UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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, 2019

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: 001-36384

THE RUBICON PROJECT, INC.
(Exact name of registrant as specified in its charter)

Delaware	**20-8881738**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

12181 Bluff Creek Drive, 4th Floor Los Angeles, CA 90094

(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code:

310 207-0272

–

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value $0.00001 per share	**RUBI**	**New York Stock Exchange**

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

None

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

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the 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	☒
Non-accelerated filer	☐	Smaller reporting company	☒
		Emerging growth company	☐

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

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

As of June 28, 2019, the aggregate market value of shares held by non-affiliates of the registrant (based on the closing sales price of such shares on the New York Stock Exchange on June 28, 2019) was approximately $321.4 million.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Outstanding as of February 23, 2020
Common Stock, $0.00001 par value	**55,040,645**

DOCUMENTS INCORPORATED BY REFERENCE:
None

THE RUBICON PROJECT, INC.
FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2019
TABLE OF CONTENTS

SPECIAL NOTE ABOUT FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K and related statements by the Company contain forward-looking statements, including statements based upon or relating to our expectations, assumptions, estimates, and projections. In some cases, you can identify forward-looking statements by terms such as "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "design," "anticipate," "estimate," "predict," "potential," "plan" or the negative of these terms, and similar expressions. Forward-looking statements may include, but are not limited to, statements concerning our anticipated financial performance, including, without limitation, revenue, advertising spend, non-GAAP earnings (loss) per share, profitability, net income (loss), Adjusted EBITDA, earnings per share, and cash flow; the benefits expected to result from the previously announced merger with Telaria, Inc.; strategic objectives, including focus on header bidding, mobile, video, Demand Manager, and private marketplace opportunities; investments in our business; development of our technology; introduction of new offerings; the impact of transparency initiatives we may undertake; the impact of our traffic shaping technology on our business; the effects of our cost reduction initiatives; scope and duration of client relationships; the fees we may charge in the future; business mix and expansion of our mobile, video, and private marketplace offerings; sales growth; client utilization of our offerings; our competitive differentiation; our market share and leadership position in the industry; market conditions, trends, and opportunities; user reach; certain statements regarding future operational performance measures including ad requests, fill rate, paid impressions, average CPM, take rate, and advertising spend; benefits from supply path optimization; and factors that could affect these and other aspects of our business. These statements are not guarantees of future performance; they reflect our current views with respect to future events and are based on assumptions and estimates and subject to known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from expectations or results projected or implied by forward-looking statements. These risks include, but are not limited to:

- *our ability to close the previously announced merger with Telaria, Inc., to successfully integrate the businesses, and to achieve the benefits expected to result from the merger;*
- *our ability to continue to grow and to manage our growth effectively;*
- *our ability to develop innovative new technologies and remain a market leader;*
- *our ability to attract and retain buyers and sellers and increase our business with them;*
- *our vulnerability to loss of, or reduction in spending by, buyers;*
- *our reliance on large sources of advertising demand and aggregators of advertising inventory;*
- *our ability to maintain and grow a supply of advertising inventory from sellers and to fill the increased inventory;*
- *the effect on the advertising market and our business from difficult economic conditions or uncertainty;*
- *the freedom of buyers and sellers to direct their spending and inventory to competing sources of inventory and demand;*
- *our ability to cause buyers and sellers to use our solution to purchase and sell higher value advertising and to expand the use of our solution by buyers and sellers utilizing evolving digital media platforms, including connected television, or CTV;*
- *our ability to introduce new offerings and bring them to market in a timely manner, and otherwise adapt in response to client demands and industry trends, including shifts in digital advertising growth from desktop to mobile channels and other platforms and from display to video formats and the introduction and market acceptance of Demand Manager;*
- *uncertainty of our estimates and expectations associated with new offerings, including header bidding, private marketplace, mobile, video, Demand Manager, and traffic shaping;*
- *lower fees and take rate and the need to grow through advertising spend increases rather than fee increases;*
- *our ability to compensate for a reduced take rate by increasing the volume and/or value of transactions on our platform and increasing our fill rate;*
- *our vulnerability to the depletion of our cash resources as we incur additional investments in technology required to support the increased volume of transactions on our exchange and development of new offerings;*
- *our ability to support our growth objectives with reduced resources from our cost reduction initiatives;*
- *our ability to raise additional capital if needed and/or to renew our working capital line of credit;*
- *our limited operating history and history of losses;*
- *our ability to continue to expand into new geographic markets and grow our market share in existing markets;*
- *our ability to adapt effectively to shifts in digital advertising;*
- *increased prevalence of ad blocking or cookie-blocking technologies and the slow adoption of common identifiers;*
- *the slowing growth rate of desktop display advertising;*

- *the growing percentage of online and mobile advertising spending captured by owned and operated sites (such as Facebook, Google, and Amazon);*
- *the effects, including loss of market share, of increased competition in our market and increasing concentration of advertising spending, including mobile spending, in a small number of very large competitors;*
- *the effects of consolidation in the ad tech industry;*
- *acts of competitors and other third parties that can adversely affect our business;*
- *our ability to differentiate our offerings and compete effectively in a market trending increasingly toward commodification, transparency, and disintermediation;*
- *requests for discounts, fee concessions or revisions, rebates, refunds, favorable payment terms, and greater levels of pricing transparency and specificity;*
- *potential adverse effects of malicious activity such as fraudulent inventory and malware;*
- *the effects of seasonal trends on our results of operations;*
- *costs associated with defending intellectual property infringement and other claims;*
- *our ability to attract and retain qualified employees and key personnel;*
- *our ability to identify future acquisitions of or investments in complementary companies or technologies and our ability to consummate the acquisitions and integrate such companies or technologies; and*
- *our ability to comply with, and the effect on our business of, evolving legal standards and regulations, particularly concerning data protection and consumer privacy and evolving labor standards.*

We discuss many of these risks and additional factors that could cause actual results to differ materially from those anticipated by our forward-looking statements under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," and elsewhere in this report and in other filings we have made and will make from time to time with the Securities and Exchange Commission, or SEC, including Quarterly Reports on Form 10-Q for 2020 and our Rule 424(b)(3) Prospectus filed with the SEC on February 13, 2020. These forward-looking statements represent our estimates and assumptions only as of the date of the report in which they are included. Unless required by federal securities laws, we assume no obligation to update any of these forward-looking statements, or to update the reasons actual results could differ materially from those anticipated, to reflect circumstances or events that occur after the statements are made. Without limiting the foregoing, any guidance we may provide will generally be given only in connection with quarterly and annual earnings announcements, without interim updates, and we may appear at industry conferences or make other public statements without disclosing material nonpublic information in our possession. Given these uncertainties, investors should not place undue reliance on these forward-looking statements.

Investors should read this Annual Report on Form 10-K and the documents that we reference in this report and have filed or will file with the SEC completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

NOTE REGARDING THIRD-PARTY INFORMATION

This Annual Report on Form 10-K includes data that we obtained from industry publications and third-party research, surveys and studies. While we believe the industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data. Such third-party data and our internal estimates and research are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Item 1A—Risk Factors" in this Annual Report on Form 10-K. These and other factors could cause results to differ materially from those included in this report.

PART I

Item 1. Business

Overview and History

The Rubicon Project, Inc., or Rubicon Project (the "Company"), was formed on April 20, 2007 in Delaware and began operations in April 2007. The Company is headquartered in Los Angeles, California.

We provide a technology solution to automate the purchase and sale of digital advertising inventory for buyers and sellers. Our platform features applications and services for digital advertising inventory sellers, including websites, mobile applications and other digital media properties, and their representatives, to sell their digital advertising inventory; applications and services for buyers, including advertisers, agencies, agency trading desks, and demand side platforms, ("DSPs"), to buy digital advertising inventory; and a marketplace over which such transactions are executed. We power a comprehensive, transparent, independent advertising marketplace that brings buyers and sellers together and facilitates intelligent decision making and automated transaction execution for the digital advertising inventory managed on our platform. Our clients include many of the world's leading publishers of websites and mobile applications and buyers of digital advertising inventory. We believe our platform reaches approximately one billion users globally.

Advertising inventory takes different forms, referred to as advertising units, including display, audio and video; is purchased and sold through real-time bidding which includes (i) direct sale of premium inventory, which we refer to as private marketplace ("PMP"), and (ii) open auction bidding, which we refer to as open marketplace, ("OMP"); and is accessed by users through different channels, including mobile web, mobile application, desktop, and connected television ("CTV") as well as across various out-of-home channels, such as digital billboards.

Sellers of digital advertising inventory monetize their inventory by using our platform to access a global market of buyers representing top advertiser brands. We also help sellers decrease costs and protect their brands and user experience.

At the same time, buyers leverage our platform to manage their advertising spending and reach their target audiences, simplify order management and campaign tracking, obtain actionable insights into audiences for their advertising, and access impression-level purchasing from thousands of sellers.

We generate revenue from the use of our platform for the purchase and sale of digital advertising inventory. Digital advertising inventory is created when consumers access sellers' content. Sellers provide digital advertising inventory to our platform in the form of advertising requests, or ad requests. When we receive ad requests from sellers, we send bid requests to buyers, which enable buyers to bid on sellers' digital advertising inventory. Winning bids can create advertising, or paid impressions, for the seller to present to the consumer. The volume of paid impressions measured as a percentage of ad requests is referred to as fill rate. The price that buyers pay for each thousand paid impressions purchased is measured in units referred to as CPM, or cost per thousand.

The total volume of spending between buyers and sellers on our platform is referred to as advertising spend. We keep a percentage of that advertising spend as a fee, and remit the remainder to the seller. The fee that we retain from the gross advertising spend on our platform is recognized as revenue. The fee earned on each transaction is based on the pre-existing agreement between us and the seller and the clearing price of the winning bid. We also refer to revenue divided by advertising spend as our take rate.

Historically, our business primarily focused on supporting desktop display advertising. In 2013 and 2014, due in part to the rapid adoption and growth in smartphone use, we increased our focus on supporting advertising across mobile platforms, including mobile web and mobile applications. In 2016, we began to focus further on development of our video solution, helping grow our product footprint to allow our sellers to sell video advertising inventory across desktop or mobile platforms, and include instream, outstream and mobile-specific formats such as interstitials.

In 2016 we also introduced our header bidding solution. Header bidding is a programmatic technique where publishers offer inventory to multiple ad exchanges, such as Rubicon Project, at the same time. While the rise of header bidding increased revenue for sellers, it also created new challenges. Managing multiple exchanges on the page is technically complex, and in the early days of header bidding, this complexity was exacerbated by the lack of independent technology standards. In 2017, we began to address these issues through our support of Prebid, a free and open source suite of software products designed by advertising community developers to enable publishers to implement header bidding on their websites and from within their apps. Despite Prebid's adoption by a number of the world's largest sellers, deploying and customizing it still requires dedicated technical resources. In the second quarter of 2019, we announced the beta program for Demand Manager. Demand Manager helps sellers effectively monetize their advertising inventory through configuration tools and analytics to make it easier to deploy, configure, and optimize Prebid-based header bidding solutions. In October 2019, we acquired RTK.io, a provider of header bidding solutions that has much in common with our Demand Manager product, including a foundation in Prebid. RTK's technology and team enables Rubicon Project to extend the strategy we introduced with the launch of Demand Manager. We plan to integrate the two solutions to extend our Demand Manager product portfolio and client base, and to add talented header bidding experts and Prebid developers to our team. We believe that adoption of these tools will further strengthen our relationship with sellers and contribute to our future revenue growth. We charge sellers a fee for Demand Manager that is based on all of the sellers' advertising spending managed through Demand Manager, whether the actual inventory monetization runs through our exchange or otherwise.

Header bidding has dramatically increased the volume of bid requests sent to buyers, increasing buyers' processing costs and making it more difficult for them to find the impressions they want. To help address this challenge, in 2017, we acquired nToggle, Inc. ("nToggle"), a provider of technology to make it easier and more cost effective for programmatic buyers to find the inventory they are looking for among the billions of bid requests they receive each day. nToggle technology utilizes analytical and data science techniques to help shape real-time bidding requests, optimize traffic, and reduce the number of duplicates and irrelevant bid requests DSPs must process. The technology also helps us manage our infrastructure costs and increase our aggregate ingestion capacity by filtering out impressions that are not in demand before they are processed through the bid stream. In 2019, we incorporated this technology into our software, which provides additional efficiencies in managing auction volumes. The technology also allows us to optimize traffic toward DSPs and buyers based on their unique, historical buying behaviors, leading to an overall expansion of relevant bid requests to DSPs unable or unwilling to process the full stream of real-time bidding requests available from our platform.

In 2018, we made first-price our default auction dynamic for header bidding due to increased competition inherent in header bidding, which led other exchanges to submit bids on a first-price basis, rendering our second-price auction methodology less competitive. This allowed us to improve the rate at which we win header-bidding auctions. To support buyers that needed some time to adapt their systems and bidding strategies to first-price auction dynamics, or may not want to make those adaptations themselves, we developed our Estimated Market Rate ("EMR") feature. This feature uses algorithms that monitor existing market conditions against our dataset of auction outcomes to look for opportunities to reduce the amount of the bid that we pass through to the downstream auction on behalf of our winning bidder, while maintaining high fill rates. This is intended to help buyers avoid overpaying for impressions while providing sellers with more stable, predictable demand. While most exchanges had already transitioned to first price auction dynamics, the largest exchange —Google Ad Manager—only transitioned to first price auction dynamics in September 2019.

On December 19, 2019, we announced a stock-for-stock merger ("Merger") with Telaria, Inc., ("Telaria"), which will create a combined company offering a single partner for transacting CTV, desktop display, video, audio, and mobile inventory across all geographies and auction types. We believe the combination of Rubicon Project's programmatic scale and expertise with Telaria's leadership in CTV technology and premium partnerships, will create the world's largest independent sell-side advertising platform with scale, capabilities, and solutions exceeding those offered by competitors. Together, the combined company will enable thousands of publishers to connect with hundreds of buyers and brands, creating a global, independent alternative to closed players. The combination will provide additional engineering and sales resources as well as deeper financial assets to seize the opportunity of CTV, the fastest-growing digital medium. We believe the combined company will be an essential omni-channel partner for buyers to reach target audiences, optimizing the supply path with industry-leading transparency, robust support for identity solutions and brand-safe premium inventory. In addition, Rubicon Project and Telaria have complimentary domestic and international footprints that will create a combined broader global reach.

Upon completion of the Merger, which is expected to close in early April 2020, each share of Telaria common stock issued and outstanding as of the effective time of the Merger will be converted into the right to receive 1.082 shares of Rubicon Project common stock. Based on the number of shares of Telaria and Rubicon Project common stock outstanding and reserved for issuance as of February 11, 2020, we estimate that former holders of Telaria common stock will own approximately 47.6% and pre-merger holders of Rubicon Project common stock will own approximately 52.4% of the common stock of the combined company on a fully diluted basis.

We operate our business on a worldwide basis, with an established operating presence in North America and Europe and a developing presence in Asia, Australia, and South America. Substantially all of our assets are U.S. assets. Our non-U.S. subsidiaries and operations perform primarily sales, marketing, and service functions.

Our Industry and Industry Trends

Continued Shift Toward Digital Advertising

The programmatic digital advertising market continues to experience growth. In October 2019, MAGNA estimated that the global programmatic market (excluding search and social) will grow from $44 billion in 2019 to $75 billion by 2023, which represents a 14% compound annual growth rate over that period. The expansion of the growth is continuously driven by the market need for automated buying and selling of advertising inventory, through various channels and across all formats. The increased delivery of content to users digitally over the Internet or through applications, as opposed to analog and print media, such as newspapers, magazines, broadcast radio, and television, has created an opportunity for buyers of advertising inventory to improve return on advertising investment by targeting audiences more accurately using data-driven strategies and delivering more relevant advertising in real time on multiple screens. Buyers are able to utilize various technologies to analyze data relating to return on investment, demographics, user behavior, location, and other attributes that enable them to create and deliver targeted advertisements to users, which helps achieve specific advertising goals. Technological advances have also enabled sellers to sell their inventory on an impression-by-impression basis, as well as in bulk, making it easier for sellers to enhance the monetization of their inventory. Therefore, advertising is continuing to shift with content to digital media.

Continued Shift to Mobile

An ongoing trend in the digital advertising industry is automating inventory transactions through new and developing channels, including mobile, which has market growth rates exceeding those of the desktop channel. According to MAGNA estimates, mobile advertising is a $26 billion global market in 2019 that is expected to increase to $56 billion by 2023, producing a compound annual growth rate of 22%. Consistent with industry trends, our mobile business is growing faster than desktop. Our mobile revenue increased $22.5 million, or 34%, for the year ended December 31, 2019, compared to the year ended December 31, 2018, while our desktop revenue increased 16% during the same period. Our mobile business consists of two components, mobile web and mobile applications. Initially our mobile business was built upon mobile web, which is more similar to our desktop business, but our mobile application business has become the growth driver behind our mobile business and has shown growth rates in excess of industry projections. Revenue from mobile applications is approximately half of our mobile business.

In recent years, we have seen an industry-wide slowdown in the growth rate for traditional desktop advertising, and the growth rate for this portion of the market is expected to flatten in future years. According to MAGNA, programmatic desktop advertising is expected to grow at a 1% compound annual growth rate over the 2019-2023 period. This results from the market shift to mobile channels and other emerging formats noted above. These market factors still present long-term growth opportunities as we pursue spend consolidation on our platform; however, in the near term, these trends are dampening our overall growth rate, because desktop advertising continues to be a meaningful part of our core business.

Continued Shift to Video, Including CTV

Another important trend in the digital advertising industry is automating inventory transactions across all formats. We enable an omni-channel approach to expand beyond traditional display advertising and have observed growth trends in emerging formats like video and audio. According to MAGNA estimates, video advertising was $25 billion in 2019 and is projected to increase to $57 billion in 2023, with a compound annual growth rate of 22%. We expect video to be a meaningful driver of our future growth with a longer-term opportunity in connected television, or CTV, advertising as more linear TV budgets shift to programmatic. We expect the pending merger with Telaria will help us access these budgets.

Supply Path Optimization

Supply Path Optimization ("SPO") refers to efforts by buyers to consolidate the number of vendors they work with to find the most effective and cost-efficient paths to procure media. This practice emerged in 2018 and continues to gain momentum. SPO is important to buyers because it can increase the proportion of their advertising ultimately spent on working media, with the goal of increasing return on their advertising spending, and can help them gain efficiencies by reducing the number of vendors they work with in a complex ecosystem. Largely because of header bidding, buyers are able to choose the best partner (or a small number of partners) without limiting the available inventory to bid on. There are a number of criteria that buyers use to evaluate supply partners, including transparency, cost, quality of inventory, privacy standards, brand safety standards, including compliance with ads.txt and similar industry standards, and fraudulent traffic prevention policies. We believe we are well positioned to benefit from supply path optimization in the long run as a result of our broad inventory supply, buyer tools such as traffic shaping, our pricing tools, which reduce the overall cost of working with us, our transparency, and our brand safety measures.

Complicated and Manual Workflow for Direct Buying and Selling of Digital Advertising Inventory

Due to the size and complexity of the advertising ecosystem and purchasing process, manual processes cannot effectively manage digital advertising inventory at scale. In addition, both buyers and sellers are demanding more transparency, better controls and more relevant insights from their advertising inventory purchases and sales. Buyers and sellers benefit from a platform that enables them to leverage the targeting capabilities of their proprietary data assets. This has created a need to automate the digital advertising industry and to simplify the process of buying and selling advertising inventory. A variety of factors makes the digital advertising ecosystem highly complex and challenging to automate, including the perishable nature of the inventory, impression-level user matching, brand safety and inventory concerns, concerns about maintaining a positive user experience, large volumes of data, lack of standardization in the industry, and increasing privacy demands. We believe we are well-positioned to help our buyers and sellers address these challenges.

Rubicon Project: Competitive Strengths of Our Platform in the Digital Advertising Marketplace

Rubicon Project was founded to address the inherent challenges associated with the digital advertising ecosystem. Buyers can direct their spending towards the impressions that are of most value to them based on demographics, pricing, timing, and other targeting objectives. Sellers can improve revenue per impression, while adhering to their own specific rules around advertising that is permissible on their websites and mobile applications.

Serving a Broad Universe of Buyers and Sellers Across a Full Spectrum of Inventory Types, Advertising Units, and Channels Creates Network Effects

By accommodating a full spectrum of digital advertising inventory through various transaction types across multiple channels, our solution brings value to both buyers and sellers. Our sellers gain instant access to the world's largest automated digital advertising buyers, including hundreds of DSPs with the flexibility to sell their advertising inventory in an automated fashion on an impression-by-impression basis, such as with OMP transactions, in bulk, or in PMP transactions pursuant to arrangements directly between the seller and the buyer. Our buyers gain the ability to fulfill their audience needs in a cost-effective manner. Large numbers of diverse sellers on our platform attract more buyers and vice versa, resulting in a self-reinforcing network effect that adds value for all our clients and creates a strong platform for growth.

Private Marketplace Solutions Provide Unique Access to Quality Supply and Facilitate Transactions

A significant portion of premium inventory is purchased and sold through PMPs. Some sellers will continue to rely on their own sales forces for sales of premium inventory, but will benefit from automation to better price, match, and place campaigns, and to automate manual operations such as ad trafficking, quality assurance, and billing and collections. Our capabilities support sales functions rather than replacing them, which eliminates friction in the sales process. Buyers and sellers can also leverage their first-party data assets and third-party data assets in our platform to increase the value of sellers' inventory and the precision of buyers' targeting efforts.

Big Data Analytics and Machine-Learning Algorithms

A core aspect of our value proposition is our big data and machine-learning/artificial intelligence platform that is able to discover unique insights from our massive data repositories containing proprietary information on ad requests, bid requests, bid responses, and served advertisements. Our systems collect and analyze variable pieces of information such as pricing of advertisements, historical clearing prices, bid responses, what types of ads are allowed on a particular website, which sellers' websites a buyer prefers, what ad formats are available to be served, advertisement size and location, user location, which users a buyer wants to target, how many ads the user has seen, browser or device information, and sellers' proprietary data about users. Our access to data puts us in a unique position to develop differentiated insights to help both buyers and sellers, and we have developed proprietary machine-learning algorithms that analyze trillions of these data points to enable our solution to make data-driven decisions in real time and to process high volumes of bid requests and responses. Our solution is constantly self-improving as we process more volume and accumulate more data, which in turn helps make our machine-learning algorithms more intelligent and contributes to higher-quality matching between buyers and sellers. This traffic optimization toward our DSP partners and buyers coupled with more aggressive filtering of non-monetizable traffic improves return on investment for buyers and increases revenue for sellers, which in turn attracts more buyers and sellers to our platform. We believe this self-reinforcing dynamic contributes to the dual network effects described above, creating a strong platform for growth.

Header Bidding Solutions

While there are still some proprietary solutions with declining usage, there are three primary header bidding solutions with broad-based adoption—one provided by Prebid.org, which we co-founded, one provided by Amazon (called Amazon A9) and one provided by Google (called Google EB), and we are integrated with all three. We believe the various header bidding alternatives we offer, our buyer reach and scale, our buying efficiency, and our machine learning capabilities put us in a strong position to compete for seller impressions, and we expect each of these header bidding solutions to deliver a meaningful volume of impressions. We have also launched Demand Manager, a software solution that helps publishers manage all of their advertising inventory, regardless of exchange, for a fee based on a percentage of that advertising spending. Demand Manager provides an intuitive user interface with a set of tools that manages Prebid open source software. It helps publishers to better monetize their advertising inventory through configuration tools and analytics to make improvements in their yield, more efficiently than they do using their own engineering resources or tools or other third-party solutions.

Independence

Unlike some large industry participants, we do not have our own media properties that compete for advertising spending with our sellers. Our independence means we have none of the inherent conflicts of interests characterizing competing exchanges that sell their own inventory, giving our clients an important alternative to monetize and acquire inventory without subsidizing their competitors.

Growth Strategies

Two powerful market trends are affecting our business. First, our exchange volume historically consisted largely of OMP transactions conducted through an ad server waterfall for desktop display advertising, but this business is being displaced by other ad units, channels, and transaction types. Second, the ad tech market is demanding more efficiency and lower cost from intermediaries like us, and we believe market share will consolidate. Our strategy for growth in this context is to operate a high-volume, low cost per transaction exchange, and focus on high-growth ad units, channels and transaction types.

- ***Increase volumes and efficiencies and reduce transaction costs on our exchange.*** We aim to increase our transaction volumes and to enhance the operational efficiency and value to clients of our exchange, enabling buyers and sellers to achieve their campaign and monetization objectives efficiently and to streamline the number of exchanges with which they work. While we were able to increase take rates slightly during the first half of 2018, our take rate growth in 2019 remained relatively flat since the fourth quarter of 2018, and we do not expect significant further increases in take rates, so any increase in revenue will have to come from volume increases rather than take rate increases. While we work to increase the volume of transactions on our exchange and compete more effectively, we must operate efficiently to relieve the pressure on our margins and cash resources that has resulted from our fee reductions and increased infrastructure required to support the increased volume of bid requests generated through header bidding and the increased volume of transactions that our growth plans require. We believe that increasing our revenue through transaction volume while still offering competitive fees to our buyers and sellers, paired with cost reduction measures we undertook in 2018 and ongoing cost discipline, will establish us as a lower cost exchange.

- ***Increasing Inventory Supply.*** Increased transaction volume begins with ad requests from sellers, which represent the inventory available for buyers to purchase on our platform. Our plan for increasing our inventory volumes includes active pursuit of more direct relationships with sellers, particularly of mobile, video, and PMP impressions, which are areas of industry growth, and expanding seller tools, including through Demand Manager. In particular, benefits from successful outcomes in the SPO process could drive meaningful increases of ad spend across our platform. Because our business has many fixed costs, increases in ad spend volume create opportunity to disproportionately improve net income.

- ***Bid Filtering.*** We continue to improve our fill rate by using the technology we acquired from nToggle to filter out low-quality impressions so that a higher proportion of the ad requests on our platform are of interest to our buyers, and to analyze market dynamics to optimize impressions toward our buyers, enabling them to identify and purchase the impressions they want more efficiently. In addition, we expect the nToggle filtering technology, which we have incorporated into our platform, to help us and our buyers control the processing costs associated with higher volumes of ad requests and bid requests.

- ***Platform Enhancements.*** We are working on a number of platform innovations and enhancements designed to improve the value to clients and the operational efficiency of our platform. For example, new technology and techniques will improve upon our market-leading position in inventory and ad quality, responding to market demands for increased brand security and protection against fraud. Cookieless targeting, including device-based user identifiers, will improve audience identification and match rates. Audience-based selling and enhanced measurement and viewability technologies will improve inventory values for sellers and campaign effectiveness for buyers. Impression filtering and virtual machine support will improve the efficiency and effective capacity of our data processing infrastructure.

Our business historically consisted largely of OMP transactions conducted through an ad server waterfall for desktop display advertising, which has declined significantly. In order for us to grow and compete effectively, we must continue to focus on areas of the digital advertising business that are experiencing growth and to adapt to evolution in the business, including mobile, video (both traditional web-based video and connected television), identity solutions, and header bidding.

Technology and Development

To support our solution, we have developed a globally distributed infrastructure hosted at data centers in the U.S., Europe, and Asia that run our proprietary software; we have also begun using cloud-based infrastructure, and we expect that to increase. Our hardware and cloud-based services provide significant scale and are programmed for high-frequency, low-latency transactions. Their massive scale support the volume, diversity, and complexity of buyers' bids on sellers' advertising inventory to increase market liquidity, and achieve improved auction pricing using our machine-learning algorithms. This infrastructure is supported by a real-time data pipeline, a system that quickly moves volumes of data generated by our business into reporting and machine learning systems that allow usage both internally and by buyers and sellers. It also is supported by a 24-hour Network Operations Center, which provides failure protection by monitoring and rerouting traffic in the event of equipment failure or network performance issues between buyers and our marketplace.

We use matchmaking algorithms with both historical and real-time data to drive automated decision-making processes. Bid efficiency algorithms provide bid prediction (i.e., which buyers are most likely to bid on a given impression) and throttling (i.e., the volume of bid requests a given buyer can process), to improve infrastructure load and execute transactions efficiently by only sending bid requests to those buyers of advertising inventory who can handle the volume and are likely to respond.

Our core technology and development team is responsible for the design, development, operation, and maintenance of our platform. Our technology and development process is based on agile development methodologies and emphasizes frequent, iterative, and incremental development cycles. Within the technology and development team, we have several highly aligned, independent sub-teams that focus on particular features of our platform. Each of these sub-teams includes engineers, quality assurance specialists, and product developers responsible for the initial and ongoing development of each sub-team's feature. In addition, the technology and development team includes our technical operations sub-team, which is responsible for the performance and capacity of our platform. We believe that continued investment in our platform, including its technologies and functionalities, is critical to our success and long-term growth.

Sales and Marketing

We market our solution to buyers and sellers through global direct sales teams that operate from various locations around the world. These teams leverage market knowledge and expertise to demonstrate the benefits of advertising automation and our solution to buyers and sellers. We deploy a professional services team with each seller integration to assist sellers in extracting value from our solution. Our buyer team focuses on the unique challenges and priorities of buyers and is separately managed in order to properly represent this important client group. We are focused on managing our brand, increasing market awareness, and driving advertising spend to our platform. To do so, we often present at industry conferences, create custom events, and invest in public relations. In addition, our marketing team advertises online, in print, and in other forms of media, creates case studies, sponsors research, writes whitepapers, publishes marketing collateral, generates blog posts, and undertakes client research studies.

Competition

Our industry is highly competitive. Overall digital advertising spending is highly concentrated in a small number of very large companies that have their own inventory, including Google, Facebook, and Amazon, with which we compete for digital advertising inventory and demand. These companies are formidable competitors due to their huge resources and direct user relationships, and will become even more dominant as third-party cookie use decreases. Despite the dominance of large companies, there is still a large addressable market that is highly fragmented and includes many providers of transaction services with which we compete, including supply side platforms, or SSPs, and advertising exchanges. As we introduce new offerings, as our existing offerings evolve, or as other companies introduce new products and services, we may be subject to additional competition. There has 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. There are many ways for buyers and sellers of digital advertising inventory to connect and transact, including directly and through many other exchanges, and advertising inventory buyers are increasingly demanding more transparency and lower transaction costs and establishing relationships directly with sellers of advertising inventory, which puts significant pressure on us. Our offering must remain competitive in terms of scope, ease of use, scalability, speed, price, inventory quality, brand security, customer service, and other technological features that help sellers monetize their inventory and buyers increase the return on their advertising investment.

While our industry is evolving rapidly and becoming increasingly competitive, we believe that our solution enables us to compete favorably on the factors described above. However, competitive differentiation is difficult to achieve, both in terms of capabilities and in terms of client perception. We lack the scale of some of our competitors, which may have the ability to compete effectively with us by offering broader capabilities or more aggressive pricing. Other competitors with capabilities inferior to ours may nevertheless compete effectively with us if clients do not perceive, or value, what we believe to be our competitive advantages.

Overall, our revenue increased 25% from $124.7 million in 2018 to $156.4 million in 2019, which reflects both increased ad spend and higher overall take rates. Our ad spend increased to $1,117 million in 2019, up from $992 million in 2018. Our overall take rate in 2019 increased to 14.0%, compared to 12.6% in 2018. Our 2019 take rate is higher due primarily to seller pricing improvements negotiated during the first half of 2018. We believe this take rate puts us in a favorable competitive position in terms of pricing, but it is uncertain whether it represents a sustainable competitive advantage.

Our Team and Culture

Our team draws from a broad spectrum of experience, including data science, machine-learning algorithms, auctions, infrastructure, software development, and from experienced managers on the seller and buyer sides.

We focus heavily upon developing and maintaining a company culture that supports our goals. We strive to make our company an exciting place to work, not just a “job.” We reward team and individual excellence and constantly strive to build a stronger, more innovative team and a consistent culture across all our locations.

As of December 31, 2019, we had 444 full-time employees. In addition to the United States, we have personnel and operations in England, Canada, France, Australia, Germany, Italy, Japan, Singapore, and Brazil.

Our Intellectual Property

Our proprietary technologies are important and we rely upon trade secret, trademark, copyright, and patent laws in the United States and abroad to establish and protect our intellectual property and protect our proprietary technologies.

We have several issued patents and pending patent applications, some of which may ultimately be abandoned if we determine that the cost of prosecution or maintenance does not justify the utility of receiving the patent. None of these patents has been litigated and we are not licensing any of the patents, and we do not believe that any individual patent or patent application is material to our business. Their importance to our business is uncertain and there are no guarantees that any of the patents will serve as protection for our technology or market in the United States or any other country in which an application has been filed.

We register certain domain names, trademarks and service marks in the United States and in certain locations outside the United States. We also rely upon common law protection for certain trademarks. We generally enter into confidentiality and invention assignment agreements with our employees and contractors, and confidentiality agreements with parties with whom we conduct business, in order to limit access to, and disclosure and use of, our proprietary information. We also use measures designed to control access to our technology and proprietary information. We view our trade secrets and know-how as a significant component of our intellectual property assets, which we believe differentiate us from our competitors.

Any impairment of our intellectual property rights, or any unauthorized disclosure or use of our intellectual property or technology, could harm our business, our ability to compete and our operating results.

Client Dynamics

While we serve many clients, certain buyers and sellers account for a large share of business transacted through our platform. On the buy-side of our business, while demand for advertising inventory is diffuse, spending by advertisers on digital advertising inventory has historically been channeled through intermediaries, including principally advertising agencies and DSPs, both of which are important to us. We have generated a majority of our revenue through OMP, and most OMP inventory purchases are executed by a relatively small number of DSPs that have the bidding technologies, data assets, and client bases necessary to enable them to execute OMP purchases at scale on behalf of their clients. We have relationships with almost all of these major DSPs, but because there are relatively few of them, each of these relationships is important to us because it represents a source of demand that could be difficult for us to replace. Similarly, the majority of supply to date on our PMP product has been by a relatively small number of sellers. Creating new seller clients and expanding our business with existing seller clients is important to our growth, and the loss of any seller clients could adversely affect our PMP business. In addition, because large agencies often spend through multiple DSPs, new or enhanced agency relationships can result in increased spending on our platform by multiple DSPs, while a decrease in business or a decline in our relationship with a single agency can result in reduced spending by multiple DSPs. We are working to develop relationships directly with advertisers, to supplement their DSP and agency relationships and also to encourage them to influence their DSPs and agencies to route their spending through our platform. We have increasingly been receiving requests from buyers for discounts, rebates, or similar incentives in order to move more advertising spending to our platform.

On the sell-side of our business, while we work with many clients, a relatively small number of them provide a large share of the unique user audiences accessible by buyers. In addition, most of the application providers that make inventory available through our platform utilize system development kits ("SDKs") and other proprietary technology of third parties, such as aggregators, and it is those third parties, not the application providers themselves, that contract with us to help monetize the inventory. Termination or diminution of our relationships with these third parties could result in a material reduction of the amount of mobile inventory available through our platform. We encourage application developers to use our own SDK when appropriate, but it is difficult to displace existing SDKs.

Our contracts with buyers and sellers generally do not provide for any minimum volumes and may be terminated on relatively short notice. Buyer and seller needs and plans can change quickly, and buyers and sellers are free to terminate their arrangements with us or direct their spending and inventory to competing sources of inventory and demand, quickly and without penalty. Loss of a major buyer could result in a decrease of demand on our platform, and loss of a major seller could result in decrease of inventory available on our platform. Despite such losses, there could still be adequate demand and inventory supply on our platform to sustain and grow our revenue, so it is not necessarily the case that loss of a buyer or seller equates to loss of revenue. However, loss of unique inventory and loss of any demand could result directly in revenue loss. In addition, just as growth in the inventory strengthens buyer activity in a network effect, loss of substantial inventory or demand could degrade our marketplace. Loss of major DSP sources of demand could adversely affect bid density or pricing in our RTB auctions, and reduction in fees if we are not able to redirect inventory to other demand sources. Loss of important unique inventory could reduce fees from demand that cannot be shifted to other sellers. The number of large media buyers and sellers in the market is finite, and it could be difficult for us to replace the losses from any buyers or sellers whose relationships with us diminish or terminate.

Because of these factors, we seek to expand and diversify our client relationships. In particular, as part of our strategy to increase the volume of advertising inventory on our exchange, we are continuing relationships with aggregators of inventory and with large sources of supply that have their own monetization capabilities but also allow third parties to connect to their exchanges and bid on their inventory. These relationships represent additional risks in terms of inventory quality, transaction discrepancies, and collections, and may be less profitable because we may be required to compensate these partners or share the fees available for intermediaries in these transactions, and may incur higher serving costs relative to revenue.

