exists and can easily be shared via application programming interfaces (and not via scraping) and then analyzed. Particularly in marketing, brands are starting to base decisions about which technology vendors they use on the amount and quality of conversion and attribution data the vendors can provide. Our conversations with industry participants at Shoptalk corroborated these observations.

It is important to note attributing sales and engagement to specific marketing and sales initiatives is a longstanding challenge that providers have been unsuccessfully trying to surmount for decades. Platform companies and solution providers have long relied on estimates and proxies to placate brands and justify their existence. While this is no longer sufficient, attribution is highly complex, particularly in marketing, largely because of the sheer number of touchpoints brands have with end customers. The multitude of traditional brand ex-
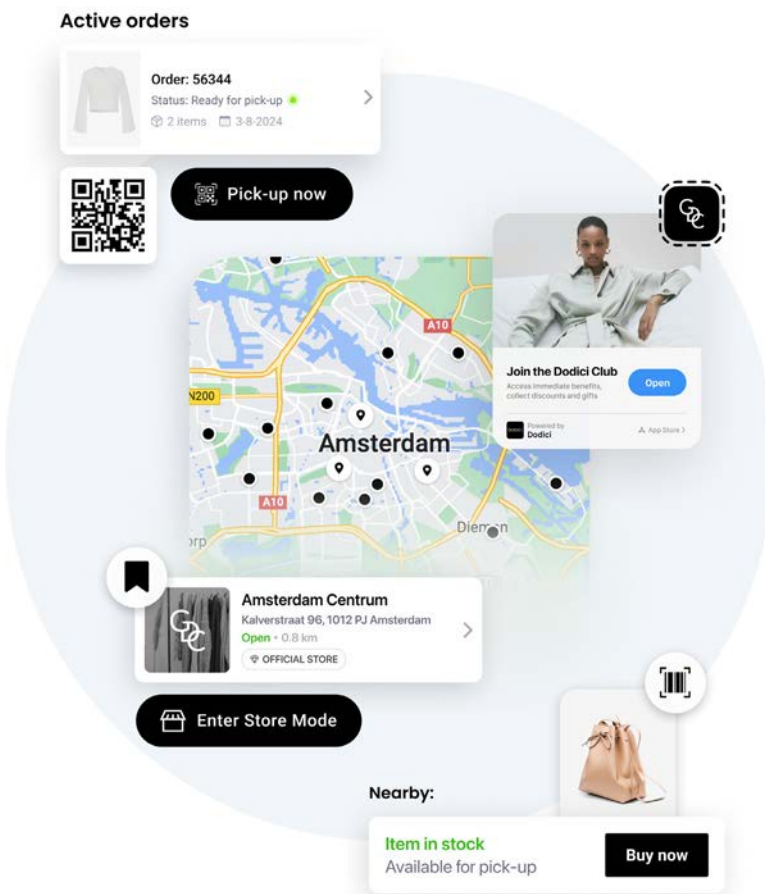
Returns prevention

Aim to minimize return rates by leveraging data analytics to address root causes and enhance customer confidence through additional purchase details

Returns solutions

Returns management

Streamline the logistics and operations of product returns to ensure efficient handling and disposition of items while reducing costs

Source: First Analysis.

posure points in stores, on billboards, and many other physical formats is now complemented by another multitude of digital exposure points, including online formats and hybrid formats such as in-store retail media networks and connected TV. Brands' customers can encounter brands' content in physical formats and then buy online or vice versa, and connecting such disconnected events is a daunting task.

But brands can stitch together data from systems supporting physical and digital environments using integrations, data scraping and third-party solutions and tools. With this, brands are beginning to see a picture emerge. It's not perfect by any means, but it's promising enough to compel brands and retailers to pursue attribution technology more aggressively, in part by

Combining multiple data sources with artificial intelligence and machine learning to reduce returns
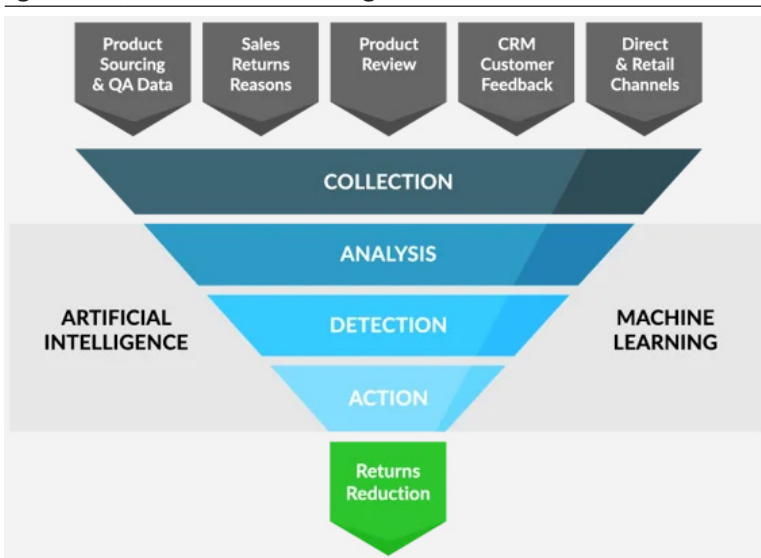

Source: Newmine.

providing more access to data and encouraging (or forcing) partners to do likewise. We expect this momentum to be a catalyst for convergence broadly, beyond the narrower focus of attribution.

