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, 2021
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	**20-5863224**
(State or other jurisdiction of incorporation or organization)	***(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 a 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	☒	Accelerated filer	o
Non-accelerated filer	o	Smaller reporting company	o
		Emerging growth company	o

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 to Section 7(a)(2)(B) of the Securities 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. ☒

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, 2021, based on the closing sales price for the registrant's Class A common stock, as reported on the Nasdaq Global Market, was approximately $975.9 million. As of January 31, 2022, there were 40,775,004 shares of the registrant's Class A common stock outstanding and 11,098,925 shares of the registrant's Class B common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement for its 2022 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, 2021.

TABLE OF CONTENTS

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;
- 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, which could have an adverse effect on our business, results of operations, and financial condition.

- The extent to which the ongoing COVID-19 pandemic, including the resulting global economic uncertainty, and measures taken in response to the pandemic, could adversely affect our business, results of operations, and financial condition will depend on future developments, which are highly uncertain and difficult to predict.

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

- Our efforts to offer private marketplace solutions may not be successful, or we may not be able to scale our platform to meet this demand in a timely manner, and, as a result, we may not realize a return from our investments in that area.

- 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.

- 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 harmed.

- 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 generally, will 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 DSPs dispute or do not pay their invoices, and any decreases in payments or in our overall take rate could adversely affect our 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 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 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.

- 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.

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

PART I

ITEM 1. BUSINESS

Overview

PubMatic, Inc. is an independent technology company seeking to maximize customer value by delivering digital advertising's supply chain of the future. Our sell-side platform empowers the world's leading digital content creators across the open internet to control access to their inventory and increase monetization by enabling marketers to drive return on investment ("ROI") and reach addressable audiences across ad formats and devices. Since 2006, our infrastructure-driven approach has allowed for the efficient processing and utilization of data in real time. By delivering scalable and flexible programmatic innovation, we improve outcomes for our customers while championing a vibrant and transparent digital advertising supply chain.

Our specialized cloud infrastructure platform provides superior monetization for publishers by increasing the value of an impression and providing incremental demand through our deep and growing relationships with buyers. We are aligned with our publisher and app developer partners by being independent. We do not own media and therefore do not have a vested interest in driving ad revenue to specific media properties. Our global platform is omnichannel, supporting a wide array of ad formats and digital device types, including mobile app, mobile web, desktop, display, video, over-the-top ("OTT"), connected television ("CTV"), and rich media.

We generate revenue from publishers primarily through revenue share agreements, generally one-year contracts that renew automatically for successive one-year periods, unless terminated prior to renewal. 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. We refer to our publishers, app developers, and channel partners collectively as our publishers.

We enter into written service agreements with our demand side platform ("DSP") buyers that allow them to use our platform to buy ad inventory, but we earn revenue from our publishers. Our platform service agreements with DSPs generally have one-year terms that renew automatically for successive one-year periods, unless terminated prior to renewal. We also negotiate Supply Path Optimization ("SPO") agreements with agencies and advertisers that encourage these buyers to spend a higher share of their advertising budgets on our platform. SPO agreements typically have a one-year term and renewal terms are generally discussed one quarter prior to a new term. The effect of these SPO agreements is to increase the volume of ad spend on our platform without corresponding increases in technology costs.

Our Industry

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

Rapid Proliferation of Digital Media Across Multiple Platforms: Consumers have dramatically increased the amount of time that they spend online and on mobile devices and numerous activities that historically occurred offline continue to shift online. In order 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.

The Rise of Programmatic Header Bidding: The challenges of scale and the complexity of the digital advertising ecosystem require an automated and efficient approach to purchasing ads online, known as programmatic advertising. Programmatic advertising, on an automated basis, enables buyers, advertisers, and/or their ad agencies, to purchase ad impressions on publisher supplied inventory, including websites, apps, TVs, and various other formats to transact within milliseconds in a sophisticated, technology-driven marketplace.

Header bidding, which came to prominence starting in 2016, further increased the complexity of programmatic advertising. Header bidding involves putting software code on a publisher's website or app allowing it to host a single parallel auction with multiple interested parties simultaneously, rather than the earlier process of sequential auctions for that impression. This innovation has fundamentally transformed programmatic advertising by providing buyers with increased transparency and equal access to ad impressions, which results in greater demand for each ad impression and increased publisher revenue.

Massive Volumes of Data and Increased Costs: Header bidding has led to 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. The 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.

Growing transaction volumes and increasingly complex data processing requirements can lead to rising overall costs for technology vendors. While header bidding increases the number of SSPs processing each ad impression, the underlying number of opportunities to place a personalized ad in front of a consumer does not grow, which creates processing complexity. Similarly, as SSPs process more ad impressions due to header bidding, so must DSPs. Each of these trends created by header bidding can significantly increase costs for technology providers if not properly addressed with superior technology.

Ad Spending Consolidating on Fewer Sell Side Platforms: As advertisers increase the percentage of their overall advertising budgets spent on digital formats, they are increasingly demanding improved transparency and control of their entire digital advertising supply chain. Transparency includes understanding what fees are being paid for every ad transaction, to whom the fees are being paid, and what value is being delivered by every fee recipient. In addition, transparency allows the advertiser to know the type of ad inventory being purchased and the content appearing adjacent to the advertiser’s ads to avoid purchasing fraudulent or fake inventory or appearing next to content that reflects poorly on the advertiser’s brand. This desire for transparency and control has led to a growing trend for advertisers to establish direct relationships with vendors in the digital advertising ecosystem that have transparent business practices and technical capabilities to meet their objectives. This has resulted in a larger portion of media spend consolidating onto fewer, more transparent technology platforms.

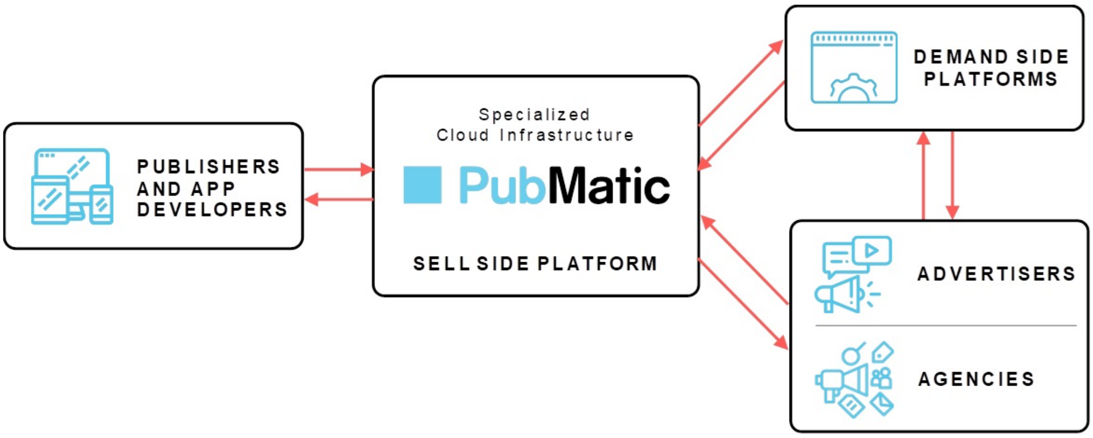
Protecting Consumer Privacy and Regulatory Challenges: There is an increasing awareness of how Internet user data is being leveraged to target ads, resulting in a growing number of privacy laws and regulations being established globally, including the General Data Protection Regulation (the “GDPR”) in the European Union, the California Consumer Privacy Act (the “CCPA”) in California, and the Video Privacy Protection Act in the United States. We believe these trends will continue locally and globally. There have also been a growing number of consumer-focused non-profit organizations and commercial entities advocating for privacy rights. These institutions are enabling 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 regulatory authorities. For example, publishers, and their downstream supply and demand partners, are required to obtain unambiguous consent from European Union data subjects to process their personal data. In addition to legal and policy requirements, participants in the digital advertising supply chain were encouraged to agree upon technical specifications to collect and transmit detailed records of consent (or an alternative basis for the processing of personal data) and the purposes of that data processing. This demand resulted in widespread adoption of the Interactive Advertising Bureau (the “IAB”) Transparency & Consent Framework 2.0 (the “TCF”) in August 2020. Prior to the TCF, dueling technical standards resulted in industry-wide confusion following adoption of the GDPR.

Over the years, Apple has greatly limited the use of third-party cookies within its web browser (Safari’s Intelligent Tracking Prevention) and recently announced the decision to make the app-based Identifier for Advertisers (the “IDFA”) opt-in by consumers rather than opt-out. Google is also, along with Apple, leading an active industry dialog to deliver the next wave of privacy compliant advertising solutions. Google announced its intention to limit the use of third-party cookies potentially starting in 2022 in its Chrome web browser, as well as limit the use of alternate user-level tracking technologies and browsing history in its own ad platforms. We believe the “Open Internet” outside the “walled gardens” (a colloquial term that refers to closed advertising platforms including 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. This shift towards significantly more reliable and accurate consumer identity has the potential to significantly increase advertiser ROI and therefore publisher revenue.

Our Role in the Digital Advertising Ecosystem

Our platform is a key component of powering the digital advertising ecosystem because of the role we play in meeting the needs of ad sellers and ad buyers.



Publishers and App Developers. Publishers and app developers create websites and apps that contain content for consumers along with adjacent viewable space for advertisements. As consumers navigate through these websites and apps, individual ad impressions are shown to them. These impressions are typically sold to buyers programmatically in real-time via a third-party technology infrastructure platform or SSP. Publishers and app developers rely on advertising revenue as the key driver for their businesses and rely on the capabilities of these third parties in order to achieve optimal yield for their 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. We have direct relationships with publishers such as Yahoo, formerly Verizon Media Group, and News Corp. and app developers such as Zynga and Electronic Arts. Our channel partners aggregate and provide further access to thousands of sites and apps from smaller publishers. We refer to our publishers, app developers, and channel partners collectively as our publishers.

We help monetize valuable impressions for our publisher clients across a wide array of ad formats and digital device types, including mobile app, mobile web, desktop, display, video, OTT/CTV, and rich media. During the fiscal year ended December 31, 2021, we added approximately 250 new publishing partners. As of December 31, 2021, we served approximately 1,450 publishers and app developers, representing over 97,000 individual domains and apps worldwide on our platform across a diverse group of content verticals including news, e-commerce, gaming, media, weather, fashion, technology, and more.

Sell Side Platforms. Traditionally referred to as sell side platforms or SSPs, platforms such as ours are designed to monetize inventory for publishers and app developers. Buyers and sellers come together through our marketplace to present, target, and purchase available advertising inventory. Our platform rapidly and efficiently processes significant volumes of ad bid data, providing a seamless digital experience for consumers. Traditionally, SSPs have focused exclusively on the needs of sellers in this process, and have limited their interactions with buyers to the buyer's agent, the demand side platform or DSP. As buyers have sought greater control of their advertising supply chains, we have extended the capabilities of our specialized cloud infrastructure platform over the last several years to serve the needs of advertisers and agencies as well.

Demand Side Platforms. Advertisers and agencies often engage demand side platforms, which act as advertising demand aggregators, to execute their digital marketing campaigns across various ad formats. We are integrated with the leading DSPs around the world, such as The Trade Desk and Google DV360, enabling them to execute real-time transactions with our publisher clients. We maintain active integrations with DSPs around the world, some of which are global and omnichannel in nature or more narrowly targeted on specific ad formats or geographic markets.

Advertisers and Agencies. Spending begins with advertisers, who often engage advertising agencies to help plan and execute their advertising campaigns. To better control and optimize their advertising operations, advertisers and agencies are consolidating their spend with fewer, larger technology platforms who can deliver transparency and ensure the highest levels of inventory quality and control. We have entered into agreements with all of the major agency holding companies and some of the largest advertisers in the world and believe this will continue to drive more ad spend to our platform. These advertisers and agencies access our platform through DSPs. We believe our purpose-built technology platform and direct relationships with advertisers and agencies will lead to significant consolidation of spend onto our platform.

Buyers on our platform include DSPs, agencies and individual advertisers. We have broad exposure to the ecosystem of buyers, reaching on average approximately 72,000 advertisers per month in 2021. As spending on programmatic advertising increasingly becomes a larger share of overall ad spending, advertisers and agencies are seeking greater control of their digital advertising supply chains. To take advantage of this industry shift, we have entered into SPO agreements directly with buyers. As a result of these direct relationships, our existing advertisers and agencies are incentivized to allocate an increasing percentage of their advertising budgets to our platform.

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.

Our Specialized Cloud Infrastructure Platform

Our specialized cloud infrastructure 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 built, enhanced and deployed our technology infrastructure to address these market conditions and provide superior outcomes for both publishers and buyers. We have deployed our purpose-built infrastructure globally in order to serve our customers with the high-speed transaction capabilities required to provide a seamless digital ad experience for consumers. 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, OTT/CTV, and rich media.

We believe that our specialized cloud infrastructure provides a number of advantages:

Real-time Ad Transaction Processing: 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. We power our cloud platform by proprietary software deployed on PubMatic-owned and operated hardware close to our customers around the world. Our technology platform processes each potential ad in a fraction of a second to optimize the consumer ad experience. For the fiscal year ended December 31, 2021, our platform efficiently processed approximately 92.2 trillion ad impressions, up 96% from approximately 46.9 trillion ad impressions in the fiscal year ended December 31, 2020.

Sophisticated, Purpose-built Technology that Delivers Superior Outcomes: Since our founding, we have believed that data-driven decisions would be the future of advertising and have accordingly invested in developing our machine learning capabilities. By harnessing our massive data assets and advanced machine learning capabilities, we are able to deliver superior outcomes by increasing advertiser ROI and publisher revenue, while increasing the cost efficiency of our platform and our customers' and partners' businesses.

Transparency and Quality: We operate on a fundamental principle of transparency, being one of the first digital advertising infrastructure platforms to provide log-level data to buyers and provide transparency on every ad impression. In addition, advertisers utilizing our cloud infrastructure have full control over which publishers, ad formats, and specific ad impressions on which they would like to bid. We are among the first to offer a fraud-free program in 2017 where buyers are credited for any fraudulent inventory they may have purchased on our platform.

Enabling Identity on the Open Internet: As advertising in the Open Internet shifts from targeting by anonymized and invisible third-party cookies that consumers must opt out of, and instead towards known first-party identity based on consumer choice and opt-in or other privacy compliant solutions, publishers and advertisers must transition to a new identity paradigm. While there are various constituents across the digital advertising industry creating new identity solutions, we have built a comprehensive platform that greatly simplifies the implementation and ongoing management of identity solution providers. Our solution 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.

Scalable, Self-service Platform: Our cloud infrastructure solutions are available via self-serve, 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. Our platform also assists with managing the increasingly complex compliance burdens brought on by new industry guidelines and government regulations. We provide the tools and the mechanisms to help enable publisher inventory to be in compliance with these norms and requirements, maintaining strong data minimization practices, and allocating responsibility for data flows and legal compliance in agreements with vendors, publishers, and buyers.

Our Strengths

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 infrastructure, rapid innovation, and transparent business model provide incentives to ad buyers to consolidate an increasing share of their total digital spend on our platform. At the same time, 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:

Investment in Innovation: Our business model driven by our technology platform, owned infrastructure, and offshore research and development has enabled us to continuously invest in driving innovation, while delivering both top line revenue growth and profitability.

Flexible Platform and Culture of Rapid Innovation: We built our company and our technology platform to be highly dynamic and to support rapid innovation. Our product and development teams are focused on continuous innovation and enhancement of our products and solutions. We believe that the flexibility of our platform and responsiveness to evolving customer needs and technical requirements enables us to achieve superior outcomes for our customers. Since our founding, we have invested significantly in a software ideation, development, build, test, and deployment process that allows us to routinely convert a requirement into working software within two weeks or less. Our platform is highly modular, which allows us to innovate and improve individual software components without affecting the rest of the platform. We utilize a microservices architecture to interconnect each module via application programming interfaces with defined interfaces for internal and external consumption. We focus on reliability and scalability of each individual module and across our platform to maximize uptime and scale up based on customer demand. In 2021, we released new software across our global infrastructure approximately 300 times, more than once per business day. The result of our flexible platform and culture of rapid innovation is that we are highly responsive to evolving customer needs, which we believe is important in a rapidly evolving digital advertising industry.

Highly Efficient Infrastructure: As a result of our long-term, internal development efforts on our technology stack and strategic approach of owning our own hardware, we believe that we have among the lowest cost infrastructures of any specialized cloud infrastructure platform in the advertising market. 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. As a result, our cost of revenue per impression processed decreased by 28% in 2021 compared to 2020, and decreased by 32% in 2020 compared to 2019. Even as we grow the applicability of our cloud infrastructure to include more ad formats and devices, such as mobile, video, and now OTT/CTV, we have maintained strong capital efficiency as measured by revenue per dollar of capital expenditures. The efficiency of our infrastructure has enabled us to grow our access to first-party data, which generally refers to customer owned audience data, ad impression and bid request data, and advertiser bid response data, further driving superior results across our platform for buyers and sellers.

Machine Learning and Data Processing: We leverage our artificial intelligence and machine learning capabilities to record, aggregate, analyze, and act on vast amounts of data to help our customers optimize their digital advertising businesses in real-time. In December 2021, our technology platform processed approximately 344 billion ad impressions and 4.2 petabytes of data every day. 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 improves long term marketplace liquidity resulting in increased publisher revenue and higher advertiser ROI.

Customer Trust and Alignment: We are aligned with both publishers and buyers, by being an independent and transparent infrastructure provider. 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. We operate with a fundamental principle of transparency and provide detailed insights into fees to our customers. Our customers can therefore be confident that our algorithmic software decisions and our guidance are independent and in their best interests. Our trusted status has enabled us to build direct relationships with publishers, advertisers, agencies, and DSPs. Our ability to meet the demands of both buyers and inventory sellers enables us to produce superior outcomes for all industry participants.

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. By providing global, omnichannel reach of our infrastructure, we are well positioned to help publishers and ad buyers make their advertising businesses more efficient and effective.