Geographic Scope of Our Operations

The growth of programmatic advertising is also expanding into geographic markets outside of the United States, and in some markets, the adoption rate of programmatic digital advertising is greater than in the United States. We attribute advertising spend to the geographic location of the seller on whose inventory the advertising spend was directed. Our markets outside of the United States are more heavily built upon desktop display advertising than they are on mobile. In addition, as programmatic advertising has grown in markets outside of the United States, we have seen more competitors enter those markets aggressively and gain market share. Our international operations and expansion plans expose us to various risks. International operations require significant investment in developing the technology infrastructure necessary to deliver our solution and establishing sales, delivery, support, and administrative capabilities in the countries where we operate. We face staffing challenges, including difficulty in recruiting, retaining, and managing a diverse and distributed workforce across time zones, cultures, and languages. We must also adapt our practices to satisfy local requirements and standards (including differing privacy requirements that are sometimes more stringent than in the U.S.), and manage the effects of global and regional recessions and economic and political instability. Transactions denominated in various non-U.S. currencies expose us to potentially unfavorable changes in exchange rates and added transaction costs. Foreign operations expose us to potentially adverse tax consequences in the United States and abroad and costs and restrictions affecting the repatriation of funds to the United States. For detailed information regarding our revenue and property and equipment, net by geographical region, see Note 4 and Note 7 of the "Notes to Consolidated Financial Statements."

User Reach

We believe our platform reaches approximately one billion users globally, however it is not practicable to determine the exact number of unique users we reach because we do not collect personally identifiable information. In order to estimate our user reach, we start with data we track on devices we see through our platform in a given time period: for web browsers, we identify each combination of browser user agent and originating IP address, and for mobile application users, we identify unique device identifiers. The resulting aggregated total counts some devices more than once because the same device creates different user agent and IP address combinations by using different browsers to access the Internet and/or accessing the Internet from locations with different IP addresses. We therefore make assumptions about the amount of duplication, as well as assumptions about the average numbers of devices per person, which can vary by geography and over time, and apply these assumptions to estimate the number of users we reach.

Regulation

Behavioral or personalized advertising, or the use of data to draw inferences about a user’s interests and deliver relevant advertising to that user, has come under increasing scrutiny by legislative, regulatory, and self-regulatory bodies in the United States and abroad that focus on consumer protection or data privacy. In particular, this scrutiny has focused on the use of technology (including "cookies") to collect or aggregate information about Internet users’ online browsing activity. Because we, and our clients, rely upon large volumes of such data, 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.

We provide this notice through our privacy policies, which can be found on our website at http://www.rubiconproject.com/privacy. As stated in our privacy policy, our technology platform does not collect information, such as name, address, or phone number, that can be used directly to identify a real person, and we take steps not to collect and store such information. Instead, we rely on IP addresses, geo-location information, and persistent identifiers about Internet users and do not attempt to associate this data with other data that can be used to identify real people. This type of information is considered "personal" in some jurisdictions or otherwise may be the subject of future legislation or regulation. The definition of personal data varies by country, 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 in each country in which we do business.

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 about users of child-directed websites. To comply with COPPA, we have taken various steps to implement a system that: (i) flags seller-identified child-directed sites to buyers, (ii) limits advertisers’ ability to serve personalized advertisements on child-directed sites, (iii) helps limit the types of information that our advertisers have access to when placing advertisements on child-directed sites, and (iv) limits the data that we collect and use on such child-directed sites.

The use of and transfer of personal data in EU member states is currently governed by the General Data Protection Regulation (the "GDPR"). The GDPR sets out higher potential liabilities for certain data protection violations, as well as a greater compliance burden for us in the course of delivering our solution in Europe. Among other requirements, the GDPR obligates companies that process large amounts of personal data about EU residents to implement a number of formal processes and policies for reviewing and documenting the privacy implications of the development, acquisition, or use of all new products, technologies, or types of data. Further, the European Union is expected to replace the EU ePrivacy Directive governing the use of technologies to collect consumer information with the ePrivacy Regulation. Current drafts of the ePrivacy Regulation impose fines for violations that are materially higher than those imposed under the ePrivacy Directive.

The GDPR also prohibits the transfer of personal data of EU subjects outside of the European Economic Area ("EEA"), 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 have relied on certain compliance measures that are currently subject to legal challenge, and which directly subject us to regulatory enforcement by data protection authorities located in the European Union and the United States. By relying on these compliance measures, we risk becoming the subject of regulatory investigations in any of the individual jurisdictions in which we operate. Each such investigation could cost us significant time and resources, and could potentially result in fines, criminal prosecution, or other penalties. Further, to the extent any of the legal challenges to these compliance measures are successful, this could invalidate our approach to data export from the EEA. It may take us significant time, resources, and effort to restructure our business and/or rely on another legally sufficient compliance measure.

In addition to the GDPR, a number of new privacy regulations will or have already come into effect in 2020. The California legislature passed the California Consumer Privacy Act ("CCPA") in 2018, which became effective January 1, 2020. This regulation imposes new obligations on businesses that handle the personal information of California residents. The obligations imposed will require the Company to devote significant resources towards compliance. Certain requirements remain unclear due to ambiguities in the drafting of or incomplete guidance. These ambiguities and resulting impact on our business will need to be resolved over time. In addition, other privacy bills have been introduced at both the state and federal level. Certain international territories are also imposing new or expanded privacy obligations. For example, Brazil's data protection regulation, the LGPD, will also come into effect in August 2020. In the coming years, we expect further consumer privacy regulation worldwide.

Additionally, our compliance with our privacy policies and our general consumer privacy practices are also 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 therein. Certain State Attorneys General may also bring enforcement actions based on comparable state laws or federal laws that permit state-level enforcement. 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.

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 Internet Advertising Bureau ("IAB"), the Digital Advertising Alliance, the Network Advertising Initiative, and the Europe Interactive Digital Advertising Alliance. Under the requirements of these self-regulatory bodies, in addition to other compliance obligations, we provide consumers with notice via our privacy policy about our use of cookies and other technologies to collect consumer data, and of our collection and use of consumer data to deliver personalized advertisements. We also allow consumers to opt-out from the use of data we collect for purposes of behavioral advertising through a mechanism on our website, linked through our privacy policy as well as through portals maintained by some of these self-regulatory bodies. 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 Federal Trade Commission or other regulatory bodies.

For additional information regarding regulatory risks to our business, see "Item 1A. Risk Factors."

Business Seasonality

Our advertising spend, revenue, cash flow from operations, Adjusted EBITDA, operating results, and other key operating and financial measures may vary from quarter to quarter due to the seasonal nature of buyer spending. For example, many buyers devote a disproportionate amount of their advertising budgets to the fourth quarter of the calendar year to coincide with increased holiday purchasing. We expect our revenue, cash flow, operating results and other key operating and financial measures to fluctuate based on seasonal factors from period to period and expect these measures to be higher in the fourth quarters than in prior quarters.

Working Capital Requirements

Our revenue is generated from advertising spend transacted on our platform using our technology solution. Generally, we invoice and collect from buyers the full purchase price for impressions they have purchased, retain our fees, and remit the balance to sellers. We attempt to coordinate collections from our buyers so as to fund our payment obligations to our sellers. However, in some cases, we may be required to pay sellers for impressions delivered before we have collected, or even if we are unable to collect, from the buyer of those impressions. There can be no assurances that we will not experience bad debt in the future. Any such write-offs for bad debt could have a materially negative effect on our results of operations for the periods in which the write-offs occur. In addition, growth and increased competitive pressure in the digital advertising industry are causing brand spenders to become more demanding, resulting in overall increased focus by all industry participants on pricing, transparency, and cash and collection cycles. Some buyers have experienced financial pressures that have motivated them to challenge some details of our invoices or to slow the timing of their payments to us. If buyers slow their payments to us or 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 buyers. This may result in additional cash expenditures and cause us to forgo or defer other more productive uses of that working capital.

Available Information

The Company is subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and accordingly files Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements, and related amendments and other information with the Securities and Exchange Commission, or the SEC, pursuant to Sections 13(a) and 15(d) of the Exchange Act. Information filed by the Company with the SEC is available free of charge on the Company’s website at investor.rubiconproject.com as soon as reasonably practicable after such materials are filed with or furnished to the SEC.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk, including the risks described below, each of which may be relevant to decisions regarding an investment in or ownership of our stock. The occurrence of any of these risks could have a significant adverse effect on our reputation, business, financial condition, revenue, results of operations, growth, or ability to accomplish our strategic objectives, and could cause the trading price of our common stock to decline. You should carefully consider the risks set forth below and the other information contained in this report, including our consolidated financial statements and related notes and Management's Discussion and Analysis of Financial Condition and Results of Operations, before making investment decisions related to our common stock. However, this report cannot anticipate and fully address all possible risks of investing in our common stock, the risks of investing in our common stock may change over time, and additional risks and uncertainties that we are not aware of, or that we do not consider to be material, may emerge. Accordingly, you are advised to consider additional sources of information and exercise your own judgment in addition to the information we provide.

Risks Related to the Proposed Merger with Telaria

We may not complete the merger with Telaria or complete the merger within the time frame we anticipate. Failure to complete the merger could have material adverse effects on us.

The completion of the merger is subject to a number of conditions, including, among other things, the receipt of stockholder approval, which make the completion and timing of the merger uncertain. The failure to satisfy all of the required conditions could delay the completion of the merger for a significant period of time or prevent it from occurring at all. There can be no assurance that the conditions to the completion of the merger will be satisfied or waived or that the merger will be completed.

If the merger is not completed, we may be materially adversely affected and, without realizing any of the benefits of having completed the merger, will be subject to a number of risks, including the following:

- the market price of our common stock could decline;
- we could owe a substantial termination fee to the other party in specified circumstances;
- if the merger agreement is terminated and our board seeks another business combination, our stockholders cannot be certain that we will be able to find a party willing to enter into a transaction on terms equivalent to or more attractive than the terms that Telaria has agreed to in the merger agreement;
- time and resources, financial and other, committed by our management to matters relating to the merger could otherwise have been devoted to pursuing other beneficial opportunities;
- we may experience negative reactions from the financial markets or from our customers, suppliers or employees; and
- we will be required to pay certain costs relating to the merger, such as legal, accounting, financial advisory and printing fees, whether or not the merger is completed.

In addition, if the merger is not completed, we could be subject to litigation related to any failure to complete the merger or related to any enforcement proceeding commenced against us to perform our obligations under the merger agreement. Any of these risks could materially and adversely impact our ongoing business, financial condition, financial results and stock price.

Similarly, delays in the completion of the merger could, among other things, result in additional transaction costs, loss of revenue or other negative effects associated with delay and uncertainty about completion of the merger and could materially and adversely impact our ongoing business, financial condition, financial results and stock price following the completion of the merger.

We may not be able to achieve anticipated cost savings or other anticipated benefits of the merger with Telaria.

The success of the merger will depend, in part, on our ability to successfully combine and integrate our business with Telaria, and realize the anticipated benefits, including synergies, cost savings, innovation and technological opportunities and operational efficiencies from the merger in a manner that does not materially disrupt existing customer, supplier and employee relations and does not result in decreased revenues due to losses of, or decreases in use of our solutions by, buyers and sellers of advertising inventory. If the combined company is unable to achieve these objectives within the anticipated time frame, or at all, the anticipated benefits may not be realized fully or at all, or may take longer to realize than expected, and the value of the combined company common stock may decline. The combined company may fail to realize some or all of the anticipated benefits of the merger if the integration process takes longer than expected or is more costly than expected.

The integration of the two companies may result in material challenges, including, without limitation:

- managing a larger, more complex combined business;
- maintaining employee morale and retaining key management and other employees;

- retaining existing business and operational relationships, including customers, suppliers and employees and other counterparties, as may be impacted by contracts containing consent and/or other provisions that may be triggered by the merger, and attracting new business and operational relationships;
- consolidating corporate and administrative infrastructures and eliminating duplicative operations, including unanticipated issues in integrating information technology, communications and other systems;
- coordinating geographically separate organizations; and
- unforeseen expenses or delays associated with the merger.

Many of these factors will be outside of our control, and any one of them could result in delays, increased costs, decreases in the amount of expected revenues or cost synergies, and other adverse impacts, which could materially affect the combined company’s financial position, results of operations and cash flows.

Due to legal restrictions, we are currently permitted to conduct only limited planning for the integration of the two companies following the merger. The actual integration may result in additional and unforeseen expenses, and the anticipated benefits of the integration plan may not be realized on a timely basis, if at all.

If the merger with Telaria is completed, our current stockholders will generally have a reduced ownership and voting interest in the combined company after the merger.

Our stockholders currently have the right to vote to elect our directors and on other matters affecting the company. Immediately after the completion of the merger, each of our stockholders will remain a stockholder of the combined company, but with a percentage ownership that will be smaller than such stockholder’s percentage of the company as of immediately prior to the merger. As a result of this reduced ownership percentage, our stockholders will generally have less voting power in the combined company after the merger than they did prior to the merger.

Completion of the merger with Telaria may trigger change in control or other provisions in buyer, seller, and other agreements to which we or Telaria are a party, which may have an adverse impact on the combined company’s business and results of operations following completion of the merger.

The completion of the merger may trigger change in control and other provisions in certain agreements to which we or Telaria are a party. If we are unable to negotiate waivers of those provisions, counterparties may exercise their rights and remedies under the agreements, including terminating the agreements or seeking monetary damages or equitable remedies. Even if we are able to negotiate consents or waivers, the counterparties may require a fee for such waivers or seek to renegotiate the agreements on terms less favorable to us. Any of the foregoing or similar developments may have an adverse impact on the combined company’s business and results of operations following completion of the merger.

Any acquisitions we undertake may disrupt our business, adversely affect operations, dilute stockholders, and expose us to costs and liabilities.

Acquisitions have been an important element of our business strategy, and we may pursue future acquisitions in an effort to increase revenue, expand our market position, add to our service offering and technological capabilities, respond to dynamic market conditions, or for other strategic or financial purposes. However, there is no assurance that we will identify suitable acquisition candidates or complete any acquisitions on favorable terms, or at all. Further, any acquisitions we do complete, including, if completed, our merger with Telaria, would involve a number of risks, which may include the following:

- The identification, acquisition, and integration of acquired businesses require substantial attention from management. The diversion of management's attention and any difficulties encountered in the transition process could hurt our business.
- The identification, acquisition, and integration of acquired businesses requires significant investment, including to determine which new service offerings we might wish to acquire, harmonize service offerings, expand management capabilities and market presence, and improve or increase development efforts and technology features and functions.
- The anticipated benefits from the acquisition may not be achieved, including as a result of loss of clients or personnel of the target, other difficulties in supporting and transitioning the target's clients, the inability to realize expected synergies from an acquisition, or negative culture effects arising from the integration of new personnel.
- We may face difficulties in integrating the personnel, technologies, solutions, operations, and existing contracts of the acquired business.
- We may fail to identify all of the problems, liabilities or other shortcomings or challenges of an acquired company, technology, or solution, including issues related to intellectual property, solution quality or architecture, income tax

and other regulatory compliance practices, revenue recognition or other accounting practices, or employee or client issues.

- To pay for future acquisitions, we could issue additional shares of our common stock or pay cash. Issuance of shares would dilute stockholders. Use of cash reserves could diminish our ability to respond to other opportunities or challenges. Borrowing to fund any cash purchase price would result in increased fixed obligations and could also include covenants or other restrictions that would impair our ability to manage our operations.
- Acquisitions expose us to the risk of assumed known and unknown liabilities including contract, tax, and other obligations incurred by the acquired business or fines or penalties, for which indemnity obligations, escrow arrangements or insurance may not be available or may not be sufficient to provide coverage.
- New business acquisitions can generate significant intangible assets that result in substantial related amortization charges and possible impairments.
- The operations of acquired businesses, or our adaptation of those operations, may require that we apply revenue recognition or other accounting methodologies, assumptions, and estimates that are different from those we use in our current business, which could complicate our financial statements, expose us to additional accounting and audit costs, and increase the risk of accounting errors.
- Acquired businesses may have insufficient internal controls that we must remediate, and the integration of acquired businesses may require us to modify or enhance our own internal controls, in each case resulting in increased administrative expense and risk that we fail to comply with the requirements of Section 404 of the Sarbanes-Oxley Act of 2002.
- Acquisition of businesses based outside the United States would require us to operate in foreign languages and manage non-U.S. currency, billing, and contracting needs, comply with laws and regulations, including labor laws and privacy laws that in some cases may be more restrictive on our operations than laws applicable to our business in the United States.
- Acquisitions can sometimes lead to disputes with the former owners of the acquired company, which can result in increased legal expenses, management distraction and the risk that we may suffer an adverse judgment if we are not the prevailing party in the dispute.

The purchase price allocation for any acquisition we complete is generally not finalized until well after the closing of the acquisition, and any final adjustment to the valuation could change the fair values assigned to the assets and liabilities, resulting in a change to our consolidated financial statements, including a change to goodwill. Such change could be material.

Risks Related to Our Business, Growth Prospects and Operating Results

Our new Demand Manager service requires significant upfront investments, has a long on-boarding and ramp-up period, and may not be successful.

We have announced a new offering called Demand Manager. Demand Manager helps sellers effectively monetize their advertising inventory through configuration tools and analytics to make it easier to deploy, configure, and optimize Prebid-based header bidding solutions. We charge sellers a fee for Demand Manager that is based on all of the sellers’ advertising spending managed through Demand Manager, whether the actual inventory monetization runs through our exchange or otherwise. In October 2019, we also acquired RTK.io, Inc., a provider of header bidding solutions similar to Demand Manager. Before clients are able to begin using Demand Manager, we expend a significant amount of time and costs in the initial setup and implementation, and we do not recognize revenue from Demand Manager clients until we commence services, often after an additional initial trial period. Clients typically initially manage only a small portion of their inventory with Demand Manager, and the pace of potential inventory ramp up will depend on the success and capabilities provided by both our Demand Manager product, and to a large extent on the development of the underlying Prebid-based header bidding solutions, which we do not control. Moreover, these services remain in the early stages of development and will require significant time, effort, and cost before we can determine the likelihood of market success. While we anticipate long-term revenue growth from Demand Manager, there can be no assurance that we will be able to add additional clients to our service or expand the inventory managed by current clients and thus grow revenue. We do not expect significant contributions from Demand Manager in the near term.

We made a strategic decision to reduce our pricing by lowering and then eliminating our buyer fees in 2017, resulting in significant revenue declines. We are now pursuing a higher volume, lower cost business model, which involves risks and may not succeed.

The ad tech market is demanding more efficiency and lower cost from intermediaries like us. In an effort to be more competitive in attracting demand and capturing inventory supply, we made a strategic decision in mid-2017 to reduce the fees we charged buyers in open market, real-time bidding, or RTB, transactions. In addition, in 2017 our business mix shifted to a higher proportion of header bidding transactions, and we charged lower buyer fees for header bidding transactions in order to pass higher bids to the downstream decisioning process. Finally, in response to increasing market pressure and in an effort to be more competitive, on November 1, 2017 we eliminated our buyer transaction fees altogether.

Buyer transaction fees represented approximately 49% of our revenue for the first ten months of 2017, which is the period during which we charged buyer fees in 2017, and represented approximately 43% of our revenue in 2017. Consequently, the elimination of our buyer transaction fees has had a severe adverse effect on our revenue and margins. We must continue to increase transactional activity on our platform dramatically to make up for this lost revenue and maintain growth. A critical part of our plan to adjust to our lower take rates is to increase advertising spending on our platform and operate with improved efficiency that will support lower margins. To increase our advertising spend, we are taking steps to increase significantly the ad requests coming from our seller clients, which represent inventory available for purchase on our platform, and to increase the percentage of ad requests that we convert into successful transactions (fill rate). We also actively discuss with buyers consolidating their spend onto our platform (commonly known as supply path optimization, or SPO).

We may not succeed in continuing to increase the inventory on our platform or improving fill rates for various reasons. Some of our competitors have matched our price reductions and developed their own filtering capabilities, thereby reducing the competitive advantage we seek to develop, and this could increase in the future. From time to time, sellers decide to reduce the number of exchanges with which they integrate and choose competitors over us. Large sources of supply that have their own monetization capabilities and also allow us to connect to their exchanges and bid on their inventory have in some cases reduced or eliminated our access to their inventories. Providers of third-party header bidding solutions from time to time impose prohibitive terms. Much of our inventory growth has been through header bidding or other downstream decisioning arrangements; we must compete effectively with other sources of demand to purchase that inventory, which has been difficult because some of our competitors have more robust demand or more effective technology or offer better pricing or service. In addition, operating at higher volumes with lower margins requires scale and efficiency, and we have found it difficult to compete successfully with our largest competitors as the market has evolved to aggressive price cutting. Finally, buyers have demanded and we expect will continue to demand certain concessions, rebates, or other consideration in order to direct additional spend to us, and there is no guarantee that any additional spend will materialize even if we make these concessions or offer rebates or other forms of consideration. To the extent we are unable to compensate for our price reductions by continuing to increase advertising spend on our platform, our revenue will decline, we will not be able to grow our business, our cash resources may be depleted, and we may be forced to seek additional capital to support our business and operations. If we are required to cut costs further in order to remain competitive, we may have difficulty identifying and implementing significant additional cost reduction measures without adversely impacting our operations and our ability to provide competitive services to our clients.

Our technology development efforts may be inefficient or ineffective, which may impair our ability to attract buyers and sellers.

We face intense competition in the marketplace and are confronted by rapidly changing technology, evolving industry standards and consumer needs, regulatory changes, and the frequent introduction of new solutions by our competitors that we must adapt and respond to. Our future success will depend in part upon our ability to enhance our existing solution and to develop and introduce competing new solutions in a timely manner with features and pricing that meet changing client and market requirements. Our solutions are complex and can require a significant investment of time and resources to develop, test, introduce, and enhance. These activities can take longer than we expect. We schedule and prioritize our development efforts according to a variety of factors, including our perceptions of market trends, client requirements, and resource availability; we may encounter unanticipated difficulties that require us to re-direct, scale back, or modify our efforts. If development of our solution becomes significantly more expensive due to changes in regulatory requirements or industry practices, or other factors, we may find ourselves at a disadvantage to larger competitors with more resources to devote to development. These factors place significant demands upon our engineering organization, require complex planning, and can result in acceleration of some initiatives and delay of others. We have expanded our use of outsourced software development, which may put the company at greater risk with respect to our technology development because we may have less control over the performance of outside programmers and we may be at greater risk of losing their services. To the extent we do not manage our development efforts efficiently and effectively, we may fail to produce solutions that respond appropriately to the needs of buyers and sellers, and competitors may more successfully develop responsive offerings. If our solution is competitive, buyers and sellers can be expected to shift their business to competing solutions. Buyers and sellers may also resist adopting our new solutions for various reasons, including reluctance to disrupt existing relationships and business practices or to invest in necessary technological integration.

The emergence of header bidding has increased competition from other demand sources, and our header bidding solution may not result in revenue growth and may cause infrastructure strain and added cost.

Sellers have embraced header bidding, a technology solution by which impressions that would have previously been exposed to different potential sources of demand in a sequence dictated by ad server priorities are instead available for concurrent competitive bidding by demand sources. This can help sellers increase revenue by exposing their inventory to more bidders, thereby allocating more inventory to demand sources that value it most highly. However, the number of demand sources that sellers accept is limited because too many header bidding integrations can cause delays in the transaction execution process, and therefore we must compete with other demand sources for allocations within a sellers' header bidding solution. With sellers that integrate with us as a demand source within their header bidding solution, we may be able to participate in improved demand dynamics by competing for impressions that would previously have been allocated first to demand sources prioritized above us in the seller's ad server, with accompanying potential for improved revenue. However, some sellers choose not to do so, and our opportunities with those sellers has been impaired as a result. Certain sources of demand with unique value propositions are prioritized by sellers in their header bidding implementation, leaving us to compete with other competitors for the remainder. Further, header bidding allows smaller competitors with less demand and/or fewer established seller relationships to compete for higher-value impressions on a more even footing. Just as header bidding allows us to compete with demand sources that would previously have been above us in sellers' ad server sequences, it exposes us to additional competition by demand sources that, prior to the emergence of header bidding, might have been below us in the sellers' ad server sequences or otherwise unable to compete effectively for inventory. This has contributed to our loss of market share for RTB desktop display inventory.

We have increased the number of installations of our header bidding solution with sellers. However, the productivity of our implementations to date has varied among sellers as a result of factors over which we have limited control, including seller systems and capabilities, technical proficiency of seller implementations, and third-party code that sellers load onto their pages. As a result, many implementations require individualized adaptation and troubleshooting. Because header bidding has typically relied upon the consumer’s browser for execution, header bidding auctions can fail if the consumer’s browser is not updated or if the consumer’s internet connection is slow, and header bidding can cause increased load times for content, adversely affecting user experience. Mobile browsers present additional difficulties. One alternative is to migrate functionality away from the client-side to the server-side, which is more highly controlled and should support faster load times. We are pursuing server-side solutions, but they present their own challenges. Adding an additional step between the user’s browser and the demand source can cause increased latency and limit the amount of user data that is transmitted, contributing to difficulties in user data syncing and resulting adverse effects on audience targeting. Server-side technology also significantly increases the volume of demand sources that can be accommodated, resulting in increased competition for impressions. Further, the exchange hosting the server-side technology used in a particular transaction has an advantage in user sync with its demand sources, at least until some form of universal user identification approach gains significant market adoption. In the future, we plan to host more server-side header bidding solutions for our sellers, but this will increase our infrastructure costs, which we will not recover without increasing our fill rates.

As we invest in development of next-generation header bidding technology, we must continue working to improve the efficiency and effectiveness of our current header bidding solution and installations. Until we address these transitional issues, we will not fully offset the increased infrastructure costs associated with the higher volume of ad and bid requests we process as a result of header bidding; and we will not be able to take full advantage of the opportunities made available through current header bidding technology to access a larger addressable market and increase our revenue by capturing a greater share of higher value inventory. In addition, the expansion of header bidding exposes more inventory to competitive bidding, thereby potentially resulting in increased volatility of our operating results with little warning as a result of various factors, including evolution in technology and changes in business practices such as competitors’ bidding tactics and sellers’ ad server integration and management.

We must increase the scale and efficiency of our technology infrastructure to support our growth and transaction volumes.

Our technology must scale to process the increased ad requests on our platform. Additionally, for each individual advertising impression created when a user visits a website or uses an application where our auctions technology is integrated, our technology must send bid requests to appropriate buyers, receive and process their responses, select a winner, and, increasingly, integrate with downstream decisioning systems. It must perform these transactions end-to-end within milliseconds. We must continue to increase the capacity of our platform to support our high-volume strategy, to cope with increased data volumes and parties resulting from header bidding and an increasing variety of advertising formats and platforms, and to maintain a stable service infrastructure and reliable service delivery. Delivering this increased capacity while concurrently reducing organizational costs or maintaining our current lower cost structure will require us to implement more efficient data processing and traffic filtering. To the extent we are unable, for cost or other reasons, to effectively increase the capacity of our platform, continue to process transactions at fast enough speeds, and support emerging advertising formats or services preferred by buyers, our revenue is adversely affected by the inability to obtain new buyers or sellers, loss of existing buyers or sellers, or failure to process auction transactions in a timely manner. We expect to continue to invest in our platform to meet increasing demand. Such investment may negatively affect our profitability and results of operations.

Our belief that there is significant and growing demand for private marketplace solutions may be inaccurate, and we may not realize a return from our investments in that area.

We believe there is significant and growing demand for PMPs, and we have made 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 CPMs. 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 sellers themselves, build their own technology and infrastructure to enter this business. Even if the market for these solutions develops as we anticipate, buyers and sellers might not embrace our offerings to the degree we expect due to various factors. For example, we may not be successful in building out these offerings consistent with our vision, and competitive offerings are offered at lower prices and are perceived as having better features and functionality. We may also be unable to scale our solution to markets outside of the United States due to local currency or other specific regulatory or operational requirements that we are unable to comply with. Even if the market for these solutions develops as we anticipate, and our buyers and sellers 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.

Our expectations regarding the growth prospects of our buyer offerings may be incorrect, and we may not realize a return from our investments in that area.

We compete for demand with well-established companies that have technological advantages stemming from their experience in the market. We must continue to adapt and improve our demand technology to compete effectively, and buyers have not always embraced our offering due to various factors, including the perception that competitors have superior technology or produce better results. Buyers’ efforts to optimize their supply paths have resulted in demands for transparency, inventory quality accountability, and longer payment terms. Some buyers are demanding access to data that we are restricted from sharing by our arrangements with sellers. Providing transparency to our buyers could negatively affect our sellers if buyers favor inventory that have lower fees. Some buyers also seek certain concessions, rebates, or other forms of consideration in order to increase their spending or continue spending with us at all. These factors may make it difficult for us to increase our business with some buyers, cause some buyers to reduce their spending with us, and increase our costs of doing business.

We have invested heavily in our mobile technology, which poses additional risks that did not affect our legacy desktop display business. Mobile connected devices, their operating systems, Internet browsers, or content distribution channels, including those controlled by our competitors, have in some instances developed in ways that make it difficult for advertisements to be delivered to their users. Further, we rely upon relationships with third parties to provide our buyers with access to large numbers of mobile inventory sellers that utilize third-party technology to display ads. To the extent our access to mobile inventory is limited by third-party technology or lack of direct relationships with mobile sellers, our ability to grow our business will be impaired.

Due to increased usage of mobile devices and resulting migration of advertising spending to mobile platforms, we have invested heavily in our mobile technology and are relying on our mobile offerings to fuel our continued growth. Because mobile advertising uses different data-capture techniques and methods of recording payable transactions, caters to different buyer budgets, may require us to enter emerging markets in which we have less experience, including China and India, and involves development challenges imposed by differing technological requirements and standards, there can be no assurance that we will be successful in achieving our goals in this market. Moreover, buyers' spending to reach consumers through mobile advertising may evolve more slowly than expected, or not grow to levels we anticipate. Our mobile investment has been focused on real-time bidding of mobile impressions, and that market may not grow as we expect. Our success in the mobile channel depends upon the ability of our technology solution to provide advertising for most mobile-connected devices, as well as the major operating systems or Internet browsers that run on them and the thousands of applications that are downloaded onto them. The design of mobile devices and operating systems, applications, or Internet browsers is controlled by third parties. These parties frequently introduce new devices and applications, and from time to time they may introduce new operating systems or Internet browsers or modify existing ones in ways that may significantly affect our business, such as by providing ad-blocking capabilities or by limiting access to Internet user data. Network carriers may also affect the ability to access specified content on mobile devices. To the extent our solution is unable to work on these devices, operating systems, applications, or Internet browsers for any reason, our ability to generate revenue through mobile advertising is significantly impaired, and that impairment may be material.

Our growth depends upon our ability to attract and retain buyers and sellers and increase business with them. Most of the application providers selling inventory through our platform utilize software development kits, or SDKs, and other proprietary technology of third parties, such as aggregators, and it is those third parties, not the application providers themselves, that contract with us to provide exchange services to help monetize the inventory. From time to time our relationships with these third parties are terminated, the scale of these third parties' business with application providers is reduced, these third parties develop their own solutions that render ours obsolete, and the third parties' clients begin transacting directly between each other rather than through the third party, which causes the amount of mobile inventory available through our platform to decline. Any rapid and/or significant decline can adversely affect our mobile advertising spend and growth prospects.

Fee issues have in the past and could in the future have a material adverse effect on our business.

A majority of our advertising spend comes from DSP buyers purchasing advertising inventory in RTB transactions on our platform. We experience requests from buyers and sellers for discounts, fee concessions or revisions, rebates or other forms of consideration, refunds, and greater levels of pricing transparency and specificity, 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 sellers for use of our technology, typically as a percentage of the cost of media, 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, the value of our business, and the price of our stock could be adversely affected if we cannot maintain and grow our revenue and profitability through volume increases that compensate for price reductions, or if we are forced to make significant fee concessions, rebates, or refunds, or if buyers reduce spending with us or sellers reduce inventory available through our exchange due to fee disputes or pricing issues.

We have a history of losses and we face many risks that may prevent us from achieving or sustaining profitability in the future.

Despite an increase in revenue in 2019, we reported net losses of $25.5 million and $61.8 million during the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019, we had an accumulated deficit of $341.1 million. We have implemented strategic plans designed to improve our financial performance and continue to increase revenue, and have taken steps to reduce unnecessary expenses and redirect spending to areas we expect to produce higher growth; however, these plans and steps may ultimately prove to be unsuccessful.

Notwithstanding these measures, and the ad spend growth experienced in 2019, revenue may continue to decrease due to competitive pressures, maturation of our business, or other factors, and additional cost-reduction measures may be required even as we must continue to increase investment in technology in response to industry developments and to retain competitiveness. We may not be able to sustain growth or to achieve or sustain profitability in the future.

As a result of various factors, our operating results have in the past and may in the future fluctuate significantly, be difficult to predict, and fall below analysts' and investors' expectations.

Our operating results are difficult to predict, particularly because we generally do not have long-term contracts with buyers or sellers. We have experienced significant variations in revenue and operating results from period to period, and operating results may continue to fluctuate and be difficult to predict due to a number of factors, including:

- seasonality in demand for digital advertising, as many advertisers devote a disproportionate amount of their advertising budgets to the fourth quarter of the calendar year to coincide with increased holiday purchasing, and advertising inventory in the fourth quarter may be more expensive due to increased demand for advertising inventory;
- changes in pricing of advertising inventory or pricing for our solution and our competitors' offerings, including potential further reductions in our pricing and overall take rate as a result of competitive pressure, changes in supply, improvements in technology and extension of automation to higher-value inventory, uncertainty regarding rate of adoption, changes in the allocation of demand spend by buyers, changes in revenue mix, auction dynamics, pricing discussions or negotiations with clients and potential clients, header bidding and other factors;
- diversification of our revenue mix to include new services, some of which may have lower pricing than our historic lower-value inventory business or may cannibalize existing business;
- the addition or loss of buyers or sellers;
- changes in the advertising strategies or budgets or financial condition of advertisers;
- the performance of our technology and the cost, timeliness, and results of our technology innovation efforts;
- advertising technology and digital media industry conditions and the overall demand for advertising, or changes and uncertainty in the regulatory environment for us or buyers or sellers, including with respect to privacy regulation;
- the introduction of new technologies or service offerings by our competitors and market acceptance of such technologies or services;
- our level of expenses, including investment required to support our technology development, scale our technology infrastructure and business expansion efforts, including acquisitions, hiring and capital expenditures, or expenses related to litigation;

- the impact of changes in our stock price on valuation of stock-based compensation or other instruments that are marked to market;
- the effectiveness of our financial and information technology infrastructure and controls;
- foreign exchange rate fluctuations; and
- changes in accounting policies and principles and the significant judgments and estimates made by management in the application of these policies and principles.

Because significant portions of our expenses are relatively fixed, variation in our quarterly revenue can cause significant variations in operating results and resulting stock price volatility from period to period. In order to minimize adverse effects of our price reductions on revenue, we must increase the inventory and advertising spend on our platform and add more high-value inventory, which requires ongoing investment that can adversely affect earnings and might ultimately be unsuccessful. Period-to-period comparisons of our historical results of operations are not necessarily meaningful, and historical operating results may not be indicative of future performance. If our revenue or operating results fall below the expectations of investors or securities analysts, or below any guidance we may provide to the market, the price of our common stock could decline substantially.

Our revenue and operating results are highly dependent on the overall demand for advertising. Factors that affect the amount of advertising spending, such as economic downturns, can make it difficult to predict our revenue and could adversely affect our business.

Our business depends on the overall demand for advertising and on the economic health of our current and prospective sellers and buyers. If advertisers reduce their overall advertising spending, our revenue and results of operations are directly affected. Various macro 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 and Europe, where we do most of our business, instability in political or market conditions generally, and any changes in favorable tax treatment of advertising expenses and the deductibility thereof. Reductions in inventory due to loss of sellers make our solution less robust and attractive to buyers.

Risks Related to the Advertising Technology Industry, Market, and Competition

Market conditions are increasing the costs and risks of our operations.

Due to various factors, including header bidding, market pressure from the increasing share of the digital advertising economy absorbed by Google and Facebook, disintermediation, and demands by both buyers and sellers of digital advertising for increased efficiency and value throughout the ecosystem, business conditions are becoming more difficult for intermediary businesses like ours. We see this in various ways. Both demand and supply for digital advertising inventory outside the “walled garden” companies are becoming less unique, contributing to commodification of the business. Buyers and sellers are demanding more favorable trade terms, which puts pressure on our cash collections cycle and can require more of our cash to fund our payments, making it unavailable to invest in growth. Buyers increasingly require us to accept liability for inventory quality and sellers increasingly require us to accept liability for ad content, despite the fact that we are not in direct control of either. Increased buyer vigilance regarding non-human traffic and other inventory quality issues, and varying inconsistent methodologies for assessing inventory quality, are causing buyers increasingly to withhold payment for transactions they question. Buyers and sellers are increasingly insisting upon using their own data to resolve discrepancies in transaction counts more favorably to them, resulting in some revenue loss. These and similar trends increase the costs and risks of our operations and put pressure on our margins.

The digital advertising market is relatively new, dependent on growth in various digital advertising channels, and vulnerable to adverse public perceptions and increased regulatory responses. If this market develops more slowly or differently than we expect, or if issues encountered by other participants or the industry generally are imputed to or affect us, our business, growth prospects and financial condition would be adversely affected.