4. PRODUCT RETURN PREVENTION TECHNOLOGY UNDERREPRESENTED

The product return rate associated with e-commerce is nearly three times that of in-store purchases, making returns a major issue for brands and online retailers. And barring a substantial change in how brands and retailers market and sell, product returns will only increase in absolute dollars as online shopping continues to grow at a faster rate than brick-and-mortar retail. Because returns are so costly – incurring tangible expenses for reverse logistics, warehousing and resale or disposal and intangible costs to brands' reputations – we expect providers of returns-centric technology to benefit from growing demand. We have identified two primary categories for returns solutions: 1) returns prevention, which aims to reduce returns by identifying and addressing their root causes, and 2) returns management, which focuses on increasing returns efficiency and reducing costs. We think returns prevention is the more compelling opportunity, as it drives more value for brands and online retailers.

Consumers return products for many reasons. Products may not fit, may not match product descriptions, may be damaged, may be missing parts or may be of poor quality. Sellers may ship the wrong product. Sometimes returns occur as part of fraud schemes. By investing in technological

CHIEF RETURNS OFFICER®

Simple & Powerful Returns Prevention

| Return Root Cause Analysis	KeepScore Insights	Returns Prevention Workbench
Gain total visibility into returns, isolate controllable returns and their root causes	Identify products, suppliers, and customers at-a-glance based on their impact to returns	Take action and collaborate with ease on your most valuable opportunities

Source: Newmine.

solutions that address the root causes of returns, brands and online retailers position themselves to provide better customer experiences while reducing costs, particularly in returns logistics and management. In our view, product return prevention solutions will help e-commerce return rates decline at least to parity with return rates for products purchased at physical stores.

Newmine dashboard

Source: Newmine.

Despite the compelling nature of returns prevention technology and its timely nature, we were surprised to find no returns prevention players exhibiting at Shoptalk. By contrast, we encountered several vendors focused on returns management. Their solutions spanned reverse logistics, storage and liquidation, with a clear emphasis on reverse logistics. These solutions can carry significant time and cost burdens. For example, returning products from customers to warehouses can cost more than initially shipping them. In some cases, brands choose to absorb the cost of handling the returned item and send the correct item, but in other instances, they opt to issue a full refund while letting customers keep the original product to avoid further expenses.
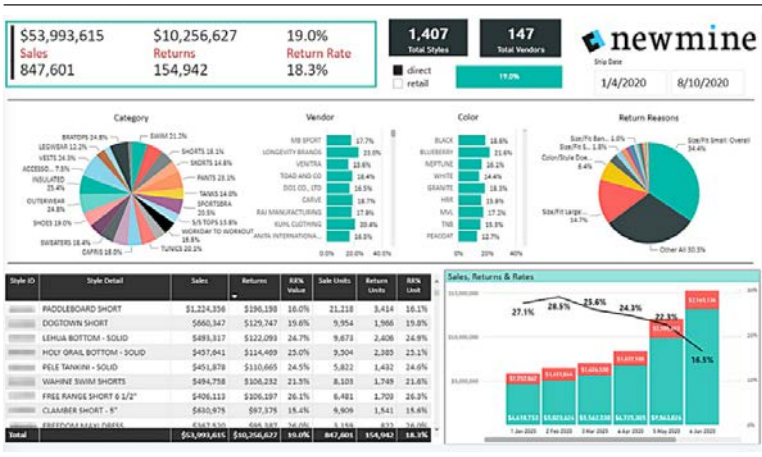
The emphasis on returns management suggests to us that returns prevention technologies are still in the early stages of education and adoption. That said, we were still able to meet with a few attendees representing companies that focus on returns prevention. For example, **Newmine** has built a returns intelligence platform that continuously analyzes product, transactional and customer feedback to identify root causes of returns. It offers near-real-

time insights and recommends corrective actions. Newmine's solution speaks to a larger trend we are seeing in the industry, where data is key to driving change. Many brands may not be tracking the kind of data Newmine tracks, or if they are, they may lack effective processes for analyzing it to derive actionable insights. Newmine's solution ensures brands hear the voice of the customer and helps brands pinpoint root causes rather than relying on guesses or assumptions. Newmine's KeepScore solution also positions the returns challenge in a more positive light: KeepScore focuses on customer retention by measuring the extent to which customers keep the products they buy. While returns usually carry a negative connotation, KeepScore shifts the narrative, encouraging retailers to prioritize customer satisfaction.

Newmine's emphasis on feedback aligns with other conversations we had on the floor, particularly around user-generated content. We spoke to **Emplifi**, a platform that enables brands to collect and showcase authentic customer reviews. This taps into the power of real customer experiences, which are often more impactful than brand messaging. Peer opinions are perceived as more genuine and relatable, creating trust and fostering a more transparent shopping environment. This helps cus-

tomers feel they are not being misled and feel they are seeing the reality of products, boosting their confidence in their decisions and leading to fewer returns.

Despite the limited emphasis on returns prevention technology at Shoptalk, we expect its visibility to grow as the technology proves to be truly game changing. Returns are an inevitable byproduct of the online shopping experience, and we believe businesses will begin to take returns prevention more seriously as they recognize the value of addressing the issue upfront, both in terms of time and cost. For some brands, this may involve implementing a combination of strategies and technologies from multiple point solution providers, while others may find a single platform more effective. Time will tell how the visibility evolves around these solutions, but we believe they are poised to play a critical role in shaping the future of returns in e-commerce.

LOOKING AHEAD TO FUTURE SHOPTALK SHOWS

Shoptalk is clearly one of the world's prime forums for e-commerce companies. Based on our enlightening and productive experience at Shoptalk Fall, we look forward to continuing to engage at future Shoptalk events as a key element underpinning our thought leadership in the e-commerce world.