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, all of which have been accelerated by the COVID-19 pandemic. Our growth strategy includes:

Attract New Publishers and Expand our Relationship with Existing Publishers: We constantly seek to acquire new high-quality publishers around the world. New publishers may include major media companies, app developers, e-commerce providers, and OTT platforms– any company that monetizes its audience through digital advertising. Once acquired, we seek to expand our relationship with existing publishers by leveraging our omnichannel capabilities to maximize our access to publishers' ad formats and devices. We have demonstrated that we can retain and grow revenues from our publisher customers, as evidenced by our net dollar-based retention rates of 149% for the fiscal year ended December 31, 2021 and 122% for the fiscal year ended December 31, 2020.

Attract New Buyers and Expand our Relationship with Existing Buyers: We seek to acquire new buyers (including advertisers, agencies and DSPs) through our strong value proposition. We work with DSPs to help them reduce their costs and improve advertiser ROI. 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 SPO agreements directly with both advertisers and agencies through various arrangements ranging from 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.

Efficiently Expand Our Infrastructure Platform to Process More Ad Impressions: We have a track record of cost-effectively expanding the capacity of our infrastructure platform as exemplified by average daily ad impressions having increased approximately 400% over the three year period ended December 31, 2021, while the corresponding costs related to processing these impressions have increased approximately 90%. 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.

Improve Liquidity in Our Marketplace: 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 growth of our platform and greater publisher and buyer retention.

Develop New Products: 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 are constantly focused on creating new products that we believe solve our customers' needs.

Expand Into New Ad Formats: We have demonstrated an ability to extend header bidding into a variety of ad formats – initially desktop display, then mobile web, mobile app, digital video, and most recently with OTT/CTV. As technology and media evolve, additional ad formats may become attractive to us – whether existing in the ecosystem today or entirely new. These may include audio/podcast ads, native ads and digital out of home ads. Each ad format represents an opportunity to further extend our cloud infrastructure, increase our platform utilization, and acquire new customers or expand our relationship with existing customers.

Expand into New Geographies: We decide to enter new advertising markets around the world based on size, growth rate, and other characteristics. We are constantly evaluating new markets with a strategy to use our existing global infrastructure and adjacent sales office, or by expanding our infrastructure footprint and placing personnel directly in those markets.

Our Technology

Overview

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. Our omnichannel platform supports a wide array of publishers, ad formats and devices, including mobile app, mobile web, desktop, display, video, OTT/CTV, and rich media.

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 SDK, for publishers who wish to integrate with or extend the platform, or develop new business models and custom advertising solutions.

Data

Among the central benefits of our software platform is the processing, management and analysis of valuable data assets. The tens of billions of ad impressions and nearly 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. This data includes:

- Ad impression and bid data, which contain parameters such as page URL or app bundle ID, location of the user, operating system of the user’s device, device type, ad size and ad location on the page;

- First party customer owned audience data, such as segment data that specifies whether a consumer is a recent shopper for electronics or automobiles; and

- Advertiser bid response data, which is bidding data received from DSPs, agencies, and advertisers.

We have developed proprietary data and analytics offerings that allow publishers to monitor their ad business in near real-time, as well as advanced tools publishers can use to find new business opportunities, optimize their monetization strategy, and help maximize the value of their digital ad business. This data is also used by our machine learning algorithms to enhance our bidding and auctioning process by analyzing large datasets and applying algorithms to drive optimal results.

Artificial Intelligence and Machine Learning

We analyze the data on our platform through extensive application of artificial intelligence technologies, including machine learning and natural language processing. Examples of how we leverage our artificial intelligence and machine learning capabilities to improve outcomes for our customers are:

- **Identify valuable ad impressions and predict auction behavior:** 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.

- **Optimize impression selection:** Our ability to accurately predict and monetize high value impressions 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 impression throttling, deploy a variety of levers to optimize traffic sent to DSPs, agencies, and advertisers.

- **Improve our self-service capabilities**: Publishers can enter natural language queries, such as “Show me average CPM for yesterday” and the analytics system will generate charts and tables with relevant data for rapid and informative analysis.

Programmatic Header Bidding

We are a leading provider of technology solutions that enable and improve header bidding for our customers. We developed an enterprise wrapper, OpenWrap, that was among the first header bidding solutions launched for general availability. OpenWrap was released in April 2016 and enables publishers to holistically manage and configure all header bidding partners through a powerful, synchronized and intuitive user interface. OpenWrap provides a transparent, real-time view into bid activity and volume, monetization and latency metrics which allow publishers to make smarter decisions and drive sustainable monetization. Our cloud infrastructure is interoperable with the other major header bidding software frameworks including open source Prebid, Google's Open Bidding, Amazon's Transparent Ad Marketplace, and others. We believe we are thought leaders in the header bidding space and are represented on the boards of Prebid and the IAB Tech Lab.

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, the GDPR that took effect in May 2018 and the CCPA that took effect in January 2020, among other global 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 IAB 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. Some of the specific measures we have taken include:

- **User Consent.** Working with publishers and channel partners to ensure appropriate consent is being obtained, recorded, and transmitted as applicable.

- **Data Mapping**. Undertaking data mapping exercises for the purpose of understanding data flows in how we collect, use, and transmit personal information from our publishers, buyers, and data providers.

- **Data Minimization**. Establishing mechanisms to collect only the data that is needed and pseudonymizing data wherever possible (including masking IP address or geolocation data as applicable).

- **Data Retention**. Implementing a short data retention period across our technology platform so that we promptly delete, aggregate, or anonymize consumer data.

- **Publisher and Demand Side Agreements.** Monitoring and updating our agreements with publishers, DSPs, agencies, and advertisers, as applicable, to address privacy and regulatory compliance.

Inventory Quality

The quality of the inventory made available to advertisers has a significant impact on their ROI. Bad actors promoting botnets, fake ads, ad stuffing and other malignant methodologies reduce the ROI for advertisers and siphon dollars away from quality publishers. 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.

Ad Quality

Ad quality refers to the quality of the advertisements that run on publishers' sites. We have developed proprietary solutions targeting the reduction of security issues, including malware, redirects, unsafe code, and other similar practices; quality issues, including unsafe creative categories (such as alcohol or drugs) and creative attributes (Inbanner video, Expandables, Text Ads); and performance issues, including network load, number of trackers and memory size. On an average day, we scan nearly one million new advertisement creatives in near real-time using our Real-Time Ad Scanning ("RTAS") system. RTAS connects to proprietary technology and partners' services to extract the nature of creatives. Publishers can configure their preferences for quality attributes using our blocklist manager, creative attribute selection, and keyword blocking. A comprehensive reporting suite is available for publishers to monitor the top performing creatives and review the lost opportunity due to excessive blocking.

Log-level Transparency and Insights

We enable buyers to gain additional transparency and insights to help them inform future ad buying and optimize their supply paths by providing them access to log-level data, which is comprised of various attributes that are relevant to a single ad impression within an auction. Log-level data provides buyers transaction verification data, or how the auction operates and what fees are being charged.

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. 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 performance.

Self-Service

We design and implement self-service workflow solutions to allow publishers to efficiently manage their ad inventory. For example, publishers can update their own price floors, add or remove advertisers from blocklists, add new web sites and mobile apps, manage optimize their header bidding set ups, and leverage identity graphs from multiple ID providers. Ad buyers can configure the attributes for the inventory they desire, setup new or adjust existing private marketplace deals, and access extensive reporting on their media buying activities with us.

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 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 steadfast focus on driving employee engagement has resulted in increasing employee retention rates (86% annualized employee retention through the twelve months of 2021) and average global tenure (3.1 years as of December 31, 2021). Our workplaces in the United States have been certified by Great Place To Work (2017-2022) and recognized on Fortune's list of Best Workplaces in the Bay Area 2020. Our India subsidiary has also been certified by Great Place To Work (2018-2022) as well as named to the list of Great Mid-size Workplaces and Best Workplaces in IT & IT-BPM in 2019 and 2021. Recognized to the Great Place To Work list of Asia's best workplaces in 2021. Our UK subsidiary has been certified by Great Place to Work (2020-2022) and recognized with an Excellence in Wellbeing certification in 2020-2021 and our Germany subsidiary has been certified by Great Place to Work (2022).

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. Our Inclusion Action Plan for 2021-2022 consists of five areas that focus on listening, learning, hiring, socio-economic support, and activism. This plan will be executed in part by our newly established 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 interview 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 customers success.

Our mission: fuel the endless potential of Internet content creators.

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.

As of December 31, 2021, we had 713 employees, of whom 241 were located in the United States, 367 in India, and 105 in our other offices around the world.

Technology and Development

We expect to continue investing in our technology in order to support efficient and effective ad monetization, which includes maximizing the yield from existing ad impressions and productively adding new ad impressions processed on our platform. We also intend to continue developing innovative capabilities for our customers.

As of December 31, 2021, we had 293 employees engaged in technology and development.

Our technology and development personnel, based in Pune, India, Redwood City, California, and New York, New York, are highly credentialed—23% of the 293 personnel have advanced degrees.

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 SSPs like Magnite, smaller private SSPs in markets around the world, as well as divisions of larger companies like Google.

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. As a result, we are able to gain access to competitors' ad impressions.

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 cloud infrastructure enables 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 would face significant costs to integrate with publishers and ad buyers and comply with growing regulatory requirements around the world.

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 our 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.

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 consumer 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 legislative, regulatory, 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. As stated in our privacy policy, we do not collect information, such as names, addresses or telephone phone numbers, for providing our advertising services that can be used directly to reveal the identity 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 strong 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 may bring enforcement actions for violations of the CCPA, as modified by the Attorney General's recently approved enforcement guidelines. We have registered as a data broker in California with the California Attorney General. When we receive bid requests that include an opt-out signal, we do not sell personal information, as defined by the CCPA. 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 the California Attorney General's office has not yet approved such frameworks. The CCPA sets 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, voters approved a California ballot initiative, the California Privacy Rights Act ("CPRA"), which will take effect in January 2023. The CPRA will impose 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, Virginia enacted the Consumer Data Protection Act ("CDPA"), which imposes consumer rights processes and requires user consent for certain types of sensitive data, which also takes effect in January 2023. The CDPA also sets 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 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 recently declared invalid by Court of Justice of the European Union. ("CJEU") on July 16, 2020. In the same judgement, while the CJEU upheld the adequacy of the standard contractual clauses (a standard form of contract approved by the European Commission as an adequate personal data transfer mechanism, and potential alternative to the 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 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 €20 million (£17 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.

Available Information

Our internet address is www.pubmatic.com. At our investor relations website, https://investors.pubmatic.com, we make available free of charge a variety of information for investors, including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after we electronically file that material with or furnish it to the SEC at www.sec.gov. Further, corporate governance information, including our corporate governance guidelines, board committee charters, and code of conduct, are also available on our investor relations website at https://investors.pubmatic.com/corporate-governance/governance-highlights.

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 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. For example, due to the COVID-19 pandemic and the recession in the United States and global economy in the second quarter of 2020, advertising demand on our platform decreased and did not recover to pre-COVID-19 levels for two months. Various macroeconomic factors could cause advertisers to reduce their advertising budgets, including adverse economic conditions and general uncertainty about economic recovery or growth, particularly in North America, Europe, and Asia, where we do most of our business; instability in political or market conditions generally; and any changes in tax treatment of advertising expenses and the deductibility thereof. Reductions in overall advertising spending as a result of 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 advantages stemming from their experience in the market. We must continue to adapt and improve our technology to compete effectively, and customers have not always embraced our offering 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 place technological or financial demands that we are unable 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. In particular, for the years ended December 31, 2021, 2020 and 2019, 17%, 20% and 28%, respectively, of our revenue was derived from ad impressions sold on our platform from our largest publisher, Yahoo. We have no minimum commitments from publishers, so the amount, quality, and cost of ad impressions available to us can change at any time, 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 expect to depend upon a relatively small number of premium publishers and channel partners for the foreseeable future. To support our continued growth, we will seek to add additional publishers to our platform, and to expand current utilization with our existing publishers. Any disruptions in our relationships with premium publishers or 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 DSPs – The Trade Desk and Google DV360 in particular – account for a significant portion of the ad impressions purchased on our platform. We expect to depend upon these DSPs for a large percentage of impressions purchased 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, 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 or advertisers 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 have been, and 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. 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 substantial 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;
- developing, maintaining, and expanding relationships with publishers, DSPs, agencies, and advertisers
- seasonality in our business;
- innovating and developing new solutions that are adopted by and meet the needs of publishers, DSPs, agencies, and advertisers;
- 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;

- responding to evolving industry standards and government regulations that impact our business, particularly in the areas of data protection and consumer privacy.

- 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, 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 regulatory requirements. 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. Moreover, we may not make the right decisions regarding these investments. New formats and channels, such as mobile header bidding and CTV, present unique challenges that we must address in order 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 and video solutions or our new CTV solutions are not widely adopted by publishers, we may not retain publishers. 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, anticipate publisher and buyer demand, or attract and retain publishers would cause our revenue or revenue growth rate to decline, and adversely affect our business, results of operations, and financial condition.

The extent to which the ongoing COVID-19 pandemic, including the resulting global economic uncertainty, and measures taken in response to the pandemic, could adversely affect our business, results of operations, and financial condition will depend on future developments, which are highly uncertain and difficult to predict.

The COVID-19 pandemic, including its variants, has disrupted the flow of the economy and put unprecedented strains on governments, health care systems, educational institutions, businesses, and individuals around the world and resulted in regional quarantines, labor shortages or stoppages, changes in consumer purchasing patterns, disruptions to service providers to deliver data on a timely basis, or at all, and overall economic instability. The impact on the global population and the duration of the COVID-19 pandemic is difficult to assess or predict. It is even more difficult to predict the impact on the global economic market, which will be highly dependent upon the actions of governments, businesses, and other enterprises in response to the pandemic and the effectiveness of those actions. The pandemic has already caused, and is likely to result in further, significant disruption of global financial markets and economic uncertainty. Although the advertising market and our business have generally recovered from the economic effects of the COVID-19 pandemic, it did initially adversely impact our sales and operations. A recession, depression, or other sustained adverse market events resulting from the spread of COVID-19 could adversely affect our business, results of operations, and financial condition, as well as the value of our common stock.

In light of the uncertain and rapidly evolving situation relating to the spread of COVID-19, we have taken temporary precautionary measures intended to help minimize the risk of the virus to our employees, our customers, and the communities in which we participate, which could adversely affect our business, results of operations, or financial condition. As a company with employees, customers, partners, and investors across the globe, we believe in upholding our company value of being good people by doing our part to help slow the spread of the virus. To this end, most of our employees have been working remotely since the start of the pandemic Although we continue to monitor the situation and may adjust our policies as more information and guidance become available, such policies could negatively impact our marketing efforts, lengthen sales cycles and result in an increase in certain prospective and current customers seeking lower prices or other more favorable contract terms, slow down our recruiting efforts, or create operational or other challenges due to a fully-remote workforce, any of which could adversely affect our business, results of operations, and financial condition.

Our customers or potential customers, particularly in industries most impacted by the COVID-19 pandemic including transportation, travel and hospitality, retail, and energy, may reduce their advertising spending or delay their advertising initiatives, which could adversely affect our business, results of operations, and financial condition. We may also experience curtailed customer demand, reduced customer spend or contract duration, delayed collections, lengthened payment terms, and increased competition due to changes in terms and conditions and pricing of our competitors' products and services.

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

Our business depends on processing ad impressions in milliseconds, and we must handle an increasingly large volume of such transactions. The addition of new solutions, such as header bidding in mobile and the CTV and OTT formats, support of evolving advertising formats, handling, and use of increasing amounts of data, and overall growth in impressions place growing demands upon our platform infrastructure. 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, 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 offer private marketplace solutions may not be successful, or we may not be able to scale our platform to meet this demand in a timely manner, and, as a result, we may not realize a return from our investments in that area.

We believe there is significant and growing demand for private marketplace solutions ("PMPs"), and we are making significant investments to meet that demand and grow our market share of PMPs. PMPs may involve lower fees than we can charge for our real-time bidding services, which may not be fully offset by anticipated higher pricing. In some cases, we have experienced fee pressure as we have built out our PMP offering, 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 this business. Even if the market for these solutions 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 moving off of existing implementations of competitive products. Additionally, even if publishers and buyers embrace our offerings, the positive effect of our PMP offerings on our results of operations may be offset or negated if PMPs cannibalize our open marketplace transaction volumes, by similar offerings from our competitors, or 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 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 placement identifiers advertising through our platform less valuable, and harm our revenue. 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 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 prominent technology companies, including Google, have also announced intentions to discontinue the use of cookies, and to develop alternative methods and mechanisms for tracking consumers. As companies replace cookies, it is possible that such companies may rely on proprietary algorithms or statistical methods to track consumers without cookies, or may utilize log-in credentials entered by consumers into other web properties owned by these companies, such as their email services, to track web usage, including usage across multiple devices. Alternatively, such companies may build different and potentially proprietary consumer tracking methods into their widely-used web browsers. 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, and could materially affect our ability to serve our customers, and our business, results of operations, and financial condition could be adversely affected. Many applications and other devices also allow consumers to avoid receiving advertisements by paying for subscriptions or other downloads. 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 cookies or publishers' cookies may be set in browsers or be accessible in mobile devices, which adversely affects our business.

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. 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.

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 identify the individual, including 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 aggregate 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. Evolving 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 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, but if publishers, buyers, or data providers do not follow this process (and in any event as the legal requirements in this area continue to evolve and develop), we could be subject to fines and liability. We may not have adequate insurance or contractual indemnity arrangements to protect us against any such 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 has enabled the purchasing and selling of vast amounts of digital advertising inventory, there now exist significant challenges related to proliferation of media across platforms, transaction speed, increased costs, transparency, and 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 longer operating histories, greater name recognition, and greater financial, technical, sales, and marketing resources than we have. 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 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 may be able to sell products or services competitive to ours at lower prices given proprietary ownership of data, technical superiority, or economies of scale. Such introduction of competent, 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, or other forms of consideration, 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 of advertising (including inventory risk and the risk of having to pay publishers for unsold advertising impressions), and in order to compete effectively we might need to accommodate risks that could be difficult 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 to the extent that 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, thereby increasing the capabilities and competitive posture of larger companies, particularly those that are already dominant in various ways, 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 in order 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.