While our core business of desktop display advertising has been used successfully for many years, marketing via new digital advertising channels, such as mobile and social media, out-of-home, and digital video advertising, are emerging and may evolve in unexpected ways, and our future growth will be constrained if we are not able to adapt successfully to market evolution. In addition, the success of our efforts to advance new solutions for increased advertising automation will depend upon adoption of our solution by personnel at buyers and sellers in lieu of their traditional methods of order placement. It is difficult to predict adoption rates, demand for our solution, the future growth rate and size of the digital advertising solutions market or the entry of competitive solutions.

Further, the digital advertising industry is complex and evolving, and the relatively few publicly traded companies operating in the business tend to be small and new to the public markets. Consequently, the digital advertising industry may not be as widely followed or understood in the financial markets as more mature industries. The markets may not fully appreciate our particular place in the industry and our strengths and differentiating factors. Problems experienced by one industry participant (even private companies) or issues affecting a part of the industry have the potential to have adverse effects on other participants in the industry or even the entire industry. Emerging understanding of how the digital advertising industry operates has spurred privacy concerns and misgivings about exploitation of consumer information and prompted regulatory responses that limit operational flexibility and impose compliance costs upon industry participants.

Any expansion of the market for digital advertising solutions depends on a number of factors, including social and regulatory acceptance, the growth of the overall digital advertising market and the growth of specific sectors including social, mobile, video, and out-of-home as well as the actual or perceived technological viability, quality, cost, performance and value associated with emerging digital advertising solutions. If demand for digital display advertising and adoption of automation does not continue to grow, or there is a reduction in demand for digital advertising caused by weakening economic conditions, decreases in corporate spending, quality, viewability, malware issues or other issues associated with buyers, advertising channels or inventory, negative perceptions of digital advertising, additional regulatory requirements, or other factors, or if we fail to develop or acquire capabilities to meet the evolving business and regulatory requirements and needs of buyers and sellers of multi-channel advertising, our competitive position will be weakened.

We operate in an intensely competitive market that includes companies that have greater financial, technical and marketing resources than we do.

We face intense competition in the marketplace. Our revenue is vulnerable to acts by third parties that reduce the amounts of spending or inventory available to us. We compete for advertising spending against competitors that, in some cases, are also buyers and/or sellers on our platform. We also compete for supply of advertising inventory against a variety of competitors. Some of our existing and potential competitors are better established, benefit from greater name recognition, may have offerings and technology that we do not have or have significantly more financial, technical, sales, and marketing resources than we do. For example, the amount of inventory available to independent platforms like us could be reduced as a result of decisions by Facebook to emphasize content viewable through its site or to favor friends-and-family type feeds over third-party properties, or decisions by Google to utilize its ad server advantages to outbid us and other competitors in open-market transactions. 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 competitors are able or willing to agree to contract terms that expose them to risks that might be more appropriately allocated to buyers or sellers of advertising (including inventory risk and the risk of having to pay sellers 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 sellers or are seeking to establish such relationships, and many sellers are investing in capabilities that enable them to connect more effectively directly with buyers. Our business suffers to the extent that buyers and sellers 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. In addition, as a result of solutions introduced by us or our competitors, our marketplace will experience disruptions and changes in business models, which may result in our loss of buyers or sellers. Our innovation efforts may lead us to introduce new solutions that compete with our existing solutions. New or stronger competitors may emerge through acquisitions and industry consolidation or through development of disruptive technologies. If our offerings are not perceived as competitively differentiated, we could lose clients, market share or be compelled to reduce our prices, making it more difficult to grow our business profitably. Finally, nefarious, illegal, or disreputable acts by one or more of our competitors could affect the reputation and trustworthiness of the ad tech industry as a whole, which could negatively affect our revenue because buyers and sellers could decide to focus their activities on larger, more established industry participants.

There has 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 buyers and sellers are large consolidated organizations that may need to acquire other companies in order to grow. Smaller buyers and sellers may need to consolidate in order to compete effectively. There is a finite number of large buyers and sellers in our target markets, and any consolidation of buyers or sellers may give the resulting enterprises greater bargaining power or result in the loss of buyers and sellers that use our platform, and thus reduce our potential base of buyers and sellers, each of which would lead to erosion of our revenue.

As technology continues to improve and market factors continue to attract investment, competition and pricing pressure may increase and market saturation may change the competitive landscape in favor of larger competitors with greater scale and broader offerings, including those that can afford to spend more than we can to grow more quickly and strengthen their competitive position through innovation, development and acquisitions. In order to compete effectively, we may need to innovate, further differentiate our offerings, and expand the scope of our operations more quickly than would be feasible through our own internal efforts. However, because some capabilities may reside only in a small number of companies, our ability to accomplish necessary expansion through acquisitions may be limited because available companies may not wish to be acquired or may be acquired by larger competitors with the resources to outbid us, or we may need to pay substantial premiums to acquire those businesses. Our ability to make strategic acquisitions has also been hampered by the significant declines we have experienced in the value of our common stock in the past, because our stock may not be viewed favorably as acquisition currency by an acquisition target, and the lower our stock price, the more dilution results from stock-based acquisitions.

Our business depends on our ability to collect and use data to deliver advertisements, and to disclose data relating to the performance of 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 sellers, buyers, and revenue. Consumer tools, regulatory restrictions and technological limitations all threaten our ability to use and disclose data.

The more informed advertising is about its audience, the more valuable it is. Programmatic advertising, facilitated by the ad tech ecosystem, enables more precise audience targeting, known as "behavioral" or "personalized" advertising. Behavioral advertising is more effective and valuable for buyers than other types of advertising, resulting in more revenue for publishers. In order to perform behavioral advertising, we and our clients must be permitted to use data in a variety of ways. Our ability to collect, use, and share data about advertising purchase and sale transactions and user behavior and interaction with content is critical to the value of our services, and any limitation on our data practices could impair our ability to deliver effective solutions that meet the needs of sellers and buyers of advertising, resulting in loss of volume and reduced pricing. Any restriction on the types of technology we use to capture user or inventory information could make placement of advertising through our solution less valuable, with commensurate reductions in revenue.

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 solution. First, cookies may easily be deleted or blocked by Internet users. All of the most commonly used Internet browsers allow Internet users to modify their browser settings to block first-party cookies (placed directly by the publisher or website owner that the user intends to interact with) or third-party cookies (placed by parties, like Rubicon Project, that have no direct relationship with the user). Browsers are increasingly blocking third-party cookies by default, and the industry is continuing to move away from third-party cookies altogether. Most browsers also now support temporary privacy modes that allow the user to suspend, with a single click, the placement of new cookies or reading or updates of existing cookies.

Some Internet users also download free or paid "ad blocking" software, not only for privacy or security reasons, such as a desire to avoid being targeted for ads based upon location or online activity, but also to counteract the adverse effect advertisements can have on users' experience, including increased load times, data consumption, and screen overcrowding. Similar ad blocking technology has also emerged for mobile devices. Such ad blocking technology may prevent certain third-party cookies, or other tracking technologies, from being stored on a user's computer or mobile device. If more Internet users adopt these measures, our business could be harmed. Ad blocking technologies have an adverse effect on our business when they reduce the volume or effectiveness (and therefore value) of advertising. 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 provider of the website or application being viewed). These ad blockers place us at a disadvantage because we rely on third-party data, while 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 clients at a disadvantage, particularly if such technologies are controlled or influenced by our competitors. Even if ad blockers do not ultimately have a material impact on our business, investor concerns about ad blockers could cause our stock price to decline.

Further, much of the data we collect and use belongs to our buyers or sellers, and we receive their permission to use it. (Other data is subject to control by Internet users, either as a result of regulation or through choices such as behavioral advertising opt-outs or use of ad blocking technologies, as discussed below). We use data related to our buyers and sellers and their transactional activity on our platform to facilitate our services, but we must exercise care not to use this data in ways that provide unfair advantages to, or adversely affect, buyers or sellers. Although our sellers and buyers generally permit us to aggregate and use data from advertising placements, subject to certain restrictions, sellers or buyers might decide to restrict our collection or use of their data. There could be various reasons for this, including perceptions by buyers that their data can be used by sellers to extract higher prices for impressions, or perceptions by sellers that their data can be used by buyers to bid tactically to reduce pricing for impressions. Buyers and sellers may also request that we discontinue using data obtained from their transactions that has already been aggregated with other data. It would be costly and difficult, if not impossible, to comply with such requests. As consumers continue to increase their use of digital technology and to incorporate multiple devices into their lives, linking and using data across such devices will become increasingly important. Various challenges affect our ability to link data relating to discrete devices or browsers, including different technologies, increased user awareness and sensitivity regarding use of data about their device usage, and evolving regulatory and self-regulatory standards. These challenges may slow growth, and if we are not able to cope with these challenges as effectively as other companies, we will be competitively disadvantaged. Any limitation on our ability to collect data about user behavior and interaction with content could make it more difficult for us to deliver effective solutions that meet the needs of sellers and buyers.

If cookies are replaced by alternative tracking mechanisms, our performance may decline and we may lose buyers and revenue.

Some prominent sellers, including Google, have announced intentions to discontinue the use of cookies, and to develop alternative methods and mechanisms for tracking web users. It is possible that these companies may rely on proprietary algorithms or statistical methods to track web users without cookies, or may utilize log-in credentials entered by users into other web properties owned by these companies, such as their digital email services, to track web usage, including usage across multiple devices, without cookies. Alternatively, such companies may build different and potentially proprietary user tracking methods into their widely-used web browsers.

If cookies are effectively replaced by proprietary alternatives, our continued reliance upon cookie-based methods may face negative consumer sentiment and otherwise place us at a competitive disadvantage, compelling us to develop or license alternative proprietary tracking methodologies. Development would take time, potentially subjecting us to competitive disadvantages, and require substantial investment from us. Development also may not be commercially feasible given our relatively small size, the fact that development of such technologies may require technical skills that differ from our core engineering competencies, and the likelihood that the market would adopt solutions developed by larger competitors. Licensing new proprietary tracking mechanisms and data from companies that have developed them may not be viable for us for various reasons; creators of such technology may compete with us and may offer to provide the technology to us only on unfavorable terms or not at all, and if proprietary web tracking standards are owned by sellers or browser operators that have access to user information by virtue of their popular consumer-oriented websites or browsers and design their technology for use in conjunction with the types of user information collected from their websites or design their browser to disfavor third-party cookies, we may still be at a competitive disadvantage even if we license their technology.

If cookies are effectively replaced by open industry-wide tracking standards rather than proprietary standards, we may still incur substantial re-engineering costs to replace cookies with these new technologies. This may also diminish the quality or value of our services to buyers if such new technologies do not provide us with the quality or timeliness of the data that we currently generate from cookies.

Legislation and regulation of digital businesses, including privacy and data protection regimes, could create unexpected additional costs, subject us to enforcement actions for compliance failures, or cause us to change our technology solution or business model, which may have an adverse effect on the demand for our solution.

Many local, state, federal, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer, and other processing of data collected from and about consumers and devices, and the regulatory framework for privacy issues is evolving worldwide. Various U.S. and foreign governments, consumer agencies, self-regulatory bodies, and public advocacy groups have called for or implemented new regulation directed at the digital advertising industry in particular, and we expect to see an increase in legislation and regulation related to the collection and use of data to target advertisements and communicate with consumers—including the use of mobile device and cross-device data, geo-location data, anonymous Internet user data and unique device identifiers, such as IP address or mobile advertising identifiers—and the collection of data from apps and websites that are directed to children. Such legislation or regulation could affect the costs of doing business online and may adversely affect the demand for or the effectiveness and value of our solution. Some of our competitors may have more access to lobbyists or governmental officials and may use such access to effect statutory or regulatory changes in a manner that commercially harms us while favoring their solutions.

Various federal privacy bills have been introduced in the U.S. Congress recently and a number of state legislatures, including California, have passed or are considering privacy bills. These regulations may place significant restrictions on the collection and use of certain types of data used for behavioral advertising. The FTC has issued guidance on how companies should apply privacy principles to tracking and delivering targeted advertisements to consumers across multiple devices. The FTC has also adopted revisions to the Children's Online Privacy Protection Act that expand liability for the collection of information (including certain anonymous information such as persistent identifiers) by operators of websites and other online services that are directed to children or that otherwise use (for certain purposes) information collected from or about children.

On June 18, 2018, California passed a privacy law in the California Consumer Privacy Act of 2018 ("CCPA"), which grants California residents certain rights with respect to their personal information. The CCPA is the most comprehensive data privacy regulation to date in the United States, and could be the precursor to other similar legislation in other states or at the federal level. The CCPA expands the definition of personal information, which captures the types of data that we collect, such as device identifiers and IP addresses. Under the CCPA, businesses are required to grant expansive access, deletion and portability rights to consumers in the United States, similar to those provided under the GDPR. In addition, the CCPA gives California residents the right to opt-out of the sale of their personal information; this opt-out right may impact the ability of ad tech companies to provide services to their customers if use of data in providing such services falls under the definition of a sale. The law also imposes burdensome storage and compliance obligations on publishers and ad tech companies. Interpretation of the requirements remains unclear due to the recent passage of the regulation. The law took effect on January 1, 2020, with the Attorney General enforcement of the CCPA delayed until July 2020. The Attorney General has proposed regulations that are still in a public comment period and could be revised. The delay in enforcement and finalizing of the applicable regulations creates uncertainty as to the requirements of the law and its impact on our business. The CCPA may precipitate additional privacy regulation by federal, state and local governments, which may increase our compliance costs and strain our technical capabilities, and which may conflict with each other. If we are unable to comply with the CCPA or other related legislation in the future, we may be subject to regulatory or private investigations, and if we are unable to use information for behavioral advertising as we have in the past, our business could be materially affected.

In addition, the European Union has adopted the General Data Protection Regulation, Regulation (EU) 2016/679. A key feature of the GDPR is that it treats much of the end-user information that is critical to programmatic digital advertising as "personal data" and therefore subject to significant conditions and restrictions on its collection and use. Without this end-user information, the value of programmatic advertising inventory diminishes, resulting in lower demand and prices, and potentially less ad spend and revenue for us and other industry participants. The GDPR also sets out higher potential liabilities for certain data protection violations and creates a greater compliance burden for us in the course of delivering our solution in Europe (as outlined further below). The regulatory climate in Europe, in particular, has grown increasingly unfavorable for advertising technology-based business. Regulators have expressed antipathy towards common technologies deployed in digital advertising and we anticipate increased regulatory scrutiny on the digital advertising industry as a whole.

Further, many governments are restricting the transmission or storage of information about individuals beyond their national borders. Such restrictions could, depending upon their scope, limit our ability to utilize technology infrastructure consolidation, redundancy, and load-balancing techniques, resulting in increased infrastructure costs, decreased operational efficiencies and performance, and increased risk of system failure.

These laws and regulations are continually evolving, not always clear, and not always consistent across the jurisdictions in which we do business. Any failure to protect, and comply with applicable laws and regulations or industry standards applicable to, personal data or other data relating to consumers could result in enforcement action against us, including fines, imprisonment of our officers, and public censure, claims for damages by consumers and other affected individuals, damage to our reputation, and loss of goodwill. This is particularly true given that the FTC, Attorneys General of various U.S. States and various international regulators (including numerous data protection authorities in the European Union), have specifically cited as enforcement priorities certain practices that relate to digital advertising. Even the perception of concerns relating to our collection, use, disclosure, processing, and retention of data, including our security measures applicable to the data we collect, whether or not valid, may harm our reputation (and the reputation of the digital advertising ecosystem) and inhibit adoption of our solution by current and future buyers and sellers. We are aware of ongoing lawsuits filed against, or regulatory investigations into, companies in the digital advertising industry concerning various alleged violations of consumer protection, data protection, and computer crime laws, asserting various privacy-related theories. Any such proceedings brought against us could hurt our reputation, force us to spend significant amounts in defense of these proceedings, distract our management, increase our costs of doing business, adversely affect the demand for our services or the digital advertising industry at large, and ultimately result in the imposition of monetary liability or restrictions on our ability to conduct our business. We are sometimes contractually liable to indemnify and hold harmless buyers or sellers from the costs or consequences of litigation or regulatory investigations resulting from using our services or from the disclosure of confidential information, which could damage our reputation among our current and potential sellers or buyers, require significant expenditures of capital and other resources and cause us to lose business and revenue.

Legal and compliance uncertainties resulting from effectiveness of the GDPR may result in substantial risk to our ad spend and revenue.

The GDPR, which became effective on May 25, 2018, has imposed significant new regulatory requirements that are applicable to us as well as our clients and competitors. As is frequently the case with transformative new laws, some critical elements of the GDPR are still unclear, and consistent regulatory guidance has yet to be developed, and established industry compliance practices have yet to emerge. Compliance stakes are high because penalties for violation of the law can reach up to the greater of 20 million Euros or 4% of total worldwide annual turnover (revenue). Further, compliance is complicated by the potential for differing interpretation and enforcement of the GDPR by regulators in each of the EEA’s member states. The reach of the GDPR extends well beyond ad tech, but some observers believe that ad tech may become a special focus of enforcement due to the concerns many European privacy regulators have expressed about digital behavioral advertising.

If European publishers react by choosing to monetize their content through non-advertising-based methods (such as paid subscriptions), or reduce use of personal data subject to the GDPR in order to reduce compliance cost and risk, the volume and value of impressions available through our exchange would decrease, with potentially significant adverse consequences for our business. If we are subjected to regulatory investigations or private claims, we could face significant fines and losses, and our financial position could be materially affected. In addition, the GDPR permits some form of representative actions, which may be similar to class actions or collective actions in the United States. Allowing such representative actions may incentivize parties, organizations, and/or advocates to pursue private legal action relating to data protection violations more aggressively.

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. The Rubicon Project, Inc. is established in the United States of America and has certified its compliance to the EU-US Privacy Shield. The Privacy Shield is a privacy framework that the European Commission has declared provides "adequate" protection for personal data, and this enables The Rubicon Project, Inc. to receive personal data lawfully from the EU for as long as it complies with the Privacy Shield. If The Rubicon Project, Inc. fails to comply with the Privacy Shield (or with EU data protection rules more generally), it risks investigation and sanction by EU or US regulatory authorities, include the Federal Trade Commission. Each such investigation could cost us significant time and resources, and could potentially result in fines, criminal prosecution, or other penalties.

Further, the Privacy Shield, as well as some alternative compliance measures that we may also use for extra-EU data transfers, such as EU Commission approved data export agreements called Standard Contractual Clauses, are facing legal and political challenges. For example, in July 2018, the EU Parliament called for the suspension of the EU-US Privacy Shield by September 1st, 2018, although this did not happen. Further, in Data Protection Commissioner v. Facebook and Maximillian Schrems (“Schrems II”), the question of whether Standard Contractual Clauses (“SCCs”) enable lawful transfers of personal data from the EU has been referred by the Irish High Court to the Court of Justice of the European Union (“CJEU”). If these challenges successfully invalidate the Privacy Shield or the alternative compliance measures that we currently rely on or may choose to rely on in the future, it may take us significant time, resources, and effort to restructure our business and/or rely on another legally sufficient compliance measure. In December, 2019, an Advocate General to the CJEU issued an advisory opinion in the Schrems II case that could impact the SCCs and the Privacy Shield. The Advocate General’s opinion confirmed the general validity of SCCs as a legal mechanism for transnational data transfer but suggested that SCCs may be insufficient where a third country’s laws impose conflicting obligations. The opinion also recommended that the CJEU avoid ruling on the validity of the EU-US Privacy Shield, but there have been at least some indications that the CJEU may be interested in taking on that broader issue. The CJEU is expected to issue a decision in the next three to six months. Additionally, such an invalidation might affect our reputation with our clients, who may choose 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.

The GDPR imposes new requirements for end user consent and legal basis for data processing that are not yet well understood.

End-user consent to data collection through device access (including the placement of cookies) has been required for some time under the European Union Privacy and Electronic Communications Directive (Directive 2002/58/EC), commonly referred to as the "ePrivacy Directive," but the GDPR has added complexity and risk. End-user consent is difficult for ad tech intermediaries like us to obtain because we do not have direct relationships with such end users, so we have historically relied upon publishers to obtain consent for our technology under the ePrivacy Directive. To the extent any seller does not adequately satisfy their consent obligations for our technology, we may face regulatory risk. Further, emerging regulatory guidance has challenged this method of obtaining consent. To the extent we (and/or our buyers) are required to obtain or confirm consent directly from end users, our ability to use cookies or access devices within the EEA may become significantly restricted.

While simple click-through cookie banners on EU-based digital media properties had been the norm for ePrivacy Directive compliance, it may become more challenging to obtain valid consent from European end users because the GDPR will likely be interpreted to impose additional requirements applicable to end-user consents generally. In order to obtain valid consent, end users must be provided with increasingly granular data about cookies placed in the course of delivering an advertisement, including cookies placed by us, or by buyers using our technology. Providing this granular level of data may be difficult to do, considering user interface restrictions, and in some cases, may not be possible. Further, if consent mechanisms become too cumbersome or unwieldy, end users are more likely to decline. This may result in lower levels of users' consent for accessing of their devices and processing of their personal data. Without consent, our publishers may not attempt to monetize inventory associated with such end users at all, or pass that inventory to us without personal data, which will reduce the value of such inventory.

In 2018, IAB Europe released a tool, the Transparency and Consent Framework (the "TCF"), in order to assist publishers, advertisers and advertising technology providers, with the process of obtaining consent from end users in accordance with the GDPR (and also to provide end users with greater transparency in the advertising chain). In order for a publisher to use this tool, it must implement a "consent management provider" (CMP) to notify end users about the vendors that may access their personal data and their intended uses. The CMP then generates a consent string to distribute information to vendors about the end user's consent preferences. There is limited guidance regarding proper implementation of the tool and some publishers and ad tech providers may not be using the tool or interpreting consent signals correctly. The TCF continues to evolve and we will need to devote internal resources to support any additional requirements imposed by the TCF (and possibly other consent tools). It is also not yet clear whether the TCF (or any other) consent tool will be accepted by regulators as appropriate consent mechanisms. Consent tool adoption remains in the early stages and it is unclear whether the market will widely adopt one standard. Some buyers may decline to bid on impressions from the EEA due to ambiguity about their rights, or may only bid on impressions that are stripped of personal data and converted to contextual advertising. This will have the effect of reducing demand for and value of EEA impressions on our platform.

National regulators in the UK and European Union are evolving their guidance on the use of advertising technologies and compliance with the GDPR and ePrivacy Directive. This guidance may be burdensome or inconsistent across countries, and present challenges to the way we operate. Some regulators are also undertaking enforcement investigations into advertising technology companies, and the outcome of these investigations may also present risks to our business.

As a result of the factors set forth above, our or our clients' ability to place or use third-party cookies or access mobile devices, may become significantly impaired in certain jurisdictions. The EU is also expected to replace the ePrivacy Directive with the ePrivacy Regulation. Current drafts of the ePrivacy Regulation propose significant requirements around obtaining consent, and impose fines for violations that are materially higher than those imposed under the ePrivacy Directive.

***It remains unclear whether certain legal bases for data processing are permitted for behavioral advertising*.**

The GDPR sets forth six alternative legal bases for processing personal data, but only two are relevant to ad tech: consent by the data subject and "legitimate interests," which means that "processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject." We generally rely upon legitimate interests. There is minimal guidance on the factors that would override any legitimate interest for processing. Some EU regulators or courts may conclude that the processing of personal data for the purposes of behavioral advertising does not satisfy the legitimate interests of the controller, or that such interests do not outweigh the privacy rights of end users, even with respect to ad tech parties that only collect pseudonymous personal data. Unavailability of this basis for processing end users' personal data would require us to obtain end-user consent for processing under the GDPR, which may not be possible for us, or other ad tech intermediaries, without changes to the ad tech business that would be difficult, time-consuming, expensive, and perhaps unattainable. These complexities are compounded by the ability of different national and state governmental authorities within the EU to adopt differing interpretative and enforcement approaches to the law.

Google currently relies on end-user consent as its legal basis for processing personal data, and has required its publishers and ad tech partners to obtain such end-user consent on behalf of Google. We are reliant upon third parties to obtain consent for Google in accordance with their policies. Consent is relatively easier for Google to obtain because of its direct relationships with end users and importance to publishers, but its practices may not translate well across the industry. If publishers are unable to obtain this consent our revenue and advertising spend could decline.

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

Some publishers may be unprepared to comply with evolving regulatory guidance under the GDPR, and therefore may remove personal data from their inventory before passing it into the bid stream, at least temporarily. This will lower their inventory on the value scale from behavioral to contextual advertising, resulting in loss of ad spend and revenue for us. Even well-prepared publishers and buyers will be confronted with difficult choices and administrative and technical hurdles to implement their GDPR 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 new law increases 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 clients 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 GDPR may benefit large, integrated competitors like 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 that we and other intermediaries without direct user relationships are less able to obtain under current industry conditions.

We generally do not have contractual privity with Internet users who view advertisements that we place, and we may not be able to disclaim liabilities from such Internet users or consumers.

Potential sources of liability to Internet users include malicious activities, such as the introduction of malware into users' computers through advertisements served through our platform, and code that redirects users to sites other than the ones users sought to visit, potentially resulting in malware downloads or use charges from the redirect site. Sellers of advertisement space purchased through our solution often have terms of use in place with their users that disclaim or limit their potential liabilities to such users, or pursuant to which users waive rights to bring class-action lawsuits against the sellers related to advertisements. Certain of our competitors are also prominent sellers, and may be able to include protections in their website or application terms of use that also limit liability to users of their advertising services. We generally do not have terms of use in place with such users. As a consequence, we generally cannot disclaim or limit potential liabilities to such users through terms of use, which may expose us to greater liabilities than competing advertising networks that are also prominent sellers.

The evolving concept of viewability involves competitive uncertainty and may cause us to incur additional costs and liability risk.

Viewability of digital advertising inventory is relevant to marketers because it represents a way of assessing the value of particular inventory as a means to reach a target audience. However, there is no consensus definition of viewability. Some approaches focus on whether an advertisement can be seen at all, and others focus on whether an advertisement that can be seen is actually seen, in whole or part, or for how long. Low viewability can be caused by various factors, including technical issues (e.g. device screen size, browser functionality and settings, web site load times), media design (e.g. below-the-fold or sub-page placements), and user behavior (e.g. the decision whether to scroll down a website or click on an advertisement or how long to watch a video). Non-viewability is a separate issue and may result, for example, from stacking ads so the one in the back is obscured, or serving ads into a single pixel space too small to be seen.

Incorporating viewability concepts fully into our business as they evolve will require us to incur additional costs to integrate relevant technologies and process additional information through our system. If we do not handle viewability well, we could be competitively disadvantaged.

In addition, inventory that is well differentiated on the basis of viewability will also be differentiated on the basis of value, with less viewable inventory valued lower. In this context, if we are not positioned to transact the higher viewability inventory competitively, our revenue and profitability could be adversely affected.

As we have experienced in the past, buyers could attempt to hold us responsible, and not to pay us, for impressions that do not satisfy their viewability requirements or expectations, and depending upon how viewability evolves, market practice or emerging regulation may require us to incur compliance costs and assume some responsibility for viewability of advertisements transacted through our solution. Divergent views of how to measure viewability and imperfect measurement technology could lead to disagreement, increasing risk of disputes, demands for refunds, and reputational harm.

Failure to comply with industry self-regulation could harm our brand, reputation, and our business.

In addition to compliance with government regulations, we voluntarily participate in trade associations and industry self-regulatory groups that promulgate best practices or codes of conduct addressing privacy and the provision of digital advertising. However, in the past, some of these guidelines have not comported with our business practices, making them difficult for us to implement. If we encounter difficulties in the future, or our opt-out mechanisms fail to work as designed, or if digital media users misunderstand our technology or our commitments with respect to these principles, we may be subject to negative publicity, as well as investigation and litigation by governmental authorities, self-regulatory bodies or other accountability groups, buyers, sellers, or other private parties. Any such action against us could be costly and time consuming, require us to change our business practices, divert management's attention and our resources, and be damaging to our reputation and our business. In addition, we could be adversely affected by new or altered 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. As a result of such inconsistencies or conflicts, or other business or legal considerations, we may choose not to comply with some self-regulatory guidelines. Additionally, as we expand geographically, we may begin to operate in jurisdictions that have self-regulatory groups in which we do not participate. 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 buyers and sellers.

Risks Related to Our Relationships with Buyers and Sellers and Other Strategic Relationships

Our contracts with buyers and sellers are generally not exclusive and generally do not require minimum volumes or long-term commitments. If buyers or sellers representing a significant portion of the demand or inventory in our marketplace decide to materially reduce the use of our solution, we could experience an immediate and significant decline in our revenue and profitability and harm to our business.

Generally, our buyers and sellers are not obligated to provide us with any minimum volumes of business, may do business with our competitors as well as with us, may reduce or cancel their business with us without penalty, and may bypass us and transact directly with each other or through other intermediaries that compete with us. Accordingly, our business is highly vulnerable to changes in the macro environment, price competition, and development of new or more compelling offerings by our competitors, which could reduce business generally or motivate buyers or sellers to migrate to competitors' offerings.

Sellers and buyers may seek to change the terms on which they do business with us, or allocate their advertising inventory or demand to our competitors who provide advertising demand and supply to them on more favorable terms or whose offerings are considered more beneficial. Supply of advertising inventory is also limited for some sellers, such as special sites or new technologies, and sellers may request higher prices, fixed price arrangements or guarantees that we cannot provide as effectively as our competitors, or that would reduce the profitability of that business. In addition, sellers sometimes place significant restrictions on the sale of their advertising inventory, such as strict security requirements, prohibitions on advertisements from specific advertisers or specific industries, and restrictions on the use of specified creative content or format. Finally, with the proliferation of header bidding, sellers' inventory is available for purchase through multiple exchanges simultaneously, thereby reducing the number of ad impressions sold through our exchange even where we have historically had relationships with the seller. Buyers, in turn, are free to direct their spend to us or one or more of our competitors, and increasingly are seeking price concessions, rebates, or other consideration to direct more spend towards us.

We serve many buyers and sellers, but certain large buyers and sellers have accounted for and will continue to account for a disproportionate share of business transacted through our solution. Although we no longer earn revenue directly from buyers, as we ceased charging buyer fees in late 2017, in 2019 there were two buyers of advertising inventory that indirectly contributed to 37% of revenue through their buying activity from sellers on our platform. Buyer and seller needs and plans can change quickly, and buyers or sellers may reduce volumes or terminate their arrangements with us, quickly and without penalty, for a variety of reasons, including financial issues or other changes in circumstances; development or acquisition by buyers or sellers of their own technologies that reduce their reliance upon us; the new offerings by or strategic relationships with our competitors; change or removal of personnel with whom we traditionally had relationships; opportunities for buyers and sellers to bypass us and deal directly with each other; change in control (including consolidations through mergers and acquisitions); adoption of header bidding solutions; our decision not to participate in rebate or similar arrangements; supply path optimization; or declining general economic conditions (including those resulting from dissolutions of companies). Technical issues affecting our systems or the systems of our larger buyers or sellers could also cause a decline in spending. As is typical in our industry, some of the largest buyers and sellers on our platform are also competitors, which could increase the risk that such companies could reduce their business with us. These factors make it important for us to expand and diversify our client relationships. The number of large media buyers and sellers in the market is finite, and it could be difficult for us to replace revenue loss from any large buyers or sellers whose relationships with us diminish or terminate. Just as growth in our inventory strengthens buyer activity in a network effect, loss of inventory or buyers could have the opposite effect.

Because we do not have long-term contracts, our future revenue is difficult to predict and there is no assurance that our current buyers and sellers will continue to use our solution or that we will be able to replace lost buyers or sellers with new ones. If a buyer or group of buyers representing a significant portion of the demand in our marketplace, or a seller or group of sellers representing a significant portion of the inventory in our marketplace decides to materially reduce use of our solutions, it could cause an immediate and significant decline in our revenue and profitability and harm to our business. Additionally, if we overestimate future usage, we may incur additional expenses in adding infrastructure without a commensurate increase in revenue, which would harm our profitability and other operating results.

We must provide value to both buyers and sellers of advertising without being perceived as favoring one over the other or being perceived as competing with them through our service offerings.

Buyers and sellers have different interests, with each trying to enhance its value in their transactions through use of data, requests that we adapt our solution to help them, and other means. We are interposed between buyers and sellers, and to be successful, we must continue to find ways of providing value to both without being perceived as favoring one at the expense of the other. For example, our proprietary auction algorithms, which are designed to improve auction outcomes, influence the allocation and pricing of impressions and must do so in ways that add value to both buyers and sellers. Continued technological evolution in our business results in the availability and use of more data more incisively to inform buying and selling decisions. Third-party data analytics providers encourage this dynamic by offering products to buyers and sellers to attempt to swing transactional dynamics to their advantage at the expense of the other. We come under pressure to provide raw data to fuel these products and to facilitate their use by buyers and sellers on our platform. Unlike some competitors, who focus on serving either buyers or sellers, we must serve the interests of both, meaning that we must exercise caution in use of data and may determine not to facilitate some data products, which could result in loss of business from clients that insist upon using such products. Furthermore, because new business models continue to emerge, we must constantly adapt our relationship with buyers and sellers and how we market ourselves to each. Consistent with our goal of connecting buyers and sellers, we inevitably grow closer to each, and we must take care that our deeper connections with buyers, on the one hand, or sellers, on the other hand, do not come at the expense of the other's interests. For example, our decision to default to a first-price auction dynamic for all our header bidding auctions could be perceived by some buyers as serving the interests of sellers by increasing amounts paid for inventory, while some sellers could view our Estimated Market Rate service, which is designed to reduce buyers’ first price bids while maintaining their win rates, as favoring buyers and reducing sellers' revenue. In addition, as our own capabilities evolve, we may be perceived by clients, particularly buyers, as competing with them. If we fail to balance our clients' interests appropriately, our ability to provide a full suite of services and our growth prospects may be compromised.

We rely on buyers to use our solution to purchase advertising on behalf of advertisers. Such buyers may have or develop high-risk credit profiles or pay slowly, which may result in credit risk to us or require additional working capital to fund our accounts payable. In addition, direct billing arrangements between buyers and sellers may result in unfavorable fee dynamics and increased working capital demands.

Generally, we invoice and collect from buyers the full purchase price for impressions they have purchased, retain our fees, and remit the balance to sellers. However, in some cases, we may be required or choose to pay sellers for impressions delivered before we have collected, or even if we are unable to collect, from the buyer of those impressions. There can be no assurances that we will not experience bad debt in the future, and write-offs for bad debt could have a materially negative effect on our results of operations for the periods in which the write-offs occur. In addition, we attempt to coordinate collections from our buyers so as to fund our payment obligations to our sellers. However, some buyers and sellers may require direct billing and collection arrangements between themselves, and some providers of header bidding wrappers or other downstream decisioning mechanisms in which we participate (such as Google EB) may control billing and collection for transactions we win through their platforms. When we collect from buyers and pay sellers, we are able to retain our fees from cash we collect before remitting balances to sellers. However, if we do not manage collections and payments, we either need to bid into the auction net of our fees or need to invoice clients for our fees, which may delay our collections and increase visibility and result in pressure for more transparent or lower fees. Further, growth and increased competitive pressure in the digital advertising industry is causing advertisers and buyers to become more demanding, resulting in overall increased focus by all industry participants on pricing, transparency, and cash and collection cycles. Some buyers have experienced financial pressures that have motivated them to slow the timing of their payments to us. If buyers slow their payments to us or 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 sales efforts with buyers and sellers may require significant time and expense and may not yield the results we seek.

Attracting new buyers and sellers and increasing our business with existing buyers and sellers involves substantial time and expense, and we may not be successful in our efforts. We may spend substantial time and effort educating buyers and sellers about our offerings, including providing demonstrations and comparisons against other available solutions. This process can be costly and time-consuming, and is complicated by us having to spend time integrating our solution with software of buyers and sellers. Because our solution may be less familiar in some markets outside the United States, the time and expense involved with attracting, educating and integrating buyers and sellers in international markets may be even greater than in the United States. If we are not successful in targeting, supporting and streamlining our sales processes, our ability to grow our business may be adversely affected. In addition, because of competitive market conditions and negotiating leverage enjoyed by large buyers and sellers, we are sometimes forced to choose between loss of business or contracting on terms that allocate more risk to us than we would prefer to accept.

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

The buyers and sellers 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 assume responsibility for satisfying or facilitating the satisfaction of some of these requirements through the contracts we enter into with buyers and sellers. In addition, we may have responsibility for some acts or omissions of buyers or sellers transacting business through our solution 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, buyers and sellers.

We contractually require our buyers and sellers to abide by relevant laws, rules and regulations, as well as 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 solution complies with applicable laws and regulations and does not violate third-party intellectual property rights, and from sellers about the quality and characteristics of the impressions they provide. We also generally receive representations from buyers and sellers 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 buyers' advertisements or sellers' media properties, and we are often unable to determine exactly what information a buyer collects after an ad has been placed, and how the buyer uses any such collected information. If buyers or sellers fail to abide by relevant laws, rules and regulations, or contract requirements, when transacting over our platform, or after such a transaction is completed, we could potentially face liability for such misuse. 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 policies of insurance may not cover, such claims and losses.