E-commerce optimization index ends 1-year period with wide lead over market

The First Analysis E-commerce Optimization Index finished the one-year period ended Nov. 15 with a 45% gain, well ahead of the Nasdaq's 30% gain and the S&P 500's 32% gain. The index's performance was volatile through the period, starting with a strong lead over the broader market, then falling well behind, and finally pulling decisively ahead again in the last week of the period.

About a third of the e-commerce optimization companies saw stock price gains over 40% during the period; Wix.com (WIX) led with an 89% gain. Salesforce (CRM),

E-commerce optimization public comparables*
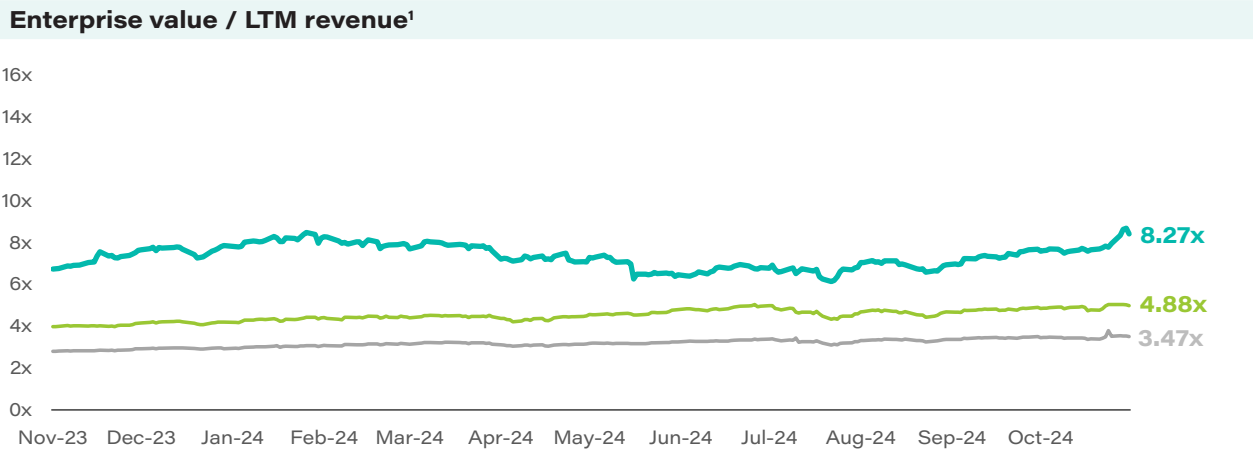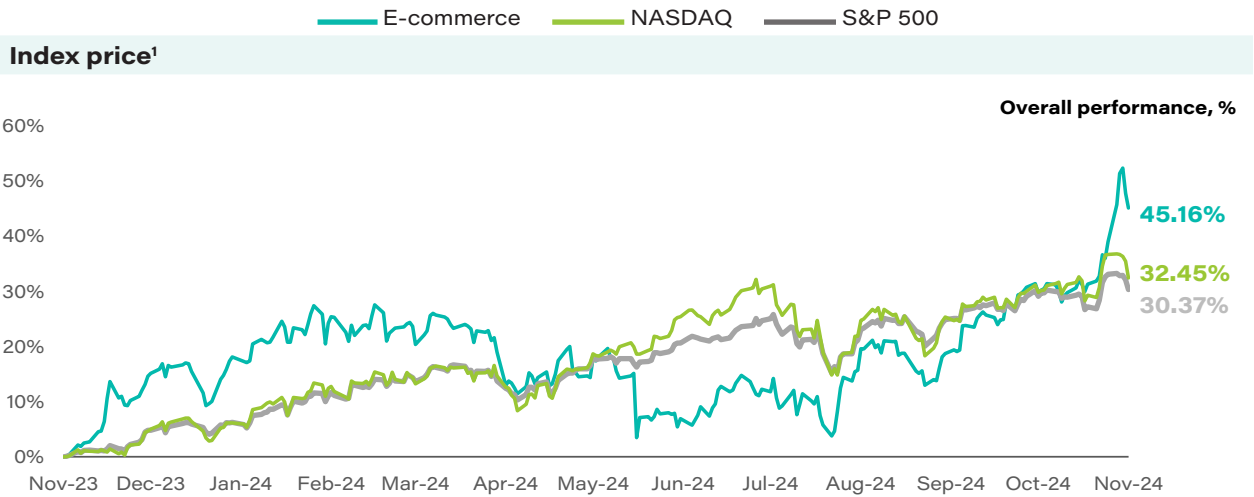
| ($ in millions) | | Revenue growth | | LTM gross margin | LTM EBITDA margin | Enterprise value / | | | |
| | LTM revenue | | | | | Revenue | | EBITDA[1] | |
Company		2023A - 2024E	2024E - 2025E			2024E	2025E	2024E	2025E
Amplitude (AMPL)	$292.5	7.8%	7.7%	74.2%	(30.9%)	3.05x	2.83x	NMF	NMF
Bandwidth (BAND)	$703.9	23.5%	2.6%	37.8%	2.6%	1.29x	1.26x	12.2x	11.0x
BigCommerce (BIGC)	$330.0	7.6%	5.2%	76.7%	(5.5%)	1.59x	1.51x	25.6x	17.1x
Braze (BRZE)	$535.9	23.8%	18.2%	68.8%	(24.7%)	5.45x	4.61x	NMF	NMF
Cardlytics (CDLX)	$293.5	(13.3%)	3.5%	43.5%	(12.5%)	1.22x	1.18x	NMF	NMF
Five9 (FIVN)	$1,002.3	13.2%	11.0%	53.6%	(0.4%)	3.04x	2.74x	16.6x	14.0x
HubSpot (HUBS)	$2,506.3	19.7%	15.8%	84.7%	(2.3%)	13.00x	11.23x	62.2x	52.6x
Klaviyo (KVYO)	$868.9	32.4%	24.9%	77.6%	(8.4%)	9.29x	7.44x	70.1x	55.9x
LivePerson (LPSN)	$334.7	(23.5%)	(14.4%)	65.6%	(12.0%)	1.30x	1.51x	19.2x	21.0x
LiveRamp Holdings (RAMP)	$707.2	13.7%	8.6%	72.3%	3.6%	2.09x	1.92x	12.1x	9.8x
MercadoLibre (MELI)	$18,493.0	42.7%	22.0%	52.5%	14.7%	4.60x	3.77x	30.6x	22.2x
RingCentral (RNG)	$2,357.2	8.9%	7.4%	70.4%	8.1%	2.01x	1.87x	8.1x	7.2x
Salesforce (CRM)	$36,465.0	8.6%	9.0%	76.3%	25.6%	8.20x	7.52x	22.2x	20.5x
Shopify (SHOP)	$8,212.0	24.5%	21.8%	50.9%	15.2%	15.52x	12.74x	NMF	67.1x
Sprinklr (CXM)	$773.7	7.4%	4.3%	74.2%	5.6%	1.94x	1.86x	14.6x	12.7x
SPS Commerce (SPSC)	$611.8	18.5%	16.3%	66.6%	20.7%	10.13x	8.71x	34.7x	29.3x
The Trade Desk (TTD)	$2,309.6	26.6%	20.0%	81.1%	19.3%	23.09x	19.23x	55.4x	45.2x
Twilio (TWLO)	$4,339.2	6.5%	7.6%	50.9%	2.7%	2.99x	2.78x	15.7x	14.1x
VTEX (VTEX)	$225.9	16.1%	20.7%	73.5%	5.1%	4.07x	3.38x	47.6x	31.4x
Weave Communications (WEAV)	$195.8	19.0%	16.1%	70.7%	(11.2%)	4.55x	3.92x	NMF	NMF
Wix.com (WIX)	$1,653.1	12.5%	14.1%	67.7%	4.2%	5.84x	5.12x	28.3x	21.3x
Yext (YEXT)	$396.1	4.0%	10.0%	77.9%	(1.1%)	2.05x	1.86x	13.0x	8.2x
Average	**$3,800.3**	**13.6%**	**11.5%**	**66.7%**	**0.8%**	**5.74x**	**4.95x**	**28.7x**	**25.6x**
Median	**$740.5**	**13.5%**	**10.5%**	**70.6%**	**2.7%**	**3.56x**	**3.10x**	**22.2x**	**20.7x**

