

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2023

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 001-39748

PUBMATIC, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

20-5863224

(I.R.S. Employer Identification Number)

Not applicable

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Class A common stock, \$0.0001 par value per share	PUBM	The Nasdaq Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of common equity held by non-affiliates of the registrant as of June 30, 2023, based on the closing sales price for the registrant's Class A common stock, as reported on the Nasdaq Global Market, was approximately \$810.1 million. As of February 21, 2024, there were 41,270,102 shares of the registrant's Class A common stock outstanding and 8,738,452 shares of the registrant's Class B common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement for its 2024 annual meeting of stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2023.

TABLE OF CONTENTS

	<u>Page</u>
Note About Forward-Looking Statements	1
Market and Industry Data	2
Summary of Risk Factors	3
Part I	
Item 1. Business	5
Item 1A. Risk Factors	14
Item 1B. Unresolved Staff Comments	40
Item 1C. Cybersecurity	40
Item 2. Properties	42
Item 3. Legal Proceedings	42
Item 4. Mine Safety Disclosures	42
Part II	
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	43
Item 6. Reserved	44
Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	45
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	58
Item 8. Financial Statements and Supplementary Data	59
Item 9. Changes in and Disagreement with Accountants on Accounting and Financial Disclosure	89
Item 9A. Controls and Procedures	89
Item 9B. Other Information	90
Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections	90
Part III	
Item 10. Directors, Executive Officers and Corporate Governance	91
Item 11. Executive Compensation	91
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	91
Item 13. Certain Relationships and Related Transactions, and Director Independence	91
Item 14. Principal Accountant Fees and Services	91
Part IV	
Item 15. Exhibits, Financial Statement Schedules	92
Item 16. Form 10-K Summary	95
Signatures	96

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contains forward-looking statements. The words “believe,” “may,” “will,” “potentially,” “estimate,” “continue,” “anticipate,” “intend,” “could,” “would,” “project,” “plan,” “expect,” and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements.

Forward-looking statements include, but are not limited to, statements about:

- our future financial and operating results;
- our ability to maintain our growth and profitability;
- our ability to attract and retain publishers and expand the utilization of our buyers;
- our ability to maintain a consistent supply of quality advertising inventory;
- our ability to maintain our competitive technological advantages against competitors in our industry;
- our expectations concerning the advertising industry, including the impact of macroeconomic conditions, inflation and rising interest rates;
- our ability to introduce new offerings and bring them to market in a timely manner;
- our ability to maintain, protect, and enhance our brand and intellectual property;
- our ability to continue to expand internationally;
- our expectations concerning relationships with third parties;
- future acquisitions of or investments in complementary companies or technologies; and
- our ability to comply with evolving legal and industry standards and regulations, particularly concerning data protection and consumer privacy.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties, and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, performance, or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Annual Report on Form 10-K to conform these statements to actual results or to changes in our expectations, except as required by law. You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K and have filed with the Securities and Exchange Commission (the “SEC”), with the understanding that our actual future results, performance, and circumstances may be materially different from what we expect.

Unless otherwise indicated, the terms “PubMatic,” “we,” “us,” and “our” refer to PubMatic, Inc. and our consolidated subsidiaries.

MARKET AND INDUSTRY DATA

Unless otherwise indicated, information contained in this Annual Report on Form 10-K concerning our industry and the markets in which we operate is based on information we obtained from industry publications and third-party research, surveys and studies, as well as assumptions that we have made that are based on that data and on our knowledge of the markets for our products and services. This information involves important assumptions and limitations, and are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors” and elsewhere in this this Annual Report on Form 10-K.

This Annual Report on Form 10-K contains our trade names, trademarks, and service marks, including the PubMatic name and logo, and all product names. This Annual Report on Form 10-K may also contain the trade names, trademarks, and service marks of other companies. We do not intend our use or display of other companies’ trade names, trademarks, or service marks to imply a relationship with these other companies, or endorsement or sponsorship of us by these other companies. Other trademarks appearing in this Annual Report on Form 10-K are the property of their respective holders.

SUMMARY OF RISK FACTORS

The following is a summary of the principal risks described below in Part I, Item 1A “Risk Factors” in this Annual Report on Form 10-K. We believe that the risks described in the “Risk Factors” section are material to investors, but other factors not presently known to us or that we currently believe are immaterial may also adversely affect us. The following summary should not be considered an exhaustive summary of the material risks facing us, and it should be read in conjunction with the “Risk Factors” section and the other information contained in this Annual Report on Form 10-K.

- Our revenue and results of operations are highly dependent on the overall demand for advertising.
- If our existing customers do not expand their usage of our platform, or if we fail to attract new publishers and buyers, our growth will suffer. Moreover, any decrease in the use of the advertising channels that we primarily depend on, or failure to expand into emerging channels, could adversely affect our business, results of operations, and financial condition.
- Our results of operations may fluctuate significantly and may not meet our expectations or those of securities analysts and investors.
- If we fail to make the right investment decisions in our platform, or if we fail to innovate and develop new solutions that are adopted by publishers, we may not attract and retain publishers and buyers, which could adversely affect our business, results of operations, and financial condition.
- We must scale our platform infrastructure to support anticipated growth and transaction volume. If we fail to do so, or doing so becomes too costly, we may limit our ability to process ad impressions, and we may lose revenue.
- Our efforts to provide new or expanded offerings may not be successful, or we may not be able to scale our offerings to meet demand in a timely manner, and, as a result, we may not realize a return from our investments.
- The rejection of digital advertising by consumers, through opt-in, opt-out or ad-blocking technologies or other means or the restriction on the use of third party-cookies, mobile device identifiers or other tracking technologies, could adversely affect our business, results of operations, and financial condition.
- The disabling of third-party cookies, and the potential of others to develop proprietary replacements for cookies, could adversely affect our business, results of operations, and financial condition.
- Our business depends on our ability to collect, use, and disclose data to deliver advertisements. Any limitation imposed on our collection, use or disclosure of this data could significantly diminish the value of our solution and cause us to lose publishers, buyers, and revenue. Consumer tools, regulatory restrictions and technological limitations all threaten our ability to use and disclose data.
- If publishers, buyers, and data providers do not obtain necessary and requisite consents from consumers for us to process their personal data, we could be subject to fines and liability.
- The digital advertising industry is intensely competitive, and if we do not effectively compete against current and future competitors, our business, results of operations, and financial condition could be adversely affected.
- Market pressure may reduce our revenue per impression.
- Seasonal fluctuations or market changes in digital advertising activity could adversely affect our business, results of operations, and financial condition.
- If ad formats and digital device types develop in ways that prevent advertisements from being delivered to consumers, our business, results of operations, and financial condition may be adversely affected.
- If we fail to detect or prevent fraud on our platform, or malware intrusion into the systems or devices of our publishers and their consumers, publishers could lose confidence in our platform, and we could face legal claims.
- Our success depends on our ability to retain key members of our management team, and on our ability to hire, train, retain, and motivate new employees.
- We are subject to payment-related risks if demand-side platform (“DSP”) buyers dispute or do not pay their invoices, and if DSPs file for bankruptcy protection or there are any decreases in payments, it could adversely affect our reputation, business, results of operations, and financial condition.
- Our international operations subject us to additional costs and risks, and our continued international expansion may not be successful.
- Our use and reliance upon technology and development resources in India may expose us to unanticipated costs and liabilities, which could affect our ability to realize cost savings from our operations in India.
- We depend on third-party data centers, the disruption of which could adversely affect our business, results of operations, and financial condition.

- Platform outages or disruptions, including due to cyberattacks or our failure to maintain adequate security and supporting infrastructure, could adversely affect our business, results of operations, and financial condition.
- Our software platform could be susceptible to errors, defects, or unintended performance problems that could adversely affect our business, results of operations, and financial condition.
- Our continued business success depends upon our ability to offer high-quality inventory with appropriate viewability capabilities.
- Future acquisitions or strategic investments could be difficult to identify and integrate, divert the attention of management, and could disrupt our business, dilute stockholder value and adversely affect our business, results of operations, and financial condition.
- We rely on publishers, buyers, and partners to abide by contractual requirements and relevant laws, rules, and regulations when using our platform, and legal claims or enforcement actions resulting from their actions could expose us to liabilities, damage our reputation, and be costly to defend.
- We are subject to frequently evolving laws, regulations and industry requirements related to data privacy, data protection, information security, and consumer protection across the markets we operate in.
- Legal uncertainty and industry unpreparedness for new regulations may mean substantial disruption and inefficiency, demand constraints, and reduced inventory supply and value.
- Recent rulings from the Court of Justice of the European Union invalidated the EU-US Privacy Shield as a lawful means for transferring personal data from the European Union to the United States; this introduces increased uncertainty and may require us to change our EU data practices and/or rely on an alternative legally sufficient compliance measure.
- Our failure or the failure of third parties to protect our sites, networks and systems against security breaches, or otherwise to protect our confidential information, could damage our reputation and brand and substantially harm our business and operating results.
- We may be subject to intellectual property rights claims by third parties, which are costly to defend, could require us to pay significant damages, and could limit our ability to use technology or intellectual property.
- Our intellectual property rights may be difficult to enforce and protect, which could enable others to copy or use aspects of our technology without compensating us, thereby eroding our competitive advantages and having an adverse effect on our business, results of operations, and financial condition.
- We rely on licenses to use the intellectual property rights of third parties to conduct our business.
- Our platform relies on third-party open source software components. Failure to comply with the terms of the underlying open source software licenses could expose us to liabilities, and the combination of open source software with code that we develop could compromise the proprietary nature of our platform.
- If we fail to maintain effective internal controls, our ability to produce accurate financial statements and other disclosures on a timely basis could be impaired.
- Our credit agreement contains operating and financial covenants that may restrict our business and financing activities.
- Our tax liabilities may be greater than anticipated.
- Tax changes could affect our effective tax rate and future profitability.
- The trading price of the shares of our Class A common stock has been and may continue to be volatile and could subject us to litigation.
- Insiders have substantial control over our company, including as a result of the dual class structure of our common stock, which could limit or preclude your ability to influence corporate matters, including the election of directors and the approval of any change of control transaction.

PART I

ITEM 1. BUSINESS

Overview

PubMatic, Inc. (“we”, or “us) is an independent technology company seeking to maximize customer value by delivering digital advertising’s supply chain of the future. Our mission is to fuel the endless potential of Internet content creators.

Our integrated technology platform empowers the world’s leading digital content creators (which we collectively refer to as “publishers”) across the open internet to maximize monetization of their advertising inventory. Our platform also provides control and transparency to buyers, which includes advertisers, agencies, agency trading desks, and demand side platforms (“DSPs”) (which we collectively refer to as “buyers”) and enables both publishers and buyers to drive better business outcomes.

Our Industry

As the digital advertising ecosystem continues to evolve, some key industry trends include:

Continued Growth of Digital Media Across Multiple Platforms: Consumers have dramatically increased the amount of time they spend online, on mobile devices, or watching content through connected television. Numerous activities that historically occurred offline continue to shift online. To better reach consumers, every major media format has transitioned or is in the process of transitioning content from traditional or analog means of delivery to digital across every media channel and device. In addition, digital advertising continues to evolve into new areas such as commerce media, which creates new opportunities for growth.

Automation and Data Processing: The challenges of scale and the complexity of the digital advertising ecosystem require an automated, fast, and efficient approach to purchasing ads online, known as programmatic advertising. Programmatic advertising, on an automated basis, enables buyers to purchase ad impressions on publisher supplied inventory within milliseconds in a sophisticated, technology-driven marketplace. With header bidding, which enables a single parallel auction by a publisher with multiple interested parties simultaneously, the industry has seen a significant increase in the number of ad impressions that need to be processed and analyzed in real-time by each participant in the digital advertising ecosystem.

As consumers increasingly engage with digital media, and as advertisers bid on a growing array of ad formats and impressions, an immense amount of data is generated. This data includes anonymized consumer information about interests and intent, log files of winning and losing advertiser bids, and transaction records for billing and payment reconciliation. Technology infrastructure platforms must rapidly process this data while offering a seamless digital ad experience for consumers. Companies must continue to innovate and find efficiencies in their data processing, including through the use of machine learning and artificial intelligence, to maintain pace with growing volumes of transactions to maintain profitability.

Consolidation and Convergence of the Sell Side and Buy Side Technology Platforms: As advertisers increase the percentage of their overall advertising budgets spent on digital formats, they are increasingly demanding greater efficiency and control of their entire digital advertising supply chain. Efficiency includes reducing operational costs, increasing the simplicity of the buying process, and increasing the return on ad spend or investment. Control refers to the buyer determining which media, content, or consumer their ad spend is being invested with to avoid appearing next to content that reflects poorly on the advertiser’s brand or purchasing fraudulent or fake inventory.

This desire for efficiency and control has led to a growing trend among advertisers to establish direct relationships with vendors in the digital advertising ecosystem that have transparent business practices and technical capabilities to meet their objectives. Additionally, buyers are increasingly interested in adopting integrated solutions on one platform that provides both demand side and sell side functionality, to deliver on their efficiency and control objectives. This has resulted in a larger portion of media spend consolidating onto fewer, more capable technology platforms.

Data Privacy and Regulatory Challenges: There is an increasing awareness of how Internet user data is being leveraged to target ads, resulting in a growing number of privacy laws and regulations. In addition to governmental actors, including legislatures and regulatory agencies, there have also been a growing number of consumer-focused non-profit organizations and commercial entities advocating for privacy rights. These laws and institutions enable Internet consumers to assert their rights over the use of their online data in advertising transactions, a trend which we support. The digital advertising landscape must continue to adapt to these trends and incorporate awareness of consumer privacy and compliance with applicable laws and regulations.

In addition, several companies have greatly limited the use of third-party cookies and other non-privacy safe identifiers. We believe the “Open Internet” outside the “walled gardens” (a colloquial term that refers to closed advertising platforms such as Google and Facebook) will shift from targeting by anonymized and invisible third-party cookies or identifiers to known identities based on consumer choice and opt-in. We expect this shift towards significantly more reliable and accurate consumer identity will create short term disruption but could have the potential to significantly increase advertiser return on investment (“ROI”) and therefore publisher revenue in the long run.

Our Digital Advertising Solutions

We generate revenue from the use of our platform for the purchase and sale of digital advertising inventory.

We primarily work with publishers and app developers who allow us direct access to their ad inventory, as well as select channel partners that meet our quality and scale thresholds. Our channel partners aggregate and provide further access to thousands of sites and apps from smaller publishers. We generate revenue through fees charged to our publishers, which are generally a percentage of the value of the advertising impressions that publishers monetize on our platform.

We also generate revenues from our other products such as OpenWrap, our header bidding solution, and Connect, our solution that provides additional data and insights to buyers, which are sold separate from or in conjunction with use of our platform. We continue to invest in new features for our existing solutions and new solutions such as our new product Activate, which allows buyers to execute direct deals on our platform across publisher inventory, and Convert, our commerce media solution, both of which were launched in 2023.

We also enter into written service agreements with our buyers, primarily DSPs, that allow them to use our platform to buy ad inventory. Two of our largest DSP relationships are with Google and The Trade Desk. We are party to an agreement with Google LLC, under which Google is a buyer on our platform. The initial one-year term of the current agreement ended in May 2019, and it automatically renews for successive one-year terms unless either party provides written notice at least 60 days’ prior to the end of the initial term or such successive terms. Either party may terminate for convenience upon providing at least 30 days’ prior written notice. We signed a prior similar agreement with a Google subsidiary in 2012. We are also party to an agreement with The Trade Desk, Inc., under which The Trade Desk is a buyer on our platform. The initial term of the agreement ended in November 2013, and it automatically renews for successive one-year terms. Either party may terminate for convenience upon providing at least 30 days’ prior written notice.

Digital advertising spending has historically been subject to seasonality. For example, digital advertisers tend to devote a large portion of their budgets to campaigns in the fourth quarter of the year, to coincide with consumer holiday spending, and then have a significantly smaller advertising budget in the first calendar quarter. Pricing of digital ad impressions in the fourth quarter is likely to be higher due to increased demand, while those same impressions may be priced lower in other quarters.

Our Competitive Advantage

Publishers are actively seeking to maximize the value of their ad inventory, and buyers are seeking to increase advertising ROI. We believe that our specialized cloud platform, supported by rapid innovation, and transparent business model provide incentives to buyers to consolidate an increasing share of their total digital spend on our platform. At the same time, we believe our direct publisher relationships, omnichannel header bidding capabilities, global scale, and access to incremental advertiser demand through direct relationships with buyers drive superior yield for publishers.

We believe the following strengths provide us with long-term competitive advantages:

Global, Omnichannel Reach: We are a global business with distributed critical infrastructure and a go-to-market presence in every major advertising market in the world outside of China. Many of our publisher customers have diversified businesses with media properties and audiences across the globe and with a wide variety of ad products, including display and video ads across desktop, tablet, mobile, and connected TV devices. Similarly, many of our advertiser and agency customers have brand portfolios that span the globe with a variety of ad campaign requirements – from branding to performance, to combinations thereof. All of these parties actively seek global, omnichannel platform providers that can solve for their needs around the world and across ad formats and devices. Our offering is omnichannel and targets a diverse set of publishers touching many ad formats, and digital device types, including mobile app, mobile web, desktop, display, video, over-the-top video/connected TV (“OTT/CTV”), and rich media. Due to the global, omnichannel reach of our infrastructure, we believe we are well positioned to help publishers and ad buyers make their advertising businesses more efficient and effective.

Customer Control and Partnership: Due to our status as an independent infrastructure provider prioritizing transparency, we can be more closely aligned with both publishers and buyers. We do not own media and therefore do not have a vested interest in driving ad revenue to specific media properties. We do not take a position in media or arbitrage media. Transparency is a fundamental principle of our business and we provide detailed insights into fees to our customers. Our customers can therefore be more confident that our algorithmic software decisions and our guidance are independent and unbiased. Our trusted status has enabled us to build direct relationships with publishers, advertisers, agencies, and DSPs. Leveraging these relationships, we create bespoke products that meet our customers' needs. Our ability to meet the demands of both buyers and inventory sellers enables us to produce superior outcomes for all industry participants.

Sustained Innovation of our Cloud Platform: Our specialized cloud platform enables real-time programmatic advertising transactions in a market characterized by significant data and impression volumes, regulatory complexity, and increased focus on transparency and privacy. We have maintained a demonstrated track record of stability and agility to address these market conditions and provide superior outcomes for both publishers and buyers. Additionally, we own and operate our proprietary software and hardware infrastructure around the world. This approach saves significant costs compared to companies that rely on public cloud alternatives due to the data-intensive nature of digital advertising and the immense volume of ad impressions created by header bidding.

Growth Strategy

We believe we are positioned to benefit from tailwinds in the advertising industry, including the rapid proliferation of digital media, the need for purpose-built infrastructure to address the increasing complexity in the digital advertising landscape, and increasing consumer time spent online. Our growth strategy includes:

Attract New Customers and Expand our Relationship with Existing Customers Globally: We constantly seek to acquire new customers and retain our relationships with existing publishers and buyers around the world. We invest in continued innovation based on the ever-changing market. We utilize customer feedback to help address the demands of publishers and buyers in order to maintain and improve our relationships with those customers. We are constantly evaluating new markets with a strategy to use our existing global infrastructure and adjacent sales offices, or by expanding our infrastructure footprint and placing personnel directly in those markets.

Expansion of SPO Agreements and Activate: As advertisers and agencies increasingly consolidate their spending with fewer larger technology platforms, we seek to increase the proportion of their digital ad spending on our platform through direct relationships. We have entered into supply path optimization ("SPO") agreements directly with both advertisers and agencies through various arrangements including custom data and workflow integrations, product features, and volume-based business terms. The effect of these SPO agreements is to increase the volume of ad spend on our platform without corresponding increases in technology costs. Additionally we believe our Activate platform provides buyers with the transparency and reporting demands of the buyers and a more efficient, programmatic way to access publisher inventory.

Expansion of Video and Mobile: We see significant growth opportunities in both video and mobile as consumers shift more of their time online to mobile devices and online streaming services. For example, as streaming video continues to expand and ad-supported models become more prevalent, we expect advertising budgets will shift from linear television to CTV.

Monetization Excellence: We strive to continuously improve publisher revenue and advertiser ROI by investing in our technology and improving our machine learning capabilities. We leverage our artificial intelligence and machine learning capabilities, alongside our growing publisher and buyer relationships, to improve liquidity in our marketplace. Increasing numbers of ad impressions, increasing advertiser bids, and data proliferation provide us with many opportunities to better match sellers and buyers of ad inventory. We believe that improved matching will lead to the growth of our platform and greater publisher and buyer retention.

Accelerate New Revenue Streams: As we grow our customer base and process increasing volumes of ad impressions and data, we gain insights into new challenges we can solve on behalf of our customers. We focus on creating new products that we believe address our customers' needs, at times before the customer is aware of such need. For example, the Open Internet continues to shift from targeting by anonymized and invisible third-party cookies that consumers must opt out of, towards known first-party identity based on consumer choice and opt-in or other privacy compliant solutions. As a result, publishers and advertisers must transition to a new identity paradigm. We have built a comprehensive platform that allows for the use of many of the leading identifiers in a scaled and privacy-compliant fashion resulting in increased publisher revenue and buyer ROI. We will continue to invest in our go to market efforts to sell these new offerings such as Connect, Activate and Convert, which drives new revenues streams, and have begun to shift customers from a free to fee model for existing solutions such as OpenWrap.

Infrastructure Platform Efficiency: We have a track record of expanding the capacity of our infrastructure platform, while maintaining or reducing the corresponding costs related to processing impressions transacted on our platform on a per impressions basis. We expect to continue to invest in both software and hardware infrastructure to continue growing the number of valuable ad impressions we process on our platform.

Additionally, we analyze the data on our platform through extensive application of artificial intelligence technologies, including machine learning and natural language processing. By leveraging our artificial intelligence and machine learning capabilities we are able to more cost effectively improve outcomes for our customers. For example, when our machine learning models predict that an impression will attract high bids, our algorithms adjust pricing guidance to bidders in real time, which can lead to significant inventory yield improvements for publishers and higher win rates for ad buyers. Our ability to accurately predict and monetize high value impressions also allows us to operate more efficiently, due to the fact that the cost of processing low-value impressions and high-value impressions are approximately the same. Our algorithms, such as for impression throttling, deploy a variety of means to optimize traffic sent to DSPs, agencies, and advertisers.

Regulatory Compliance: A growing set of privacy regulations have introduced complexity regarding the collection, use, and transmission of consumer data to the digital advertising ecosystem. Most notably, these include the General Data Protection Regulation (the “GDPR”) which took effect in the European Union in May 2018, and the California Consumer Privacy Act (the “CCPA”) which took effect in January 2020 and was later amended by the California Privacy Rights Act (the “CPRA”), with those amendments taking effect in January 2023. The GDPR and the CCPA, as well as other global and U.S. state consumer privacy laws and regulations, have created a compliance burden for advertisers, publishers, and their partners to navigate. The advertising industry has developed a number of the technical and policy solutions to create standards for compliance, such as the Interactive Advertising Bureau (the “IAB”) Transparency Consent Framework (“TCF”).

We have implemented a number of technology innovations, process enhancements, and industry solutions in response to our publishers’ increased obligations. Through the TCF and other frameworks, we can identify and pass user consent parameters, and opt-in or opt-out as applicable, in a bid request. We are also able to evaluate whether such consents apply to our various demand partners, such as DSPs and agencies.

Our Technology

We have designed our technology to efficiently process real-time advertising transactions while leveraging data to optimize outcomes for publishers and buyers. We own and operate our software and hardware infrastructure globally, which saves significant infrastructure expenditures as compared to public cloud alternatives. We designed our platform using a flexible, service-oriented architecture in order to facilitate rapid development of new solutions, to meet evolving industry demands, and to support new use cases and new ad formats. Our agile development process and flexible, service-oriented architecture empower our development teams to routinely convert a requirement into working software within a typical time frame of two weeks or less.

We offer our solution as a complete, unified offering for publishers who want a simple, efficient and comprehensive solution. We also offer modular access to our platform via rich application programming interfaces and a mobile software developer kit for mobile applications (“SDK”), for publishers who wish to integrate with or extend the platform or develop new business models and custom advertising solutions.

Some key benefits of our platform to publishers and buyers include:

- **Scalability:** Our specialized cloud infrastructure is designed for the rapid and efficient processing of real-time, programmatic ad transactions and the aggregation and analysis of the significant data accompanying each transaction. The hundreds of billions of ad impressions and trillion advertiser bids that we process every day generate enormous volumes of data that we harness to drive higher revenue for our publishers and increased ROI for our buyers.
- **Transparency:** We provide log-level data to buyers and provide transparency on every ad impression, which gives buyers full control over which publishers, ad formats, and specific ad impressions on which they would like to bid.
- **Built in Quality Controls:** We have developed a multi-pronged strategy to create a high-quality marketplace beginning with high quality publisher selection, supported by proprietary and third-party fraud detection software, manual review, timely fraud investigations, and a fraud-free program in which buyers are credited for any fraudulent inventory they may have purchased on our platform.

- **Data Driven Decisions:** We leverage our artificial intelligence and machine learning capabilities to record, aggregate, analyze, and act on vast amounts of data in a matter of milliseconds to help our customers optimize their digital advertising businesses in real-time. This data includes first party customer owned audience data, ad impression and bid request data, and advertiser bid response data. We flow all of this data through our machine learning platform in order to run thousands of algorithmic iterations on trillions of data points per month. These capabilities improve long term marketplace liquidity resulting in increased publisher revenue and higher advertiser ROI.
- **Self-Serve:** Our cloud infrastructure solutions are available via self-serve to publishers and buyers, including an easy-to-use customer user interface and a set of application programming interfaces that allow our publisher customers to configure new inventory, extend into new geographies or ad formats, review reporting insights, and manage and track payments and billing cycles.
- **Reporting:** Our technology platform provides extensive reporting capabilities to both buyers and publishers via application programming interfaces for direct integration into a customer’s reporting systems. Publishers are able to review performance, monitor key performance indicators (“KPIs”), and make adjustments to their set up and optimization in real time. Buyers have access to campaign insight data to facilitate testing and adaptation toward maximizing ROI. Detailed performance by ad format, channels, and ad sizes allows for optimization to achieve maximum ROI.

Sales and Marketing

We primarily deploy a self-service model and focus our sales and marketing efforts on supporting, advising, and training our publishers to optimize their usage of our platform. We employ a nimble in-market sales team with expertise in programmatic advertising to attract premium publishers to our platform. We have dedicated teams focused on new publisher acquisition and existing publisher relationship management. New publishers on our platform work closely with our Customer Success team, which handles on-boarding and providing support throughout the publisher relationship life cycle. Our Customer Success team is organized and specialized by type of ad format and device and is trained to both maximize the number of integrations with each publisher and deploy the value-added solutions that we provide.

Similarly, we have teams focused on new business acquisition and existing partner retention and expansion for advertisers, agencies, and DSPs. These teams focus on onboarding new partners and increasing spend across a variety of ad formats, devices, and geographies.

Our marketing team is focused on achieving thought leadership, educating customers on how to harness programmatic advertising to improve their business, guiding buyers on how to maximize ROI via the PubMatic cloud infrastructure, supporting our sales team, generating new leads, and increasing awareness for our brand.

Our Competition

The digital advertising ecosystem is competitive and complex due to a variety of factors. While programmatic header bidding has enabled the purchasing and selling of vast amounts of digital advertising inventory, there now exist significant challenges related to the proliferation of media across platforms, transaction speed, increased costs, transparency, and regulatory requirements. To address these issues at scale for both publishers and buyers, we provide specialized software and hardware infrastructure to optimally power technology-driven transactions. We compete with other large SSPs, smaller private SSPs in markets around the world, and divisions of larger technology companies.

While there is direct competition, our cloud infrastructure is interoperable with the major header bidding software frameworks including open source Prebid, Google’s Open Bidding, Amazon’s Transparent Ad Marketplace, and others.

We have also demonstrated an ability to extend our header bidding infrastructure into a variety of higher-growth ad formats such as mobile web, mobile app, digital video, and most recently OTT/CTV.

We believe that our specialized platform and cloud infrastructure enable us to compete favorably on the factors described above. In addition, we believe that new market entrants would find it difficult to gain direct access to publishers and ad buyers given their limited scale and face significant costs to integrate with publishers and ad buyers and comply with evolving regulatory requirements around the world.

Intellectual Property

The protection of our technology and intellectual property is an important component of our success. We protect our intellectual property rights by relying on federal and state statutory and common law rights, foreign laws where applicable, and contractual restrictions. We seek to control access to our proprietary technology by entering into non-disclosure agreements with third parties and disclosure and invention assignment agreements with our employees and contractors.

We consider our trademarks, patents, copyrights, trade secrets, and other intellectual property rights to be, in the aggregate, material to our business. We currently own two issued U.S. patents, expiring in 2034, relating to online advertising and auction techniques. We also own one issued Japanese patent. We also own trademark registrations and applications for the “PubMatic” name and variants thereof and other product-related marks in the United States and certain foreign countries. We have also registered numerous Internet domain names related to our business. We believe our platform would be difficult, time consuming, and costly to replicate.

We intend to pursue additional intellectual property protection to the extent we believe it would be beneficial and cost effective. Despite our efforts to protect our intellectual property rights, they may not be respected in the future or may be invalidated, circumvented, or challenged. In addition, the laws of various foreign countries where our products are distributed may not protect our intellectual property rights to the same extent as laws in the United States.

Privacy and Data

We are subject to laws and regulations governing privacy and the transmission, collection, and use of personal data. Interest-based advertising, or the use of data to draw inferences about a consumer’s interests and deliver relevant advertising to that consumer, has come under increasing scrutiny by legislatures, regulatory agencies, and self-regulatory bodies, privacy advocates, academics, and commercial interests in the United States and abroad that focus on data protection and consumer privacy. In particular, much of this scrutiny has focused on the use of cookies and other tracking technologies that collect or aggregate information about consumers’ online browsing and mobile app usage activity. Because both our company and our publishers rely upon large volumes of such data collected primarily through cookies and other tracking technologies, it is essential that we monitor legal requirements and other developments in this area, domestically and globally, maintain a robust privacy and security compliance program, and engage in responsible privacy practices, including providing consumers with notice of the types of data we collect, how we collect it, with whom we share it, how we use that data to provide our solutions, and the applicable choices we offer consumers.

We provide notice through our privacy policies and notices, which can be found on our website at www.pubmatic.com. We do not collect information, such as names, addresses or telephone phone numbers, for providing our advertising services that are directly identifying of the underlying individual. We take steps not to collect and store such information (although on occasion, our publishers voluntarily share information of their consumers with us and in such circumstances, we require the publishers to have obtained all necessary consents for such sharing). Our advertising and reporting rely on information that does not, on its own, directly reveal the identity of the underlying individuals (and we do not attempt to associate this information with other information that can identify such individuals). We typically do collect and store IP addresses, geo-location information, and device identifiers that are considered personal data or personal information under the privacy laws of some jurisdictions or otherwise may be the subject of current or future data privacy legislation or regulation. The definition of personally identifiable information, personal information, or personal data, varies by jurisdiction and continues to evolve in ways that may require us to adapt our practices to avoid violating laws or regulations related to the collection, storage, and use of consumer data. As a result, our technology platform and business practices must be assessed regularly against a continuously evolving legal and regulatory landscape, and we have adopted data minimization practices that mitigate our compliance risks.

There are also a number of specific laws and regulations governing the collection and use of certain types of consumer data relevant to our business. For example, the Children’s Online Privacy Protection Act (“COPPA”) imposes restrictions on the collection and use of data provided by children under the age of 13 by child-directed websites or online services, such as apps, directed to children or any website if the collection of such data is known to the website or app operator. We have taken various steps to implement a system in which our publishers are contractually obligated to either flag or notify us in writing of child-directed websites. When websites are flagged, or we receive notice of such websites, we do not collect personal information, as defined by COPPA, including cookie identifiers that can recognize the same consumer across multiple sites over time, or location information more specific than street and city, on such websites or online services.

Additionally, our compliance with our privacy policy and our general consumer data privacy and security practices are subject to review by the Federal Trade Commission, which may bring enforcement actions to challenge allegedly unfair and deceptive trade practices, including the violation of privacy policies and representations or material omissions therein.

Certain State Attorneys General in the United States may also bring enforcement actions based on comparable state laws or federal laws that permit state-level enforcement. In California, for example, the Attorney General of the newly created California Privacy Protection Agency (“CPPA”, which is charged with CCPA rule-making and enforcement) may bring regulatory actions for violations of the CCPA. We have registered as a data broker in California with the California Attorney General. We have also adopted the IAB CCPA Compliance Framework, which includes a technical specification to identify consumer signals to opt-out of sale of their data, and have signed the IAB Limited Service Provider Agreement that imposes service provider obligations for certain opted-out bid requests. These IAB frameworks are designed to facilitate compliance with the CCPA although neither the California Attorney General’s office nor the CPPA has yet approved such frameworks. The CCPA and CPRA set forth high potential liabilities for data privacy violations on a per-record basis, and the industry faces an uncertain compliance burden as our partners and publishers work to become compliant with the law. Adding further complexity in California, the CPRA imposed additional data protection obligations on companies doing business in California, including additional consumer rights processes and opt-outs for certain uses of sensitive data and sharing of personal data. Likewise, several U.S. state laws took effect in 2023: Virginia enacted the Consumer Data Protection Act (“CDPA”), Connecticut enacted the Connecticut Data Privacy Act (“CTDPA”), Colorado enacted the Colorado Privacy Act (“CPA”), and Utah enacted the Utah Consumer Privacy Act (“UCPA”), which impose consumer rights processes and requires user consent for certain types of sensitive data. Additional state privacy laws have been enacted and are set to take effect between 2024 and 2026: the Florida Digital Bill of Rights (July 1, 2024), Oregon’s protections for the personal data of consumer enacted through SB 619 (July 1, 2024), the Texas Data Privacy and Security Act (July 1, 2024), Montana’s Consumer Data Privacy Act (October 1, 2024), the Delaware Personal Data Privacy Act (January 1, 2025), Iowa’s Consumer Data Protection Act (January 1, 2025), the New Jersey Senate Bill 332 (January 15, 2025), the Tennessee Information Protection Act (July 1, 2025) and the Indiana Consumer Data Protection Act (January 1, 2026). These laws also set forth high potential liabilities for data privacy violations, including on a per-record basis, and the industry faces an uncertain compliance burden as our partners and publishers work to become compliant with these laws in the future.

Outside of the United States, our privacy and data practices are subject to regulation by data protection authorities and other regulators in the countries in which we do business. The use and transfer of personal data in member states of the European Union is currently governed under the GDPR, which grants additional rights to consumers about their data, such as deletion and portability, and generally prohibits the transfer of personal data of EU subjects outside of the EU, unless the party exporting the data from the EU implements a compliance mechanism designed to ensure that the receiving party will adequately protect such data. We had relied on the EU-U.S. Privacy Shield framework (“Privacy Shield Framework”), to transfer personal data of EU subjects to the United States, but the Privacy Shield Framework was declared invalid by the Court of Justice of the European Union (“CJEU”) on July 16, 2020. In October 2022, the Biden administration negotiated new privacy transfer terms with EU regulators, and signed an Executive Order directing the steps the United States would take to implement its commitments to an EU/U.S. Data Privacy Framework. On July 10, 2023, the European Commission adopted an adequacy decision for the EU-U.S. Data Privacy Framework, and in October 2023 we self-certified to comply with the EU-U.S. Data Privacy Framework, the UK Extension to the EU-U.S. Data Privacy Framework, and the Swiss-U.S. Data Privacy Framework as a mechanism to legally facilitate personal data transfers from the EU, the U.K., and Switzerland to the U.S. This new Data Privacy Framework could be subject to legal challenge in front of the CJEU, specifically by Max Schrems, who successfully litigated to invalidate the Privacy Shield in 2020 and has indicated that he will legally challenge these new frameworks.

Related to cross-border transfers, in its July 16, 2020 decision, while the CJEU upheld the adequacy of the standard contractual clauses (a standard form of contract approved and promulgated by the European Commission as an adequate personal data transfer mechanism and potential alternative to the then-invalidated Privacy Shield Framework), it made clear that reliance on them alone may not necessarily be sufficient in all circumstances and cast doubt on their future use. Use of the standard contractual clauses must now be assessed on a case-by-case basis taking into account the legal regime applicable in the destination country, in particular applicable surveillance laws and rights of individuals. The use of standard contractual clauses for the transfer of personal data specifically to the United States remains under review by a number of European data protection supervisory authorities.