Our business relationships expose us to risk of substantial liability for contract breach, violation of laws and regulations, intellectual property infringement and other losses, and our contractual indemnities and limitations of liability may not protect us adequately.

Our agreements with sellers, buyers and other third parties typically obligate us to provide indemnity and defense for losses resulting from claims of intellectual property infringement, damages to property or persons, business losses or other liabilities. Generally, these indemnity and defense obligations relate to our own business operations, obligations and acts or omissions. However, under some circumstances, we agree to indemnify and defend contract counterparties against losses resulting from their own business operations, obligations and acts or omissions, or the business operations, obligations and acts or omissions of third parties. For example, because our business interposes us between buyers and sellers in various ways, buyers often require us to indemnify them against acts and omissions of sellers, and sellers often require us to indemnify them against acts and omissions of buyers. In addition, our agreements with sellers, buyers and other third parties typically include provisions limiting our liability to the counterparty and the counterparty's liability to us. These limits sometimes do not apply to certain liabilities, including indemnity obligations. These indemnity and limitation of liability provisions generally survive termination or expiration of the agreements in which they appear.

We have limited ability to control acts and omissions of buyers and sellers or other third parties that could trigger our indemnity obligations, and our policies of insurance may not cover us for acts and omissions of others. Because we contract with many buyers and sellers and those contracts are individually negotiated with different scopes of indemnity and different limits of liability, it is possible that in any case our obligation to provide indemnity for the acts or omissions of a third party such as a buyer or seller may exceed what we are able to recover from that party. Further, contractual limits on our liability may not apply to our indemnity obligations, contractual limits on our counterparties' liability may limit what we can recover from them, and contract counterparties may be unable to meet their obligations to indemnify and defend us as a result of insolvency or other factors. Large indemnity obligations, or obligations to third parties not adequately covered by the indemnity obligations of our contract counterparties, could expose us to significant costs.

In addition to the effects on indemnity described above, the limitation of liability provisions in our contracts may, depending upon the circumstances, be too high to protect us from significant liability for our own acts or omissions, or so low as to prevent us from recovering fully for the acts or omissions of our counterparties.

Our solution 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 certain open source software with code that we develop could compromise the proprietary nature of our solution.

Our solution utilizes software licensed to us by third-party authors under "open source" licenses. 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. 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 certain manner, we could, under certain 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.

The terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on us. Moreover, we cannot guarantee that our processes for controlling our use of open source software 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 certain code, or to make generally available, in source code form, portions of our proprietary code.

Risks Related to Our Operations

Real or perceived errors or failures in the operation of our solution could damage our reputation and impair our sales.

We must operate our technology infrastructure without interruption to support the needs of sellers and buyers. Because our software is complex, undetected errors and failures may occur, especially when new versions or updates are made to our software or network infrastructure, changes are made to sellers' or buyers' software interfacing with our solution, or as we integrate Telaria's technologies with our own. Errors or bugs in our software, faulty algorithms, technical or infrastructure problems, or updates to our systems could lead to an inability to effect transactions or process data to place advertisements or price inventory effectively, cause the inadvertent disclosure of proprietary data, or cause advertisements to display improperly or be placed in proximity to inappropriate content. Errors or bugs in our software have in the past, and may in the future, 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 reporting and analytics applications for buyers, resulting in delays in their spending on our platform. Errors or failures in our solution, even if caused by the implementation of changes by buyers or sellers to their systems, could also result in negative publicity, disclosure of confidential information, damage to our reputation, loss of or delay in market acceptance of our solution, increased costs or loss of revenue, loss of competitive position, or claims by advertisers for losses sustained by them.

We may make errors in the measurement of transactions conducted through our solution, causing discrepancies with the measurements of buyers and sellers, which can lead to a lack of confidence in us and require us to reduce our fees or provide refunds to buyers and sellers. Alleviating problems resulting from errors in our software could require significant expenditures of capital and other resources and could cause interruptions, delays, or the cessation of our business.

Various risks could interrupt access to our network infrastructure or data, exposing us to significant costs and other liabilities.

Our revenue depends on the technological ability of our solution to deliver and measure advertising impressions, and the operation of our exchange and our ability to place impressions depend on the continuing and uninterrupted performance of our IT systems. Our platform operates on our data processing equipment that is housed in third-party commercial data centers that we do not control or on servers owned and operated by cloud-based service providers, which may leave us vulnerable to technical issues or outages that we cannot easily control or remedy. In addition, our systems interact with systems of buyers and sellers and their contractors. All of these facilities and systems are vulnerable to interruption and/or damage from a number of sources, many of which are beyond our control, including, without limitation: (i) loss of adequate power or cooling and telecommunications failures; (ii) fire, flood, earthquake, hurricane, and other natural disasters; (iii) software and hardware errors, failures, or crashes; (iv) financial insolvency; and (v) computer viruses, malware, hacking, terrorism, and similar disruptive problems. In particular, intentional cyber-attacks present a serious issue because they are difficult to prevent and remediate and can be used to defraud our buyers and sellers and their clients and to steal confidential or proprietary data from us, our clients, or their users. Further, because our Los Angeles headquarters and San Francisco offices and our California data center sites are in seismically active areas, earthquakes present a particularly serious risk of business disruption. These vulnerabilities may increase with the complexity and scope of our systems and their interactions with buyer and seller systems.

The steps we take to mitigate this risk may not protect against all problems, and our ability to mitigate risks to related third-party systems is limited. In addition, we rely to a significant degree upon security and business continuity measures of our data center operators, which may be ineffective. Our disaster recovery and business continuity plans rely upon third-party providers of related services, and if those vendors fail us, we could be unable to meet the needs of buyers and sellers. Any steps we take to increase the reliability and redundancy of our systems may be expensive and may not be successful in preventing system failures. Any failures with our solution or delays in the execution of transactions through our system may result in the loss of advertising placements on impressions and, as a result, the loss of revenue. Our facilities would be costly to repair or replace, and any such efforts would likely require substantial time.

Buyers may attribute to us any technical disruption or failure in the performance of advertisements on sellers' digital media properties, harming our reputation and resulting in buyers seeking to avoid payment or demand future credits for disruptions or failures. If we are unable to operate our exchange and deliver advertising impressions successfully, our ability to attract potential buyers and sellers and retain and expand business with existing buyers and sellers could be harmed.

Malfunction or failure of our systems, or other systems that interact with our systems, or inaccessibility or corruption of data, could disrupt our operations and negatively affect our business and results of operations to a level in excess of any applicable business interruption insurance, result in potential liability to buyers and sellers, and negatively affect our reputation and ability to sell our solution.

Any breach of our computer systems or confidential data in our possession could expose us to significant expense and liabilities and harm our reputation.

We maintain our own confidential and proprietary information in our IT systems, and we control or have access to confidential, proprietary, and personal data belonging or related to buyers, sellers, and their clients and users, as well as vendors and business partners. Our clients and various third parties also have access to our confidential and proprietary information. There is no guarantee that inadvertent or unauthorized use or disclosure will not occur or that third parties will not gain unauthorized access to this data despite our efforts to protect this data.

We are subject to ongoing security threats and breaches, computer malware, computer hacking attacks, and inadvertent transmission of computer viruses, which continue to increase in sophistication. Other harmful software code may occur on our systems or those of our clients, business partners, or information technology vendors. Security measures undertaken by us, our vendors, and our buyers and sellers may be ineffective as a result of employee error, failure to implement appropriate processes and procedures, malfeasance, cyber-attacks, cyber-extortion or other intentional misconduct by computer hackers, "phishing" or other tactics to obtain illicit system access, or otherwise. Because techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, and because we typically are not able to control the efficacy of security measures implemented by our clients and vendors, we may be unable to anticipate these techniques or to implement adequate preventative or mitigation measures.

Though it is difficult to determine what harm may directly result from any specific interruption or breach, any security incident could disrupt computer systems or networks, interfere with services to our sellers, buyers, or their clients, and result in unauthorized access to personally identifiable information, intellectual property, and other confidential business information owned by us or our buyers, sellers, or vendors. As a result, we could be exposed to legal claims and litigation, indemnity obligations, regulatory fines and penalties, contractual obligations, other liabilities, significant costs for remediation and re-engineering to prevent future occurrences, significant distraction to our business, and damage to our reputation, our relationships with buyers and sellers, and our ability to retain and attract new buyers and sellers. If personally identifiable information is compromised, we may be required to undertake notification and remediation procedures, provide indemnity, and undergo regulatory investigations and penalties, all of which can be extremely costly and result in adverse publicity.

Failure to detect or prevent fraud, intrusion of malware through our platform into the systems or devices of our clients and their customers, or other actions that impact the integrity of our solution or advertisement performance, could cause sellers and buyers to lose confidence in our solution and expose us to legal claims, which would cause our business to suffer. If we terminate relationships with sellers as a result of our screening efforts, our volume of paid impressions may decline.

We have in the past, and may in the future, be subject to fraudulent and malicious activities undertaken by persons seeking to use our platform for improper purposes, including to divert or artificially inflate purchases by buyers through our platform, or to disrupt or divert the operation of the systems and devices of our clients and their customers to misappropriate information, generate fraudulent billings, stage hostile attacks, or for other illicit purposes. Examples of such activities include the use of bots or other automated or manual mechanisms to generate fraudulent impressions that are delivered through our platform, which could overstate the performance of advertising impressions. Such activities could also include the introduction of malware through our platform by persons seeking to commandeer, or gain access to information on, consumers' devices. We use proprietary technology to identify non-human inventory and traffic, as well as malware, and we generally terminate relationships with parties that appear to be engaging in such activities, which may result in fewer paid impressions in the year the relationships are terminated than would have otherwise occurred. Despite our efforts, it can be difficult to detect fraudulent or malicious activity for various reasons. We do not own content and must rely in part on sellers and buyers for controls with respect to such activity. Perpetrators of fraudulent impressions and malware can be ingenious and change their tactics to adapt to preventative measures, requiring us to improve over time our processes for assessing the quality of sellers' inventory and controlling fraudulent activity. We may be restricted from employing certain anti-fraud detection technology. Fraudulent activity is more difficult for us to detect and police in inventory we access through third-party aggregators, because in those situations we do not connect directly to the publishers and their servers. We plan to increase our reliance on this type of inventory as part of our strategy to increase the volume of transactions on our platform, which could expose us to increased risk of fraudulent activity. If we fail to detect or prevent fraudulent or other malicious activity, we could face legal claims from clients and/or consumers and the affected advertisers may experience or perceive a reduced return on their investment or heightened risk associated with use of our solution, resulting in dissatisfaction with our solution, refusals to pay, refund demands, loss of confidence of buyers or sellers, or withdrawal of future business. We also face claims from sellers that we terminate because of known or perceived fraudulent activity, and any such claim could be material.

Failure to maintain the brand security features of our solution could harm our reputation and expose us to liabilities.

It is important to sellers that the advertising placed on their media not conflict with existing seller arrangements and be of high quality, consistent with applicable seller standards and compliant with applicable legal and regulatory requirements. It is important to buyers that their advertisements are placed on appropriate media, in proximity with appropriate content, that the impressions for which they are charged are legitimate, and that their advertising campaigns yield their desired results. We use various measures, including proprietary technology, in an effort to store, manage and process rules set by buyers and sellers and to ensure the quality and integrity of the results delivered to sellers and buyers through our solution. If we fail to properly implement or honor rules established by buyers and sellers, or if our measures are not adequate, advertisements may be improperly placed through our platform, which can result in harm to our reputation as well as the need to pay refunds and other potential legal liabilities.

If we fail to attract, motivate, train, and retain highly qualified engineering, marketing, sales and management personnel, our ability to execute our business strategy could be impaired.

We are a technology-driven company and it is imperative that we have highly skilled mathematicians, computer scientists, engineers and engineering management to innovate and deliver our complex solutions. Increasing our base of buyers and sellers depends to a significant extent on our ability to expand our sales and marketing operations and activities, and our solution requires a sophisticated sales force with specific sales skills and specialized technical knowledge that takes time to develop. Appropriately qualified personnel can be difficult to recruit and retain. In addition, in international markets, we encounter staffing challenges that are unique to a particular country or region, such as recruiting and retaining qualified personnel in foreign countries and difficulty managing such personnel and integrating them into our culture. In particular, it may be difficult to find qualified sales personnel in international markets, or sales personnel with experience in emerging segments of the market. Skilled and experienced management is critical to our ability to achieve revenue growth, execute against our strategic vision and maintain our performance through the growth and change we anticipate.

Our success depends significantly upon our ability to recruit, train, motivate, and retain key technology, engineering, sales, and management personnel, and competition for employees with experience in our industry can be intense, particularly in California, New York and London, where our operations and the operations of other digital media companies are concentrated and where other technology companies compete for management and engineering talent. Other employers may be able to provide better compensation, more diverse opportunities and better chances for career advancement. None of our officers or other key employees have an employment agreement for a specific term, and any of such individuals may terminate his or her employment with us at any time.

In addition, if the merger with Telaria is completed, the combined company's success will depend in part upon the ability of the combined company to retain certain key management personnel and employees. Prior to the completion of the merger, current and prospective employees may experience uncertainty about their roles following the completion of the transactions, which may have an adverse effect on our ability to attract or retain key management and other key personnel. In addition, no assurance can be given that the combined company, after the completion of the merger, will be able to attract or retain key management personnel and other key employees to the same extent that we have previously been able to attract or retain employees.

It can be difficult, time-consuming, and expensive to recruit personnel with the combination of skills and attributes required to execute our business strategy, and we may be unable to hire or retain sufficient numbers of qualified individuals in the markets where we do business or plan to do business. New hires require significant training and it may take significant time (often six months or more) before they achieve full productivity. As a result, we may incur significant costs to attract and retain employees, including significant expenditures related to salaries and benefits and compensation expenses related to equity awards before new hires contribute to sales or productivity, and we may lose new employees to our competitors or other companies before we realize the benefit of our investment in recruiting and training. Moreover, new employees may not be or become as productive as we expect, and we may face challenges in adequately or appropriately integrating them into our workforce and culture. At times we have experienced elevated levels of unwanted attrition, and as our organization grows and changes and competition for talent increases, this type of attrition may increase.

Our proprietary rights may be difficult to enforce, which could enable others to copy or use aspects of our solution without compensating us, thereby eroding our competitive advantages and harming our business.

Our success depends, in part, on our ability to protect proprietary methods and technologies that we develop or otherwise acquire, so that we can prevent others from using our inventions and proprietary information. Establishing trade secret, copyright, trademark, domain name, and patent protection is difficult and expensive. We rely on trademark, copyright, trade secret laws, confidentiality procedures and contractual provisions to protect our proprietary methods and technologies.

Unauthorized parties may attempt to copy aspects of our technology or obtain and use information that we regard as proprietary, and the steps we take to protect our proprietary information may not prevent misappropriation of our technology and proprietary information or infringement of our intellectual property rights. Policing unauthorized use of our technology and intellectual property is difficult. We may be required to protect our intellectual property in an increasing number of jurisdictions, a process that is expensive and may not be successful or which we may not pursue in every location. Our competitors and others could attempt to capitalize on our brand recognition by using domain names or business names similar to ours, and we may be unable to prevent third parties from acquiring or using domain names and other trademarks that infringe on, are similar to, or otherwise decrease the value of our brands, trademarks or service marks. 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 proprietary rights in such countries may be inadequate. It may be possible for unauthorized third parties to copy or reverse engineer aspects of our technology or otherwise obtain and use information that we regard as proprietary, or to develop technologies similar or superior to our technology or design around our proprietary rights, despite the steps we have taken to protect our proprietary rights.

From time to time, we may take legal action to enforce our intellectual property rights, protect our trade secrets, determine the validity and scope of the proprietary rights of others, or defend against claims of infringement. Such litigation could result in substantial costs and the diversion of limited resources, and might not be successful. If we are unable to protect our proprietary rights (including aspects of our technology solution) we may find ourselves at a competitive disadvantage.

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 certain technologies and intellectual property.

Third parties may assert claims of infringement or misappropriation of intellectual property rights against us or buyers, sellers, or third parties with which we work; we cannot be certain that we are not infringing any third-party intellectual property rights, and we may have liability or indemnification obligations as a result of such claims. As a result of the information disclosure in required public company filings our business and financial condition are visible, which may result in threatened or actual litigation, including by competitors and other third parties.

Regardless of whether claims that we are infringing patents or infringing or misappropriating other intellectual property rights have any merit, these claims are time-consuming and costly to evaluate and defend, and can impose a significant burden on management and employees. The outcome of any claim is inherently uncertain, and we may receive unfavorable interim or preliminary rulings in the course of litigation. There can be no assurances that favorable final outcomes will be obtained in all cases. We may decide to settle lawsuits and disputes on terms that are unfavorable to us. Some of our competitors have substantially greater resources than we do and are able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than we could.

Although third parties may offer a license to their technology or intellectual property, the terms of any offered license may not be acceptable and the failure to obtain a license or the costs associated with any license could cause our business, results of operations or financial condition to be materially and adversely affected. In addition, some licenses may be non-exclusive, and therefore our competitors may have access to the same technology or intellectual property licensed to us. Alternatively, we may be required to develop non-infringing technology or to make other changes, such as to our branding, which could require significant effort and expense and ultimately may not be successful. Furthermore, a successful claimant could secure a judgment or we may agree to a settlement that prevents us from distributing certain products or performing certain services or that requires us to pay substantial damages, including treble damages if we are found to have willfully infringed such claimant's patents or copyrights. Claims of intellectual property infringement or misappropriation also could result in injunctive relief against us, or otherwise result in delays or stoppages in providing all or certain aspects of our solution.

Risks Related to Our International Business Strategy

Our international operations require increased expenditures and impose additional risks and compliance imperatives, and failure to successfully execute our international plans will adversely affect our growth and operating results.

We have numerous operations outside of North America, in Northern and Southern Europe, Australia, Japan, Singapore, and Brazil, and achievement of our international objectives will require a significant amount of attention from our management, finance, legal, analytics, operations, sales, and engineering teams, as well as significant investment in developing the technology infrastructure necessary to deliver our solution and maintain sales, delivery, support, and administrative capabilities in the countries where we operate. Attracting new buyers and sellers outside the United States may require more time and expense than in the United States, in part due to language barriers and the need to educate such buyers and sellers about our solution, and we may not be successful in establishing and maintaining these relationships. The data center and telecommunications infrastructure in some overseas markets may not be as reliable as in North America and Europe, which could disrupt our operations. In addition, our international operations will require us to develop and administer our internal controls and legal and compliance practices in countries with different cultural norms, languages, currencies, legal requirements, and business practices than the United States.

International operations also impose risks and challenges in addition to those faced in the United States, including management of a distributed workforce; the need to adapt our offering to satisfy local requirements and standards (including differing privacy policies and labor laws that are sometimes more stringent); laws and business practices that may favor local competitors; legal requirements or business expectations that agreements be drafted and negotiated in the local language and disputes be resolved in local courts according to local laws; the need to enable transactions in local currencies; longer accounts receivable payment cycles and other collection difficulties; the effect of global and regional recessions and economic and political instability; potentially adverse tax consequences in the United States and abroad; staffing challenges, including difficulty in recruiting and retaining qualified personnel as well as managing such a diversity in personnel; reduced or ineffective protection of our intellectual property rights in some countries; and costs and restrictions affecting the repatriation of funds to the United States.

One or more of these requirements and risks may make our international operations more difficult and expensive or less successful than we expect, and may preclude us from operating in some markets. There is no assurance that our international expansion efforts will be successful, and we may not generate sufficient revenue or margins from our international business to cover our expenses or contribute to our growth.

Operating in multiple countries requires us to comply with different legal and regulatory requirements.

Our international operations subject us to laws and regulations of multiple jurisdictions, as well as U.S. laws governing international operations, which are often evolving and sometimes conflict. For example, the Foreign Corrupt Practices Act ("FCPA"), and comparable foreign laws and regulations (including the U.K. Bribery Act) prohibit improper payments or offers of payments to foreign governments and their officials and political parties by U.S. and other business entities for the purpose of obtaining or retaining business. Other laws and regulations prohibit bribery of private parties and other forms of corruption. As we expand our international operations, there is some risk of unauthorized payment or offers of payment or other inappropriate conduct by one of our employees, consultants, agents, or other contractors, including by persons engaged or employed by a business we acquire, which could result in violation by us of various laws, including the FCPA. Safeguards we implement to discourage these practices may prove to be ineffective and violations of the FCPA and other laws may result in severe criminal or civil sanctions, or other liabilities or proceedings against us, including class action lawsuits and enforcement actions from the SEC, Department of Justice, and foreign regulators. Other laws applicable to our international business include local employment, tax, privacy, data security, and intellectual property protection laws and regulations, including restrictions on movement of information about individuals beyond national borders. In particular, as explained in more detail elsewhere in this report, the GDPR imposes substantial compliance obligations and increases the risks associated with collection and processing of personal data. In some cases, buyers and sellers operating in non-U.S. markets may impose additional requirements on our non-U.S. business in efforts to comply with their interpretation of their own or our legal obligations. These requirements may differ significantly from the requirements applicable to our business in the United States and may require engineering, infrastructure and other costly resources to accommodate, and may result in decreased operational efficiencies and performance. As these laws continue to evolve and we expand to more jurisdictions or acquire new businesses, compliance will become more complex and expensive, and the risk of non-compliance will increase.

Compliance with complex foreign and U.S. laws and regulations that apply to our international operations increases our cost of doing business abroad, and violation of these laws or regulations may interfere with our ability to offer our solution competitively in one or more countries, expose us or our employees to fines and penalties, and result in the limitation or prohibition of our conduct of business. In addition, we have recently received numerous inquiries from foreign regulators asking for information about the advertising technology generally and our business specifically. These investigations are costly and time consuming to respond to and divert management attention.

Risks Related to Our Internal Controls and Finances

Our ability to use our net operating losses and tax credit carryforwards to offset future taxable income may be subject to certain limitations, which could result in higher tax liabilities.

Our ability to fully utilize our net operating loss and tax credit carryforwards to offset future taxable income may be limited and may become further limited as a result of the merger with Telaria.

At December 31, 2019, we had U.S. federal net operating loss carryforwards, or NOLs, of approximately $288.8 million, state NOLs of approximately $176.2 million, foreign NOLs of approximately $18.0 million, federal research and development tax credit carryforwards, or credit carryforwards, of approximately $10.2 million, and state credit carryforwards of approximately $8.0 million. A lack of future taxable income would adversely affect our ability to utilize these NOLs and credit carryforwards. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, and comparable state income tax laws, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs and credit carryforwards to offset future taxable income following the ownership change. As a result, future changes in our stock ownership, including because of issuance of shares of common stock in connection with acquisitions or other direct or indirect changes in our ownership that may be outside of our control, could result in limitations on our ability to fully utilize our NOLs and credit carryforwards. The Company had an ownership change on December 31, 2015 subjecting the federal and state NOLs to an annual limitation. Additionally, the Company had an ownership change in January 2008 and $2.3 million of federal and state NOLs are already subject to limitation under Section 382 of the Code. Additionally, approximately $3.4 million of our federal NOLs and approximately $3.4 million of our state NOLs were generated during the pre-acquisition period by corporations that we acquired, and thus those NOLs already are subject to limitation under Section 382 of the Code and comparable state income tax laws. In addition, the merger with Telaria may result in an ownership change for purposes of Section 382, which may impose additional limitations on the ability of the combined company to utilize these tax carryover assets. Whether an ownership change occurs as a result of the merger is highly dependent on numerous factors, some of which are not in our control.

Moreover, the Internal Revenue Service, referred to as the IRS, recently proposed regulations that, if applicable to an ownership change, whether resulting from or following the merger with Telaria, could severely limit the combined company’s ability to utilize the tax carryover assets. These proposed regulations are not expected to be applicable to the merger, but they may apply to any subsequent ownership change of the combined company. If the merger does not result in an ownership change, the merger would substantially increase the likelihood that an ownership change could result in the near future, again creating the possibility that utilization of the tax carryover assets of the combined company would be limited and possibly expire unutilized. Given the uncertainty surrounding whether we will undergo an ownership change as a result of the merger, and the uncertainty surrounding the impact of these proposed regulations on any future ownership change, the extent to which the final version of the proposed regulations will limit the combined company’s ability to used its tax carryover assets following the merger is uncertain.

Also, depending on the timing and level of our taxable income, a portion of our NOLs and credit carryforwards may expire unutilized, which could prevent us from offsetting future taxable income we may generate by the amount of our NOLs and credit carryforwards generated in tax years beginning before December 31, 2017. U.S. federal net operating loss carryforwards generated for tax years beginning before December 31, 2017 can offset 100% of taxable income, however, these NOLs can only be carried forward for 20 years. U.S. federal net operating loss carryforwards generated for tax years beginning after December 31, 2017 can offset 80% of taxable income, however, these NOLs can be carried forward indefinitely. We have recorded a full valuation allowance related to our NOLs, credit carryforwards, and other net deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets. To the extent we determine that all, or a portion of, our valuation allowance is no longer necessary, we will reverse the valuation allowance and recognize an income tax benefit in the reported financial statement earnings in that period. Once the valuation allowance is eliminated or reduced, its reversal will no longer be available to offset our current financial statement tax provision in future periods. Release of the valuation allowance would result in the recognition of certain net deferred tax assets and a decrease to income tax expense for the period the release is recorded. However, the exact timing and amount of the valuation allowance release are subject to change on the basis of the level of profitability that we are able to actually achieve and the impact of Section 382.

We may require additional capital to support our business, and such capital might not be available on terms acceptable to us, if at all. Inability to obtain financing could limit our ability to conduct necessary operating activities and make strategic investments.

Various business challenges and opportunities may require additional funds, including the need to respond to competitive threats or market evolution by developing new solutions and improving our operating infrastructure through additional hiring or acquisition of complementary businesses or technologies, or both. In addition, we could incur significant expenses or shortfalls in anticipated cash generated as a result of unanticipated events in our business or competitive, regulatory, or other changes in our market, or longer payment cycles required or imposed by our buyers.

Our available cash and cash equivalents, any cash we may generate from operations, and our available line of credit under our credit facility may not be adequate to meet our capital needs, and therefore we may need to engage in equity or debt financings to secure additional funds. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing on terms satisfactory to us when we require it or are unable to renew our credit facility when it matures or enter into a new one, our ability to continue to support our business growth and respond to business challenges could be significantly impaired, and our business may be adversely affected.

If we do raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, 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 that we secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, including the ability to pay dividends. This may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. In addition, if we issue debt, the holders of that debt would have prior claims on the Company's assets, and in case of insolvency, the claims of creditors would be satisfied before distribution of value to equity holders, which would result in significant reduction or total loss of the value of our equity.

Our credit facility subjects us to operating restrictions and financial covenants that impose risk of default and may restrict our business and financing activities.

We have a $40.0 million credit facility with Silicon Valley Bank. Borrowings are secured by substantially all of our tangible personal property assets and all of our intangible assets are subject to a negative pledge in favor of Silicon Valley Bank. This credit facility is, and any replacement credit facility that we may secure will be, subject to certain covenants and borrowing conditions, including those related to financial ratios and liquidity. If we fail to perform in accordance with covenants or to satisfy conditions, we may not be able to make borrowings under the facility. The credit facility is, and any replacement credit facility that we may secure will be, also subject to restrictions that limit our ability, among other things, to:

- dispose of or sell our assets;
- make material changes in our business or management;
- acquire, 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.

These covenants may restrict our ability to finance our operations and to pursue our business activities and strategies. Our ability to comply with these covenants may be affected by events beyond our control. If a default were to occur and not be waived, such default could cause, among other remedies, all of the outstanding indebtedness under our loan and security agreement to become immediately due and payable. In such an event, our liquid assets might not be sufficient to meet our repayment obligations, and we might be forced to liquidate collateral assets at unfavorable prices or our assets may be foreclosed upon and sold at unfavorable valuations.

Our ability to renew our existing credit facility, which matures in September 2020, or to enter into a new credit facility to replace or supplement the existing facility may be limited due to various factors, including the status of our business, global credit market conditions, and perceptions of our business or industry by sources of financing. In particular, it may be difficult to renew or replace our existing credit facility if we are not able to produce, or demonstrate a path to produce, positive cash flow. In addition, if credit is available, lenders may seek more restrictive covenants and higher interest rates that may reduce our borrowing capacity, increase our costs, and reduce our operating flexibility.

If we make borrowings under the facility and do not have or are unable to generate sufficient cash available 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. Our inability to obtain financing may negatively impact our ability to operate and continue our business as a going concern.

Risks Related to the Securities Markets and Ownership of our Common Stock

The price of our common stock has been and may continue to be volatile and the value of an investment in our common stock could decline.

Technology stocks have historically experienced high levels of volatility. The trading price of our common stock has fluctuated substantially and may continue to do so. These fluctuations could result in significant decreases in the value of an investment in our common stock. Factors that could cause fluctuations in the trading price of our common stock include the following:

- announcements of new offerings, products, services or technologies, commercial relationships, acquisitions, or other events by us or our competitors, including the proposed merger with Telaria;
- price and volume fluctuations in the overall stock market from time to time;

- significant volatility in the market price and trading volume of technology companies in general and of companies in the digital advertising industry in particular;
- fluctuations in the trading volume of our shares or the size of our public float;
- actual or anticipated changes or fluctuations in our results of operations;
- actual or anticipated changes in the expectations of investors or securities analysts, and whether our results of operations meet these expectations;
- litigation involving us, our industry, or both;
- regulatory developments in the United States, foreign countries, or both;
- general economic conditions and trends;
- major catastrophic events;
- breaches or system outages;
- departures of officers or other key employees; or
- an adverse impact on the company resulting from other causes, including any of the other risks described in this report.

In addition, if the market for technology stocks or the stock market, in general, experiences a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business. The trading price of our common stock might also decline in reaction to events that affect other companies in our industry even if these events do not directly affect us. In addition, our employee restricted stock and restricted stock unit awards typically vest each May 15 and November 15, and are subject to automatic sale arrangements at those dates to cover taxes accruing on vesting. In the past, volatility in the market price of a company's securities has often resulted in securities litigation being brought against that company. Declines in the price of our common stock, even following increases, may result in securities litigation against us, which would result in substantial costs and divert our management's attention and resources from our business.

Competition for investors could adversely affect the price of our stock.

There are many companies in the advertising technology or "ad tech" space, but we are one of a relatively small portion of those companies that is publicly traded. Some of the other publicly traded ad tech companies are substantially larger than we are and have more diversified offerings, or may be perceived by investors as having greater stability or growth potential. Others may be focused on parts of the business that investors may view as more appealing. Ad tech or related advertising companies that are not yet public may become public, and publicly traded companies may enter the ad tech business through acquisitions. Increase in the number of publicly traded companies available to investors wishing to invest in ad tech may result in a decrease in demand for our shares, either because overall demand for ad tech investment does not increase commensurately with the increase in public companies in the ad tech space, or because we are not perceived as competitively differentiated or offering superior value compared to other such companies. Decrease in demand for our shares would result in suppressed growth, or decrease, in the value of our stock.

Provisions of our charter documents and Delaware law may inhibit a potential acquisition of the company and limit the ability of stockholders to cause changes in company management.

Our amended and restated certificate of incorporation and amended and restated bylaws, and the certificate of incorporation and bylaws that will govern the combined company if the merger with Telaria is completed, include or may include provisions, as described below, that could delay or prevent a change in control of the company, and make it difficult for stockholders to elect directors who are not nominated by the current members of our board of directors or take other actions to change company management.

- Our certificate of incorporation gives our board of directors the authority to issue shares of preferred stock in one or more series, and to establish the number of shares in each series and to fix the price, designations, powers, preferences and relative, participating, optional or other rights, if any, and the qualifications, limitations, or restrictions of each series of the preferred stock without any further vote or action by stockholders. The issuance of shares of preferred stock may discourage, delay or prevent a merger or acquisition of the company by significantly diluting the ownership of a hostile acquirer, resulting in the loss of voting power and reduced ability to cause a takeover or effect other changes.
- Our certificate of incorporation provides that our board of directors is classified, with only one of its three classes elected each year, and directors may be removed only for cause and only with the vote of $66\,^2/_3\%$ of the voting power of stock outstanding and entitled to vote thereon. Further, the number of directors is determined solely by our board of directors, and because we do not allow for cumulative voting rights, holders of a majority of shares of common

stock entitled to vote may elect all of the directors standing for election. These provisions could delay the ability of stockholders to change the membership of a majority of our board of directors.

- Under our bylaws, only the board of directors or a majority of remaining directors, even if less than a quorum, may fill vacancies resulting from an increase in the authorized number of directors or the resignation, death or removal of a director.
- Our certificate of incorporation prohibits stockholder action by written consent, so any action by stockholders may only be taken at an annual or special meeting.
- Our certificate of incorporation provides that a special meeting of stockholders may be called only by the board of directors. This could delay any effort by stockholders to force consideration of a proposal or to take action, including the removal of directors.
- Under our bylaws, advance notice must be given to nominate directors or submit proposals for consideration at stockholders' meetings. This gives our board of directors time to defend against takeover attempts and could discourage or deter a potential acquirer from soliciting proxies or making proposals related to an unsolicited takeover attempt.
- The provisions of our certificate of incorporation noted above may be amended only with the affirmative vote of holders of at least $66^2/_3$% of the voting power of all of the then-outstanding shares of the company's voting stock, voting together as a single class. The same two-thirds vote is required to amend the provision of our certificate of incorporation imposing these supermajority voting requirements. Further, our bylaws may be amended only by our board of directors or by the same percentage vote of stockholders noted above as required to amend our certificate of incorporation. These supermajority voting requirements may inhibit the ability of a potential acquirer to effect such amendments to facilitate an unsolicited takeover attempt.
- Our board of directors may amend our bylaws by majority vote. This could allow the board to use bylaw amendments to delay or prevent an unsolicited takeover, and limits the ability of an acquirer to amend the bylaws to facilitate an unsolicited takeover attempt.

We are also subject to Section 203 of the Delaware General Corporation Law, which prohibits us from engaging in any business combination with an interested stockholder for a period of three years from the date the person became an interested stockholder, unless certain conditions are met. These provisions make it more difficult for stockholders or potential acquirers to acquire the company without negotiation and may apply even if some of our stockholders consider the proposed transaction beneficial to them. For example, these provisions might discourage a potential acquisition proposal or tender offer, even if the acquisition proposal or tender offer were to be at a premium over the then-current market price for our common stock. These provisions could also limit the price that investors are willing to pay in the future for shares of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Los Angeles, California, where we occupy office space totaling approximately 47,000 square feet under a lease that expires in 2021. We use these facilities for our principal administration, sales and marketing, technology and development, and engineering activities. We also have a 15,000 square foot office in New York under a lease that expires in 2030, and lease additional offices and maintain data centers in other locations in North America, South America, Europe, Australia, and Asia. We believe that our current facilities are adequate to meet our current needs, but if our proposed merger with Telaria is consummated, our needs will change and any new facilities could have a material impact on our financial condition.

Item 3. Legal Proceedings

We and our subsidiaries may from time to time be parties to legal or regulatory proceedings, lawsuits and other claims incident to our business activities and to our status as a public company. Such routine matters may include, among other things, assertions of contract breach or intellectual property infringement, claims for indemnity arising in the course of our business, regulatory investigations or enforcement proceedings, and claims by persons whose employment has been terminated. Such matters are subject to many uncertainties, and outcomes are not predictable with assurance. Consequently, we are unable to ascertain the ultimate aggregate amount of monetary liability, amounts which may be covered by insurance or recoverable from third parties, or the financial impact with respect to such matters as of December 31, 2019. However, based on our knowledge as of December 31, 2019, we believe that the final resolution of such matters pending at the time of this report, individually and in the aggregate, will not have a material adverse effect upon our consolidated financial position, results of operations or cash flows.

On February 13, 2020, a complaint (captioned Sebatini v. The Rubicon Project, Inc. et al.) was filed in the United States District Court for the District of Delaware by a putative stockholder of Telaria challenging the proposed merger. The complaint names as defendants Rubicon Project, Madison Merger Corp., Telaria, and each member of the Telaria board of directors. The complaint asserts violations of Section 14(a) of the Exchange Act and Rule 14a-9 promulgated thereunder against all defendants other than Rubicon Project and Madison Merger Corp., and asserts violations of Section 20(a) of the Exchange Act against Rubicon Project and the individual defendants. The plaintiff contends that the Registration Statement on Form S-4 filed with the SEC by Rubicon Project on February 7, 2020, and serving as an amended preliminary joint proxy statement/prospectus for the Telaria merger, omitted or misrepresented material information regarding the merger. The complaint seeks injunctive relief, rescission, or rescissory damages, and an award of plaintiff’s costs, including attorneys’ fees and expenses. We believe the claims asserted in the complaint are without merit.

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 common stock has been listed on the New York Stock Exchange, or the NYSE, since April 1, 2014, under the symbol "RUBI." Prior to our initial public offering, or IPO, there was no public market for our common stock.