Market pressure may reduce our revenue per impression.

Our revenue may 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. 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 developments could 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, or financial condition.

Our revenue, net cash provided by operating activities, results of operations, and other key operating and performance metrics may 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. In addition, adverse economic conditions or 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, 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 the systems, and devices of our publishers, and their consumers in order to misappropriate information, generate fraudulent billings or 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 in order 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. Further, perpetrators of fraudulent impressions and malware frequently change their tactics and may 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 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. 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 reduce our ability to innovate, create, and operate effectively.

We are subject to payment-related risks if DSPs dispute or do not pay their invoices, and any decreases in payments or in our overall take rate could adversely affect our 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 have been exacerbated by the COVID-19 pandemic and resulting economic impact, as many of our buyers are experiencing financial difficulties and liquidity constraints. In certain cases, buyers have been unable to timely make payments and we have suffered losses. For example, in early 2019, the advertising company Sizmek declared bankruptcy, which led us to lose approximately $6 million in contracted spending on our platform. 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 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, or 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 other more productive 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 staffing difficulties;
- 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; 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 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. 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. 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, growing increasingly more 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. 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 solution, 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 solution, 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. 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 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, perhaps without 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 their compliance. 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. Publishers often have terms of use in place with their consumers that disclaim or limit their potential liabilities to such consumers, or pursuant to which consumers waive rights to bring class-action lawsuits against the publishers related to advertisements. 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 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.

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 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, 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, 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 run our business and either directly or indirectly disrupt publishers' and partners' businesses, which could adversely affect our business, results of operations, and financial condition.

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 our customers, employees, and services providers. Our handling of this data is subject to a variety of federal, state, and foreign laws and regulations and is subject to regulation by various government authorities. Our data handling also is subject to contractual obligations and may be deemed to be subject to industry standards.

The U.S. federal 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. 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 currently 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 could be placed upon 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. 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, steps taken to de-identify personal data, and to use and distribute the resulting data, including for purposes of personalization and the targeting of advertisements, 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. Much of this scrutiny 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, 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. 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 recently 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 legislation, the California Consumer Privacy Act (the "CCPA") that became operative on January 1, 2020 and became enforceable by the California Attorney General on July 1, 2020, along with related regulations which came into force on August 14, 2020. The CCPA creates individual privacy rights for California residents and increases the privacy and security obligations of businesses handling personal data. The CCPA is enforceable by the California Attorney General and there is also a 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 and afford California consumers new abilities to opt-out of certain sales of personal information, a concept that is defined broadly, and although formal guidance has not been issued, behavioral advertising is believed to be a sale under CCPA by us, consumer advocacy groups and in some cases our larger competitors. We cannot yet fully predict the impact of the CCPA 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. Decreased availability and increased costs of information 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.

Additionally, a California ballot initiative, the California Privacy Rights Act (the "CPRA"), imposes 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 starting in January 2023. The effects of the CCPA and CPRA 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 and increase our potential exposure to regulatory enforcement and/or litigation.

The CCPA has encouraged "copycat" laws and in other states across the country, such as in Nevada, New Hampshire, Illinois, and Nebraska. In March 2020, Virginia passed the Consumer Data Protection Act (the "CDPA") which takes effect in January 2023. The CDPA is enforceable by the Virginia Attorney General and creates individual privacy rights for Virginia residents and increases the privacy obligations of businesses handling sensitive personal data. In July 2021, Colorado passed the Colorado Privacy Act (the "CPA") which takes effect in July 2023. The CPA is enforceable by the Colorado Attorney General and also creates individual privacy rights for Colorado residents and increases the privacy obligations of business handling personal data. We cannot yet fully predict the impact of the CDPA, the CPA, 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. Other 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.

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 EU citizens, wherever that processing occurs. The GDPR includes operational requirements for companies that receive or process personal data of residents of the European

Union that are different than those that were in place in the European Union. For example, we have been required to offer new controls 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 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, in the European Union, regulators are increasingly focusing on compliance with requirements in the online behavioral advertising ecosystem, and current national laws that implement the ePrivacy Directive will be replaced by an EU Regulation, known as the ePrivacy Regulation, which will significantly increase fines for non-compliance and impose burdensome requirements around obtaining consent. While the text of the ePrivacy Regulation is still under development, a recent European court decision and regulators' recent guidance are driving increased attention to cookies and tracking technologies. As regulators start to enforce the strict 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. In addition, some countries 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, including Brazil's General Data Protection law and Thailand's Personal Data Protection Act. 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 the related regulations and standards, are uncertain, 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. 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). 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, CDPA or other new regulations, and may therefore remove personal data from their inventory before passing it into the bid stream, at least temporarily. This may lower their inventory, 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. While we can and do provide training and guidance on compliance, the nature of the ecosystem and technology does not support 100% verification that consent from end users has been obtained, when required, and we may unknowingly pass on consumer personal information 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 their 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, GDPR, or other new regulations increase and industry compliance standards evolve. 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 the law and adapt to industry practice. The uncertain regulatory environment caused by the CCPA, GDPR, or other new regulations may disadvantage us in comparison to large, integrated competitors such as Google and Facebook, which have greater compliance resources and can take advantage of their direct relationships with end users to secure consents from end 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, unless a lawful data transfer solution 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 solutions. The first method, 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. As a result, despite the fact that we have certified our compliance to the EU-US Privacy Shield, our customers may no longer rely on this mechanism as a lawful means to transfer European data to us in the United States. For the time being, however, the Department of Commerce continues to operate the EU-US Privacy Shield, and if we fail to comply with the Privacy Shield requirements, we risk investigation and sanction by U.S. regulatory authorities, including the Federal Trade Commission. Such investigation could cost us significant time and resources, and could potentially result in fines, criminal prosecution, or other penalties. While the United States and the European Union are in discussions regarding a replacement to Privacy Shield, we cannot predict if we it will happen or if it does, what impact it will have on our business and industry.

The second mechanism, Standard Contractual Clauses (“SCCs”), an alternative transfer measure that we also offer to our EU customers for extra-EU data transfers, was upheld as a valid legal mechanism for transnational data transfer. However, the ruling requires that European organizations seeking to rely on the SCCs to export data out of the European Union 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. It remains unclear what “supplementary measures” must be taken to allow the lawful transfer of personal data to the United States, and it is possible that EU 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 SCCs for EU-US transfers of EU personal data and explore what "supplementary measures" can 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 issued updated Standard Contractual Clauses ("New SCCs") that require additional information for transnational data transfers. New agreements must incorporate the New SCCs effective September 27, 2021 and existing agreements must incorporate the New SCCs by December 27, 2022. It remains unclear whether SCCs or New SCCs can 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 restructure our data export practices as a result of Brexit. European Union law may cease to apply to the United Kingdom. This means that 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 or enter into New SSCs, in order to ensure the continuing flow of data to and from the United Kingdom subsidiary. We would likely need to restructure our transfers of European data via another European subsidiary and have such entity enter into the SCCs or New 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 or New SSCs 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 could increase the cost and complexity of operating our business.

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 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 them. Any such 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 and 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 relationships with our publishers 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 countries. 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 fundamentally change our business activities and practices or modify our software, 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 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 international 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

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, third-party confidentiality and non-disclosure agreements, additional 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 currently 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 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.

While it is our policy to protect and defend our rights to our intellectual property, 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. We also cannot guarantee that others will not independently develop technology with the same or similar functions to any proprietary technology 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 solutions, and policing unauthorized use of our technology and intellectual property rights is difficult 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 platform) 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.

Our customer agreements generally restrict the use of our confidential information solely to such customer's use in connection with its use of our services. In spite of such limitations, reverse engineering our software or the theft or misuse of our confidential information could occur by customers or other third parties who have access to our technology.

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 the employees or consultants party thereto. 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 our 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 discovery or adequate remedies.

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 parties 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 such 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 patents or other intellectual property rights 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. Results of these 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 adversely affect on business, results of operations, and financial condition.

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 injure 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 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, 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 solution 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 Our Internal and Disclosure Controls and Finances

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 ("Section 404"), 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 will need to 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. Because we are no longer an "emerging growth company" as of December 31, 2021, 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 commencing with the fiscal year ended December 31, 2021, which has, and will continue to, require 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 will be required to disclose changes made in our internal control and procedures on a quarterly basis. To comply with the requirements of being a public company, we may need to undertake various actions, such as implementing new internal controls and procedures and hiring accounting or internal audit staff.

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 would likely have a negative effect on the trading price of our Class A common stock.

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

As of December 31, 2021, we had no outstanding borrowings under our loan and security agreement with Silicon Valley Bank (“SVB”). Borrowings under this agreement are secured by substantially all of our assets, excluding our intellectual property. This loan and security agreement restricts our ability, without SVB’s written consent, to, among other things: dispose of or sell our assets; make material changes in our business or management; consolidate or merge with other entities; incur additional indebtedness; create liens on our assets; pay dividends; make investments; enter into transactions with affiliates; and pay off or redeem subordinated indebtedness. In addition, our loan and security agreement with SVB contains covenants requiring us to comply with minimum monthly liquidity requirements. The operating and financial restrictions and covenants in the loan and security 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 loan and security agreements. If not waived, future defaults could cause all of the outstanding indebtedness under our loan and security 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, we may not be able to obtain additional debt or equity financing on favorable terms, if at all, which may negatively impact our ability to operate and continue our business as a going concern.

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 are changing. 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, the European Commission has proposed, and various jurisdictions have enacted or are considering enacting laws that impose separate taxes on specified digital services, which may increase our tax obligations in such jurisdictions. 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 will 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.

Changes in U.S. federal, state or foreign tax laws and regulations, or their interpretation and application, including those with retroactive effect, could affect our tax expense, operating results, and/or cash flows. Beginning in 2022, the Tax Cuts and Jobs Act of 2017 eliminates the option to immediately deduct research and development expenditures in the year incurred and requires taxpayers to amortize such costs incurred in the U.S. over five years, and in foreign jurisdictions over fifteen years. While it is possible that Congress may modify, defer or repeal this provision before it takes effect, we have no assurance that the provision will be modified, deferred or repealed. If these provisions are not deferred, modified, or repealed by Congress with retroactive effect to January 1, 2022, it may have an adverse effect on our cash taxes and as a result, our operating results, financial condition, and/or cash flows beginning in 2022.

Risks Related to Ownership of Our Common Stock

We have received a notice of delisting for failure to satisfy the Nasdaq continued listing rule concerning the composition of our audit committee.

On December 29, 2021, we received notification from Nasdaq regarding our noncompliance with Nasdaq Listing Rule 5605(c)(2) ("Rule 5605"), which requires that our audit committee be comprised of a minimum of three independent directors. Our noncompliance occurred as the result of the passing of one of our directors, Narendra Gupta, who was one of the three members of our audit committee. On December 27, 2021, we advised The Nasdaq Global Market of Mr. Gupta's passing, its consequences with regard to compliance with Rule 5605 and our intention to regain compliance in a timely manner. In accordance with Nasdaq Listing Rule 5605(c)(4), we have a cure period in order to regain compliance with Rule 5605 until (i) the earlier of our next annual stockholders' meeting or December 25, 2022; or (ii) if our next annual stockholders' meeting is held before June 23, 2022, then we must evidence compliance no later than June 23, 2022. We intend to appoint a third independent director to our board of directors and audit committee, and thereby regain compliance Rule 5605, prior to the end of the cure period. However, if we are unable to regain compliance with Rule 5605 in a timely manner, Nasdaq will commence delisting procedures.

If we are unable to maintain our listing on The Nasdaq Global Market, it may become more difficult for our stockholders to sell our stock in the public market, and the price of our common stock may be adversely affected due to the likelihood of decreased liquidity resulting from delisting. Furthermore, we would expect decreases in institutional and other investor demand, analyst interest, market making activity and information available concerning trading prices and volume, and fewer broker-dealers would be willing to execute trades with respect to our 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, 2022, our directors and officers, and their respective affiliates, beneficially owned in the aggregate approximately 63.7% 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 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 7 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

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 December 31, 2021, there were 79 holders of record of our Class A common stock and 118 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.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item will be included in our proxy statement relating to our 2022 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, 2021 (the “Proxy Statement”) and is incorporated herein by reference.

Unregistered Sales of Equity Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

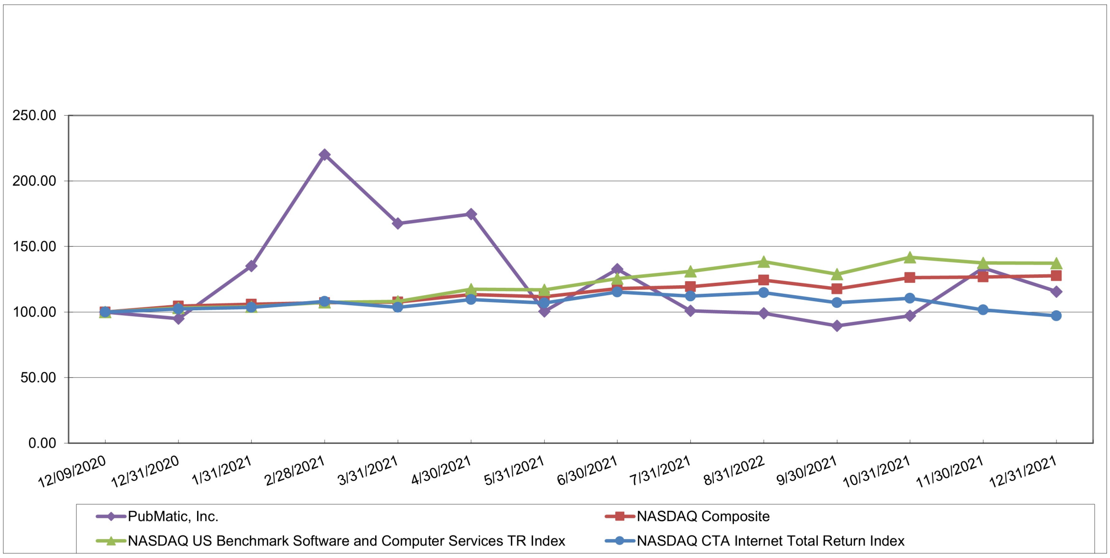
None.

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, 2021, 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.



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 sell-side platform empowers the world’s leading digital content creators across the open internet to control access to their inventory and increase monetization by enabling marketers to drive ROI and reach addressable audiences across ad formats and devices. Since 2006, our infrastructure-driven approach has allowed for the efficient processing and utilization of data in real time. By delivering scalable and flexible programmatic innovation, we improve outcomes for our customers while championing a vibrant and transparent digital advertising supply chain.

Our specialized cloud infrastructure platform provides superior monetization for publishers by increasing the value of an impression and providing incremental demand through our deep and growing relationships with buyers. We are aligned with our publisher and app developer partners by being independent. We do not own media and therefore do not have a vested interest in driving ad revenue to specific media properties. Our global platform is omnichannel, supporting a wide array of ad formats and digital device types, including mobile app, mobile web, desktop, display, video, OTT, CTV, and rich media.

In December 2021, our platform efficiently processed approximately 344 billion ad impressions daily, each in a fraction of a second, and 4.2 petabytes of data every day. During the fiscal year ended December 31, 2021, we added approximately 250 new publishing partners. As of December 31, 2021, we served approximately 1,450 publishers and app developers representing over 97,000 individual domains and apps worldwide on our platform across a diverse group of content verticals such as news, e-commerce, gaming, media, weather, fashion, technology, and more, including many of the leading digital companies such as Yahoo, formerly Verizon Media Group, and News Corp. We have demonstrated that we can retain and grow revenues from our publisher customers, as evidenced by our net dollar-based retention rate of 149% for the year ended December 31, 2021 and 122% for the year ended December 31, 2020.

We generate revenue from publishers primarily through revenue share agreements, generally one-year contracts that renew automatically for successive one-year periods, unless terminated prior to renewal. 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. We refer to our publishers, app developers, and channel partners collectively as our publishers.

We enter into written service agreements with our DSP buyers that allow them to use our platform to buy ad inventory, but we earn revenue from our publishers. Our platform service agreements with DSPs generally have one-year terms that renew automatically for successive one-year periods, unless terminated prior to renewal. We also negotiate SPO agreements with agencies and advertisers that encourage these buyers to spend a higher share of their advertising budgets on our platform. SPO agreements typically have a one-year term and renewal terms are generally discussed one quarter prior to a new term. The effect of these SPO agreements is to increase the volume of ad spend on our platform without corresponding increases in technology costs.

In the fourth quarter of 2021, mobile (including mobile video) and video (including OTT/CTV) combined comprised approximately 67% of our revenue. We anticipate mobile to continue increasing as a percentage of our total impressions and revenue in the future. We further expect video to constitute an increasingly important component of our business.

COVID-19

The COVID-19 pandemic and its variants has resulted in a global slowdown of economic activity which is likely to decrease demand for a broad variety of goods and services, including those provided by certain of the advertisers on our platform. This situation could also potentially limit our ad buyers' budgets or disrupt sales channels and advertising and marketing activities generally. The duration of these disruptive effects will continue for an unknown period of time until the virus is contained or economic activity normalizes. With the decline in economic activity, our revenue growth slowed and turned negative in the second quarter of 2020. Although our revenue has subsequently returned to growth, the impact of the pandemic on our future growth and our results of operations is unknown and we are unable to accurately predict the future impact. The extent of the impact of the COVID-19 pandemic on our operational and financial performance will depend on a variety of factors, including the duration and spread of the virus, including new variants, and its impact on our publishers, ad buyers, industry, and employees, all of which are uncertain at this time and cannot be accurately predicted. See "Risk Factors" for further discussion of the adverse impacts of the COVID-19 pandemic on our business.