The GDPR, as originally implement by the respective EU members states and later adopted by the U.K. following Brexit (the “UK GDPR”), sets out higher potential liabilities for certain data protection violations, which may result in fines up to the greater of €20 million or 4% of an enterprise’s global annual revenue. Additionally, the UK GDPR will also have the ability to fine up to the greater of £17.5 million or 4% of global turnover. Further, the EU is currently in discussions to replace the ePrivacy Directive (commonly called the “Cookie Directive”) with the ePrivacy Regulation that governs the use of technologies that collect, access, and store consumer information and may create additional compliance burdens for us in Europe.

Other jurisdictions have enacted legislation that closely tracks the concepts, obligations, and consumer rights described in the GDPR, including Brazil's General Data Protection law and Thailand's Personal Data Protection Act. Some jurisdictions, including Russia and China, have in recent years enacted data localization laws, which require any personal information of citizens of those jurisdictions to be stored and processed on servers located in those jurisdictions. Such laws are gaining momentum and are being enforced by local authorities.

Beyond laws and regulations, we are also members of self-regulatory bodies that impose additional requirements related to the collection, use, and disclosure of consumer data, including the IAB, the Digital Advertising Alliance, and the NAI. Under the requirements of these self-regulatory bodies, in addition to other compliance obligations, we provide consumers with notice via our privacy policies about our use of cookies and other technologies to collect consumer data, our collection and use of consumer data to deliver interest-based advertisements, and consumers' opt-out choices. We also allow consumers to opt-out from the use of data we collect for purposes of interest-based advertising through mechanisms described in our privacy policies available on our website. Some of these self-regulatory bodies have the ability to discipline members or participants, which could result in penalties and cause reputational harm. Additionally, some of these bodies might refer violations of their requirements to the Federal Trade Commission or other regulators.

Our Team and Culture

Our culture and our team are our most important asset in building and expanding our business. Our team identifies new problems to solve, builds solutions, optimizes and extends our infrastructure, and acquires and serves our customers. We believe that strong and diverse customer teams deepen customer relationships, promote innovation, and increase productivity.

Our people strategy revolves around creating employee experiences that foster deep employee engagement built upon personal development and achievement that is supported by continuous feedback, learning, and team building. Our workplaces have been recognized as a Great Place to Work in the United States, India, Asia, and Europe.

We have achieved these results by delivering custom learning programs and creating opportunities for advancement that align with the dynamic needs of our business. Our practice of open and transparent communication coupled with a performance-based approach to compensation has created a culture in which employees feel empowered in their ability to influence and impact our business and be rewarded for their efforts. The value proposition we offer to our employees is rounded out with strong benefits programs that include paid family leave, health and wellness benefits and company sponsored opportunities to give back to the communities in which they work and live.

We are also committed to being inclusive in our hiring practices, promotion practices, and management practices as a means of ensuring equal opportunity for all employees as we continue to diversify our workforce. The diversity of our workforce has been publicly documented since 2017 with our annual Diversity & Inclusion Report. Execution of this plan is overseen in part by our Diversity & Inclusion Committee. The plan has a global focus that takes into consideration regional cultural differences to provide interactive employee experiences that drive continuous support for inclusion throughout our organization.

It has always been our goal to attract and retain the best talent in the industry and our inclusive recruiting process includes finding those candidates that best add to our company mission, values, and cultural principles. These three guiding elements form a social contract between employees as well as set expectations for the common behaviors we can expect from each other and inform how we treat our customers. They are infused in every aspect of our business, from employee experience and workplace culture to marketing strategies and customer success.

Values:

- We put the customer first.
- We are biased towards action.
- We are leaders and innovators.
- We are committed to integrity.
- We celebrate teamwork.

Cultural Principles:

- We will empower every individual team member and treat each other as partners.
- We will make having fun a priority.
- We will hire and retain the best talent.
- We will communicate internally with honesty, transparency, and authenticity, including positive and negative information.
- We will encourage diversity and inclusion of ideas and people, creating a high-trust and high-performance workplace.

As of December 31, 2023, we had 948 employees, of whom 290 were located in the United States, 537 in India, and 121 in our other offices around the world.

Corporate Information

We were incorporated in the State of Delaware in 2006.

Our internet address is www.pubmatic.com. We file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements and related amendments, exhibits and other information with the Securities and Exchange Commission (the “SEC”). You may access and read our filings without charge through the SEC’s website at www.sec.gov or through our website at <https://investors.pubmatic.com>, as soon as reasonably practicable after such materials are electronically filed with or furnished to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act.

Website addresses referred to in this Annual Report on Form 10-K are not intended to function as hyperlinks, and the information contained on or available through our website is not incorporated into, and does not form a part of this Annual Report on Form 10-K or any other report or documents we file with or furnish to the SEC.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including our consolidated financial statements and related notes, before making an investment decision. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that affect us. If any of the following risks materializes, our business, financial condition, results of operations, and prospects could be materially harmed, which could cause the price of our Class A common stock to decline, and cause any investment in our Class A common stock to lose some or all of its value.

Risks Related to Our Business, Results of Operations and Growth

Our revenue and results of operations are highly dependent on the overall demand for advertising.

Our business depends on the overall demand for advertising and on the economic health of our current and prospective publishers and buyers. In 2023, macroeconomic factors such as inflation, rising interest rates and softening demand in certain verticals caused some advertisers to reduce their advertising budgets. Such macroeconomic factors, as well as broader economic downturns, recessions, inflation, further changes in interest rates or foreign exchange rates or any supply chain disruptions, changes in the tax treatment of advertising expenses, or general uncertainty, in North America, Europe, and Asia, where we do most of our business; could adversely affect our business, results of operations, and financial condition. In addition, the conflicts in Ukraine and Israel could cause unpredictable economic effects in Europe and EMEA, including potentially softening general consumer demand. Such conflicts have increased costs of labor and other items impacting our cost of revenue, and these conflicts and potential others may do so in the future. Reductions in overall advertising spending due to these factors could make it difficult to predict our revenue and could adversely affect our business, results of operations, and financial condition.

If our existing customers do not expand their usage of our platform, or if we fail to attract new publishers and buyers, our growth will suffer. Moreover, any decrease in the use of the advertising channels that we primarily depend on, or failure to expand into emerging channels, could adversely affect our business, results of operations, and financial condition.

We depend upon our buyer and publisher relationships, including channel partners, which aggregate large numbers of smaller publishers, to provide advertising space which we can offer to prospective buyers to continue to grow the usage of our platform. In doing so, we compete for both supply and demand with larger, well-established companies that may have technological or other advantages stemming from their broader experience in the market. We must continue to adapt and improve our technology to compete effectively, and customers have not always embraced our offerings due to various factors, including switching costs from moving away from pre-existing technology integrations, such as already implemented header bidding wrappers, and lack of awareness of our omnichannel offerings. Although we believe we provide superior transparency and accountability to such competitors, certain customers may make technological or financial demands that we are unable or unwilling to meet. These and other factors may make it difficult for us to increase our business with our publishers and buyers, cause some buyers to reduce their spending with us, or increase our costs of doing business, which could adversely affect our business, results of operations, and financial condition.

A relatively small number of premium publishers have historically accounted for a significant portion of the ad impressions sold on our platform, as well as a significant portion of our revenue from publishers, including a relatively small number of channel partners.

We generally do not have minimum commitments from publishers. As a result, the amount, quality, and cost of ad impressions available to us can change at any time with little or no prior notice, and we cannot assure you that we will have access to a consistent volume or quality of ad impressions at a reasonable cost, or at all. We depend upon a relatively small number of premium publishers and channel partners and expect to continue to do so for the foreseeable future. To support our continued growth, we seek to add additional publishers and buyers to our platform and to expand current utilization with our existing publishers and buyers. Any disruptions in our relationships with premium publishers, buyers, or our largest channel partners could adversely affect our business, results of operations, and financial condition. If we cannot retain or add individual publishers with valuable ad impressions, or if such publishers decide not to make their valuable ad impressions available to us, then our buyers may be less inclined to use our platform, which could adversely affect our business, results of operations, and financial condition.

A limited number of large demand side platforms (“DSPs”) – The Trade Desk and Google DV360 in particular – account for a significant portion of the ad impressions purchased on our platform. We depend upon these DSPs for a large percentage of impressions purchased and expect to do so for the foreseeable future. We have no minimum commitments from buyers to spend on our platform, so the amount of demand available to us can change at any time with little or no prior notice, and we cannot assure you that we will have access to a consistent volume or quality of ad campaigns or demand for our ad impressions at a reasonable price, or at all. Any disruptions in our relationships with DSPs, agencies, advertisers, or buyers could adversely affect our business, results of operations, and financial condition. If a buyer or group of buyers representing a significant portion of the demand in our marketplace decides to materially reduce use of our platform, it could cause an immediate and significant decline in our revenue and profitability and adversely affect our business, results of operations, and financial condition.

Historically, our buyers have predominantly used our platform to purchase mobile, display, and video advertising inventory from our publishers. We expect that these will continue to be significant channels used by our customers for digital advertising in the future. We also believe that our revenue growth may depend on our ability to expand within mobile, video, and in particular, CTV, and we are continuing to enhance such channels. We may not be able to accurately predict changes in overall advertiser demand for the channels in which we operate and cannot assure you that our investment in formats will correspond to any such changes or shifts in demand. Any decrease in the use of mobile, display, and video advertising, whether due to customers losing confidence in the value or effectiveness of such channels, regulatory restrictions or other causes, or any inability to further penetrate CTV or enter new and emerging advertising channels, could adversely affect our business, results of operations, and financial condition.

Our results of operations may fluctuate significantly and may not meet our expectations or those of securities analysts and investors.

We operate in an evolving industry with ever-changing customer needs, and, as a result, our business has evolved over time such that our operating history makes it difficult to evaluate our business and future prospects. Our results of operations have fluctuated in the past, and future results of operations are likely to fluctuate as well. Although we have experienced prolonged revenue growth, we may not be able to sustain this growth rate, current revenue levels, or profitability. In addition, because our business is evolving, our historical results of operations may be of limited utility in assessing our future prospects. We expect to face challenges, risks, and difficulties frequently experienced by growing companies in rapidly developing industries, including those relating to:

- changes in demand and pricing for ad impressions sold on our platform;
- changes in our access to valuable ad impressions from publishers;
- responding to evolving industry standards and government regulations that impact our business, particularly in the areas of data protection and consumer privacy;
- developing, maintaining, and expanding relationships with publishers, DSPs, agencies, advertisers, and buyers;
- seasonality in our business;
- innovating and developing new solutions that are adopted by and meet the needs of publishers, DSPs, agencies, advertisers, and buyers;
- competing against companies with a larger customer base or greater financial or technical resources;
- changes in the structure of the buying and selling of ad impressions;
- changes in the pricing policies of publishers and competitors;
- changes in demand due to changes in macroeconomic environment, including as a result of an economic downturn, recession, inflation, changes in interest rates or foreign exchange rates, disruptions to supply chains, or otherwise;
- further expanding our business internationally; and
- recruiting, integrating, and retaining qualified and motivated employees, particularly engineers.

Any one or more of the factors above may result in significant fluctuations in our results of operations. You should not rely on our past results as an indicator of our future performance.

Because many of our expenses are based upon forecasted demand and may be difficult to reduce in the short term, volatility in quarterly revenue could cause significant variations in quarterly results of operations. We may not forecast our revenue or expenses accurately, causing our results of operations to diverge from our estimates or the expectations of securities analysts and investors. If we fail to meet or exceed such expectations for these or any other reasons, the trading price of our Class A common stock could fall, and we could face costly litigation, including securities class action lawsuits.

If we fail to make the right investment decisions in our platform, or if we fail to innovate and develop new solutions that are adopted by publishers, we may not attract and retain publishers and buyers, which could adversely affect our business, results of operations, and financial condition.

We face intense competition in the marketplace and are confronted by rapidly changing technology, evolving industry standards and consumer preferences, regulatory changes, and the frequent introduction of new solutions by our competitors that we must adapt and respond to. We need to continuously update our platform and the technology we invest in and develop, including our machine learning and other proprietary algorithms, in order to attract publishers and buyers and keep ahead of changes in technology, evolving industry standards and a rapidly changing regulatory environment. Our platform is complex and new solutions can require a significant investment of time and resources to develop, test, introduce, and enhance. These activities can take longer than we expect and may require the hiring of employees or contractors with new skill sets, which we may not be able to do in a cost-effective manner or at all. Moreover, we may not make the right decisions regarding these investments. For example, we recently launched two new products, Activate and Convert, which may not be widely adopted or result in incremental value. New formats and channels, such as mobile header bidding and CTV, present unique challenges that we must address to succeed. Our success in new formats and channels depends upon our ability to integrate our platform with these new formats and channels. If our mobile, video, or CTV solutions are not widely adopted by publishers and buyers, we may not retain such publishers and buyers. In addition, new demands from publishers and buyers, superior offerings by competitors, changes in technology, or new industry standards or regulatory requirements could render our platform or our existing solutions less effective and require us to make unanticipated changes to our platform or business model. Our failure to adapt to a rapidly changing market and regulatory environment, anticipate publisher and buyer demand, or attract and retain publishers and buyers would cause our revenue or revenue growth rate to decline, and adversely affect our business, results of operations, and financial condition.

We must scale our platform infrastructure to support anticipated growth and transaction volume. If we fail to do so, or doing so becomes too costly, we may limit our ability to process ad impressions, and we may lose revenue.

Our business depends on processing advertising impressions in milliseconds, and we must handle an increasingly large volume of such transactions. The demands on our platform infrastructure have increased over time due to, among other factors, the addition of new solutions, such as our Activate or Convert offerings, the need to support evolving advertising formats, the handling and increased use of large amounts of data, and overall growth in impressions. Expanding our platform infrastructure and the number of ad impressions we can process requires resource commitment over a period of months or years, and we may not be able to scale quickly enough if demand increases rapidly as short-term solutions may be too costly or unavailable. If we are unable to grow our platform to support substantial increases in the number of transactions and in the amount of data we process, on a high-performance, cost-effective basis, or we are slow in growing our infrastructure compared to demand, our business, results of operations, and financial condition could be adversely affected. We expect to continue to invest in our platform in order to meet these requirements, and that investment could adversely affect our business, results of operations, and financial condition. Additionally, if we overestimate future usage of our platform, we may incur expense in adding infrastructure without a commensurate increase in revenue, which could adversely affect our business, results of operations, and financial condition.

Our efforts to provide new or expanded offerings may not be successful, or we may not be able to scale our offerings to meet demand in a timely manner, and, as a result, we may not realize a return from our investments.

We believe there is significant and growing demand for our offerings and those we are developing, and we are making significant investments to meet that demand and grow our market share. That demand may not materialize and, even if it does so, we may not be able to take advantage of that increased demand if we cannot scale our offerings in a timely manner or if the demand for one of our offerings cannibalizes the demand for other products we offer. In some cases, we have experienced fee pressure as we have built out our offerings, and we expect this fee pressure to increase as more competitors, including new entrants as well as publishers themselves, build their own technology and infrastructure to enter the markets in which we do business. Even if the market for these offerings develops as we anticipate, publishers and buyers might not embrace our offerings to the degree we expect due to various factors such as inertia from usage of existing implementations of competitive products. While continued investment in and use of our products has allowed us to achieve efficiencies, the investment cost to gain such efficiencies may grow over time, especially with our existing products which may be closer to technical and economic maturity, and the potential expansion of our business or offerings may increase regulatory scrutiny of our company. Additionally, even if publishers and buyers embrace our new or expanded offerings, the positive effect of these new or expanded offerings on our results of operations may be offset or negated if such adoption cannibalizes business from our existing solutions, if we are unable to scale our offerings to keep up with demand, if we are unable to hire or retain personnel with the requisite skills and experience related to our new or expanded offerings, if publishers and buyers prefer similar offerings from our competitors, or by other adverse developments.

Risk Related to Data Collection and the Use of Collected Data

The rejection of digital advertising by consumers, through opt-in, opt-out or ad-blocking technologies or other means or the restriction on the use of third party-cookies, mobile device identifiers or other tracking technologies, could adversely affect our business, results of operations, and financial condition.

We use “cookies,” or small text files placed on consumer devices when an Internet browser is used, as well as mobile device identifiers, to gather data that enables our platform to be more effective. Our cookies and mobile device identifiers do not identify consumers directly, but record information such as when a consumer views or clicks on an advertisement, when a consumer uses a mobile app, the consumer’s location, and browser or other device information. Publishers, buyers, third-party data providers, and partners may also choose to share their information about consumers’ interests or give us permission to use their cookies and mobile device identifiers. We use data from cookies, mobile device identifiers, and other tracking technologies to help advertisers decide whether to bid on, and how to price, an ad impression in a certain location, at a given time, for a particular consumer.

Without cookies, mobile device identifiers, and other tracking technology data, transactions processed through our platform would be executed with less insight into consumer activity, reducing the precision of advertisers' decisions about which impressions to purchase for an advertising campaign. This could make advertising through our platform less valuable and decrease our revenue as advertising budgets may be decreased or directed to alternatives that don't rely on cookies, mobile device identifiers, and other tracking technology data. If our ability to use cookies, mobile device identifiers or other tracking technologies is limited, we may be required to develop or obtain additional applications and technologies to compensate for the lack of cookies, mobile device identifiers and other tracking technology data, which may not be available to us or could be time consuming or costly to develop, less effective, and subject to additional regulation.

Additionally, consumers can, with increasing ease, implement technologies that limit our ability to collect and use data to deliver advertisements or otherwise limit the effectiveness of our platform. Cookies may be deleted or blocked by consumers. The most commonly used Internet browsers allow consumers to modify their browser settings to block first-party cookies (placed directly by the publisher or website owner that the consumer intends to interact with) or third-party cookies (placed by parties, like us, that have no direct relationship with the consumer), and some browsers block third-party cookies by default.

Some consumers also download “ad blocking” software on their computers or mobile devices, not only for privacy reasons, but also to counteract the adverse effect advertisements can have on the consumer experience, including increased load times, data consumption, and screen overcrowding. Ad-blocking technologies and other global privacy controls may prevent some third-party cookies, or other tracking technologies, from being stored on a consumer's computer or mobile device. If more consumers adopt these measures, it could reduce the volume or effectiveness and value of advertising, which could adversely affect our business, results of operations, and financial condition. In addition, some ad blocking technologies block only ads that are targeted through use of third-party data, while allowing ads based on first-party data (i.e., data owned by the publisher). These ad blockers could place us at a disadvantage because we rely on third-party data, while some large competitors have troves of first-party data they use to direct advertising. Mobile devices using Android and iOS operating systems limit the ability of cookies to track consumers while they are using applications other than their web browser on the device. As a consequence, fewer of our or our publishers’ cookies may be set in browsers or be accessible in mobile devices, which adversely affects our business. Other technologies allow ads that are deemed “acceptable,” which could be defined in ways that place us or our publishers at a disadvantage, particularly if such technologies are controlled or influenced by our competitors. Even if ad blockers do not ultimately have an adverse effect on our business, investor concerns about ad blockers could cause our stock price to decline.

The disabling of third-party cookies, and the potential of others to develop proprietary replacements for cookies, could adversely affect our business, results of operations, and financial condition.

Some prominent technology companies, including Google, have also announced intentions to discontinue the use of third-party cookies, and to develop alternative methods and mechanisms for targeting advertisements. On January 4, 2024, Google disabled third-party cookies for up to 1% of Chrome users and has announced plans to disable cookies for additional users beginning in the third quarter of 2024. If companies are forced to rely on targeting methodologies other than cookies, such companies may instead rely on proprietary products, algorithms, or statistical methods to track consumers without cookies, or may utilize log-in credentials entered by consumers into other web properties owned by those companies such as their email services to track web usage, including usage across multiple devices.

Additionally, such companies may build different and potentially proprietary consumer tracking methods into their widely used web browsers, which we may not be able to effectively use for our publishers and buyers. Many applications and other devices also allow consumers to avoid receiving advertisements by paying for subscriptions or other downloads. Although we believe our platform is well-positioned to adapt and continue to provide key data insights to our publishers without cookies, this transition could be more disruptive, slower, or more expensive than we currently anticipate, or publishers and buyers could elect to move a larger proportion of their advertising inventory or spend to these providers to take advantage of proprietary consumer tracking methods, any of which could materially affect our ability to serve our customers, publishers, and buyers, and our business, results of operations, and financial condition could be adversely affected.

Our business depends on our ability to collect, use, and disclose data to deliver advertisements. Any limitation imposed on our collection, use or disclosure of this data could significantly diminish the value of our solution and cause us to lose publishers, buyers, and revenue. Consumer tools, regulatory restrictions and technological limitations all threaten our ability to use and disclose data.

As we process transactions through our platform, we collect large amounts of data about advertisements and where they are placed, such as advertiser and publisher preferences for media and advertising content. We also collect data on ad specifications such as placement, size and format, ad pricing, and auction activity such as price floors, bid response behavior, and clearing prices. Further, we collect data on consumers that does not directly identify the individual, but includes pseudonymous identifiers and data regarding browser, device location and characteristics, online browsing behavior, exposure to and interaction with advertisements, and inferential data about purchase intentions, and preferences. We collect this data through various means, including from our own systems, pixels that publishers allow us to place on their websites to track consumer visits, software development kits installed in mobile applications, cookies, and other tracking technologies. Our publishers, buyers, and data providers may also choose to provide us with their proprietary data about consumers.

We collect this data and analyze it in order to enhance our services, including the pricing, placement, and scheduling of advertisements. As part of our real-time analytics service offering, we also share the data, or analyses based on it, with our publishers and buyers. Our ability to collect, use and share data about advertising transactions and consumer behavior is critical to the value of our services, and is subject to a rapidly evolving regulatory framework that is not always consistent across geographies and jurisdictions. Evolving and conflicting regulatory standards could place restrictions on the collection, management, aggregation and use of information, which could result in a material increase in the cost of collecting or otherwise obtaining certain kinds of data and could limit the ways in which we may use or disclose information. Internet users can, with increasing ease, implement practices or technologies that may limit our ability to collect and use data to deliver advertisements, or otherwise inhibit the effectiveness of our platform. Although our publishers and buyers generally permit us to aggregate and use data from advertising placements, subject to certain restrictions, publishers or buyers might decide to restrict our collection or use of their data. Any limitations on this ability could impair our ability to deliver effective solutions, which could adversely affect our business, results of operations, and financial condition.

If publishers, buyers, and data providers do not obtain necessary and requisite consents from consumers for us to process their personal data, we could be subject to fines and liability.

Because we do not generally have direct relationships with consumers, we rely on publishers, buyers, and data providers, as applicable, to obtain the consent of the consumer on our behalf to process their data and deliver interest-based advertisements, and to implement any notice or choice mechanisms required under applicable laws. If publishers, buyers, or data providers do not follow the applicable requirements and processes or otherwise fail to secure any legally-required consents or provide required notice and choice mechanisms, which can be difficult given the rapidly evolving regulatory consent frameworks being promulgated, we could be subject to fines and liability. Additionally, if our data, privacy, or consent practices are found to be inadequate, or we make errors in the deployment of existing and future policies or safeguards, we may be subject to regulatory action. We may not have adequate insurance or contractual indemnity arrangements to protect us against any such fines, penalties, claims, and losses.

Risk Related to the Advertising Industry and Competition

The digital advertising industry is intensely competitive, and if we do not effectively compete against current and future competitors, our business, results of operations, and financial condition could be adversely affected.

The digital advertising ecosystem is competitive and complex due to a variety of factors. While programmatic header bidding and other digital advertising has enabled the purchasing and selling of vast amounts of digital advertising inventory, there are significant challenges related to proliferation of media across platforms, including maintaining competitive transaction speed, increased costs, transparency, and evolving regulatory requirements. To address these issues at scale for both buyers and sellers, we provide specialized software and hardware infrastructure to optimally power technology-driven transactions. To successfully grow our business, we compete with SSPs like Magnite, Inc., smaller private SSPs in markets around the world, as well as divisions of larger companies like Google.

Some of our competitors have greater financial, technical, sales, and marketing resources, longer operating histories, and greater name recognition. In addition, some competitors, particularly those with greater scale or a more diversified revenue base and a broader offering, have greater flexibility than we do to compete aggressively on the basis of price and other contract terms, or to compete with us by including in their product offerings services that we may not be able to provide. Some of our competitors may also choose to sell products or services competitive to ours at lower prices by accepting lower margins and profitability, or they may be able to sell competitive products or services at lower prices given proprietary ownership of data, technical superiority, or economies of scale. The introduction of competitive products, pricing strategies, or other technologies by our competitors that are superior to or that achieve greater market acceptance than our products and services could adversely affect our business.

We experience requests from publishers and buyers for discounts, fee concessions, rebates, refunds, and greater levels of pricing transparency, in some cases as a condition to maintain the relationship or to increase the amount of advertising spend that the buyer sends to our platform. In addition, we charge fees to publishers for use of our platform, and we may decide to offer discounts or other pricing concessions in order to attract more inventory or demand, or to compete effectively with other providers that have different or lower pricing structures and may be able to undercut our pricing due to greater scale or other factors. Our revenue, take rate, business, results of operations and financial condition could be adversely affected if we cannot maintain and grow our revenue and profitability through volume increases that compensate for any price reductions, or if we are forced to make significant fee concessions, rebates, or refunds.

Some of our competitors are also able or willing to agree to contract terms that expose them to risks that might be more appropriately allocated to publishers or buyers (including inventory risk and the risk of having to pay publishers for unsold advertising impressions, among others), and in order to compete effectively we might need to accommodate risks that could be costly to manage or insure against. Some existing and potential buyers have their own relationships with publishers or are seeking to establish such relationships, and many publishers are investing in capabilities that enable them to connect more effectively directly with buyers. Our business suffers when publishers and buyers purchase and sell advertising inventory directly from one another or through other intermediaries other than us, reducing the amount of advertising spend on our platform. If we are unable to compete effectively for publishers' ad impressions and buyer's advertising spend, we could experience a decline in market share and revenues and be forced to reduce our prices, resulting in lower profit margins for us. Loss of existing or future market share to new competitors and increased price competition could substantially harm our business, results of operations, and financial condition.

There has also been rapid evolution and consolidation in the advertising technology industry, and we expect these trends to continue, increasing the capabilities and competitive posture of larger companies, particularly those that already are dominant or have a greater market share than us, and enabling new or stronger competitors to emerge. Many publishers and buyers are large, consolidated organizations that may need to acquire other companies in order to grow. Smaller publishers and buyers may need to consolidate to compete effectively. There is a finite number of large publishers and buyers in our target markets, and any consolidation of publishers or buyers may give the resulting enterprises greater bargaining power or result in the loss of publishers and buyers that use our platform, reducing our potential base of publishers and buyers, each of which would lead to erosion of our revenue and financial condition.

Market pressure may reduce our revenue per impression.

Our revenue can be affected by market changes, new demands by publishers and buyers, new solutions, and competitive pressure. Our solutions may be priced too high or too low, or our pricing approaches may not be accepted, any of which may carry adverse consequences to our business and results of operations. We may receive requests from publishers for discounts, fee revisions, rebates, and refunds, or from DSPs, agencies and advertisers for volume discounts, fee revisions, and rebates. Any of these pressures from publishers or buyers can adversely affect our business, results of operations, and financial condition.

Seasonal fluctuations or market changes in digital advertising activity could adversely affect our business, results of operations, and financial condition.

Our revenue, net cash provided by operating activities, results of operations, and other key operating and performance metrics vary from quarter to quarter due to the seasonal nature of digital advertising spending. For example, digital advertisers tend to devote a large portion of their budgets to campaigns in the fourth quarter of the year, to coincide with consumer holiday spending, and then have a significantly smaller advertising budget in the first calendar quarter. Pricing of digital ad impressions in the fourth quarter is likely to be higher due to increased demand. Google's announced intent to further deactivate cookies in the third and fourth quarter of 2024 could cause disruption to our business during a time when we typically expect to generate a disproportionate amount of our revenue, which could adversely affect our business, results of operations, and financial condition. In addition, adverse economic conditions, inflation, changes in foreign exchange rates or interest rates, or general economic uncertainty may cause advertisers to decrease purchases of digital ad impressions, adversely affecting our business, results of operation and financial condition. A decline in the market for programmatic advertising or the failure of that market to grow as expected could also adversely affect our business, results of operations, and financial condition.

If ad formats and digital device types develop in ways that prevent advertisements from being delivered to consumers, our business, results of operations, and financial condition may be adversely affected.

Our success depends upon the ability of our platform to provide advertising for a variety of digital devices, the major operating systems or Internet browsers that run on them, and the thousands of applications that are downloaded onto them. The design of digital devices and operating systems or browsers is controlled by third parties that may also introduce new devices and operating systems or modify existing ones, and our access to content on certain devices may be limited. If our platform cannot operate effectively with popular devices, operating systems, or Internet browsers, including, for example, as a result of Google's deactivation of cookies or other similar events, our business, results of operations, and financial condition could be adversely affected.

Risks Related to our Operations

If we fail to detect or prevent fraud on our platform, or malware intrusion into the systems or devices of our publishers and their consumers, publishers could lose confidence in our platform, and we could face legal claims.

We may be subject to fraudulent or malicious activities undertaken by persons seeking to use our platform for improper purposes. For example, someone may attempt to divert or artificially inflate advertiser purchases through our platform, or to disrupt or divert the operation of our systems and the devices of our publishers and their consumers in order to misappropriate information, generate fraudulent billings, stage cyberattacks, or for other illicit purposes. For example, sophisticated bot-nets and other complex forms of click fraud might be used to generate fraudulent impressions and divert advertising revenue from legitimate websites of publishers. Those activities could also introduce malware through our platform to commandeer or gain access to information on consumers' computers. We use third-party tools and proprietary technology to identify non-human traffic and malware, and we may reduce or terminate relationships with publishers that we find to be engaging in such activities. Although we continuously assess the quality and performance of advertising on publishers' digital media properties, it may be difficult to detect fraudulent or malicious activity quickly or at all. Further, perpetrators of fraudulent impressions and malware frequently change their tactics and can become more sophisticated over time, requiring both us and third parties to improve processes for assessing the quality of publisher inventory and controlling fraudulent activity. If we fail to timely detect or prevent fraudulent or malicious activity of this sort, our reputation could be damaged, publishers may contest payment, demand refunds, or fail to give us future business, or we could face legal claims. Even if we are not directly involved in fraud or malicious activity, any sustained failures of others in our industry to adequately detect and prevent fraud could generate the perception that programmatic advertising is unsafe and lead our publishers to avoid programmatic advertising.

Our success depends on our ability to retain key members of our management team, and on our ability to hire, train, retain, and motivate new employees.

Our success depends upon the continued service of members of our senior management team and other key employees. Our Co-Founder and Chief Executive Officer, Rajeev K. Goel, is critical to our overall management, as well as the continued development of our platform and relationships with publishers, DSPs, and agencies, and our strategic direction. Our success also depends on our ability to hire, train, retain, and motivate new employees that align with our corporate culture that has fostered innovation, creativity, and teamwork across our business. Competition for employees in our industry can be intense, and we compete for experienced personnel with many companies that have greater resources than we have. Further, as our business grows and we introduce new offerings, we may need to hire employees with skills and experience that we have not historically required. The market for talent in our key areas of operations, especially in engineering, and competition for qualified personnel is particularly intense in the San Francisco Bay Area, Pune, India, and New York, where we maintain offices. As we expand and change, in particular across multiple geographies or following acquisitions, it may be difficult to preserve our corporate culture, which could increase employee turnover or reduce our ability to innovate, create, and operate effectively.

We are subject to payment-related risks if DSP buyers dispute or do not pay their invoices, and if DSPs file for bankruptcy protection or there are any decreases in payments, it could adversely affect our reputation, business, results of operations, and financial condition.

We generate revenue primarily through revenue share agreements with our publishers. We invoice DSPs and collect the full purchase price for the digital ad impressions they purchase, retain our fees, and remit the balance to the publisher. However, in some cases, we are required to pay publishers for digital ad impressions delivered even if we are unable to collect from the buyer that purchased the digital ad impressions. In the past, certain buyers have sought to slow their payments to us or been forced into filing for bankruptcy protection, resulting in us not receiving payment. These challenges may be exacerbated by the overall market and economic volatility, inflation, changes in foreign exchange rates or interest rates, disruptions to supply chains, pandemics, epidemics or other public health crises, and the resulting economic impacts, as many of our buyers are experiencing financial difficulties and liquidity constraints. Some DSPs have historically carried relatively high debt obligations, and the maturity of that debt or changes in interest rates may negatively impact the liquidity of those DSPs and their ability to timely pay us. In certain cases, buyers have been unable to timely make payments and we have suffered financial losses, including in June 2023 when MediaMath declared bankruptcy, which led us to record a bad debt expense of \$5.7 million. While our contracts generally do not contain such exposure, there are certain agreements under which we may be responsible for the whole amount of contracted spending, whether or not ultimately paid by the buyer.

In addition, a prolonged economic downturn or prolonged period of elevated interest rates may lead additional buyers to slow or default on payments or in some cases seek bankruptcy protection. We cannot assure you that we will not experience bad debt in the future, and write-offs for bad debt could adversely affect our business, results of operations, and financial condition in the periods in which the write-offs occur. If our cash collections are significantly diminished as a result of these dynamics, our revenue and/or cash flow could be adversely affected, and we may need to use working capital to fund our accounts payable pending collection from the buyers. This may result in additional costs and cause us to forgo or defer more strategic uses of that working capital.

Our international operations subject us to additional costs and risks, and our continued international expansion may not be successful.

We have entered into several international markets and we expect to continue to expand our international operations. Further expansion may require significant management attention and financial resources and may place burdens on our management, administrative, operational, legal, and financial infrastructure. The costs and risks inherent in conducting business internationally include, but are not limited to:

- difficulties and costs associated with maintaining effective controls at foreign locations;
- adapting our platform and solutions to non-U.S. publishers' preferences and customs;
- regulatory and other delays and difficulties in setting up foreign operations, including difficulties in hiring personnel with skill sets and experience that match our international expansion efforts;
- compliance with anti-bribery laws and regulations, export and import control and economic sanctions, laws and regulations;
- compliance with foreign data privacy laws;
- economic and political instability in some countries, including as a result of the conflicts in Ukraine and Israel; and
- compliance with the laws of numerous taxing jurisdictions.

As we continue to expand our business globally, our success will depend, in large part, on our ability to anticipate and effectively manage these risks. These factors and others, and the costs associated with any failure to effectively manage risks and comply with local laws and regulations, could harm our ability to increase international revenues and, consequently, could adversely affect our business, results of operations, and financial condition.

Our use and reliance upon technology and development resources in India may expose us to unanticipated costs and liabilities, which could affect our ability to realize cost savings from our operations in India.

Most of our technology and development work is conducted in Pune, India. We cannot assure you that our reliance upon development resources in India will enable us to achieve meaningful cost reductions or greater resource efficiency. Further, our development efforts and other operations in India involve significant risks, including, but not limited to:

- difficulty hiring and retaining engineering and management resources due to intense competition for such resources and resulting wage inflation;
- heightened exposure to changes in economic, health, security, and political conditions in India; and
- fluctuations in currency exchange rates and tax compliance in India.

In addition, enforcement of intellectual property rights and confidentiality protections in India may not be as effective as in the United States or other countries. Policing unauthorized use of proprietary technology is difficult and expensive, and we may need to resort to litigation to protect our trade secrets and confidential information. The experience and capabilities of Indian courts in handling intellectual property litigation vary, and outcomes are unpredictable. Further, such litigation may require significant expenditures of cash and management efforts and could harm our business, financial condition, and results of operations.

We expect to continue to rely on significant cost savings obtained by concentrating our technology and development and engineering work in India, rather than in the United States, but difficulties resulting from the factors noted above and other risks related to our operations in India could increase our expenses and harm our competitive position. The historical rate of wage inflation has been higher in India than in the United States. Accordingly, it may be harder in the future to achieve labor-related cost efficiencies that we have historically benefited from. In addition, if the Rupee strengthens against the U.S. Dollar, our costs would increase. If the cost of technology and development work in India significantly increases or the labor environment in India changes unfavorably, our cost savings may be diminished. Any such developments could adversely affect our business, results of operations, and financial condition.