Holders of Record

As of February 23, 2020, there were approximately 54 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never declared or paid any dividends and we do not anticipate paying any cash dividends in the foreseeable future. In addition, our credit facility contains restrictions on our ability to pay dividends.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We presently have no publicly announced repurchase plan or program.

Upon vesting of most restricted stock units or stock awards, we are required to deposit minimum statutory employee withholding taxes on behalf of the holders of the vested awards. As reimbursement for these tax deposits, we have the option to withhold from shares otherwise issuable upon vesting a portion of those shares with a fair market value equal to the amount of the deposits we paid. Withholding of shares in this manner is accounted for as a repurchase of common stock. There were no repurchases during the quarter ended December 31, 2019.

Use of Proceeds

As of December 31, 2019, all of the proceeds from our initial public offering of common stock effected through a Registration Statement on Form S-1 (File No. 333-193739) have been applied as described in our final prospectus filed with the SEC pursuant to Rule 424(b) of the Securities Act and other period reports previously filed with the SEC.

Item 6. Selected Financial Data

This section is not required for smaller reporting companies.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the consolidated financial statements and the related notes to those statements included in Item 8 to this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, beliefs, and expectations and that involve risks and uncertainties. Our actual results and the timing of events could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in "Item 1A. Risk Factors" and the "Special Note About Forward-Looking Statements."

Overview and Industry Trends

See “Item 1. Business” for an overview of our business, of the industry we operate in, and of important industry trends.

Trends in Our Business

Ad Spend and Take Rate Trends

Overall, our revenue increased 25% from $124.7 million in 2018 to $156.4 million in 2019, which reflects both increased ad spend and higher overall take rates. Our ad spend increased to $1,117 million in 2019, up from $992 million in 2018, driven by growth across both desktop and mobile channels, with video and audio inventory types being key contributors. Our overall take rate in 2019 increased to 14.0%, compared to 12.6% in 2018. Our 2019 take rate is higher due primarily to seller pricing improvements negotiated during the first half of 2018. We believe this take rate puts us in a favorable competitive position in terms of pricing, but it is uncertain whether it represents a sustainable competitive advantage. We do not expect significant increases in take rate, and could experience decreases in take rate due to the mix of PMP ad spend which typically carries a lower take rate, and from discounted seller fees related to our SPO initiatives. Our results could be negatively impacted if take rate decreases from these factors are not offset by increased ad spend. For an explanation of how ad spend and take rate are calculated and why they are useful to investors and managers, see the discussion below under the heading "Non-GAAP Financial Measures."

Industry dynamics are challenging due to market and competitive pressures and make it difficult to predict the near-term effect of our growth initiatives. While we anticipate long-term benefits from these initiatives, unless we are able to continue to increase advertising spend on our platform, through higher transaction volumes or higher transaction values or both, our revenue growth may be limited.

Supply Path Optimization

Supply Path Optimization ("SPO"), refers to efforts by buyers to consolidate the number of vendors they work with to find the most effective and cost-efficient paths to procure media. This practice emerged in 2018 and continues to gain momentum. SPO is important to buyers because it can increase the proportion of their advertising ultimately spent on working media, with the goal of increasing return on their advertising spending, and can help them gain efficiencies by reducing the number of vendors they work with in a complex ecosystem. Largely because of header bidding, buyers are able to choose the best partner (or a small number of partners) without limiting the available inventory to bid on. There are a number of criteria that buyers use to evaluate supply partners, including transparency, cost, quality of inventory, privacy standards, brand safety standards, including compliance with ads.txt and similar industry standards, and fraudulent traffic prevention policies. We believe we are well positioned to benefit from supply path optimization in the long run as a result of our broad inventory supply, buyer tools such as traffic shaping, our pricing tools, which reduce the overall cost of working with us, our transparency, and our brand safety measures. We believe that benefits from successful outcomes in the SPO process could drive meaningful increases of ad spend across our platform. In order to achieve increased ad spend, we may negotiate discounts to our seller fees with agencies and advertisers, and we have increasingly been receiving requests from buyers for discounts, rebates, or similar incentives in order to move more advertising spending to our platform. We believe that because our business has many fixed costs, increases in ad spend volume create opportunity to disproportionately improve net income, even with increased seller fee discounts. However, our results could be negatively impacted if our advertising spend increases and cost reductions are not adequate to compensate for the discounted fees.

Impact of Header Bidding

While the rise and rapid adoption of header bidding increased revenue for sellers, it also created new challenges. Managing multiple exchanges on the page is technically complex, and in the early days of header bidding this complexity was exacerbated by the lack of independent technology standards. In 2017, we began to address these issues through our support of Prebid, a free and open source suite of software products designed by advertising community developers to enable publishers to implement header bidding on their websites and from within their apps. Despite Prebid's adoption by a number of the world's largest sellers, deploying and customizing it still requires dedicated technical resources. In the second quarter of 2019, we announced the beta program for Demand Manager. Demand Manager helps sellers effectively monetize their advertising inventory through configuration tools and analytics to make it easier to deploy, configure, and optimize Prebid-based header bidding solutions. In October 2019, we acquired RTK.io, a provider of header bidding solutions that has much in common with our Demand Manager product, including a foundation in Prebid. RTK's technology and team enables Rubicon Project to extend the strategy we introduced with the launch of Demand Manager. We plan to integrate the two solutions to extend our Demand Manager product portfolio and client base, and to add talented header bidding experts and Prebid developers to our team. We believe that adoption of these tools will further strengthen our relationship with sellers and contribute to our future revenue growth. We charge sellers a fee for Demand Manager that is based on all of the sellers' advertising spending managed through Demand Manager, whether the actual inventory monetization runs through our exchange or otherwise.

Desktop, Mobile, Video and CTV Trends

MAGNA estimates that compound annual growth rates through 2023 for desktop, mobile, and video will be 1%, 22%, and 22%, respectively. CTV is a nascent but rapidly growing segment, with the U.S. market expected to grow at an annual compound rate of 19% through 2023 according to eMarketer. Lower industry growth rates in desktop will make growth of desktop revenue more challenging unless we are able to grow market share through SPO or the expansion of additional inventory. Our strategic focus is on growth areas—including mobile, video, PMPs, Demand Manager, and header bidding—that are expected to represent a majority of our revenue in future periods. However, despite our progress in these growth areas, our traditional desktop display business is expected to continue to represent a significant part of our revenue in the near term. Therefore, the mix of our desktop display business will continue to have a significant effect on our growth rate until our advertising spend mix has shifted more fully to growth areas. Revenue from our mobile business was $88 million in 2019, representing 56% of our total business, and grew 34% in 2019 over 2018. Video revenue was $29 million in 2019, and grew 43% in 2019 over 2018.

Because of the long-term growth potential in CTV, we undertook a comprehensive review in 2019 to determine our CTV strategic approach through build, buy or partner opportunities. On December 19, 2019, we announced a stock-for-stock merger ("Merger") with Telaria, Inc., ("Telaria"), which will create a combined company offering a single partner for transacting CTV, desktop display, video, audio, and mobile inventory across all geographies and auction types. We believe the combination of Rubicon Project's programmatic scale and expertise with Telaria's leadership in CTV technology and premium partnerships, will create the world's largest independent sell-side advertising platform with scale, capabilities, and solutions exceeding those offered by competitors. Together, the combined company will enable thousands of publishers to connect with hundreds of buyers and brands, creating a global, independent alternative to closed players. The combination will provide additional engineering and sales resources as well as deeper financial assets to seize the opportunity of CTV, the fastest-growing digital medium. We believe the combined company will be an essential omni-channel partner for buyers to reach target audiences, optimizing the supply path with industry-leading transparency, robust support for identity solutions and brand-safe premium inventory. In addition, Rubicon Project and Telaria have complimentary domestic and international footprints that will create a combined broader global reach.

Expense Reduction Initiatives

In addition to strategic decisions made to reduce costs paid by our clients on our platform while growing revenue through transaction volume, we have also focused on the cost structure of our business to enable us to compete more effectively. We must operate efficiently to remain competitive in the current environment and to compensate for the ongoing investments in technology and data processing capabilities required to support the increased volume of transactions that our growth plans require. As part of these efforts, during the first quarter of 2018, we undertook measures to reduce headcount by approximately 100 people, or 19% of our workforce, and to reduce other operating costs. Our actions included reductions in administrative staff to bring our general and administrative operations into better alignment with the current size of the business, as well as in sales and technical personnel as a result of offshoring certain development functions, organizational delayering and restructuring, and reducing investment in unprofitable projects. We are continuously evaluating our costs and pursuing additional cost-control and efficiency opportunities, including increased automation, across all aspects of the company. However, we anticipate significant increases in ad request volume, and are developing internal tools to manage the volume increases and investing in software architectural improvements, filtering, and cloud services to accelerate innovation and further enable efficiencies.

Uncertainty Resulting from Privacy Regulations

Our business is highly susceptible to emerging privacy regulations and oversight. In Europe, data protection authorities have started to clarify certain requirements under the GDPR, but uncertainty remains. Data protection authorities in a number of territories have expressed a desire to focus on the advertising technology ecosystem specifically.

In addition to the GDPR, a number of new privacy regulations will or have already come into effect in 2020. The California legislature passed the California Consumer Privacy Act ("CCPA") in 2018, which became effective January 1, 2020. This regulation imposes new obligations on businesses that handle the personal information of California residents. The obligations imposed will require the Company to devote significant resources towards compliance. Certain requirements remain unclear due to ambiguities in the drafting of or incomplete guidance. These ambiguities and resulting impact on our business will need to be resolved over time. In addition, other privacy bills have been introduced at both the state and federal level. Certain international territories are also imposing new or expanded privacy obligations. For example, Brazil's data protection regulation, the LGPD, will also come into effect in August 2020. In the coming years, we expect further consumer privacy regulation worldwide.

Until prevailing compliance practices standardize, the impact of worldwide privacy regulations on our business and, consequently, our revenue could be negatively impacted.

Components of Our Results of Operations

We report our financial results as one operating segment. Our consolidated operating results, together with non-GAAP financial measures, are regularly reviewed by our chief operating decision maker, principally to make decisions about how we allocate our resources and to measure our consolidated operating performance.

Revenue

We generate revenue from the purchase and sale of digital advertising inventory through our marketplace. We also generate revenue from the fee we charge clients for use of our Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. We recognize revenue upon the fulfillment of our contractual obligations in connection with a completed transaction, subject to satisfying all other revenue recognition criteria. Our revenue recognition policies are discussed in more detail in Note 4 of the accompanying Notes to the Consolidated Financial Statements.

Expenses

We classify our expenses into the following categories:

Cost of Revenue. Our cost of revenue consists primarily of data center costs, bandwidth costs, ad protection costs, depreciation and maintenance expense of hardware supporting our revenue-producing platform, amortization of software costs for the development of our revenue-producing platform, amortization expense associated with acquired developed technologies, personnel costs, facilities-related costs, and cloud computing costs. Personnel costs included in cost of revenue include salaries, bonuses, and stock-based compensation, and are primarily attributable to personnel in our network operations group who support our platform. We capitalize costs associated with software that is developed or obtained for internal use and amortize the costs associated with our revenue-producing platform in cost of revenue over their estimated useful lives. We amortize acquired developed technologies over their estimated useful lives.

Sales and Marketing. Our sales and marketing expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, as well as marketing expenses such as brand marketing, travel expenses, trade shows and marketing materials, professional services, and amortization expense associated with client relationships and backlog from our business acquisitions, and to a lesser extent, facilities-related costs and depreciation and amortization. Our sales organization focuses on increasing the adoption of our solution by existing and new buyers and sellers. We amortize acquired intangibles associated with client relationships and backlog from our business acquisitions over their estimated useful lives.

Technology and Development. Our technology and development expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, as well as professional services associated with the ongoing development and maintenance of our solution, and to a lesser extent, facilities-related costs and depreciation and amortization, including amortization expense associated with acquired intangible assets from our business acquisitions that are related to technology and development functions. 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 qualifies for capitalization, which are then recorded as internal use software development costs, net, on our consolidated balance sheets. We amortize internal use software development costs that relate to our revenue-producing activities on our platform to cost of revenue and amortize other internal use software development costs to technology and development costs or general and administrative expenses, depending on the nature of the related project. We amortize acquired intangibles associated with technology and development functions from our business acquisitions over their estimated useful lives.

General and Administrative. Our general and administrative expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, associated with our executive, finance, legal, human resources, compliance, and other administrative personnel, as well as accounting and legal professional services fees, facilities-related costs and depreciation and amortization, and other corporate-related expenses. General and administrative expenses also include amortization of internal use software development costs and acquired intangible assets from our business acquisitions over their estimated useful lives that relate to general and administrative functions.

Restructuring and Other Exit Costs. Our restructuring and other exit costs consist primarily of employee termination costs, including stock-based compensation charges, facility closure and relocation costs, and contract termination costs.

Other (Income) Expense

Interest (Income) Expense, Net. Interest income consists of interest earned on our cash equivalents and marketable securities. Interest expense is mainly related to our credit facility.

Other Income. Other income consists primarily of rental income from commercial office space we hold under lease and have sublet to other tenants.

Foreign Currency Exchange (Gain) Loss, Net. Foreign currency exchange (gain) loss, net consists primarily of gains and losses on foreign currency transactions. We have foreign currency exposure related to our accounts receivable and accounts payable that are denominated in currencies other than the U.S. Dollar, principally the British Pound and the Euro.

Provision (Benefit) for Income Taxes

We are subject to income taxes in the U.S. (federal and state) and numerous foreign jurisdictions. Tax laws, regulations, administrative practices, principles, and interpretations in various jurisdictions may be subject to significant change, with or without notice, due to economic, political, and other conditions, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. Our effective tax rates could be affected by numerous factors, such as changes in our business operations, acquisitions, investments, entry into new businesses and geographies, intercompany transactions, the relative amount of our foreign earnings, including earnings being lower than anticipated in jurisdictions where we have lower statutory rates and higher than anticipated in jurisdictions where we have higher statutory rates, losses incurred in jurisdictions for which we are not able to realize related tax benefits, the applicability of special tax regimes, changes in foreign currency exchange rates, changes in our stock price, changes in our deferred tax assets and liabilities and their valuation, changes in the laws, regulations, administrative practices, principles, and interpretations related to tax, including changes to the global tax framework, competition, and other laws and accounting rules in various jurisdictions.

Results of Operations

The following table sets forth our consolidated results of operations:

	Year Ended December 31, 2019	Year Ended December 31, 2018	Favorable/(Unfavorable) %
	(in thousands)		
Revenue	$ 156,414	$ 124,685	25 %
Expenses [(1)(2)]:			
Cost of revenue	57,391	60,003	4 %
Sales and marketing	44,565	44,556	— %
Technology and development	40,269	37,863	(6)%
General and administrative	41,772	42,431	2 %
Restructuring and other exit costs	—	3,440	100 %
Total expenses	183,997	188,293	2 %
Loss from operations	(27,583)	(63,608)	57 %
Other (income) expense, net	(593)	(2,143)	(72)%
Loss before income taxes	(26,990)	(61,465)	56 %
Provision (benefit) for income taxes	(1,512)	357	524 %
Net loss	$ (25,478)	$ (61,822)	59 %

(1) Stock-based compensation expense included in our expenses was as follows:

	Year Ended December 31, 2019	Year Ended December 31, 2018
	(in thousands)	
Cost of revenue	$ 421	$ 321
Sales and marketing	5,638	4,557
Technology and development	4,757	2,867
General and administrative	8,009	8,139
Restructuring and other exit costs	—	398
Total stock-based compensation expense	$ 18,825	$ 16,282

(2) Depreciation and amortization expense included in our expenses was as follows:

	Year Ended December 31, 2019	Year Ended December 31, 2018
	(in thousands)	
Cost of revenue	$ 30,345	$ 33,306
Sales and marketing	537	586
Technology and development	573	882
General and administrative	671	564
Total depreciation and amortization expense	$ 32,126	$ 35,338

The following table sets forth our consolidated results of operations for the specified periods as a percentage of our revenue for those periods presented:

	Year Ended	
	December 31, 2019	December 31, 2018
Revenue	100 %	100 %
Cost of revenue	37	48
Sales and marketing	28	36
Technology and development	26	30
General and administrative	27	34
Restructuring and other exit costs	—	3
Total expenses	118	151
Loss from operations	(18)	(51)
Other (income) expense, net	(1)	(1)
Loss before income taxes	(17)	(50)
Provision (benefit) for income taxes	(1)	—
Net loss	(16)%	(50) %

Comparison of the Years Ended December 31, 2019 and 2018

Revenue

Revenue increased $31.7 million, or 25%, for the year ended December 31, 2019 compared to the prior year. Our revenue growth was driven primarily by ongoing increases in advertising spend transacted on our platform, particularly video and mobile ad spend, and to a lesser degree, by increases in take rate, or the fee we earn on advertising spend.

Revenue is impacted by shifts in the mix of advertising spend by transaction type and channel, changes in the fees we charge sellers for our services, and other factors such as changes in the market, our execution of the business, and competition. In addition, an increase in PMP transactions as a percentage of the transactions on our platform could also result in reduced revenue, if not offset by increased volume, because PMP transactions can carry lower fees than OMP transactions. Industry dynamics are challenging due to market and competitive pressures and make it difficult to predict the near-term effect of our growth initiatives. While we anticipate long-term benefits from these initiatives, unless we are able to continue to increase advertising spend on our platform, through higher transaction volumes or higher transaction values or both, revenue growth may be limited.

Cost of Revenue

Cost of revenue decreased $2.6 million, or 4%, for the year ended December 31, 2019 compared to the prior year mainly due to our continued focus on infrastructure serving efficiency, which resulted in a decrease of $3.0 million in depreciation and amortization and a decrease of $1.0 million in data and bandwidth expenses due to our leverage in contract pricing as a result of our increased scale. These decreases were partially offset by an increase of $1.1 million in ad protection costs.

We expect cost of revenue to be higher in absolute dollars in 2020 compared to 2019 as we continue to expand select data center operations to cloud service providers to accelerate innovation and gain efficiencies, and to support the growth of our business. Cost of revenue may fluctuate from quarter to quarter and period to period, on an absolute dollar basis and as a percentage of revenue, depending on revenue levels and the volume of transactions we process supporting those revenues, and the timing and amounts of depreciation and amortization of equipment and software.

Sales and Marketing

Sales and marketing expenses stayed flat for the year ended December 31, 2019 compared to the prior year primarily due to the benefit of the prior year's cost control initiatives.

We expect sales and marketing expenses to increase in 2020 compared to 2019 as a result of increased investment in headcount, particularly in international markets. Sales and marketing expense may fluctuate quarter to quarter and period to period, on an absolute dollar basis and as a percentage of revenue, based on revenue levels, the timing of our investments and seasonality in our industry and business.

Technology and Development

Technology and development expenses increased by $2.4 million, or 6%, for the year ended December 31, 2019 compared to the prior year, primarily due to an increase of $3.0 million in personnel costs as a result of strategic headcount additions to focus on the engineering aspect of our new developments, including Demand Manager and other initiatives.

We expect technology and development expense to increase in 2020 compared to 2019 as we make a limited number of strategic and targeted headcount additions to focus on the engineering aspect of building our new products and expanding features and functionalities of our current products. The timing and amount of our capitalized development and enhancement projects may affect the amount of development costs expensed in any given period. As a percentage of revenue, technology and development expense may fluctuate from quarter to quarter and period to period based on revenue levels, the timing and amounts of technology and development efforts, the timing and the rate of the amortization of capitalized projects and the timing and amounts of future capitalized internal use software development costs.

General and Administrative

General and administrative expenses decreased by $0.7 million, or 2%, for the year ended December 31, 2019 compared to the prior year, primarily due to a decrease of $1.2 million in personnel related expenses due to the benefit of prior year's cost control initiatives.

We expect general and administrative expenses to increase slightly in 2020 compared to 2019. General and administrative expenses may fluctuate from quarter to quarter and period to period based on the timing and amounts of expenditures in our general and administrative functions as they vary in scope and scale over periods. Such fluctuations may not be directly proportional to changes in revenue.

Restructuring and Other Exit Costs

As part of our on-going evaluation of efficiency and implementation of cost-control measures, during the first quarter of 2018, we undertook measures to reduce headcount by approximately 100 people, or 19% of our workforce, and to reduce other operating costs. Our actions included reductions in administrative staff to bring our general and administrative operations into better alignment with the current size of the business, as well as in sales and technical personnel as a result of offshoring certain development functions, organizational delayering and restructuring, and reducing investment in unprofitable projects.

For the year ended December 31, 2018, we incurred restructuring and other exit costs of $3.4 million for severance and other one-time employee termination benefits related to headcount reductions that were made in the first quarter of 2018 (see Note 14 to the consolidated financial statements). There were no restructuring and other exit costs incurred during the year ended December 31, 2019. All accrued costs as of December 31, 2018 associated with these events were paid in the first quarter of 2019.

Other (Income) Expense, Net

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Interest income, net	$ (789)	$ (988)
Other income	(285)	(766)
Foreign exchange (gain) loss, net	481	(389)
Total other (income) expense, net	$ (593)	$ (2,143)

Foreign exchange (gain) loss, net is impacted by movements in exchange rates and the amount of foreign currency-denominated receivables and payables, which are impacted by our billings to buyers and payments to sellers. The foreign currency loss, net during the year ended December 31, 2019 was primarily attributable to the currency movements between the British Pound and the Euro relative to the U.S. Dollar.

Provision (Benefit) for Income Taxes

We recorded an income tax benefit of $1.5 million for the year ended December 31, 2019 compared to an income tax expense of $0.4 million for the year ended December 31, 2018. The net tax benefit for the year ended December 31, 2019 is the result of a deferred tax liability associated with the RTKio acquisition, the release of a foreign valuation allowance resulting from a change to a cost-plus arrangement for a foreign subsidiary, the domestic valuation allowance, and the tax liability associated with foreign subsidiaries.

Non-GAAP Financial Measures and Operational Measures

In addition to our GAAP results, we review certain non-GAAP financial measures to help us evaluate our business, measure our performance, identify trends affecting our business, establish budgets, measure the effectiveness of investments in our technology and development and sales and marketing, and assess our operational efficiencies. These non-GAAP measures include advertising spend and Adjusted EBITDA, which are discussed immediately following the table below, along with the operational performance measure take rate. Revenue and other GAAP measures are discussed under the headings "Components of Our Results of Operations" and "Results of Operations."

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Financial Measures and non-GAAP Financial Measures:		
Revenue	$ 156,414	$ 124,685
Advertising spend	$ 1,117,317	$ 992,087
Net loss	$ (25,478)	$ (61,822)
Adjusted EBITDA	$ 25,694	$ (11,222)
Operational Measure:		
Take Rate %	14.0%	12.6%

Advertising Spend

We define advertising spend as the total volume of spending between buyers and sellers transacted on our platform. Advertising spend does not represent revenue reported on a GAAP basis. We also use advertising spend for internal management purposes to assess market share of total advertising spending.

Our advertising spend may be influenced by demand for our services, the volume and characteristics of paid impressions, average CPM, our ability to fill ad requests, the nature and amount of fees we charge, and other factors such as changes in the market, our execution of the business, and competition.

Advertising spend may fluctuate due to seasonality. In the past, we have experienced higher advertising spend during the fourth quarter of a given year because many buyers devote a disproportionate amount of their advertising budgets to this period of the year to coincide with increased holiday purchasing. Buyers' focus on the fourth quarter generates more bidding activity on our platform, which may drive higher volumes of paid impressions, average CPM, or both. Our advertising spend grew 13% for the year ended December 31, 2019 compared to 2018. The increase in advertising spend was driven by higher ad request volumes and corresponding paid impressions. CPMs generated from our auctions were flat driven by implementation of first price auctions and EMR for our header bidding inventory. CPMs can be influenced heavily by the value of the inventory that we made available to buyers, including PMP, mobile, and video inventory that typically carries higher pricing.

The following table presents the reconciliation of revenue to advertising spend:

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Revenue	$ 156,414	$ 124,685
Plus amounts paid to sellers	960,903	867,402
Advertising spend	$ 1,117,317	$ 992,087

Our solution enables buyers and sellers to transact through desktop and mobile channels. The following tables present revenue by channel and as a percentage of total revenue for the years ended December 31, 2019 and 2018.

	Revenue			
	Year Ended			
	December 31, 2019		December 31, 2018	
	(in thousands, except percentages)			
Channel:				
Desktop	$ 68,302	44%	$ 59,039	47%
Mobile	88,112	56	65,646	53
Total	$ 156,414	100%	$ 124,685	100%

Adjusted EBITDA

We define Adjusted EBITDA as net income (loss) adjusted to exclude stock-based compensation expense, depreciation and amortization, amortization of acquired intangible assets, impairment charges, interest income or expense, and other cash and non-cash based income or expenses that we do not consider indicative of our core operating performance, including, but not limited to foreign exchange gains and losses, acquisition and related items, and provision (benefit) for income taxes. We believe Adjusted EBITDA is useful to investors in evaluating our performance for the following reasons:

- Adjusted EBITDA is widely used by investors and securities analysts to measure a company's performance without regard to items such as those we exclude in calculating this measure, which 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 performance and the effectiveness of our business strategies, and in communications with our board of directors concerning our performance. Adjusted EBITDA may also be used as a metric for determining payment of cash incentive compensation.

- Adjusted EBITDA provides a measure of consistency and comparability with our past performance that many investors find useful, 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.

Although Adjusted EBITDA is frequently used by investors and securities analysts in their evaluations of companies, Adjusted EBITDA has limitations as an analytical tool, and should not be considered in isolation or as a substitute for analysis of our results of operations as reported under GAAP. These limitations include:

- Stock-based compensation is a non-cash charge and will remain an element of our long-term incentive compensation package, although we exclude it as an expense when evaluating our ongoing operating performance for a particular period.
- Depreciation and amortization are non-cash charges, and the assets being depreciated or amortized will often have to be replaced in the future, but Adjusted EBITDA does not reflect any cash requirements for these replacements.
- Impairment charges are non-cash charges related to goodwill, intangible assets and/or long-lived assets.
- Adjusted EBITDA does not reflect non-cash charges related to acquisition and related items, such as amortization of acquired intangible assets and changes in the fair value of contingent consideration.
- Adjusted EBITDA does not reflect cash and non-cash charges and changes in, or cash requirements for, acquisition and related items, such as certain transaction expenses and expenses associated with earn-out amounts.
- Adjusted EBITDA does not reflect changes in our working capital needs, capital expenditures, or contractual commitments.
- Adjusted EBITDA does not reflect cash requirements for income taxes and the cash impact of other income or expense.
- Other companies may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Our Adjusted EBITDA is influenced by fluctuations in our revenue and the timing and amounts of our investments in our operations. Adjusted EBITDA should not be considered as an alternative to net income (loss), income (loss) from operations, or any other measure of financial performance calculated and presented in accordance with GAAP.

The following table presents a reconciliation of net loss, the most comparable GAAP measure, to Adjusted EBITDA for the years ended December 31, 2019 and 2018.

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Net income (loss)	$ (25,478)	$ (61,822)
Add back (deduct):		
Depreciation and amortization expense, excluding amortization of acquired intangible assets	28,818	32,153
Amortization of acquired intangibles	3,308	3,185
Stock-based compensation expense	18,825	16,282
Acquisition and related items	2,041	—
Interest income, net	(789)	(988)
Foreign exchange (gain) loss, net	481	(389)
Provision (benefit) for income taxes	(1,512)	357
Adjusted EBITDA	$ 25,694	$ (11,222)

Take Rate

Take rate is an operational performance measure calculated by dividing revenue by advertising spend. We review take rate for internal management purposes to assess the development of our marketplace with buyers and sellers.

Our take rate (and our fees, which drive take rate) can be affected by a variety of factors, including the terms of our arrangements with buyers and sellers active on our platform in a particular period, the scale of a buyer’s or seller’s activity on our platform, mix of inventory types, the implementation of new products, platforms and solution features, auction dynamics, competitive factors, our strategic pricing decisions, credits for discrepancies and other items, and the overall development of the digital advertising ecosystem.

Take rate increased by 143 basis points for the year ended December 31, 2019 compared to the prior year.

Liquidity and Capital Resources

Our principal sources of liquidity are our cash and cash equivalents, marketable securities, cash generated from operations, and our credit facility with Silicon Valley Bank ("SVB"). At December 31, 2019, we had cash and cash equivalents of $88.9 million, of which $13.0 million was held in foreign currency cash accounts. Our cash and marketable securities balances are affected by our results of operations, the timing of capital expenditures, which are typically greater in the second half of the year, and by changes in our working capital, particularly changes in accounts receivable and accounts payable. The timing of cash receipts from buyers and payments to sellers can significantly impact our cash flows from operating activities and our liquidity for, and within, any period presented. Our collection and payment cycle can vary from period to period depending upon various circumstances, including seasonality.

On September 26, 2018, we amended and restated our loan and security agreement with SVB (the "Loan Agreement"). The Loan Agreement provides a senior secured revolving credit facility of up to $40.0 million with a maturity date of September 26, 2020. Pursuant to the Loan Agreement, we are required to comply with certain financial covenants. While we are in compliance with these covenants, this could change in the future depending on our operating results.

At December 31, 2019, we had no amounts outstanding under our Loan Agreement. Future availability under the credit facility is dependent on several factors, including the available borrowing base and compliance with future covenant requirements. See Note 18 of "Notes to Consolidated Financial Statements" for additional information regarding the Loan Agreement.

We believe our existing cash and cash equivalents and investment balances will be sufficient to meet our working capital requirements for at least the next twelve months from the issuance of our financial statements. However, there are multiple factors that could impact our cash balances in the future. For example, we typically collect from buyers in advance of payments to sellers, and our collection and payment cycle can vary from period to period depending upon various circumstances, including seasonality. Some buyers have begun demanding longer terms to pay us later and some sellers have begun demanding shorter terms to collect from us earlier. We may not have the leverage to resist these demands given the competitive nature of our business. If this continues, more of our cash will be required to fund our payment cycle and therefore not be available for other uses. Some buyers have also began experiencing financial difficulty and have been forced into filing for bankruptcy protection, and we may be forced to pay sellers even if we are unable to collect from buyers. Our future capital requirements and the adequacy of available funds will depend on many factors, including those set forth in Part I, Item 1A: "Risk Factors" of this Annual Report on Form 10-K.

Our ability to renew our existing credit facility, which matures on September 26, 2020, or to enter into a new credit facility to replace or supplement the existing facility may be limited due to various factors, including the status of our business, global credit market conditions, and perceptions of our business or industry by sources of financing. In particular, it may be difficult to renew or replace our existing credit facility if we are not able to produce, or demonstrate a path to produce, positive cash flow. In addition, even if credit is available, lenders may seek more restrictive covenants and higher interest rates that may reduce our borrowing capacity, increase our costs, and reduce our operating flexibility.

In the future, we may attempt to raise additional capital through the sale of equity securities or through equity-linked or debt financing arrangements. If we raise additional funds by issuing equity or equity-linked securities, the ownership of our existing stockholders will be diluted. If we raise additional financing by incurring indebtedness, we will be subject to increased fixed payment obligations and could also be subject to 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.

An inability to raise additional capital could adversely affect our ability to achieve our business objectives. In addition, if our operating performance during the next twelve months is below our expectations, our liquidity and ability to operate our business could be adversely affected.

Cash Flows

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

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Cash flows provided by (used in) operating activities	$ 31,983	$ (22,686)
Cash flows provided by (used in) investing activities	(23,388)	27,947
Cash flows used in financing activities	(205)	(1,279)
Effects of exchange rate changes on cash, cash equivalents and restricted cash	46	(172)
Change in cash, cash equivalents and restricted cash	$ 8,436	$ 3,810

Operating Activities

Our cash flows from operating activities are primarily driven by revenues generated from advertising activity, offset by the cash costs of operations, and significantly influenced by increases or decreases in receipts from buyers and related payments to sellers. Our future cash flows will be diminished if we cannot increase our revenue levels and manage costs appropriately. Cash flows from operating activities have been further 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 sellers can significantly impact our cash flows from operating activities for any period presented.

During the year ended December 31, 2019, net cash provided by operating activities was $32.0 million, compared to net cash used in operating activities of $22.7 million during the year ended December 31, 2018. Our operating activities included our net losses of $25.5 million and $61.8 million for the years ended December 31, 2019 and 2018, respectively, which were offset by non-cash adjustments of $51.5 million and $51.3 million, respectively. In 2019, net changes in our working capital increased cash provided by operating activities by $5.9 million. In 2018, net changes in our working capital increased cash used in operating activities by $12.1 million. The net changes in working capital for both periods are primarily due to the timing of cash receipts from buyers and the timing of payments to sellers.

We believe that cash flows from operations will continue to be negatively impacted by our working capital needs.

Investing Activities

Our primary investing activities have consisted of investments in, and maturities of, available-for-sale securities, acquisitions of businesses, purchases of property and equipment, and capital expenditures to develop our internal use software in support of creating and enhancing our technology infrastructure. Purchases of property and equipment and investments in internal use software development may vary from period-to-period due to the timing of the expansion of our operations, changes to headcount, and the cycles of our internal use software development. As we execute on our strategy to be a high volume, low cost advertising exchange, we are developing solutions to manage the growth of our digital advertising inventory volume more efficiently. We anticipate investment in internal use software development to remain relatively consistent with past years' investment levels as we continue to innovate new solutions on our platform. As the business continues to grow, we expect our investment in property and equipment to increase compared to 2019. Historically, a majority of our purchases in property and equipment have occurred in the latter half of the year in preparation for the peak volumes of the fourth quarter and early in the first quarter of the following year. We expect those trends to continue, with higher levels of property and equipment spend in the latter half of this year compared to the first half of the year. Investments in, and maturities of, available-for-sale securities and acquisitions of businesses vary from period-to-period.

During the year ended December 31, 2019, net cash used by investing activities was $23.4 million compared to net cash provided by investing activities of $27.9 million during the year ended December 31, 2018. Net cash used in our investing activities in 2019 included $11.0 million to acquire RTK.io. For the years ended December 31, 2019 and 2018 we had net maturities of investments in available-for-sale securities of $7.5 million and $38.7 million, respectively. In addition, we had cash inflows of $9.2 million during the year ended December 31, 2018 related to sales of available-for-sale securities. During each of the the years ended December 31, 2019 and 2018, we had cash outflows for the purchase of property and equipment of $11.4 million. We also made investments in our internally developed software of $8.5 million in each of the last two years.

On October 21, 2019, we acquired RTK.io, a leading provider of tools and services that bring simplicity and control to header bidding for publishers. Refer to "Item 1. Business" for additional information.

On December 19, 2019, we announced a stock-for-stock merger with Telaria, which will create a combined company offering a single platform for transacting CTV, desktop display, video, audio, and mobile inventory across all geographies and auction types. Refer to "Item 1. Business" for additional information.

Financing Activities

Our financing activities consisted of transactions related to the issuance of our common stock under our equity plans.

For the years ended December 31, 2019 and 2018, we used net cash of $0.2 million and $1.3 million, respectively, for financing activities. Cash outflows from financing activities for the years ended December 31, 2019 and 2018 included payments of $1.8 million and $1.6 million, respectively, for income tax deposits paid in respect of vesting of stock-based compensation awards that were reimbursed by the award recipients through surrender of shares. Offsetting these outflows were cash inflows of $1.6 million and $0.4 million from the issuance of common stock under the employee stock purchase plan and exercise of stock options for the years ended December 31, 2019 and 2018, respectively.

Off-Balance Sheet Arrangements

We do not have any relationships with other entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities that have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. We did not have any other off-balance sheet arrangements at December 31, 2019 than the indemnification agreements described below.

Contractual Obligations and Known Future Cash Requirements

Our principal commitments consist of leases for our various office facilities, including our corporate headquarters in Los Angeles, California and offices in New York, New York, and operating lease agreements with data centers that expire at various times through 2030. At December 31, 2019, expected future commitments relating to operating leases were $25.8 million. See Note

16 of "Notes to Consolidated Financial Statements" for our annual lease commitment for each of the next five years and thereafter. In certain cases, the terms of the lease agreements provide for rental payments on a graduated basis. We received rental income from subleases totaling $0.3 million for the year ended December 31, 2019.

There were no significant changes to our unrecognized tax benefits in the year ended December 31, 2019. Upon completion of the Merger with Telaria, which is expected to close in early April 2020, our unrecognized tax benefits may be materially impacted, and as a result, we cannot reasonably estimate if there will be significant changes to unrecognized tax benefits through December 31, 2020.

In the ordinary course of business, we enter into agreements with sellers, buyers, and other third parties pursuant to which we agree to indemnify buyers, sellers, vendors, lessors, business partners, lenders, stockholders, and other parties with respect to certain matters, including, but not limited to, losses resulting from claims of intellectual property infringement, damages to property or persons, business losses, or other liabilities. Generally, these indemnity and defense obligations relate to our own business operations, obligations, and acts or omissions. However, under some circumstances, we agree to indemnify and defend contract counterparties against losses resulting from their own business operations, obligations, and acts or omissions, or the business operations, obligations, and acts or omissions of third parties. These indemnity provisions generally survive termination or expiration of the agreements in which they appear. In addition, we have entered into indemnification agreements with our directors, executive officers and certain other officers that will require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers, or employees. No demands for indemnification have been made as of December 31, 2019.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates.