The table below summarizes the financial highlights of our business:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Revenue	$ 226,908	$ 148,748	$ 113,871
Operating income	58,789	31,755	8,509
Net income	56,604	26,613	6,643
Adjusted EBITDA[1]	96,250	50,349	23,307
Net cash provided by operating activities	88,681	24,330	35,125

(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.

Key Factors Affecting Our Performance

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

Growing access to valuable ad impressions

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 9.0 trillion, 10.3 trillion, 11.8 trillion, 15.8 trillion, 18.5 trillion, 20.2 trillion, 23.9 trillion and 29.6 trillion, for each of the three months ended March 31, 2020, June 30, 2020, September 30, 2020 and December 31, 2020, March 31, 2021, June 30, 2021, September 30, 2021, December 31, 2021, respectively.

Monetizing ad impressions for publishers and buyers

We focus on monetizing digital impressions by coordinating daily over a hundred billion real-time auctions and nearly a trillion bids globally, 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 444 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. By deploying our specialized software and hardware and continuously optimizing our machine learning algorithms, we are able to derive superior outcomes by increasing advertiser ROI and publisher revenue, while increasing the cost efficiency of our platform and our customers' businesses. 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.

Identifying valuable ad impressions that we can profitably monetize at scale

We continuously review our available inventory from existing publishers across every format (mobile, desktop, digital video, OTT, CTV, and rich media). The factors we consider to determine which impressions we process include transparency, viewability, and whether or not the impression is human sourced. By consistently applying these criteria, we believe that the ad impressions we process will be valuable and marketable to advertisers. In addition, using a combination of proprietary analysis driven by machine learning algorithms that are continuously updated along with specialized third-party tools, we aim to exclude low value impressions from our platform and, in some cases, may suspend certain publishers, or particular publisher sites and apps, from using our platform if they do not meet our standards. Our confidence in our ability to achieve our quality goals is backed by a fraud-free guarantee to all of our buyers which we introduced in 2017. We believe that this rigorous commitment to quality helps us maintain our reputation as a leader in the programmatic advertising ecosystem. Our financial performance depends in part on how efficiently and effectively we can conduct these activities at scale.

Increasing revenue from publishers and advertising spend from buyers

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 up-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 149% for the year ended December 31, 2021, and 122% for the year ended December 31, 2020. Our growth in the period ended December 31, 2021 and 2020 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.

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. We have entered into SPO agreements directly with buyers, advertisers and agencies through various arrangements ranging from 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.

Managing industry dynamics

We operate in the rapidly evolving digital advertising industry. Due to the scale and complexity of the digital advertising ecosystem, direct sales via manual, person-to-person processes are insufficient for delivering a real-time, personalized ad experience, creating the need for programmatic advertising. In turn, advances in programmatic technologies have enabled publishers to auction their ad inventory to more buyers, simultaneously, and in real time through a process referred to as header bidding. Header bidding has also provided advertisers with transparent access to ad impressions. As advertisers keep pace with ongoing changes in the way that consumers view and interact with digital media there will be further innovation and we anticipate that header bidding will be extended into new areas such as OTT/CTV. We believe our focus on publishers and buyers has allowed us to understand their needs and our ongoing innovation has enabled us to quickly adapt to changes in the industry, develop new solutions and do so cost effectively. Our performance depends on our ability to keep pace with industry changes such as header bidding and the evolving needs of our publishers and buyers while continuing our cost efficiency.

Expanding and managing investments

We make software and hardware infrastructure investment decisions to meet expected increases in ad impressions on both a global and regional data center level throughout the calendar year based on the projected quantity, ad format type, and associated data requirements. In parallel, we seek to continuously improve our infrastructure utilization. Our ability to identify and monetize high value impressions allows us to operate more efficiently because the cost of processing low-value impressions and high-value impressions are approximately the same. We believe that increasing utilization of our platform leads to improved outcomes for our customers and more efficient and effective operations for us. To achieve improved utilization, we leverage the data on our platform through extensive application of artificial intelligence technologies, including machine learning and natural language processing. The magnitude and timing of our investments in our software and hardware may lead to fluctuations in our operating results.

Expanding internationally

We plan to continue expanding our international presence and making additional investments in sales and marketing and infrastructure to support our long-term growth and to position ourselves for expected increases in the penetration of programmatic advertising globally. We expect programmatic advertising to grow at different rates in different geographic markets. Our publishers outside of the United States typically have smaller amounts of programmatic inventory, and as a result, our sales and marketing expenses associated with non-U.S. publishers are generally proportionally higher. We are constantly evaluating new markets with a strategy to use our existing infrastructure and adjacent sales offices, or by expanding our infrastructure footprint and placing personnel directly in those markets. Our ability to efficiently expand into new markets will affect our operating results.

Managing Seasonality

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, and our ability to manage our resources in anticipation of these trends will affect our operating results.

Key Components of Our Results of Operations

Revenue

We generate revenue from publishers who use our platform. Our platform allows publishers to sell, in real time, customized ad inventory to buyers and provides automated inventory management and monetization tools to publishers across various device types and digital ad formats. We generate revenue primarily through fees charged to our publishers, which are generally a percentage of the value of the advertising impressions that publishers monetize on the platform. 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.

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. We expect cost of revenue to generally increase in absolute dollars in future periods.

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 expend 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 intra-office travel and conferences.

We expect to invest in corporate infrastructure and incur additional expenses associated with the transition to and 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 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 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 on equity investment consists of gains and losses on our investment in equity securities, including unrealized gains and losses from market price changes on securities we continue to hold. Other income (expense), net consists primarily of gains and losses from foreign currency exchange transactions and the change in fair value of our convertible preferred stock warrant liability, which we previously marked-to-market until the warrant's exercise in the third quarter of 2019.

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 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 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.

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, impairments of long-lived assets, interest income, 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,		
	2021	2020	2019
		(in thousands)	
Net income	$ 56,604	$ 26,613	$ 6,6
Add back (deduct):			
Stock-based compensation	14,107	3,563	2,0
Depreciation and amortization	23,073	15,743	12,6
Unrealized gain on equity investment	(5,433)	—	-
Impairment of internal use software	—	—	7(
Interest income	(300)	(537)	(1,2
Provision for income taxes	8,199	4,967	2,5
Adjusted EBITDA	$ 96,250	$ 50,349	$ 23,3

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;

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.

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,					
	2021		2020		2019	
Consolidated Statements of Operations:						
Revenue	$	226,908	$	148,748	$	113,87
Cost of revenue[1]		58,313		41,186		36,10
Gross profit		168,595		107,562		77,76
Operating expenses[1]:						
Technology and development		15,885		12,250		12,45
Sales and marketing		58,160		43,297		36,49
General and administrative		35,761		20,260		20,30
Total operating expenses		109,806		75,807		69,25
Operating income		58,789		31,755		8,50
Total other income (expense), net		6,014		(175)		71
Income before provision for income taxes		64,803		31,580		9,22
Provision for income taxes		8,199		4,967		2,57
Net income	$	56,604	$	26,613	$	6,64

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

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Cost of revenue	$ 825	$ 86	$ 26
Technology and development	2,232	599	402
Sales and marketing	5,176	1,101	684
General and administrative	5,874	1,777	890
Total stock-based compensation expense	$ 14,107	$ 3,563	$ 2,002

	Year Ended December 31,		
	2021	2020	2019
		(as percentage of revenue)	
Revenue	100 %	100 %	100 %
Cost of revenue	26	28	32
Gross profit	74	72	68
Operating expenses:			
Technology and development	7	8	11
Sales and marketing	26	29	32
General and administrative	16	14	18
Total operating expenses	48	51	61
Operating income	26	21	7
Total other income (expense), net	3	—	1
Income before provision for income taxes	29	21	8
Provision for income taxes	4	3	2
Net income	25 %	18 %	6 %

Comparison of the Years Ended December 31, 2021 and 2020

Revenue, Cost of Revenue and Gross Profit

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
Revenue	$ 226,908	$ 148,748	$ 78,160	53 %
Cost of revenue	58,313	41,186	17,127	42 %
Gross profit	168,595	107,562	61,033	57 %
Gross profit margin	74 %	72 %		

Revenue increased $78.2 million, or 53%, in 2021 driven by growth in impressions processed on our platform from both existing and new publishers. For the year ended 2021, we served approximately 1,450 publishers worldwide on our platform, compared to approximately 1,200 publishers worldwide for the year ended 2020, including approximately 250 net new publishers in 2021, which represented over 62,000 domains and 35,000 apps in total, compared to approximately 360 new publishers in 2020, which represented approximately 60,000 domains and 20,000 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 2021 we completed a number of SPO initiatives which increased buyer spend on our platform.

We expect revenue to continue to grow in 2022, 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 $17.1 million, primarily due to a $7.3 million increase in depreciation of data center equipment and amortization of internal use software, a $3.9 million increase in data centers expansion and upgrades, a $3.1 million increase in personnel costs as headcount increased by 26% in order to support our growing business, a $1.5 million in IT support expenses, and a $0.9 million in software expenses. Overall, our cost of revenue per impression processed in 2021 declined by 28% compared to 2020.

Our gross margin of 74% in 2021 increased compared to 2020 of 72% due to greater utilization of our platform offset by investments for capacity expansion.

We expect the cost of revenue to be higher in 2022 compared to 2021 in absolute dollars primarily due to costs associated with the continued expansion of our capacity to process impressions to support revenue growth.

Technology and Development

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
Technology and development	$ 15,885	$ 12,250	$ 3,635	30
Percent of revenue	7 %	8 %		

The increase in technology and development costs was primarily due to an increase of $7.1 million in personnel costs associated with a headcount increase by 44% and higher stock-based compensation costs, offset by a $3 million increase in the capitalization of internal use software.

We expect technology and development expenses to increase in 2022 compared to 2021 in absolute dollars, primarily due to the additional headcount investment in our key growth opportunities.

Sales and Marketing

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
Sales and marketing	$ 58,160	$ 43,297	$ 14,863	34
Percent of revenue	26 %	29 %		

Sales and marketing costs increased primarily due to a $13.2 million increase in personnel costs associated with a headcount increase by 18% and higher stock-based compensation costs, and a $1.3 million increase in marketing expenses.

We expect sales and marketing expenses to increase in 2022 compared to 2021 in absolute dollars primarily due to additional headcount investment and marketing programs.

General and Administrative

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
General and administrative	$ 35,761	$ 20,260	$ 15,501	77
Percent of revenue	16 %	14 %		

General and administrative expense increased primarily due to a $8.3 million increase in personnel costs associated with a 27% increase in headcount and higher stock-based compensation costs, a $3.5 million increase in insurance costs primarily due to director and officer insurance, and a $3.0 million increase in professional services, accounting and legal service costs.

We expect general and administrative expenses to increase in 2022 compared to 2021 in absolute dollars primarily due to the additional headcount and increased costs associated with being a public company.

Total Other Income (Expense), net

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
Total other income (expense), net	$ 6,014	$ (175)	$ 6,189	(3537)

Total other income (expense), net increased for the year ended December 31, 2021, compared to the prior year period, primarily driven by unrealized gains related to our equity investment and as a result of currency fluctuations, partially offset by lower interest rates and as a result of holding a larger portion of our excess cash in lower yielding money market investments.

Provision for Income Taxes

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(dollars in thousands)			
Provision for income taxes	$ 8,199	$ 4,967	$ 3,232	65

The difference between the effective tax rate in 2021 of 13% and the federal statutory income tax rate of 21% was primarily due to deductible stock-based compensation, federal research and development credit, and a decrease in transfer pricing reserve due to expiration of statute of limitation, partially offset by Section 162(m) limitation and state taxes.

The difference between the effective tax rate in 2020 of 16% and the federal statutory income tax rate of 21% was primarily due to deductible stock-based compensation, the foreign tax rate differential and federal research and development credits, partially offset by a valuation allowance on state research and development credits.

For discussion on comparison of the fiscal years ended December 31, 2020 and December 31, 2019, 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, 2020.

Quarterly Results of Operations

The following table sets forth our unaudited quarterly consolidated statements of operations data for each of the eight quarters in the period ended December 31, 2021. The information for each of these quarters has been prepared on a basis consistent with our audited annual consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K and, in our opinion includes all adjustments, consisting only of normal recurring adjustments necessary for the fair statement of the financial information contained in those statements. The following unaudited consolidated quarterly financial data should be read in conjunction with our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. These quarterly results are not necessarily indicative of our operating results for a full year or any future period.

	Three Months Ended							
	March 2020	June 2020	Sep 2020	Dec 2020	March 2021	June 2021	Sep 2021	Dec 2021
	(unaudited) (in thousands, except share and per share data)							
Revenue	$ 28,348	$ 26,361	$ 37,797	$ 56,242	$ 43,608	$ 49,658	$ 58,086	$ 75,556
Cost of revenue	10,056	9,189	10,491	11,450	12,300	13,088	16,020	16,905
Gross profit	18,292	17,172	27,306	44,792	31,308	36,570	42,066	58,651
Operating expenses:								
Technology and development	2,919	2,971	3,390	2,970	3,738	3,860	4,139	4,147
Sales and marketing	9,995	9,236	10,911	13,155	12,789	13,997	15,004	16,369
General and administrative	4,349	4,236	5,214	6,461	8,139	8,580	8,875	10,168
Total operating expenses	17,263	16,443	19,515	22,586	24,666	26,437	28,018	30,684
Operating income	1,029	729	7,791	22,206	6,642	10,133	14,048	27,967
Total other income (expense), net	274	8	61	(518)	199	(239)	277	5,776
Income before provision for income taxes	1,303	737	7,852	21,688	6,841	9,894	14,325	33,743
Provision for (benefit from) income taxes	399	84	1,621	2,863	1,923	(27)	799	5,504
Net income	$ 904	$ 653	$ 6,231	$ 18,825	$ 4,918	$ 9,921	$ 13,526	$ 28,239
Net income attributable to common stockholders								
Basic	$ —	$ —	$ 1,195	$ 7,724	$ 4,918	$ 9,921	$ 13,526	$ 28,239
Diluted	$ —	$ —	$ 1,574	$ 9,348	$ 4,918	$ 9,921	$ 13,526	$ 28,239
Net income per share attributable to common stockholders:								
Basic	$ —	$ —	$ 0.12	$ 0.39	$ 0.10	$ 0.20	$ 0.27	$ 0.55
Diluted	$ —	$ —	$ 0.10	$ 0.34	$ 0.09	$ 0.18	$ 0.24	$ 0.50

	Three Months Ended							
	March 2020	June 2020	Sep 2020	Dec 2020	March 2021	June 2021	Sep 2021	Dec 2021
	(unaudited) (as percentage of revenue)							
Revenue	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Cost of revenue	35 %	35 %	28 %	20 %	28 %	26 %	28 %	22 %
Gross profit	65 %	65 %	72 %	80 %	72 %	74 %	72 %	78 %
Operating expenses:								
Technology and development	10 %	11 %	9 %	5 %	9 %	8 %	7 %	5 %
Sales and marketing	35 %	35 %	29 %	23 %	29 %	28 %	26 %	22 %
General and administrative	15 %	16 %	14 %	11 %	19 %	17 %	15 %	14 %
Total operating expenses	60 %	62 %	52 %	39 %	57 %	53 %	48 %	41 %
Operating income	5 %	3 %	20 %	41 %	15 %	21 %	24 %	37 %
Total other income (expense), net	1 %	— %	— %	(1)%	— %	(1)%	— %	7 %
Income before provision for income taxes	6 %	3 %	20 %	40 %	15 %	20 %	24 %	44 %
Provision for (benefit from) income taxes	1 %	— %	4 %	5 %	4 %	— %	1 %	7 %
Net income	5 %	3 %	16 %	35 %	11 %	20 %	23 %	37 %

Set forth below is a reconciliation of Adjusted EBITDA to net income for the periods presented:

	Three Months Ended							
	March 2020	June 2020	Sep 2020	Dec 2020	March 2021	June 2021	Sep 2021	Dec 2021
	(unaudited) (dollars in thousands)							
Net income	$ 904	$ 653	$ 6,231	$ 18,825	$ 4,918	$ 9,921	$ 13,526	$ 28,239
Add back (deduct):								
Stock-based compensation[1]	495	500	1,444	1,124	3,165	3,629	3,714	3,599
Depreciation and amortization	3,586	3,810	4,178	4,169	4,550	5,138	6,304	7,081
Unrealized gain on equity investment	—	—	—	—	—	—	—	(5,433)
Interest income	(260)	(132)	(83)	(62)	(62)	(67)	(79)	(92)
Provision for (benefit from) income taxes	399	84	1,621	2,863	1,923	(27)	799	5,504
Adjusted EBITDA	$ 5,124	$ 4,915	$ 13,391	$ 26,919	$ 14,494	$ 18,594	$ 24,264	$ 38,898

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

	Three Months Ended							
	March 2020	June 2020	Sep 2020	Dec 2020	March 2021	June 2021	Sep 2021	Dec 2021
	(unaudited) (dollars in thousands)							
Cost of revenue	$ 10	$ 11	$ 10	$ 56	$ 168	$ 204	$ 233	$ 220
Technology and development	74	80	222	222	481	579	586	586
Sales and marketing	180	183	358	380	1,161	1,290	1,388	1,337
General and administrative	231	226	854	466	1,355	1,556	1,507	1,456
Total stock-based compensation expense	$ 495	$ 500	$ 1,444	$ 1,124	$ 3,165	$ 3,629	$ 3,714	$ 3,599

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, 2021, we had cash, cash equivalents, and marketable securities of $159.6 million and net working capital, consisting of current assets less current liabilities, of $193.8 million. As of December 31, 2021, we had retained earnings of $99.3 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. In light of the potential impact worldwide of COVID-19 pandemic, we are closely monitoring the effect that current economic conditions may have on our working capital requirements. To date, the pandemic has not had a material negative impact on our cash flow or liquidity. 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 the incurrence of 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.

Revolving Line of Credit

In February 2011, we entered into a Loan and Security Agreement (the “Loan Agreement”), with Silicon Valley Bank (“SVB”), which was subsequently amended at various times to provide us with additional borrowing capacity and/or flexibility.