We depend on third-party data centers, the disruption of which could adversely affect our business, results of operations, and financial condition.

We host our company-owned infrastructure at third-party data centers. Any damage to or failure of our systems generally would prevent us from operating our business. We rely on the Internet and, accordingly, depend upon the continuous, reliable, and secure operation of Internet servers, related hardware and software, and network infrastructure. While we control and have access to our servers and all of the components of our network that are located in our external data centers, we do not control the operation of these facilities.

The owners of our data center facilities have no obligation to renew their agreements with us on commercially reasonable terms, or at all. If we are unable to renew these agreements on commercially reasonable terms, or if one of our data center operators is acquired, we may be required to transfer our servers and other infrastructure to new data center facilities, and we may incur significant costs and possible service interruption in connection with doing so.

Problems faced by our third-party data center operations, with the telecommunications network providers with whom we or they contract, or with the systems by which our telecommunications providers allocate capacity among their customers, including us, could adversely affect the experience of publishers. Additionally, improving our platform's infrastructure and expanding its capacity in anticipation of growth in new channels and formats, as well as implementing technological enhancements to our platform to improve its efficiency and cost-effectiveness are key components of our business strategy, and if our data centers are unable to keep up with our growing needs for capacity, this could have an adverse effect on our business. Increasing data center capacity requires physical plant expansion and the procurement of additional equipment, which can take a year or more to accomplish. Accordingly, if there is a rapid increase in our need for data center capacity, we may not be able to increase our capacity quickly enough to meet the needs of publishers or our business, which could adversely affect our business, results of operations, and financial condition. Any changes in third-party service levels at our data centers or any errors, defects, disruptions, or other performance problems could adversely affect our reputation, expose us to liability, cause us to lose customers, or otherwise adversely affect our business, results of operations, and financial condition. Service interruptions might reduce our revenue, trigger refunds to publishers, subject us to potential liability, or adversely affect our business, results of operations, and financial condition.

The occurrence of a natural disaster, an act of terrorism, vandalism or sabotage, or other unanticipated problems at these facilities could result in interruptions in the availability of our platform. While we have disaster recovery arrangements in place, they have not been tested under actual disasters or similar events and may not effectively permit us to continue to provide our products and services in the event of any problems with respect to our data centers. Moreover, because we do not currently have full redundancy with respect to the services at each data center, if one of our data centers shuts down there may be a period of time that our products or services, or some of our products or services, will be unavailable to publishers served by that data center. If any of these events were to occur to our business, our business, results of operations, or financial condition could be adversely affected.

Platform outages or disruptions, including due to cyberattacks or our failure to maintain adequate security and supporting infrastructure, could adversely affect our business, results of operations, and financial condition.

As we grow our business, we expect to continue to invest in our platform infrastructure, including hardware and software solutions, network services, and database technologies, as well as potentially increase our reliance on open source software. Without these improvements, our operations might suffer from unanticipated system disruptions, slow transaction processing, unreliable service levels, impaired quality, or delays in reporting accurate information regarding transactions on our platform, any of which could negatively affect our reputation and ability to attract and retain publishers. The steps we take to enhance the reliability, integrity, and security of our platform as it scales are expensive and complex, and poor execution could result in operational failures. In addition, cyberattack techniques are constantly evolving and becoming increasingly diverse and sophisticated, and could involve denial-of-service attacks or other maneuvers that have the effect of disrupting the availability of services on our platform.

Other types of cyberattacks could harm us even if our platform operations are left undisturbed. For example, attacks may be designed to deceive employees into releasing control of their systems to a hacker, while others may aim to introduce computer viruses or malware into our systems with a view to stealing confidential or proprietary data. Additionally, we rely on third party software providers for the delivery of certain of our services and offerings, and a disruption to those providers, whether an outage, cybersecurity attack, or otherwise, could adversely affect our business, results of operations, and financial condition.

We are also vulnerable to unintentional errors or malicious actions by persons with authorized access to our systems that exceed the scope of their access rights, distribute data erroneously, or, unintentionally or intentionally, interfere with the intended operations of our platform. Although we maintain insurance coverage, it may be insufficient to protect us against all losses and costs stemming from security breaches, cyberattacks and other types of unlawful activity, or any resulting disruptions from such events. Outages and disruptions of our platform, including any caused by cyberattacks, may harm our reputation and adversely affect our business, results of operations, and financial condition.

Our software platform could be susceptible to errors, defects, or unintended performance problems that could adversely affect our business, results of operations, and financial condition.

We depend upon the sustained and uninterrupted performance of our platform to operate our business. Software bugs, faulty algorithms, technical or infrastructure problems, or system updates could lead to an inability to process data to place advertisements or price inventory effectively, or cause advertisements to display improperly or be placed in proximity to inappropriate content, which could adversely affect our business, results of operations, and financial condition. These risks are compounded by the complexity of our technology and the large amounts of data we utilize. Because our software is complex, undetected material defects, errors and failures may occur. Despite testing, errors or bugs in our software may not be found until the software is in our live operating environment.

For example, changes to our solution have in the past caused errors in the measurements of transactions conducted through our platform, resulting in disputes raised by publishers. Errors or failures in our offerings, even if caused by the implementation of changes by publishers or partners to their systems, could also result in negative publicity, damage to our reputation, loss of or delay in market acceptance of our offerings, increased costs or loss of revenue, or loss of competitive position. As a result, defects or errors in our products or services could harm our reputation, result in significant costs to us, impair the ability of publishers to sell and for buyers to purchase inventory, and impair our ability to fulfill obligations with publishers and partners. Any significant interruptions could adversely affect our business, results of operations, and financial condition.

Our continued business success depends upon our ability to offer high-quality inventory with appropriate viewability capabilities.

We must address quality concerns of both advertisers and publishers. Publishers require ad quality tools that enable granular control over the characteristics of the ads that run on their ad impressions, including those relating to the advertiser, industry and content for a particular ad. We must also provide automatic or ad hoc blocking of ads that contain malware or other ads the publisher deems undesirable. Our inventory quality tools must continue to help publishers demonstrate the value and quality of their ad impressions to DSPs, advertisers, and agencies with automated fraud detection and viewability reporting. Maintaining and upgrading our capabilities associated with ad quality and inventory quality is complex and costly. Maintaining high-quality inventory may become increasingly difficult with the advent of “deep fake” video and other media produced using artificial intelligence (“AI”). If we fail to maintain high quality controls for our publishers and partners, our business, results of operations, and financial condition could be adversely affected.

In addition, the viewability of ad impressions is important to certain advertisers because it enables them to assess the value of particular ad impressions as a means to reach a target audience. However, there is no consensus regarding the definition of viewability or the minimum standard viewability thresholds and metrics that should apply for different ad formats. We cannot predict whether consensus views will emerge, or what they will be. Incorporating accepted viewability approaches fully into our business as they evolve will require us to incur additional costs to integrate relevant technologies and process additional information through our platform. In addition, ad impressions that are well differentiated on the basis of viewability will also typically be differentiated on the basis of value, with those that are less viewable valued lower. In this context, if we are not able to effectively transact ad impressions with higher viewability and to incorporate appropriate viewability capabilities into our platform, we could be competitively disadvantaged and our business, results of operations, and financial condition could be adversely affected.

Future acquisitions or strategic investments could be difficult to identify and integrate, divert the attention of management, and could disrupt our business, dilute stockholder value and adversely affect our business, results of operations, and financial condition.

As part of our growth strategy, we may acquire or invest in other businesses, assets, or technologies that we believe are complementary to and fit within our strategic goals. Any acquisition or investment may divert the attention of management and require us to use significant amounts of cash, issue dilutive equity securities, or incur debt. Any additional capital raised through the sale of equity or convertible debt securities would dilute your stock ownership, and any new equity securities we issue could have rights, preferences, and privileges superior to those of holders of our common stock.

Any debt financing we secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. In addition, the anticipated benefits of any acquisition or investment may not be realized, and we may be exposed to unknown risks, any of which could adversely affect our business, results of operations, and financial condition, including risks arising from:

- difficulties in integrating the operations, technologies, product or service offerings, administrative systems, and personnel of acquired businesses;
- ineffectiveness or incompatibility of acquired technologies or solutions;
- potential loss of key employees of the acquired business;
- inability to maintain key business relationships and reputation of the acquired business;
- litigation arising from the acquisition or the activities of the acquired business;
- failure to generate the expected financial results related to an acquisition in a timely manner or at all;
- failure to accurately forecast the impact of an acquisition; and
- implementation or remediation of effective controls, procedures, and policies for acquired businesses.

We rely on publishers, buyers, and partners to abide by contractual requirements and relevant laws, rules, and regulations when using our platform, and legal claims or enforcement actions resulting from their actions could expose us to liabilities, damage our reputation, and be costly to defend.

The publishers, buyers, and partners engaging in transactions through our platform impose various requirements upon each other, and they and the underlying advertisers are subject to regulatory requirements by governments and standards bodies applicable to their activities. We may assume responsibility for satisfying or facilitating the satisfaction of some of these requirements through the contracts we enter into with publishers, buyers, and partners. In addition, we may have responsibility for some acts or omissions of publishers, buyers, or partners transacting business through our platform under applicable laws or regulations or as a result of common law duties, even if we have not assumed responsibility contractually. These responsibilities could expose us to significant liabilities and we may not have the ability to impose effective mitigating controls upon, or to recover from, publishers and buyers. Moreover, for those third parties who are both publishers and buyers on our platform, it is feasible that they could use our platform to buy and sell advertisements in an effort to inflate their own revenue. We could be subject to litigation as a result of such actions, and, if we were sued, we would incur legal costs in our defense and cannot guarantee that a court would not attribute some liability to us.

We contractually require our publishers, buyers, data providers, and partners to abide by relevant laws, rules and regulations, and restrictions by their counterparties, when transacting on our platform, and we generally attempt to obtain representations from buyers that the advertising they place through our platform complies with applicable laws and regulations and does not violate third-party intellectual property rights, and from publishers about the quality and characteristics of the impressions they provide. We also generally receive representations from publishers, buyers, and data providers about their privacy practices and compliance with applicable laws and regulations, including their maintenance of adequate privacy policies that disclose and permit our data collection practices. Nonetheless, there are many circumstances in which it is difficult or impossible for us to monitor or evaluate compliance by our publishers, buyers, data providers, and partners. For example, we cannot control the content of publisher's media properties, and we are often unable to determine exactly what information a partner collects after an ad has been placed, and how the buyer uses any such collected information. Moreover, we are unable to prevent DSPs from aggregating bid requests from publishers and directing it to their own buying platforms or even reselling such bid data to advertisers or third parties.

If publishers, buyers, data providers, or partners fail to abide by relevant laws, rules and regulations, or contractual requirements when transacting over our platform, or after such a transaction is completed, we could potentially face liability to consumers for such misuse. Potential sources of liability to consumers include malicious activities, such as the introduction of malware into consumers' computers through advertisements served through our platform, and code that redirects consumers to sites other than the ones consumers sought to visit, potentially resulting in malware downloads or use charges from the redirect site. In such an event, consumers may look to PubMatic to recover any alleged damages as a result of publishers' use of limitations or disclaimers of liability through their terms of use with consumers. Similarly, if such misconduct results in enforcement action by a regulatory body or other governmental authority, we could become involved in a potentially time-consuming and costly investigation or we could be subject to litigation or some form of sanction or penalty. We may not have adequate indemnity to protect us against, and our insurance policies, may not cover, such claims and losses.

We cannot guarantee that our share repurchase program will be fully consummated or that it will enhance long-term stockholder value. Share repurchases could also increase the volatility of the trading price of our stock and diminish our cash reserves.

In February 2023, our board of directors authorized and approved the 2023 Repurchase Program pursuant to which we may repurchase up to \$75.0 million in aggregate of shares of our Class A common stock, with the authorization to expire on December 31, 2024. On February 22, 2024, our board of directors authorized an increase to our share repurchase program for the repurchase of shares of our Class A common stock from \$75.0 million to \$175.0 million through December 31, 2025. As of December 31, 2023, we have repurchased approximately \$59.3 million of our Class A common stock under the program. Although our board of directors has authorized the 2023 Repurchase Program, the program does not obligate us to repurchase any specific dollar amount or to acquire any specific number of shares of our Class A common stock. The actual timing and amount of repurchases remain subject to a variety of factors, including stock price, trading volume, market conditions and other general business considerations, all of which may be negatively impacted by macroeconomic conditions and factors, including, for example, rising interest rates, inflation, and the wars in Ukraine and Israel. The 2023 Repurchase Program may be modified, suspended, or terminated at any time, and we cannot guarantee that the 2023 Repurchase Program will be fully consummated or that it will enhance long-term stockholder value. The program could affect the trading price of our Class A common stock, increase volatility and diminish our cash and cash equivalents and marketable securities, and any announcement of a termination of this program may result in a decrease in the trading price of our stock.

Our business is subject to the risk of catastrophic events such as pandemics, earthquakes, flooding, fire, and power outages, and to interruption by man-made problems such as acts of war and terrorism.

Our business is vulnerable to damage or interruption from pandemics, earthquakes, flooding, fire, power outages, telecommunications failures, terrorist attacks, acts of war, human errors, break-ins, and similar events. A significant natural disaster could have a material adverse effect on our business, results of operations, and financial condition, and our insurance coverage may be insufficient to compensate us for losses that may occur. We have one office and one data center facility located in California, a state known for seismic activity. Significant portions of our development and advertising operations work is located in Pune, India, which is susceptible to earthquakes and flooding. In addition, economic or political instability caused by the conflicts in Ukraine, or Israel or international responses thereto, could adversely affect our business, results of operations, and financial condition. Furthermore, acts of terrorism, which may be targeted at metropolitan areas that have higher population density than rural areas, could cause disruptions in our or our publishers' and partners' businesses or the economy as a whole. Our servers may also be vulnerable to computer viruses, break-ins, denial-of-service attacks, and similar disruptions from unauthorized tampering with our computer systems, which could lead to interruptions, delays, and loss of critical data. We may not have sufficient protection or recovery plans in some circumstances, such as natural disasters affecting California, New York, Virginia, or Pune, India. As we rely heavily on our data center facilities, computer and communications systems, and the Internet to conduct our business and provide high-quality customer service, these disruptions could negatively impact our ability to operate our business and either directly or indirectly disrupt publishers' and partners' businesses, which could adversely affect our business, results of operations, and financial condition.

We use artificial intelligence in our business, and challenges with properly managing its use could result in reputational harm, competitive harm, and legal liability, and adversely affect our results of operations.

We currently incorporate AI solutions into our specialized cloud software, including audience solutions, and these applications may become more important in our operations over time. Our competitors or other third parties may incorporate AI into their products and offerings more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations. Additionally, if the content, analyses, or recommendations that AI applications assist in producing are or are alleged to be inaccurate, deficient, or biased, our business, financial condition, and results of operations may be adversely affected. Additionally, AI applications generally state they do not use personal information or other classes of protected information, but we may not know the source of data used by an AI application and may inadvertently incorporate personal information, or data derived from personal information, in the course of using an AI application. The use of AI applications has resulted in, and may in the future result in, cybersecurity incidents that implicate the sensitive data of customers analyzed within such applications. Any such cybersecurity incidents related to our use of AI applications for analysis of sensitive data could adversely affect our reputation and results of operations. If we include portions of our proprietary information when using AI tools, that information may enter the public domain and we may lose the ability to protect such proprietary information. AI also presents emerging ethical issues and if our use of AI becomes controversial, we may experience brand or reputational harm, competitive harm, or legal liability. The rapid evolution of AI, including potential government regulation of AI and its various uses, will require significant resources to develop, test, and maintain our intelligence cloud platform, offerings, services, and features to help us implement AI ethically in order to minimize unintended, harmful impact.

Risks Related to Regulations

We are subject to constantly evolving laws, regulations and industry requirements related to data privacy, data protection, information security, and consumer protection across the markets we operate in.

We receive, store, and process data about or related to consumers in addition to publisher, buyer, partner, employee, and services provider or vendor data. Our handling of this data is subject to numerous federal, state, and foreign laws and regulations that are constantly evolving and not always consistent across jurisdictions. We are also subject to regulation by various governmental authorities in addition to federal and state regulations. Our data handling is further subject to contractual obligations and may be deemed to be subject to industry standards and trade associations.

The U.S. federal government and various state and foreign governments have adopted or proposed limitations on the collection, distribution, use, and storage of data relating to individuals, including the use of contact information and other data for marketing, advertising and other communications with individuals and businesses. In the United States, various laws and regulations apply to the collection, processing, disclosure, and security of certain types of data. Additionally, the U.S. Federal Trade Commission and many state attorneys general are interpreting federal and state consumer protection laws as imposing standards for the online collection, use, dissemination, and security of data. These regulatory regimes are constantly evolving and not always interpreted in a consistent manner. If we fail to comply with any such laws or regulations, we may be subject to enforcement actions that may not only expose us to litigation, fines, and civil and/or criminal penalties, but also require us to change our business practices, each of which could adversely affect our business, results of operations, and financial condition.

The regulatory framework for data privacy issues worldwide is evolving and is likely to remain uncertain for the foreseeable future. The occurrence of unanticipated events often rapidly drives the adoption of legislation or regulation affecting the use, collection, or other processing of data and manners in which we conduct our business. Restrictions have been placed upon the collection, management, aggregation, and use of information, and compliance with those restrictions may require us to change how we collect, manage, aggregate, and use data in the future, which could result in a material increase in the cost of collecting or otherwise obtaining certain kinds of data. These restrictions could further limit the ways in which we may use or disclose information, or may require us to make changes to our offerings, which could adversely affect our business, results of operations, and financial condition. In particular, interest-based advertising, or the use of data to draw inferences about a user's interests and deliver relevant advertising to that user, and similar or related practices (sometimes referred to as behavioral advertising or personalized advertising), such as cross-device data collection and aggregation, have come under increasing scrutiny by legislative, regulatory, and self-regulatory bodies in the United States and abroad that focus on consumer protection or data privacy. In addition, the steps taken by companies to de-identify personal data, to use and distribute the resulting data, including for purposes of personalization and the targeting of advertisements, have also been a frequent target of scrutiny by these authorities. Much of the related regulatory activity has focused on the use of cookies and other technology to collect information about Internet users' online browsing activity on web browsers, mobile devices, and other devices, to associate such data with user or device identifiers or de-identified identities across devices and channels.

In addition to governmental authorities, providers of Internet browsers have engaged in, or announced plans to continue or expand, efforts to provide increased visibility into, and certain controls over, cookies and similar technologies and the data collected using such technologies. For example, Google announced on January 4, 2024, that it was disabling third-party cookies for 1% of Chrome users with plans to disable third-party cookies for additional Chrome users in the latter half of the year. Because we, and our customers, rely upon large volumes of such data collected primarily through cookies and similar technologies, it is possible that these efforts may have a substantial impact on our ability to collect and use data from Internet users, and it is essential that we monitor developments in this area domestically and globally, and engage in responsible privacy practices, including providing consumers with notice of the types of data we collect and how we use that data to provide our services.

In the United States, the U.S. Congress and state legislatures, along with federal regulatory authorities have increased their attention on matters concerning the collection and use of consumer data. In the United States, non-sensitive consumer data generally may be used under current rules and regulations, subject to certain restrictions, so long as the person does not affirmatively “opt-out” of the collection or use of such data. If an “opt-in” model or other more restrictive regulations were to be adopted in the United States, less data would be available, and the cost of data would be higher.

California enacted the California Consumer Privacy Act (“CCPA”) which took effect in January 2020 and was later amended by the California Privacy Rights Act (“CPRA”), with those amendments taking effect in January 2023. The CCPA, as amended by the CPRA, is referred to as the “CCPA.” The CCPA created individual privacy rights for California residents, including rights of deletion and access, and increased the privacy and security obligations of businesses handling personal data. The CCPA is also still enforceable by the California Attorney General, and there is a CCPA private right of action relating to certain data security incidents. The CCPA generally requires covered businesses to, among other things, provide new disclosures to California consumers regarding the collection, use and disclosure of their personal information. The CCPA also affords California consumers new abilities to opt-out of certain sales of personal information, a concept that is defined broadly and is subject to evolving regulations promulgated initially by the California Attorney General, and now the California Privacy Protection Agency (“CPPA”), a newly created agency under the CPRA charged with CCPA rulemaking and enforcement.

The CPRA also imposed additional data protection obligations on companies doing business in California, including additional consumer rights processes and opt-outs for certain uses of sensitive data and “sharing” of personal information for cross-context behavioral advertising. While new CCPA regulations have been introduced, enforcement of some have been initially delayed through court orders but such enforcement is expected to begin in March 2024. The effects of the CCPA, including from expected but not yet promulgated regulations, are potentially significant and may require us to modify our data collection or processing practices and policies and to incur substantial costs and expenses in an effort to comply, which will increase our potential exposure to regulatory enforcement and/or litigation. Decreased availability and increased costs of information due to implementing the CCPA, could adversely affect our ability to meet our customers’ requirements and could have an adverse effect on our business, results of operations, and financial condition.

The CCPA has encouraged “copycat” laws in other states across the country. Following California’s lead, several other states enacted privacy laws that took effect in 2023: the Colorado Privacy Act, the Connecticut Personal Data Privacy and Online Monitoring Act, the Utah Consumer Privacy Act, and the Virginia Consumer Data Protection Act. Additional state privacy laws in nine other states have been enacted and are set to take effect between 2024 and 2026: the Florida Digital Bill of Rights (July 1, 2024), Oregon’s protections for the personal data of consumer enacted through SB 619 (July 1, 2024), the Texas Data Privacy and Security Act (July 1, 2024), Montana’s Consumer Data Privacy Act (October 1, 2024), the Delaware Personal Data Privacy Act (January 1, 2025), Iowa’s Consumer Data Protection Act (January 1, 2025), the New Jersey Senate Bill 332 (January 15, 2025), the Tennessee Information Protection Act (July 1, 2025) and the Indiana Consumer Data Protection Act (January 1, 2026). Compliance with new privacy legislation adds complexity and may require investment in additional resources for compliance programs, thus potentially resulting in additional costs and expense of resources to maintain compliance. We cannot yet fully predict the impact of such state laws or subsequent guidance on our business or operations, but it may require us to further modify our data processing practices and policies and to incur substantial costs and expenses in an effort to comply. This new proposed legislation may add additional complexity, variation in requirements, restrictions, and potential legal risk, require additional investment in resources to compliance programs, and could impact strategies and availability of previously useful data and could result in increased compliance costs and/or changes in business practices and policies. Although it continues to be introduced as a bill in Congress each year, it remains to be seen whether the U.S. will implement federal consumer privacy legislation.

In Europe, the GDPR took effect on May 25, 2018, and applies to products and services that we provide in Europe, as well as the processing of personal data of European Union (“EU”) citizens, wherever that processing occurs. The United Kingdom (“U.K.”) implemented the Data Protection Act, effective May 2018, and statutorily amended it in 2019 to contain provisions, including its own derogations, for how GDPR is applied in the U.K. post-Brexit (the “UK GDPR”). The GDPR includes operational requirements for companies that receive or process personal data of residents of the EU. For example, we are required to offer consent mechanisms to data subjects in Europe before processing data for certain aspects of our service. Failure to comply with GDPR may result in significant penalties for non-compliance of up to the greater of €20 million (£17.5 million in the U.K.) or 4% of an enterprise’s global annual revenue. In addition to the foregoing, a breach of the GDPR could result in regulatory investigations, reputational damage, orders to cease/ change our processing of our data, enforcement notices, and/ or assessment notices (for a compulsory audit). We may also face civil claims including representative actions and other class action type litigation (where individuals have suffered harm), potentially amounting to significant compensation or damages liabilities, as well as associated costs, diversion of internal resources, and reputational harm.

Further, European regulators continue to be focused on compliance with requirements in the online behavioral advertising ecosystem and enforcing national laws that implement the ePrivacy Directive (commonly called the “Cookie Directive”) in those ecosystems. Notably, discussions continue about replacing the ePrivacy Directive with an EU Regulation known as the ePrivacy Regulation which would significantly increase fines for non-compliance and impose burdensome requirements around obtaining consent. European court decisions and regulators’ recent guidance continue to drive increased attention to cookies and tracking technologies. As regulators start to enforce a stricter approach (which has already begun to occur in Germany, where data protection authorities have initiated a probe on third-party cookies), this could lead to substantial costs, require significant systems changes, limit the effectiveness of our marketing activities, divert the attention of our technology personnel, adversely affect our margins, increase costs, and subject us to additional liabilities.

IAB Europe previously collaborated with the digital advertising industry to create a user-facing framework (the Transparency and Control Framework, or “TCF”) for establishing and managing legal bases under the GDPR and other U.K. and EU privacy laws including the ePrivacy Directive. Although the TCF is actively in use, its viability as a compliance mechanism is under review by the Belgian Data Protection Authority (“DPA”) and others and we cannot predict its effectiveness over the long term. In February 2022, the Belgian DPA issued an order against IAB Europe that imposes specific remedies on IAB Europe and its operation of TCF. IAB Europe appealed the Belgian DPA’s decision, and recently, the Belgian Market Court issued an interim ruling on the appeal and referred preliminary questions to the CJEU for guidance. It is unclear whether the Belgian DPA will rule on the corrective action plan submitted by the IAB prior to a final judgement on the appeal. Further, other European regulators have questioned TCF’s viability and activists have filed complaints with regulators of alleged non-compliance by specific companies that employ the TCF.

In addition, some countries, including India, Brazil, Thailand, and Japan, are considering or have passed legislation implementing data protection requirements or requiring local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services or force us to change business practices to conform to local law. Any failure to achieve required data protection standards (which are not currently clear when applied to the online advertising ecosystem) may result in lawsuits, regulatory fines, or other actions or liability, all of which may harm our results of operations. Because the interpretation and application of privacy and data protection laws, such as the CCPA and GDPR, and their related regulations and standards, are uncertain and sometimes contradictory across jurisdictions, it is possible that these laws, regulations and standards may be interpreted and applied in manners that are, or are asserted to be, inconsistent with our data management practices or the technological features of our solutions.

We are also subject to laws and regulations that dictate whether, how, and under what circumstances we can transfer, process and/or receive certain data that is critical to our operations, including data shared between countries or regions in which we operate and data shared among our products and services.

We are also subject to regulation with respect to political advertising activities, which are governed by various federal and state laws in the United States, and national and provincial laws worldwide. Online political advertising laws are rapidly evolving and our publishers may impose restrictions on receiving political advertising, especially in light of the 2024 elections both in the United States and in foreign jurisdictions. The lack of uniformity and increasing compliance requirements around political advertising may adversely impact the amount of political advertising spent through our platform, increase our operating and compliance costs, and subject us to potential liability from regulatory agencies.

In addition to government regulation, privacy advocacy and industry groups may propose new and different self-regulatory standards that either legally or contractually apply to us or our customers. We are members of self-regulatory bodies that impose additional requirements related to the collection, use, and disclosure of consumer data. Under the requirements of these self-regulatory bodies, in addition to other compliance obligations, we are obligated to provide consumers with notice about our use of cookies and other technologies to collect consumer data and of our collection and use of consumer data for certain purposes, and to provide consumers with certain choices relating to the use of consumer data. Some of these self-regulatory bodies have the ability to discipline members or participants, which could result in fines, penalties, and/or public censure (which could in turn cause reputational harm) being imposed on us. Additionally, some of these self-regulatory bodies might refer violations of their requirements to the U.S. Federal Trade Commission or other regulatory bodies. If we were to be found responsible for such a violation, it could adversely affect our reputation, as well as our business, results of operations, and financial condition.

Legal uncertainty and industry unpreparedness for new regulations may mean substantial disruption and inefficiency, demand constraints, and reduced inventory supply and value.

Some of our publishers may be unprepared to comply with evolving regulatory guidance under the CCPA, CPRA, GDPR, UK GDPR, or other privacy regulations, which may result in removing personal data from their inventory before passing it into the bid stream. This may lower their inventory, at least temporarily, resulting in loss of ad spend and revenue for us. Further, since we do not have direct relationships with end users, we rely on publishers to obtain such consents as required and may be subject to liability, including fines, lawsuits, and other penalties, if they fail to adhere to evolving consent requirements. While we can and do provide training and guidance on compliance, the nature of the digital advertising ecosystem and technology, without direct access to the end user, does not support 100% verification that consent from end users has been obtained, when required by applicable law or regulations, and we may inadvertently process personal data when we should not be. This exposes us to potential regulatory scrutiny, investigations, fines, penalties, and other legal and financial exposure. Additionally, privacy and data protection laws are evolving, and it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our safeguards and practices that could result in fines, lawsuits, and other penalties, and significant changes to our publishers' business practices and inventory. Even well-prepared publishers and buyers may be confronted with difficult choices and administrative and technical hurdles as they implement compliance programs and integrate with multiple other parties in the ecosystem. Further, compliance program design and implementation will be an ongoing process as understanding of the CCPA, CPRA, GDPR, UK GDPR, increasing numbers of U.S. state privacy laws, or other emerging regulations and industry compliance standards, evolves and companies address sometimes conflicting compliance guidance. In addition to California, Colorado, Connecticut, Delaware, Florida, Indiana, Iowa, Montana, Nevada, New Jersey, Oregon, Tennessee, Texas, Utah, and Virginia have all enacted regulations that may apply to our business, and we expect more state legislatures or regulatory agencies to do the same. The resulting process friction could result in substantial inefficiency and loss of inventory and demand, as well as increased burdens upon our organization as we seek to assist customers and adapt our own technology and processes as necessary to comply with laws and regulations and adapt to industry practice. The uncertain regulatory environment caused by the CCPA, GDPR, UK GDPR, increasing numbers of U.S. state privacy laws, or other emerging regulations may disadvantage us in comparison to larger, integrated competitors such as Google and Meta (Facebook), which have greater compliance resources and can take advantage of their direct relationships with end users to secure consent directly from those users. Changes in the business practices of such large integrated competitors could impose additional requirements with respect to the retention and security of our handling or ability to handle customer and end user data, could limit our marketing and core business activities, and have an adverse effect on our business, results of operations, and financial condition.

Recent rulings from the Court of Justice of the European Union invalidated the EU-US Privacy Shield as a lawful means for transferring personal data from the European Union to the United States; this introduces increased uncertainty and may require us to change our EU data practices and/or rely on an alternative legally sufficient compliance measure.

The GDPR generally prohibits the transfer of personal data of EU subjects outside of the European Union to another country that the European Commission does not recognize as offering an adequate level of data protection unless a lawful data transfer mechanism has been implemented or a data transfer derogation applies. On July 16, 2020, in a case known as Schrems II, the Court of Justice of the European Union (the "CJEU") ruled on the validity of two of the primary data transfer mechanisms.

The first mechanism called the EU-US Privacy Shield operated by the U.S. Department of Commerce was declared invalid as a legal mechanism to transfer data from Europe to the United States in 2020. As a result, despite the fact that we certified our compliance to the EU-US Privacy Shield, our customers were no longer able to rely on this mechanism as a lawful means to transfer European data to us in the United States.

This was the case until October 2022, when the Biden administration negotiated new privacy transfer terms with EU regulators, and signed an Executive Order in October 2022 directing the steps the United States will take to implement its commitments to the EU/US data privacy framework. On July 10, 2023, the European Commission adopted an adequacy decision for the EU-U.S. Data Privacy Framework, and we have self-certified to comply with the EU - U.S. Data Privacy Framework, the UK Extension to the EU-U.S. Data Privacy Framework, and the Swiss-U.S. Data Privacy Framework as a mechanism to legally facilitate personal data transfers from the EU, the U.K., and Switzerland to the U.S. This new Data Privacy Framework could be subject to legal challenge in front of the CJEU, where non-governmental organizations successfully litigated to invalidate the Privacy Shield in 2020.

The second mechanism called the Standard Contractual Clauses (“SCCs”) is an alternative transfer measure that we also offer to our EU and UK customers for cross-border data transfers that was upheld as a valid legal mechanism for transnational data transfers by the CJEU. However, the ruling requires that European organizations seeking to rely on the SCCs to export data out of the European Union must ensure the data is protected to a standard that is “essentially equivalent” to that in the European Union, including, where necessary, by taking “supplementary measures” to protect the data. Although “supplementary measures” are not explicitly defined, it is possible that European data protection authorities may determine that there are no supplementary measures that can legitimize EU-US data transfers. For the time being, we will rely on the DPF and SCCs for EU-US transfers of EU personal data and explore what “supplementary measures” can be implemented to protect EU personal data that is transferred to us in the United States. SCCs also contemplate data received from a third party, but may not cover data that is collected directly on behalf of a third party. In June 2021, the European Commission further updated the SCCs to require additional information for cross-border data transfers. It remains possible that the SCCs may be later determined inadequate to cover our use of cookies and other tracking technologies placed directly on consumer’s browsers or devices through our publishers or buyers’ websites.

We may also need to continue to restructure our data export practices because of Brexit. Personal data may not be able to flow freely between the European Union and the United Kingdom, and our United Kingdom subsidiaries may need to enter into SCCs and adopt “supplementary measures” both with customers and other group entities, in order to ensure the continuing flow of data to and from the United Kingdom subsidiary. On June 28, 2021, the European Commission issued an adequacy decision for personal data transfers from the EEA to the U.K., with a sunset clause of four years, meaning that the European Commission will review and renew only if the European Commission considers that the U.K. continues to ensure an adequate level of data protection. Notably, the European Commission reserved a right to intervene at any time during the four-year adequacy period if the U.K. deviates from the level of protection then in place. If this adequacy decision is reversed by the European Commission, we would have to implement protection measures such as the SCCs for personal data transfers between the EU and the U.K. or find alternative solutions for the compliant transfer of personal data from the EU into the U.K. In March 2022, the U.K. Information Commissioner’s Office adopted an International Data Transfer Agreement (IDTA) for transfers of personal data out of the U.K. to so-called third countries, as well as an international data transfer addendum (U.K. SCC Addendum) that can be used with the SCCs for the same purpose.

Depending on evolving legal developments, we may need to restructure our transfers of European data via another European subsidiary and have such entity enter into SCCs with other group entities and implement “supplementary measures” to ensure the continuing flow of data from the European Union to the United States. In the event that use of the SCCs is subsequently invalidated as a solution for data transfers to the United States, or there are additional changes to the data protection regime in the European Union resulting in any inability to transfer personal data from the European Union to the United States in compliance with data protection laws, European customers may be more inclined to work with businesses that do not rely on such compliance mechanisms to ensure legal and regulatory compliance, such as EU-based companies or other competitors that do not need to transfer personal data to the United States in order to avoid the above-identified risks and legal issues. Such changes could cause us to incur penalties under GDPR and UK GDPR and could increase the cost and complexity of operating our business.

Our failure or the failure of third parties to protect our sites, networks and systems against security breaches, or otherwise to protect our confidential information, could damage our reputation and brand and substantially harm our business and operating results.

We collect, maintain, transmit and store data about consumers, employees, partners and others, including personal and other confidential information.

We also engage third parties that store, process, and transmit these types of information on our behalf. We rely on encryption and authentication technology licensed from third parties in an effort to securely transmit confidential and sensitive information, including payment information. Advances in computer capabilities, new technological discoveries, or other developments may result in the whole or partial failure of this technology to protect transaction data or other confidential and sensitive information from being breached or compromised. In addition, ecommerce websites are often attacked through compromised credentials, including those obtained through phishing and credential stuffing. Our security measures, and those of our third-party service providers, might not detect or prevent all attempts to breach our systems, denial-of-service attacks, viruses, malicious software, break-ins, phishing attacks, social engineering, security breaches, ransomware, credential stuffing attacks, or other attacks and similar disruptions that may jeopardize the security of information stored in or transmitted by our websites, networks, and systems or that we or such third parties otherwise maintain, including payment card systems, which may subject us to fines, higher transaction fees, or limit or terminate our access to certain payment methods. We and such third parties might not anticipate, prevent, or detect attacks until after they have already been launched. Further, techniques used to obtain unauthorized access to, or sabotage, systems change frequently and might not be known until launched against us or our third-party service providers. In addition, security breaches can also occur as a result of non-technical issues, including intentional or inadvertent breaches by our employees or by third parties. These risks can increase over time as the complexity and number of technical systems and applications we use also increases.