We believe that the following assumptions and estimates have the greatest potential impact on our consolidated financial statements: (i) the determination of revenue recognition as net versus gross in our revenue arrangements, (ii) internal-use software development costs, (iii) intangible asset impairment analysis, (iv) assumptions used in the valuation models to determine the fair value of stock options and stock-based compensation expense, (v) the assumptions used in the valuation of acquired assets and liabilities in business combinations, and (vi) income taxes, including the realization of tax assets and estimates of tax liabilities. There have been no significant changes in our accounting policies from those disclosed in our audited consolidated financial statements and notes thereto for the year ended December 31, 2019.

We believe that the accounting policies disclosed below include estimates and assumptions critical to our business and their application could have a material impact on our consolidated financial statements. In addition to these critical policies, our significant accounting policies are included within Note 2 of our "Notes to Consolidated Financial Statements" within this Annual Report on Form 10-K.

Revenue Recognition

We generate revenue from transactions where we provide a platform for the purchase and sale of digital advertising inventory. We also generate revenue from the fee we charge clients for use of our Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. Our advertising automation solution is a marketplace that includes sellers of inventory (providers of websites, mobile applications and other digital media properties, and their representatives) and buyers of inventory (including advertisers, agencies, agency trading desks, and demand-side platforms). This solution incorporates proprietary machine-learning algorithms, sophisticated data processing, high-volume storage, detailed analytics capabilities, and a distributed infrastructure. Together, these features form the basis for our automated advertising solution that brings buyers and sellers together and facilitates intelligent decision-making and automated transaction execution for the digital advertising inventory managed on our platform. Digital advertising inventory is created when consumers access sellers' content. Sellers provide digital advertising inventory to our platform in the form of advertising requests, or ad requests. When we receive ad requests from sellers, we send bid requests to buyers, which enable buyers to bid on sellers' digital advertising inventory. Winning bids can create advertising, or paid impressions, for the seller to present to the consumer.

The total volume of spending between buyers and sellers on our platform is referred to as advertising spend. We keep a percentage of that advertising spend as a fee, and remit the remainder to the seller. The fee that we retain from the gross advertising spend on our platform is recognized as revenue. The fee earned on each transaction is based on the pre-existing agreement we have with the seller and the clearing price of the winning bid. We recognize revenue upon fulfillment of our performance obligation to a client, which occurs at the point in time an ad renders and is counted as a paid impression, subject to a contract existing with the client and a fixed or determinable transaction price. Performance obligations for all transactions are satisfied, and the corresponding revenue is recognized, at a distinct point in time; we have no arrangements with multiple performance obligations. We consider the following when determining if a contract exists (i) contract approval by all parties, (ii) identification of each party's rights regarding the goods or services to be transferred, (iii) specified payment terms, (iv) commercial substance of the contract, and (v) collectability of substantially all of the consideration is probable.

We have determined that we do not act as the principal in the purchase and sale of digital advertising inventory because we are not the primary obligor and do not set prices agreed upon within the auction marketplace, and therefore we report revenue on a net basis.

Recently Issued Accounting Pronouncements

For information regarding recent accounting pronouncements, refer to Note 2 of our "Notes to Consolidated Financial Statements" within this Annual Report on Form 10-K.

Item 7A. Quantitative and Qualitative Disclosure About Market Risk

This section is not required for smaller reporting companies.

Item 8. Financial Statements and Supplementary Data

The Rubicon Project, Inc.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of The Rubicon Project, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of The Rubicon Project, Inc. and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2019 and the related notes (collectively referred to as the "financial statements"). We also have audited the Company’s internal control over financial reporting as of December 31, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, 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, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

Change in Accounting Principle

As discussed in Note 2 to the financial statements, effective January 1, 2019, the Company adopted the FASB’s new standard related to leases using the modified retrospective approach.

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.

/s/ Deloitte & Touche LLP

Los Angeles, California

February 26, 2020

We have served as the Company's auditor since 2018.

THE RUBICON PROJECT, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share amounts)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 88,888	$ 80,452
Marketable securities	—	7,524
Accounts receivable, net	217,571	205,683
Prepaid expenses and other current assets	6,591	6,882
TOTAL CURRENT ASSETS	313,050	300,541
Property and equipment, net	23,667	33,487
Right of use lease asset	21,491	—
Internal use software development costs, net	16,053	14,570
Intangible assets, net	11,386	10,174
Goodwill	7,370	—
Other assets, non-current	2,103	1,240
TOTAL ASSETS	$ 395,120	$ 360,012
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 259,439	$ 239,678
Lease liabilities - current portion	7,282	—
Other current liabilities	778	1,304
TOTAL CURRENT LIABILITIES	267,499	240,982
Lease liabilities - non-current portion	15,231	—
Other liabilities, non-current	454	1,017
TOTAL LIABILITIES	283,184	241,999
Commitments and contingencies (Note 17)		
STOCKHOLDERS' EQUITY		
Preferred stock, $0.00001 par value, 10,000 shares authorized at December 31, 2019 and December 31, 2018; 0 shares issued and outstanding at December 31, 2019 and December 31, 2018	—	—
Common stock, $0.00001 par value; 500,000 shares authorized at December 31, 2019 and December 31, 2018; 53,888 and 51,159 shares issued, and outstanding at December 31, 2019 and December 31, 2018, respectively	1	1
Additional paid-in capital	453,064	433,877
Accumulated other comprehensive loss	(45)	(259)
Accumulated deficit	(341,084)	(315,606)
TOTAL STOCKHOLDERS' EQUITY	111,936	118,013
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 395,120	$ 360,012

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

THE RUBICON PROJECT, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended	
	December 31, 2019	December 31, 2018
Revenue	$ 156,414	$ 124,685
Expenses:		
Cost of revenue	57,391	60,003
Sales and marketing	44,565	44,556
Technology and development	40,269	37,863
General and administrative	41,772	42,431
Restructuring and other exit costs	—	3,440
Total expenses	183,997	188,293
Loss from operations	(27,583)	(63,608)
Other (income) expense:		
Interest income, net	(789)	(988)
Other income	(285)	(766)
Foreign exchange (gain) loss, net	481	(389)
Total other (income) expense, net	(593)	(2,143)
Loss before income taxes	(26,990)	(61,465)
Provision (benefit) for income taxes	(1,512)	357
Net loss	$ (25,478)	$ (61,822)
Net loss per share:		
Basic and Diluted	$ (0.48)	$ (1.23)
Weighted average shares used to compute net loss per share:		
Basic and Diluted	52,614	50,259

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

THE RUBICON PROJECT, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)

	Year Ended	
	December 31, 2019	**December 31, 2018**
Net loss	$ (25,478)	$ (61,822)
Other comprehensive income (loss):		
Unrealized gain on investments	2	27
Foreign currency translation adjustments	212	(327)
Other comprehensive income (loss)	214	(300)
Comprehensive loss	$ (25,264)	$ (62,122)

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

THE RUBICON PROJECT, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2017	50,239	$ —	$ 418,354	$ 41	$ (253,784)	$ 164,611
Exercise of common stock options	50	—	45	—	—	45
Restricted stock awards, net	(156)	—	—	—	—	—
Issuance of common stock related to employee stock purchase plan	174	—	314	—	—	314
Issuance of common stock related to RSU vesting	1,367	1	—	—	—	1
Shares withheld related to net share settlement	(515)	—	(1,638)	—	—	(1,638)
Stock-based compensation	—	—	16,802	—	—	16,802
Other comprehensive loss	—	—	—	(300)	—	(300)
Net loss	—	—	—	—	(61,822)	(61,822)
Balance at December 31, 2018	51,159	1	433,877	(259)	(315,606)	118,013
Exercise of common stock options	285	—	588	—	—	588
Restricted stock awards, net	(182)	—	—	—	—	—
Issuance of common stock related to employee stock purchase plan	227	—	1,054	—	—	1,054
Issuance of common stock related to RSU vesting	2,858	—	—	—	—	—
Shares withheld related to net share settlement	(459)	—	(1,847)	—	—	(1,847)
Stock-based compensation	—	—	19,392	—	—	19,392
Other comprehensive income	—	—	—	214	—	214
Net loss	—	—	—	—	(25,478)	(25,478)
Balance at December 31, 2019	53,888	$ 1	$ 453,064	$ (45)	$ (341,084)	$ 111,936

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

THE RUBICON PROJECT, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended	
	December 31, 2019	**December 31, 2018**
OPERATING ACTIVITIES:		
Net loss	$ (25,478)	$ (61,822)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	32,126	35,338
Stock-based compensation	18,825	16,282
Loss on disposal of property and equipment	114	243
Provision for doubtful accounts	2,060	758
Accretion of available for sale securities	24	(412)
Non-cash lease expense	(209)	—
Deferred income taxes	(595)	(42)
Unrealized foreign currency gains, net	(823)	(897)
Changes in operating assets and liabilities, net of effect of business acquisitions:		
Accounts receivable	(10,705)	(40,688)
Prepaid expenses and other assets	(51)	4,519
Accounts payable and accrued expenses	16,288	26,612
Other liabilities	407	(2,577)
Net cash provided by (used in) operating activities	31,983	(22,686)
INVESTING ACTIVITIES:		
Purchases of property and equipment	(11,425)	(11,433)
Capitalized internal use software development costs	(8,463)	(8,507)
Acquisitions, net of cash acquired	(11,000)	—
Investments in available-for-sale securities	—	(23,991)
Maturities of available-for-sale securities	7,500	62,650
Sales of available-for-sale securities	—	9,228
Net cash provided by (used in) investing activities	(23,388)	27,947
FINANCING ACTIVITIES:		
Proceeds from exercise of stock options	588	45
Proceeds from issuance of common stock under employee stock purchase plan	1,054	314
Taxes paid related to net share settlement	(1,847)	(1,638)
Net cash used in financing activities	(205)	(1,279)
EFFECT OF EXCHANGE RATE CHANGES ON CASH, CASH EQUIVALENTS AND RESTRICTED CASH	46	(172)
CHANGE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	8,436	3,810
CASH, CASH EQUIVALENTS AND RESTRICTED CASH — Beginning of period	80,452	76,642
CASH, CASH EQUIVALENTS AND RESTRICTED CASH — End of period	$ 88,888	$ 80,452
SUPPLEMENTAL DISCLOSURES OF OTHER CASH FLOW INFORMATION:		
Cash paid for income taxes	$ 291	$ 379
Cash paid for interest	$ 61	$ 46
Capitalized assets financed by accounts payable and accrued expenses	$ 141	$ 6
Capitalized stock-based compensation	$ 567	$ 520
Operating lease right-of-use assets obtained in exchange for new operating lease liabilities	$ 13,533	$ —

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

THE RUBICON PROJECT, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1—Nature of Operations

Company Overview

The Rubicon Project, Inc., or Rubicon Project (the "Company"), was formed on April 20, 2007 in Delaware and began operations in April 2007. The Company is headquartered in Los Angeles, California.

The Company provides a technology solution to automate the purchase and sale of digital advertising inventory for buyers and sellers. The Company's platform features applications and services for digital advertising sellers, including websites, mobile applications and other digital media properties, and their representatives, to sell their digital advertising inventory; applications and services for buyers, including advertisers, agencies, agency trading desks, and demand side platforms ("DSPs") to buy digital advertising inventory; and a marketplace over which such transactions are executed.

In the second quarter of 2019, the Company announced the beta program for Demand Manager. Demand Manager helps sellers effectively monetize their advertising inventory through configuration tools and analytics to make it easier to deploy, configure, and optimize Prebid-based header bidding solutions. Prebid is a free and open source suite of software products designed by advertising community developers to enable publishers to implement header bidding on their websites and from within their apps. Together, these features power and enhance a comprehensive, transparent, independent advertising marketplace that brings buyers and sellers together and facilitates intelligent decision making and automated transaction execution for the advertising inventory managed on the Company's platform. See related acquisition of rtk.io described in Note 10-Business Acquisitions.

Advertising inventory takes different forms, referred to as advertising units, including display, audio, and video; is purchased and sold through real-time bidding, which includes (i) direct sale of premium inventory, which the Company refers to as private marketplaces ("PMP"), and (ii) open auction bidding, which the Company refers to as open marketplace ("OMP"); and is accessed by users through different channels, including mobile web, mobile application, desktop, and connected televisions ("CTV"), as well as across various out-of-home channels such as digital billboards.

Note 2—Organization and Summary of Significant Accounting Policies

Basis of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP, and include the operations of the Company and its wholly owned subsidiaries. All significant inter-company transactions and balances have been eliminated in consolidation.

Segments

Management has determined that the Company operates as one segment. The Company’s chief operating decision maker reviews financial information on an aggregated and consolidated basis, together with certain operating and performance measures principally to make decisions about how to allocate resources and to measure the Company’s performance.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported and disclosed financial statements and accompanying footnotes. Actual results could differ materially from these estimates.

On an ongoing basis, management evaluates its estimates, primarily those related to: (i) revenue recognition criteria, including the determination of revenue reporting as net versus gross in the Company’s revenue arrangements, (ii) accounts receivable and allowances for doubtful accounts, (iii) the useful lives of intangible assets and property and equipment, (iv) valuation of long-lived assets and their recoverability, including goodwill, (v) the realization of tax assets and estimates of tax liabilities, (vi) assumptions used in valuation models to determine the fair value of stock-based awards, (vii) fair value of financial instruments, (viii) the recognition and disclosure of contingent liabilities, and (ix) the assumptions used in valuing acquired assets and assumed liabilities in business combinations. These estimates are based on historical data and experience, as well as various other factors that management believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Estimates relating to the valuation of stock and business combinations, as well as the recoverability of long-lived assets and goodwill, require the selection of appropriate valuation methodologies and models, and significant judgment in evaluating ranges of assumptions and financial inputs. Actual results may differ materially from those estimates under different assumptions or circumstances.

Revenue Recognition

The Company generates revenue from the purchase and sale of digital advertising inventory through its marketplace. The Company also generates revenue from the fee it charges clients for use of its Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. Digital advertising inventory is created when consumers access sellers' content. Sellers provide digital advertising inventory to the Company's platform in the form of advertising requests, or ad requests. When the Company receives ad requests from sellers, it sends bid requests to buyers, which enable buyers to bid on sellers' digital advertising inventory. Winning bids can create advertising, or paid impressions, for the seller to present to the consumer.

The total volume of spending between buyers and sellers on the Company's platform is referred to as advertising spend. The Company keeps a percentage of that advertising spend as a fee, and remits the remainder to the seller. The fee that the Company retains from the gross advertising spend on its platform is recognized as revenue. The fee earned on each transaction is based on the pre-existing agreement with the seller and the clearing price of the winning bid. The Company recognizes revenue upon fulfillment of its performance obligation to a client, which occurs at the point in time an ad renders and is counted as a paid impression, subject to a contract existing with the client and a fixed or determinable transaction price. Performance obligations for all transactions are satisfied, and the corresponding revenue is recognized, at a distinct point in time; the Company has no arrangements with multiple performance obligations. The Company considers the following when determining if a contract exists (i) contract approval by all parties, (ii) identification of each party's rights regarding the goods or services to be transferred, (iii) specified payment terms, (iv) commercial substance of the contract, and (v) collectability of substantially all of the consideration is probable.

The Company evaluates whether it acts as the principal in the purchase and sale of digital advertising inventory to determine whether revenue should be reported on a gross or net basis. 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 have control of the digital advertising inventory and does not set prices agreed upon within the auction marketplace, and therefore reports revenue on a net basis. See Note 4 for additional disclosure of the Company's revenue policies and disaggregated presentation of the Company's revenues.

Expenses

The Company classifies its expenses into the following categories:

Cost of Revenue. The Company's cost of revenue consists primarily of data center costs, bandwidth costs, ad protection costs, depreciation and maintenance expense of hardware supporting the Company's revenue-producing platform, amortization of software costs for the development of the Company's revenue-producing platform, amortization expense associated with acquired developed technologies, personnel costs, facilities-related costs, and cloud computing costs. Personnel costs included in cost of revenue include salaries, bonuses, and stock-based compensation, and are primarily attributable to personnel in the Company's network operations group who support the Company's platform. The Company capitalizes costs associated with software that is developed or obtained for internal use and amortizes the costs associated with its revenue-producing platform in cost of revenue over their estimated useful lives. The Company amortizes acquired developed technologies over their estimated useful lives.

Sales and Marketing. The Company's sales and marketing expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, as well as marketing expenses such as brand marketing, travel expenses, trade shows and marketing materials, professional services, and amortization expense associated with client relationships and backlog from the Company's business acquisitions and, to a lesser extent, facilities-related costs and depreciation and amortization. The Company's sales organization focuses on increasing the adoption of the Company's solution by existing and new buyers and sellers. The Company amortizes acquired intangibles associated with client relationships and backlog from its business acquisitions over their estimated useful lives.

Technology and Development. The Company's technology and development expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, and professional services associated with the ongoing development and maintenance of the Company's solution and, to a lesser extent, facilities-related costs and depreciation and amortization, including amortization expense associated with acquired intangible assets from the Company's business acquisitions that are related to technology and development functions. 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 qualifies for capitalization, which are then recorded as internal use software development costs, net on the Company's consolidated balance sheets. The Company amortizes internal use software development costs that relate to its revenue-producing activities on the Company's platform to cost of revenue and amortizes other internal use software development costs to technology and development costs or general and administrative expenses, depending on the nature of the related project. The Company amortizes acquired intangibles associated with technology and development functions from its business acquisitions over their estimated useful lives.

General and Administrative. The Company's general and administrative expenses consist primarily of personnel costs, including salaries, bonuses, and stock-based compensation, associated with the Company's executive, finance, legal, human resources, compliance, and other administrative personnel, as well as accounting and legal professional services fees, facilities-related costs and depreciation, and other corporate-related expenses. General and administrative expenses also include amortization of internal use software development costs and acquired intangible assets from the Company's business acquisitions over their estimated useful lives that relate to general and administrative functions.

Restructuring and Other Exit Costs. The Company's restructuring and other exit costs are cash and non-cash charges consisting primarily of employee termination costs, including stock-based compensation charges, facility closure and relocation costs, and contract termination costs.

Stock-Based Compensation

Compensation expense related to stock-based awards is measured and recognized in the consolidated financial statements based on the fair value of the awards granted. The Company has granted restricted stock awards, restricted stock units, and stock option awards that vest based solely on continued service, or service conditions, to employees and non-employees. The fair value of each share-based award containing service conditions is based on the Company's closing price of the Company's common stock as reported on the New York Stock Exchange, or the NYSE, on the grant date for restricted stock awards and restricted stock units and is estimated using the Black-Scholes option-pricing model for stock option awards. For service condition awards, stock-based compensation expense is recognized on a straight-line basis over the requisite service periods of the awards, or the vesting period, which is generally four years.

The assumptions and estimates used in the Black-Scholes pricing model are as follows:

Fair Value of Common Stock. The fair value of common stock is based on the closing price of the Company's common stock as reported on the NYSE on the grant date.

Risk-Free Interest Rate. The Company bases the risk-free interest rate used in the Black-Scholes option-pricing model on the yields of U.S. Treasury securities with maturities appropriate for the term of stock option awards.

Expected Term. For employee options that contain service conditions, the Company applies the simplified approach, in which the expected term of an award is presumed to be the mid-point between the vesting date and the expiration date of the award. The expected term of employee stock options that contain performance conditions represents the weighted-average period that the stock options are estimated to remain outstanding.

Volatility. Because the Company does not have significant trading history for the Company’s common stock, the Company determines the price volatility based on the historical volatilities of a publicly traded peer group based on daily price observations over a period equivalent to the expected term of the stock option grants.

Dividend Yield. The dividend yield assumption is based on the Company’s history and current expectations of dividend payouts. The Company has never declared or paid any cash dividends on its common stock and does not anticipate paying any cash dividends in the foreseeable future, so the Company used an expected dividend yield of zero.

Determining the fair value of stock-based awards using a pricing model requires judgment. The Company’s use of the Black-Scholes option-pricing model requires the input of subjective assumptions such as the expected term of the award, the expected volatility of the price of the Company’s common stock, risk-free interest rates, and the expected dividend yield of the Company’s common stock. The assumptions used in the Company’s valuation model represent management’s best estimates. These estimates involve inherent uncertainties and the application of management’s judgment. If factors change and different assumptions are used, the Company’s stock-based compensation expense could be materially different in the future.

Due to the full valuation allowance provided on its net deferred tax assets, the Company has not recorded any tax benefit attributable to stock-based awards for the years ended December 31, 2019 and 2018.

Income Taxes

Deferred income tax assets and liabilities are determined based upon the net tax effects of the differences between the Company’s consolidated financial statement 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. The Company has established a full valuation allowance to offset its domestic net deferred tax assets due to the uncertainty of realizing future tax benefits from the net operating loss carryforwards and other deferred tax assets.

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 accrued related to its uncertain tax positions in its income tax provision (benefit) in the consolidated statements of operations.

Capital Stock

The Company has authorized capital stock of 500,000,000 shares of common stock and 10,000,000 shares of preferred stock. The Company has issued common stock, which is included in outstanding common stock on the Company's Consolidated Balance Sheets. The Company has not issued any shares of its preferred stock subsequent to the Company's IPO and does not have any preferred stock outstanding.

The Company is required to reserve and keep available out of its authorized but unissued shares of common stock such number of shares sufficient to effect the conversion of all shares granted and available for grant under the Company’s stock award plans. The number of shares of the Company's stock reserved for these purposes at December 31, 2019 was 18,014,777.

The board of directors is authorized to establish, from time to time, the number of shares to be included in each series of preferred stock, and to fix the designation, powers, privileges, preferences, and relative participating, optional or other rights, if any, of the shares of each series of preferred stock, and any of its qualifications, limitations or restrictions.

Net Income (Loss) Per Share Attributable to Common Stockholders

Basic net income (loss) per share of common stock is calculated by dividing the net income (loss) by the weighted-average number of shares of common stock outstanding. Diluted income (loss) per share attributable to common stockholders adjusts the basic weighted-average number of shares of common stock outstanding for the effect of potentially dilutive securities during the period. Potentially dilutive securities consist of stock options, restricted stock awards, restricted stock units, potential shares issued under the Company's Employee Stock Purchase Plan ("ESPP"), shares held in escrow and potential shares issuable as part of contingent consideration as a result of business combinations. For purposes of this calculation, potentially dilutive securities are excluded from the calculation of diluted net income (loss) per share if their effect is anti-dilutive.

Comprehensive Income (Loss)

Comprehensive income (loss) encompasses all changes in equity other than those arising from transactions with stockholders, and consists of net income (loss), unrealized gains (losses) on investments and foreign currency translation adjustments.

Cash, Cash Equivalents, and Marketable Securities

The Company invests excess cash primarily in money market funds, corporate debt securities, and highly liquid debt instruments of the U.S. government and its agencies. The Company classifies investments held in money market funds as cash equivalents because the money market funds have weighted-average maturities at the date of purchase of less than 90 days. Investments held in U.S. government and agency bonds and corporate debt securities with stated maturities of less than one year are classified as short-term investments included in marketable securities and prepaid expenses and other current assets. Investments held in U.S. government and agency bonds and corporate debt securities with stated maturities of over a year are classified as long-term investments included in other assets, non-current on the Company’s consolidated balance sheets, as the Company does not expect to redeem or sell these securities within one year from the balance sheet date.

The Company determines the appropriate classification of investments in marketable securities at the time of purchase and reevaluates such designation at each balance sheet date. The Company classifies and accounts for the Company’s marketable securities as available-for-sale, and as a result carries the securities at fair value and reports the unrealized gains and losses in the consolidated statements of comprehensive income (loss) and as a component of stockholders’ equity. The Company determines any realized gains or losses on the sale of marketable securities on a specific identification method, and the Company records such gains and losses as a component of other income, net on the Company’s consolidated statements of operations.

Restricted Cash

The Company classifies certain restricted cash balances within prepaid expenses and other current assets on the consolidated balance sheets based upon the term of the remaining restrictions. At December 31, 2019 and 2018 the Company had no restricted cash.

Accounts Receivable Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount, are unsecured, and do not bear interest. The allowance for doubtful accounts is based on the best estimate of the amount of probable credit losses in existing accounts receivable. The allowance for doubtful accounts 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 client information, subsequent collection history and other relevant data. The Company reviews the allowance for doubtful accounts on a quarterly basis. Account balances are charged off against the allowance when the Company believes it is probable the receivable will not be recovered. The Company's allowance for doubtful accounts was approximately $3.4 million and $1.3 million at December 31, 2019 and 2018, respectively. During the years ended December 31, 2019 and 2018, the Company wrote off $3.3 million and $0.6 million, respectively, of accounts receivable.

Property and Equipment, Net

Property and equipment are recorded at historical cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method based upon the estimated useful lives of the assets. The estimated useful lives of the Company's property and equipment are as follows:

	Years
Computer equipment and network hardware	3
Furniture, fixtures and office equipment	5 to 7
Leasehold improvements	Shorter of useful life or life of lease
Computer equipment under leases	Shorter of useful life or life of lease

Repair and maintenance costs are charged to expense as incurred, while renewals and improvements are capitalized. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in the Company's results of operations.

Internal Use Software Development Costs

The Company capitalizes certain internal use software development costs associated with creating and enhancing internally developed software related to the Company's 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 qualification for capitalization, as further discussed below, are expensed as incurred and recorded in technology and development expenses in the results 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. The Company capitalizes costs associated with software developed for internal use when the planning stage is completed, management has authorized further funding for the completion of the project, and it is probable that the project will be completed and perform as intended. 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 three years, commencing when the software is ready for its intended use. The straight-line recognition method approximates the manner in which the expected benefit will be derived.

The Company does not transfer ownership of its software, or lease its software, to third parties.

Intangible Assets

Intangible assets primarily consist of acquired developed technology, client relationships, and non-compete agreements resulting from business combinations, which are recorded at acquisition-date fair value, less accumulated amortization. The Company determines the appropriate useful life of its intangible assets by performing an analysis of expected cash flows of the acquired assets. Intangible assets are amortized over their estimated useful lives using a straight-line method, which approximates the pattern in which the economic benefits are consumed.

The Company's intangible assets are being amortized over their estimated useful lives as follows:

	Years
Developed technology	3 to 5
Client relationships	2 to 3
Non-compete agreements	2 to 3
Other intangible assets	0.5 to 1.5

Intangible assets are reviewed for impairment indicators at least annually and whenever events or changes in circumstances indicate that the carrying amount of the assets might not be recoverable. Conditions that would necessitate an impairment assessment include a significant decline in the observable market value of an asset, a significant change in the extent or manner in which an asset is used, or any other significant adverse change that would indicate that the carrying amount of an asset or group of assets may not be recoverable. For intangible assets used in operations, impairment losses are only recorded if the asset's carrying amount is not recoverable through its undiscounted, probability-weighted future cash flows. The Company measures the impairment loss based on the difference between the carrying amount and estimated fair value.

Impairment of Long-Lived Assets including Internal Use Capitalized Software Costs

The Company assesses the recoverability of its long-lived assets when events or changes in circumstances indicate their carrying value may not be recoverable. Such events or changes in circumstances may include: a significant adverse change in the extent or manner in which a long-lived asset is being used, significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset, an accumulation of costs significantly in excess of the amount originally expected for the acquisition or development of a long-lived asset, current or future operating or cash flow losses that demonstrate continuing losses associated with the use of a long-lived asset, or a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. The Company performs impairment testing at the asset group level that represents the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. The Company assesses recoverability of a long-lived asset by determining whether the carrying value of the asset group can be recovered through projected undiscounted cash flows over their remaining lives. If the carrying value of the asset group exceeds the forecasted undiscounted cash flows, an impairment loss is recognized, measured as the amount by which the carrying amount exceeds estimated fair value. An impairment loss is charged to operations in the period in which management determines such impairment.

Business Combinations

The results of businesses acquired in a business combination are included in the Company's consolidated financial statements from the date of acquisition. The Company allocates the purchase price of a business combination, which is the sum of the consideration provided, which may consist of cash, equity or a combination of the two, to the identifiable assets and liabilities of the acquired business at their acquisition date fair values. The excess of the purchase price over the amount allocated to the identifiable assets and liabilities, if any, is recorded as goodwill. Determining the fair value of assets acquired and liabilities assumed requires management to use significant judgment and estimates including the selection of valuation methodologies, estimates of future revenues and cash flows, discount rates and selection of comparable companies.

When the Company issues stock-based or cash awards to an acquired company's stockholders, the Company evaluates whether the awards are contingent consideration or compensation for post-business combination services. The evaluation includes, among other things, whether the vesting of the awards is contingent on the continued employment of the selling stockholder beyond the acquisition date. If continued employment is required for vesting, the awards are treated as compensation for post-acquisition services and recognized as expense over the requisite service period.

The Company estimates the fair value of intangible assets acquired generally using a discounted cash flow approach, which includes an analysis of the future cash flows expected to be generated by the asset and the risk associated with achieving these cash flows. The key assumptions used in the discounted cash flow model include the discount rate that is applied to the forecasted future cash flows to calculate the present value of those cash flows and the estimate of future cash flows attributable to the acquired intangible asset, which include revenue, expenses and taxes. The carrying value of acquired working capital assets and liabilities approximates its fair value, given the short-term nature of these assets and liabilities.

Acquisition-related transaction costs are not included as a component of consideration transferred, but are accounted for as an expense in the period in which the costs are incurred.

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. Goodwill is not amortized, but is subject to impairment testing conducted annually during the fourth quarter or more frequently if events or changes in circumstances indicate that goodwill may be impaired.

In accordance with guidance related to impairment testing, the Company has the option to first assess qualitative factors to determine whether or not it is necessary to perform the quantitative goodwill impairment test. If the qualitative assessment option is not elected, or if the qualitative assessment indicates that it is more likely than not that the fair value is less than its carrying amount, a quantitative analysis is then performed. The quantitative analysis, if performed, compares the estimated fair value of the Company with its respective carrying amount, including goodwill. If the estimated fair value of the Company exceeds its carrying amount, including goodwill, goodwill is considered not to be impaired and no additional steps are necessary. If the fair value is less than the carrying amount, including goodwill, then an impairment adjustment must be recorded up to the carrying amount of goodwill.

The Company operates as a single operating segment and has identified a single reporting unit.

Operating and Finance Leases

On January 1, 2019, the Company adopted ASU 2016-02—*Leases (Topic 842), (*"ASC 842"), which requires the recognition of the right-of-use assets, or ROU assets, and related lease liabilities on the balance sheet using a modified retrospective approach. The consolidated financial statements related to periods prior to January 1, 2019 were not restated, and continue to be reported under ASC Topic 840—*Leases* ("ASC 840"), which did not require the recognition of operating lease liabilities on the balance sheet. As a result, the consolidated financial statements related to periods prior to January 1, 2019 are not entirely comparative with current and future periods. As permitted under ASC 842, the Company elected several practical expedients that permit the Company to not reassess (1) whether existing contracts are or contain a lease, (2) the classification of existing leases, and (3) whether previously capitalized costs continue to qualify as initial indirect costs. In addition, the Company has elected not to recognize short-term leases on the balance sheet, nor separate lease and non-lease components for data center leases. In addition, the Company utilized the portfolio approach to group leases with similar characteristics and did not use hindsight to determine lease term. The finance lease classification under ASC 842 includes leases previously classified as capital leases under ASC 840.

In addition to the leases previously reported under ASC 840, the Company also reviewed its data center agreements to identify non-lease components that should not be included in the lease liability and lease expense under ASC 842. Certain fixed non-lease components of data center leases, primarily fixed minimum power commitments, have been included in the lease liability and ROU asset as the Company has elected the practical expedient for its data centers to not separate the lease and non-lease components; however, variable components have not been included. For identified leases, the Company used its incremental borrowing rate to discount the related future payment obligations as of January 1, 2019 to determine its lease liability as of adoption. As of the adoption date, the Company recognized a lease liability of $15.6 million and a corresponding ROU asset of $14.3 million; there was no equity impact from the adoption. The difference between the lease liability and the ROU asset primarily represents the existing deferred rent liabilities balances before adoption, resulting from historical straight-lining of operating leases, which was effectively reclassified upon adoption to reduce the measurement of the ROU asset.

The Company records rent expense for operating leases, including leases of office locations, data centers, and equipment, on a straight-line basis over the lease term. The straight-line calculation of rent expense includes rent escalations on certain leases, as well as lease incentives provided by the landlords, including payments for leasehold improvements and rent-free periods. The Company begins recognition of rent expense on the commencement date, which is generally the date that the asset is made available for use. The lease liability is included in lease liabilities, current and lease liabilities, non-current within the consolidated balance sheet, which are reduced as lease related payments are made. The ROU asset is amortized on a periodic basis over the expected term of the lease (see Note 16).

Prior to January 1, 2019, assets and liabilities under capital lease were recorded at the lesser of present value of aggregate future minimum lease payments, including estimated bargain purchase options, or the fair value of the asset under lease. Assets under capital lease were amortized using the straight-line method over the estimated useful lives of the assets.

Fair Value of Financial Instruments

The carrying amounts of the Company's cash equivalents, accounts receivable, accounts payable, accrued expenses, and seller payables approximate fair value due to the short-term nature of these instruments. Certain assets of the Company are recorded at their fair value, using the fair value hierarchy, on a recurring basis, and other assets and liabilities, including goodwill and intangible assets are subject to measurement at fair value on a non-recurring basis if they are deemed to be impaired as a result of an impairment review (see Note 5).

Concentration of Risk

Financial instruments that potentially subject the Company to concentration of credit risk consist principally of cash, cash equivalents, restricted cash and accounts receivable. Cash and cash equivalents maintained with financial institutions exceed applicable federally insured limits.

Accounts receivable include amounts due from buyers with principal operations primarily in the United States. The Company performs ongoing credit evaluations of its buyers.

At December 31, 2019, two buyers accounted for 23% and 17% respectively, of consolidated accounts receivable. At December 31, 2018, two buyers accounted for 21% and 13%, respectively, of accounts receivable.

The Company recognizes revenue from its contracts with sellers. No seller of advertising inventory accounted for 10% or more of revenue during the year ended December 31, 2019 and year ended December 31, 2018.

At December 31, 2019 and 2018, no seller of advertising inventory comprised 10% or more of accounts payable.

Foreign Currency Transactions and Translation

Transactions in foreign currencies are translated into the functional currency of the applicable entity at the rates of exchange in effect at the date of the transaction. Foreign exchange gains or losses were included in foreign exchange (gain) loss, net in the accompanying consolidated statements of operations. To the extent that the functional currency is different than the U.S Dollar, the financial statements have then been translated into U.S. Dollars using period-end exchange rates for assets and liabilities and average exchanges rates for the results of operations. Foreign currency translation gains and losses are included as a component of accumulated other comprehensive income (loss) on the consolidated balance sheet.

Recent Accounting Pronouncements

Under the Jumpstart Our Business Startups Act, or the JOBS Act, the Company met the definition of an emerging growth company for the year ended December 31, 2018 and irrevocably elected to opt out of the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act. For the year ended December 31, 2019, the Company no longer meets the definition of an emerging growth company due to the time limitation of five fiscal years since the Company's initial public offering.

In June 2016, the FASB issued ASU 2016-13—*Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("*ASU 2016-13"). This guidance requires entities to use a current expected credit loss methodology to measure impairments of certain financial assets and to recognize an allowance for its estimate of lifetime expected credit losses. The main objective of this update is to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. The guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. The Company will adopt ASU 2016-13 as of January 1, 2020. The Company is currently evaluating the impact the standard may have on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13—*Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), to streamline the disclosure requirements of ASC Topic 820—Fair Value Measurement. ASU 2018 removes certain disclosure requirements, including the valuation process for Level 3 fair value measurements, and adds certain quantitative disclosures around Level 3 fair value measurements. This ASU is effective for annual reporting periods beginning after December 15, 2019, including interim periods within that reporting period, with early adoption permitted. The provisions of ASU 2018-13 are required to be adopted retrospectively, with the exception of disclosure of the range and weighted average of significant unobservable inputs used to develop Level 3 measurements, which can be adopted prospectively. The Company is currently evaluating the effect this guidance will have on its consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-15—*Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"). ASU 2018-15 was issued to clarify the requirements of ASC 350-40—*Intangibles—Goodwill and Other—Internal-Use Software* ("ASC 350-40"). The ASU clarifies that implementation, setup and other upfront costs related to cloud computing agreements ("CCA") should be accounted for under ASC 350-40. ASC 2018-15 will require companies to capitalize certain costs incurred when purchasing a CCA that is a service. Under the new guidance, companies will apply the same criteria for capitalizing implementation costs in a CCA service as they would for internal-use software. The capitalized implementation costs will generally be expensed over the term of the service arrangement and the related assets will be assessed for impairment using the same model applied to long-lived assets. This ASU is effective for annual reporting periods beginning after December 15, 2019, including interim periods within that reporting period, with early adoption permitted. ASU 2018-15 can be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is adopting the guidance on January 1, 2020 and does not expect the adoption of this standard to have a material impact on its consolidated financial statements.