Source: Capital IQ, First Analysis.

Notes: * Public comparable company data shown above is as of Nov. 17, 2024.
(1) EBITDA multiples less than 0 and greater than 75 labeled "not meaningful" (NMF). LTM = last 12 months. EBITDA = earnings before interest, taxes, depreciation and amortization.

First Analysis E-commerce Optimization Index 1-year performance

— E-commerce — NASDAQ — S&P 500

Index price[1]

Overall performance, %

E-commerce: **45.16%**
NASDAQ: **32.45%**
S&P 500: **30.37%**

Enterprise value / LTM revenue[1]

E-commerce: **8.27x**
NASDAQ: **4.88x**
S&P 500: **3.47x**

Source: Capital IQ.

Notes: (1) Index performance is based on market cap weighted constituents. For the period from Nov. 15, 2023, through Nov. 15, 2024.

Shopify (SHOP), Trade Desk (TTD) and MercadoLibre (MELI), which together accounted for 85% of the index's total market capitalization at the beginning of the year, accounted for nearly all the index's gain. Eight stocks in the sector declined over the period, twice as many as in our May report, with LivePerson (LPSN) losing the most: 76%.

The group's enterprise value multiple of trailing 12-month revenue ended the period at 8.3, near its high for the one-year period and up from 6.7 at the start of the period. Looking at forward multiples, the average enterprise value multiples of estimated revenue as of Nov. 17 were 5.7 for 2024 and 5.0 for 2025, up from 5.1 and 4.4 in our May report. The average revenue growth estimates were 13.6% for 2024 and 11.5% for 2025, compared to 12.8% and 13.5% in our May report.

E-commerce M&A: Notable transactions include SPS Commerce, Shopify acquisitions

We highlight a handful of noteworthy e-commerce merger and acquisition transactions since our last report.

On Aug. 1, SPS Commerce (SPSC) announced it acquired SupplyPike for $119 million in cash and $87 million in stock, or about 8 times forward revenue. SupplyPike helps suppliers monitor and manage invoice deductions to recover lost revenue, and it provides information needed to improve processes and eliminate deductions in the future. On May 9, SPS announced it acquired Traverse Systems for about $25 million in cash and $4.3 million in SPS stock, or about 6 times forward revenue. Traverse Systems' platform provides retailers and their merchandise suppliers a unified view of supply chain performance to improve collaboration and enhance consumer experiences. Its scorecarding and vendor performance management solutions for retailers drive supply chain efficien-

cies such as increased on-time and in-full shipments, enhanced inventory accuracy, greater visibility into inbound shipments, real-time disruption management, and improved invoice accuracy. These two acquisitions enhance SPS's offerings in supply chain optimization and supplier support.