Breaches of our security measures or those of our third-party service providers on whom we rely or other cyber security incidents could result in unauthorized access to our mobile applications, sites, networks and systems; unauthorized access to and misappropriation of data and customer information, including customers' personally identifiable information, or other confidential or proprietary information of ourselves or third parties; viruses, worms, spyware or other malware being served from our mobile applications, sites, networks or systems; deletion or modification of content or the display of unauthorized content on our mobile applications or sites; interruption, disruption or malfunction of operations; costs relating to breach remediation, deployment of additional personnel and protection technologies, response to governmental investigations and media inquiries and coverage; engagement of third-party experts and consultants; litigation; regulatory action; investigations, fines or penalties, and other potential liabilities. In the future, we or our third-party service providers may experience social engineering, ransomware, phishing, malware and similar attacks and threats of denial-of-service attacks and such attacks could have a material adverse effect on our operations and financial condition. If any of these breaches of security should occur, our reputation and brand could be damaged, our business may suffer, we could be required to expend significant capital and other resources to alleviate problems caused by such breaches, and we could be exposed to a risk of loss, litigation or regulatory action and possible liability. We cannot guarantee that recovery protocols and backup systems will be sufficient to prevent data loss. Actual or anticipated attacks may cause us to incur increasing costs, including costs to deploy additional personnel and protection technologies, train employees and engage third-party experts and consultants. In addition, any party who is able to illicitly obtain a user's password could access the user's transaction data or personal information, resulting in the perception that our systems are insecure.

Many U.S. and foreign laws and regulations require companies to provide notice of data security breaches and/or incidents involving certain types of personal data to individuals, the media, government authorities or other third parties. In addition, some of our customers contractually require notification of data security breaches. Any compromise or breach of our security measures, or those of our third-party service providers, could cause significant legal and financial exposure, adverse publicity, and a loss of confidence in our security measures, which could have a material adverse effect on our business, results of operations, financial condition and prospects. There can be no assurance that any limitations of liability provisions in our contracts would be enforceable or adequate or would otherwise protect us from any such liabilities or damages with respect to any particular claim arising from a cyber incident. We also cannot be sure that our existing cyber insurance coverage, general liability insurance coverage, and coverage for errors or omissions will fully cover such incidents, will continue to be available on acceptable terms, or will be available in sufficient amounts to cover one or more large claims, or that insurers will not deny coverage as to any future claim. One or more large, successful claims against us in excess of our available insurance coverage, or changes in our insurance policies, including premium increases or large deductible or co-insurance requirements, could have an adverse effect on our business, operating results and financial condition.

Failure to comply with industry self-regulation could adversely affect our business, results of operations, and financial condition.

In addition to complying with government regulations, we participate in trade associations and industry self-regulatory groups such as the Interactive Advertising Bureau and the Networking Advertising Initiative that promote best practices or codes of conduct addressing privacy. For example, we have undertaken to comply with industry codes of conduct in the United States and Europe. On our website, we offer consumers the ability to opt out of receiving advertisements based on cookies or other technologies. If we encounter difficulties implementing such guidelines, or our opt-out mechanisms fail to work as designed, we may experience negative publicity and be the subject of investigations or litigation.

Any representations that we make regarding our adherence to self-regulatory standards could result in regulatory action if we fail to meet such representations. Any regulatory action against us could be costly and time consuming, require us to change our business practices, cause us to divert management's attention and our resources, and be damaging to our reputation and our business. New self-regulatory guidelines that are inconsistent with our practices or in conflict with applicable laws and regulations in the United States and other countries where we do business could arise. If we fail to abide by or are perceived as not operating in accordance with applicable laws, regulations, and industry best practices, or any industry guidelines or codes with regard to privacy or the provision of Internet advertising, our reputation may suffer and we could lose market share or relationships with our publishers, buyers, or others.

In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that may apply to us, and are constantly evolving in the United States, European Union, and other jurisdictions. Because the interpretation and application of privacy and data protection laws, regulations, rules, and other standards are still uncertain, it is possible that these laws, rules, regulations, and other actual or alleged legal obligations, such as contractual or self-regulatory obligations, may be interpreted and applied in a manner that is inconsistent with our existing data management practices or the functionality of our platform. If so, in addition to the possibility of fines, lawsuits, and other claims, we could be required to change our offerings or business activities and practices or modify our software, any of which could have an adverse effect on our business, results of operations, and financial condition.

We are subject to governmental economic sanctions requirements and export and import controls that could impair our ability to compete in international markets or subject us to civil or criminal liability.

We are subject to various U.S. export control and trade and economic sanctions laws and regulations, including the U.S. Export Administration Regulations and the various sanctions programs administered by the U.S. Department of the Treasury's Office of Foreign Assets Control (collectively, "Trade Controls"). U.S. Trade Controls may prohibit the shipment of specified products and services to certain countries, governments, and persons. Although we endeavor to conduct our business in compliance with Trade Controls, our limited ability to oversee and control the inventory of our channel partners or our failure to successfully comply may expose us to negative legal and business consequences, including civil or criminal penalties, governmental investigations, and reputational harm.

Furthermore, if we export our technology or software, the exports may require authorizations, including a license, a license exception, or other appropriate government authorization or regulatory requirements. Complying with Trade Controls may be time-consuming and may result in the delay or loss of opportunities.

In addition, various countries regulate the import of encryption technology, including the imposition of import permitting and licensing requirements, and have enacted laws that could limit our ability to offer our platform or could limit our customers' ability to use our platform in those countries. Changes in our platform or future changes in export and import regulations may create delays in the introduction of our platform in certain markets or prevent our customers with international operations from deploying our platform globally. Any change in export or import regulations, economic sanctions or related legislation, or change in the countries, governments, persons, or technologies targeted by such regulations, could result in decreased use of our platform by, or in our decreased ability to export our technology and services to, existing or potential customers with international operations. Any decreased use of our platform or limitation on our ability to export our platform could adversely affect our business, results of operations, and financial condition.

Risks Related to Intellectual Property

We may be subject to intellectual property rights claims by third parties, which are costly to defend, could require us to pay significant damages, and could limit our ability to use technology or intellectual property.

We operate in an industry with extensive intellectual property litigation. There is a risk that our business, platform, and services may infringe or be alleged to infringe the trademarks, copyrights, patents, and other intellectual property rights of third parties, including patents held by our competitors or by non-practicing entities. We could be subject to third party claims if our publishers or buyers do not have sufficient rights to the content, technology, data, or other material associated with an ad impression that they provide, or if it infringes or is alleged to infringe the intellectual property rights of other parties. We may also face allegations that our employees have misappropriated or divulged the intellectual property of their former employers or other third parties. Regardless of whether claims that we are infringing on the intellectual property rights of others have any merit, the claims are time consuming, divert management attention and financial resources, and are costly to evaluate and defend. Some of our competitors have substantially greater resources than we do and are able to sustain the cost of complex intellectual property litigation to a greater extent and for longer periods of time than we could. Due to the cost of litigation, we may choose to enter into license agreements with third parties alleging infringement even when we do not believe our business, platform, or services infringe on third parties' intellectual property rights. Results of intellectual property litigation matters are difficult to predict and may require us to stop offering some features, purchase licenses, which may not be available on favorable terms or at all, or modify our technology or our platform while we develop non-infringing substitutes, or incur significant settlement costs. Any of these events could have an adverse effect on our business, results of operations, and financial condition.

Our intellectual property rights may be difficult to enforce and protect, which could enable others to copy or use aspects of our technology without compensating us, thereby eroding our competitive advantages and having an adverse effect on our business, results of operations, and financial condition.

We rely upon a combination of trade secrets protections, third-party confidentiality and non-disclosure agreements, contractual restrictions on disclosure and use, and trademark, copyright, patent, and other intellectual property laws to establish and protect our proprietary technology and intellectual property rights. We rely on copyright laws to protect computer programs related to our platform and our proprietary technologies, although to date we have not registered for statutory copyright protection. In order to bring a copyright infringement lawsuit in the United States, the copyright must be registered. Accordingly, the remedies and damages available to us for unauthorized use of our software or products may be limited. Historically, we have prioritized keeping our technology architecture, trade secrets, and engineering roadmap private, and as a general matter, have not patented our proprietary technology. As a result, we cannot look to patent enforcement rights to protect much of our proprietary technology. Any issued patents may be challenged, invalidated, or circumvented, and any rights granted under these patents may not actually provide adequate defensive protection or competitive advantages to us. Additionally, the process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner.

We cannot guarantee that others will not independently develop technology with the same or similar functions to our proprietary technology that we rely on to conduct our business and differentiate ourselves from our competitors. Unauthorized parties may also attempt to copy or obtain and use our technology to develop applications with the same functionality as our offerings, and policing unauthorized use of our technology and intellectual property rights is difficult, time-consuming, and costly, and may not be effective. In addition, the laws of some foreign countries may not be as protective of intellectual property rights as those of the United States, and mechanisms for enforcement of our intellectual property rights in such countries may be inadequate. If we are unable to protect our intellectual property rights (including in particular, the proprietary aspects of our offerings) we may find ourselves at a competitive disadvantage to others who have not incurred the same level of expense, time, and effort to create and protect their intellectual property, which could adversely affect our business, results of operations, and financial condition.

While it is our policy to protect and defend our rights to our intellectual property, especially via trade secrets protections, we cannot predict whether steps taken by us to protect our intellectual property will be adequate to prevent infringement, misappropriation, dilution, or other violations of our intellectual property rights. Third parties may knowingly or unknowingly infringe our intellectual property rights, third parties may challenge intellectual property rights held by us, and pending and future trademark and patent applications may not be approved. These claims may result in restrictions on our use of our intellectual property or the conduct of our business. In any of these cases, we may be required to expend significant time and expense to prevent infringement or to enforce our rights.

Our customer agreements generally restrict the use of our confidential information solely to such customer's use in connection with its use of our offerings. In spite of such limitations, reverse engineering our software and feature sets, or the theft or misuse of our confidential information, could occur by customers or other third parties who have access to our technology, and we may fail to detect such theft or misuse in a timely manner.

We also endeavor to enter into agreements with our employees and contractors in order to limit access to and disclosure of our confidential information, as well as to clarify rights to intellectual property and technology associated with our business. These agreements may not effectively grant all necessary rights to any inventions that may have been developed by such employees or consultants. In addition, these agreements may not effectively prevent unauthorized use or disclosure of our confidential information, intellectual property, or technology and may not provide an adequate remedy in the event of unauthorized use or disclosure of our confidential information, intellectual property, or technology. Furthermore, protecting our intellectual property is particularly challenging after our employees or contractors end their relationship with us, and, in some cases, decide to work for our competitors. Enforceability of the non-compete agreements that we have in place is not guaranteed, and contractual restrictions could be breached without us becoming aware of such breach or adequate remedies available to us.

We rely on licenses to use the intellectual property rights of third parties to conduct our business.

We rely on products, technologies, and intellectual property that we license from third parties for use in operating our business. We cannot assure you that these third-party licenses, or support for such licensed products and technologies, will continue to be available to us on commercially reasonable terms, if at all. We cannot be certain that our licensors are not infringing the intellectual property rights of others or that our suppliers and licensors have sufficient rights to the technology in all jurisdictions in which we may operate. Some of our license agreements may be terminated by our licensors for convenience. If we are unable to obtain or maintain rights to any of this technology because of intellectual property infringement claims brought by third parties against our suppliers and licensors or against us, or if we are unable to continue to obtain the technology or enter into new agreements on commercially reasonable terms, our ability to operate and expand our business could be adversely affected.

Our platform relies on third-party open source software components. Failure to comply with the terms of the underlying open source software licenses could expose us to liabilities, and the combination of open source software with code that we develop could compromise the proprietary nature of our platform.

Our platform utilizes software licensed to us by third-party authors under "open source" licenses, and we expect to continue to utilize open source software in the future. The use of open source software may entail greater risks than the use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. To the extent that our platform depends upon the successful operation of the open source software we use, any undetected errors or defects in this open source software could prevent the deployment or impair the functionality of our platform, delay new solutions introductions, result in a failure of our platform, and harm our reputation. For example, undetected errors or defects in open source software could render it vulnerable to breaches or security attacks, and, in conjunction, make our systems more vulnerable to data breaches. Furthermore, some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software we use. If we combine our proprietary software with open source software in a specific manner, we could, under some open source licenses, be required to release the source code of our proprietary software to the public. This would allow our competitors to create similar solutions with lower development cost, effort, and time, and ultimately put us at a competitive disadvantage.

Although we monitor our use of open source software to avoid subjecting our platform to conditions we do not intend or requirements to disclose source code, we cannot assure you that our processes for controlling our use of open source software in our platform will be effective. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue operating using our offerings on terms that are not economically feasible, to re-engineer our solution or the supporting computational infrastructure to discontinue use of code, or to make generally available, in source code form, portions of our proprietary code.

Risks Related to Financial and Accounting Matters

If we fail to maintain effective internal controls, our ability to produce accurate financial statements and other disclosures on a timely basis could be impaired.

We are required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. Effective internal control over financial reporting is necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations. Ineffective internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

This assessment must include disclosure of any material weaknesses identified by our management in our internal control over financial reporting, as well as a statement that our independent registered public accounting firm has issued an opinion on the effectiveness of our internal control over financial reporting. Section 404(b) of the Sarbanes-Oxley Act requires our independent registered public accounting firm to annually attest to the effectiveness of our internal control over financial reporting, which requires increased costs, expenses, and management resources. An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not. Undetected material weaknesses in our internal controls could lead us to restate our financial statements, which could cause investors to lose confidence in our reported financial information, have a negative effect on the trading price of our common stock, and result in additional costs to remediate such material weaknesses. We are required to disclose changes made in our internal control and procedures on a quarterly basis.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our consolidated financial statements for prior periods.

Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we are required to include in our periodic reports that are filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our Class A common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Global Market.

In addition to our results determined in accordance with GAAP, we believe certain non-GAAP measures and key metrics may be useful in evaluating our operating performance. We present certain non-GAAP financial measures and key metrics in this report and intend to continue to present certain non-GAAP financial measures and key metrics in future filings with the SEC and other public statements. Any failure to accurately report and present our non-GAAP financial measures and key metrics could cause investors to lose confidence in our reported financial and other information, which could have a negative effect on the trading price of our Class A common stock.

Our credit agreement contains operating and financial covenants that may restrict our business and financing activities.

As of December 31, 2023, we had no outstanding borrowings under our Senior Secured Credit Facilities Credit Agreement (the "Credit Agreement") with Silicon Valley Bank ("SVB"). Borrowings under the Credit Agreement are secured by substantially all of our assets. The Credit Agreement contains customary representations and warranties as well as customary affirmative and negative covenants. Negative covenants include, among others, limitations on incurrence of, indebtedness, liens, dispositions of property and investments by us and our subsidiaries. In addition, the Credit Agreement requires us to maintain certain interest coverage, leverage and senior leverage ratios. The operating and financial restrictions and covenants in the Credit Agreement, as well as any future financing arrangements that we may enter into, may restrict our ability to finance our operations, engage in, expand, or otherwise pursue our business activities and strategies. Our ability to comply with these or other covenants may be affected by events beyond our control, and future breaches of these or other covenants could result in a default under the Credit Agreement. If not waived, future defaults could cause all of the outstanding indebtedness under our Credit Agreement to become immediately due and payable and terminate all commitments to extend further credit.

If we do not have or are unable to generate sufficient cash to repay our debt obligations when they become due and payable, either upon maturity or in the event of a default, it could negatively impact our ability to operate and continue our business as a going concern. Additionally, if we are unable to repay our debt obligations under the Credit Agreement, we may not be able to obtain additional future debt or equity financing on favorable terms, if at all, which could negatively impact our ability to operate and continue our business as a going concern.

Moreover, on March 10, 2023, SVB was closed by the California Department of Financial Protection and Innovation and subsequently appointed the Federal Deposit Insurance Corporation (“FDIC”) as receiver. Similarly, on March 12, 2023, Signature Bank and Silvergate Capital Corp. were each swept into receivership. While the FDIC has taken steps to make whole all depositors of SVB, there is no assurance that similar guarantees will be made in the event of further bank closures and continued instability in the global banking system. If other banks and financial institutions enter receivership or become insolvent in the future in response to financial conditions affecting the banking system and financial markets, then our ability to obtain financing may be threatened, which could have a material adverse effect on our business and financial condition. Moreover, events such as the closure of SVB, in addition to other global macroeconomic conditions, may cause further turbulence and uncertainty in the capital markets.

Our tax liabilities may be greater than anticipated.

The U.S. and non-U.S. tax laws applicable to our business activities are subject to interpretation and change. We are subject to audit by the Internal Revenue Service and by taxing authorities of the state, local and foreign jurisdictions in which we operate. Our tax obligations are based in part on our corporate operating structure, including the manner in which we develop, value, use and hold our intellectual property, the jurisdictions in which we operate, how tax authorities assess revenue-based taxes such as sales and use taxes, the scope of our international operations, and the value we ascribe to our intercompany transactions. Taxing authorities may challenge, and have challenged, our tax positions and methodologies for valuing developed technology or intercompany arrangements, positions regarding the collection of sales and use taxes, and the jurisdictions in which we are subject to taxes, which could expose us to additional taxes. Any adverse outcomes of such challenges to our tax positions could result in additional taxes for prior periods, interest and penalties, as well as higher future taxes. In addition, our future tax expense could increase as a result of changes in tax laws, regulations or accounting principles, or as a result of earning income in jurisdictions that have higher tax rates. For example, various jurisdictions have threatened to impose laws that tax specified digital services, which may increase our tax obligations in such jurisdictions. Many countries have adopted changes to their tax laws based on the model rules adopted by The Organization for Economic Cooperation and Development defining a 15% global minimum tax (commonly referred to as Pillar 2) that could increase our tax obligations in countries where we do business or cause us to change the way we operate our business. Any increase in our tax expense could have a negative effect on our financial condition and results of operations. Moreover, the determination of our provision for income taxes and other tax liabilities requires significant estimates and judgment by management, and the tax treatment of certain transactions is uncertain. Any changes, ambiguity, or uncertainty in taxing jurisdictions’ administrative interpretations, decisions, policies and positions, including the position of taxing authorities with respect to revenue generated by reference to certain digital services, could also materially impact our income tax liabilities. Although we believe we have made and will continue to make reasonable estimates and judgments, the ultimate outcome of any particular issue may differ from the amounts previously recorded in our financial statements and any such occurrence could adversely affect our business, results of operations, and financial condition.

Tax changes could affect our effective tax rate and future profitability.

We are subject to federal, state, and local taxes in the United States, and we are subject to taxes in numerous foreign jurisdictions. Significant judgment is required in evaluating our tax positions and our worldwide provision for income taxes. During the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. In addition, our future income tax obligations could be adversely affected by changes in, or interpretations of, tax laws in the United States or in other jurisdictions in which we operate. For example, the United States tax legislation commonly referred to as the Tax Cuts and Jobs Act of 2017 (the “Tax Act”) (as modified by the Coronavirus Aid, Relief, Economic Security Act, the Families First Coronavirus Response Act and the American Rescue Plan Act), significantly reformed the Internal Revenue Code of 1986, as amended, reducing U.S. federal tax rates, making sweeping changes to rules governing international business operations, and imposing significant additional limitations on tax benefits, including the deductibility of interest and the capitalization of research and development expenses. In addition, the Inflation Reduction Act of 2022 (the “Inflation Reduction Act”) imposes a 15% corporate alternative minimum tax and 1% excise tax on repurchases of corporate stock. We are currently evaluating the various provisions of the Inflation Reduction Act but do not anticipate it will have a material effect on the condensed consolidated financial statements.

Tax proposals and enactments worldwide include changes to the existing framework in respect of income taxes, limitations on the ability of taxpayers to claim and utilize tax benefits, as well as new types of non-income taxes (such as taxes based on a percentage of revenue or taxes applicable to digital services). For example, the Organisation for Economic Co-operation and Development proposed introduction of the global minimum tax standard. Due to the large and expanding scale of our international business activities, these types of changes to the taxation of our activities could impact the tax treatment of our foreign earnings, increase our worldwide effective tax rate, increase the amount of taxes imposed on our business, and impact our financial position.

Risks Related to Ownership of Our Class A Common Stock

The trading price of the shares of our Class A common stock has been and may continue to be volatile and could subject us to litigation.

Technology stocks historically have experienced high levels of volatility. The trading price of our Class A common stock has fluctuated substantially and may continue to do so. These fluctuations could cause you to incur substantial losses, including all of your investment in our Class A common stock. Factors that could cause fluctuations in the trading price of our Class A common stock, some of which are beyond our control and may not be related to our operational or financial performance, include, among others, the following:

- volatility in the market price and trading volume of technology companies in general and of companies in the digital advertising industry in particular;
- announcements of new solutions or technologies, commercial relationships, acquisitions, or other events by us or our competitors;
- the public's reaction to our press releases, other public announcements, and filings with the SEC;
- fluctuations in the trading volume of our shares or the size of our public float;
- sales of large blocks of our common stock; actual or anticipated changes or fluctuations in our results of operations or financial projections;
- changes in actual or future expectations of investors or securities analysts;
- governmental or regulatory developments or actions, or litigation involving us, our industry, or both; and
- general economic conditions and trends or catastrophic events in our domestic and foreign markets.

In addition, if the market for technology stocks, the stock of digital advertising companies or the stock market, in general, experiences a loss of investor confidence, the trading price of our Class A common stock could decline for reasons unrelated to our business, results of operations, or financial condition. The trading price of our Class A common stock might also decline in reaction to events that affect other companies in the digital advertising industry even if these events do not directly affect us. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. If litigation is instituted against us, it could subject us to substantial costs, divert management's attention and resources, and adversely affect our business.

Insiders have substantial control over our company, including as a result of the dual class structure of our common stock, which could limit or preclude your ability to influence corporate matters, including the election of directors and the approval of any change of control transaction.

Our Class B common stock has ten votes per share, and our Class A common stock has one vote per share. Transfers of stock by holders of Class B common stock will generally result in those shares converting to Class A common stock, subject to limited exceptions. As of January 31, 2024, our directors and officers, and their respective affiliates, beneficially owned in the aggregate approximately 67.67% of the voting power of our capital stock. Because of the ten-to-one voting ratio between our Class B and Class A common stock, the holders of our Class B common stock collectively will continue to control a majority of the combined voting power of our common stock and therefore be able to control all matters submitted to our stockholders for approval. This concentrated control will limit or preclude your ability to influence corporate matters for the foreseeable future, including the election of directors, amendments of our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval. The interests of this group of stockholders may not coincide with our interests or the interests of other stockholders. This concentration of ownership may also have the effect of deterring, delaying or preventing a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company and might ultimately affect the market price of our common stock. Having a dual-class common stock structure may make our Class A common stock less attractive to some investors, such as funds and investment companies that attempt to track the performance of any indexes that prohibit or limit the inclusion of companies with such structures.

Sales of substantial amounts of our Class A common stock in the public markets, or the perception that they might occur, could cause the market price of our Class A common stock to decline.

Sales of a substantial number of shares of our Class A common stock into the public market, particularly sales by our directors and executive officers, or the perception that these sales might occur, could cause the market price of our Class A common stock to decline and may make it more difficult for you to sell your common stock at a time and price that you deem appropriate. Our directors, executive officers and employees hold options and restricted stock units under our equity incentive plans, and the common stock issuable upon the exercise of such options or vesting of such restricted stock units has been registered for public resale under the Securities Act. Accordingly, these shares of common stock will be able to be freely sold in the public market upon issuance subject to certain legal and contractual requirements.

Our charter documents and Delaware law could discourage takeover attempts and other corporate governance changes.

Our restated certificate of incorporation and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a provision that our board of directors will be classified into three classes of directors with staggered three-year terms at such time as the outstanding shares of our Class B common stock represent less than a majority of the combined voting power of our common stock, which could delay the ability of stockholders to change the membership of our board;
- the ability of our board to issue shares of preferred stock without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- a prohibition on stockholder action by written consent effective upon such time as the outstanding shares of our Class B common stock represent less than a majority of the combined voting power of our common stock;
- the requirement that a special meeting of stockholders may be called only by the chairman of the board, our chief executive officer, our lead director, or a majority of our board;
- the requirement for the affirmative vote of holders of at least 66-2/3% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend provisions of our restated certificate of incorporation or our restated bylaws;
- the ability of our board to amend the bylaws, which may allow it to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer;
- the requirement that stockholders submitting notice of a nomination or proposal to be considered at an annual meeting of our stockholders must have continuously beneficially owned at least 1% of our outstanding common stock for a period of one year before giving such notice;

- advance notice procedures with which stockholders must comply to nominate candidates to our board or to propose matters to be acted upon at a stockholders' meeting; and
- the dual class common stock structure in which holders of our Class B common stock have the ability to control the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the outstanding shares of our common stock, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets.

In addition, our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for derivative actions, actions asserting a breach of fiduciary duty, actions asserting a claim against us arising pursuant to the Delaware General Corporation Law, our restated certificate of incorporation or restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business, results of operations, and financial condition.

In addition, because we are incorporated in Delaware, we are governed by the provisions of the anti-takeover provisions of the Delaware General Corporation Law, which may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board, they would apply even if an offer rejected by our board was considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board, which is responsible for appointing the members of our management.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 1C. CYBERSECURITY

We recognize the importance of maintaining the trust and confidence of our publishers, buyers, partners, customers, and employees. The Audit Committee of our Board ("Audit Committee") is responsible for oversight of the Company's cybersecurity function and efforts, and receives quarterly updates from management regarding the Company's cybersecurity policies, standards, processes, and practices. In general, we seek to address cybersecurity risks through a comprehensive, cross-functional approach that is focused on preserving the confidentiality, security and availability of the information that we collect and store by identifying, preventing and mitigating cybersecurity threats and effectively responding to cybersecurity incidents when they occur. Our cybersecurity risk management program is overseen by our Senior Vice President, Infrastructure and Security ("SVP Security"), our executive management team, and our Board through the Audit Committee.

Risk Management and Strategy

We maintain a cross-functional cybersecurity program to identify, prevent, and mitigate cybersecurity threats and incidents. The program also includes implementing controls and procedures that provide for the prompt escalation of certain cybersecurity incidents so that decisions regarding the public disclosure and reporting of such incidents can be made by management in a timely manner.

Policies and Framework

Our cybersecurity efforts are governed by a set of policies to address data protection and security incident management, and overseen by our Security Incident Management Team ("SIMT"). Our policies are closely based on recognized frameworks established by the National Institute of Standards and Technology ("NIST"), the International Organization for Standardization ("ISO") and other applicable industry standards, and we expect to review them at least annually. Our information technology standards and infrastructure safeguards include information security standards prescribed for use by NIST, security measures aligned with the ISO/IEC 27000 series of standards, the Sarbanes-Oxley Act and SSAE 18/ISAE 3402, privacy regulations compliance, and other generally recognized industry standards, in each case, designed to safeguard the confidentiality, integrity and availability of our infrastructure and data and the resiliency of our operations.

In connection with these policies, we deploy technical safeguards that are designed to protect our information systems from cybersecurity threats, including firewalls, anti-malware functionality and access controls, which are evaluated and improved through vulnerability assessments and cybersecurity threat intelligence.

We also maintain a risk-based approach to identify and oversee cybersecurity risks presented by third parties, including vendors, service providers and other external users of our systems, as well as the systems of third parties that could adversely impact our business in the event of a cybersecurity incident affecting those third-party systems.

Incident Response and Recovery Planning

We have established and maintain incident response and recovery plans and procedures that address our response to a known or potential cybersecurity incident, including in our systems and those that occur on third-party systems that we use. These plans and procedures include the notification and escalation processes, the investigation and containment process, the evaluation, review, and remediation process for a known or potential cybersecurity incident, and a process to assess the materiality of an incident.

Our incident response and recovery planning are overseen by the SIMT and Company personnel who become aware of an incident or potential incident are required to notify the SIMT. The SIMT is comprised of senior members of management and subject matter experts and is responsible for overseeing our cybersecurity program and our response to any cybersecurity incidents.

Periodic Review, Testing and Training

In accordance with our policies, we perform periodic assessments and tests of the application of our policies, standards, processes, and practices that are designed to address cybersecurity threats and incidents. These efforts include a range of activities, including internal audits, assessments, threat modeling, vulnerability testing, and other exercises focused on evaluating the effectiveness of our cybersecurity measures and planning. We engage third parties to perform assessments on our cybersecurity measures as a component of our SOX compliance program.

We also provide regular, mandatory training for employees and contractors regarding cybersecurity threats as a means to equip our personnel with effective tools to address cybersecurity threats, including the detection and prevention of “phishing” and other attacks using social engineering, and to communicate our evolving information security policies, standards, processes, and practices.

Governance

The Board, in coordination with the Audit Committee, oversees our overall enterprise risk management (“ERM”) process, including the management of risks arising from cybersecurity threats and information security. The Audit Committee receives regular presentations and reports on cybersecurity risks, which address a wide range of topics including recent developments, evolving standards, vulnerability assessments, the threat environment, technological trends, and information security considerations arising with respect to our peers and third parties. Beginning in 2024, the Audit Committee will be provided updates on our process, procedures, policies and any cybersecurity incidents at least quarterly. In the event of a material incident, or incident that may be determined to be material, the Audit Committee is informed as soon as reasonably practical and provided regular updates by the SIMT. The Board and the Audit Committee also receive prompt and timely information regarding any cybersecurity incident that meets established reporting thresholds, as well as ongoing updates regarding any such incident until it has been addressed. On an annual basis, the Board and the Audit Committee will have the opportunity to discuss our approach to cybersecurity risk management with the SIMT.

Our SIMT is responsible for preventing, detecting and responding to cybersecurity threats and incidents to the Company, and includes our Chief Executive Officer (“CEO”), SVP Security, Chief Financial Officer (“CFO”), Chief Marketing Officer, Chief Technology Officer (“CTO”), General Counsel, and other subject matter experts. The SIMT works collaboratively across the Company to implement a program designed to protect our information systems and offerings from cybersecurity threats and to promptly identify and respond to any cybersecurity incidents in accordance with our incident response and recovery plans. To facilitate the success of our cybersecurity risk management program, multidisciplinary teams are deployed to address cybersecurity threats and to respond to cybersecurity incidents. Through ongoing communications with these teams, the SVP, Security and the SIMT monitor the prevention, detection, mitigation, and remediation of cybersecurity threats and incidents, and report such threats and incidents to our Board and Audit Committee when appropriate.

The SIMT, together with other internal and external advisors, has developed a Security Incident Management Policy (“Security Policy”) and Cybersecurity Incident Management Process (“CIM Process”) to help guide our response to any potential cybersecurity incidents or threats. These documents are reviewed on a periodic basis by the SIMT, and the Audit Committee will be apprised of the SIMT’s actions and potential improvements to the Security Policy and CIM process.

Our SVP Security has a strong background in engineering with over 30 years' of industry experience in technology and security, and previously operated one of the world's largest retail websites instituting and undergoing PCI and HIPPA certifications.

Cybersecurity threats, including as a result of any previous cybersecurity incidents, have not materially affected us, including our business strategy, results of operations or financial condition. Cybersecurity threats, and their evolving nature, may pose a risk to us and our strategy, results of operations, and financial condition in the future.

ITEM 2. PROPERTIES

We lease office and data center space in various cities across North America, Europe and Asia Pacific. We believe that our facilities are adequate to meet our needs for the immediate future and that, should it be needed, we will be able to secure additional space to accommodate expansion of our operations.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may become involved in legal or regulatory proceedings, lawsuits and other claims arising in the ordinary course of our business. In view of the inherent difficulty of predicting the outcome of such matters, we cannot state what the eventual outcome of such matters will be. However, based on our knowledge, we are not presently a party to any legal proceedings that, in the opinion of our management, would individually or taken together have a material adverse effect on our business, operating results, financial condition, or cash flows. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity and reputational harm, and other factors. For additional information, see Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II**ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES****Market Information**

Our Class A common stock began trading on the Nasdaq Global Market on December 9, 2020 under the symbol “PUBM.” Prior to that date, there was no public trading market for our Class A common stock. There is no public trading market for our Class B common stock.

Holders of Record

As of January 31, 2024, there were 99 holders of record of our Class A common stock and 78 holders of record of our Class B common stock. Because many of our shares of Class A common stock are held in street name by brokers and other nominees on behalf of stockholders, we are unable to estimate the total number of beneficial owners of our Class A common stock represented by these holders of record.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions, and other factors that our board may deem relevant.

Issuer Purchases of Equity Securities

The following table provides information about our repurchases of our Class A common stock during the three months ended December 31, 2023:

Period	Total Number of Shares Purchased	Average Price Paid Per Share ⁽²⁾	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽¹⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ⁽¹⁾
October 1, 2023 - October 31, 2023	616,300	\$ 12.06	616,300	\$ 28,465,793
November 1, 2023 - November 30, 2023	461,271	\$ 15.93	461,271	\$ 21,118,403
December 1, 2023 - December 31, 2023	314,600	\$ 17.12	314,600	\$ 15,732,751
Total	1,392,171		1,392,171	

The amounts above do not include the 1% excise tax on stock repurchases enacted by the Inflation Reduction Act of 2022.

(1) On February 28, 2023, we announced the authorization of a share repurchase program for the repurchase of shares of our Class A common stock in an aggregate amount of up to \$75 million through December 31, 2024. On February 26, 2024, we announced an increase to the aggregate amount available for repurchases to \$175 million through December 31, 2025. As of December 31, 2023, we had purchased approximately \$59.3 million of our Class A common stock.

(2) Average price paid per share includes costs associated with the repurchases.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item will be included in our proxy statement relating to our 2024 annual meeting of stockholders to be filed by us with the SEC no later than 120 days after the close of our fiscal year ended December 31, 2023 (the “Proxy Statement”) and is incorporated herein by reference.

Unregistered Sales of Equity Securities

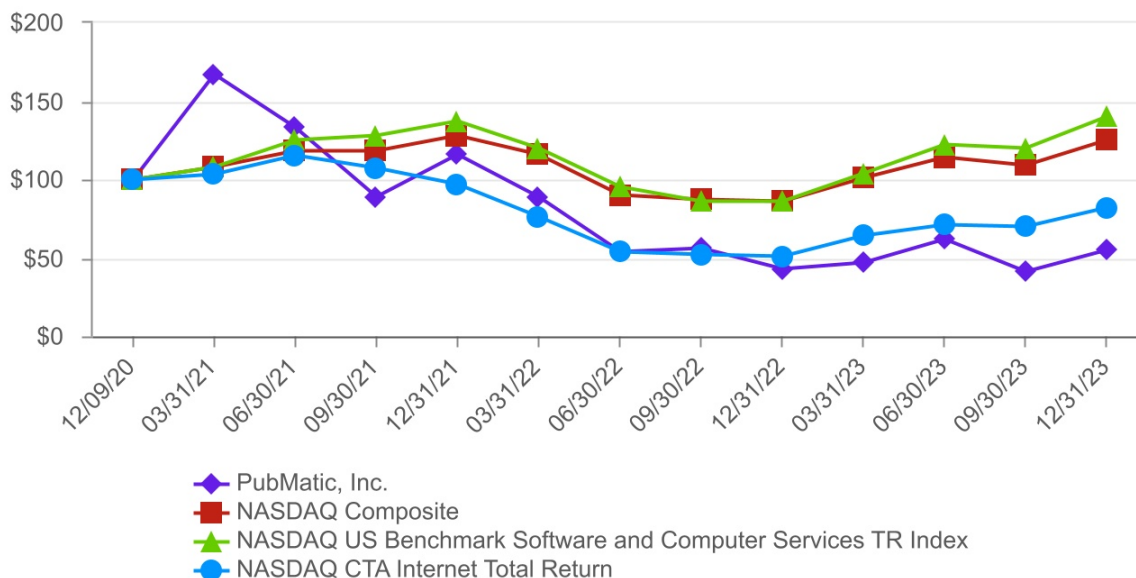
None.

Stock Performance Graph

This performance graph shall not be deemed “soliciting material” or to be “filed” with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of ours under the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

The following graph compares the cumulative total stockholder return on an initial investment of \$100 in our Class A common stock between December 9, 2020 (the date our Class A common stock commenced trading on the Nasdaq Global Market) through December 31, 2023, with the comparative cumulative total returns of the Nasdaq Composite Index, the Nasdaq US Benchmark Software and Computer Services TR Index and the Nasdaq CTA Internet Total Return Index over the same period. The graph uses the closing market price on December 9, 2020 of \$29.45 per share as the initial value of our Class A common stock. We have not paid any cash dividends; therefore, the cumulative total return calculation for us is based solely upon stock price appreciation and not the reinvestment of cash dividends, whereas the data for the comparative indexes assumes reinvestments of dividends. The returns shown are based on historical results and are not indicative of, nor intended to forecast, future stock price performance.