In December 2018, the FASB issued ASU 2018-20—*Leases (Topic 842): Narrow-Scope Improvements for Lessors* ("ASU 2018-20"). ASU 2018-20 was issued to clarify the requirements for lessors under ASC 842—*Leases* ("ASC 842"). The ASU clarifies the recognition timing and requirements of certain payments made by lessees to either the lessor or a third party. This ASU is effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period, with its adoption aligned with the adoption of ASU 2016-02. The Company functions as the sublessor for a limited number of real estate leases, however ASU 2018-20 is not applicable to these subleases.

In December 2019, the FASB issued ASU 2019-02—*Simplifying the Accounting for Income Taxes* ("ASU 2019-01") . ASU 2019-02 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. This guidance is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2020 including interim reporting periods within those fiscal years. Early adoption is permitted. The Company is evaluating the impact of adopting this new accounting guidance on its consolidated financial statements and related disclosures.

Note 3—Net Income (Loss) Per Share

The following table presents the basic and diluted net loss per share:

	Year Ended	
	December 31, 2019	**December 31, 2018**
Basic and Diluted EPS:		
Net loss	$ (25,478)	$ (61,822)
Weighted-average common shares outstanding	52,634	50,602
Weighted-average unvested restricted shares	(20)	(343)
Weighted-average common shares outstanding used to compute net loss per share	52,614	50,259
Basic and diluted net loss per share	$ (0.48)	$ (1.23)

The following weighted-average shares have been excluded from the calculation of diluted net loss per share attributable to common stockholders for each period presented because they are anti-dilutive:

	Year Ended	
	December 31, 2019	**December 31, 2018**
	(in thousands)	
Options to purchase common stock	793	128
Unvested restricted stock awards	13	218
Unvested restricted stock units	4,211	2,029
ESPP	34	55
Total shares excluded from net loss per share	5,051	2,430

Note 4—Revenues

On January 1, 2018, the Company adopted Accounting Standards Update 2014-09—*Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09") using a modified retrospective approach applied to all contracts that generated revenue in the preceding year. The adoption of this guidance did not have an impact on the amount or timing of revenue recognized by the Company.

The Company generates revenue from transactions where it provides a platform for the purchase and sale of digital advertising inventory. The Company also generates revenue from the fee it charges clients for use of its Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. The Company's advertising automation solution is a marketplace for sellers of digital advertising inventory (providers of websites, mobile applications and other digital media properties, and their representatives) and buyers of digital advertising inventory (including advertisers, agencies, agency trading desks, and demand-side platforms). This solution incorporates proprietary machine-learning algorithms, sophisticated data processing, high-volume storage, detailed analytics capabilities, and a distributed infrastructure. Together, these features form the basis for the Company's automated advertising solution that brings buyers and sellers together and facilitates intelligent decision-making and automated transaction execution for the digital advertising inventory managed on the Company's platform. Digital advertising inventory is created when consumers access sellers' content. Sellers provide digital advertising inventory to the Company's platform in the form of advertising requests, or ad requests. When the Company receives ad requests from sellers, it sends bid requests to buyers, which enable buyers to bid on sellers' digital advertising inventory. Winning bids can create advertising, or paid impressions, for the seller to present to the consumer.

The total volume of spending between buyers and sellers on the Company's platform is referred to as advertising spend. The Company keeps a percentage of that advertising spend as a fee, and remits the remainder to the seller. The fee that the Company retains from the gross advertising spend on its platform is recognized as revenue. The fee earned on each transaction is based on the pre-existing agreement between the Company and the seller and the clearing price of the winning bid. The Company recognizes revenue upon fulfillment of its performance obligation to a client, which occurs at the point in time an ad renders and is counted as a paid impression, subject to an underlying agreement existing with the client and a fixed or determinable transaction price. Performance obligations for all transactions are satisfied, and the corresponding revenue is recognized, at a distinct point in time when an ad renders. The Company does not have arrangements with multiple performance obligations.

The Company reports revenue on a net basis as it does not act as the principal in the purchase and sale of digital advertising inventory because it does not have control of the digital advertising inventory and does not set prices agreed upon within the auction marketplace.

Payment terms are specified in agreements between the Company and the buyers and sellers on its exchange platform. The Company generally bills buyers at the end of each month for the full purchase price of impressions filled in that month. The Company recognizes volume discounts as a reduction of revenue as they are incurred. Specific payment terms may vary by agreement, but are generally seventy-five days or less. The Company's accounts receivable are recorded at the amount of gross billings to buyers, net of allowances for the amounts the Company is responsible to collect. The Company's accounts payable related to amounts due to sellers are recorded at the net amount payable to sellers (see Note 11). Accordingly, both accounts receivable and accounts payable appear large in relation to revenue reported on a net basis.

The following table presents our revenue by channel for the years ended December 31, 2019 and 2018:

	Year Ended			
	December 31, 2019		December 31, 2018	
Channel:				
Desktop	$ 68,302	44%	$ 59,039	47%
Mobile	88,112	56	65,646	53
Total	$ 156,414	100%	$ 124,685	100%

The following table presents the Company's revenue disaggregated by geographic location, based on the location of the Company's sellers:

	Year Ended December 31, 2019	Year Ended December 31, 2018
	(in thousands)	
United States	$ 108,385	$ 83,020
International	48,029	41,665
Total	$ 156,414	$ 124,685

Note 5—Fair Value Measurements

Recurring Fair Value Measurements

Fair value represents the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Observable inputs are based on market data obtained from independent sources. The fair value hierarchy is based on the following three levels of inputs, of which the first two are considered observable and the last one is considered unobservable:

- Level 1 – Quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.
- Level 2 – Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 – Unobservable inputs.

The table below sets forth a summary of financial instruments that are measured at fair value on a recurring basis at December 31, 2019:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
			(in thousands)	
Cash equivalents	$ 13,501	$ 13,501	$ —	$ —

The table below sets forth a summary of financial instruments that are measured at fair value on a recurring basis at December 31, 2018:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
			(in thousands)	
Cash equivalents	$ 13,692	$ 13,692	$ —	$ —
U.S. Treasury, government and agency debt securities	$ 7,524	$ 7,524	$ —	$ —

At December 31, 2019 and 2018, cash equivalents of $13.5 million and $13.7 million, respectively, consisted of money market funds and commercial paper, with original maturities of three months or less. The carrying amounts of cash equivalents are classified as Level 1 or Level 2 depending on whether or not their fair values are based on quoted market prices for identical securities that are traded in an active market. Corporate debt securities (which are included in marketable securities on the balance sheet) with fair values derived from similar securities rather than based on quoted market prices for identical securities, are classified as Level 2 as well. The fair values of the Company's U.S. treasury, government and agency debt securities are based on quoted market prices and classified as Level 1, and are included within marketable securities.

There were no transfers between Level 1 and Level 2 fair value measurements during the years ended December 31, 2019 and 2018.

Note 6—Investments

Investments in marketable securities as of December 31, 2018 consisted of the following:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Available-for-sale—short-term:				
U.S. Treasury, government and agency debt securities	$ 7,526	$ —	$ (2)	$ 7,524

During the year ended December 31, 2019, $7.5 million of available-for-sale investments matured, on which the realized gains were de minimis and there were no unrealized holding gains (losses) reclassified out of accumulated other comprehensive loss into the consolidated statements of operations. The Company had no sales of available-for-sale investments in 2019.

During the year ended December 31, 2018, the Company sold $9.2 million of available-for-sale investments, on which the realized gains were de minimis and there were no unrealized holding gains (losses) reclassified out of accumulated other comprehensive loss into the consolidated statements of operations.

Note 7—Property and Equipment

Major classes of property and equipment were as follows:

	December 31, 2019	December 31, 2018
	(in thousands)	
Purchased software	$ 1,254	$ 1,254
Computer equipment and network hardware	105,491	98,884
Furniture, fixtures and office equipment	1,896	1,973
Leasehold improvements	1,589	2,571
Gross property and equipment	110,230	104,682
Accumulated depreciation	(86,563)	(71,195)
Net property and equipment	$ 23,667	$ 33,487

Depreciation expense on property and equipment totaled $21.3 million and $25.0 million for the years ended December 31, 2019 and 2018, respectively. There were no impairment charges to property and equipment for the years ended December 31, 2019 and 2018.

At December 31, 2019, the Company had $21.5 million of ROU assets and no property and equipment under finance leases. At December 31, 2018, the Company had no property and equipment under capital leases.

The Company's property and equipment, net by geographical region was as follows:

	December 31, 2019	December 31, 2018
	(in thousands)	
United States	$ 14,546	$ 24,928
International	9,121	8,559
Total	$ 23,667	$ 33,487

Note 8—Internal Use Software Development Costs

Internal use software development costs were as follows:

	December 31, 2019	December 31, 2018
	(in thousands)	
Internal use software development costs, gross	45,156	$ 41,882
Accumulated amortization	(29,103)	(27,312)
Internal use software development costs, net	$ 16,053	$ 14,570

During the years ended December 31, 2019 and 2018, the Company capitalized $9.0 million and $9.0 million, respectively, of internal use software development costs. Amortization expense was $7.5 million and $7.2 million for the years ended December 31, 2019 and 2018, respectively. In the years ended December 31, 2019 and 2018, amortization expense included the write-off of software development costs of $0.5 million and $0.5 million, in the respective periods. Based on the Company's internal use software development costs at December 31, 2019, estimated amortization expense of $7.5 million, $5.3 million, $2.9 million, and $0.3 million is expected to be recognized in 2020, 2021, 2022, and 2023 respectively.

There were no impairment charges to internal use software development costs for the year ended December 31, 2019 and 2018.

Note 9—Goodwill and Intangible Assets

Details of the Company's goodwill were as follows:

	December 31, 2019
	(in thousands)
Beginning balance	$ —
Additions from the acquisition of RTKio (Note 10)	7,370
Ending balance	$ 7,370

The Company's intangible assets as of December 31, 2019 and 2018 included the following:

	December 31, 2019	December 31, 2018
	(in thousands)	
Amortizable intangible assets:		
Developed technology	$ 19,658	$ 16,878
Customer relationships	1,650	—
Non-compete agreements	70	690
Trademarks	20	20
Total identifiable intangible assets, gross	21,398	17,588
Accumulated amortization—intangible assets:		
Developed technology	(9,823)	(6,888)
Customer relationships	(162)	—
Non-compete agreements	(7)	(506)
Trademarks	(20)	(20)
Total accumulated amortization—intangible assets	(10,012)	(7,414)
Total identifiable intangible assets, net	$ 11,386	$ 10,174

Amortization of intangible assets for the years ended December 31, 2019 and 2018 was $3.3 million and $3.2 million, respectively. During the year ended December 31, 2019, the Company wrote off fully amortized intangible assets with a historical cost of $0.7 million.

The estimated remaining amortization expense associated with the Company's intangible assets was as follows as of December 31, 2019:

Fiscal Year	Amount (in thousands)
2020	$ 4,242
2021	4,073
2022	2,068
2023	556
2024	447
Total	$ 11,386

The Company's qualitative assessment in the fourth quarter of 2019 did not indicate that it is more likely than not that the fair value of its goodwill and intangible assets is less than the aggregate carrying amount.

Note 10—Business Combinations

2019 Acquisition—RTK.io

On October 21, 2019, the Company completed the acquisition of RTK.io for total purchase consideration of $11.4 million, which includes cash paid of $11.0 million, cash acquired of $0.6 million, and a working capital adjustment of $0.2 million. RTK.io is a leading provider of tools and services that bring simplicity and control to header bidding for publishers. RTK's solution is built on Prebid, the same open source framework as Demand Manager, the header bidding solution the Company launched in May 2019. The primary reason for the acquisition was to acquire technology, know-how, and personnel that will enable the Company to extend its Demand Manager product portfolio and client base. The financial results of RTK.io have been included in the Company's consolidated financial statements since the date of the acquisition.

The major classes of assets and liabilities to which the Company allocated the purchase price were as follows as of the acquisition date:

	Amount (in thousands)
Cash and cash equivalents	$ 553
Accounts receivable	2,441
Prepaid and other assets	50
Intangible assets	4,520
Goodwill	7,370
Total assets acquired	14,934
Accounts payable and accrued expenses	2,450
Deferred tax liability, net	1,089
Total liabilities assumed	3,539
Total net assets acquired	$ 11,395

The following table summarizes the components of the acquired intangible assets and estimated useful lives (in thousands, except for estimated useful life):

	December 31, 2019	Estimated Useful Life
Developed technology	$ 2,780	5 years
Customer relationships	1,650	2 years
Non-compete agreements	70	2 years
Trademark & trade name	20	< 0.5 year
Total intangible assets acquired	$ 4,520	

The intangible assets are amortized on a straight-line basis, which approximates the pattern in which the economic benefits are consumed, over their estimated useful lives. Amortization of developed technology is included in cost of revenue, amortization related to customer relationships is included in sales and marketing, amortization related to non-compete agreements is included in sales and marketing or technology and development, depending on the nature of the employee's job function, and amortization related to trademark and trade name is included in general and administrative.

Goodwill resulting from the acquisition was primarily attributable to acquired workforce, an increase in development capabilities, increased offerings to clients, and enhanced opportunities for growth and innovation. The acquired intangibles and goodwill resulting from the RTK.io acquisition are not amortizable for tax purposes. Pro forma results of operations were not significant to the consolidated results of operations.

The Company does not track RTK.io's expenses on a stand-alone basis, and as a result, the determination of RTK.io post-acquisition operating results on a stand-alone basis was impracticable. The post-acquisition revenue, expenses, and pro forma results of operations were not significant to the consolidated results of operations for the years ended December 31, 2019 and 2018.

2020 Merger—Telaria

On December 19, 2019, the Company entered into an Agreement and Plan of Merger with Telaria, Inc. ("Telaria"), pursuant to which, subject to the approval of the Company's stockholders and Telaria stockholders, the Company and Telaria will combine in an all-stock merger (the "Merger"). At the completion of the Merger, Telaria will become a wholly owned subsidiary of the Company. The Merger will create a combined company offering a single platform for transacting CTV, desktop display, video, audio, and mobile inventory across all geographies and auction types. The Merger has not been completed as of December 31, 2019 and is expected to be completed in early April 2020. Refer to "Item 1. Business" for additional information.

Note 11—Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses included the following:

	December 31, 2019	December 31, 2018
	(in thousands)	
Accounts payable—seller	$ 247,891	$ 230,423
Accounts payable—trade	4,822	3,122
Accrued employee-related payables	6,726	6,133
Total	$ 259,439	$ 239,678

Note 12—Accumulated Other Comprehensive Income (Loss)

The components of accumulated other comprehensive income (loss) were as follows (in thousands):

	Unrealized Gain (Loss) on Investments, net of tax	Foreign Currency Translation	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2017	$ (29)	$ 70	$ 41
Other comprehensive income (loss)	27	(327)	(300)
Balance at December 31, 2018	(2)	(257)	(259)
Other comprehensive income	2	212	214
Balance at December 31, 2019	$ —	$ (45)	$ (45)

Note 13—Stock-Based Compensation

In connection with its IPO, the Company implemented its 2014 Equity Incentive Plan, which governs equity awards made to employees and directors of the Company since the IPO. Prior to the IPO, the Company granted equity awards under its 2007 Stock Incentive Plan, which governs equity awards made to employees and contractors prior to the IPO. In November 2014, the Company approved the 2014 Inducement Grant Equity Incentive Plan (the "Inducement Plan"), which governs certain equity awards made to certain employees in connection with commencement of employment. In connection with the Company's acquisitions of Chango Inc. ("Chango"), iSocket, Inc. ("iSocket"), and nToggle, Inc. ("nToggle") it assumed the existing employee equity award plans, the 2009 Chango Stock Option Plan (the "Chango Plan"), the iSocket 2009 Equity Incentive Plan (the "iSocket Plan"), and the nToggle 2014 Equity Incentive Plan (the "nToggle Plan"). All compensatory equity awards outstanding at

December 31, 2019 were issued pursuant to the 2014 Equity Incentive Plan, the iSocket Plan, the Chango Plan, the nToggle Plan, the Inducement Plan, or the Company's 2007 Stock Incentive Plan.

The Company’s equity incentive plans provide for the grant of equity awards, including non-statutory or incentive stock options, restricted stock awards, and restricted stock units, to the Company's employees, officers, directors, and consultants. The Company's board of directors administers the plans. Options outstanding vest based upon continued service at varying rates, but generally over four years from issuance with 25% vesting after one year of service and the remainder vesting monthly thereafter. Restricted stock awards and restricted stock units vest at varying rates, typically approximately 25% vesting after approximately one year of service and the remainder vesting semi-annually thereafter. The restricted stock units granted in 2019 and 2018 included 1.8 million and 2.8 million, respectively, restricted stock units that vest 50% on each of the first and second anniversaries of the grant date. Restricted stock units granted in 2020 will typically have approximately 25% of the award vesting after approximately one year of service and the remainder vesting quarterly thereafter. Options, restricted stock awards, and restricted stock units granted under the plans accelerate under certain circumstances for certain participants upon on a change in control, as defined in the governing plan. No further awards were made under the iSocket Plan, the Chango Plan, or the nToggle Plan from the date of acquisition and no further awards were made under the 2007 Stock Incentive Plan since the IPO. Available shares under the iSocket Plan, the Chango Plan, and the nToggle Plan were rolled into the available share pool under the 2014 Equity Incentive Plan at the time of acquisition of each company, and available shares under the 2007 Stock Incentive Plan were rolled into the available share pool under the 2014 Equity Incentive Plan at the time of the IPO. An aggregate of 3,780,447 shares remained available for future issuance at December 31, 2019 under the plans. The 2014 Equity Incentive Plan has an evergreen provision pursuant to which the share reserve will automatically increase on January 1st of each year in an amount equal to 5% of the total number of shares of capital stock outstanding on December 31st of the preceding calendar year, although the Company’s board of directors may provide for a lesser increase, or no increase, in any year. The 2014 Inducement Grant Equity Incentive Plan has a provision pursuant to which the share reserve may be increased at the discretion of the Company's board of directors.

Stock Options

A summary of stock option activity for the year ended December 31, 2019 is as follows:

	Shares Under Option	Weighted-Average Exercise Price	Weighted- Average Contractual Life	Aggregate Intrinsic Value
	(in thousands)			(in thousands)
Outstanding at December 31, 2018	3,488	$ 7.06		
Granted	1,184	$ 4.98		
Exercised	(285)	$ 1.99		
Expired	(47)	$ 13.36		
Forfeited	(78)	$ 2.74		
Outstanding at December 31, 2019	4,262	$ 6.82	6.9 years	$ 11,825
Exercisable at December 31, 2019	2,420	$ 8.62	5.6 years	$ 4,995

The total intrinsic value of options exercised during the year ended December 31, 2019 was $1.6 million. At December 31, 2019, the Company had unrecognized employee stock-based compensation expense relating to nonvested stock options of approximately $4.0 million, which is expected to be recognized over a weighted-average period of 2.6 years. The weighted-average grant date fair value per share of stock options granted during the year ended December 31, 2019 was $2.85. Total fair value of options vested during the year ended December 31, 2019 was $1.6 million.

The Company estimates the fair value of stock options that contain service and/or performance conditions using the Black-Scholes option pricing model. The weighted-average input assumptions used by the Company were as follows:

	Year Ended	
	December 31, 2019	December 31, 2018
Expected term (in years)	6.1	6.0
Risk-free interest rate	2.55%	2.67%
Expected volatility	60%	57%
Dividend yield	—%	—%

Restricted Stock Awards

A summary of restricted stock activity for the year ended December 31, 2019 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
	(in thousands)	
Nonvested shares of restricted stock outstanding at December 31, 2018	197	$ 12.06
Granted	—	$ —
Canceled	(182)	$ 12.71
Vested	(13)	$ 13.74
Nonvested shares of restricted stock outstanding at December 31, 2019	2	$ 13.49

The aggregate fair value of restricted stock awards with service conditions that vested during the year ended December 31, 2019 was $0.1 million. At December 31, 2019, the Company had unrecognized stock-based compensation expense for restricted stock awards with service conditions of $18.9 thousand, which is expected to be recognized over a weighted-average period of 0.4 years.

Restricted Stock Units

A summary of restricted stock unit activity for the year ended December 31, 2019 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
	(in thousands)	
Nonvested restricted stock units outstanding at December 31, 2018	6,100	$ 3.56
Granted	5,341	$ 5.09
Canceled	(506)	$ 3.94
Vested	(2,858)	$ 3.82
Nonvested restricted stock units outstanding at December 31, 2019	8,077	$ 4.46

The weighted-average grant date fair value per share of restricted stock units granted during the year ended December 31, 2019 was $5.09. The aggregate fair value of restricted stock units that vested during the year ended December 31, 2019 was $16.6 million. At December 31, 2019, the intrinsic value of nonvested restricted stock units was $65.9 million. At December 31, 2019, the Company had unrecognized stock-based compensation expense relating to nonvested restricted stock units of approximately $26.0 million, which is expected to be recognized over a weighted-average period of 2.1 years.

Employee Stock Purchase Plan

In November 2013, the Company adopted the Company's 2014 Employee Stock Purchase Plan ("ESPP"). The ESPP is designed to enable eligible employees to periodically purchase shares of the Company's common stock at a discount through payroll deductions of up to 10% of their eligible compensation, subject to any plan limitations. At the end of each six-month offering period, employees are able to purchase shares at a price per share equal to 85% of the lower of the fair market value of the Company's common stock on the first trading day of the offering period or on the last trading day of the offering period. Offering periods generally commence and end in May and November of each year.

As of December 31, 2019, the Company has reserved 1,891,813 shares of its common stock for issuance under the ESPP. The ESPP has an evergreen provision pursuant to which the share reserve will automatically increase on January 1st of each year in an amount equal to 1% of the total number of shares of capital stock outstanding on December 31st of the preceding calendar year, although the Company’s board of directors may provide for a lesser increase, or no increase, in any year.

Stock-Based Compensation Expense

Total stock-based compensation expense recorded in the consolidated statements of operations was as follows:

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Cost of revenue	$ 421	$ 321
Sales and marketing	5,638	4,557
Technology and development	4,757	2,867
General and administrative	8,009	8,139
Restructuring and other exit costs	—	398
Total stock-based compensation expense	$ 18,825	$ 16,282

Note 14—Restructuring and Other Exit Costs

In the first quarter of 2018, the Company announced its restructuring plan to reduce headcount to bring the Company's general and administrative operations into better alignment with the current size of the business and de-layer certain functions, and to reduce its investment in unprofitable projects (the "2018 Restructuring Events"). During the year ended December 31, 2018 the Company incurred restructuring and other exit costs expenses of $3.4 million for severance and one-time termination benefits and as of December 31, 2018, the Company had $0.1 million accrued restructuring and other exit costs remaining and are included within other liabilities on the Company's consolidated balance sheets. No restructuring and other exit costs were incurred during the year ended December 31, 2019, and all remaining accrued costs associated with the 2018 restructuring events were paid in the first quarter of 2019.

Note 15—Income Taxes

The following are the domestic and foreign components of the Company's income (loss) before income taxes for the years ended December 31, 2019 and 2018:

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Domestic	$ (28,063)	$ (62,292)
International	1,073	827
Loss before income taxes	$ (26,990)	$ (61,465)

The following are the components of the provision (benefit) for income taxes for the years ended December 31, 2019 and 2018:

	Year Ended	
	December 31, 2019	December 31, 2018
	(in thousands)	
Current:		
Federal	$ (153)	$ (23)
State	28	41
Foreign	281	388
Total current provision	156	406
Deferred:		
Federal	(762)	—
State	(174)	2
Foreign	(732)	(51)
Total deferred benefit	(1,668)	(49)
Total provision (benefit) for income taxes	$ (1,512)	$ 357

The Company recorded an income tax benefit of $1.5 million for the year ended December 31, 2019 and an income tax expense of $0.4 million for the year ended December 31, 2018. The tax benefit for the year ended December 31, 2019 is the result of a deferred tax liability associated with the RTKio acquisition, the release of a foreign valuation allowance resulting from a change to a cost-plus arrangement for a foreign subsidiary, the domestic valuation allowance and the tax liability associated with foreign subsidiaries.

Set forth below is a reconciliation of the components that caused the Company's provision (benefit) for income taxes to differ from amounts computed by applying the U.S. Federal statutory rate of 21% for the years ended December 31, 2019 and 2018:

	Year Ended	
	December 31, 2019	December 31, 2018
U.S. federal statutory income tax rate	21.0 %	21.0 %
State income taxes, net of federal benefit	(0.1)%	(0.1)%
Foreign income (loss) at other than U.S. rates	(4.3)%	— %
Stock-based compensation expense	3.5 %	(5.3)%
Meals and entertainment	(0.9)%	(0.4)%
Debt cancellation	— %	(1.2)%
Other permanent items	(1.2)%	(0.5)%
Change in valuation allowance	(7.5)%	(14.1)%
Sec 162(m) officers compensation	(6.3)%	— %
Provision to return adjustments	1.4 %	— %
Effective income tax rate	5.6 %	(0.6)%

Set forth below are the tax effects of temporary differences that give rise to a significant portion of the deferred tax assets and deferred tax liabilities as of December 31, 2019 and 2018:

	December 31, 2019	December 31, 2018
	(in thousands)	
Deferred Tax Assets:		
Accrued liabilities	$ 1,396	$ 916
Stock-based compensation	3,666	2,623
Net operating loss carryovers	75,853	76,098
Tax credit carryovers	13,055	13,206
Other	1,537	1,053
Total deferred tax assets	95,507	93,896
Less valuation allowance	(93,611)	(90,959)
Deferred tax assets, net of valuation allowance	1,896	2,937
Deferred Tax Liabilities:		
Fixed assets	(570)	(2,352)
Intangible assets	(298)	(152)
Total deferred tax liabilities	(868)	(2,504)
Net deferred tax assets (liability)	$ 1,028	$ 433

The change in valuation allowance for the years ended December 31, 2019 and 2018 was $2.7 million and $9.2 million, respectively.

At December 31, 2019, the Company had U.S. federal net operating loss carryforwards, or NOLs, of approximately $288.8 million, which will begin to expire in 2027. At December 31, 2019, the Company had state NOLs of approximately $176.2 million, which will begin to expire in 2027. At December 31, 2019, the Company had foreign NOLs of approximately $18.0 million, which will begin to expire in 2026. At December 31, 2019, the Company had federal research and development tax credit carryforwards, or credit carryforwards, of approximately $10.2 million, which will begin to expire in 2027. At December 31, 2019, the Company had state research and development tax credits of approximately $8.0 million, which carry forward indefinitely. No amounts for any federal or state research and development tax credits for the year ended December 31, 2018 or December 31, 2019 are included herein.

Utilization of certain NOLs and credit carryforwards may be subject to an annual limitation due to ownership change limitations set forth in the Internal Revenue Code of 1986, as amended, or the Code, and comparable state income tax laws. Any future annual limitation may result in the expiration of NOLs and credit carryforwards before utilization. A prior ownership change and certain acquisitions resulted in the Company having NOLs subject to insignificant annual limitations.

Additionally, for tax years beginning after December 31, 2017, the Tax Cuts and Jobs Act limits the NOL deduction to 80% of taxable income, repeals carryback of all NOLs arising in a tax year ending after 2017, and permits indefinite carryforward for all such NOLs. NOL's arising in a tax year ending in or before 2017 can offset 100% of taxable income, are available for carryback, and expire 20 years after they arise.

At December 31, 2019, unremitted earnings of the subsidiaries outside of the United States were approximately $8.6 million, on which the Company previously recorded a transition tax of $0.6 million. The Company's intention is to indefinitely reinvest these earnings outside the United States. Upon distribution of those earnings in the form of a dividend or otherwise, the Company would be subject to withholding taxes payable to various foreign countries and, potentially, various state taxes. The amounts of such tax liabilities that might be payable upon actual repatriation of foreign earnings, after consideration of corresponding foreign tax credits, are not material.

The following table summarizes the activity related to the unrecognized tax benefits (in thousands):

	Amount (in thousands)
Balance as of December 31, 2017	$ 5,646
Increases related to 2018 tax positions	—
Decreases related to prior year tax positions	(929)
Balance as of December 31, 2018	4,717
Increases related to current year tax positions	—
Decreases related to current year tax positions	—
Increases related to prior year tax positions	3
Balance as of December 31, 2019	4,720

Interest and penalties related to the Company’s unrecognized tax benefits accrued at December 31, 2019 and 2018 were not material.

Due to the net operating loss carryforwards, the Company's United States federal and a majority of its state returns are open to examination by the Internal Revenue Service and state jurisdictions for all years since inception. For Canada, Japan, the Netherlands, and the United Kingdom, all tax years remain open for examination by the local country tax authorities, for France only 2017 forward are open for examination, for Singapore 2016 and forward are open for examination, and for Australia, Brazil, and Germany, tax years 2015 and forward are open for examination.

The Company does not expect its uncertain income tax positions to have a material impact on its consolidated financial statements within the next twelve months.

Note 16—Leases

The Company adopted ASC 842 as of January 1, 2019. As part of the implementation, the Company recognized its lease liabilities, including the current and non-current portions, within its consolidated balance sheet as of the adoption date, which represents the present value of the Company’s obligation related to the estimated future lease payments. The Company also recognized a right-of-use asset, or ROU asset, which represents the right to use the leased asset over the period of the lease. The ROU asset was calculated as the lease liability less any asset or liability balances that existed at the time of adoption.

The lease term is generally specified in the lease agreement, however certain agreements provide for lease term extensions or early termination options. To determine the period for the estimated future lease payments, the Company evaluates whether it is reasonably certain that it will exercise the option at the commencement date and periodically thereafter. Certain data center lease agreements include one year extension options or month-to-month extension options, and one or more of these extensions have been assumed for each lease that the Company believes to be an integral part of the business in the near term. The lease terms of the Company’s operating leases generally range from 1.0 year to 10.5 years, and the weighted average remaining lease term of leases included in the lease liability is 6.3 years as of December 31, 2019.

To determine the estimated future lease payments, the Company reviews each of its lease agreements to identify the various payment components. For real estate and equipment leases, the Company includes only the actual lease components in its determination of future lease payments, and for its data center leases, includes both the fixed lease and non-lease components in the estimated future lease payments. This typically includes a fixed minimum power commitment that is included in the data center agreements, but it does not include any variable or usage-based additional charges. Once the estimated future lease payments are determined, the Company uses a discount rate to calculate the present value of the future lease payments. Because most of the Company's leases do not provide an implicit rate of return, the Company uses the incremental borrowing rate it would be subject to on borrowings from its available revolving debt agreement based on the information available at the lease commencement date in determining the present value of lease payments. As of December 31, 2019, a weighted average discount rate of 4.65% has been applied to the remaining lease payments to calculate the lease liabilities included within the consolidated balance sheet.

For the year ended December 31, 2019, the Company recognized $7.8 million of lease expense under ASC 842, which included operating lease expenses associated with leases included in the lease liability and ROU asset on the consolidated balance sheet. In addition, for the year ended December 31, 2019, the Company recognized expenses of $10.0 million of cloud-based services related to data centers and $1.2 million of lease expense related to short-term leases that are not included in the ROU asset or lease liability balances.

For the year ended December 31, 2018, the Company recognized rental expenses of $19.7 million under ASC 840, which included expenses related to short-term leases, and also included certain non-lease components including variable capacity related expenses for cloud-based services related to data centers of $7.1 million.

The maturity of the Company's lease liabilities associated with leases included in the lease liability and ROU asset were as follows as of December 31, 2019 (in thousands):

Fiscal Year		
2020	$	8,167
2021		4,570
2022		2,429
2023		2,065
2024		1,611
Thereafter		6,880
Total lease payments (undiscounted)		25,722
Less: imputed interest		(3,209)
Lease liabilities—total (discounted)	$	22,513

The following table summarizes the Company's future minimum lease payments under non-cancelable operating leases and related sublease income at December 31, 2018 based on the lease accounting guidance prior to the adoption of ASC 842:

	2019	**2020**	**2021**	**2022**	**2023**	**Total**
			(in thousands)			
Operating lease expense	$ 6,773	$ 3,880	$ 1,734	$ 1,019	$ 597	$ 14,003
Operating sublease income	(285)	(194)	(194)	(194)	(145)	(1,012)
Total	$ 6,488	$ 3,686	$ 1,540	$ 825	$ 452	$ 12,991

The Company also received rental income of $0.3 million and $0.8 million for real estate leases for which it subleases the property to a third party during the year ended December 31, 2019 and 2018, respectively.

Note 17—Commitments and Contingencies

Commitments

The Company has commitments under non-cancelable operating leases for facilities, certain equipment, and its managed data center facilities (Note 16).

As of December 31, 2019 and 2018, the Company had $2.5 million and $2.9 million, respectively, of letters of credit associated with office leases available for borrowing, on which there were no outstanding borrowings as of either date.

Guarantees and Indemnification

The Company’s agreements with sellers, buyers, and other third parties typically obligate it to provide indemnity and defense for losses resulting from claims of intellectual property infringement, damages to property or persons, business losses, or other liabilities. Generally, these indemnity and defense obligations relate to the Company’s own business operations, obligations, and acts or omissions. However, under some circumstances, the Company agrees to indemnify and defend contract counterparties against losses resulting from their own business operations, obligations, and acts or omissions, or the business operations, obligations, and acts or omissions of third parties. For example, because the Company’s business interposes the Company between buyers and sellers in various ways, buyers often require the Company to indemnify them against acts and omissions of sellers, and sellers often require the Company to indemnify them against acts and omissions of buyers. In addition, the Company’s agreements with sellers, buyers, and other third parties typically include provisions limiting the Company’s liability to the counterparty, and the counterparty’s liability to the Company. These limits sometimes do not apply to certain liabilities, including indemnity obligations. These indemnity and limitation of liability provisions generally survive termination or expiration of the agreements in which they appear. The Company has also entered into indemnification agreements with its directors, executive officers and certain other officers that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. No material demands have been made upon the Company to provide indemnification under such agreements and there are no claims that the Company is aware of that could have a material effect on the Company's consolidated financial statements.

Litigation

The Company and its subsidiaries may from time to time be parties to legal or regulatory proceedings, lawsuits and other claims incident to their business activities and to the Company's status as a public company. Such matters may include, among other things, assertions of contract breach or intellectual property infringement, claims for indemnity arising in the course of the Company's business, regulatory investigations or enforcement proceedings, and claims by persons whose employment has been terminated. Such matters are subject to many uncertainties, and outcomes are not predictable with assurance. Consequently, management is unable to ascertain the ultimate aggregate amount of monetary liability, amounts which may be covered by insurance or recoverable from third parties, or the financial impact with respect to such matters as of December 31, 2019. However, based on management's knowledge as of December 31, 2019, management believes that the final resolution of these matters known at such date, individually and in the aggregate, will not have a material adverse effect upon the Company's consolidated financial position, results of operations or cash flows.

On February 13, 2020, a complaint (captioned Sebatini v. The Rubicon Project, Inc. et al.) was filed in the United States District Court for the District of Delaware by a putative stockholder of Telaria challenging the proposed merger. The complaint names as defendants Rubicon Project, Madison Merger Corp., Telaria, and each member of the Telaria board of directors. The complaint asserts violations of Section 14(a) of the Exchange Act and Rule 14a-9 promulgated thereunder against all defendants other than Rubicon Project and Madison Merger Corp., and asserts violations of Section 20(a) of the Exchange Act against Rubicon Project and the individual defendants. The plaintiff contends that the Registration Statement on Form S-4 filed with the SEC by Rubicon Project on February 7, 2020, and serving as an amended preliminary joint proxy statement/prospectus for the Telaria merger, omitted or misrepresented material information regarding the merger. The complaint seeks injunctive relief, rescission, or rescissory damages, and an award of plaintiff's costs, including attorneys' fees and expenses. The Company believes the claims asserted in the complaint are without merit.

Employment Contracts

The Company has entered into severance agreements with certain employees and officers. The Company may be required to pay severance and accelerate the vesting of certain equity awards in the event of involuntary terminations.

Note 18—Debt

In September 2018, the Company amended and restated its loan and security agreement with Silicon Valley Bank (the "Loan Agreement"), which was scheduled to expire on September 27, 2018. The Loan Agreement provides a senior secured revolving credit facility of up to $40.0 million with a maturity date of September 26, 2020. The amount available for borrowing as of December 31, 2019 is $40.0 million. The Company incurred $0.1 million of debt issuance fees that were capitalized and are being amortized over the term of the Loan Agreement.

An unused revolver fee in the amount of 0.15% per annum of the average unused portion of the revolver line is charged and is payable monthly in arrears. The Company may elect for advances to bear interest calculated by reference to prime or LIBOR. If the Company elects LIBOR, amounts outstanding under the amended credit facility bear interest at a rate per annum equal to LIBOR plus 2.50% if a streamline period applies or LIBOR plus 4.00% if a streamline period does not apply. If the Company elects prime, advances bear interest at a rate of prime plus 0.50% if a streamline period applies or prime plus 2.00% if a streamline period does not apply. A streamline period is any period during which an event of default does not exist and the Company's Adjusted Quick Ratio (as defined in the Loan Agreement) is at least 1.05 for each day in the preceding month.