Shopify's (SHOP) "Summer of M&A" featured strategic acquisitions aimed at enhancing its enterprise offerings and omnichannel capabilities. In July, Shopify acquired ChannelApe for an undisclosed amount. ChannelApe is an inventory management platform designed to simplify inventory management, streamline order fulfillment and enhance overall e-commerce operations. In June, Shopify announced it acquired Checkout Blocks, an app designed to help brands build and customize their checkout process. It provides tools including recommendations driven by artificial intelligence, custom content, dis-

Invoice deduction management
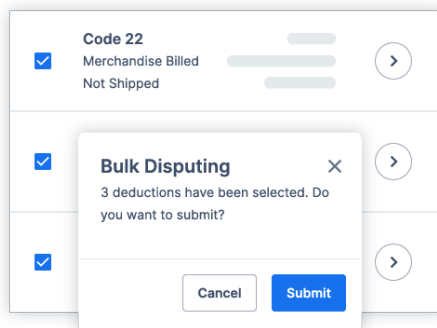
Source: SupplyPike.

Online sales analysis
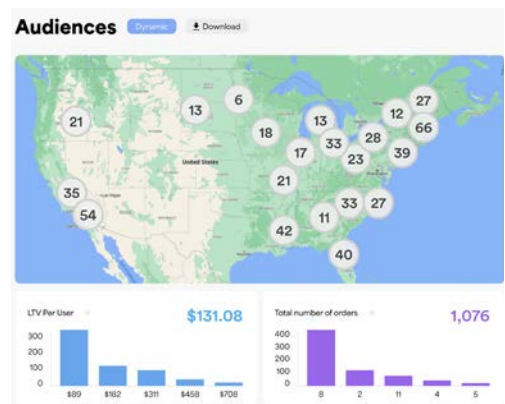
Source: Peel Insights.

Multichannel e-commerce inventory management

counts, email validation, custom fields, and personalized order pages. In May, Shopify announced it acquired Peel Insights, which helps online merchants analyze their sales data and improve customer retention through advanced analytics and integrations. Together, these acquisitions are aimed at helping Shopify better support large brands, optimize operations, and improve overall e-commerce experiences.

On October 14, Descartes Systems Group announced its acquisition of Sellercloud for $110 million in cash and an additional performance-based earnout of up to $20 million. Sellercloud offers multichannel e-com-

merce solutions for small and mid-sized businesses, helping them synchronize, plan and manage inventory levels across multiple sales channels. In addition, Sellercloud helps product sellers orchestrate fulfillment processes. The acquisition directly complements Descartes' e-commerce investments in XPS, ShipRush, pixi, and Peoplevox, enabling Descartes to provide a more comprehensive platform for managing the entire e-commerce shipment life cycle.

Also in October, Zeta Global (ZETA) acquired LiveIntent for $250 million ($77.5 million in cash and $172.5 million in stock, or about 3 times estimated 2024 revenue and about 16 times EBITDA) with additional possible earnouts. LiveIntent provides a people-based marketing platform that uses proprietary technology to deliver mobile-centric experiences and identity solutions across various channels. It focuses on using first-party data to identify, engage and monetize audiences, with an emphasis on email-based identity resolution. The integration of LiveIntent into Zeta's marketing platform is expected to expand gross margin while accelerating a revenue shift from agency customers to direct channels.

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

($ in millions)				Enterprise	EV/
Date	Target	Target business description	Buyer	value (EV)	Revenue
11/7/2024	Avid Ratings	Customer experience surveys, loyalty strategies and training for the homebuilding industry	ECI Software Solutions	Undisclosed	Undisclosed
11/5/2024	Weni	AI-driven customer service solutions that enhance support efficiency and post-purchase experiences	VTEX (VTEX)	$3.9	Undisclosed
10/30/2024	ZaneRay	Digital agency specializing in e-commerce design and solutions for outdoor, lifestyle and consumer brands	O2 Commerce	Undisclosed	Undisclosed
10/29/2024	Keap	Customer relationship management and marketing automation for small and medium-size businesses	Thryv	$80.0	0.9x
10/14/2024	Sellercloud	Inventory, order and warehouse management tools for multichannel e-commerce	Descartes Systems Group (DSG)	$110.0	Undisclosed
10/8/2024	LiveIntent	Marketing platform that uses proprietary technology to deliver mobile-centric experiences and identity solutions across various channels	Zeta Global (ZETA)	$250.0	3.0x
9/23/2024	ITG Commerce	Full-service e-commerce solution provider that helps businesses implement and optimize their online operations	Bluprintx	Undisclosed	Undisclosed
9/19/2024	New Thing Co.	Augmented reality rewards platform for advertising and marketing campaigns	Benjamin Capital Partners	Undisclosed	Undisclosed
9/3/2024	Front Row	Comprehensive e-commerce, marketing, content and strategy solutions to drive global brand growth	Charlesbank Capital Partners	Undisclosed	Undisclosed
8/22/2024	RevLocal	Digital marketing services for small and medium-size businesses	Hibu	Undisclosed	Undisclosed
8/13/2024	Jaggaer	Sourcing and procurement software for spend management, including analytics, supplier management and invoicing	Vista Equity Partners	Undisclosed	Undisclosed
8/13/2024	Neuro-ID	Software that uses behavioral analysis to minimize fraud in online transactions	Experian Information Solutions	Undisclosed	Undisclosed
8/8/2024	Staircase AI	AI-driven technology that analyzes customer-vendor interactions to enhance customer success and relationship management	Gainsight	Undisclosed	Undisclosed
8/8/2024	Acqueon Technologies	An AI-powered platform that automates outbound communications to help B2C businesses boost revenue, enhance customer engagement and ensure compliance	Five9 (FIVN)	$173.8	Undisclosed
8/6/2024	Optivations	Platform that helps brands launch and optimize their online presence across Amazon and other digital marketplaces	Skylark Private Equity Partners	Undisclosed	Undisclosed
8/1/2024	Storeroom Logix	Inventory management software that centralizes inventory data and processes for easier tracking and control	Wesco International (WCC)	Undisclosed	Undisclosed
8/1/2024	SupplyPike	Helps suppliers monitor and manage invoice deductions to recover lost revenue and provides information needed to improve processes and eliminate deductions in the future	SPS Commerce (SPSC)	$206.2	8.0x
7/25/2024	Protex Group	3D product configuration and augmented reality solutions for e-commerce businesses	RealTruck	Undisclosed	Undisclosed
7/24/2024	ChannelApe	Inventory management platform designed to simplify inventory management, streamline order fulfillment and enhance overall e-commerce operations	Shopify	Undisclosed	Undisclosed