As of December 31, 2021, the amount we can borrow under the Loan Agreement was the lesser of $25.0 million or 80% of eligible accounts receivable less certain reserves, minus the aggregate principal amount of all outstanding advances. Interest accrues on advances under the Loan Agreement at a variable rate equal to the prime rate. For any quarter where the average closing outstanding balance under the Loan Agreement is less than $5 million, a fee for such unused capacity in the amount of 0.40% per annum of the average unused portion is charged and is payable in arrears. As of December 31, 2021, the applicable interest rate under the Loan Agreement was 3.25%. In June, 2021, we amended the Loan Agreement to extend its maturity date to June 6, 2024. As of December 31, 2021, there were no outstanding borrowings under the Loan Agreement.

Our obligations under the Loan Agreement are secured by substantially all of our assets excluding our intellectual property. The Loan Agreement contains affirmative covenants including financial covenants that, among other things, require us to maintain an adjusted quick ratio of no less than 1.0 to 1.0. The adjusted quick ratio is defined as the ratio of unrestricted cash and cash equivalents at SVB, plus billed accounts receivable to total accounts payable plus all SVB loans outstanding and outstanding letters of credit. The Loan Agreement also restricts us from paying dividends to stockholders without prior consent from SVB. We were in compliance with the covenants as of December 31, 2021.

Cash Flows

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

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Net cash provided by operating activities	$ 88,681	$ 24,330	$ 35,125
Net cash used in investing activities	(96,723)	(29,877)	(22,089)
Net cash provided by (used in) financing activities	9,359	52,485	(1)
Net increase (decrease) in cash and cash equivalents	$ 1,317	$ 46,938	$ 13,035

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, 2021, net cash provided by operating activities of $88.7 million resulted primarily from net income of $56.6 million, adjustments for non-cash expenses of $38.5 million, including $23.1 million for depreciation and amortization, $14.1 million for stock-based compensation, and $4.8 million for deferred income taxes, and an increase in accounts receivable of $67.4 million, partially offset by an increase in accounts payable of $68.3 million.

For the year ended December 31, 2020, net cash provided by operating activities of $24.3 million resulted primarily from net income of $26.6 million, adjustments for non-cash expenses of $22.6 million, including $15.7 million for depreciation and amortization, $2.9 million for deferred income taxes and $3.6 million for stock-based compensation, and an increase in accounts receivable of $102.2 million, partially offset by an increase in accounts payable of $77.4 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, 2021, we used $96.7 million of cash in investing activities, consisting of a net increase in investments of marketable securities of $57.4 million, $30.4 million in purchases of property and equipment (primarily data center infrastructure), and $8.9 million of investments in capitalized internal use software.

For the year ended December 31, 2020, we used $29.9 million of cash in investing activities, consisting of $24.2 million in purchases of property and equipment (primarily data center infrastructure), $7.2 million of investments in capitalized internal use software offset by a net decrease in investments of marketable securities of $1.5 million.

Financing Activities

For the year ended December 31, 2021, net cash provided by financing activities of $9.4 million was primarily due to $5.4 million proceeds from stock option exercises and $4.8 million proceeds from the employee stock purchase plan, partially offset by $0.8 million due to payments of issuance costs of Class A common stock in connection with the IPO.

For the year ended December 31, 2020, net cash provided by financing activities of $52.5 million was primarily due to proceeds from the issuance of Class A common stock in connection with the IPO, net of underwriting discounts and commissions and other offering costs of $45.8 million, proceeds from repayment of stockholders' notes receivables of $4.3 million and proceeds from exercise of stock options of $2.4 million.

For discussion on operating, investing, and financing activities of the fiscal year ended December 31, 2019, 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 26, 2021 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, 2021 (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]	31,781	10,506	21,138	137	—
Operating lease liabilities	23,210	4,298	6,929	7,233	4,750
Finance lease liabilities	922	136	285	302	199
Total	$ 55,913	$ 14,940	$ 28,352	$ 7,672	$ 4,950

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

As of December 31, 2021, we had $2.4 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.

Off-Balance Sheet Arrangements

Through December 31, 2021, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities that would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

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, stock-based compensation expense, 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.

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.

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 Stock Option Plans.

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 adopted accounting pronouncements and 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 $82.5 million and marketable securities of $77.1 million as of December 31, 2021, which consisted of bank deposits, money market accounts, commercial paper, 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, 2021. 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 $1.2 million and $0.9 million in our operating income for the year ended December 31, 2021 and December 31, 2020, respectively. A hypothetical 10% change in the U.S. Dollar to British Pound exchange rate could result in a change of $1.4 million and $1.1 million in our operating income for the year ended December 31, 2021 and December 31, 2020, 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, 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

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, 2021 and 2020, 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, 2021, 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, 2021, 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, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, 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, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

Changes in Accounting Principles

As discussed in Note 2 to the financial statements, the Company changed its method of accounting for leases in fiscal year 2021 due to the adoption of Accounting Standards Update No. 2016-02, Leases (Topic 842), using the optional transition method.

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) relates 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, 2021, the Company's revenue was $226.9 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 on a customer’s website 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, 2022

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

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

	December 31, 2021	December 31, 2020
ASSETS		
Current Assets		
Cash and cash equivalents	$ 82,505	$ 81,188
Marketable securities	77,121	19,793
Accounts receivable - net	286,916	219,511
Prepaid expenses and other current assets	14,207	6,622
Total Current Assets	460,749	327,114
Property, equipment and software - net	50,140	30,044
Operating lease right-of-use assets	21,613	—
Goodwill	6,250	6,250
Deferred income tax asset	515	762
Other assets, non-current	10,948	7,076
TOTAL ASSETS	$ 550,215	$ 371,246
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts payable	$ 244,321	$ 176,731
Accrued expenses and other current liabilities	18,780	14,844
Operating lease liabilities, current	3,864	—
Total Current Liabilities	266,965	191,575
Operating lease liabilities, non-current	17,842	—
Deferred tax liability	6,067	1,561
Other liabilities, non-current	2,161	2,683
TOTAL LIABILITIES	293,035	195,819
Commitments and contingencies (Note 6)		
Stockholders' Equity		
Preferred stock, $0.0001 par value per share, 10,000,000 shares authorized as of December 31, 2021 and 2020; No shares issued and outstanding as of December 31, 2021 and 2020	—	—
Common stock, par value $0.0001 per share; 1,000,000,000 Class A shares authorized as of December 31, 2021 and 2020; 40,695,140 and 6,801,368 shares issued and outstanding as of December 31, 2021 and 2020, respectively; 1,000,000,000 Class B shares authorized as of December 31, 2021 and 2020; 11,159,609 and 42,186,774 shares issued and outstanding as of December 31, 2021 and 2020, respectively.	6	6
Treasury stock, at cost - 3,140,437 and 3,139,295 shares as of December 31, 2021 and 2020, respectively.	(11,486)	(11,434)
Additional paid-in capital	169,401	144,163
Accumulated other comprehensive income	(36)	1
Retained earnings	99,295	42,691
Total Stockholders' Equity	257,180	175,427
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 550,215	$ 371,246

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

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

	Year Ended December 31,					
	2021		2020		2019	
Revenue	$	226,908	$	148,748	$	113,87
Cost of revenue		58,313		41,186		36,10
Gross profit		168,595		107,562		77,76
Operating expenses:						
Technology and development		15,885		12,250		12,45
Sales and marketing		58,160		43,297		36,49
General and administration		35,761		20,260		20,30
Total operating expenses		109,806		75,807		69,25
Operating income		58,789		31,755		8,50
Interest income		300		537		1,29
Unrealized gain on equity investment		5,433		—		—
Other income (expense), net		281		(712)		(57
Total other income (expense), net		6,014		(175)		71
Income before provision for income taxes		64,803		31,580		9,22
Provision for income taxes		8,199		4,967		2,57
Net income	$	56,604	$	26,613	$	6,64
Net income per share attributable to common stockholders:						
Basic	$	1.13	$	0.51	$	0.0
Diluted	$	1.00	$	0.46	$	0.0
Weighted-average shares used to compute net income per share attributable to common stockholders:						
Basic		50,184,455		12,642,293		10,036,98
Diluted		56,628,574		17,125,882		12,169,88

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,		
	2021	**2020**	**2019**
Net income	$ 56,604	$ 26,613	$ 6,64
Other comprehensive income (loss):			
Unrealized gain (loss) on marketable securities, net of tax	(37)	(5)	
Comprehensive income	$ 56,567	$ 26,608	$ 6,64

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

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

	Convertible Preferred Stock		Redeemable Common Stock		Common Stock				Accumulated Other Comprehensive Income (Loss)		
	Shares	Amount	Shares	Amount	Shares	Amount	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
Balance — December 31, 2018	33,398,753	$ 60,820	5,901,863	$ 19,025	5,726,954	$ 1	$ (11,426)	$ 6,615	$ —	$ 9,435	$ 4,625
Stock-based compensation								2,022			2,022
Cashless exercise of Series D convertible preferred stock warrants	45,216	396									—
Exercise of stock options					20,983	—		4			4
Repurchase of treasury stock, at cost					(1,721)	—	(5)				(5)
Other comprehensive income									6		6
Net income										6,643	6,643
Balance — December 31, 2019	33,443,969	$ 61,216	5,901,863	$ 19,025	5,746,216	$ 1	$ (11,431)	$ 8,641	$ 6	$ 16,078	$ 13,295
Stock-based compensation								3,603			3,603
Exercise of stock options					1,241,970	—		2,409			2,409
Repurchase of treasury stock, at cost					(876)	—	(3)				(3)
Repayment of shareholders notes receivable								4,268			4,268
Reclassification of common stock			(5,901,863)	(19,025)	5,901,863	1		19,024			19,025
Conversion of convertible preferred stock to common stock upon initial offering	(33,443,969)	(61,216)			33,443,969	3		61,213			61,216
Issuance of common stock upon initial public offering, net of underwriting discounts and commissions and other offering costs					2,655,000	1		45,005			45,006
Other comprehensive loss									(5)		(5)
Net income										26,613	26,613
Balance — December 31, 2020	—	$ —	—	$ —	48,988,142	$ 6	$ (11,434)	$ 144,163	$ 1	$ 42,691	$ 175,427
Stock-based compensation								15,011			15,011
Exercise of stock options					2,511,505	—		5,423			5,423
Repurchase of treasury stock, at cost					(1,142)	—	(52)	—			(52)
Issuance of common stock related to employee stock purchase plan					276,406	—		4,804			4,804
Issuance of common stock related to RSU vesting					79,838	—					—
Other comprehensive loss									(37)		(37)
Net income										56,604	56,604
Balance — December 31, 2021	—	$ —	—	$ —	51,854,749	$ 6	$ (11,486)	$ 169,401	$ (36)	$ 99,295	$ 257,180

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,		
	2021	**2020**	**2019**
CASH FLOW FROM OPERATING ACTIVITIES:			
Net Income	$ 56,604	$ 26,613	$ 6,643
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	23,073	15,743	12,671
Impairment of internally developed software	—	—	702
Unrealized gain on equity investment	(5,433)	—	—
Stock-based compensation	14,107	3,563	2,002
Provision for doubtful accounts	—	319	3,557
Change in fair value of preferred stock warrant liability	—	—	120
Deferred income taxes	4,753	2,933	193
Accretion of discount on marketable securities	(45)	(145)	(341)
Non-cash lease expense	2,042	—	—
Other	45	189	19
Changes in operating assets and liabilities:			
Accounts receivable	(67,405)	(102,175)	(11,919)
Prepaid expenses and other assets	(7,681)	(2,801)	618
Accounts payable	68,301	77,357	18,465
Accrued expenses	3,530	3,452	2,011
Operating lease liabilities	(2,283)	—	—
Other liabilities, non-current	(927)	(718)	384
Net cash provided by operating activities	88,681	24,330	35,125
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of and deposits on property and equipment	(30,432)	(24,177)	(9,553)
Capitalized software development costs	(8,929)	(7,226)	(5,442)
Purchases of marketable securities	(90,562)	(36,704)	(37,545)
Proceeds from sales of marketable securities	—	2,295	696
Proceeds from maturities of marketable securities	33,200	35,950	30,255
Purchase of equity securities	—	(15)	(500)
Net cash used in investing activities	(96,723)	(29,877)	(22,089)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from initial public offering, net of underwriting discounts and commissions and other offering costs	(806)	45,811	—
Proceeds from repayments of stockholders' notes receivable	—	4,268	—
Proceeds from issuance of common stock for employee stock purchase plan	4,804	—	—
Proceeds from exercise of stock options	5,423	2,409	4
Principal payments on finance lease obligations	(10)	—	—
Payments to acquire treasury stock	(52)	(3)	(5)
Net cash provided by (used in) financing activities	9,359	52,485	(1)
NET INCREASE IN CASH AND CASH EQUIVALENTS	1,317	46,938	13,035
CASH AND CASH EQUIVALENTS - Beginning of Year	81,188	34,250	21,215
CASH AND CASH EQUIVALENTS - End of Year	$ 82,505	$ 81,188	$ 34,250
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Income taxes paid	$ 6,786	$ 2,691	$ 3,016
SUPPLEMENTAL DISCLOSURES OF NON-CASH INVESTING AND FINANCING INFORMATION:			
Stock-based compensation capitalized as internal use software costs	$ 903	$ 40	$ 20
Property and equipment included in accounts payable and accrued expenses	$ 49	$ 111	$ 770
Capitalized software costs included in accounts payable and accrued expenses	$ 1,794	$ 1,336	$ 1,214
Non-cash exercise of convertible preferred stock warrant	$ —	$ —	$ 396
Deferred offering costs incurred during the period included in accounts payable and accrued expenses	$ —	$ 806	$ —

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. and subsidiaries ("Company" or "PubMatic") was founded in 2006. The Company is an independent technology company seeking to maximize customer value by delivering digital advertising's supply chain of the future. The Company's sell-side platform empowers the world's leading digital content creators across the open internet to control access to their inventory and increase monetization by enabling marketers to drive return on investment and reach addressable audiences across ad formats and devices.

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 2021, for example, refer to the fiscal year ended December 31, 2021.

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.

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, 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, 2021, including those resulting from the impacts of the COVID-19 pandemic, 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.

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, equity investment, accounts payable, and accrued liabilities. Cash equivalents, marketable securities and equity investment 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 (formerly Allowance for Doubtful Accounts)

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,		
	2021	2020	2019
Allowance for credit losses, beginning balance	$ 1,989	$ 2,051	$ 1,78
Provision	—	319	3,55
Write-offs	(224)	(381)	(3,29
Allowance for credit losses, ending balance	$ 1,765	$ 1,989	$ 2,05

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.

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.

Goodwill

Goodwill represents the excess of the aggregate fair value of the consideration transferred in a business combination over the fair value of the assets acquired, net of liabilities assumed. The Company tests for impairment of goodwill annually during the fourth quarter or more frequently if events or changes in circumstances indicate that the 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 goodwill impairment to date.

Equity Investment

Prior to December 2021, the Company accounted for investment in non-marketable equity securities that it does not exercise significant influence using the measurement alternative in accordance with Accounting Standards Update 2016-01. 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. Adjustments are determined primarily based on a market approach as of the transaction date. During December 2021, an observable transaction occurred for such investment driven by a merger with a company registered with the U.S. Securities and Exchange Commission (SEC) and determined to have an active market. Therefore, the investment has readily determinable and observable fair value as of December 31, 2021 with realized and unrealized gains and losses included in Other (income) expense, net. The Company classifies its equity investment as Other assets, non-current on the Consolidated Balance Sheets.

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 it 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, 2021, 2020 and 2019 were $0.5 million, $0.5 million and $0.3 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 RSA and 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. We account for forfeitures as they occur instead of estimating the number of awards expected to be forfeited. 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

The functional currency of the Company's foreign subsidiaries is the U.S. dollar. 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 and comprehensive income. The Company's net foreign currency (gain) losses recorded during the years ended December 31, 2021, 2020 and 2019 were $0.1 million, $0.6 million, and $0.4 million respectively.

Comprehensive Income

Comprehensive income is composed of two components: net income and other comprehensive gain (loss). The Company's changes in unrealized gains and losses on available-for-sale marketable securities represent the components of other comprehensive gain (loss) that are excluded from the reported net income.

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 a single reporting segment.

Concentration of Revenue and Accounts Receivable

The Company defines its revenue concentration based on revenue recognized from individual publishers. For the years ended December 31, 2021, 2020 and 2019, one publisher represented 17%, 20% and 28% respectively, of the Company’s revenue. As of December 31, 2021, two buyers accounted for 29% and 19%, respectively, of accounts receivable. As of December 31, 2020, four buyers accounted for 33%, 14%, 13% and 11%, respectively, of accounts receivable.

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. Prior to the conversion of preferred stock to common stock concurrent with the IPO in December 2020 and because the holders of the Company’s convertible preferred stock were entitled to participate in dividends, the Company allocated net income to common and preferred stock based on their respective rights to receive dividends, whether or not declared.

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 February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842), to increase transparency and comparability among organizations related to their leasing arrangements. This comprehensive new standard amends and supersedes existing lease accounting guidance and is intended to increase transparency and comparability among organizations by recognizing right-of-use (ROU) lease assets and lease liabilities on the balance sheet and requiring disclosure of key information about leasing arrangements. Lease expense continues to be recognized in a manner similar to legacy GAAP. The Company adopted the new lease standard on January 1, 2021 using the optional transition method to the modified retrospective approach. Under this transition provision, results for reporting periods beginning on January 1, 2021 are presented under Topic 842, while prior period amounts continue to be reported and disclosed in accordance with the Company's historical accounting treatment under ASC Topic 840, *Leases*.

To reduce the burden of adoption and ongoing compliance with Topic 842, a number of practical expedients and policy elections are available under the new guidance. The Company elected the "package of practical expedients" permitted under the transition guidance, which among other things, did not require reassessment of whether contracts entered into prior to adoption are or contain leases, and allowed carryforward of the historical lease classification for existing leases. The Company has not elected to adopt the "hindsight" practical expedient, and therefore will measure the ROU asset and lease liability using the remaining portion of the lease term at adoption on January 1, 2021.