Comparison of Cumulative Total Return (Since Listing)



Use of Proceeds

Our initial public offering of our Class A common stock was effected pursuant to a registration statement on Form S-1 (File No. 333-250077), which was declared effective by the SEC on December 8, 2020.

There has been no material change in the planned use of proceeds from the initial public offering as described in our final prospectus dated December 8, 2020 (the “Prospectus”) filed with the SEC pursuant to Rule 424(b) under the Securities Act.

ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section titled “Risk Factors” included elsewhere in this Annual Report on Form 10-K.

Overview

We are an independent technology company seeking to maximize customer value by delivering digital advertising’s supply chain of the future.

Our technology platform empowers the world’s leading digital content creators (which we refer to as “publishers”) across the open internet to maximize monetization of their advertising inventory. Our platform also provides control and transparency to buyers, which includes advertisers, agencies, agency trading desks, and demand side platforms (“DSPs”), (which we collectively refer to as “buyers”) and enables both publishers and buyers to drive better business outcomes. Our infrastructure-driven approach allows for the efficient processing and utilization of data in real time. By delivering scalable and flexible programmatic innovation, we believe we improve outcomes for our customers while championing a vibrant and transparent digital advertising supply chain.

We continue to focus on the strengths that we believe provide us with long-term competitive advantages. These strengths include our global, omnichannel reach which targets a diverse set of publishers touching many ad formats and digital device types, including mobile app, mobile web, desktop, display, video, over-the-top video/connected TV (“OTT/CTV”), and rich media. Additionally, as an independent infrastructure provider prioritizing transparency, we can be more closely aligned with both publishers and buyers which has enabled us to build direct relationships with publishers, advertisers, agencies, and DSPs and create bespoke products that meet our customers’ needs. We have also maintained a demonstrated track record of stability and agility to address these market conditions and provide superior outcomes for both publishers and buyers. Finally, we have designed our technology to efficiently process real-time advertising transactions while leveraging data to optimize outcomes for publishers and buyers. We own and operate our software and hardware infrastructure globally, which saves significant infrastructure expenditures as compared to public cloud alternatives.

Industry Trends and Macroeconomic Factors

The digital advertising ecosystem continues to evolve and adapt at a rapid pace. Some noted trends include the continued growth of digital media across multiple platforms, a continued increase in the number of ad impressions processed and analyzed in real-time by each participant in the digital advertising ecosystem, a desire for transparency and control throughout the supply chain from both the buyers and publishers, and rapidly evolving data and privacy regulations and standards.

Additionally, recent interest rate increases, foreign currency fluctuation and persistent inflation in the U.S. and other markets globally continue to create economic volatility and dislocation in the capital and credit markets in the U.S. and globally. To date, we have not observed material impacts in our business or outlook, but we intend to continue to monitor macroeconomic conditions closely and may determine to take certain financial or operational actions in response to such conditions to the extent our business begins to be adversely impacted.

We believe we are positioned to benefit from tailwinds in the advertising industry, including the rapid proliferation of digital media, the need for purpose-built infrastructure to address the increasing complexity in the digital advertising landscape, and increasing consumer time spent online.

See “Risk Factors” for further discussion of the risks related to inflation, rising interest rates, foreign currency fluctuations and public health crises on our business.

Financial Results Overview

The table below summarizes the financial highlights of our business:

	Year Ended December 31,		
	2023	2022	2021
	(in thousands)		
Revenue	\$ 267,014	\$ 256,380	\$ 226,908
Operating income	2,036	40,520	58,789
Net income	8,881	28,705	56,604
Adjusted EBITDA ⁽¹⁾	75,309	97,014	96,250
Net cash provided by operating activities	81,121	87,212	88,681

(1) For a definition of Adjusted EBITDA, an explanation of our management's use of this measure, and a reconciliation of Adjusted EBITDA to net income, see "Non-GAAP Financial Measures" below.

Our Strategy and Performance

We believe our growth and financial performance are dependent on many factors, including those described below.

Attract New Customers and Expand our Relationship with Existing Customers Globally

We leverage our extensive platform capabilities and the subject matter expertise of our team members to grow revenue from our publishers and increase advertising spending from our buyers. Our sales and marketing team includes customer success pods to enhance customer knowledge and implementation of best practices. Once we onboard a new customer, we seek to expand our relationship with existing publishers by establishing multiple header bidding integrations by leveraging our omnichannel capabilities to maximize our access to publishers' ad formats and devices, and expanding into the various properties that a publisher may own around the world. We may also sell additional products to publisher customers including our header bidding management, identity, and audience solutions. We automate workflow processes whenever feasible to drive predictable and value-added outcomes for our customers and increase productivity of our organization.

Net dollar-based retention rate is an important indicator of publisher satisfaction and usage of our platform, as well as potential revenue for future periods. We calculate our net dollar-based retention rate at the end of each year. We calculate our net dollar-based retention rate by starting with the revenue from publishers in the last prior year ("Prior Period Revenue"). We then calculate the revenue from these same publishers in the current year ("Current Period Revenue"). Current Period Revenue includes any upsells and is net of contraction or attrition, but excludes revenue from new publishers.

Our net dollar-based retention rate equals the Current Period Revenue divided by Prior Period Revenue. Our net dollar-based retention rate was 101% for the year ended December 31, 2023, and 108% for the year ended December 31, 2022. Our revenue growth in the period ended December 31, 2023 and 2022 was primarily attributable to an increase in the number of ad impressions processed from our publishers, upselling additional products, penetration of header bidding for mobile app and digital video, and increased demand from the growth of our buyer relationships primarily through SPO agreements. Our net dollar-based retention rate and revenues for the period ended December 31, 2023 were negatively impacted due to a decline in run rate from one of our publishers as they closed a portion of their business in 2023.

Further, we work with DSPs to help them reduce their costs and improve advertiser ROI, which in turn makes us the specialized cloud infrastructure platform of choice for many of our buying partners. As buyers increasingly consolidate their spending with fewer larger technology platforms, we seek to bring an increased proportion of their digital ad spending to our platform through direct deals. Supply Path Optimization ("SPO") continues to be a major growth driver for us as we add new SPO relationships and expand existing ones. We have been investing in SPO technology and partnerships for five years and SPO represented approximately 45% of total activity for the year ended December 31, 2023.

Monetization Excellence

We focus on monetizing digital impressions by coordinating over a hundred billion real-time auctions and nearly a trillion bids globally on a daily basis, using our specialized cloud software, machine learning algorithms, and scaled transaction infrastructure. Valuable ad impressions are transparent and data rich, viewable by humans, and verifiable. Each ad impression we auction consists of 573 independent data parameters, which can yield valuable insights if recorded and analyzed properly. This processing of voluminous data for each ad impression must occur in less than half a second as consumers expect a seamless digital ad experience. We continually assess impressions from new and existing publishers through a rigorous validation process. We add or remove impressions from our platform based on an assessment of the projected value of the impressions, which is influenced by the type of publisher and its related consumers, as well as the potential volume of monetizable impressions and ad format types, such as digital video. We continuously create and iterate algorithms that leverage vast datasets flowing through our infrastructure to improve the liquidity in our marketplace. Our ability to drive successful outcomes in the real-time auction process on behalf of our publishers and buyers will affect our operating results.

Infrastructure Platform Efficiency

We have a track record of expanding the capacity of our infrastructure platform, while maintaining or reducing the corresponding costs related to processing impressions transacted on our platform on a per impression basis. We expect to continue to invest in both software and hardware infrastructure to continue growing the number of valuable ad impressions we process on our platform.

Our recent growth has been driven by a variety of factors including increased access to mobile web (display and video) and mobile app (display and video) impressions and desktop video impressions. Our performance is affected by our ability to maintain and grow our access to valuable ad impressions from current publishers as well as through new relationships with publishers. The number of ad impressions processed on our platform was approximately 46.5 trillion, 48.8 trillion, 56.0 trillion, and 59.4 trillion for each of the three months ended March 31, 2023, June 30, 2023, September 30, 2023, and December 31, 2023, respectively, as compared to 32.6 trillion, 36.2 trillion, 42.1 trillion, and 48.2 trillion for each of the three months ended March 31, 2022, June 30, 2022, September 30, 2022, and December 31, 2022, respectively.

Key Components of Our Results of Operations

Revenue

We generate revenue from the use of our platform for the purchase and sale of digital advertising inventory.

We primarily work with publishers and app developers who allow us direct access to their ad inventory, as well as select channel partners that meet our quality and scale thresholds. Our channel partners aggregate and provide further access to thousands of sites and apps from smaller publishers. We generate revenue through fees charged to our publishers, which are generally a percentage of the value of the advertising impressions that publishers monetize on our platform.

We also generate revenues from our other products such as OpenWrap, our header bidding solution, and Connect, our solution that provides additional data and insights to buyers, which are sold separate from or in conjunction with use of our platform. We continue to invest in new features for our existing solutions and new solutions such as our new product Activate, which allows buyers to execute direct deals on our platform with publisher inventory, and Convert, our commerce media solution, both of which were launched in 2023.

We report revenue on a net basis. This represents gross billings to buyers, net of amounts we pay publishers. We record our accounts receivable at the amount of gross billings to buyers, net of allowances, for the amounts we are responsible to collect, and we record our accounts payable at the net amount payable to publishers. Accordingly, both accounts receivable and accounts payable appear large in relation to revenue, which is reported on a net basis.

The global advertising industry experiences seasonal trends that affect the vast majority of participants in the digital advertising ecosystem. Most notably, advertisers have historically spent relatively more in the fourth quarter of the calendar year to coincide with the holiday shopping season, and relatively less in the first quarter. We expect seasonality trends to continue, thereby resulting in seasonality in our revenues and corresponding accounts receivable and accounts payable balances, and our ability to manage our resources in anticipation of these trends will affect our operating results.

Our revenue recognition policies are discussed in more detail under “Critical Accounting Policies and Estimates.”

Cost of Revenue

Cost of revenue consists of data center co-location costs, depreciation expense related to hardware supporting our platform, amortization expense related to capitalized internal use software development costs, personnel costs, and allocated facilities costs. Personnel costs include salaries, bonuses, stock-based compensation, and employee benefit costs, and are primarily attributable to our cloud operations group, which maintains our servers, and our client operations group, which is responsible for the integration of new publishers and buyers and providing customer support for existing customers.

Operating Expenses

Technology and Development. Technology and development expenses consist of personnel costs, including salaries, bonuses, stock-based compensation, and employee benefits costs, allocated facilities costs, and professional services. These expenses include costs incurred in the development, implementation and maintenance of internal use software, including platform and related infrastructure. We expense technology and development costs as incurred, except to the extent that such costs are associated with internal use software development that qualifies for capitalization. We expect technology and development expenses to generally increase in absolute dollars in future periods.

Sales and Marketing. Sales and marketing expenses consist of personnel costs, including salaries, bonuses, stock-based compensation, and employee benefits costs for our employees engaged in sales, sales support, marketing, business development, and customer relationship functions. Sales and marketing expenses also include expenses related to promotional, advertising and marketing activities, allocated facilities costs, travel, and entertainment primarily related to sales activity and professional services. We expect sales and marketing expenses to increase in absolute dollars in future periods.

General and Administrative. General and administrative expenses consist of personnel costs, including salaries, bonuses, stock-based compensation, and employee benefits costs for our executive, finance, legal, human resources, information technology, and other administrative employees. General and administrative expenses also include outside consulting, legal and accounting services, allocated facilities costs, and travel and entertainment primarily related to inter-office travel and conferences.

We continue to invest in corporate infrastructure and incur additional expenses associated with our operation as a public company, including increased legal and accounting costs, increased investor relations costs, higher insurance premiums, and compliance costs associated with developing the requisite infrastructure required for internal controls. As a result, we continue to expect general and administrative expenses to increase in absolute dollars in future periods.

Total Other Income (expense), Net

Total other income (expense), net consists of interest income, unrealized gain (loss) on equity investment and other income (expense), net. Interest income is generated by investing excess cash into money market accounts and marketable securities. Unrealized gain (loss) on equity investment consists of gains and losses on our investment in equity securities, including unrealized gains and losses from market price changes or impairment of securities we continue to hold. Other income (expense), net consists primarily of gains and losses from foreign currency exchange transactions.

We believe that investment gains and losses, whether realized from dispositions or unrealized from changes in market prices of equity securities, are generally meaningless in understanding our reported results or evaluating the economic performance of our businesses. These gains and losses have caused and will continue to cause significant volatility in our periodic earnings.

Provision for Income Taxes

The provision for income taxes consists primarily of federal, state, and foreign income taxes. Our income tax may be significantly affected by changes to our estimates for tax in jurisdictions in which we operate and other estimates utilized in determining the global effective tax rate. Actual results may also differ from our estimates based on changes in economic conditions. Such changes could have a substantial impact on the income tax provision. We reevaluate the judgments surrounding our estimates and make adjustments, as appropriate, each reporting period.

Our effective tax rate differs from the U.S. federal statutory income tax rate due to state taxes, foreign tax rate differences, technology and development tax credits, Section 162(m) limitation, and stock-based compensation.

Realization of our deferred tax assets is dependent primarily on the generation of future taxable income. In considering the need for a valuation allowance, we consider our historical, as well as future projected, taxable income along with other objectively verifiable evidence. Objectively verifiable evidence includes our realization of tax attributes, assessment of tax credits, and utilization of net operating loss carryforwards during the year.

Results of Operations

The following tables set forth our consolidated results of operations data (in thousands) and such data as a percentage of revenue for the periods presented. The period-to-period comparison of results is not necessarily indicative of results for future periods.

	Year Ended December 31,		
	2023	2022	2021
Consolidated Statements of Operations:			
Revenue	\$ 267,014	\$ 256,380	\$ 226,908
Cost of revenue ⁽¹⁾	99,229	81,512	58,313
Gross profit	167,785	174,868	168,595
Operating expenses ⁽¹⁾ :			
Technology and development	26,727	20,846	15,885
Sales and marketing	82,803	68,562	58,160
General and administrative	56,219	44,940	35,761
Total operating expenses	165,749	134,348	109,806
Operating income	2,036	40,520	58,789
Total other income (expense), net	8,469	(3,053)	6,014
Income before income taxes	10,505	37,467	64,803
Provision for income taxes	1,624	8,762	8,199
Net income	\$ 8,881	\$ 28,705	\$ 56,604

(1) Amounts include stock-based compensation expense before tax benefit as follows:

	Year Ended December 31,		
	2023	2022	2021
(in thousands)			
Cost of revenue	\$ 1,472	\$ 1,135	\$ 825
Technology and development	4,346	3,225	2,232
Sales and marketing	10,462	7,645	5,176
General and administrative	12,582	8,641	5,874
Total stock-based compensation expense	\$ 28,862	\$ 20,646	\$ 14,107

	Year Ended December 31,		
	2023	2022	2021
(as percentage of revenue)			
Revenue	100 %	100 %	100 %
Cost of revenue	37	32	26
Gross profit	63	68	74
Operating expenses:			
Technology and development	10	8	7
Sales and marketing	31	27	26
General and administrative	21	17	16
Total operating expenses	62	52	49
Operating income	1	16	25
Total other income (expense), net	3	(2)	4
Income before income taxes	4	14	29
Provision for income taxes	1	3	4
Net income	3 %	11 %	25 %

Comparison of the Years Ended December 31, 2023 and 2022

Revenue, Cost of Revenue and Gross Profit

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Revenue	\$ 267,014	\$ 256,380	\$ 10,634	4 %
Cost of revenue	99,229	81,512	17,717	22 %
Gross profit	\$ 167,785	\$ 174,868	\$ (7,083)	(4)%
Gross profit margin	63 %	68 %		

Revenue increased \$10.6 million, or 4%, in 2023 driven by growth in impressions processed on our platform from both existing and new publishers. For the year ended 2023, we served approximately 1,800 publishers worldwide on our platform, compared to approximately 1,650 publishers worldwide for the year ended 2022. We ended fiscal 2023 with approximately 150 net new publishers in 2023, which represented over 66,000 domains and 29,000 apps in total, compared to approximately 200 new publishers in 2022, which represented approximately 67,000 domains and 25,000 apps in total. For purposes of our publisher count, we aggregate multiple business accounts from separate divisions, segments or subsidiaries into a single “master” publisher based on our assessment of the related nature of the group. In addition, in 2023 we completed a number of SPO initiatives which increased buyer spend on our platform.

We expect revenue to continue to increase in 2024, with mobile and omnichannel video, which is the combination of short form video and OTT/CTV, as our primary growth drivers.

Cost of revenue increased \$17.7 million, primarily due to a \$4.0 million increase in depreciation of data center equipment, a \$3.8 million increase in amortization of internal use software, a \$6.2 million increase in data centers expansion and upgrades, a \$2.0 million increase in personnel costs as headcount increased by 12% in order to support our growing business, and a \$1.1 million increase in amortization for acquisition-related intangible assets. Overall, our cost of revenue per impression processed in 2023 declined by 8% compared to 2022.

Our gross margin of 63% in 2023 decreased compared to 2022 of 68% due to increases in depreciation and amortization expense from significant data center capacity expansion, as well as an increase in hosting expenses as a result of an increase in volume of impressions.

We expect the cost of revenue to be higher in 2024 compared to 2023 in absolute dollars primarily due to increases in depreciation and amortization expense from data center capacity expansion in 2023, as well as increases in software, hardware and equipment maintenance to support the data centers.

Technology and Development

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Technology and development	\$ 26,727	\$ 20,846	\$ 5,881	28 %
Percent of revenue	10 %	8 %		

The increase in technology and development costs was primarily due to an increase of \$11.1 million in personnel costs associated with a headcount increase by 11% and higher stock-based compensation costs, an increase of \$1.0 million in facilities costs associated with new offices, offset by a \$6.7 million increase in the capitalization of internal use software.

We expect technology and development expenses to increase in 2024 compared to 2023 in absolute dollars, primarily due to the additional headcount investment in our key growth opportunities.

Sales and Marketing

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Sales and marketing	\$ 82,803	\$ 68,562	\$ 14,241	21 %
Percent of revenue	31 %	27 %		

Sales and marketing costs increased primarily due to a \$10.7 million increase in personnel costs associated with a headcount increase by 5% and higher stock-based compensation costs, a \$2.2 million increase in travel and entertainment expenses, and a \$0.7 million increase in amortization for acquisition-related intangible assets.

We expect sales and marketing expenses to increase in 2024 compared to 2023 in absolute dollars primarily due to additional headcount investment and marketing programs.

General and Administrative

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
General and administrative	\$ 56,219	\$ 44,940	\$ 11,279	25 %
Percent of revenue	21 %	17 %		

General and administrative expense increased primarily due to a \$6.4 million increase in personnel costs associated with higher stock-based compensation costs, and a \$5.7 million increase in provision for bad debt relating to a DSP buyer of our platform that filed for Chapter 11 bankruptcy.

We expect general and administrative expenses to increase in 2024 compared to 2023 in absolute dollars primarily due to increases in expenses relating to our personnel.

Interest income

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Interest income	\$ 8,828	\$ 2,214	\$ 6,614	299 %

Interest income increased due to the increase in interest rates.

Total Other Income (Expense), net

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Total other income (expense), net	\$ (359)	\$ (5,267)	\$ 4,908	(93)%

Total other income (expense), net increased for the year ended December 31, 2023, compared to the prior year period, primarily driven by impairment of our equity investment in 2022.

Provision for Income Taxes

	Year Ended December 31,		\$ Change	% Change
	2023	2022		
	(dollars in thousands)			
Provision for income taxes	\$ 1,624	\$ 8,762	\$ (7,138)	(81)%

The difference between the effective tax rate in 2023 of 15% and the federal statutory income tax rate of 21% was primarily due to federal research and development credit and foreign derived intangible income (FDII) deduction partially offset by state taxes, stock-based compensation, and Section 162(m) limitation.

The difference between the effective tax rate in 2022 of 23% and the federal statutory income tax rate of 21% was primarily due to state taxes, stock-based compensation, and Section 162(m) limitation partially offset by federal research and development credit, and a foreign derived intangible income deduction.

For discussion on comparison of the fiscal years ended December 31, 2022 and December 31, 2021, please refer to Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022.

Non-GAAP Financial Measures

In addition to our results determined in accordance with U.S. generally accepted accounting principles (“GAAP”), including in particular operating income, net cash provided by operating activities, and net income, we believe that Adjusted EBITDA, a non-GAAP measure, is useful in evaluating our operating performance. We define Adjusted EBITDA as net income adjusted for stock-based compensation expense, depreciation and amortization, unrealized (gain) loss and impairment of equity investment, interest income, acquisition-related and other expenses, and provision for income taxes.

The following table presents a reconciliation of Adjusted EBITDA to net income for each of the periods indicated:

	Year Ended December 31,		
	2023	2022	2021
	(in thousands)		
Net income	\$ 8,881	\$ 28,705	\$ 56,604
Add back (deduct):			
Stock-based compensation	28,862	20,646	14,107
Depreciation and amortization	44,770	34,249	23,073
Unrealized (gain), loss and impairment of equity investment	—	5,948	(5,433)
Interest income	(8,828)	(2,214)	(300)
Acquisition-related and other expenses ⁽¹⁾	—	918	—
Provision for income taxes	1,624	8,762	8,199
Adjusted EBITDA	\$ 75,309	\$ 97,014	\$ 96,250

(1) We exclude acquisition-related and other expenses incurred in connection with our acquisition of Martin from Adjusted EBITDA because we do not believe such expenses are reflective of our ongoing core operations. Acquisition-related expenses incurred in connection with our acquisition of Martin include third-party transaction costs. Beginning in fiscal year 2023, we no longer exclude the impact of post-acquisition cash compensation arrangements for certain key acquired employees from our Adjusted EBITDA calculation. We have updated prior period results for comparability. For additional information, see Note 7, “Business Combination” to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In addition to operating income and net income, we use Adjusted EBITDA as a measure of operational efficiency. We believe that this non-GAAP financial measure is useful to investors for period to period comparisons of our business and in understanding and evaluating our operating results for the following reasons:

- Adjusted EBITDA is widely used by investors and securities analysts to measure a company’s operating performance without regard to items such as stock-based compensation expense, depreciation and amortization, interest expense, provision for income taxes, and certain one-time items such as impairments of long-lived assets, that can vary substantially from company to company depending upon their financing, capital structures and the method by which assets were acquired;

- Our management uses Adjusted EBITDA in conjunction with GAAP financial measures for planning purposes, including the preparation of our annual operating budget, as a measure of operating performance and the effectiveness of our business strategies and in communications with our board of directors concerning our financial performance; and
- Adjusted EBITDA provides consistency and comparability with our past financial performance, facilitates period-to-period comparisons of operations, and also facilitates comparisons with other peer companies, many of which use similar non-GAAP financial measures to supplement their GAAP results.

Our use of this non-GAAP financial measure has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under GAAP. Some of these limitations are as follows:

- Adjusted EBITDA does not reflect: (a) changes in, or cash requirements for, our working capital needs; (b) the potentially dilutive impact of stock-based compensation; or (c) tax payments that may represent a reduction in cash available to us;
- Although depreciation and amortization expense are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and Adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements; and
- Other companies in our industry may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Because of these and other limitations, you should consider Adjusted EBITDA along with other GAAP-based financial performance measures, including net income and our GAAP financial results.

Liquidity and Capital Resources

We have financed our operations and capital expenditures primarily through utilization of cash generated from operations, as well as a public offering of our common stock. As of December 31, 2023, we had cash, cash equivalents, and marketable securities of \$175.3 million and net working capital, consisting of current assets less current liabilities, of \$182.4 million. As of December 31, 2023, we had retained earnings of \$136.9 million.

We believe our existing cash, cash equivalents, marketable securities and anticipated net cash provided by operating activities, together with available borrowings under our credit facility, will be sufficient to meet our working capital requirements for at least the next 12 months. However, if our operating performance during the next 12 months is below our expectations, our liquidity and ability to operate our business could be adversely affected. Our future capital requirements and the adequacy of available funds will depend on many factors, including those set forth under “Risk Factors.”

In the future, we may attempt to raise additional capital through the sale of equity securities or through equity-linked or debt financing arrangements. If we raise additional funds by issuing equity or equity-linked securities, the ownership of our existing stockholders will be diluted. If we raise additional financing by incurring additional indebtedness, we may be subject to increased fixed payment obligations and could also be subject to additional restrictive covenants, such as limitations on our ability to incur additional debt, and other operating restrictions that could adversely impact our ability to conduct our business. Any future indebtedness we incur may result in terms that could be unfavorable to equity investors. We cannot guarantee that we will be able to raise additional capital in the future on favorable terms, or at all. Any inability to raise capital could adversely affect our ability to achieve our business objectives.

Cash Flows

The following table summarizes our cash flows for the periods presented:

	Year Ended December 31,		
	2023	2022	2021
	(in thousands)		
Net cash provided by operating activities	\$ 81,121	\$ 87,212	\$ 88,681
Net cash used in investing activities	(39,018)	(81,371)	(96,723)
Net cash provided by (used in) financing activities	(55,976)	4,036	9,359
Net increase (decrease) in cash and cash equivalents	\$ (13,873)	\$ 9,877	\$ 1,317

Operating Activities

Our cash flows from operating activities are primarily influenced by growth in our operations, increases or decreases in collections from our buyers and related payments to our publishers, as well as our investment in personnel to support the anticipated growth of our business. Cash flows from operating activities have been affected by changes in our working capital, particularly changes in accounts receivable and accounts payable. The timing of cash receipts from buyers and payments to publishers can significantly impact our cash flows from operating activities. In addition, we expect seasonality to impact quarterly cash flows from operating activities.

For the year ended December 31, 2023, net cash provided by operating activities of \$81.1 million resulted primarily from net income of \$8.9 million, adjustments for non-cash expenses of \$68.0 million, including \$44.8 million for depreciation and amortization, \$28.9 million for stock-based compensation, and \$13.4 million for deferred income taxes, and an increase in accounts receivable of \$75.7 million, partially offset by an increase in accounts payable of \$79.7 million.

For the year ended December 31, 2022, net cash provided by operating activities of \$87.2 million resulted primarily from net income of \$28.7 million, adjustments for non-cash expenses of \$59.0 million, including \$34.2 million for depreciation and amortization, \$20.6 million for stock-based compensation, and \$7.2 million for deferred income taxes, and an increase in accounts receivable of \$24.4 million, partially offset by an increase in accounts payable of \$29.8 million.

Investing Activities

Our investing activities primarily included investments in marketable securities, purchases of equipment as we expanded the infrastructure in our third-party data centers, and capitalized internal-use software costs in support of enhancing our platform. Purchases of property and equipment may vary from period-to-period due to the timing of the expansion of our data centers, the addition of headcount, and the development cycles of our software development. As our business grows, we expect our capital expenditures and our investment activity to continue to increase.

For the year ended December 31, 2023, we used \$39.0 million of cash in investing activities, consisting of a net increase in investments of marketable securities of \$29.6 million, \$10.6 million in purchases of property and equipment (primarily data center infrastructure), \$17.7 million of investments in capitalized internal use software, offset by an increase from sales of marketable securities prior to maturity of \$18.9 million.

For the year ended December 31, 2022, we used \$81.4 million of cash in investing activities, consisting of a net increase in investments of marketable securities of \$4.4 million, \$35.9 million in purchases of property and equipment (primarily data center infrastructure), \$13.0 million of investments in capitalized internal use software, and \$28.1 million for the Martin acquisition.

Financing Activities

For the year ended December 31, 2023, net cash used in financing activities of \$56.0 million was primarily due to \$59.3 million in stock repurchases, offset by \$1.5 million proceeds from stock option exercises and \$1.9 million proceeds from the employee stock purchase plan.

For the year ended December 31, 2022, net cash provided by financing activities of \$4.0 million was primarily due to \$1.2 million in proceeds from stock option exercises and \$3.0 million in proceeds from the employee stock purchase plan.

For discussion on operating, investing, and financing activities of the fiscal year ended December 31, 2021, see the Liquidity and Capital Resources section disclosed in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our Annual Report on Form 10-K, which was filed with the SEC on March 1, 2022 and hereby incorporated by reference herein and considered part of this Annual Report on Form 10-K only to the extent referenced.

Contractual Obligations and Future Cash Requirements

Our principal contractual obligations consist of non-cancelable leases for our various facilities. In certain cases, the terms of the lease agreements provide for rental payments that increase over time.

The following table summarizes our contractual obligations, at December 31, 2023 (in thousands):

	Payments due by period				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Other contractual obligations ⁽¹⁾	\$ 24,771	\$ 18,314	\$ 6,457	\$ —	\$ —
Operating lease liabilities	23,169	6,842	11,055	5,272	—
Finance lease liabilities	646	145	302	199	—
Total	\$ 48,586	\$ 25,301	\$ 17,814	\$ 5,471	\$ —

(1) Other contractual obligations consist primarily of contractual obligations to third-party data center providers.

As of December 31, 2023, we had \$4.5 million of long-term income tax liabilities, including interest, related to uncertain tax positions. Because of the high degree of uncertainty regarding the settlement of these liabilities, we are unable to estimate the years in which future cash outflows may occur. As a result, this amount is not included in the contractual obligations table above.

Credit Facilities

On October 17, 2022, we entered into a Senior Secured Credit Facilities Credit Agreement (the “Credit Agreement”) with the several lenders parties thereto, and Silicon Valley Bank, as administrative agent, lead arranger, issuing lender, and swingline lender. The Credit Agreement provides a revolving credit facility in an aggregate principal amount of \$110.0 million (“the Revolving Credit Facility”), including a \$25.0 million letter of credit sub-facility and a \$25.0 million swingline sub-facility. We may, subject to certain customary conditions, on one or more occasions increase commitments under the Revolving Credit Facility in an amount not to exceed \$90.0 million in the aggregate (the “Incremental Facility”). Each Lender will have discretion to determine whether it will participate in any Incremental Facility. The obligations under the Credit Agreement are secured by substantially all of our assets. The Credit Agreement matures on October 17, 2027.

Borrowings under the Revolving Credit Facility accrue interest at rates equal, at our election, to (i) the adjusted term secured overnight financing rate (“SOFR”), which is defined as (a) the applicable term SOFR plus (b) a term SOFR adjustment equal to 0.20% per annum, plus the applicable margin for such loans, or (ii) the alternate base rate (“ABR”), which is defined as the highest of (a) the prime rate in effect from time to time, (b) the federal funds effective rate in effect from time to time plus 0.50%, and (c) the adjusted term SOFR for a one (1) month tenor in effect from time to time plus 1.0%, plus the applicable margin for such loans. The applicable margin for borrowings bearing interest on the SOFR ranges from 2.00% to 2.75%, and the applicable margin for borrowings bearing interest based on the ABR ranges from 1.00% to 1.75%. We will pay a quarterly commitment fee during the term of the Credit Agreement for the non-use of available funds ranging from 0.25% to 0.35%. As of December 31, 2023, the applicable interest rate under the Revolving Credit Facility was 9.50%. We had no amounts outstanding under the Revolving Credit Facility as of December 31, 2023.

The Credit Agreement contains customary representations and warranties as well as customary affirmative and negative covenants. Negative covenants include, among others, limitations on incurrence of indebtedness, liens, disposition of property and investments by us and our subsidiaries. In addition, the Credit Agreement requires us to maintain certain interest coverage, leverage and senior leverage ratios.

For additional information, see Note 5, “Loan and Security Agreement and Senior Secured Credit Facilities Agreement” to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

We prepare our consolidated financial statements in accordance with GAAP. The preparation of the consolidated financial statements requires us to make estimates and assumptions that affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities, and reported amounts of revenue and expenses. We evaluate our estimates and assumptions on an ongoing basis using historical experience and other factors, and adjust those estimates and assumptions when facts and circumstances dictate. Actual results could materially differ from these estimates and assumptions.

We believe estimates and assumptions associated with the evaluation of revenue recognition criteria, including the determination of revenue reporting as net versus gross in our revenue arrangements, as well as internal use software development costs, fair values of stock-based awards, and income taxes have the greatest potential impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Revenue Recognition

We refer to our publishers, app developers, and channel partners collectively as our publishers. We generate revenue through the monetization of publisher ad impressions processed on our platform. Our platform allows publishers to sell, in real time, ad impressions to buyers and provides automated inventory management and monetization tools to publishers across various device types and digital ad formats. We charge publishers a fee, which is typically a percentage of the value of the impressions monetized through our platform.

We maintain agreements with each publisher and buyer in the form of written service agreements, which set out the terms of the relationship, including payment terms (typically ninety days or less) and access to our platform.

We invoice buyers for publisher digital advertising inventory purchased through its platform. We recognize revenue when a bid is won and a buyer purchases inventory on our platform. We estimate and record reductions to revenue for volume discounts based on expected volumes during the incentive term.

The determination as to whether revenue should be reported gross of amounts billed to buyers (gross basis) or net of payments to publishers (net basis) requires significant judgment, and is based on our assessment of whether we are acting as the principal or an agent in the transaction. We have determined that we do not act as the principal in the purchase and sale of digital advertising inventory because we do not control the advertising inventory and do not set the price which is the result of an auction within the marketplace. Based on these and other factors, we report revenue on a net basis. See “Part II - Item 8. Financial Statements and Supplementary Data - Note 2” for more information on revenue recognition.

We generally invoice buyers at the end of each month for the full purchase price of ad impressions monetized in that month. Accounts receivable are recorded at the amount of gross billings for the amounts we are responsible to collect, and accounts payable are recorded at the net amount payable to publishers. Accordingly, both accounts receivable and accounts payable appear large in relation to revenue reported on a net basis.

Internal Use Software Development Costs

We capitalize certain internal use software development costs associated with creating and enhancing internal use software related to our platform and technology infrastructure. These costs include personnel and related employee benefits expenses for employees who are directly associated with and who devote time to software projects, and external direct costs of materials and services consumed in developing or obtaining the software. We expense software development costs that do not meet the criteria for capitalization as incurred and record them in technology and development expenses in the consolidated statements of operations.

Software development activities generally consist of three stages: (i) the planning stage; (ii) the application and infrastructure development stage; and (iii) the post implementation stage. Costs incurred in the planning and post implementation stages of software development, including costs associated with the post configuration training and repairs and maintenance of the developed technologies, are expensed as incurred. We capitalize costs associated with software developed for internal use when both the preliminary project stage is completed and management has authorized further funding for the completion of the project. We capitalize costs incurred in the application and infrastructure development stages, including significant enhancements and upgrades. Capitalization ends once a project is substantially complete and the software and technologies are ready for their intended purpose. We amortize internal use software development costs using a straight-line method over the estimated useful life of two to five years, commencing when the software is ready for its intended use.

Stock-Based Compensation

Stock-based compensation expense related to stock options, restricted stock units, and awards granted under our employee stock purchase plan (“ESPP”) is measured and recognized in our consolidated financial statements based on the fair value of the awards granted. The fair values of our ESPP and stock option awards are estimated on the grant date using the Black-Scholes option-pricing model. The fair value of restricted stock is calculated using the closing market price of our common stock on the date of grant.

Stock-based compensation expense related to stock options and restricted stock is recognized on a straight-line basis over the requisite service periods of the awards, which is generally four years. Stock-based compensation expense for ESPP awards is recognized on a graded-vesting attribution basis over the requisite service period of each award.

For additional information regarding stock-based compensation and the assumptions used for determining the fair value of stock options and ESPP awards, refer to Note 2—Basis of Presentation and Summary of Significant Accounting Policies and Note 10—Stockholders’ Equity and Equity Incentive Plans.

Acquisition-related Intangible Assets and Goodwill

Acquisition-related intangible assets with finite lives are amortized over their estimated useful lives on a straight-line basis, while goodwill amounts are not amortized. Acquisition-related intangible assets and goodwill are tested for impairment at least annually or more frequently if events or changes in circumstances indicate that the acquisition-related intangible assets or goodwill may be impaired.