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

($ in millions) Date	Target	Target business description	Buyer	Enterprise value (EV)	EV/ Revenue
7/10/2024	Jebbit	Interactive mobile content and solutions that help brands engage audiences, gather data and drive conversions	BlueConic	Undisclosed	Undisclosed
7/9/2024	Curated	Connects consumers with verified experts for personalized advice on high-value purchases	Flip	$330.0	Undisclosed
6/25/2024	Viral Vault	E-commerce education platform to help entre-preneurs launch e-commerce stores	Auto DS	Undisclosed	Undisclosed
6/18/2024	0x Shop	Web3 e-commerce platform	9dcc	Undisclosed	Undisclosed
06/03/2024	Checkout Blocks	App designed to help brands build and cus-tomize their checkout process	Shopify (SHOP)	Undisclosed	Undisclosed
5/23/2024	WithoutWire Inventory Sciences	Inventory management solutions for small and mid-sized businesses, automating supply chain processes	Scanco Software	Undisclosed	Undisclosed
5/12/2024	Peel Insights	Helps online merchants analyze their sales data and improve customer retention through advanced analytics and integrations	Shopify (SHOP)	Undisclosed	Undisclosed
5/9/2024	Traverse Systems	Provides retailers and their merchandise sup-pliers a unified view of supply chain perfor-mance to improve collaboration and enhance consumer experiences	SPS Commerce (SPSC)	$29.3	6.0x

Source: Capital IQ, First Analysis.

E-commerce private placements: Notable transactions include Wildfire Systems, Cart.com

We highlight five noteworthy e-commerce private placements since our last report.

On Oct. 28, Wildfire Systems, announced a $16 million Series B funding led by Intuit Ventures and Mucker Capital with participation from new investors Cohen Circle, Samsung Next, Evolution VC, and Gaingels and existing investors TTV Capital, QED Investors, B Capital, DLA Piper, Moonshots Capital, and Citi Ventures. The Wildfire Systems platform enables its financial services organization and technology company clients to offer white-label shopping rewards and loyalty solutions.

Source: Wildfire Systems.

On Oct. 2, Vizit announced a $25 million Series B funding led by Industry Ventures. Vizit's artificial intelligence technology interprets, measures and predicts consumers' visual preferences, enabling brands to precisely optimize their visual content. This enables customers to create personalized, high-converting content that helps brands effectively engage their audience.
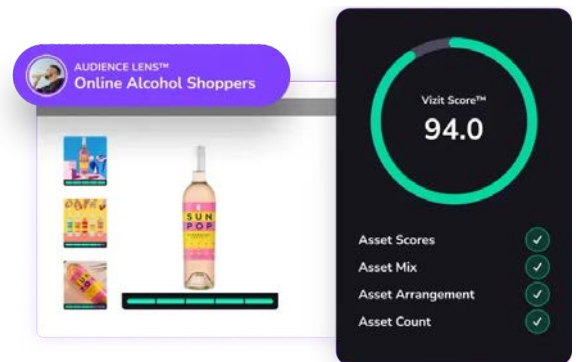
Source: Vizit.

On Sept. 16, Two Boxes announced it had raised $5.3 million in a funding led by Peterson Ventures and including new investor Assembly Ventures and existing investors Vinyl, Range Ventures and Matchstick Ventures. Two Boxes optimizes returns inspection, prioritization, processing and tracking for brands and third-party logistics providers. It also helps combat return fraud and enhances sustainability by reducing waste. With the additional capital, the company plans to grow its engineering and go-to-market teams, as well as expand its geographic footprint beyond North America.

Source: Cart.com

On July 17, Cart.com announced it had secured a $105 million term loan facility from BlackRock. Cart.com provides unified commerce and logistics solutions that help merchants sell and fulfill across multiple channels. The funding will help Cart.com expand into new markets and enhance its technology, particularly its Constellation OMS offering. The transaction followed the closing of a $25 million Series C extension that brought the company's Series C total to $85 million at a $1.2 billion valuation.