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 (or January 1, 2021 for existing leases upon the adoption of Topic 842). 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'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 made an accounting policy election to account 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 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.

Adoption of Topic 842 resulted in the recording of ROU assets and lease liabilities related to the Company's operating leases of approximately $2.8 million and $3.1 million, respectively, on January 1, 2021. The adoption of the new lease standard did not materially impact our consolidated net income or consolidated cash flows and did not result in a cumulative-effect adjustment to the opening balance of retained earnings.

In June 2016, FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* (ASU 2016-13). This update changes the accounting for recognizing impairments of financial assets, such that credit losses for certain types of financial instruments will be estimated based on expected losses. The update also modifies the impairment models for available-for-sale debt securities and for purchased financial assets with credit deterioration since their origination. The Company adopted ASU 2016-13 as of January 1, 2021. The standard did not have any material impact on its consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles—Goodwill and Other: Simplifying the Test for Goodwill Impairment* (ASU 2017-04). ASU 2017-04 eliminates Step 2 from the goodwill impairment test which measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. Under ASU 2017-04, an entity should perform its annual or interim goodwill impairment test by comparing the fair value of the reporting unit with its carrying amount, and should recognize an impairment loss for the amount by which the carrying amount exceeds the reporting unit's fair value, with the loss not exceeding the total amount of goodwill allocated to that reporting unit. The Company adopted ASU 2017-04 as of January 1, 2021. The standard did not have any material impact on its consolidated financial statements.

In December 2019 the FASB issued ASU 2019-12—Simplifying the Accounting for Income Taxes (ASU 2019-12). ASU 2019-12 simplifies the accounting for income taxes by removing certain exceptions to general principles in Topic 740 and clarifies and amends existing guidance for clarity and consistent application.The Company adopted ASU 2019-12 as of January 1, 2021. The standard did not have a material impact on the condensed consolidated financial statements and related 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 I – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;

- Level II – 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 III – 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 I and II assets. The Company had no Level III assets or liabilities for the periods presented. The Company classifies its cash equivalents and marketable securities within Level I or Level II 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 table sets 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, 2021			
	Level I	Level II	Level III	Total
Financial Assets				
Money market funds	$ 65,311	$ —	$ —	$ 65,311
Certificates of deposit	—	5,942	—	5,942
Cash equivalents	65,311	5,942	—	71,253
Commercial paper	—	50,954	—	50,954
U.S. Treasury and government debt securities	—	26,167	—	26,167
Marketable securities	—	77,121	—	77,121
Equity investment	5,948	—	—	5,948
Non-current assets	5,948	—	—	5,948
Total Financial Assets	$ 71,259	$ 83,063	$ —	$ 154,322

	December 31, 2020			
	Level I	Level II	Level III	Total
Financial Assets				
Money market funds(1)	$ 12,462	$ —	$ —	$ 12,462
Commercial paper(1)	—	7,199	—	7,199
Cash equivalents	12,462	7,199	—	19,661
U.S. Treasury and government debt securities	—	8,999	—	8,999
Commercial paper	—	10,794	—	10,794
Marketable securities	—	19,793	—	19,793
Total Financial Assets	$ 12,462	$ 26,992	$ —	$ 39,454

(1) The amounts were previously combined and presented as cash equivalents. Prior periods have been reclassified to conform with current period presentation.

Note 4 – Balance Sheet Components

Marketable Securities

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

	December 31, 2021			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value
Commercial paper	$ 50,954	$ —	$ —	$ 50,954
U.S. Treasury and government debt securities	26,203	—	(36)	26,167
Total	$ 77,157	$ —	$ (36)	$ 77,121

	December 31, 2020			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value
Commercial paper	$ 10,794	$ —	$ —	$ 10,794
U.S. Treasury and government debt securities	8,998	1	—	8,999
Total	$ 19,792	$ 1	$ —	$ 19,793

The remaining contractual maturity of all marketable securities was within one year as of December 31, 2021 and 2020. Realized gains and losses were not material for the years ended December 31, 2021, 2020 and 2019. As of December 31, 2021 and 2020, 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 consists of the following (in thousands):

	December 31,	
	2021	2020
Internal-use software	$ 30,581	$ 24,513
Network hardware, computer equipment and software	92,561	62,764
Leasehold improvements	2,426	1,249
Furniture and fixtures	1,448	621
Property, equipment and software, gross	127,016	89,147
Less: accumulated depreciation and amortization	(76,876)	(59,103)
Total property, equipment and software, net	$ 50,140	$ 30,044

Depreciation and amortization expense related to property, equipment, and software (excluding amortization of internal use software) was $15.7 million, $9.8 million, and $6.9 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The Company capitalized $10.3 million, $7.3 million, and $6.0 million in software development costs during the years ended December 31, 2021, 2020 and 2019, respectively. Amortization expense of internal use software was $7.4 million, $5.9 million, and $5.4 million for the years ended December 31, 2021, 2020 and 2019, respectively. These costs are included within cost of revenue in the consolidated statements of operations and comprehensive income.

The Company did not recognize any impairment charges on its long-lived assets during the year ended December 31, 2021 and 2020. During the year ended December 31, 2019 the Company discontinued offering its Unified Ad Server product which is part of capitalized software development and recorded a $0.7 million impairment charge in cost of revenue in the Company's consolidated statement of operations and comprehensive income.

Accounts Payable

Accounts payable consists of the following (in thousands):

	December 31,	
	2021	2020
Payable to publishers	$ 235,440	$ 168,673
Trade payables	8,881	8,058
Total accounts payable	$ 244,321	$ 176,731

Accrued Expenses

Accrued expenses consist of the following (in thousands):

	December 31,	
	2021	2020
Accrued compensation	$ 17,271	$ 13,352
Accrued and other current liabilities	1,509	1,492
Total accrued expenses	$ 18,780	$ 14,844

Note 5 – Loan and Security Agreement

In June 2021, the Company amended and restated its loan and security agreement (the "Loan Agreement") with Silicon Valley Bank ("SVB".) The Loan Agreement provides a senior secured revolving credit facility of up to $25.0 million or 80% of eligible accounts receivable less certain reserves, minus the aggregate principal amount of all outstanding advances. Interest accrues on advances under the revolving line of credit at a variable rate equal to the greater of prime rate or 3.25%. As of December 31, 2021, the applicable interest rate under the revolving line of credit was 3.25%. An unused revolver fee in the amount of 0.40% per annum of the average unused portion of the revolver line is charged and is payable quarterly in arrears in any quarter where the average closing outstanding balance is less than $5.0 million. The maturity date of the revolving line of credit is June 6, 2024. As of December 31, 2021 there were no outstanding advances under the revolving line of credit.

The Company's obligations under the line of credit and the letters of credit (described in Note 6) with SVB are secured by substantially all of its assets excluding its intellectual property. The Loan Agreement contains affirmative covenants including financial covenants that, among other things, require the Company to maintain an adjusted quick ratio of no less than 1.00 to 1.00. The adjusted quick ratio is defined as the ratio of unrestricted cash and cash equivalents at SVB, plus billed accounts receivable to total accounts payable plus all SVB loans outstanding and outstanding letters of credit. The Loan Agreement also restricts the Company from paying dividends to stockholders without prior consent from SVB. The Company was in compliance with the financial covenants as of December 31, 2021.

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 2 to 10 years. Included in an office lease the Company also leases furniture and fixtures under a finance lease with a seven year term finance lease 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 10 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 ROU assets and interest expense for the outstanding lease liabilities, and results in a front-loaded expense pattern over the lease term. The components of lease expense are as follows:

	2021
Operating lease cost	$ 2,104
Finance lease cost - amortization of right-of-use assets	14
Finance lease cost - interest on lease liabilities	2
Total lease cost	$ 2,120

Rent expense was approximately $2.5 million, $2.5 million, and $2.6 million for the year ended December 31, 2021, 2020, and 2019, respectively. Rent expense was offset by sublease income of $0.4 million and $0.6 million for the years ended December 31, 2020 and 2019, respectively. No sublease income was recognized for the year ended December 31, 2021. Short-term and variable lease expenses are not material to the Company's consolidated financial statements.

Supplemental cash flow information related to leases is as follows:

	2021
Cash paid for amounts included in measurement of lease liabilities:	
Operating cash outflows - payments on operating leases	$ 2,283
Right-of-use assets obtained in exchange for new lease obligations:	
Operating leases	$ 20,887
Finance leases	869

Supplemental balance sheet information related to leases is as follows:

		2021
Operating leases		
Operating lease right-of-use assets	$	21,613
Operating lease liabilities, current	$	3,864
Operating lease liabilities, non-current		17,842
Total operating lease liabilities	$	21,706
Finance leases		
Furniture and fixtures	$	869
Accumulated depreciation		(14)
Furniture and fixtures, net	$	855
Accrued liabilities	$	119
Other liabilities, non-current		741
Total finance lease liabilities	$	860

Weighted-average remaining lease term:	
Operating leases	6 years
Finance leases	6.3 years
Weighted-average discount rate:	
Operating leases	2.20 %
Finance leases	2.24 %

As of December 31, 2021, the maturities of lease liabilities under operating and finance leases were as follows:

Year ending December 31,		Operating leases		Finance leases		Total
2022	$	4,298	$	136	$	4,434
2023		3,470		140		3,610
2024		3,459		145		3,604
2025		3,563		149		3,712
2026		3,670		153		3,823
Thereafter		4,750		200		4,950
Total minimum lease payments	$	23,210	$	923	$	24,133
Less: imputed interest		(1,504)		(63)		(1,567)
Total present value of lease liabilities	$	21,706	$	860	$	22,566

A summary of the future minimum lease commitments, as determined under Topic 840, for all non-cancelable operating lease agreements were as follows as of December 31, 2020:

2021	$	2,179
2022		1,031
2023		108
Total minimum lease commitments	$	3,318

Note 7 – Commitments and Contingencies

Contractual Obligations

In the normal course of business, we enter into contractual obligations with various parties, primarily relate to minimum contractual payments due to data center providers. As of December 31, 2021, our outstanding contractual obligations with a term of 12 months or longer consist of the following (in thousands):

Years ending December 31,		Contractual Obligations
2022		10,506
2023		14,598
2024		6,540
2025		137
Total future minimum commitments, net	$	31,781

Letters of Credit

As of December 31, 2021, the Company had two irrevocable letters of credit outstanding related to noncancelable facilities leases in the amounts of $3.5 million and $0.7 million, with annual automatic renewal and final expiration dates in July 2028 and June 2022, respectively. As of December 31, 2020, the Company had an irrevocable letter of credit outstanding related to noncancelable facilities leases in the amounts of $0.7 million, with annual automatic renewal and final expiration date in June 2022.

Legal Matters

From time to time, the Company has become involved in claims and other legal matters arising in the normal course of business. The Company investigates these claims as they arise and accrues for contingencies when the Company believes that a loss is probable and that the Company can reasonably estimate the amount of any such loss. The Company has made an assessment of the probability of incurring any such losses and whether or not those losses are estimable and although claims are inherently unpredictable the Company concluded that these losses are not material to the Company’s business, financial position, results of operations, or cash flows. To the extent 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 8 – Convertible Preferred Stock

Upon completion of the IPO on December 11, 2020, all shares of convertible preferred stock outstanding, totaling 33,443,969 shares, were automatically converted into an equivalent number of shares of Class B common stock on a one-to-one basis and their carrying value of $61.2 million was reclassified into stockholders' equity. As of December 31, 2020, there were no shares of convertible preferred stock issued and outstanding.

In connection with the IPO, our amended and restated certificate of incorporation became effective, which authorized the issuance of 10,000,000 shares of undesignated preferred stock with a par value of $0.0001 with rights and preferences, including voting rights, designated from time to time by our board of directors.

Note 9 – Stockholders' Notes Receivable and Redeemable Common Stock

In August 2018, the Company loaned its Chief Executive Officer and Chief Growth Officer a total of $4.0 million under secured nonrecourse promissory notes (the "Notes"). Per the terms of the Notes, they had interest at a rate of 2.42% per annum compounded annually and matured on August 30, 2021, with interest and principal due at maturity. The Notes were secured by pledges of 1.6 million shares of outstanding common stock of the Company owned by the two officers (the "Pledged Shares").

As the Company's only recourse on the Notes and associated interest was the Pledged Shares, the Notes were accounted for as nonrecourse and recorded to stockholders' equity. This was accounted for as though the Company repurchased the Pledged Shares and in exchange issued the Notes and granted 1.6 million fully vested stock options with an exercise price equal to the face value of Notes plus interest. Incremental compensation expense of $1.0 million was recorded as stock-based compensation expense within the consolidated statements of operations and comprehensive income and was calculated as the difference between the Repurchase Price (defined as the face value of the Notes and the fair value of the stock options) and the fair value of the Pledged Shares. In year ended December 31, 2020, all principal and interest due under the notes were prepaid. No principal or interest payments were paid during the year ended December 31, 2021.

In connection with the Notes, the Company provided the officers with a right to sell to the Company outstanding shares of common stock upon settlement of the Notes (the "Put Option"). The officers could have only exercised the Put Option upon repayment of the Notes using the Pledged Shares or upon the prepayment of the Notes using proceeds from the officers' sale or disposal of the Pledged Shares at a price less than the face value of the Notes. The Put Option allowed the officers to require the Company to repurchase any or all common stock held or beneficially owned to offset their tax liabilities resulting from the settlement of the Notes via one of the above methods. As the exercisability of the Put Option and therefore redemption of the common stock was outside the control of the Company then all common stock held or beneficially owned by the officers required temporary equity classification. The Company therefore classified $19.0 million of common stock outside of stockholders' equity, which represented the fair value of the shares held or beneficially owned on the transaction date. The Company did not adjust the carrying value of the redeemable common stock during the year ended December 31, 2019 since a redemption event was not probable. The Put Option expired unexercised upon the repayment of the Notes and during the Company's quarter ended September 30, 2020, the $19.0 million of redeemable common stock has been reclassified back to common stock.

Note 10 – Stockholders' Equity and Equity Incentive Plans

Common Stock

In connection with the IPO in December 2020, the Company's restated certificate of incorporation became effective, which 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.

Equity Incentive Plans

Prior to the IPO, the Company maintained two equity incentive plans: the 2006 Stock Option Plan (the "2006 Plan") and the 2017 Equity Incentive Plan. In February 2017, the Company adopted the 2017 Equity Incentive Plan (the "2017 Plan") and all shares remaining unissued under the 2006 Stock Option Plan were assumed by the 2017 Plan. Upon completion of the IPO, the Company adopted the 2020 Equity Incentive Plan ("2020 Plan"), which serves as the successor to the 2017 Plan. Under the 2020 Plan, 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, 2021, the Company has reserved 6,386,698 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. To the extent outstanding awards under the 2017 Plan and the 2006 Plan are forfeited, lapse 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. No new awards were issued under the 2006 Plan or 2017 Plan after the effective date of 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 10 years from the date of grant.

The following summarizes stock option activity:

	Options Outstanding			
	Number of Shares Underlying Outstanding Options	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding — December 31, 2020	8,459,969	$ 2.53	6.83	$ 215,144
Options granted	660,466	$ 36.74		
Options exercised	(2,511,505)	$ 2.16		
Options canceled	(66,419)	$ 6.38		
Options expired	(160)	$ 0.26		
Outstanding — December 31, 2021	6,542,351	$ 6.08	6.95	$ 184,727
Vested and exercisable — December 31, 2021	4,341,907	$ 3.56	6.17	$ 132,770

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 $80.7 million, $15.7 million and $0.1 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The weighted-average grant date fair value of options granted was $20.30, $4.96 and $1.65 for the years ended December 31, 2021, 2020 and 2019, respectively. As of December 31, 2021, unrecognized stock-based compensation of $17.0 million related to unvested stock options will be recognized on a straight-line basis over a weighted average period of 2.69 years.

The Black-Scholes assumptions used to value the employee options at the grant dates are as follows:

	Year Ended December 31,		
	2021	2020	2019
Fair market value of common stock	$39.75-$54.07	$3.20-$17.00	$3.01-$3.18
Expected term (in years)	5.8-6.7	5.7-6.4	5.2-6.6
Risk-free interest rate	0.6%-1.0%	0.3%-1.5%	1.4%-2.6%
Expected volatility	51%-54%	50%-55%	52%-54%
Dividend rate	—%	—%	—%

Each of these inputs is subjective and generally requires significant judgment to determine. These assumptions and estimates were determined as follows:

Fair Value of Common Stock - Prior to the Company's IPO, the fair value was determined by the board of directors, with input from management and valuation reports prepared by third-party valuation specialists. After the Company's IPO, the fair value of each share of underlying common stock was based on the closing price of our 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

Restricted stock awards generally vest over four years, subject to the holder's continued service through the vesting date. A summary of RSU activity under the Company's equity incentive plan and related information is as follows:

	RSUs		
	Number of Shares	**Weighted-Average Grant Date Fair Value per Share**	**Aggregate Intrinsic Value (in thousands)**
Unvested — December 31, 2020	—	$ —	$ —
Granted	582,259	35.24	—
Vested	(79,838)	35.91	—
Canceled/Forfeited	(19,119)	32.69	—
Unvested — December 31, 2021	483,302	$ 35.23	$ 17,025

As of December 31, 2021, unrecognized stock-based compensation of $15.7 million related to unvested RSUs will be recognized on a straight-line basis over a weighted average period of 3.34 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 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, 2021, the Company has reserved 713,475 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, beginning December 9, 2020 through May 31, 2022 with the purchase date on the last day of each purchase period. As of December 31, 2021, $0.3 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 and other current liabilities. For the twelve months ended December 31, 2021, 276,406 shares of our Class A common stock have been purchased under the ESPP.

As of December 31, 2021, unrecognized stock-based compensation expense related to the ESPP was $1.4 million, which is expected to be recognized over a weighted-average period of 0.41 years.

We estimated the fair value of ESPP purchase rights on the date of the grant using a Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,
	2021
Expected term (in years)	0.4-1.4
Risk-free interest rate	0.1%
Expected volatility	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 - Since the Company has 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 considers to be comparable to its business over a period equivalent to the expected term of the awards.