Events or changes in circumstances which could trigger an impairment review include a significant adverse change in legal factors or in the business climate, an adverse action or assessment by a regulator, unanticipated competition, a loss of key personnel, significant changes in the manner of the Company's use of the acquired assets, or the strategy for the Company's overall business, significant negative industry or economic trends, or significant underperformance relative to expected historical or projected future results of operations.

Income Taxes

Our income tax provision may be significantly affected by changes to our estimates for tax in jurisdictions in which we operate and other estimates utilized in determining the global effective tax rate. Actual results may also differ from our estimate based on changes in economic conditions. Such changes could have a substantial impact on the income tax provision. We evaluate the judgments surrounding our estimates and make adjustments, as appropriate, each reporting period.

Deferred income tax assets and liabilities are determined based upon the net effects of the differences between the consolidated financial statements carrying amounts and the tax basis of assets and liabilities and are measured using the enacted tax rate expected to apply to taxable income in the years in which the differences are expected to be reversed. A valuation allowance is used to reduce some or all of the deferred tax assets if, based upon the weight of available evidence, it is more likely than not that those deferred tax assets will not be realized.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized. We recognize interest and penalties accrued related to our uncertain tax positions in our income tax provision in the accompanying consolidated statement of operations.

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements included in Part II, Item 8 of this Form 10-K, for recently issued accounting pronouncements not yet adopted.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to certain market risks in the ordinary course of our business. These risks primarily include:

Interest Rate Risk

We had cash and cash equivalents of \$78.5 million and marketable securities of \$96.8 million as of December 31, 2023, which consisted of bank deposits, money market accounts, commercial paper, agency debt securities, and U.S. Treasury and government debt securities. The primary objective of our investment activities is to preserve principal while maximizing income without significantly increasing risk. Because our cash, cash equivalents, and marketable securities have a relatively short maturity, our portfolio's fair value is relatively insensitive to interest rate changes. Our line of credit is at variable interest rates. We had no amounts outstanding under our credit facility as of December 31, 2023. We do not believe that an increase or decrease in interest rates of 100 basis points would have a material effect on our operating results or financial condition. In future periods, we will continue to evaluate our investment policy relative to our overall objectives.

Currency Exchange Risk

Our consolidated results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. Historically, the majority of our revenue contracts have been denominated in U.S. Dollars. Our expenses are generally denominated in the currencies in which our operations are located, primarily the U.S. Dollar, Indian Rupee and British Pound. To date, we have not entered into any hedging arrangements with respect to foreign currency risk or other derivative instruments. In the event our foreign sales and expenses increase, our operating results may be more greatly affected by foreign currency exchange rate fluctuations, which can affect our operating income. A hypothetical 10% change in the U.S. Dollar to India Rupee exchange rate could result in a change of \$2.0 million and \$1.6 million in our operating income for the year ended December 31, 2023 and December 31, 2022, respectively. A hypothetical 10% change in the U.S. Dollar to British Pound exchange rate could result in a change of \$1.7 million and \$1.4 million in our operating income for the year ended December 31, 2023 and December 31, 2022, respectively.

Inflation Risk

We do not believe that inflation has had a material effect on our business, results of operations, or financial condition. If our costs were to become subject to significant inflationary pressures, for example in India or increases in data center base costs, we might not be able to fully offset such higher costs through price increases. Our inability or failure to do so could adversely affect our business, results of operations, and financial condition.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

PUBMATIC, INC. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page
Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)	60
Consolidated Balance Sheets	62
Consolidated Statements of Operations	63
Consolidated Statements of Comprehensive Income	64
Consolidated Statements of Stockholders' Equity	65
Consolidated Statements of Cash Flows	66
Notes to Consolidated Financial Statements	67

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of PubMatic, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of PubMatic, Inc. and subsidiaries (the "Company") as of December 31, 2023 and 2022, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). We have also audited the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

Basis for Opinions

The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition — Refer to Note 2 to the financial statements

Critical Audit Matter Description

The Company generates revenue through the monetization of publisher ad impressions on its platform. The Company charges publishers a fee, which is typically a percentage of the value of the ad impressions monetized through the platform. The Company recognizes revenue when a bid is won and a buyer purchases digital advertising inventory on its platform. The Company reports revenue net of payments to publishers. For the year ended December 31, 2023, the Company's revenue was \$267.0 million.

We identified revenue as a critical audit matter because there is a significant audit effort required in performing our audit procedures, which include evaluating and testing the Company's process, systems, and controls related to the revenue cycle.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the Company's revenue included the following, among others:

- We tested the effectiveness of controls related to the revenue cycle, including (i) general information technology (IT) controls over relevant systems used to process and record advertising transactions, including testing of user access controls, change management controls, and IT operations controls and (ii) controls in place to reconcile the various systems to the Company's general ledger and to address the accuracy and completeness of data used to recognize revenue.
- We generated synthetic transactions and traced the recording of these transactions into the Company's systems to understand how revenue transactions are captured, processed, and aggregated.
- We used data analytics to inspect journal entries and identify relationships in the revenue population to (i) identify significant relationships in the revenue population and (ii) understand significant relationships and related accounts affecting revenue.
- We performed audit procedures on those related accounts determined to have a significant relationship with revenue, including sending confirmations to customers for a selection of accounts which included the receivable balances and related impression count for each selection, and selecting a sample of publisher payables and performing subsequent disbursements testing.
- We performed a proof of cash reconciliation that reconciled cash to revenue and related revenue accounts.

/s/ DELOITTE & TOUCHE LLP

San Jose, California

February 28, 2024

We have served as the Company's auditor since 2012.

PUBMATIC, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except par values)

	December 31, 2023	December 31, 2022
ASSETS		
Current assets		
Cash and cash equivalents	\$ 78,509	\$ 92,382
Marketable securities	96,835	82,013
Accounts receivable, net	375,468	314,299
Prepaid expenses and other current assets	11,143	14,784
Total current assets	561,955	503,478
Property, equipment and software, net	60,729	71,156
Operating lease right-of-use assets	21,102	26,206
Acquisition-related intangible assets, net	5,864	8,299
Goodwill	29,577	29,577
Deferred tax assets	13,880	1,047
Other assets, non-current	2,136	2,412
TOTAL ASSETS	\$ 695,243	\$ 642,175
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 347,673	\$ 277,414
Accrued liabilities	25,684	18,936
Operating lease liabilities, current	6,236	5,676
Total current liabilities	379,593	302,026
Operating lease liabilities, non-current	15,607	20,915
Deferred tax liabilities	—	573
Other liabilities, non-current	3,844	6,473
TOTAL LIABILITIES	399,044	329,987
Commitments and contingencies (Note 9)		
Stockholders' Equity		
Preferred stock, \$0.0001 par value per share, 10,000 shares authorized as of December 31, 2023 and 2022; No shares issued and outstanding as of December 31, 2023 and 2022	—	—
Common stock, par value \$0.0001 per share; 1,000,000 Class A shares authorized as of December 31, 2023 and 2022; 45,542 shares issued and 41,502 shares outstanding as of December 31, 2023; 43,452 shares issued and outstanding as of December 31, 2022; 1,000,000 Class B shares authorized as of December 31, 2023 and 2022; 11,884 shares issued and 8,744 shares outstanding as of December 31, 2023; 12,393 shares issued and 9,253 outstanding as of December 31, 2022	6	6
Treasury stock, at cost; 7,180 and 3,140 shares as of December 31, 2023 and 2022, respectively	(71,103)	(11,486)
Additional paid-in capital	230,419	195,677
Accumulated other comprehensive loss	(4)	(9)
Retained earnings	136,881	128,000
TOTAL STOCKHOLDERS' EQUITY	296,199	312,188
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 695,243	\$ 642,175

The accompanying notes are an integral part of these consolidated financial statements

PUBMATIC, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 31,		
	2023	2022	2021
Revenue	\$ 267,014	\$ 256,380	\$ 226,908
Cost of revenue	99,229	81,512	58,313
Gross profit	167,785	174,868	168,595
Operating expenses:			
Technology and development	26,727	20,846	15,885
Sales and marketing	82,803	68,562	58,160
General and administrative	56,219	44,940	35,761
Total operating expenses	165,749	134,348	109,806
Operating income	2,036	40,520	58,789
Interest income	8,828	2,214	300
Unrealized gain (loss) on equity investments	—	(5,948)	5,433
Other income (expense), net	(359)	681	281
Total other income (expense), net	8,469	(3,053)	6,014
Income before income taxes	10,505	37,467	64,803
Provision for income taxes	1,624	8,762	8,199
Net income	\$ 8,881	\$ 28,705	\$ 56,604
Net income per share attributable to common stockholders:			
Basic	\$ 0.17	\$ 0.55	\$ 1.13
Diluted	\$ 0.16	\$ 0.50	\$ 1.00
Weighted-average shares used to compute net income per share attributable to common stockholders:			
Basic	51,760	52,278	50,184
Diluted	56,027	56,908	56,629

The accompanying notes are an integral part of these consolidated financial statements.

PUBMATIC, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Year Ended December 31,		
	2023	2022	2021
Net income	\$ 8,881	\$ 28,705	\$ 56,604
Other comprehensive income (loss):			
Unrealized gain (loss) on marketable securities, net of tax	5	27	(37)
Comprehensive income	\$ 8,886	\$ 28,732	\$ 56,567

The accompanying notes are an integral part of these consolidated financial statements.

PUBMATIC, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
	Shares	Amount					
Balance — December 31, 2020	48,988	\$ 6	\$ (11,434)	\$ 144,163	\$ 1	\$ 42,691	\$ 175,427
Stock-based compensation	—	—	—	15,011	—	—	15,011
Exercise of stock options	2,512	—	—	5,423	—	—	5,423
Repurchase of treasury stock, at cost	(1)	—	(52)	—	—	—	(52)
Issuance of common stock related to employee stock purchase plan	276	—	—	4,804	—	—	4,804
Issuance of common stock related to RSU vesting	80	—	—	—	—	—	—
Other comprehensive loss	—	—	—	—	(37)	—	(37)
Net income	—	—	—	—	—	56,604	56,604
Balance — December 31, 2021	51,855	6	(11,486)	169,401	(36)	99,295	257,180
Stock-based compensation	—	—	—	22,121	—	—	22,121
Exercise of stock options	358	—	—	1,195	—	—	1,195
Issuance of common stock related to employee stock purchase plan	184	—	—	2,960	—	—	2,960
Issuance of common stock related to RSU vesting	308	—	—	—	—	—	—
Other comprehensive income	—	—	—	—	27	—	27
Net income	—	—	—	—	—	28,705	28,705
Balance — December 31, 2022	52,705	6	(11,486)	195,677	(9)	128,000	312,188
Stock-based compensation	—	—	—	31,324	—	—	31,324
Exercise of stock options	575	—	—	1,549	—	—	1,549
Repurchase of treasury stock, at cost	(4,040)	—	(59,617)	—	—	—	(59,617)
Issuance of common stock related to employee stock purchase plan	128	—	—	1,869	—	—	1,869
Issuance of common stock related to RSU vesting	878	—	—	—	—	—	—
Other comprehensive income	—	—	—	—	5	—	5
Net income	—	—	—	—	—	8,881	8,881
Balance — December 31, 2023	50,246	\$ 6	\$ (71,103)	\$ 230,419	\$ (4)	\$ 136,881	\$ 296,199

The accompanying notes are an integral part of these consolidated financial statements.

PUBMATIC, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2023	2022	2021
CASH FLOW FROM OPERATING ACTIVITIES:			
Net income	\$ 8,881	\$ 28,705	\$ 56,604
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	44,770	34,249	23,073
Unrealized (gain) loss and impairment of equity investment	—	5,948	(5,433)
Stock-based compensation	28,862	20,646	14,107
Provision for doubtful accounts	5,675	—	—
Deferred income taxes	(13,406)	(7,166)	4,753
Accretion of discount on marketable securities	(4,093)	(577)	(45)
Non-cash lease expense	6,145	5,831	2,042
Other	45	90	45
Changes in operating assets and liabilities:			
Accounts receivable	(75,716)	(24,408)	(67,405)
Prepaid expenses and other current assets	3,918	(1,595)	(7,681)
Accounts payable	79,687	29,763	68,301
Accrued liabilities	3,035	(1,024)	3,530
Operating lease liabilities	(5,789)	(5,539)	(2,283)
Other liabilities, non-current	(893)	2,289	(927)
Net cash provided by operating activities	81,121	87,212	88,681
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of and deposits on property and equipment	(10,601)	(35,869)	(30,432)
Capitalized software development costs	(17,687)	(13,024)	(8,929)
Purchases of marketable securities	(140,603)	(137,793)	(90,562)
Proceeds from sales of marketable securities	18,873	—	—
Proceeds from maturities of marketable securities	111,000	133,400	33,200
Business combination, net of cash acquired	—	(28,085)	—
Net cash used in investing activities	(39,018)	(81,371)	(96,723)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from initial public offering, net of underwriting discounts and commissions	—	—	(806)
Proceeds from issuance of common stock for employee stock purchase plan	1,869	2,960	4,804
Proceeds from exercise of stock options	1,549	1,195	5,423
Principal payments on finance lease obligations	(126)	(119)	(10)
Payments to acquire treasury stock	(59,268)	—	(52)
Net cash provided by (used in) financing activities	(55,976)	4,036	9,359
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(13,873)	9,877	1,317
CASH AND CASH EQUIVALENTS - Beginning of Year	92,382	82,505	81,188
CASH AND CASH EQUIVALENTS - End of Year	<u>\$ 78,509</u>	<u>\$ 92,382</u>	<u>\$ 82,505</u>
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Income taxes paid	<u>\$ 15,631</u>	<u>\$ 9,190</u>	<u>\$ 6,786</u>
SUPPLEMENTAL DISCLOSURES OF NON-CASH INVESTING AND FINANCING INFORMATION:			
Stock-based compensation capitalized as internal use software costs	<u>\$ 2,462</u>	<u>\$ 1,475</u>	<u>\$ 903</u>
Property and equipment included in accounts payable and accrued expenses	<u>\$ 203</u>	<u>\$ 749</u>	<u>\$ 49</u>
Capitalized software costs included in accounts payable and accrued expenses	<u>\$ 2,966</u>	<u>\$ 1,796</u>	<u>\$ 1,794</u>
Business combination purchase consideration - indemnification claims holdback	<u>\$ 2,148</u>	<u>\$ 2,148</u>	<u>\$ —</u>

The accompanying notes are an integral part of these consolidated financial statements.

PUBMATIC, INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements

Note 1 – Organization and Description of Business

PubMatic, Inc. (together with its subsidiaries, the “Company” or “PubMatic”) was founded in 2006. The Company has offices in California, New York, Europe, Asia, and Australia. The Company provides a specialized cloud infrastructure platform that enables real-time programmatic advertising transactions. The purpose-built technology and infrastructure provides superior outcomes for both publishers and advertisers leveraging an efficient design, machine learning, and data processing capabilities, with customer alignment and global omnichannel reach.

Note 2 – Basis of Presentation and Summary of Significant Accounting Policies

Fiscal Year

The Company’s fiscal year ends on December 31. References to fiscal year 2023, for example, refer to the fiscal year ended December 31, 2023.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (“GAAP”). The accompanying consolidated financial statements include the accounts of PubMatic, Inc. and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. Certain prior period amounts reported in our consolidated financial statements and notes thereto have been reclassified to conform to the current period presentation.

Use of Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities, and reported amounts of revenue and expenses.

Significant items subject to such estimates include: revenue recognition criteria, including the determination of revenue reporting as net versus gross in the Company’s revenue arrangements, internal use software development costs, stock-based compensation, acquisition-related intangible assets, and income taxes, including the valuation reserve on deferred tax assets. The Company evaluates its estimates and assumptions on an ongoing basis using historical experience and other factors and adjusts those estimates and assumptions when facts and circumstances dictate. Actual results could materially differ from those estimates and assumptions.

Due to the inherent uncertainty involved in making assumptions and estimates, events and changes in circumstances arising after December 31, 2023, including macroeconomic factors, may result in actual outcomes that differ from those contemplated by the Company’s assumptions and estimates.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentration of credit risk consist principally of cash and cash equivalents, marketable securities, and accounts receivable. The Company maintains its cash and cash equivalents with financial institutions in amounts which exceed Federal Deposit Insurance Corporation limits.

The Company’s investment policy limits investments to certain types of securities issued by the U.S. government and its agencies and institutions with investment-grade credit ratings and places restrictions on maturities and concentration by type and issuer. The primary objective of its investment activities is to preserve principal while maximizing income without significantly increasing risk.

The Company defines its revenue concentration based on revenue recognized from individual publishers. For the years ended December 31, 2023, no publisher represented more than 10% of the Company’s revenue. For the years ended December 31, 2022 and 2021, one publisher represented 13% and 17% respectively, of the Company’s revenue. As of December 31, 2023, three buyers accounted for 30%, 21%, and 14%, respectively, of accounts receivable. As of December 31, 2022, three buyers accounted for 33%, 15%, and 11%, respectively, of accounts receivable.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity at the date of purchase of three months or less to be cash equivalents.

Marketable Securities

The Company classifies marketable securities as available-for-sale at the time of purchase and reevaluates such classification at each balance sheet date. The Company may sell these securities at any time for use in current operations even if they have not yet reached maturity. As a result, the Company classifies its marketable securities, including those with maturities beyond twelve months, as current assets in the consolidated balance sheets. These marketable securities are carried at fair value and unrealized gains and losses are recorded in other comprehensive income, which is reflected as a component of stockholders' equity. These marketable securities are assessed as to whether those with unrealized loss positions are other than temporarily impaired. The Company considers impairments to be other than temporary if they are related to deterioration in credit risk or if it is likely the securities will be sold before the recovery of their cost basis. Realized gains and losses from the sale of marketable securities and declines in value deemed to be other than temporary are determined based on the specific identification method. Realized gains and losses, and any expected credit losses, are reported in other income (expense), net in the consolidated statements of operations and comprehensive income.

Fair Value of Financial Instruments

Financial instruments consist of cash equivalents, marketable securities, accounts receivable, accounts payable, and accrued liabilities. Cash equivalents and marketable securities are remeasured at fair value at the end of every period. Accounts receivable, accounts payable and accrued liabilities are stated at their carrying value, which approximates fair value due to the short time to the expected receipt or payment.

Accounts Receivable and Allowance for Credit Losses

Accounts receivable are recorded at the invoiced amount, are unsecured, and do not bear interest. The allowance for credit losses is based on the best estimate of the amount of probable credit losses in existing accounts receivable. The allowance for credit losses is determined based on historical collection experience and the review in each period of the status of the then outstanding accounts receivable, while taking into consideration current customer information, collection history, and other relevant data. The Company reviews the allowance for credit losses on a quarterly basis. Account balances are written off against the allowance when the Company believes it is probable the receivable will not be recovered.

The following table presents the changes in the allowance for credit losses (in thousands):

	December 31,		
	2023	2022	2021
Allowance for credit losses, beginning balance	\$ 1,765	\$ 1,765	\$ 1,989
Provision	14,547	—	—
Write-offs	(15,542)	—	(224)
Allowance for credit losses, ending balance	<u>\$ 770</u>	<u>\$ 1,765</u>	<u>\$ 1,765</u>

During the year ended December 31, 2023, the provision for expected credit losses associated with accounts receivable increased by \$14.5 million relating to uncollectible receivables for a DSP buyer of the Company's platform that filed for Chapter 11 bankruptcy on June 30, 2023. Of the total uncollectible receivables from the DSP buyer of \$14.5 million, \$8.8 million was subject to chargeback to publishers of the Company and recorded as contra payable to publishers related to expected recoveries. The result was \$5.7 million of bad debt expense for the year ended December 31, 2023.

Property and Equipment

Property and equipment, including leasehold improvements, are stated at cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the related assets, generally three years. Leasehold improvements are amortized on a straight-line basis over the shorter of the estimated useful lives of the assets or the remaining lease term.

Internal Use Software Development Costs

The Company capitalizes certain internal use software development costs associated with creating and enhancing internal use software related to its platform and technology infrastructure. These costs include personnel and related employee benefits expenses for employees who are directly associated with and who devote time to software projects, and external direct costs of materials and services consumed in developing or obtaining the software. Software development costs that do not meet the criteria for capitalization are expensed as incurred and recorded in technology and development expenses in the consolidated statements of operations and comprehensive income.

Software development activities generally consist of three stages, (i) the planning stage, (ii) the application and infrastructure development stage, and (iii) the post implementation stage. Costs incurred in the planning and post implementation stages of software development, including costs associated with the post configuration training and repairs and maintenance of the developed technologies, are expensed as incurred.

The Company capitalizes costs associated with software developed for internal use when both the preliminary project stage is completed and management has authorized further funding for the completion of the project. Costs incurred in the application and infrastructure development stages, including significant enhancements and upgrades, are capitalized. Capitalization ends once a project is substantially complete and the software and technologies are ready for their intended purpose. Internal use software development costs are amortized using a straight-line method over the estimated useful life of two to five years, commencing when the software is ready for its intended use.

Leases

We determine if an arrangement is a lease at inception. The Company's leases may include a non-lease component representing additional services transferred to the Company, such as common area maintenance for real estate. The Company accounts for each separate lease component and the non-lease components associated with that lease component as a single lease component. As such, minimum lease payments include fixed payments for non-lease components within a lease agreement but exclude variable lease payments not dependent on an index or rate, such as common area maintenance, operating expenses, utilities, or other costs that are subject to fluctuation from period to period. Non-lease components that are variable in nature are recorded as variable lease expense in the period incurred.

The Company made an accounting policy election under Topic 842 not to recognize right-of-use (ROU) assets and lease liabilities for leases with a term of twelve months or less. For all other leases, the Company recognizes ROU assets and lease liabilities based on the present value of lease payments over the lease term at the commencement date of the lease. The ROU assets also include any initial direct costs incurred and lease payments made at or before the commencement date and are reduced by any lease incentives.

The Company uses its incremental borrowing rate to determine the present value of lease payments, as the Company's leases do not have a readily determinable implicit discount rate. The incremental borrowing rate is the rate of interest the Company would have to pay to borrow on a collateralized basis over a similar term and amount in a similar economic environment. Judgement is applied in assessing factors such as Company-specific credit risk, lease term, nature and quality of the underlying collateral, currency, and economic environment in determining the incremental borrowing rate to apply to each lease.

Operating lease assets and liabilities are included on our consolidated balance sheets. Finance lease assets are included in property, equipment and software, net. Finance lease liabilities are included in accrued liabilities or other liabilities, non-current.

Impairment of Long-Lived Assets

The Company continually monitors events and changes in circumstances that could indicate that carrying amounts of its long-lived assets, including property and equipment and intangible assets may not be recoverable. When such events or changes in circumstances occur, the Company assesses the recoverability of long-lived assets by determining whether the carrying value of such assets will be recovered through their undiscounted expected future cash flows. If the future undiscounted cash flows are less than the carrying value of these assets, the Company recognizes an impairment loss based on the excess of the carrying value over the fair value of the assets.

Business Combinations

The Company allocates the purchase consideration for acquired companies to tangible and intangible assets acquired and liabilities assumed based on their estimated fair values as of the acquisition date, with the excess recorded to goodwill. These estimates are inherently uncertain and subject to refinement. During the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the fair value of these tangible and intangible assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

Acquisition-related Intangible Assets and Goodwill

Acquisition-related intangible assets with finite lives are amortized over their estimated useful lives on a straight-line basis. Goodwill amounts are not amortized. Acquisition-related intangible assets and goodwill are tested for impairment at least annually or more frequently if events or changes in circumstances indicate that the acquisition-related intangible assets or goodwill may be impaired.

Events or changes in circumstances which could trigger an impairment review include a significant adverse change in legal factors or in the business climate, an adverse action or assessment by a regulator, unanticipated competition, a loss of key personnel, significant changes in the manner of the Company's use of the acquired assets, or the strategy for the Company's overall business, significant negative industry or economic trends, or significant underperformance relative to expected historical or projected future results of operations. The Company has not recorded any acquisition-related intangible assets or goodwill impairment to date.

Impairment of Equity Investment

Prior to December 2021, the Company measured its equity investment in a privately held company in which the Company did not own a controlling interest or exercise significant influence using the measurement alternative for equity securities without a readily determinable fair value. Under the measurement alternative, the carrying value is measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. During December 2021, an observable transaction occurred for the Company's equity investment wherein the privately held company merged with a publicly held company whose shares of common stock were publicly quoted in the Over-the-Counter ("OTC") market. Therefore, the equity investment had a readily determinable fair value as of December 31, 2021 and was subsequently measured at fair value in the Company's consolidated balance sheets with unrealized gains and losses included in other income (expense), net in the Company's consolidated statements of operations. However, during September 2022, the Company concluded there was no longer a readily determinable fair value for its equity investment because the shares were no longer publicly quoted pursuant to U.S. Securities and Exchange Commission ("SEC") Rule 15c2-11. The Company evaluated the measurement guidance for equity securities without a readily determinable fair value and performed a qualitative assessment of various impairment indicators and concluded the equity investment was fully impaired as of September 30, 2022 and December 31, 2022. As a result, the Company recognized an impairment loss equal to the difference between the fair value of the investment and its carrying amount. An impairment charge of \$5.9 million was recorded within other income (expense), net in the Company's consolidated statements of operations for the year ended December 31, 2022.

Revenue Recognition

The Company recognizes revenue through the following steps:

- Identification of a contract with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when or as the performance obligations are satisfied.

The Company refers to its publishers, app developers, and channel partners collectively as its publishers. The Company generates revenue through the monetization of publisher ad impressions on its platform. The Company's platform allows publishers to sell, in real time, ad impressions to buyers and provides automated inventory management and monetization tools to publishers across various device types and digital ad formats. The Company charges publishers a fee, which is typically a percentage of the value of the ad impressions monetized through the Company's platform.

The Company maintains agreements with each publisher and buyer in the form of written service agreements, which set out the terms of the relationship, including payment terms (typically ninety days or less) and access to its platform.

The Company invoices buyers for publisher digital advertising inventory purchased through its platform. The Company recognizes revenue when a bid is won and a buyer purchases inventory on its platform. The Company estimates and records reductions to revenue for rebates related to supply path optimization agreements based on expected volumes during the incentive term.

The determination as to whether revenue should be reported gross of amounts billed to buyers (gross basis) or net of payments to publishers (net basis) requires significant judgment, and is based on the Company's assessment of whether it is acting as the principal or an agent in the transaction. The Company has determined that it does not act as the principal in the purchase and sale of digital advertising inventory because it does not control the advertising inventory and it does not set the price which is the result of an auction within the marketplace. Based on these and other factors, the Company reports revenue on a net basis.

The Company generally invoices buyers at the end of each month for the full purchase price of ad impressions monetized in that month. Accounts receivable are recorded at the amount of gross billings for the amounts the Company is responsible to collect, and accounts payable are recorded at the net amount payable to publishers. Accordingly, both accounts receivable and accounts payable appear large in relation to revenue reported on a net basis.

Cost of Revenue

Cost of revenue consists primarily of data center co-location costs, depreciation expense related to hardware supporting the Company's platform, amortization expense related to capitalized internal use software development costs, personnel costs, and allocated facilities costs. Personnel costs include salaries, bonuses, stock-based compensation, and employee benefit costs, and are primarily attributable to the Company's network operations group which maintains the Company's servers and the Company's client operations group, which is responsible for integration of new publishers and buyers and providing customer support for existing customers.

Technology and Development Costs

Technology and development expenses consist primarily of personnel costs, including salaries, bonuses, stock-based compensation, and employee benefits costs, allocated facilities costs, and professional services. These expenses include costs incurred in the development, implementation and maintenance of internal use software, including platform and related infrastructure. Technology and development costs are expensed as incurred, except to the extent that such costs are associated with internal use software development that meets the criteria for capitalization. The Company amortizes internal use software development costs that relate to its revenue producing activities on its platform to cost of revenue.

Advertising Costs

Advertising costs are expensed as incurred and are included in sales and marketing expenses. The Company's advertising costs recorded during the years ended December 31, 2023, 2022 and 2021 were \$0.1 million, \$0.3 million and \$0.5 million, respectively.

Stock-Based Compensation

Stock-based compensation expense related to stock awards, including stock options, restricted stock units ("RSUs"), and the employee stock purchase plan (the "ESPP"), is measured based on the fair value of the awards granted and recognized as an expense on a straight-line basis over the requisite service period.

The fair value of each option and ESPP award is estimated on the grant date using the Black-Scholes option pricing model. The Black-Scholes option pricing model requires the input of highly subjective assumptions, including the fair value of the underlying common stock, the expected term of the award, the expected volatility of the price of our common stock, risk-free interest rates, and the expected dividend yield of our common stock.

The fair value of each RSU award is based on the fair value of the underlying common stock as of the grant date.

The assumptions used to determine the fair value of the stock awards represent management's best estimates. These estimates involve inherent uncertainties and the application of management's judgment. The Company accounts for forfeitures as they occur. For additional information regarding stock-based compensation and the assumptions used for determining the fair value of stock options and ESPP awards, refer to Note 10—Stockholders' Equity and Equity Incentive Plans.

Foreign Currency Translation

Transactions in foreign currencies are translated into the functional currency of the applicable entity at the rates of exchange in effect at the date of the transaction. Accordingly, all monetary assets and liabilities of these subsidiaries are remeasured at the current exchange rate at each balance sheet date, nonmonetary assets and liabilities are measured at historical rates, and revenue and expenses are remeasured at average exchange rates during the period. Transaction gains and losses are included in other income (expense), net in the accompanying consolidated statements of operations. The Company's net foreign currency gain (losses) recorded during the years ended December 31, 2023, 2022 and 2021 were \$1.5 million, \$(0.7) million, and \$(0.1) million respectively.

Income Taxes

The Company utilizes the asset and liability method under which deferred tax assets and liabilities arise from the temporary differences between the tax basis of an asset or liability and its reported amount in the consolidated financial statements, as well as from net operating loss and tax credit carryforwards. Deferred tax amounts are determined by using the tax rates expected to be in effect when the taxes will actually be paid or refunds received, as provided for under currently enacted tax law. A valuation allowance is established when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized. The Company recognizes interest and penalties related to income tax matters as income tax expense.

Segment Information

Operating segments are components of an enterprise for which separate financial information is available and is evaluated regularly by the Company's chief operating decision maker in deciding how to allocate resources and assessing performance. The Company's chief operating decision maker is its Chief Executive Officer.

The Chief Executive Officer reviews financial information presented on a consolidated basis, for purposes of allocating resources and evaluating financial performance. The Company has one business activity and there are no segment managers accountable for operations, operating results beyond revenue or gross profit, or plans for levels or components below the consolidated unit level. Accordingly, the Company has one single reporting segment.

Net Income Per Share Attributable to Common Stockholders

Basic and diluted net income per share attributable to Class A and Class B common stock is computed in conformity with the two-class method required for participating securities. The Company applies the two-class method to allocate earnings between common and other participating securities based on their participation rights.

Distributed and undistributed earnings allocated to participating securities are subtracted from net income in determining net income attributable to common stockholders. Basic net income per share is computed by dividing net income attributable to common stockholders by the weighted-average number of shares of our Class A and Class B common stock outstanding.

The diluted net income per share attributable to common stockholders is computed by giving effect to all dilutive securities. Diluted net income per share attributable to common stockholders is computed by dividing the resulting net income attributable to common stockholders by the weighted-average number of fully diluted common shares outstanding. During the periods when there is a net loss attributable to common stockholders, potentially dilutive common stock equivalents have been excluded from the calculation of diluted net loss per share attributable to common stockholders as their effect is anti-dilutive.

Recently Adopted Accounting Pronouncements

In October 2021, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, which requires contract assets and contract liabilities acquired in a business combination to be recognized and measured in accordance with Topic 606, Revenue from Contracts with Customers, as if the acquirer had originated the contracts. Under previous GAAP, such assets and liabilities were recognized by the acquirer at fair value on the acquisition date. The Company adopted ASU 2021-08 as of January 1, 2023. The adoption of ASU 2021-08 did not have a material impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements Not Yet Adopted

In November 2023, the Financial Standards Accounting Board (FASB) issued Accounting Standards Update (ASU) 2023-07 "Segment Reporting (Topic 280):Improvements to Reportable Segment Disclosures" which expands annual and interim disclosure requirements for reportable segments, primarily through enhanced disclosures about significant segment expenses. ASU 2023-07 is effective for our annual periods beginning January 1, 2024, and for interim periods beginning January 1, 2025, with early adoption permitted. We are currently evaluating the potential effect that the updated standard will have on our financial statement disclosures.

In December 2023, the FASB issued ASU 2023-09 "Income Taxes (Topics 740): Improvements to Income Tax Disclosures" to expand the disclosure requirements for income taxes, specifically related to the rate reconciliation and income taxes paid. ASU 2023-09 is effective for our annual periods beginning January 1, 2025, with early adoption permitted. We are currently evaluating the potential effect that the updated standard will have on our financial statement disclosures.

Note 3 – Fair Value Measurements

Assets and liabilities recorded at fair value on a recurring basis in the consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Fair value represents the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

- Level 1 – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;
- Level 2 – Inputs are observable, unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and
- Level 3 – Unobservable inputs that are significant to the measurement of the fair value of the assets or liabilities that are supported by little or no market data.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability.

The Company's financial assets consist of Level 1 and 2 assets. The Company had no Level 3 assets or liabilities for the periods presented. The Company classifies its cash equivalents and marketable securities within Level 1 or Level 2 because they are valued using either quoted market prices or inputs other than quoted prices which are directly or indirectly observable in the market, including readily-available pricing sources for the identical underlying security which may not be actively traded. The Company's fixed income available-for-sale securities consist of high quality, investment grade securities from diverse issuers. The valuation techniques used to measure the fair value of the Company's marketable securities were derived from non-binding market consensus prices that are corroborated by observable market data and quoted market prices for similar instruments.

The following tables set forth the fair value of the Company's financial assets and liabilities measured on a recurring basis by level within the fair value hierarchy (in thousands):

	December 31, 2023			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	\$ 42,126	\$ —	\$ —	\$ 42,126
Certificates of deposit	—	12,528	—	12,528
Cash equivalents	42,126	12,528	—	54,654
Commercial paper	—	50,962	—	50,962
Agency debt securities	—	2,995	—	2,995
U.S. Treasury and government debt securities	—	42,878	—	42,878
Marketable securities	—	96,835	—	96,835
Total financial assets	\$ 42,126	\$ 109,363	\$ —	\$ 151,489

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	\$ 48,884	\$ —	\$ —	\$ 48,884
Certificates of deposit	—	4,169	—	4,169
Cash equivalents	48,884	4,169	—	53,053
Commercial paper	—	63,483	—	63,483
Agency debt securities	—	5,778	—	5,778
U.S. Treasury and government debt securities	—	12,752	—	12,752
Marketable securities	—	82,013	—	82,013
Total financial assets	\$ 48,884	\$ 86,182	\$ —	\$ 135,066

There were no transfers between Level 1 and Level 2 fair value measurement categories during the years ended December 31, 2023 and 2022.

Note 4 – Balance Sheet Components

Marketable Securities

The following tables summarize the Company's marketable securities by significant investment categories (in thousands):

	December 31, 2023			
	Amortized Cost	Unrealized Gains	Unrealized Loss	Fair Value
Commercial paper	\$ 50,975	\$ 3	\$ (16)	\$ 50,962
Agency debt securities	2,997	—	(2)	2,995
U.S. Treasury and government debt securities	42,867	12	(1)	42,878
Total	\$ 96,839	\$ 15	\$ (19)	\$ 96,835

	December 31, 2022			
	Amortized Cost	Unrealized Gains	Unrealized Loss	Fair Value
Commercial paper	\$ 63,483	\$ —	\$ —	\$ 63,483
Agency debt securities	5,762	17	—	5,779
U.S. Treasury and government debt securities	12,777	2	(28)	12,751
Total	\$ 82,022	\$ 19	\$ (28)	\$ 82,013

The remaining contractual maturity of all marketable securities was within one year as of December 31, 2023 and 2022. Realized gains and losses were not material for the years ended December 31, 2023, 2022 and 2021. As of December 31, 2023, and 2022 there were no securities that were in an unrealized loss position for more than twelve months.