On June 25, Route announced a $40 million Series C funding round at a $1.4 billion valuation led by Hanaco VC with participation from JAWS Ventures, Madrona Ventures, and Granger. Route provides package tracking and protection solutions for e-commerce brands, allowing them to offer a seamless post-purchase experience for customers. The company partners with over 13,000 brands, including Alice + Olivia and Tom Ford, providing solutions such as shipment tracking, package protection, and carbon offsetting.
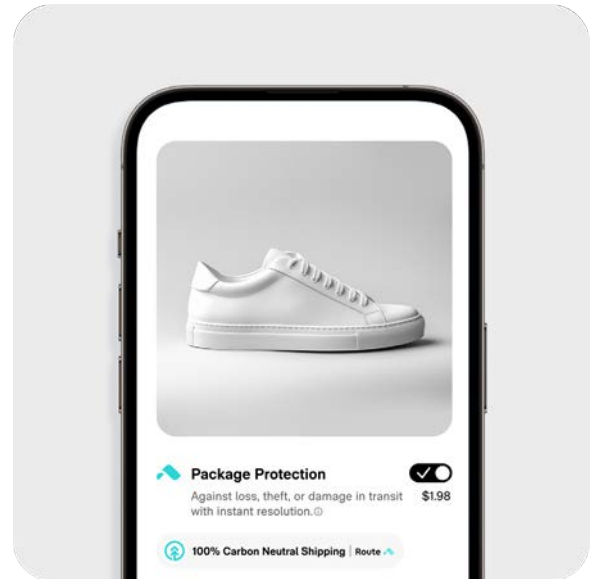
Source: Route.

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

Date	Company	Business description	Investors	Raise type	Amount raised	Total amount raised
10/30/2024	Regal	Customer engagement platform for personalized calls and text message conversation	Emergence Equity; Founder Collective Co; Homebrew Management	Venture	$40.0	$83.0
10/28/2024	Wildfire Systems	Enables financial services organization and technology companies to offer white-label shopping rewards and loyalty solutions	B Capital Group.; Citi Ventures; Cohen Circle; DLA Piper (US); Evolution VC; Gaingels; Intuit (INTU); Moonshots Capital; Mucker Capital; QED Investors; Samsung NEXT; TTV Capital	Series B	$16.0	$36.0
10/22/2024	Optiwise.ai	Optimizes Walmart.com e-commerce listings and ad campaigns for brands	StartupXseed Ventures	Seed	$2.4	$3.7
10/11/2024	Zimi	International fulfillment services to simplify cross-border selling	Fearless Fund	Venture	Undisclosed	Undisclosed
10/2/2024	Vizit	Artificial intelligence technology that interprets, measures and predicts consumers' visual preferences, enabling brands to precisely optimize their visual content	B37 Ventures; Brand Foundry; eGateway Capital; Highmount Capital; Industry Ventures; Infinity Ventures; Lakefront; Lightscape; Roll Tack Ventures; Stage 1 Ventures	Series B	$25.0	$35.0
9/26/2024	3D Cloud	3D digital asset management for 3D product visualization	Bellini Capital	Growth	$20.0	$56.1
9/26/2024	Zenlytic	No-code analytics software for e-commerce businesses	14Peaks Capital; Bain Capital; Company Ventures; Correlation Ventures; M13 Ventures; Primary Venture	Series A	$9.0	$15.4
9/24/2024	Banzai International (BNZI)	Data-driven marketing solutions for engaging audiences via webinars and events	Undisclosed	PIPE	$5.0	NA
9/20/2024	Partium	Search platform for spare part identification, analytics and after-sales services	The Riverside Company; Trestle Partners; Anzu Capital; Berndorf AG; Beyond 1435; Bloomberg Ventures; TechNexus	Series A	$15.0	Undisclosed
9/16/2024	Two Boxes	Optimizes returns inspection, prioritization, processing and tracking for brands and third-party logistics providers	Assembly Ventures; Matchstick Ventures; Peterson Ventures; Range Ventures; Vinyl Capital	Venture	$5.3	$9.8
8/28/2024	Bland AI	AI-powered platform for enterprise phone call automation across various industries	Scale Management; Y Combinator	Series A	$16.0	$22.0
8/7/2024	Clear Demand	Price and promotion optimization software for retail and e-commerce businesses	M33 Growth	Growth	Undisclosed	Undisclosed
7/29/2024	Reason Automation	Tools to manage and analyze e-commerce data for Amazon sellers	Verify Venture Studio	Seed	Undisclosed	Undisclosed
7/24/2024	Knowde	Master data management and digital marketplace for the chemical industry	Blue Cloud; Point72.; Sequoia Capital Operations; Socium Ventures	Series C	$60.0	$175.0
7/22/2024	OTO Global	Delivery management platform for e-commerce businesses	Iliad Partners; Propeller; Sadu Capital; Sanabil Investments; Soma Capital	Series A	$8.0	$11.0

($ in millions)

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

						Total
($ in millions)				**Raise**	**Amount**	**amount**
Date	**Company**	**Business description**	**Investors**	**type**	**raised**	**raised**
7/22/2024	Language I/O	Real-time multilingual customer support using AI translation	Gutbrain Ventures; Joint Effects; Omega Venture; PBJ Capital; Raptor Hold-co GP; Wyoming Venture Capital (WYVC)	Growth	$5.0	$29.1
7/17/2024	Cart.com	Unified commerce and logistics solutions that help merchants sell and fulfill across multiple channels	BlackRock	Debt	$105.0	$551.2
7/11/2024	Syrup Tech	Inventory management software for e-commerce, focusing on style, color, and size decisions	1686 Partners	Venture	Undis-closed	Undis-closed
7/10/2024	Intelligems	Price, shipping rate, and subscription testing tools to optimize e-commerce sales and margins	Undisclosed	Venture	$8.9	$13.1
7/2/2024	Qloo	Consumer behavior and sentiment database combined with AI software to predict audience interests and preferences	Bluestone Equity Partners	Growth	$20.0	$88.8
6/27/2024	Barn2Door	Connects local farms with chefs through an e-commerce platform for selling local food and products	Decathlon Capital Partners	Growth	Undis-closed	Undis-closed
6/25/2024	Route	Package tracking and protection solutions for e-commerce brands	Granger; Hanaco VC; Jaws Ventures; Madrona Ventures	Series C	$40.0	$320.0
6/17/2024	Finaloop	Bookkeeping and inventory management software with integration capabilities for e-commerce	Accel Partners; Aleph Venture; Commerce Ventures; Lightspeed Ventures; Vesey Ventures	Series A	$35.0	$35.0
6/6/2024	Dappier	Marketplace for publishers to sell content to large language model builders	Silverton Partners	Seed	$2.0	$2.0

Source: Capital IQ, First Analysis.