Dividend rate - The Company has never declared or paid any cash dividends and does not presently plan to pay cash dividends in the foreseeable future. As a result, an expected dividend yield of zero percent was used.

Stock-Based Compensation

The stock-based compensation expense by line item in the accompanying consolidated statements of operations is summarized as follows:

	December 31,		
	2021	2020	2019
Cost of revenue	$ 825	$ 86	$ 26
Technology and development	2,232	599	402
Sales and marketing	5,176	1,101	684
General and administrative	5,874	1,777	890
Total stock-based compensation	14,107	3,563	2,002
Tax benefit from stock-based compensation	(1,825)	(493)	(181)
Total stock-based compensation, net of tax effect	$ 12,282	$ 3,070	$ 1,821

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,		
	2021	2020	2019
	(in thousands, except share and per share data)		
Numerator:			
Net income	$ 56,604	$ 26,613	$ 6,6
Less: Undistributed earnings allocated to participating securities	—	(20,187)	(6,2
Net income attributable to common stockholders – basic	$ 56,604	$ 6,426	$ 4
Denominator:			
Weighted average common shares outstanding – basic	50,184,455	12,642,293	10,036,9
Net income per share attributable to common stockholders – basic:	$ 1.13	$ 0.51	$ 0.
Numerator:			
Net income attributable to common stockholders - diluted	$ 56,604	$ 7,929	$ 5
Denominator:			
Weighted average shares outstanding – basic	50,184,455	12,642,293	10,036,9
Options to purchase common stock	6,353,779	4,483,589	2,119,7
Restricted stock	29,662	—	-
Employee stock purchase plan shares	60,678	—	-
Warrants to purchase common stock	—	—	13,1
Weighted average shares outstanding – diluted	56,628,574	17,125,882	12,169,8
Net income per share attributable to common stockholders – diluted	$ 1.00	$ 0.46	$ 0.

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:

	Year Ended December 31,		
	2021	2020	2019
Options to purchase common stock	671,244	846,481	3,359,4
Common stock issuable upon conversion of convertible preferred stock	—	—	33,410,2
Total excludable from net income per share attributable to common stockholders – diluted	671,244	846,481	36,769,7

Note 12 – Income Taxes

The following table presents domestic and foreign components of income (loss) before income taxes for the periods presented (in thousands):

	December 31, 2021		December 31, 2020		December 31, 2019	
Domestic	$	61,822	$	28,169	$	6,9
International		2,981		3,411		2,2
Income before provision for income taxes	$	64,803	$	31,580	$	9,2

The income tax (benefit) provision is composed of the following (in thousands):

	December 31, 2021		December 31, 2020		December 31, 2019	
Current provisions for income taxes:						
Federal	$	2,437	$	360	$	1,6
State		714		240		
Foreign		295		1,434		6
Total current tax expense		3,446		2,034		2,3
Deferred tax expense:						
Federal	$	4,513	$	1,845	$	2
State		251		1,170		
Foreign		(11)		(82)		(
Total deferred tax expense		4,753		2,933		1
Total provision for income taxes	$	8,199	$	4,967	$	2,5

The following table presents a reconciliation of the statutory federal rate and the Company's effective tax rate for the periods presented:

	December 31, 2021		December 31, 2020		December 31, 2019
Statutory federal income tax rate	21.00	%	21.00	%	21.00
State after-tax rate	1.49		4.47		0.67
Stock options	(10.38)		(6.79)		5.48
Research credit	(1.37)		(2.04)		(2.85)
Transfer pricing reserve	(1.26)		1.32		(0.68)
Foreign rate differential	0.73		0.61		2.37
Foreign derived intangible income	(0.48)		(3.26)		(7.89)
Section 162(m) limitation	2.49		—		—
Other	0.42		0.42		9.86
	12.64	%	15.73	%	27.96

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. The following table presents the significant components of the Company's deferred tax assets and liabilities for the periods presented (in thousands):

	December 31,					
		2021		**2020**		**2019**
Deferred tax assets:						
Net operating loss carryforwards	$	56	$	124	$	1
Accruals and allowances		1,104		614		7
Tax credits		1,396		1,631		1,0
Stock-based compensation		3,171		2,045		1,7
Intangibles assets		1,010		1,106		1,2
Lease obligation		5,226		—		—
Other		808		1,101		9
Valuation allowance		(1,396)		(1,372)		—
Total deferred tax assets		11,375		5,249		5,9
Deferred tax liabilities:						
Property, equipment, and software		(8,316)		(4,995)		(3,0
Goodwill		(749)		(653)		(5
Prepaid expense		(1,365)		(400)		(2
Right-of-use asset		(5,201)		—		—
Unrealized gain on equity investment		(1,296)		—		—
Total deferred tax liabilities		(16,927)		(6,048)		(3,8
Net deferred income tax asset (liabilities)	$	(5,552)	$	(799)	$	2,1

The Company had gross state net operating loss carryforwards of approximately $1.9 million as of December 31, 2021. These 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, 2021, the Company had state research and development credit carryforwards of $2.9 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, 2021 and 2020, 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 historically provided for U.S. deferred taxes on the cumulative earnings of non-U.S. affiliates that have been reinvested indefinitely. However, under the 2017 Tax Act the Company was deemed to have repatriated the cumulative earnings of its non-U.S. affiliates and the U.S. liability associated with those cumulative earnings has been reflected in the current federal tax provision. In addition, the Tax Act has enacted tax provisions that will subject all foreign earnings to U.S. taxation. The Company will continue to maintain its policy of indefinite reinvestment to the extent that the repatriation of foreign earnings are 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,		
	2021	2020	2019
Gross unrecognized income tax benefits — beginning balance	$ 3,208	$ 2,369	$ 2,2
Increases related to tax positions taken during the current year	649	951	5
Decreases related to tax positions taken during prior years	(1,493)	(112)	(38
Increases related to tax positions taken during the prior years	—	—	[illegible]
Gross unrecognized income tax benefits — ending balance	$ 2,364	$ 3,208	$ 2,3

The Company recognizes interest and penalties, if any, related to uncertain tax positions in its income tax provision. As of December 31, 2021 and 2020, the Company had approximately $0.1 million and $0.3 million, respectively, of accrued interest related to uncertain tax positions.

All of the $2.4 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. The Company is currently under audit by the IRS for the U.S. 2019 federal tax return. There are currently no income tax audits involving any U.S. states or foreign tax jurisdictions.

Note 13 – Segment Information

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

	Year Ended December 31,		
	2021	2020	2019
United States	$ 139,049	$ 96,886	$ 77,31
EMEA	62,531	34,156	23,64
APAC	20,910	15,087	10,98
Rest of the world	4,418	2,619	1,92
Total	$ 226,908	$ 148,748	$ 113,87

The Company’s long-lived assets, net by geographic area are summarized as follows (in thousands):

	Year Ended December 31,			
	2021		2020	
United States	$	42,059	$	24,58
Rest of the world		8,081		5,46
Total	$	50,140	$	30,04

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 no matching contribution to the 401(k) Plan for the year ended December 31, 2021 and December 31, 2020.

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, 2021 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, 2021 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, 2021 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.

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ITEM 9B. OTHER INFORMATION

Not applicable.

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 RELATIONSHIP 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**	
3.1	Restated Certificate of Incorporation.	10-K	001-39748	3.1	3/26/2021	
3.2	Restated Bylaws.	10-K	001-39748	3.2	3/26/2021	
4.1	Form of Class A Common Stock Certificate.	S-1/A	333-250077	4.1	11/30/2020	
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	11/13/2020	
4.3	Description of the Registrant's Securities.	10-K	001-39748	4.3	3/26/2021	
10.1*	Form of Indemnification Agreement.	S-1	333-250077	10.1	11/13/2020	
10.2*	2006 Stock Option Plan, as amended.	S-1	333-250077	10.2	11/13/2020	
10.3*	2017 Equity Incentive Plan, as amended.	S-1	333-250077	10.4	11/13/2020	
10.4*	2020 Equity Incentive Plan.	S-1/A	333-250077	10.5	11/30/2020	
10.5*	2019 Executive Bonus Plan.	S-1	333-250077	10.3	11/13/2020	
10.6*	2020 Executive Bonus Plan.	10-K	001-39748	10.4	3/26/2021	
10.7*†	2021 Executive Bonus Plan.	8-K	001-39748	10.6	03/25/2020	
10.8*	2022 Executive Bonus Plan.					X
10.9*	2020 Employee Stock Purchase Plan, and form of subscription agreement.	S-1/A	333-250077	10.6	11/30/2020	
10.10*	Executive Deferred Compensation Plan.	8-K	001-39748	10.7	03/25/2021	

Exhibit Number	Description of Document	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.11*	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	11/30/2020	
10.12*	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	11/30/2020	
10.13*	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	11/30/2020	
10.14*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Rajeev K. Goel.	8-K	001-39748	10.2	03/25/2021	
10.15*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Amar K. Goel.	8-K	001-39748	10.3	03/25/2021	
10.16*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Steven Pantelick.	8-K	001-39748	10.4	03/25/2021	
10.17*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Jeffrey Hirsch.	8-K	001-39748	10.5	3/25/2021	
10.18*	Retention Agreement, dated as of January 29, 2021, by and between the Registrant and Mukul Kumar.					X
10.19	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	11/13/2020	
10.20	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	03/25/2021	
10.21	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	4/9/2021	
10.22	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	6/8/2021	
10.23†	Google Exchange Integration Agreement, dated May 14, 2018, by and between the Registrant and Google Inc, as amended.	S-1	333-250077	10.14	11/13/2020	

Exhibit Number	Description of Document	Incorporated by Reference Form	File No.	Exhibit	Filing Date	Filed Herewith
10.24†	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	11/13/2020	
10.25†	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	11/13/2020	
10.26†	Sublease Agreement, dated as of October 20, 2021, by and between PubMatic, Inc. and Chan Zuckerberg Initiative, LLC.	10-Q	001-39748	10.1	11/10/2021	
10.27	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	11/10/2021	
10.28	Office Lease Agreement, dated August 22, 2014, by and between the Registrant and BRE/NYT L.L.C.	S-1	333-250077	10.18	11/13/2020	
10.29	Leave and License Agreement, dated February 23, 2018, by and between Pubmatic India Private Limited and His Holiness Dr. Syedna Taher Saifuddin Memorial Foundation.	S-1	333-250077	10.19	11/13/2020	
10.30*	Form of Tier 1 Retention Agreement.	S-1/A	333-250077	10.20	11/30/2020	
10.31*	Form of Tier 2 Retention Agreement.	S-1/A	333-250077	10.21	11/30/2020	
21.1	Subsidiaries of the Registrant.					X
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

Exhibit Number	Description of Document	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
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
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, 2022

PUBMATIC, INC.

By: /s/ Rajeev K. Goel

Rajeev K. Goel
Chief Executive Officer

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.

Signature	Title	Date
/s/ Rajeev K. Goel Rajeev K. Goel	Chief Executive Officer and Director *(Principal Executive Officer)*	February 28, 2022
/s/ Steven Pantelick Steven Pantelick	Chief Financial Officer *(Principal Financial Officer)*	February 28, 2022
/s/ Michael van der Zweep Michael van der Zweep	Controller *(Principal Accounting Officer)*	February 28, 2022
/s/ Cathleen Black Cathleen Black	Director	February 28, 2022
/s/ W. Eric Carlborg W. Eric Carlborg	Director	February 28, 2022
/s/ Susan Daimler Susan Daimler	Director	February 28, 2022
/s/ Amar K. Goel Amar K. Goel	Director	February 28, 2022

Exhibit 10.8

(***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.)

PubMatic

2022 Executive Bonus Plan

Overview
This 2022 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, 2022 through December 31, 2022 (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 Commercial Officer; Chief Growth Officer; Chief Technology Officer; Chief Marketing Officer; General Counsel; SVP, Product Management; SVP, Human Resources, 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

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

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

<u>Adjusted Pre-Tax Net Income</u>: Company's earnings before income taxes and excluding stock-based compensation costs.

<u>Bonus Payment Date</u>: 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, 2023.

<u>Bonus Pool</u>: 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 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 2022 and a 50% weighting will apply to 2H 2022.

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 [***]

Company-Approved Leaves of Absence

If a Participant goes on a Company-approved leave of absence in excess of thirty (30) days, the Company may revise the Participant's targets on a pro-rated basis from thirty (30) days following the last day of work prior to leave and the first day of work upon return from leave. Bonuses for a Plan Period during which a Participant is on a Company-approved leave of absence will be prorated and will not accrue after thirty (30) days while the Participant is on leave, subject to applicable law.

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 designed 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, make goods 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-- 2022 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 2022 Target**	**2H 2022 Target**
Revenue (GAAP)	**100%**	[***]	[***]

Exhibit B – FY 2022 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 2022 Target**	**2H 2022 Target**
Adjusted Pre-Tax Net Income	[***]	[***]

Exhibit 10.18

Retention Agreement

This Retention Agreement (the "**Agreement**") is entered into as of January 29, 2021 (the "**Effective Date**") by and between Mukul Kumar (the "**Executive**") and PubMatic, Inc., a Delaware corporation (the "**Company**").

1. Term of Agreement.

Except to the extent renewed as set forth in this Section 1, this Agreement shall terminate the earlier of the third (3rd) anniversary of the Effective Date (the "**Expiration Date**") or the date the Executive's employment with the Company terminates for a reason other than a Qualifying Termination or CIC Qualifying Termination; *provided however*, if a definitive agreement relating to a Change in Control has been signed by the Company on or before Expiration Date, then this Agreement shall remain in effect through the earlier of:

(a) The date the Executive's employment with the Company terminates for a reason other than a Qualifying Termination or CIC Qualifying Termination, or

(b) The date the Company has met all of its obligations under this Agreement following a termination of the Executive's employment with the Company due to a Qualifying Termination or CIC Qualifying Termination.

This Agreement shall renew automatically and continue in effect for three (3) year periods measured from the initial Expiration Date, unless the Company provides Executive notice of non-renewal at least three (3) months prior to the date on which this Agreement would otherwise renew. For the avoidance of doubt, and notwithstanding anything to the contrary in Section 2 or 3 below, the Company's non-renewal of this Agreement shall not constitute a Qualifying Termination or CIC Qualifying Termination.

2. Notice of Termination.

To the extent permitted by law, by his or her signature below, Executive hereby agrees that he or she shall provide the Company with at least two (2) months of advance written notice prior to voluntarily terminating his or her employment with or service to the Company. For the avoidance of doubt, this notice requirement shall not apply in the event of Executive's resignation for Good Reason. Further, for the avoidance of doubt, nothing in this Section 2 shall restrict the ability of the Company to cancel such two (2) month notice period or otherwise to terminate Executive's employment at any time, with or without Cause, subject to the provisions of this Agreement.

3. Qualifying Termination. If the Executive is subject to a Qualifying Termination, then, subject to Sections 5, 7, 10, and 11 below, Executive will be entitled to the following benefits:

(a) **Severance Benefits.** The Company shall pay the Executive (i) twelve (12) months of his or her monthly base salary (at the rate in effect immediately prior to the actions that resulted in the Qualifying Termination), and (ii) pro-rata payment of Executive's then-current target bonus amount. Such severance payment shall be paid in accordance with the Company's standard payroll procedures. The Executive will receive his or her severance payments in a cash lump-sum which will be made on the first business day occurring after the sixtieth (60th) day following the Separation, *provided that* the Release Conditions have been satisfied.

(b) **Extension of Exercise Period.** To the extent applicable, each of Executive's then-outstanding vested options to purchase shares of Company common stock ("***Options***") will remain outstanding and exercisable for twelve (12) months following the Qualifying Termination (provided that in no event will the terminated Executive's Options remain outstanding beyond the expiration of the Option's maximum term).

(c) **Continued Employee Benefits**. If Executive timely elects continued coverage under the Consolidated Omnibus Budget Reconciliation Act ("**COBRA**"), the Company shall continue Executive's coverage under the Company's health, dental and vision plans, including coverage for the Executive's eligible dependents, for the twelve (12) month period following the Executive's Separation or, if earlier, until Executive is eligible to be covered under another substantially equivalent medical insurance plan by a subsequent employer. Notwithstanding the foregoing, the Company may elect to provide Executive, in lieu of any portion of such continued coverage, taxable installment payments equal in amount to the applicable premiums in effect as of Executive's Separation for the remainder of the twelve (12) month continuation period; *provided that*, Executive shall have no right to an additional gross-up payment to account for the fact that such COBRA premium amounts are paid on an after-tax basis.

4. **CIC Qualifying Termination.** If the Executive is subject to a CIC Qualifying Termination, then, subject to Sections 5, 7, 10, and 11 below, Executive will be entitled to the following benefits, which shall be mutually exclusive of any benefits provided under Section 3:

(a) **Severance and Bonus Payments**. The Company or its successor shall pay the Executive (i) twelve (12) months of his or her monthly base salary (at the rate in effect immediately prior to the actions that resulted in the Separation), (ii) 100% of Executive's then-current target bonus opportunity, and (iii) pro-rata payment of Executive's then-current target bonus amount. Such payment shall be paid in a cash lump sum payment in accordance with the Company's standard payroll procedures, which payment will be made on the first business day occurring after the sixtieth (60^{th}) day following the Separation, *provided that* the Release Conditions have been satisfied. For the avoidance of doubt, in the event that a Change of Control occurs within three (3) months following a Qualifying Termination, then, provided that such Qualifying Termination followed a Potential Change of Control, the Executive shall receive additional payments as necessary in order to provide the benefits described in this Section 4(a).

(b) **Equity.** Each of Executive's then outstanding Equity Awards, shall accelerate and become vested and exercisable as to 100% of the total shares underlying such Equity Awards. Subject to Section 5, the accelerated vesting described above shall be effective as of the Separation. For the avoidance of doubt, in order to give effect to the acceleration contemplated by this Section 4(b), each of Executive's outstanding Equity Awards shall remain outstanding and eligible to vest (solely pursuant to the terms of this Section 4(b)) for a period of three (3) months following a Qualifying Termination in order to give effect to this Section 4(b). Further, following the application of such acceleration, each of Executive's then-outstanding vested Options will remain outstanding and exercisable for twelve (12) months following the CIC Qualifying Termination (provided that in no event will the terminated Executive's Options remain outstanding beyond the expiration of the Option's maximum term).