Property, Equipment and Software, Net

Property, equipment and software, net consisted of the following (in thousands):

	December 31,	
	2023	2022
Internal-use software	\$ 56,257	\$ 40,794
Network hardware, computer equipment and software	137,709	129,212
Leasehold improvements	5,173	4,026
Furniture and fixtures	2,304	2,087
Property, equipment and software, gross	201,443	176,119
Less: accumulated depreciation and amortization	(140,714)	(104,963)
Total property, equipment and software, net	<u>\$ 60,729</u>	<u>\$ 71,156</u>

Depreciation and amortization expense related to property, equipment, and software (excluding amortization of internal use software) was \$28.5 million, \$23.6 million, and \$15.7 million for the years ended December 31, 2023, 2022 and 2021, respectively.

The Company capitalized \$21.3 million, \$14.5 million, and \$10.3 million in software development costs during the years ended December 31, 2023, 2022 and 2021, respectively. Fully-amortized software development costs of \$5.9 million have been removed from internal-use software and accumulated depreciation and amortization for the year ended December 31, 2023. Amortization expense of internal use software was \$13.9 million, \$10.0 million, and \$7.4 million for the years ended December 31, 2023, 2022 and 2021, respectively. These costs are included within cost of revenue in the consolidated statements of operations.

The Company did not recognize any impairment charges on its long-lived assets during the years ended December 31, 2023, 2022 and 2021.

Accounts Payable

Accounts payable consisted of the following (in thousands):

	December 31,	
	2023	2022
Payable to publishers	\$ 335,061	\$ 266,506
Trade and other payables	12,612	10,908
Total accounts payable	<u>\$ 347,673</u>	<u>\$ 277,414</u>

Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	December 31,	
	2023	2022
Accrued compensation	\$ 18,784	\$ 14,587
Accrued and other current liabilities	6,900	4,349
Total accrued liabilities	<u>\$ 25,684</u>	<u>\$ 18,936</u>

Note 5 – Senior Secured Credit Facilities Agreement

Senior Secured Credit Facilities Agreement

On October 17, 2022, the Company entered into a Senior Secured Credit Facilities Credit Agreement (the “Credit Agreement”) with the several lenders parties thereto (the “Lenders”), and Silicon Valley Bank (“SVB”), as administrative agent, lead arranger, issuing lender, and swingline lender.

The Credit Agreement provides a revolving credit facility in an aggregate principal amount of \$110.0 million (“the Revolving Credit Facility”), including a \$25.0 million letter of credit sub-facility and a \$25.0 million swingline sub-facility. The Company’s obligations under the Revolving Credit Facility and the letter of credit sub-facility (described in Note 9) with SVB are secured by substantially all of its assets excluding its intellectual property. The Company may, subject to certain customary conditions, on one or more occasions increase commitments under the Revolving Credit Facility in an amount not to exceed \$90.0 million in the aggregate (the “Incremental Facility”). Each Lender will have discretion to determine whether it will participate in any Incremental Facility. The Credit Agreement matures on October 17, 2027.

Borrowings under the Revolving Credit Facility will accrue interest at rates equal, at the Company’s election, to (i) the applicable secured overnight financing rate (“SOFR”), plus the applicable margin for such loans, or (ii) the alternate base rate (“ABR”), which is defined as the highest of (a) the prime rate in effect from time to time, (b) the federal funds effective rate in effect from time to time plus 0.50%, and (c) the adjusted term SOFR for a one (1) month tenor in effect from time to time plus 1.0%, plus the applicable margin for such loans. The applicable margin for borrowings bearing interest on the SOFR ranges from 2.00% to 2.75%, and the applicable margin for borrowings bearing interest based on the ABR ranges from 1.00% to 1.75%. The Company will pay a quarterly commitment fee during the term of the Credit Agreement for the non-use of available funds ranging from 0.25% to 0.35%. In addition, the Credit Agreement provides a mechanism to determine a successor reference rate to the applicable reference rate if, among other things, the applicable reference rate becomes unavailable or is generally replaced as a benchmark interest rate.

The Credit Agreement contains customary representations and warranties as well as customary affirmative and negative covenants. Negative covenants include, among others, limitations on incurrence of indebtedness, liens, disposition of property and investments by the Company and its subsidiaries. In addition, the Credit Agreement requires the Company to maintain certain interest coverage, leverage and senior leverage ratios. The Company was in compliance with these covenants as of December 31, 2023.

The Credit Agreement contains customary events of default. Upon the occurrence and during the continuance of an event of default, the Lenders may declare the outstanding advances and all other obligations under the Credit Agreement immediately due and payable.

The Company may use amounts borrowed under the Credit Agreement to refinance the Existing Credit Agreement, for general corporate purposes or working capital financing. The Company may borrow additional amounts under the Credit Agreement from time to time as opportunities and needs arise.

Note 6 – Leases

The Company determines if an arrangement is or contains a lease at inception, which is the date on which the terms of the contract are agreed to, and the agreement creates enforceable rights and obligations. Under Topic 842, a contract is or contains a lease when (i) explicitly or implicitly identified assets have been deployed in the contract and (ii) the customer obtains substantially all of the economic benefits from the use of that underlying asset and directs how and for what purpose the asset is used during the term of the contract. The Company also considers whether its service arrangements include the right to control the use of an asset.

The Company leases office facilities from unrelated parties under operating lease agreements that have initial terms ranging from two to seven years. Included in an office lease the Company also leases furniture and fixtures under a finance lease with a seven year term with a purchase option at the end of the term.

The allocation of lease payments was determined based on the relative standalone price of the separate office and furniture components. Some leases include one or more options to renew, generally at our sole discretion, with renewal terms that can extend the lease term up to five additional years. In addition, certain leases contain termination options, where the rights to terminate are held by either the Company, the lessor, or both parties. These options to extend or terminate a lease are not included in the lease terms as the Company is not reasonably certain that they will exercise that option. The Company’s leases generally do not contain any material restrictive covenants.

Operating lease cost is recognized on a straight-line basis over the lease term. Finance lease cost is recognized as a combination of the amortization expense for the right-of-use assets and interest expense for the outstanding lease liabilities, and results in a front-loaded expense pattern over the lease term. Short-term and variable lease costs are not material to the Company's consolidated financial statements.

The components of lease cost were as follows (in thousands):

	Year Ended December 31,	
	2023	2022
Operating lease cost	\$ 7,468	\$ 6,876
Finance lease cost	189	192
Total lease cost	\$ 7,657	\$ 7,068

Supplemental cash flow information related to leases was as follows (in thousands):

	Year Ended December 31,	
	2023	2022
Cash paid for amounts included in measurement of lease liabilities:		
Operating cash outflows - payments on operating leases	\$ 5,789	\$ 5,015
Right-of-use assets obtained in exchange for new lease obligations:		
Operating leases	\$ 1,041	\$ 10,424

Supplemental balance sheet information related to leases was as follows (in thousands):

	December 31,	
	2023	2022
Operating leases		
Operating lease right-of-use assets	\$ 21,102	\$ 26,206
Operating lease liabilities, current	\$ 6,236	\$ 5,676
Operating lease liabilities, non-current	15,607	20,915
Total operating lease liabilities	\$ 21,843	\$ 26,591
Finance leases		
Furniture and fixtures	\$ 869	\$ 869
Accumulated depreciation	(362)	(188)
Furniture and fixtures, net	\$ 507	\$ 681
Accrued liabilities	\$ 133	\$ 125
Other liabilities, non-current	483	616
Total finance lease liabilities	\$ 616	\$ 741

Other information related to leases was as follows:

	December 31,	
	2023	2022
Weighted-average remaining lease term:		
Operating leases	3.7 years	4.6 years
Finance leases	4.3 years	5.3 years
Weighted-average discount rate:		
Operating leases	3.23 %	3.22 %
Finance leases	2.24 %	2.24 %

As of December 31, 2023, the maturities of lease liabilities under operating and finance leases were as follows (in thousands):

	Operating Leases	Finance Leases	Total
Year ending December 31,			
2024	\$ 6,842	\$ 145	\$ 6,987
2025	5,423	149	5,572
2026	5,632	153	5,785
2027	4,278	158	4,436
2028	994	41	1,035
Total minimum lease payments	23,169	646	23,815
Less: imputed interest	(1,326)	(30)	(1,356)
Total present value of lease liabilities	\$ 21,843	\$ 616	\$ 22,459

Note 7 – Business Combination

On September 16, 2022, the Company acquired all outstanding stock of ConsultMates, Inc. (dba “Martin”), a media measurement and reporting platform, for \$30.8 million. The acquisition is in response to growing demand from the Company’s buy-side customers for enhanced tools to take advantage of the Company’s global omnichannel inventory, including market-leading addressability solutions and innovative technology to enable supply path optimization. The assets acquired and liabilities assumed were recorded at fair value. The purchase price excludes \$14.2 million of post-acquisition cash compensation arrangements for certain key acquired employees to be paid ratably over three years following the closing of the acquisition (subject to forfeiture upon termination). The purchase price was attributed to \$7.9 million of developed technology intangible assets, \$1.0 million of customer relationship intangible assets, \$23.3 million of goodwill, \$1.1 million of deferred tax liabilities, and \$0.3 million of net liabilities assumed. The fair value of the acquired developed technology intangible asset was estimated using the excess earnings method. This valuation methodology included an analysis of future class flows expected to be generated by the developed technology intangible asset. The goodwill recognized was primarily attributable to the assembled workforce and the expected synergies from integrating Martin’s technology into the Company’s platform. Goodwill is not deductible for tax purposes. The financial results of Martin are included in the Company’s consolidated financial statements from the date of acquisition. Separate operating results and pro forma results of operations for Martin have not been presented as the effect of this acquisition was not material to the Company’s financial results. Acquisition-related costs were \$0.9 million and are included in general and administrative expenses in the consolidated statements of operations for the year ended December 31, 2022.

Note 8 - Goodwill and Acquisition-related Intangible Assets, Net

Goodwill

Goodwill as of December 31, 2023 and 2022 was \$29.6 million. There were no accumulated impairment losses as of December 31, 2023.

Acquisition-related Intangible Assets, Net

Acquisition-related intangible assets, net consisted of the following (in thousands):

	December 31, 2023			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Useful Life (in years)
Developed technology	\$ 7,900	\$ 2,036	\$ 5,864	3.75
Customer relationships	1,000	1,000	—	—
Total acquisition-related intangible assets	\$ 8,900	\$ 3,036	\$ 5,864	3.75

	December 31, 2022			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Useful Life (in years)
Developed technology	\$ 7,900	\$ 456	\$ 7,444	4.75
Customer relationships	1,000	145	855	1.75
Total acquisition-related intangible assets	\$ 8,900	\$ 601	\$ 8,299	4.44

Amortization expense related to acquisition-related intangibles was \$2.4 million and \$0.6 million for the years ended December 31, 2023 and 2022.

As of December 31, 2023, estimated future amortization expense for acquisition-related intangible assets was as follows (in thousands):

2024	\$ 1,580
2025	1,580
2026	1,580
2027	1,124
Total estimated future amortization expense for acquisition-related intangible assets	\$ 5,864

Note 9 – Commitments and Contingencies

Purchase Obligations

The Company's purchase obligations primarily relate to minimum contractual payments due to data center providers.

As of December 31, 2023, future minimum commitments for purchase obligations with a remaining term in excess of one year were as follows (in thousands):

Years ending December 31,	
2024	\$ 18,314
2025	6,278
2026	179
Total future minimum commitments, net	\$ 24,771

Letters of Credit

As of December 31, 2023 and 2022, the Company had two irrevocable letters of credit outstanding related to noncancelable facilities leases in the amounts of \$0.5 million and \$3.5 million, with annual automatic renewal and final expiration dates in April 2025 and July 2028, respectively.

Legal Matters

From time to time, the Company is or may be involved in various claims and other legal matters arising in the normal course of business. The Company records an accrual for a liability relating to claims and other legal matters when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Any such accruals are reviewed at least quarterly and adjusted for the impacts of negotiations, rulings, settlements, and other information or events pertaining to a particular matter, or on the advice of legal counsel. To date, the Company has not incurred a material loss, or a material loss in excess of a recorded accrual, with respect to any claims and other legal matters arising in the normal course of business. However, the outcomes of claims and other legal matters are inherently unpredictable and subject to significant uncertainties. If the Company subsequently concludes that there is a reasonable possibility that a loss exceeding amounts already recognized may be incurred, and the amount of such additional loss would be material, the Company will either disclose the estimated additional loss or state that such an estimate cannot be made.

Indemnification

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for general indemnification. The Company's exposure under these agreements is unknown because it involves future claims that may be made against the Company, but have not yet been made. To date, the Company has not paid any material claims or been required to defend any actions related to its indemnification obligations. However, the Company may record charges in the future as a result of these indemnification obligations. In addition, the Company has indemnification agreements with certain of its directors and executive officers that require it, among other things, to indemnify them against certain liabilities that may arise due to their status or service as directors or officers of the Company. The terms of such obligations may vary.

Note 10 – Stockholders' Equity and Equity Incentive Plans

Common Stock

The Company's board of directors has authorized 1,000,000,000 shares of Class A common stock, \$0.0001 par value per share, and 1,000,000,000 shares of Class B common stock, \$0.0001 par value per share. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting and conversion rights. Holders of Class A common stock are entitled to one vote and holders of Class B common stock are entitled to ten votes and is convertible into one share of Class A common stock. Each share of Class B is convertible anytime at the option of the holder into one share of Class A common stock. Once converted or transferred and converted into Class A common stock, the Class B common stock will not be reissued.

Share Repurchases

In February 2023, the Company's board of directors authorized the Company to repurchase up to \$75 million of its Class A common stock ("2023 Repurchase Program"). As of December 31, 2023, \$15.7 million remains available for repurchases. Shares are repurchased in a manner deemed in the best interest of the Company and its stockholders, dependent upon business, economic and market conditions, corporate and regulatory requirements, prevailing stock prices and other considerations.

In accordance with the authorization of the Company's board of directors, during the year ended December 31, 2023, the Company repurchased 4,040,129 aggregate shares of Class A common stock for \$59.3 million. The Company recorded an additional \$0.3 million related to the 1% excise tax on net share repurchases as a result of the Inflation Reduction Act of 2022 ("IRA").

Repurchases are executed from time to time, subject to general business and market conditions and other investment opportunities, through open market purchases or privately negotiated transactions, in accordance with Rule 10b-18 and/or Rule 10b5-1 of the Exchange Act. The 2023 Repurchase Program is scheduled to terminate on December 31, 2024.

Equity Incentive Plans

The Company maintains the 2020 Equity Incentive Plan (“2020 Plan”), pursuant to which the Company may grant stock options, restricted stock awards, stock appreciation rights, restricted stock units (“RSUs”), deferred stock units (“DSUs”) performance awards, and stock bonus awards. As of December 31, 2023, the Company has reserved 6,507,867 shares of Class A common stock for the issuance of awards under the 2020 Plan. These available shares will increase automatically on January 1 for each of the first ten calendar years during the term of the 2020 Plan by the number of shares equal to the lesser of five percent (5%) of the aggregate number of outstanding shares of all classes of the Company’s common stock outstanding as of the immediately preceding December 31, or a number as may be determined by the Company’s board of directors or compensation committee. No new awards were issued under the Company’s prior 2006 Plan or 2017 Plan (“Prior Plans”) after the effective date of the 2020 Plan. To the extent outstanding awards under the 2006 Plan and the 2017 Plan are forfeited, expire unexercised, or would otherwise have been returned to the share reserve under the Prior Plans, the shares of Class B common stock subject to such awards instead will be available for future issuance as Class A common stock under the 2020 Plan.

Stock Options

Stock options granted under the Company’s stock incentive plans generally vest over four years, subject to the holder’s continued service through the vesting date and expire no later than ten years from the date of grant.

The following table summarizes stock option activity and related information under the Company’s equity incentive plans (shares and aggregate intrinsic value in thousands):

	Options Outstanding			
	Number of Shares Underlying Outstanding Options	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding — December 31, 2022	6,476	\$ 7.38	6.10	\$ 55,516
Options granted	1,375	15.33		
Options exercised	(575)	2.69		
Options canceled	(180)	16.09		
Options expired	(17)	32.14		
Outstanding — December 31, 2023	7,079	\$ 9.02	5.78	\$ 67,418
Vested and exercisable — December 31, 2023	5,594	\$ 6.65	5.05	\$ 64,803

The aggregate intrinsic value represents the difference between the exercise price of the options and the fair market value of our common stock on the date of exercise. The intrinsic value of options exercised was \$7.5 million, \$6.4 million and \$80.7 million for the years ended December 31, 2023, 2022 and 2021, respectively.

As of December 31, 2023, unrecognized stock-based compensation of \$14.7 million related to unvested stock options will be recognized on a straight-line basis over a weighted average period of 2.27 years.

The fair value of stock options granted under the Company's equity incentive plans was estimated using the following assumptions:

	Year Ended December 31,		
	2023	2022	2021
Fair market value of common stock	\$12.56-\$16.94	\$18.63-\$31.79	\$39.75-\$54.07
Expected term (in years)	5.0-7.0	5.0-7.0	5.8-6.7
Risk-free interest rate	3.5%-4.0%	1.8%-3.4%	0.6%-1.0%
Expected volatility	55%-59%	54%-57%	51%-54%
Dividend rate	—%	—%	—%
Weighted-average grant date fair value of options granted	\$8.58	\$13.70	\$20.30

These assumptions and estimates were determined as follows:

Fair Value of Common Stock - The fair value of each share of underlying common stock was based on the closing price of the Company's Class A common stock as reported on the date of the grant.

Expected Term - The expected term represents the period that the Company's stock-based awards are expected to be outstanding. For option grants that are considered to be "plain vanilla," the Company determines the expected term using the simplified method. The simplified method deems the term to be the average of the time-to-vesting and the contractual life of the options. For other option grants, the Company estimates expected term using historical data on employee exercises and post-vesting employment termination behavior taking into account the contractual life of the award.

Risk-Free Interest Rate - The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for zero-coupon U.S. Treasury notes with maturities approximately equal to the option's expected term.

Expected Volatility - Since the Company has a short trading history of its common stock, the expected volatility is derived from the average historical stock volatilities of several unrelated public companies within the Company's industry that the Company considers to be comparable to its business over a period equivalent to the expected term of the stock option grants.

Dividend Rate - The expected dividend is assumed to be zero as the Company has never paid dividends and has no current plans to do so.

Restricted Stock Units

RSU awards generally vest over four years, subject to the holder's continued service through the vesting date.

The following table summarizes RSU activity and related information under the Company's 2020 Plan:

	RSUs		
	Number of Shares (in thousands)	Weighted-Average Grant Date Fair Value per Share	Aggregate Intrinsic Value (in thousands)
Unvested — December 31, 2022	1,582	\$ 26.49	\$ 20,264
Granted	2,573	15.98	
Vested	(878)	22.10	
Canceled/Forfeited	(343)	18.83	
Unvested — December 31, 2023	2,934	\$ 19.49	\$ 47,859

As of December 31, 2023, unrecognized stock-based compensation of \$51.5 million related to unvested RSUs will be recognized on a straight-line basis over a weighted average period of 2.67 years.

2020 Employee Stock Purchase Plan

In November 2020, the Company’s board of directors adopted, and its stockholders approved, the 2020 Employee Stock Purchase Plan (“ESPP”), which became effective in connection with the Company’s IPO. A total of 500,000 shares of the Company’s Class A common stock were initially reserved for issuance under the ESPP. The aggregate number of shares reserved for issuance under the ESPP will increase automatically on January 1st of each of the first ten calendar years during the term of the ESPP by the number of shares equal to the lesser of (a) 1% of the total outstanding shares of all classes of the Company’s common stock as of the immediately preceding December 31 and (b) such number of shares of common stock as determined by the Company’s board of directors. The aggregate number of shares issued over the term of the ESPP may not exceed 7,500,000 shares of Class A common stock. As of December 31, 2023, the Company has reserved 401,599 shares of its common stock for issuance under the ESPP.

Under the ESPP, Class A common stock will be purchased for the accounts of employees participating in the ESPP on each purchase date at a price per share equal to 85% of the lesser of: (a) the fair market value on the offering date or (b) the fair market value on the purchase date. The ESPP provides for, at maximum, 27 month offering periods and each offering period may consist of one or more six-month purchase periods, whereby the latest offering period commenced on June 1, 2022, and the offering periods thereafter consist of two six-month purchase periods ending May 31, 2023. As of December 31, 2023, \$0.1 million has been withheld on behalf of employees for a future purchase under the ESPP due to the timing of payroll deductions and is included in accrued liabilities. For the twelve months ended December 31, 2023, 128,289 shares of our Class A common stock have been purchased under the ESPP.

As of December 31, 2023, unrecognized stock-based compensation expense related to the ESPP was \$0.4 million, which is expected to be recognized over a weighted-average period of 0.42 years.

The fair value of purchase right granted the under the Company’s 2020 Employee Stock Purchase Plan was estimated using the following assumptions:

	Year Ended December 31,		
	2023	2022	2021
Expected term (in years)	0.5-1.0	0.5-1.0	0.4-1.4
Risk-free interest rate	5.4%-5.1%	1.6%-2.2%	0.1%
Expected volatility	48%-59%	83%-79%	60%-76%
Dividend rate	—%	—%	—%

Expected Term - The expected term of the ESPP represents the period of time that purchase rights are expected to be outstanding.

Risk-Free Interest Rate - The risk-free interest rate for the expected term of the awards was based on the U.S. Treasury yield curve in effect at the time of the grant.

Expected Volatility - The expected volatility is based on the historical volatility of the Company’s Class A common stock over a period equivalent to the expected term of the ESPP purchase rights. In 2021, since the Company had a short trading history of its common stock, the expected volatility was estimated by taking the average historic price volatility of several unrelated public companies within the Company’s industry that the Company considered to be comparable to its business over a period equivalent to the expected term of the awards.

Dividend rate - The expected dividend is assumed to be zero as the Company has never paid dividends and has no current plans to do so.

Stock-Based Compensation

Total stock-based compensation expense recognized in the consolidated statements of operations was as follows (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Cost of revenue	\$ 1,472	\$ 1,135	\$ 825
Technology and development	4,346	3,225	2,232
Sales and marketing	10,462	7,645	5,176
General and administrative	12,582	8,641	5,874
Total stock-based compensation expense	28,862	20,646	14,107
Tax benefit from stock-based compensation	(5,695)	(3,537)	(1,825)
Total stock-based compensation expense, net of tax effect	\$ 23,167	\$ 17,109	\$ 12,282

Note 11 – Net Income Per Share Attributable to Common Stockholders

The Company has two classes of common stock, Class A and Class B. The rights, including the liquidation and dividend rights, of the holders of Class A and Class B common stock are identical, except with respect to voting. As the liquidation and dividend rights are identical, the undistributed earnings are allocated on a proportionate basis and the resulting net loss per share attributed to common stockholders will, therefore, be the same for both Class A and Class B common stock on an individual or combined basis.

The following table sets forth the computation of the Company's basic and diluted net income per share (in thousands, except share and per share data):

	Year Ended December 31,		
	2023	2022	2021
	(in thousands, except per share data)		
Numerator:			
Net income attributable to common stockholders – basic	\$ 8,881	\$ 28,705	\$ 56,604
Denominator:			
Weighted average shares outstanding – basic	51,760	52,278	50,184
Options to purchase common stock	4,037	4,606	6,354
Restricted stock	178	13	30
Employee stock purchase plan shares	52	11	61
Weighted average shares outstanding – diluted	56,027	56,908	56,629
Net income per share attributable to common stockholders – diluted	\$ 0.16	\$ 0.50	\$ 1.00

The following weighted-average outstanding shares of common stock equivalents were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented because including them would have been anti-dilutive (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Options to purchase common stock	2,167	1,016	671
Unvested restricted stock units	1,106	1,165	—
ESPP	37	73	—
Total common stock equivalents excluded from net income per share attributable to common stockholders – diluted	3,310	2,254	671

Note 12 – Income Taxes

The domestic and foreign components of income before provision for income taxes were as follows (in thousands):

	December 31,		
	2023	2022	2021
Domestic	\$ 5,371	\$ 32,945	\$ 61,822
Foreign	5,134	4,522	2,981
Income before provision for income taxes	<u>\$ 10,505</u>	<u>\$ 37,467</u>	<u>\$ 64,803</u>

The provision for income taxes consisted of the following (in thousands):

	December 31,		
	2023	2022	2021
Current provisions for income taxes:			
Federal	\$ 11,059	\$ 11,379	\$ 2,437
State	2,026	2,060	714
Foreign	1,947	1,349	295
Total current tax expense	<u>15,032</u>	<u>14,788</u>	<u>3,446</u>
Deferred tax expense (benefit):			
Federal	(11,825)	(5,491)	4,513
State	(1,391)	(769)	251
Foreign	(192)	234	(11)
Total deferred tax expense (benefit)	<u>(13,408)</u>	<u>(6,026)</u>	<u>4,753</u>
Total provision for income taxes	<u>\$ 1,624</u>	<u>\$ 8,762</u>	<u>\$ 8,199</u>

The following table presents a reconciliation of the U.S. federal statutory income tax rate to the Company's effective tax rate for the periods presented:

	December 31,		
	2023	2022	2021
Federal statutory income tax rate	21.00 %	21.00 %	21.00 %
State after-tax rate	2.82	3.45	1.49
Stock options	19.25	2.67	(10.38)
Research credit	(10.20)	(4.51)	(1.37)
Transfer pricing reserve	1.54	0.76	(1.26)
Foreign rate differential	4.64	(0.02)	0.73
GILTI	(11.62)	3.30	—
Foreign derived intangible income	(22.57)	(5.43)	(0.48)
Section 162(m) limitation	7.18	2.59	2.49
Acquisition-related costs	1.22	(0.65)	—
Other	2.18	0.27	0.42
Effective tax rate	<u>15.44 %</u>	<u>23.43 %</u>	<u>12.64 %</u>

Deferred income taxes reflect the net tax effects of temporary differences between carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's deferred tax assets and liabilities were as follows (in thousands):

	December 31,		
	2023	2022	2021
Deferred tax assets:			
Net operating loss carryforwards	\$ 811	\$ 263	\$ 56
Accruals and allowances	1,489	1,067	1,104
Tax credits	2,023	1,954	1,396
Stock-based compensation	6,967	4,907	3,171
Unrealized gain on equity investment	—	124	—
Intangibles assets	816	907	1,010
Lease obligation	4,081	5,074	5,226
R&D capitalization	15,419	—	—
Other	931	1,222	808
Total deferred tax assets	32,537	15,518	12,771
Valuation allowance	(2,023)	(1,954)	(1,396)
Total deferred tax assets, net of valuation allowance	30,514	13,564	11,375
Deferred tax liabilities:			
Property, equipment, and software	(9,273)	(3,905)	(8,316)
Goodwill	(956)	(843)	(749)
Prepaid expense	(1,023)	(1,188)	(1,365)
Right-of-use asset	(3,933)	(5,158)	(5,201)
Acquired intangibles	(1,449)	(1,996)	—
Unrealized loss on equity investment	—	—	(1,296)
Total deferred tax liabilities	(16,634)	(13,090)	(16,927)
Net deferred income tax asset (liabilities)	\$ 13,880	\$ 474	\$ (5,552)

The Company had gross federal and state net operating loss carryforwards of approximately \$3.7 million and \$0.6 million, respectively, as of December 31, 2023. The federal net operating loss never expires and the state net operating losses will expire at various dates beginning in 2035 if not utilized and may be subject to annual limitations of usage, as promulgated by the Internal Revenue Service, due to ownership changes that may have occurred in the past. As of December 31, 2023, the Company had state research and development credit carryforwards of \$4.0 million. The state credits can be carried forward indefinitely.

Pursuant to Section 382 of the Internal Revenue Code of 1986, as amended (“Code”), the Company’s ability to utilize net operating loss carryforwards or other tax attributes, such as research tax credits, in any taxable year may be limited if the Company experiences an “ownership change.” A Section 382 “ownership change” generally occurs if one or more stockholders or groups of stockholders who own at least 5% of the Company’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three year period. Similar rules may apply under state tax laws. Net operating loss carryforwards and other tax attributes generated are currently not subject to limitation by Section 382, but subsequent changes in the Company’s stock ownership as well as other changes that may be outside of the Company’s control, could result in additional ownership changes under Section 382 of the Code.

Deferred Tax Valuation Allowance

A valuation allowance is provided for deferred tax assets where the recoverability of the assets is uncertain. The determination to provide a valuation allowance is dependent upon the assessment of whether it is more likely than not that sufficient future taxable income will be generated to utilize the deferred tax assets. Management has determined that there is sufficient positive evidence that a valuation allowance against deferred tax assets is not required as of December 31, 2023 and 2022, except for state research credit carryforwards, starting in 2020, for which realization is not deemed more likely than not given the Company expects to generate more credits in future than can be utilized against projected taxable income.

The Company has not provided for U.S. deferred taxes on the cumulative earnings of non-U.S. affiliates that have been reinvested indefinitely. The Company will continue to maintain its policy of indefinite reinvestment to the extent that the repatriation of foreign earnings is restricted by local laws, accounting rules, substantial incremental costs associated with repatriating the foreign earnings, or other business requirements.

Uncertain Tax Positions

The activity related to the unrecognized income tax benefits is as follows (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Gross unrecognized income tax benefits — beginning balance	\$ 4,303	\$ 2,364	\$ 3,208
Increases related to tax positions taken during the current year	1,104	1,788	649
Increases related to tax positions taken during the prior years	—	386	—
Decreases related to tax positions taken during the prior years	(1,026)	(235)	(1,493)
Gross unrecognized income tax benefits — ending balance	\$ 4,381	\$ 4,303	\$ 2,364

The Company recognizes interest and penalties, if any, related to uncertain tax positions in its income tax provision. As of December 31, 2023 and 2022, the Company had approximately \$0.2 million in each year, respectively, of accrued interest related to uncertain tax positions.

All of the \$2.6 million of unrecognized income tax benefits would, if recognized, impact the effective tax rate in the period in which each of the benefits is recognized.

The Company files U.S., state and foreign income tax returns with varying statutes of limitations. The federal, state, and foreign returns statute of limitations remains open for tax years from 2013 and thereafter. There are currently no income tax audits involving any U.S. states or foreign tax jurisdictions.

Note 13 – Geographical Information

The following table presents total revenue by geographic area based on the publisher’s billing address (in thousands):

	Year Ended December 31,		
	2023	2022	2021
United States	\$ 158,110	\$ 156,067	\$ 139,049
EMEA	84,919	71,869	62,531
APAC	19,287	24,844	20,910
Rest of the world	4,698	3,600	4,418
Total	\$ 267,014	\$ 256,380	\$ 226,908

The following table presents long-lived assets by geographic area, which includes property and equipment, net, and operating lease right-of-use assets (in thousands):

	December 31,	
	2023	2022
United States	\$ 68,299	\$ 80,021
Rest of the world	13,532	17,341
Total	\$ 81,831	\$ 97,362

Note 14 – 401(k) Plan

The Company has a 401(k) Savings Plan (the “401(k) Plan”) that qualifies as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code. Under the 401(k) Plan, participating employees may elect to contribute up to 100% of their eligible compensation, subject to certain limitations. The 401(k) Plan provides for a discretionary employer matching contribution. The Company made \$1.3 million and \$1.2 million matching contribution to the 401(k) Plan for the year ended December 31, 2023 and 2022, respectively.

Note 15 – Subsequent Events

On February 22, 2024, the Company’s Board of Directors authorized a program for the repurchase of up to an additional \$100 million of its Class A common stock (“2024 Repurchase Program”), in addition to the \$75.0 million repurchase program previously authorized by the Company’s Board of Directors on February 28, 2023 (the “2023 Repurchase Program”). As of February 22, 2024, there was \$8.2 million authorized and available from the 2023 Repurchase Program. Accordingly, the Company has a collective total of \$108.2 million authorized and available for repurchases of its Class A common stock as of February 22, 2024 under the 2023 Repurchase Program and 2024 Repurchase Program. Pursuant to the 2024 Repurchase Program, the Company is authorized to repurchase shares in the open market and/or in privately negotiated transactions, in accordance with Rule 10b-18 and/or Rule 10b5-1 of the Exchange Act. The timing and total amount of the repurchases will depend upon business, economic and market conditions, corporate and regulatory requirements, prevailing stock prices and other considerations. The 2024 Repurchase Program is scheduled to terminate on December 31, 2025.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our principal executive officer and principal financial officer have concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our management conducted an assessment of the effectiveness our internal control over financial reporting based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Our management has concluded that our internal control over financial reporting was effective as of December 31, 2023 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

The effectiveness of our internal control over financial reporting as of December 31, 2023 has been audited by Deloitte and Touche, LLP, an independent registered public accounting firm, as stated in their report, which is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(d) and 15d-15(d) under the Exchange Act) that occurred during the quarter ended December 31, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls and Procedures

Our management, including our principal executive officer and principal financial officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well designated and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our consolidated financial statements would be prevented or detected.

ITEM 9B. OTHER INFORMATION

(c) Trading Plans

In the quarter ended December 31, 2023, the following trading plans were adopted or terminated:

Name	Title	Action	Date	Trading Arrangement		Total Shares to be Sold	Expiration Date
				Rule 10b5-1*	Non-Rule 10b5-1**		
Amar Goel (2)	Chief Innovation Officer	Adopted	12/5/2023	X ⁽¹⁾		255,137	1/31/2025

* Intended to satisfy the affirmative defense of Rule 10b5-1(c).

** Not intended to satisfy the affirmative defense of Rule 10b5-1(c).

- (1) The 10b5-1 plan included a representation from the officer to the broker administering the plan that they were not in possession of any material nonpublic information regarding the Company or the securities subject to the plan. A similar representation was made to the Company in connection with the adoption of the plan under the Company's insider trading policy. Those representations were made as of the date of adoption of the 10b5-1 plan, and speak only as of that date. In making those representations, there is no assurance with respect to any material non-public information of which the officer was unaware, or with respect to any material non-public information acquired by the officer or the Company after the date of the representation.
- (2) The aggregate number of RSU Shares that will be available for sale under the Plan is not yet determinable because the shares available will be net of shares sold to satisfy tax withholding obligations that arise in connection with the vesting and settlement of such RSU awards. As such, for purposes of this disclosure, the shares included in this table reflect the aggregate maximum number of shares underlying Mr. Goel's RSUs without excluding the shares that will be sold to satisfy the tax withholding obligations in addition to shares held in Trust accounts.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

We have adopted a code of business conduct and ethics that applies to all of our employees, including our principal executive officer, principal financial officer and principal accounting officer, and our board of directors. A copy of this code, “Code of Business Conduct and Ethics,” is available on our website at <https://investors.pubmatic.com> under the section titled “Governance.” Any amendments or waivers of our Code of Business Conduct and Ethics pertaining to one of our executive officers or a member of our board of directors will be disclosed on the website address and location specified above.

The other information required by this item will be included in the Proxy Statement and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be included in the Proxy Statement and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item will be included in the Proxy Statement and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be included in the Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item will be included in the Proxy Statement and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) The following documents are filed as a part of this Annual Report on Form 10-K:

(1) Financial Statements

The information concerning our financial statements, and Report of Independent Registered Public Accounting Firm required by this Item is incorporated by reference herein to the section of this Annual Report on Form 10-K in Item 8, entitled “Consolidated Financial Statements and Supplementary Data.”

(2) Financial Statement Schedules

All schedules have been omitted because the required information is not present or not present in amounts sufficient to require submission of the schedules, or because the information required is included in Item 8, entitled “Consolidated Financial Statements and Supplementary Data.”