E-commerce optimization 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[1] | |
								2024E	2025E	2024E	2025E
Amplitude (AMPL)	$1,224.5	$909.1	$292.5	7.8%	7.7%	74.2%	(30.9%)	3.05x	2.83x	NMF	NMF
Bandwidth (BAND)	$510.9	$960.0	$703.9	23.5%	2.6%	37.8%	2.6%	1.29x	1.26x	12.2x	11.0x
BigCommerce (BIGC)	$474.2	$527.8	$330.0	7.6%	5.2%	76.7%	(5.5%)	1.59x	1.51x	25.6x	17.1x
Braze (BRZE)	$3,601.6	$3,185.4	$535.9	23.8%	18.2%	68.8%	(24.7%)	5.45x	4.61x	NMF	NMF
Cardlytics (CDLX)	$171.8	$326.7	$293.5	(13.3%)	3.5%	43.5%	(12.5%)	1.22x	1.18x	NMF	NMF
Five9 (FIVN)	$2,863.2	$3,133.2	$1,002.3	13.2%	11.0%	53.6%	(0.4%)	3.04x	2.74x	16.6x	14.0x
HubSpot (HUBS)	$34,952.8	$33,772.8	$2,506.3	19.7%	15.8%	84.7%	(2.3%)	13.00x	11.23x	62.2x	52.6x
Klaviyo (KVYO)	$9,376.2	$8,591.9	$868.9	32.4%	24.9%	77.6%	(8.4%)	9.29x	7.44x	70.1x	55.9x
LivePerson (LPSN)	$70.6	$399.0	$334.7	(23.5%)	(14.4%)	65.6%	(12.0%)	1.30x	1.51x	19.2x	21.0x
LiveRamp Holdings (RAMP)	$1,820.2	$1,510.8	$707.2	13.7%	8.6%	72.3%	3.6%	2.09x	1.92x	12.1x	9.8x
MercadoLibre (MELI)	$95,311.1	$94,978.1	$18,493.0	42.7%	22.0%	52.5%	14.7%	4.60x	3.77x	30.6x	22.2x
RingCentral (RNG)	$3,235.6	$4,809.7	$2,357.2	8.9%	7.4%	70.4%	8.1%	2.01x	1.87x	8.1x	7.2x
Salesforce (CRM)	$310,948.6	$310,500.6	$36,465.0	8.6%	9.0%	76.3%	25.6%	8.20x	7.52x	22.2x	20.5x
Shopify (SHOP)	$140,179.7	$136,425.7	$8,212.0	24.5%	21.8%	50.9%	15.2%	15.52x	12.74x	NMF	67.1x
Sprinklr (CXM)	$1,944.1	$1,526.9	$773.7	7.4%	4.3%	74.2%	5.6%	1.94x	1.86x	14.6x	12.7x
SPS Commerce (SPSC)	$6,634.1	$6,441.5	$611.8	18.5%	16.3%	66.6%	20.7%	10.13x	8.71x	34.7x	29.3x
The Trade Desk (TTD)	$58,315.8	$56,877.2	$2,309.6	26.6%	20.0%	81.1%	19.3%	23.09x	19.23x	55.4x	45.2x
Twilio (TWLO)	$14,815.3	$13,243.0	$4,339.2	6.5%	7.6%	50.9%	2.7%	2.99x	2.78x	15.7x	14.1x
VTEX (VTEX)	$1,166.9	$952.8	$225.9	16.1%	20.7%	73.5%	5.1%	4.07x	3.38x	47.6x	31.4x
Weave Communications (WEAV)	$965.7	$924.2	$195.8	19.0%	16.1%	70.7%	(11.2%)	4.55x	3.92x	NMF	NMF
Wix.com (WIX)	$10,075.7	$10,263.6	$1,653.1	12.5%	14.1%	67.7%	4.2%	5.84x	5.12x	28.3x	21.3x
Yext (YEXT)	$995.2	$861.2	$396.1	4.0%	10.0%	77.9%	(1.1%)	2.05x	1.86x	13.0x	8.2x
Average	*$31,802.4*	*$31,414.6*	*$3,800.3*	*13.6%*	*11.5%*	*66.7%*	*0.8%*	*5.74x*	*4.95x*	*28.7x*	*25.6x*
Median	*$3,049.4*	*$3,159.3*	*$740.5*	*13.5%*	*10.5%*	*70.6%*	*2.7%*	*3.56x*	*3.10x*	*22.2x*	*20.7x*

Source: Capital IQ.

Notes: * Public comparable company data shown above is as of Nov. 17, 2024.

(1) EBITDA multiples less than 0 and greater than 75 labeled "not meaningful" (NMF). LTM = last 12 months. EBITDA = earnings before interest, taxes, depreciation and amortization.

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