(c) **Continued Employee Benefits**. If Executive timely elects continued coverage under the Consolidated Omnibus Budget Reconciliation Act ("**COBRA**"), the Company shall continue Executive's coverage under the Company's health, dental and vision plans, including coverage for the Executive's eligible dependents, for the fifteen (15) month period following the Executive's Separation or, if earlier, until Executive is eligible to be covered under another substantially equivalent medical insurance plan by a subsequent employer. Notwithstanding the foregoing, the Company may elect to provide Executive, in lieu of any portion of such continued coverage, taxable installment payments equal in amount to the applicable premiums in effect as of Executive Separation for the remainder of the fifteen (15) month continuation period; *provided that*, Executive shall have no right to an additional gross-up payment to account for the fact that such COBRA premium amounts are paid on an after-tax basis.

5. **General Release.** Any other provision of this Agreement notwithstanding, the benefits under Section 3 and 4 shall not apply unless the Executive (i) has executed a general release (in a form prescribed by the Company) of all known and unknown claims that he or she may then have against the Company or persons affiliated with the Company and such release has become effective by no later than the 60^{th} day following the date of Executive's termination and (ii) has agreed not to prosecute any legal action or other proceeding based upon any of such claims. The release must be in the form prescribed by the Company, without alterations (this document effecting the foregoing, the "**Release**"). The Company will deliver the form of Release to the Executive within thirty (30) days after the Executive's Separation. The Executive must execute, return, and make effective the Release within the time period specified in the form, but no later than 60 days following the Separation.

6. **Accrued Compensation and Benefits.** Notwithstanding anything to the contrary in Section 3 and 4 above, in connection with any termination of employment upon or following a Change in Control (whether or not a

Qualifying Termination or CIC Qualifying Termination), the Company shall pay Executive's earned but unpaid base salary and other vested but unpaid cash entitlements for the period through and including the termination of employment, including unused earned vacation pay (if applicable) and unreimbursed documented business expenses incurred by Executive prior to the date of termination (collectively "**Accrued Compensation and Expenses**"), as required by law and applicable Company plans or policies. In addition, Executive shall be entitled to any other vested benefits earned by Executive for the period through and including the termination date of Executive's employment under any other employee benefit plans and arrangements maintained by the Company, in accordance with the terms of such plans and arrangements, except as modified herein (collectively "**Accrued Benefits**"). Any Accrued Compensation and Expenses to which the Executive is entitled shall be paid to the Executive in cash as soon as administratively practicable after the termination, and, in any event, no later than two and one-half (2-1/2) months after the end of the taxable year of the Executive in which the termination occurs or at such earlier time as may be required by Section 11 below or to such lesser extent as may be mandated by Section 10 below. Any Accrued Benefits to which the Executive is entitled shall be paid to the Executive as provided in the relevant plans and arrangements.

7. Covenants.

(a) **Invention Assignment and Confidentiality Agreement.** The Executive agrees and acknowledges that the Executive is bound by the Employee Invention Assignment and Confidentiality Agreement entered into by and between the Executive and the Company (the "**Confidentiality Agreement")**, including but not limited to the Executive's confidentiality, non-competition and non-solicitation obligations, if any, thereunder.

(b) **Non-Competition**. The Executive agrees that, during his or her employment with the Company, he or she shall not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company.

(c) **Cooperation and Non-Disparagement**. The Executive agrees that, during the six (6) month period following his or her cessation of employment, he or she shall cooperate with the Company in every reasonable respect and shall use his or her best efforts to assist the Company with the transition of Executive's duties to his or her successor. The Executive further agrees that he or she shall not in any way or by any means disparage the Company, the members of the Company's Board of Directors or the Company's officers and employees.

8. Definitions.

(a) **"Cause"** means (a) an unauthorized use or disclosure by Executive of the Company's confidential information or trade secrets, which use or disclosure causes material harm to the Company, (b) a material breach of any agreement between Executive and the Company, (c) a material failure to comply with the Company's written policies or rules that has caused or is reasonably likely to cause material financial, reputational, or other injury to the Company, its successor, or its affiliates, or any of their business, (d) conviction of, or plea of "guilty" or "no contest" to, a felony under the laws of the United States or any state thereof, (e) willful misconduct that has caused or is reasonably likely to cause material injury to the Company, its successor, or its affiliates, or any of their business, (f) embezzlement, or (g) failure to cooperate with the Company in any investigation or formal proceeding if the Company has requested Executive's reasonable cooperation.

(b) "**Code**" means the Internal Revenue Code of 1986, as amended.

(c) **"Change in Control."** For all purposes under this Agreement, a Change in Control shall mean a "Corporate Transaction," as such term is defined in the Company's 2020 Equity Incentive Plan, as may be amended from time to time, *provided that* the transaction (including any series of transactions) also qualifies as a change in control under U.S. Treasury Regulation 1.409A-3(i)(5)(v) or 1.409A-3(i)(5)(vii).

(d) **"CIC Qualifying Termination"** means a Separation (A) within twenty-four (24) months following a Change in Control or (B) within three (3) months preceding a Change in Control (but as to part (B), only if the Separation occurs after a Potential Change in Control) resulting, in either case (A) or (B), from (i) the

Company terminating the Executive's employment for any reason other than Cause or (ii) the Executive voluntarily resigning his or her employment for Good Reason. A termination or resignation due to the Executive's death or disability shall not constitute a CIC Qualifying Termination. A "**Potential Change in Control**" means the date of execution of a legally binding and definitive agreement for a corporate transaction which, if consummated, would constitute the applicable Change in Control (which for the avoidance of doubt, would include a merger agreement, but not a term sheet for a merger agreement). In the case of a termination following a Potential Change in Control and before a Change in Control, solely for purposes of benefits under this Agreement, the date of Separation will be deemed the date the Change in Control is consummated.

(e) "**Equity Awards**" means all Options as well as any and all other stock-based awards granted to the Executive. For purposes of this Agreement, Equity Awards shall exclude any awards that vest upon the satisfaction of performance criteria, which shall be treated as provided in the applicable award agreements.

(f) **"Good Reason"** means, without the Executive's consent, (i) a material reduction in the Executive's level of responsibility and/or scope of authority in a manner that disproportionately adversely affects the Executive, as compared to all other Company officers, provided, however that the unilateral change, by a surviving or acquiring entity (or its parent) in the Executive's title and duties to a position that is comparable in salary with respect to the acquired or surviving entity or a division or unit thereof created out of the Company or its assets (whether it becomes a subsidiary, unit or division) to the Executive's current position shall not constitute "Good Reason," (ii) a reduction by more than 10% in Executive's base salary (other than a reduction generally applicable to executive officers of the Company and in generally the same proportion as for the Executive), or (iii) relocation of the Executive's principal workplace by more than thirty-five (35) miles from Executive's then current place of employment. For the Executive to receive the benefits under this Agreement as a result of a voluntary resignation under this subsection (e), all of the following requirements must be satisfied: (1) the Executive must provide notice to the Company of his or her intent to assert Good Reason within sixty (60) days of the initial existence of one or more of the conditions set forth in subclauses (i) through (iii); (2) the Company will have thirty (30) days (the "**Company Cure Period**") from the date of such notice to remedy the condition and, if it does so, the Executive may withdraw his or her resignation or may resign with no benefits; and (3) any termination of employment under this provision must occur within ten (10) days of the earlier of expiration of the Company Cure Period or written notice from the Company that it will not undertake to cure the condition set forth in subclauses (i) through (iii). Should the Company remedy the condition as set forth above and then one or more of the conditions arises again within twelve months following the occurrence of a Change in Control, the Executive may assert Good Reason again subject to all of the conditions set forth herein.

(g) "**Release Conditions**" mean the following conditions: (i) Company has received the Executive's executed Release and (ii) any rescission period applicable to the Executive's executed Release has expired.

(h) **"Qualifying Termination"** means a Separation that is not a CIC Qualifying Termination, but which results from (i) the Company terminating the Executive's employment for any reason other than Cause or (ii) the Executive voluntarily resigning his or her employment for Good Reason. A termination or resignation due to the Executive's death or disability shall not constitute a Qualifying Termination.

(i) **"Separation**" means a "separation from service," as defined in the regulations under Section 409A of the Code.

9. Successors.

(a) **Company's Successors**. The Company shall require any successor (whether direct or indirect and whether by purchase, lease, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets to assume this Agreement and to agree expressly to perform this Agreement in the same manner and to the same extent as the Company would be required to perform it in the absence of a succession. For all purposes under this Agreement, the term "Company" shall include any successor to the Company's business and/or assets or which becomes bound by this Agreement by operation of law.

(b) **Executive's Successors**. This Agreement and all rights of the Executive hereunder shall inure to the benefit of, and be enforceable by, the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

10. Golden Parachute Taxes.

(a) **Best After-Tax Result**. In the event that any payment or benefit received or to be received by Executive pursuant to this Agreement or otherwise ("**Payments**") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code and (ii) but for this subsection (a), be subject to the excise tax imposed by Section 4999 of the Code, any successor provisions, or any comparable federal, state, local or foreign excise tax ("**Excise Tax**"), then, subject to the provisions of Section 11, such Payments shall be either (A) provided in full pursuant to the terms of this Agreement or any other applicable agreement, or (B) provided as to such lesser extent which would result in no portion of such Payments being subject to the Excise Tax ("**Reduced Amount**"), whichever of the foregoing amounts, taking into account the applicable federal, state, local and foreign income, employment and other taxes and the Excise Tax (including, without limitation, any interest or penalties on such taxes), results in the receipt by Executive, on an after-tax basis, of the greatest amount of payments and benefits provided for hereunder or otherwise, notwithstanding that all or some portion of such Payments may be subject to the Excise Tax. Unless the Company and Executive otherwise agree in writing, any determination required under this Section shall be made by independent tax counsel designated by the Company and reasonably acceptable to Executive ("**Independent Tax Counsel'**), whose determination shall be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required under this Section, Independent Tax Counsel may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code; *provided that* Independent Tax Counsel shall assume that Executive pays all taxes at the highest marginal rate. The Company and Executive shall furnish to Independent Tax Counsel such information and documents as Independent Tax Counsel may reasonably request in order to make a determination under this Section. The Company shall bear all costs that Independent Tax Counsel may reasonably incur in connection with any calculations contemplated by this Section. In the event that Section 10(a)(ii)(B) above applies, then based on the information provided to Executive and the Company by Independent Tax Counsel, Executive may, in Executive's sole discretion and within thirty (30) days of the date on which Executive is provided with the information prepared by Independent Tax Counsel, determine which and how much of the Payments (including the accelerated vesting of equity compensation awards) to be otherwise received by Executive shall be eliminated or reduced (as long as after such determination the value (as calculated by Independent Tax Counsel in accordance with the provisions of Sections 280G and 4999 of the Code) of the amounts payable or distributable to Executive equals the Reduced Amount). If the Internal Revenue Service (the "**IRS**") determines that any Payment is subject to the Excise Tax, then Section 10(b) hereof shall apply, and the enforcement of Section 10(b) shall be the exclusive remedy to the Company.

(b) **Adjustments**. If, notwithstanding any reduction described in Section 10(a) hereof (or in the absence of any such reduction), the IRS determines that Executive is liable for the Excise Tax as a result of the receipt of one or more Payments, then Executive shall be obligated to surrender or pay back to the Company, within one-hundred twenty (120) days after a final IRS determination, an amount of such payments or benefits equal to the "**Repayment Amount**." The Repayment Amount with respect to such Payments shall be the smallest such amount, if any, as shall be required to be surrendered or paid to the Company so that Executive's net proceeds with respect to such Payments (after taking into account the payment of the Excise Tax imposed on such Payments) shall be maximized. Notwithstanding the foregoing, the Repayment Amount with respect to such Payments shall be zero (0) if a Repayment Amount of more than zero (0) would not eliminate the Excise Tax imposed on such Payments or if a Repayment Amount of more than zero would not maximize the net amount received by Executive from the Payments. If the Excise Tax is not eliminated pursuant to this Section 10(b), Executive shall pay the Excise Tax.

11. Miscellaneous Provisions.

(a) **Section 409A**. To the extent (i) any payments to which Executive becomes entitled under this Agreement, or any agreement or plan referenced herein, in connection with Executive's termination of employment with the Company constitute deferred compensation subject to Section 409A of the Code and (ii) Executive is deemed at the time of such termination of employment to be a "specified" employee under Section 409A of the Code, then such payment or payments shall not be made or commence until the earlier of (i) the expiration of the six (6)-month period measured from the Executive's Separation; or (ii) the date of Executive's death following such Separation; *provided, however*, that such deferral shall only be effected to the extent required to avoid adverse tax treatment to Executive, including (without limitation) the additional twenty percent (20%) tax for which Executive would otherwise be liable under Section 409A(a)(1)(B) of the Code in the absence of such deferral. Upon the expiration of the applicable deferral period, any payments which would have otherwise been made during that period (whether in a single sum or in installments) in the absence of this paragraph shall be paid to Executive or Executive's beneficiary in one lump sum (without interest). Except as otherwise expressly provided herein, to the extent any expense reimbursement or the provision of any in-kind benefit under this Agreement (or otherwise referenced herein) is determined to be subject to (and not exempt from) Section 409A of the Code, the amount of any such expenses eligible for reimbursement, or the provision of any in-kind benefit, in one calendar year shall not affect the expenses eligible for reimbursement or in kind benefits to be provided in any other calendar year, in no event shall any expenses be reimbursed after the last day of the calendar year following the calendar year in which Executive incurred such expenses, and in no event shall any right to reimbursement or the provision of any in-kind benefit be subject to liquidation or exchange for another benefit. To the extent that any provision of this Agreement is ambiguous as to its exemption or compliance with Section 409A, the provision will be read in such a manner so that all payments hereunder are exempt from Section 409A to the maximum permissible extent, and for any payments where such construction is not tenable, that those payments comply with Section 409A to the maximum permissible extent. To the extent any payment under this Agreement may be classified as a "short-term deferral" within the meaning of Section 409A, such payment shall be deemed a short-term deferral, even if it may also qualify for an exemption from Section 409A under another provision of Section 409A. Payments pursuant to this Agreement (or referenced in this Agreement) are intended to constitute separate payments for purposes of Section 1.409A-2(b)(2) of the regulations under Section 409A. To the extent any nonqualified deferred compensation subject to Section 409A payable to Executive hereunder could be paid in one or more taxable years depending upon Executive completing certain employment-related actions (such as resigning after a failure to cure a Good Reason event and/or returning an effective release), then any such payments will commence or occur in the later taxable year to the extent required by Code Section 409A.

(b) **Other Arrangements**. This Agreement supersedes any and all cash severance arrangements and vesting acceleration arrangements on change in control under any prior option agreement, restricted stock unit agreement, severance and salary continuation arrangements, programs and plans which were previously offered by the Company to the Executive, including change in control severance arrangements and vesting acceleration arrangements pursuant to an employment agreement or offer letter, and Executive hereby waives Executive's rights to such other benefits. In no event shall any individual receive cash severance benefits under both this Agreement and any other severance pay or salary continuation program, plan or other arrangement with the Company. For the avoidance of doubt, in no event shall Executive receive payment under both Section 3 and Section 4 with respect to Executive's Separation. Notwithstanding the foregoing, or any provision of this Agreement to the contrary, the Board may accelerate, in full or in part, the vesting of the Equity Awards in its sole discretion, including, without limitation, upon termination of Executive's employment or upon a Change in Control.

(c) **Dispute Resolution**. To ensure rapid and economical resolution of any and all disputes that might arise in connection with this Agreement, Executive and the Company agree that any and all disputes, claims, and causes of action, in law or equity, arising from or relating to this Agreement or its enforcement, performance, breach, or interpretation, will be resolved solely and exclusively by final, binding, and confidential arbitration, by a single arbitrator, in Santa Clara County, and conducted by Judicial Arbitration & Mediation Services, Inc. ("**JAMS**") under its then-existing employment rules and procedures. Nothing in this section, however, is intended to prevent either party from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration. Each party to an arbitration or litigation hereunder shall be responsible for the payment of its own attorneys' fees.

(d) **Notice**. Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid or deposited with Federal Express Corporation, with shipping charges prepaid. In the case of the Executive, mailed notices shall be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its Secretary.

(e) **Waiver**. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Executive and by an authorized officer of the Company (other than the Executive). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(f) **Withholding Taxes**. All payments made under this Agreement shall be subject to reduction to reflect taxes or other charges required to be withheld by law.

(g) **Severability**. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(h) **No Retention Rights**. Nothing in this Agreement shall confer upon the Executive any right to continue in service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company or any subsidiary of the Company or of the Executive, which rights are hereby expressly reserved by each, to terminate his or her service at any time and for any reason, with or without Cause.

(i) **Choice of Law**. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California (other than its choice-of-law provisions).

IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year first above written.

EXECUTIVE	PUBMATIC, INC.
/s/ Mukul Kumar	/s/ Rajeev Goel
Mukul Kumar	By: Rajeev Goel
	Title: Chief Executive Officer

Exhibit 21.1

SUBSIDIARIES OF PUBMATIC, INC.

Name:	Jurisdiction:
PubMatic India Private Limited 6th Floor, Amar Paradigm, Baner Road, near D-mart Pune, Maharashtra 411045, India	India

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-251237 and 333-254752 on Form S-8 of our report dated February 28, 2022, relating to the financial statements of PubMatic, Inc. and the effectiveness of PubMatic's internal control over financial reporting, appearing in this Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP

San Jose, California
February 28, 2022

Exhibit 31.1

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, 2022

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

Exhibit 31.2

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, 2022

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

Exhibit 32.1

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, 2021 (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, 2022

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.

Exhibit 32.2

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, 2021 (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, 2022

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.