(3) Exhibits

The exhibits required to be filed as part of this report are:

Exhibit Number	Description of Document	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
2.1	Agreement and Plan of Merger, dated as of September 14, 2022, by and among the Registrant, Marlin Acquisition Sub, Inc., and ConsultMates, Inc.	8-K	001-39748	2.1	September 14, 2022	
3.1	Restated Certificate of Incorporation.	10-K	001-39748	3.1	March 26, 2021	
3.2	Amended and Restated Bylaws.	10-K	001-39748	3.2	February 28, 2023	
4.1	Form of Class A Common Stock Certificate.	S-1/A	333-250077	4.1	November 30, 2020	
4.2	Sixth Amended and Restated Investors’ Rights Agreement, dated October 1, 2020, by and among the Registrant and certain of its stockholders.	S-1	333-250077	4.2	November 13, 2020	
4.3	Description of the Registrant’s Securities.	10-K	001-39748	4.3	March 26, 2021	
10.1*	Form of Indemnification Agreement.	S-1	333-250077	10.1	November 13, 2020	
10.2*	2006 Stock Option Plan, as amended.	S-1	333-250077	10.2	November 13, 2020	
10.3*	2017 Equity Incentive Plan, as amended.	S-1	333-250077	10.4	November 13, 2020	
10.4*	2020 Equity Incentive Plan.	S-1/A	333-250077	10.5	November 30, 2020	
10.5*	2019 Executive Bonus Plan.	S-1	333-250077	10.3	November 13, 2020	
10.6*	2020 Executive Bonus Plan.	10-K	001-39748	10.4	March 26, 2021	
10.7*†	2021 Executive Bonus Plan.	8-K	001-39748	10.6	March 25, 2020	
10.8*	2022 Executive Bonus Plan.	10-K	001-39748	10.8	March 1, 2022	
10.9*	2023 Executive Bonus Plan.	10-K	001-39748	10.9	February 28, 2023	
10.10*	2024 Executive Bonus Plan.					X
10.11*	2020 Employee Stock Purchase Plan, and form of subscription agreement.	S-1/A	333-250077	10.6	November 30, 2020	
10.12*	Executive Deferred Compensation Plan.	8-K	001-39748	10.7	March 25, 2021	
10.13*	Amended and Restated Employment Agreement, effective as of December 18, 2017, by and between the Registrant and Rajeev K. Goel.	S-1/A	333-250077	10.7	November 30, 2020	
10.14*	Offer Letter, effective as of October 1, 2016, by and between the Registrant and Amar K. Goel, as amended.	S-1/A	333-250077	10.8	November 30, 2020	

Exhibit Number	Description of Document	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.15*	Employment Agreement, effective as of November 7, 2011, by and between the Registrant and Steven Pantelick, as amended.	S-1/A	333-250077	10.9	November 30, 2020	
10.16*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Rajeev K. Goel.	8-K	001-39748	10.2	March 25, 2021	
10.17*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Amar K. Goel.	8-K	001-39748	10.3	March 25, 2021	
10.18*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Steven Pantelick.	8-K	001-39748	10.4	March 25, 2021	
10.19*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Jeffrey Hirsch.	8-K	001-39748	10.5	March 25, 2021	
10.20*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Mukul Kumar.	10-K	001-39748	10.18	March 1, 2022	
10.21	Third Amended and Restated Loan and Security Agreement, dated November 7, 2017, by and between the Registrant and Silicon Valley Bank, as amended.	S-1	333-250077	10.13	November 13, 2020	
10.22	Second Amendment to Third Amended and Restated Loan and Security Agreement, dated March 4, 2021, by and between the Registrant and Silicon Valley Bank.	8-K	001-39748	10.1	March 25, 2021	
10.23	Third Amendment to Third Amended and Restated Loan and Security Agreement, dated April 6, 2021, by and between the Company and Silicon Valley Bank.	8-K	001-39748	10.1	April 9, 2021	
10.24	Fourth Amendment to Third Amended and Restated Loan and Security Agreement, dated June 4, 2021, by and between the Registrant and Silicon Valley Bank.	8-K	001-39748	10.1	June 8, 2021	
10.25†	Google Exchange Integration Agreement, dated May 14, 2018, by and between the Registrant and Google Inc. as amended.	S-1	333-250077	10.14	November 13, 2020	
10.26†	PubMatic Demand Partner Agreement, dated November 5, 2011, by and between the Registrant and The Trade Desk, Inc., as amended.	S-1	333-250077	10.15	November 13, 2020	
10.27†	Yahoo Ad Exchange Agreement - Media Buyer, effective as of December 16, 2015, by and between the Registrant and Yahoo! Inc.	S-1	333-250077	10.16	November 13, 2020	
10.28†	Sublease Agreement, dated as of October 20, 2021, by and between PubMatic, Inc. and Chan Zuckerberg Initiative, LLC.	10-Q	001-39748	10.1	November 10, 2021	
10.29	First Amendment to Sublease Agreement, dated as of November 8, 2021, by and between PubMatic, Inc. and Chan Zuckerberg Initiative, LLC.	10-Q	001-39748	10.2	November 10, 2021	
10.30*	Form of Tier 1 Retention Agreement.	S-1/A	333-250077	10.20	November 30, 2020	
10.31*	Form of Tier 2 Retention Agreement.	S-1/A	333-250077	10.21	November 30, 2020	
10.32	Credit Agreement, dated as of October 17, 2022, by and among the Registrant, the lenders party thereto, and Silicon Valley Bank	8-K	001-39748	10.1	October 17, 2022	
10.33	Advisor Agreement between Jeffrey Hirsch and PubMatic, Inc. dated March 30, 2023	10-Q	001-39748	10.1	May 9, 2023	
21.1	Subsidiaries of the Registrant.					X

Exhibit Number	Description of Document	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
23.1	Consent of Deloitte & Touche LLP, independent registered public accounting firm.					X
24.1	Power of Attorney (included in the signature page hereto).					X
31.1	Certification of Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
97.1	Clawback Policy					X
101.INS	Inline XBRL Instance Document — the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X

* Indicates a management contract, compensatory plan or arrangement.

† Registrant has omitted portions of the exhibit as permitted under Item 601(b)(10) of Regulation S-K.

** The information in this exhibit is furnished and deemed not filed with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and is not to be incorporated by reference into any filing of PubMatic, Inc. under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: February 28, 2024

PUBMATIC, INC.

By: /s/ Rajeev K. Goel

Rajeev K. Goel

Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Rajeev K. Goel and Steven Pantelick, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with full power of substitution, for him or her and in his or her name, in any and all capacities, to sign any and all amendments to this report, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Rajeev K. Goel</u> Rajeev K. Goel	Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	February 28, 2024
<u>/s/ Steven Pantelick</u> Steven Pantelick	Chief Financial Officer <i>(Principal Financial Officer)</i>	February 28, 2024
<u>/s/ Lisa Gimbel</u> Lisa Gimbel	Chief Accounting Officer <i>(Principal Accounting Officer)</i>	February 28, 2024
<u>/s/ Susan Daimler</u> Susan Daimler	Director	February 28, 2024
<u>/s/ Shelagh Glaser</u> Shelagh Glaser	Director	February 28, 2024
<u>/s/ Amar K. Goel</u> Amar K. Goel	Director	February 28, 2024
<u>/s/ Anton Hanebrink</u> Anton Hanebrink	Director	February 28, 2024
<u>/s/ Ramon Jones</u> Ramon Jones	Director	February 28, 2024
<u>/s/ Nick Mehta</u> Nick Mehta	Director	February 28, 2024
<u>/s/ Jacob Shulman</u> Jacob Shulman	Director	February 28, 2024

PubMatic

2024 Executive Bonus Plan

Overview

This 2024 Executive Bonus Plan (“Plan”) specifies the terms and conditions under which eligible executive employees of PubMatic, Inc. and/or its subsidiaries (“Company” or “PubMatic”) may receive bonuses from the Company and how the Plan will be administered. This Plan states how bonuses are calculated, but it does not change your target bonus. Please read this entire document carefully, as important aspects of the Plan and your potential bonus are detailed in this document.

This Plan is for the plan year January 1, 2024 through December 31, 2024 (the “Plan Period”). The Company reserves the right to modify, extend, withdraw or terminate this Plan, prospectively, at any time.

Purpose of Plan

The purpose of the Plan is to reward executive employees for achieving defined objectives and financial targets, to help the Company achieve its overall goals, and to retain high-performing employees.

Plan Objectives

The primary objective of the Plan is to promote business success by:

- Creating a uniform plan for executives that is consistent with the market.
- Incenting executives to focus on Company targets and Individual Action Plans.
- Providing an opportunity to receive a bonus beyond current bonus targets, should the Company exceed performance targets.

Participants and Eligibility

An executive employee of the Company is eligible to participate in the Plan if the following eligibility criteria are met:

- You are one of the following executives of the Company: Chief Executive Officer; Chief Innovation Officer; Chief Financial Officer; President, Engineering; Chief Technology Officer; Chief Marketing Officer; General Counsel; SVP, Product Management; SVP, Human Resources; CRO, Americas; or any other position as determined by the Board of Directors of the Company or a designated committee thereto (the “Board”).
- The executive employee is not an eligible participant under any other bonus plan generally available to employees of PubMatic for the Plan Period; and
- The employee is employed in Good Standing by PubMatic in a regular, full-time position through the Bonus Payment Date, subject to applicable law.

Executive employees who are eligible to participate in the Plan are referred to herein as “Participants.” Each Participant must sign, date, and return a copy of this Plan to the Company before the Participant is eligible to receive any payments or benefits under the Plan, subject to applicable law.

Definitions

1H: The first half of a calendar year, meaning January 1 through June 30.

2H: The second half of a calendar year, meaning July 1 through December 31.

Adjusted Pre-Tax Net Income: Company's earnings before income taxes, excluding stock-based compensation expense, unrealized gains/losses on equity investments and expenses relating to unplanned merger and acquisition activity.

Bonus Payment Date: The date occurring after the close of the annual review process as approved by the Board, which date shall be the next scheduled payroll on or after March 15, 2025.

Bonus Pool: The total aggregate target bonus amount of all eligible Participants under this Plan as of the end of each half year. For an eligible Participant who works for less than entire half year, such Participant's target bonus amount will be prorated based on the number of days worked during the Plan Period divided by the number of days in the half year.

Good Standing: This means that you have neither received any written warnings for misconduct, nor been placed on a performance improvement plan during the Plan Period.

Revenue (GAAP): The actual revenue recognized by the Company, as defined by generally accepted accounting principles (GAAP).

Bonus Target Amount

Please refer to your offer letter, promotion letter, employment contract, or similar documentation ("Employment Agreement") for your bonus target, or contact Human Resources.

Criteria

A bonus may be paid to a Participant based on factors such as Company performance and continued employment with the Company in Good Standing through the Bonus Payment Date.

Plan Components and Weightings

The Plan consists of:

Financial Metric Component. The financial metric component of a Participant's bonus will be weighted in the aggregate at 100%, and annual attainment will be measured based on the half-year Company performance targets and weightings specified in Exhibit A.

Performance Based Adjustments to the Bonus Pool. The Adjusted Pre-Tax Net Income metric will be used to determine the half year adjustment to the Bonus Pool based on the targets specified in Exhibit B. Any adjustments to the Bonus Pool amount will be distributed on a prorated basis to all eligible Participants based on their respective bonus target amounts. This adjustment will occur after the calculation of the preliminary bonus amount detailed in the "Bonus Calculation" section below.

For example, if the Bonus Pool is \$600k for 1H and a Participant has a \$60,000 target bonus, the Participant's preliminary bonus amount will be subject to 10.0% of any adjustment, positive or negative, to the Bonus Pool.

For each component of the Plan, a 50% weighting will apply to 1H and a 50% weighting will apply to 2H.

Minimum Achievement

In order for any bonus payout to be earned for the year, the Financial Metric Component in the aggregate for the year must equal or exceed 80% of the target specified in Exhibit A hereto, prior to applying any multipliers.

Multipliers

Multipliers will be applied to achievement on financial metrics based on Company performance for each half-year.

The resulting percentage achievement, as applicable, will factor into the Participant’s bonus payout for the year per the table below.

Multipliers are calculated using the square method: multiplying the achievement against itself to come up with the final achievement. For example, an achievement of 110% would yield an achievement used for end of year calculation of 121% (110% x 110%= 121%).

Multiplier Table Example

Achievement in Aggregate	Multiplier	Final Achievement Result
80%	80%	64.0%
94%	94%	88.4%
95%	95%	90.3%
100%	100%	100.0%
110%	110%	121.0%
134%	134%	179.6%
185%	185%	342.3%

Bonus Calculation

The bonus calculation for each year is a two-step process. Bonus calculations are prorated for days worked in the Plan Period, subject to applicable law.

Steps

1. The financial metrics are calculated. If the weighted average is over the minimum achievement of 80% specified above, multipliers will be applied to the financial metric, which will be used to calculate the preliminary bonus amount.
2. For every \$1 above the Adjusted Pre-Tax Net Income target specified in Exhibit B hereto, [***] cents will be added to the Bonus Pool for 1H. For every \$1 below the Adjusted Pre-Tax Net Income Target, [***] cents will be removed from the Bonus Pool for 1H (this amount will be revised as part of the 2H planning process). Any adjustments to the Bonus Pool will be applied on a prorated basis to the preliminary bonus amount and a final bonus amount will be calculated.

Bonus calculation for each Participant, including any Bonus Pool adjustment, for each half is capped at 250% of the Participant's target bonus. Bonus payouts are then prorated based on the number of days worked during the Plan Period divided by the number of days in Plan Period.

Bonus Calculation Example

[***]

Reductions During Company-Approved Leaves of Absence

If a Participant goes on a Company-approved leave of absence, the Company may reduce the Participant's bonus target on a pro-rated basis, to the extent permitted by law. This pro-rata reduction will *not* apply during the first four weeks of any Company-approved and *paid* leave of absence, or during the first 12 weeks of any maternity leave. This pause in the reduction of a bonus target is referred to as a "Paid Leave Bonus Credit".

A Participant is entitled to only one Paid Leave Bonus Credit per Plan Year. Where a single leave of absence extends from one Plan Year to the next, the Participant may not apply a new Paid Leave Bonus Credit to the **same leave of absence as it passes into the subsequent Plan Year**. However, the Participant will not be precluded from Paid Leave Bonus Credit in the subsequent Plan Year should the Participant need to take a second, unrelated leave of absence. Any Paid Leave Bonus Credit during such second leave of absence shall be reduced by the amount of credit previously taken in that same year.

In the case of intermittent leave, any pro-rata reduction or Paid Leave Bonus Credit will be based on the amount of leave actually taken, not on the span of time during which intermittent leave occurred.

Standards of Conduct

Any violation of the Company's policies, including PubMatic's Code of Business Conduct and Ethics and/or Anti-Bribery Policy, may result in a negative penalty on eligibility to accrue and/or receive bonuses under this Plan, and may subject the Participant to disciplinary action, up to and including termination of employment.

By signing below, Participant agrees to abide by any and all Company policies in effect during the Plan Year.

Participants Who Become Ineligible or Who Are Terminated

If a Participant becomes ineligible to participate in the Plan because the Participant is transferred into a Company position that is not eligible to participate in this Plan, the Participant's targets under this Plan will be pro-rated according to the last day of work under this Plan immediately prior to the transfer.

If a Participant becomes ineligible to participate in the Plan because the Participant's employment with the Company terminates for any reason or the Participant is under notice of employment termination (whether given or received) prior to the applicable Bonus Payment Date (i.e., by voluntary resignation, involuntary termination, or death or otherwise), the Participant's eligibility to earn any future bonus under this Plan shall cease on the Participant's final day of employment, except to the extent prohibited by applicable law. To be clear, for a Participant to earn any bonus under this Plan, the Participant must be employed on the Bonus Payment Date, except as prohibited by law.

Overpayment of Bonuses

By signing the Plan, the Participant agrees to promptly repay the Company for any bonus overpayment made to the Participant (e.g., due to miscalculation, payroll errors), and agrees to authorize the Company to make deductions from the Participant's earned wages and/or future bonus payments under the Plan, to recover any overpayments. In the event the Participant and the Company cannot agree on repayment terms, the Company reserves all its legal rights, including its right to initiate legal action to recover the overpayment and/or to deduct the overpayment from the Participant's earned wages (including the Participant's final paycheck) in accordance with applicable laws.

Company's Rights

The Company reserves the right to accept and reject customers and proposed agreements with customers, to set and modify prices and discounts, and to otherwise make all decisions with respect to the Company's business. No bonuses will be earned for any contracts not approved by, or otherwise rejected by, the Company for any reason.

Plan Administration

This Plan is authorized and administered by the Board, who has sole authority to interpret the Plan and to make or nullify any provision or procedure, as deemed necessary, for proper administration of the Plan, or a designated committee of the Board. Unless otherwise prohibited by law, any determination by the Board or its designated committee regarding the Plan or any of its provisions or procedures shall be final and binding as to all affected Participants.

Plan Changes or Discontinuance

Except as limited by applicable law, the Company reserves the right to modify, discontinue, or otherwise change the Plan or any of its provisions at any time for any reason, including, without limitation, the right to modify or change a Participant's weightings, targets/metrics, achievement criteria (including thresholds or caps for specific target achievement) or bonus payments to account, among other things, for Company financial performance, change in market conditions, client circumstances that are outside of Participant control, non-recurring charges, makegoods or other financial factors, as well as a Participant's performance or failure to comply with the Company's policies or procedures. Any such modification, discontinuance or change shall be made in a written document and provided to the affected Participant or Participants.

At-Will Employment

If Participant is an at-will employee, nothing in this Plan alters or modifies the at-will nature of a Participant's employment with the Company, and the Participant and the Company have the right to terminate the at-will employment relationship at any time, with or without notice or cause, except as limited by applicable laws or the Participant's Employment Agreement.

Governing Law

This Plan and all agreements hereunder, including any attachments, schedules, exhibits, and subsequent modifications to the Plan, shall be governed by and construed in accordance with the laws of the State of California, USA without giving effect to that body of laws pertaining to conflict of laws.

Signature

By signing below, you acknowledge that you have carefully read this document and understand its terms. Additionally, you agree that this document contains the entire agreement between you and the Company regarding your participation in a Company bonus plan for the Plan

Period, and supersedes any and all other bonus plans or agreements or arrangements you have or may have had with the Company, including any such Company bonus plan covering the Company's immediately prior fiscal year. To be clear, if you do not sign and return this Plan to the Company, you shall not be eligible to continue to receive bonus payments with regard to the Plan Period under the terms of any such prior bonus plans to which you have been subject.

If you are signing this document by electronic signature such as Adobe Sign: (i) you agree, and it is your intent, to sign this document and affirmation by electronic signature such as Adobe Sign and by electronically submitting this document to the Company; (ii) you understand that your signing and submitting this record/document in this fashion is the legal equivalent of having placed your handwritten signature on the submitted record/document and this affirmation; and (iii) you understand and agree that by electronically signing and submitting this record/document in this fashion, you are affirming to the truth of the information contained therein.

Participant:

By: _____

Name: _____

Date: _____

PubMatic:

Rajeev Goel, Co-Founder & CEO

Exhibit A-- 2024 Company Performance Metric Targets

(*Portions of this exhibit have been redacted in compliance with Regulation S-K Item 601(b)(10). The omitted information is not material and is the type of information that the Company customarily and actually treats as private and confidential.)**

Metric	Weight	1H 2024 Target	2H 2024Target
Revenue (GAAP)	100%	***	***

Exhibit B – FY 2024 Adjusted Pre-Tax Net Income Achievement

(*Portions of this exhibit have been redacted in compliance with Regulation S-K Item 601(b)(10). The omitted information is not material and is the type of information that the Company customarily and actually treats as private and confidential.)**

Metric	1H 2024 Target	2H 2024 Target
Adjusted Pre-Tax Net Income	***	***

SUBSIDIARIES OF PUBMATIC, INC.

Name:

PubMatic India Private Limited
PubMatic GmbH
PubMatic Limited
PubMatic Software (Shanghai) Limited
PubMatic KK
PubMatic Pte Ltd

Jurisdiction:

India
Germany
United Kingdom
China
Japan
Singapore

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-270102, 333-263129, 333-251237 and 333-254752 on Form S-8 of our report dated February 28, 2024, relating to the financial statements of PubMatic, Inc. and the effectiveness of PubMatic Inc.'s internal control over financial reporting, appearing in this Annual Report on Form 10-K for the year ended December 31, 2023.

/s/ Deloitte & Touche LLP

San Jose, California
February 28, 2024

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Rajeev K. Goel, certify that:

1. I have reviewed this Annual Report on Form 10-K of PubMatic, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 28, 2024

By: /s/ Rajeev K. Goel
Rajeev K. Goel
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven Pantelick, certify that:

1. I have reviewed this Annual Report on Form 10-K of PubMatic, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 28, 2024

By: /s/ Steven Pantelick
Steven Pantelick
Chief Financial Officer
(Principal Financial Officer)

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Rajeev K. Goel, Chief Executive Officer of PubMatic, Inc. (the “Company”), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- (1) the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2023 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 28, 2024

By: /s/ Rajeev K. Goel
Rajeev K. Goel
Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is not deemed filed with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and is not to be incorporated by reference into any filing of PubMatic, Inc. under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven Pantelick, Chief Financial Officer of PubMatic, Inc. (the “Company”), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- (1) the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2023 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 28, 2024

By: /s/ Steven Pantelick
Steven Pantelick
Chief Financial Officer
(Principal Financial Officer)

The foregoing certification is not deemed filed with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and is not to be incorporated by reference into any filing of PubMatic, Inc. under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

PubMatic, Inc.
Compensation Recovery Policy

(Adopted November 3, 2023)

The Board has determined that it is in the best interests of the Company and its stockholders to adopt this Policy enabling the Company to recover from specified current and former Company executives certain incentive-based compensation in the event of an accounting restatement resulting from material noncompliance with any financial reporting requirements under the federal securities laws. Capitalized terms are defined in Section 14.

This Policy is designed to comply with Rule 10D-1 of the Exchange Act and shall become effective on the Effective Date and shall apply to Incentive-Based Compensation Received by Covered Persons on or after the Listing Rule Effective Date.

1. Administration

This Policy shall be administered by the Administrator. The Administrator is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy. The Administrator may retain, at the Company's expense, outside legal counsel and such compensation, tax or other consultants as it may determine are advisable for purpose of administering this Policy.

2. Covered Persons and Applicable Compensation

This Policy applies to any Incentive-Based Compensation Received by a person (a) after beginning service as a Covered Person; (b) who served as a Covered Person at any time during the performance period for that Incentive-Based Compensation; and (c) was a Covered Person during the Clawback Period.

However, recovery is not required with respect to:

- i. Incentive-Based Compensation Received prior to an individual becoming a Covered Person, even if the individual served as a Covered Person during the Clawback Period.
- ii. Incentive-Based Compensation Received prior to the Listing Rule Effective Date.
- iii. Incentive-Based Compensation Received prior to the Clawback Period.
- iv. Incentive-Based Compensation Received while the Company did not have a class of listed securities on a national securities exchange or a national securities association, including the Exchange.

The Administrator will not consider the Covered Person's responsibility or fault or lack thereof in enforcing this Policy with respect to recoupment under the Final Rules.

3. Triggering Event

Subject to and in accordance with the provisions of this Policy, if there is a Triggering Event, the Administrator shall require a Covered Person to reimburse or forfeit to the Company the Recoupment Amount applicable to such Covered Person. A Company's obligation to recover the Recoupment Amount is not dependent on if or when the restated financial statements are filed.

4. Calculation of Recoupment Amount

The Recoupment Amount will be calculated in accordance with the Final Rules, as provided in the Calculation Guidelines attached hereto as Exhibit B.

5. Method of Recoupment

Subject to compliance with the Final Rules and applicable law, the Administrator will determine, in its sole discretion, the method for recouping the Recoupment Amount hereunder which may include, without limitation:

- i. Requiring reimbursement or forfeiture of the pre-tax amount cash Incentive-Based Compensation previously paid;
- ii. Offsetting the Recoupment Amount from any compensation otherwise owed by the Company to the Covered Person, including without limitation, any prior cash incentive payments, executive retirement benefits, wages, equity grants or other amounts payable by the Company to Covered Person in the future;
- iii. Seeking recovery of any gain realized on the vesting, exercise, settlement, cash sale, transfer, or other disposition of any equity-based awards; and/or
- iv. Taking any other remedial and recovery action permitted by law, as determined by the Administrator.

6. Arbitration

To the fullest extent permitted by law, any disputes under this Policy shall be submitted to mandatory binding arbitration (the "*Arbitrable Claims*"), governed by the Federal Arbitration Act (the "*FAA*"). Further, to the fullest extent permitted by law, no class or collective actions can be asserted in arbitration or otherwise. All claims, whether in arbitration or otherwise, must be brought solely in Covered Person's individual capacity, and not as a plaintiff or class member in any purported class or collective proceeding.

SUBJECT TO THE ABOVE PROVISIO, ANY RIGHTS THAT COVERED PERSON MAY HAVE TO TRIAL BY JURY IN REGARD TO ARBITRABLE CLAIMS ARE WAIVED. ANY

RIGHTS THAT COVERED PERSON MAY HAVE TO PURSUE OR PARTICIPATE IN A CLASS OR COLLECTIVE ACTION PERTAINING TO ANY CLAIMS BETWEEN COVERED PERSON AND THE COMPANY ARE WAIVED.

Covered Person is not restricted from filing administrative claims that may be brought before any government agency where, as a matter of law, Covered Person's ability to file such claims may not be restricted. However, to the fullest extent permitted by law, arbitration shall be the exclusive remedy for the subject matter of such administrative claims. The arbitration shall be conducted in Redwood City, California through JAMS before a single neutral arbitrator, in accordance with the JAMS Comprehensive Arbitration Rules and Procedures then in effect, provided however, that the FAA, including its procedural provisions for compelling arbitration, shall govern and apply to this Arbitration provision. The arbitrator shall issue a written decision that contains the essential findings and conclusions on which the decision is based. If, for any reason, any term of this Arbitration provision is held to be invalid or unenforceable, all other valid terms and conditions herein shall be severable in nature and remain fully enforceable.

7. Recovery Process; Impracticability

Actions by the Administrator to recover the Recoupment Amount will be reasonably prompt.

The Administrator must cause the Company to recover the Recoupment Amount unless the Administrator shall have previously determined that recovery is impracticable and one of the following conditions is met:

- i. The direct expense paid to a third party to assist in enforcing the policy would exceed the amount to be recovered; before concluding that it would be impracticable to recover any amount of erroneously awarded compensation based on expense of enforcement, the Company must make a reasonable attempt to recover such erroneously awarded compensation, document such reasonable attempt(s) to recover, and provide that documentation to the Exchange;
- ii. Whether recovery would violate home country law where that law was adopted prior to November 28, 2022; before concluding that it would be impracticable to recover any amount of erroneously awarded compensation based on violation of home country law, the Company must obtain an opinion of home country counsel, acceptable to the Exchange, that recovery would result in such a violation, and must provide such opinion to the Exchange; or
- iii. Whether recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of 26 U.S.C. 401(a)(13) or 26 U.S.C. 411(a) and regulations thereunder.

8. Non-Exclusivity

The Administrator intends that this Policy will be applied to the fullest extent of the law. Without limitation to any broader or alternate clawback authorized in any written document with a Covered Person, (i) the Administrator may require that any employment agreement, equity award agreement, or similar agreement entered into on or after the Effective Date shall, as a condition to the grant of any benefit thereunder, require a Covered Person to agree to abide by the terms of this Policy, and (ii) this Policy will nonetheless apply to Incentive-Based Compensation as required by the Final Rules, whether or not specifically referenced in those arrangements. Any right of recoupment under this Policy is in addition to, and not in lieu of, any other remedies or rights of recoupment that may be available to the Company pursuant to the terms of any similar policy in any employment agreement, equity award agreement, or similar agreement and any other legal remedies or regulations available or applicable to the Company (including SOX 304). If recovery is required under both SOX 304 and this Policy, any amounts recovered pursuant to SOX 304 may be credited toward the amount recovered under this Policy, or vice versa.

9. No Indemnification

The Company shall not indemnify any Covered Persons against (i) the loss of erroneously awarded Incentive-Based Compensation or any adverse tax consequences associated with any incorrectly awarded Incentive-Based Compensation or any recoupment hereunder, or (ii) any claims relating to the Company enforcement of its rights under this Policy. For the avoidance of doubt, this prohibition on indemnification will also prohibit the Company from reimbursing or paying any premium or payment of any third-party insurance policy to fund potential recovery obligations obtained by the Covered Person directly. No Covered Person will seek or retain any such prohibited indemnification or reimbursement.

Further, the Company shall not enter into any agreement that exempts any Incentive-Based Compensation from the application of this Policy or that waives the Company's right to recovery of any erroneously awarded Incentive-Based Compensation and this Policy shall supersede any such agreement (whether entered into before, on or after the Effective Date).

For clarity, the phrase "erroneously awarded" compensation as used herein shall have the meaning described in Exhibit B of this document.

10. Covered Person Acknowledgement and Agreement

All Covered Persons subject to this Policy must acknowledge their understanding of, and agreement to comply with, the Policy by executing the certification attached hereto as Exhibit A. **Notwithstanding the foregoing, this Policy will apply to Covered Persons whether or not they execute such certification.**

11. Successors

This Policy shall be binding and enforceable against all Covered Persons and their beneficiaries, heirs, executors, administrators or other legal representatives and shall inure to the benefit of any successor to the Company.

12. Interpretation of Policy

To the extent there is any ambiguity between this Policy and the Final Rules, this Policy shall be interpreted so that it complies with the Final Rules. If any provision of this Policy, or the application of such provision to any Covered Person or circumstance, shall be held invalid, the remainder of this Policy, or the application of such provision to Covered Persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

In the event any provision of this Policy is inconsistent with any requirement of any Final Rules, the Administrator, in its sole discretion, shall amend and administer this Policy and bring it into compliance with such rules.

Any determination under this Policy by the Administrator shall be conclusive and binding on the applicable Covered Person. Determinations of the Administrator need not be uniform with respect to Covered Persons or from one payment or grant to another.

13. Amendments; Termination

The Administrator may make any amendments to this Policy as required under applicable law, rules and regulations, or as otherwise determined by the Administrator in its sole discretion.

The Administrator may terminate this Policy at any time.

14. Definitions

“*Administrator*” means the Compensation Committee of the Board, or in the absence of a committee of independent directors responsible for executive compensation decisions, a majority of the independent directors serving on the Board.

“*Board*” means the Board of Directors of the Company.

“*Clawback Measurement Date*” is the earlier to occur of:

- i. The date the Board, a committee of the Board, or the officer or officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an accounting restatement as described in this Policy; or
- ii. The date a court, regulator, or other legally authorized body directs the Company to prepare an accounting restatement as described in this Policy.

“**Clawback Period**” means the three (3) completed fiscal years immediately prior to the Clawback Measurement Date and any transition period between the last day of the Company’s previous fiscal year end and the first day of its new fiscal year (that results from a change in the Company’s fiscal year) within or immediately following such three (3)-year period; provided that any transition period between the last day of the Company’s previous fiscal year end and the first day of its new fiscal year that comprises a period of 9 to 12 months will be deemed a completed fiscal year.

“**Company**” means PubMatic, Inc., a Delaware corporation, or any successor corporation.

“**Covered Person**” means any Executive Officer (as defined in the Final Rules), including, but not limited to, those persons who are or have been determined to be “officers” of the Company within the meaning of Section 16 of Rule 16a-1(f) of the rules promulgated under the Exchange Act, and “executive officers” of the Company within the meaning of Item 401(b) of Regulation S-K, Rule 3b-7 promulgated under the Exchange Act, and Rule 405 promulgated under the Securities Act of 1933, as amended; provided that the Administrator may identify additional employees who shall be treated as Covered Persons for the purposes of this Policy with prospective effect, in accordance with the Final Rules.

“**Effective Date**” means November 3, 2023, the date the Policy was adopted by the Board.

“**Exchange**” means the NASDAQ exchange or any other national securities exchange or national securities association in the United States on which the Company has listed its securities for trading.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

“**Final Rules**” means the final rules promulgated by the SEC under Section 954 of the Dodd-Frank Act, Rule 10D-1 and Exchange listing standards, as may be amended from time to time.

“**Financial Reporting Measure**” are measures that are determined and presented in accordance with the accounting principles used in preparing the Company’s financial statements, and any measures that are derived wholly or in part from such measures. Stock price and TSR are also financial reporting measures. A financial reporting measure need not be presented within the financial statements or included in a filing with the SEC.

“**Incentive-Based Compensation**” means compensation that is granted, earned or vested based wholly or in part on the attainment of any Financial Reporting Measure. Examples of “Incentive-Based Compensation” include, but are not limited to: non-equity incentive plan awards that are earned based wholly or in part on satisfying a Financial Reporting Measure performance goal; bonuses paid from a “bonus pool,” the size of which is determined based wholly or in part on satisfying a Financial Reporting Measure performance goal; other cash awards based on satisfaction of a Financial Reporting Measure performance goal; restricted stock, restricted stock units, performance share units, stock options, and SARs that are granted or become vested based wholly or in part on satisfying a Financial Reporting Measure goal; and proceeds received upon the sale of shares acquired through an incentive plan that were granted or vested based wholly or

in part on satisfying a Financial Reporting Measure goal. “Incentive-Based Compensation” excludes, for example, time-based awards such as stock options or restricted stock units that are granted or vest *solely* upon completion of a service period; awards based on non-financial strategic or operating metrics such as the consummation of a merger or achievement of non-financial business goals; service-based retention bonuses; discretionary compensation; and salary.

“**Listing Rule Effective Date**” means the effective date of the listing standards of the Exchange on which the Company’s securities are listed.

“**Policy**” means this Compensation Recovery Policy.

Incentive-Based Compensation is deemed “**Received**” in the Company’s fiscal period during which the relevant Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, irrespective of whether the payment or grant occurs on a later date or if there are additional vesting or payment requirements, such as time-based vesting or certification or approval by the Compensation Committee or Board, that have not yet been satisfied.

“**Recoupment Amount**” means the amount of Incentive-Based Compensation received by the Covered Person based on the financial statements prior to the restatement that exceeds the amount such Covered Person would have received had the Incentive-Based Compensation been determined based on the financial restatement, computed without regard to any taxes paid (*i.e.*, gross of taxes withheld).

“**SARs**” means stock appreciation rights.

“**SEC**” means the U.S. Securities and Exchange Commission.

“**SOX 304**” means Section 304 of the Sarbanes-Oxley Act of 2002.

“**Triggering Event**” means any event in which the Company is required to prepare an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period.

“**TSR**” means total stockholder return.

EXHIBIT A

Certification

I certify that:

1. I have read and understand the Company's Compensation Recovery Policy (the "**Policy**"). I understand that the Company is available to answer any questions I have regarding the Policy.
2. I understand that the Policy applies to all of my existing and future compensation-related agreements with the Company, whether or not explicitly stated therein.
3. I agree that notwithstanding the Company's certificate of incorporation, bylaws, and any agreement I have with the Company, including any indemnity agreement I have with the Company, I will not be entitled to, and will not seek indemnification from the Company for, any amounts recovered or recoverable by the Company in accordance with the Policy.
4. I understand and agree that in the event of a conflict between the Policy and the foregoing agreements and understandings on the one hand, and any prior, existing or future agreement, arrangement or understanding, whether oral or written, with respect to the subject matter of the Policy and this Certification, on the other hand, the terms of the Policy and this Certification shall control, and the terms of this Certification shall supersede any provision of such an agreement, arrangement or understanding to the extent of such conflict with respect to the subject matter of the Policy and this Certification.
5. I agree to abide by the terms of the Policy, including, without limitation, by returning any erroneously awarded Incentive-Based Compensation to the Company to the extent required by, and in a manner permitted by, the Policy.

Signature: _____

Name: _____

Title: _____

Date: _____

EXHIBIT B

Calculation Guidelines

For purposes of calculating the Recoupment Amount:

- i. For cash awards, the erroneously awarded compensation is the difference between the amount of the cash award (whether payable as a lump sum or over time) that was received and the amount that should have been received applying the restated Financial Reporting Measure.
- ii. For cash awards paid from bonus pools, the erroneously awarded compensation is the pro rata portion of any deficiency that results from the aggregate bonus pool that is reduced based on applying the restated Financial Reporting Measure.
- iii. For equity awards, if the shares, options, restricted stock units, or SARs are still held at the time of recovery, the erroneously awarded compensation is the number of such securities received in excess of the number that should have been received applying the restated Financial Reporting Measure (or the value of that excess number). If the options or SARs have been exercised, but the underlying shares have not been sold, the erroneously awarded compensation is the number of shares underlying the excess options or SARs (or the value thereof). If the underlying shares have been sold, the Company may recoup proceeds received from the sale of shares.
- iv. For Incentive-Based Compensation based on stock price or TSR, where the amount of erroneously awarded compensation is not subject to mathematical recalculation directly from the information in an accounting restatement:
 - a. The amount must be based on a reasonable estimate of the effect of the accounting restatement on the stock price or TSR upon which the Incentive-Based Compensation was Received; and
 - b. The Company must maintain documentation of the determination of that reasonable estimate and the Company must provide such documentation to the Exchange in all cases.