The Loan Agreement is collateralized by security interests in substantially all of the Company's assets. Subject to certain exceptions, the Loan Agreement restricts the Company's ability to, among other things, pay dividends, sell assets, make changes to the nature of the business, engage in mergers or acquisitions, incur, assume or permit to exist, additional indebtedness and guarantees, create or permit to exist, liens, make distributions or redeem or repurchase capital stock, or make other investments, engage in transactions with affiliates, make payments with respect to subordinated debt, and enter into certain transactions without the consent of the financial institution. If a streamline period is not in effect, the Company is required to maintain a lockbox arrangement where clients payments received in the lockbox will immediately reduce the amounts outstanding on the credit facility.

The Loan Agreement requires the Company to comply with financial covenants, including a minimum Adjusted Quick Ratio and the achievement of certain Adjusted EBITDA targets. On a monthly basis, or quarterly if there were no advances outstanding during the calendar quarter, the Company is required to maintain a minimum Adjusted Quick Ratio of: (i) 1.00 if the trailing six month adjusted EBITDA is $0 or less, or (ii) 0.90 if the trailing six month adjusted EBITDA is greater than $0. If the Company’s Adjusted Quick Ratio is 1.05 or greater, a streamline period applies. As of December 31, 2019, the Company's Adjusted Quick Ratio was 1.13, which is in compliance with its covenant requirement and is higher than the minimum Adjusted Quick Ratio required to qualify for a streamline period. The Company must also maintain the following trailing twelve month Adjusted EBITDA targets as of the end of each quarter as follows: (1) September 30, 2018 through June 30, 2019 Adjusted EBITDA must be within 20% of the Adjusted EBITDA projections that were delivered to Silicon Valley Bank; (2) September 30, 2019 Adjusted EBITDA of $1 or greater; and (3) December 31, 2019 and thereafter, Adjusted EBITDA of $5.0 million or greater. As of December 31, 2019, the Company was in compliance with the Adjusted EBITDA covenant.

The Loan Agreement also includes customary representations and warranties, affirmative covenants, and events of default, including events of default upon a change of control and material adverse change (as defined in the Loan Agreement). Following an event of default, SVB would be entitled to, among other things, accelerate payment of amounts due under the credit facility and exercise all rights of a secured creditor.

As of December 31, 2019, there were no amounts outstanding under the Loan Agreement. Future availability under the credit facility is dependent on several factors including the available borrowing base and compliance with future covenant requirements.

Note 19—Related Party Transactions

As of December 31, 2019 and 2018, there were no holders of more than 10% of the Company’s outstanding common stock that were considered to be related parties. During the years ended December 31, 2019 and 2018, the Company did not enter into transactions with any of its related parties.

Note 20—Quarterly Financial Data (Unaudited)

The following tables set forth the Company's quarterly consolidated statements of operations data for each of the eight quarters in the two-year period ended December 31, 2019. The Company has prepared the quarterly unaudited consolidated statements of operations data on a basis consistent with the audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. In the opinion of management, the financial information in these tables reflects all adjustments, consisting only of normal recurring adjustments, which management considers necessary for a fair statement of this data. This information should be read in conjunction with the audited consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. The results of historical periods are not necessarily indicative of the results for any future period.

	Three Months Ended							
	Mar. 31, 2018	June 30, 2018	Sept. 30, 2018	Dec. 31, 2018	Mar. 31, 2019	June 30, 2019	Sept. 30, 2019	Dec. 31, 2019
	(in thousands, except per share amounts)							
Revenue	$ 24,876	$ 28,648	$ 29,729	$ 41,432	$ 32,416	$ 37,870	$ 37,642	$ 48,486
Expenses:								
Cost of revenue	14,783	15,044	14,687	15,489	15,116	15,085	13,869	13,321
Sales and marketing	12,257	11,135	10,654	10,510	10,592	11,519	11,040	11,414
Technology and development	10,494	9,245	9,299	8,825	9,716	9,839	10,293	10,421
General and administrative	12,544	11,441	9,355	9,091	10,280	10,027	9,121	12,344
Restructuring and other exit costs	2,466	974	—	—	—	—	—	—
Total expenses	52,544	47,839	43,995	43,915	45,704	46,470	44,323	47,500
Income (loss) from operations	(27,668)	(19,191)	(14,266)	(2,483)	(13,288)	(8,600)	(6,681)	986
Other (income) expense, net	73	(1,281)	(558)	(377)	(34)	(403)	(562)	406
Income (loss) before income taxes	(27,741)	(17,910)	(13,708)	(2,106)	(13,254)	(8,197)	(6,119)	580
Provision (benefit) for income taxes	75	74	84	124	(708)	84	55	(943)
Net income (loss)	$ (27,816)	$ (17,984)	$ (13,792)	$ (2,230)	$ (12,546)	$ (8,281)	$ (6,174)	$ 1,523
Net income (loss) per share:								
Basic	$ (0.56)	$ (0.36)	$ (0.27)	$ (0.04)	$ (0.24)	$ (0.16)	$ (0.12)	$ 0.03
Diluted	$ (0.56)	$ (0.36)	$ (0.27)	$ (0.04)	$ (0.24)	$ (0.16)	$ (0.12)	$ 0.03
Weighted-average shares used to compute net income (loss) per share:								
Basic	49,692	50,071	50,513	50,746	51,577	52,358	53,023	53,473
Diluted	49,692	50,071	50,513	50,746	51,577	52,358	53,023	59,595

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 Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as defined in Rule 13a-15(e) under the Exchange Act. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives of ensuring that information we are required to disclose in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures, and is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. There is no assurance that our disclosure controls and procedures will operate effectively under all circumstances. Based upon the evaluation described above, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2019, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the three months ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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) of the Exchange Act).

Our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in "Internal Control - Integrated Framework" (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2019. Deloitte & Touche LLP has independently assessed the effectiveness of our internal control over financial reporting and its report is included under "Item 8. Financial Statements and Supplementary Data."

Inherent Limitations on Effectiveness of Controls

Management recognizes that a control system, no matter how well designed 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 that management is required to apply its judgment in evaluating the benefits of possible controls and procedures 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 or error, 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 also is 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 the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

DIRECTORS

The table below lists the Company's seven directors and their committee assignments. A summary of the background for each director is set forth after the table. These background summaries include the specific experience, qualifications, attributes, and/or skills that, together with the general characteristics and qualifications contributed to our board's conclusion that the person should serve as a director of the company.

			Committee Assignments			
Name	**Age[(1)]**	**Position**	**Audit**	**Compensation**	**Nominating & Governance**	**Member Since**
Frank Addante	43	Chairman				April 2007
Michael G. Barrett	57	President, Chief Executive Officer and Director				March 2017
Lewis W. Coleman	78	Director	X	X		December 2015
Robert J. Frankenberg	72	Lead Director	X	Chair	X	April 2014
Sarah Harden	48	Director		X		July 2019
Robert F. Spillane	69	Director		X	Chair	April 2014
Lisa L. Troe	57	Director	Chair		X	February 2014

(1) As of February 1, 2020

Class I Directors—Term expiring 2021

Frank Addante is our founder and has been a member and Chairman of our board of directors since 2007 and served as our Chief Executive Officer from April 2007 to March 2017 and our Chief Product Architect from November 2014 to February 2016. From March 2017 to June 2018, he was employed by the company, reporting to and assisting the Chief Executive Officer, including by providing analysis and advice in the areas of strategy, innovation, and advertising technology market conditions and dynamics. In 2002, Mr. Addante founded the email infrastructure provider StrongMail Systems, Inc. From January 1998 to November 2000, Mr. Addante was CTO and Technology Founder of L90, an Internet advertising company, where he pioneered one of the Internet's first ad serving platforms, adMonitor. Mr. Addante started his Internet career with the creation of Starting Point, a search engine. Mr.

Addante brings to our board of directors thorough knowledge of our company and extensive experience in advertising automation and related systems engineering, innovation, and executive leadership.

Robert J. Frankenberg joined our board of directors in connection with our initial public offering in April 2014. Mr. Frankenberg has owned NetVentures, a management consulting and investment firm focused on the high-tech industry, since 1996. He served on the board of directors of public company Nuance Communications from March 2000 to June 2018. He previously served as a member of the boards of directors of public companies Polycom from October 2013 to September 2016, Wave Systems from December 2011 to June 2015 and National Semiconductor until October 2011. He also serves on the board of private company Veracity Networks and the Sundance Institute board. Prior to its sale in 2004, Mr. Frankenberg chaired Kinzan, a leading provider of Internet services platforms. Mr. Frankenberg was the chairman, president, and CEO of Encanto Networks from June 1997 to July 2000 when the company's major business was sold to Avaya. Encanto was a leading provider of eBusiness software and services to small business. From April 1994 to August 1996, Mr. Frankenberg was the Chairman/CEO of Novell, a networking software company. Prior to Novell, Mr. Frankenberg was the Vice President & Group General Manager of Hewlett-Packard's Personal Information Products Group, responsible for HP's personal computer, server, networking, office software, calculator, and consumer product lines. Mr. Frankenberg joined Hewlett-Packard in 1969 as a manufacturing technician, later became a design engineer, software designer, project manager, engineering and marketing executive, and general manager. He became a corporate vice president in 1990 and general manager of the Personal Information Products Group in 1991. He served in the US Air Force from 1965 to 1969. Mr. Frankenberg previously served on various other boards, including for America OnLine (AOL), and holds several computer design patents. He brings to the board a deep knowledge of software, computer networks and systems, business operations, the technology industry, and public company governance and board service.

Sarah P. Harden joined our board of directors in July 2019. Ms. Harden brings more than two decades of experience in digital media, entertainment and direct-to-consumer video to the Company's Board. Since January 2018, Ms. Harden has served as the Chief Executive Officer of Reese Witherspoon's media company Hello Sunshine. Prior to that, Ms. Harden held executive-level positions at Otter Media/The Chernin Group from 2013 to 2018, including President and Executive Vice President. Ms. Harden previously served as board member of privately held ESPN-Star Sports, Star China Media and The Moby Group and as a board director overseeing successful acquisitions and exits of private portfolio companies including Crunchyroll, Fullscreen, Roosterteeth, McBeard, Stagebloc and minority-invested company DLVR. Ms. Harden received her MBA from Harvard Business School and graduated with honors with a B.A. in international relations from The University of Melbourne.

Class II Directors—Term expiring 2022

Michael G. Barrett has been a member of our board of directors and has served as our President and Chief Executive Officer since March 2017. Mr. Barrett has served as the President of Ichabod Farm Ventures LLC, an investment company that he founded, since December 2012. From January 2014 to December 2015, he served as President and Chief Executive Officer of Millennial Media, Inc. From July 2012 to December 2012, Mr. Barrett served as Global Chief Revenue Officer and Executive Vice President at Yahoo! Inc. Prior to Yahoo!, from January 2012 to July 2012, Mr. Barrett served as Director at Google Inc., where he led the integration efforts following Google's acquisition of AdMeld Inc., a global supply side platform solution for premium publishers. Mr. Barrett previously served as Chief Executive Officer at AdMeld from November 2008 to December 2011. Mr. Barrett also held senior positions at AOL, Fox Interactive Media and Disney Online. Mr. Barrett serves on the board of directors of Media Math, a demand-side platform. Mr. Barrett brings to the board extensive experience in digital advertising and advertising technology, as well as significant executive management expertise.

Robert F. Spillane joined our board of directors in connection with our initial public offering in April 2014. From 1998 to 2017, Mr. Spillane was a Managing Principal at DigaComm, L.L.C., a private investment firm that leads early-stage venture capital transactions, primarily involving companies in technology and digital media. Mr. Spillane was formerly a Principal and President and CEO of the investment group DM Holdings, Inc., which was formed in 1991 to acquire Donnelley Marketing, Inc. from The Dun and Bradstreet Corporation. Donnelley Marketing was a leading direct marketing and information services company. Mr. Spillane served as President and CEO, and on the board of directors of Donnelley Marketing, Inc. Prior to joining DM Holdings, Mr. Spillane was the Executive Vice President of Diamandis Communications, Inc., then a leading consumer magazine publisher, formed in 1987 in a leveraged buyout of CBS Magazines from CBS Inc., and also served as a member of the Diamandis board of directors from 1987 to 1990. Prior to Diamandis, Mr. Spillane held various executive positions with CBS, Inc., including Senior Vice President Group Publisher, Vice President of Circulation, Vice President General Manager of the CBS Special Interest Magazine Group, and Vice President Sales and Marketing of Fawcett Books. His ten-year career at CBS culminated in service from 1985 to 1987 as Senior Vice President, Publishing of CBS Magazines. In that capacity, he was directly responsible for 10 magazines. From 1972 to 1977, Mr. Spillane held various positions with Chesebrough Ponds, Inc. Mr. Spillane also served on the board of directors of TVSM, Inc., a private media company, from 1992-1998. Mr. Spillane brings to the board expertise in the publishing and advertising businesses, as well as significant experience with operations and mergers and acquisitions.

Class II Directors—Term expiring 2020

Lewis W. Coleman has been a member of our board of directors since December 2015. He is the retired Vice Chairman of DreamWorks Animation, a position he held from July 2014 to January 2015. Prior to that, he served in various executive-level positions with DreamWorks since December 2005, including as President from December 2005 to August 2014, Chief Financial Officer from February 2007 to September 2015, and acting Chief Accounting Officer from June to September 2014. Prior to joining DreamWorks, Mr. Coleman was the President of the Gordon and Betty Moore Foundation from its founding in November 2000 to December 2004. Prior to that, Mr. Coleman was a Senior Managing Director at Montgomery Securities and then President and Chief Operating Officer of its successor, Banc of America Securities, where he also served as Chairman from 1998 to 2000. Before then, Mr. Coleman spent ten years at Bank of America where he served as Vice Chairman and Chief Financial Officer. He spent the previous 21 years at Wells Fargo Bank, where his positions included Chief Credit Officer and Chairman of the Credit Policy Committee, and at Bank of California. Mr. Coleman currently serves on the board of directors of Immune Design, a publicly traded clinical-stage immunotherapy company focused on oncology, as well as DCI, LLC, a private fund management company, and Vista Capital Advisors (formerly eBond Advisors), a private financial technology company. Mr. Coleman's previous board experience includes Chiron Corporation, Regal Entertainment, Bank of America, DreamWorks Animation and Northrop Grumman, where he was the Lead Independent Director. Mr. Coleman brings to the board an extensive background in consumer media and technology, and successful track record of expanding businesses into emerging markets, as well as significant executive level and public company board experience.

Lisa L. Troe has been a member of our board of directors since February 2014. She is a Senior Managing Director and co-founder of Athena Advisors LLC, a business advisory firm, a position she has held since January 2014. From October 2005 to December 2013, Ms. Troe was a Senior Managing Director in the forensic and litigation consulting practice at FTI Consulting, Inc., a global business advisory firm. From January 1995 to October 2005, Ms. Troe served on the staff of the Division of Enforcement at the SEC's Pacific regional office, including seven years as an enforcement branch chief and six years as regional chief enforcement accountant. Her career includes accounting positions in public and private companies and with a Big Four public accounting firm. Ms. Troe served as a member of a public gaming industry company board's special litigation committee, a director of a nonpublic technology company, and an advisory board member to an upstream energy company. Ms. Troe is a National Association of Corporate Directors (NACD) Board Leadership Fellow, the highest level of credentialing for corporate directors offered by the NACD, and completed the NACD Cyber-Risk Oversight Program. Ms. Troe holds a CERT Certificate in Cybersecurity from the Software Engineering Institute of Carnegie Mellon University. She is a CPA, and member of NACD, the American Institute of CPAs, and other director and professional organizations. Ms. Troe brings to the board an extensive background in public company governance and oversight, enterprise risk and crisis management, and public company accounting, financial reporting and disclosure, as well as a diverse experience with many industries allowing her to bring additional perspective to our board.

EXECUTIVE OFFICERS

The table below sets forth certain information regarding our executive officers.

Name	Age(1)	Position
Michael G. Barrett	57	President, Chief Executive Officer and Director
David L. Day	58	Chief Financial Officer
Jonathan Feldman	37	Co-General Counsel and Secretary
Eve Filip	40	Co-General Counsel and Chief Privacy Counsel
Thomas Kershaw	52	Chief Technology Officer
Joseph Prusz	41	Chief Revenue Officer
Adam Soroca	47	Head of Global Buyer Team
Blima Tuller	41	Chief Accounting Officer

(1) As of February 1, 2020

Michael G. Barrett. See “Directors” for Mr. Barrett’s biography.

David L. Day has served as our Chief Financial Officer since May 2016 and served as our Chief Accounting Officer from March 2013 to August 2017. From May 2011 to March 2013, Mr. Day served as the Chief Accounting Officer at ReachLocal, Inc., a public company servicing small and medium-sized businesses as their digital ad agency. Prior to that, Mr. Day provided finance and accounting-related consulting services to technology and telecommunications companies and was co-founder of SignJammer Corporation, a start-up in the out-of-home advertising market, from 2008 to 2011. His career also includes experience as Vice President of Finance for Spot Runner, a technology-based ad agency for small and medium-sized business, Senior Vice President of Finance for Yahoo! Search Marketing, Senior Vice President of Finance and Corporate Controller of Overture, and public accounting experience with PricewaterhouseCoopers and Arthur Andersen.

Jonathan Feldman has served has our Co-General Counsel and Secretary since June 2018. From November 2013 to June 2018, Mr. Feldman served as our Deputy General Counsel - Corporate and Assistant Secretary. Prior to joining the company, Mr. Feldman was counsel at O’Melveny & Myers LLP, where he focused on mergers and acquisitions and public company reporting.

Eve Filip has served as our Co-General Counsel and Chief Privacy Counsel since June 2018 and as our Data Protection Officer from June 2017 to December 2018. She previously served as our Deputy General Counsel - Commercial from March 2015 to June 2018. Prior to joining the company, Ms. Filip served as Assistant General Counsel at Sony Pictures Entertainment, an American entertainment company that produces, acquires, and distributes filmed entertainment through multiple platforms, from April 2014 to February 2015 and as Senior Counsel from July 2011 to April 2014. Ms. Filip also served as Vice President, Associate General Counsel at Ascent Media Group, a company that provides end-to-end media and technology services for the creation, management, and distribution of media content, from July 2007 to May 2011. Prior to such time, Ms. Filip worked as an attorney in the corporate department of Fried, Frank, Harris, Shriver & Jacobson LLP from September 2004 to June 2007. Ms. Filip is a registered in-house counsel in the State of California.

Thomas Kershaw has served as our Chief Technology Officer since October 2016. Previously, Mr. Kershaw served as Director of Product Management of Google, a multinational technology company specializing in Internet-related services and products, from March 2013 to October 2016, and Senior Vice President and General Manager of the Iconectiv business unit of Ericsson, a communications technology company, from March 2008 to March 2013. Mr. Kershaw has also held executive positions at VeriSign, Clarent Corporation and Unisys, and was Chief Technical Officer of SS8 Networks.

Joseph Prusz has served as our Chief Revenue Officer since December 2017 and is responsible for maintaining and growing our revenue stream across all formats, channels, and inventory types. Prior to that, since joining the company in September 2008, Mr. Prusz had various roles of increasing responsibility in our sales department, including leading the Americas region and being Head of Mobile.

Adam Soroca has served as our Head of Global Buyer Team since our acquisition of nToggle, Inc. in July 2017. Mr. Soroca co-founded nToggle in September 2014 and served as its Chief Executive Officer and a member of the board of directors until nToggle’s sale to the company. Prior to founding nToggle, Mr. Soroca was the chief product officer at Millennial Media (via acquisition of Jumptap) from November 2013 to July 2014, where he oversaw the global product and operations teams. Prior to

Millennial Media, from June 2005 to November 2013, Mr. Soroca was the chief product officer and a founding leadership team member at Jumptap, the leading mobile programmatic and audience platform. Mr. Soroca serves as an advisor at CoachUp, Inc., viisights and Chalk Digital. He pioneered bringing both audience data (DMP) and programmatic capabilities (DSP) to the mobile industry. He is a digital advertising entrepreneur and inventor, holding over 90 awarded patents spanning mobile advertising and search techniques.

Blima Tuller has served as our Chief Accounting Officer since August 2017. Prior to joining the company, Ms. Tuller was Chief Financial Officer of Liberman Broadcasting, Inc., a Spanish-language broadcaster, from July 2012 to July 2017. Liberman Broadcasting filed for protection under Chapter 11 of the United States Bankruptcy Code in November 2018. She was previously at MRV Communications Inc., a publicly traded technology company, where she served as Vice President, Finance from 2009 to 2011 and as Director of Finance from 2008 to 2009. From 2006 to 2008, Ms. Tuller served as Vice President of Finance and Chief Accounting Officer of QPC Lasers, Inc., a start-up manufacturer and distributor of semiconductor lasers. Prior to joining QPC Lasers, Inc., Ms. Tuller was Vice President of Finance of Ameripath, Inc.'s Esoteric Division, an anatomic pathology laboratory and esoteric testing services provider, and served as Director of Finance and Director of Internal Audit of Specialty Laboratories, a clinical reference laboratory acquired by Ameripath, Inc., from 2003 to 2006. From 1998 to 2003, Ms. Tuller held a positions of increasing responsibility at the public accounting firms of Arthur Andersen LLP and KPMG LLP.

Our executive officers are elected by, and serve at the discretion of, our board of directors. There are no family relationships among any of our directors or executive officers.

CODE OF BUSINESS CONDUCT AND ETHICS

Our board of directors has adopted a Code of Business Conduct and Ethics that applies to each of our directors, officers and employees. The full text of our Code of Business Conduct and Ethics is posted on the "Corporate Governance" section of our Investor Relations website at http://investor.rubiconproject.com. We intend to post any amendment to our Code of Business Conduct and Ethics, and any waivers of the Code for directors and executive officers, on the same website.

CORPORATE GOVERNANCE

There are no material changes to the procedures by which security holders may recommend nominees to the Company's board of directors.

Audit Committee

The Company has an audit committee that is responsible for, among other things, providing assistance to the board of directors in fulfilling its oversight responsibilities regarding the integrity of our financial statements, our compliance with applicable legal and regulatory requirements, the integrity of our financial reporting processes, including our systems of internal accounting and financial controls, the performance of our internal audit function and our independent registered public accounting firm, and our financial policy matters. The audit committee approves the services performed by our independent registered public accounting firm and reviews their reports regarding our accounting practices and systems of internal control over financial reporting, as applicable. The audit committee also oversees the audit efforts and confirms the independence of our independent registered public accounting firm. Our board of directors has determined that each member of our audit committee, Ms. Troe and Messrs. Coleman and Frankenberg, satisfies SEC requirements for independence and the independence and financial literacy requirements of the New York Stock Exchange, and that each qualifies as an "audit committee financial expert," as defined in the SEC rules.

Item 11. Executive Compensation

Compensation Discussion and Analysis

Introduction

This Compensation Discussion and Analysis describes the compensation arrangements we had for 2019 with our "named executive officers," as determined under the rules of the SEC and identified in the following table.

Name	Position
Michael G. Barrett	President and Chief Executive Officer
David L. Day	Chief Financial Officer
Thomas Kershaw	Chief Technology Officer
Adam L. Soroca	Head of Global Buyer Team
Joseph R. Prusz	Chief Revenue Officer

Executive Summary

Compensation Highlights. Our compensation programs are designed to support creation of stockholder value while maintaining our ability to recruit and retain personnel. For 2019, the compensation committee took the following actions:

- Changed the compensation peer group by removing larger peers and replacing with smaller companies; the resulting group better reflected Rubicon Project's revised revenue growth trajectory and market valuation with median 2018 revenues of $186 million (down from $255 million) and a median market capitalization of $690 million (down from $1.1 billion);

- Did not make any changes to base salary or target cash incentives opportunities for any named executive officer;

- Approved annual long-term incentive grant values that were closer to competitive market levels after making annual grants in 2018 and 2017 that were low versus competitive market long-term incentive levels; and

- Approved an annual cash incentive opportunity with payouts ranging from 0% to 150% of the named executive officer's target cash incentive amount, with the actual payout based on pre-determined revenue and adjusted EBITDA less capital expenditures, referred to as capex, financial targets tied to our budget and operating plan.

CEO Pay and Performance. The compensation committee's pay actions in the past three years for Mr. Barrett recognize his leadership, deep industry experience, recognition that he was the right chief executive to lead the company through its turn-around, and the successful execution of that turn-around.

- Since joining in March 2017, Mr. Barrett has executed several strategic objectives, including removing buy-side fees and embracing open source and transparency, shifting the business towards header bidding, developing Demand Manager for publishers, and recently announcing the merger with Telaria;

- The market's response to these accomplishments resulted in a doubling of our market value in each of 2018 and 2019—outpacing the growth from other ad-tech peers and the Russell 2000; at the end of December 2019, we generated the following annualized returns for stockholders:
  - +12% (versus +7% for the Russell 2000) from March 2017 (Mr. Barrett's hire date) through December 31, 2019;
  - +106% (versus +4% for the Russell 2000) from January 2, 2018 through December 31, 2019; and
  - +113% (versus +23% for the Russell 2000) from January 2, 2019 through December 31, 2019

- In 2019, Mr. Barrett's target pay levels increased to $3.7 million (from $2.0 million in 2018) (measured based on Mr. Barrett's base salary, target cash incentive amount and the grant date fair value of his equity awards), with the increase coming entirely in the grant date fair value of the equity, to (i) recognize the stellar overall company performance through 2018 under Mr. Barrett's leadership and (ii) provide a target total pay opportunity more closely in line with competitive market levels after delivering an equity award in 2018 that was low versus the competitive market.

Our executive compensation program includes a number of features intended to reflect best practices in the market and help ensure that the program reinforces our stockholders' interests. These features are described in more detail below in this Compensation Discussion and Analysis and include the following:

What We Do:	What We Don't Do:
ü Provide a significant portion of CEO pay that is "at-risk" (86% of 2019 target direct compensation was based on financial or share price performance) (with target direct compensation determined based on the CEO's annual base salary, target cash incentive amount, and the grant date fair value of his equity awards) ü Utilize a formulaic incentive structure in our annual incentive program and limit the use of discretion, as well as limit the maximum annual incentive payment to 150% of the target amount ü Maintain an ownership and holding requirement policy to encourage alignment with stockholders ü Employ a clawback policy to allow the company to recover any performance-based compensation ü Retain an independent compensation consultant to advise the compensation committee ü Consider feedback from stockholders as part of the compensation committee's annual program review	û No single-trigger change in control benefits û No gross-ups for change in control benefits û No discounted stock options or option re-pricings û No excessive perquisites û No hedging of our equity securities

Executive Compensation Philosophy and Objectives

The compensation committee conducts an annual review of our executive compensation program to help ensure that: (1) the program is designed to align the interests of our named executive officers with our stockholders' interests by rewarding performance that is tied to creating stockholder value; and (2) the program provides a total compensation package for each of our named executive officers that we believe is competitive and necessary to attract and retain talent.

We accomplish these objectives by providing a total compensation package that includes three main components: base salary, annual performance-based cash awards and long-term equity-based awards. We believe that in order to attract and retain top executives, we need to provide them with compensation levels that reward their continued service. Some of the elements, such as base salaries and annual cash awards, are paid out on a short-term or current basis. Other elements, such as equity awards that are subject to multi-year vesting schedules and benefits provided upon certain terminations of employment, are paid out on a long-term basis. We believe this mix of short- and long-term elements allows us to achieve our goals of attracting, retaining and motivating our top executives. We also, in certain cases, provide our named executive officers with certain relocation and other benefits in connection with their joining us.

In structuring executive compensation packages, the compensation committee considers how each component promotes retention and motivates performance. Base salaries, severance and other termination benefits are primarily intended to attract and retain highly qualified executives. These elements of our executive compensation program are generally not dependent on performance. Annual cash bonus opportunities provide further incentives to achieve performance goals specified by the compensation committee and long-term equity awards provide incentives to help create value for our stockholders and continue employment with us through specified vesting dates.

We believe that by providing a significant portion of our named executive officers' total compensation package in the form of equity-based awards, we are able to create an incentive to build stockholder value over the long-term and more closely align the interests of our named executive officers to those of our stockholders. Our annual equity awards to the named executive officers for 2019 consisted of stock options and restricted stock unit awards, which generally only vest if the executive remains employed with us through the vesting date. For additional information regarding equity-based awards granted to our named executive officers during 2019, see "Compensation Discussion and Analysis—Current Executive Compensation Program Elements—Annual Performance-Based Cash Awards" below.

Payment of our annual performance-based cash awards is solely contingent upon the achievement of financial performance metrics. The amount of compensation ultimately received for these awards varies with our annual financial performance, thereby providing additional incentives to achieve short-term or annual goals that we believe will maximize stockholder value over the long term.

Compensation Determination Process

The compensation committee considers, determines, reviews, and revises all components of each named executive officer's compensation. It may not delegate that responsibility. The compensation committee also has oversight of and consults with management regarding executive and non-executive employee compensation plans and programs, including administration of our equity incentive plans.

The compensation committee retains an independent executive compensation consultant, Semler Brossy Consulting Group, referred to as Semler Brossy, to provide input, analysis, and consultation about our executive compensation. During 2019, Semler Brossy's work with the compensation committee included analysis, advice, and recommendations on total compensation philosophy; peer groups and market assessment and analysis; compensation program design, including program goals, components, and metrics; equity usage and allocation; compensation trends in comparable business sectors and in the general marketplace for senior executives; regulatory factors; and the compensation of the chief executive officer and the other named executive officers, including advice on the design of cash-based and equity-based compensation.

Semler Brossy reports directly and solely to the compensation committee and performs compensation consulting services for the compensation committee at its request. Semler Brossy is not engaged to perform services directly for our management. The compensation committee has concluded that no conflict of interest exists with respect to its engagement of Semler Brossy nor are there other factors that would adversely impact Semler Brossy's independence in advising the compensation committee under applicable SEC and New York Stock Exchange rules. The compensation committee reached this conclusion after considering the following six factors, as well as Semler Brossy's views regarding its independence and other information the compensation committee deemed relevant: (i) the provision of other services to us by Semler Brossy; (ii) the amount of fees received from us by Semler Brossy, as a percentage of the total revenue of Semler Brossy; (iii) the policies and procedures of Semler Brossy that are designed to prevent conflicts of interest; (iv) any business or personal relationship of the Semler Brossy consultants with a member of the compensation committee; (v) any of our stock owned by the Semler Brossy consultants; and (vi) any business or personal relationship of the Semler Brossy consultants or Semler Brossy with any of our executive officers.

Executive officers do not propose or seek approval for, or have any decision-making authority with respect to, their own compensation. The chief executive officer makes recommendations to the compensation committee on the base salary, annual incentive cash targets, and equity awards for each named executive officer other than himself, based on his assessment of each executive officer's performance during the year and other factors, including compensation survey data and input from Semler Brossy.

Performance reviews for the chief executive officer and other named executive officers include factors that may vary depending on the role of the individual officer, including strategic capability—how well the executive officer identifies and develops relevant business strategies and plans; execution—how well the executive officer executes strategies and plans; and leadership capability—how well the executive officer leads and develops the organization and its people. The compensation committee conducts an annual performance review of the chief executive officer to evaluate the company's performance, his performance and the performance of the management team and considers this review in determining the chief executive officer's base salary, annual performance-based cash incentive target, and equity awards.

We have engaged in discussions regarding our compensation philosophy with several of our large stockholders, and we intend to engage in further compensation-related discussions from time to time at such stockholders' request. Additionally, at our 2020 annual meeting, stockholders will have an opportunity to cast an advisory vote to approve the compensation programs of our named executive officers, referred to as the Say-On-Pay Vote, and will have an opportunity to cast an advisory vote on the frequency of future Say-On-Pay Votes.

Peer Group Compensation Assessment

The compensation committee works with Semler Brossy periodically to select a peer group of companies in our industry to assist the committee in making its compensation decisions. Although the compensation committee reviews and discusses the peer company compensation data provided by Semler Brossy to help inform its decision-making process, the compensation committee does not set compensation levels at any specific level or percentile against the peer group data. The peer company data is only one point of information taken into account by the compensation committee in making compensation decisions.

Fiscal Year 2019 Peer Group Approach. In July 2018, the compensation committee, with assistance from Semler Brossy, reviewed the list of peer group companies selected in 2017, and re-calibrated the peer companies to reflect our business expectations with respect to earnings, headcount, and potential return to revenue growth in late 2018 and into 2019. As a result of this re-evaluation, five companies used in the 2018 peer group were removed for the 2019 peer group (Box, Inc., Cornerstone OnDemand, Inc., ANGI Homeservices Inc., Rocket Fuel, Inc., and YuMe, Inc.). Those five companies had either been acquired or had outsized revenue or market capitalization as compared to us. Five new companies were added (ChannelAdvisor Corp., TechTarget, Inc., TeleNav, Inc., Digital Turbine, Inc., and Marchex, Inc.); these companies were selected based on several criteria, including being similar in size to us, favoring companies based in California or New York, and having a reasonably comparable business to ours.

Fiscal 2019 Peer Group

AppFolio, Inc.	Model N, Inc.	TechTarget, Inc.
ChannelAdvisor Corporation	PROS Holdings, Inc.	Telaria, Inc.
Digital Turbine, Inc.	Qualys, Inc.	Telenav, Inc.
Five9, Inc.	QuinStreet, Inc.	The Trade Desk, Inc.
Leaf Group Ltd.	Quotient Technology Inc.	TrueCar, Inc.
Marchex, Inc.	SPS Commerce, Inc.	Varonis Systems, Inc.
MobileIron, Inc.	Synacor, Inc.	

Fiscal Year 2020 Peer Group Approach. In July 2019, the compensation committee, with assistance from Semler Brossy, conducted an annual review of the peer group and determined that several peers have grown too large and continue to have different market value multiples than us. The assessment led to the removal of five companies (AppFolio, Five 9, Qualys, QuinStreet and Quotient Technology) and the addition of three new companies (Cardlytics, Everquote, and Fluent).

Current Executive Compensation Program Elements

The current elements of our executive compensation program are:

- base salaries;
- annual performance-based cash awards;
- equity-based incentive awards; and
- certain additional employee benefits.

We strive to achieve an appropriate mix between the various elements of our compensation program to meet our compensation objectives and philosophy; however, we do not apply any rigid allocation formula in setting our named executive officers' compensation, and we may make adjustments to this approach for various positions after giving due consideration to prevailing circumstances.

As discussed throughout this Compensation Discussion and Analysis, the compensation policies and programs applicable to our named executive officers reflect our emphasis on aligning the interests of our executive officers with our stockholders' interests in enhancing our value over the long term. Applying this philosophy, a significant portion of overall compensation opportunities offered to our named executive officers is in the form of (i) equity-based compensation with a value directly linked to our stock price and (ii) annual performance-based cash awards contingent upon achievement of measurable financial objectives.

Base Salaries

Base salaries for our named executive officers are designed to be competitive when compared with similarly situated executives with our peer group, and are based on a variety of factors, including level of responsibility, performance, and the recommendations of the chief executive officer for named executive officers other than the chief executive officer. Base salaries are reviewed annually or at the time of promotion or other changes in responsibilities. In determining whether to award base salary increases, the compensation committee considers our overall business outlook, our budget, the executive's individual performance, historical compensation, market compensation levels for comparable positions, internal pay equity, and other factors, including any retention concerns.

After consideration of the data from the peer groups described above and the other factors described in the preceding paragraph, the compensation committee determined that the named executive officers' base salaries for 2019 would remain unchanged from their 2018 levels and were as follows:

Name	2018 Annual Base Salary	2019 Annual Base Salary	Percent Increase (%)
Michael Barrett	$ 515,000	$ 515,000	—
David Day	$ 400,000	$ 400,000	—
Thomas Kershaw	$ 425,000	$ 425,000	—
Adam Soroca	$ 325,000	$ 325,000	—
Joseph Prusz	$ 325,000	$ 325,000	—

Annual Performance-Based Cash Awards

For 2019, our named executive officers were eligible to receive cash incentive payments under our 2019 Executive Cash Incentive Plan, referred to as the Executive Bonus Plan, which is administered by our compensation committee. The amount of cash incentive payments under the Executive Bonus Plan is determined based upon the achievement of pre-established corporate financial objectives that the compensation committee believed were challenging yet achievable. For 2019, the target award opportunities for our named executive officers remained unchanged from 2018 levels and were as follows:

Name	2018 Annual Target Bonus Opportunity	2019 Annual Target Bonus Opportunity	Percent Increase (%)
Michael Barrett	$ 515,000	$ 515,000	—
David Day	$ 260,000	$ 260,000	—
Thomas Kershaw	$ 275,000	$ 275,000	—
Adam Soroca	$ 225,000	$ 225,000	—
Joseph Prusz	$ 225,000	$ 225,000	—

For 2019, performance was measured against two financial goals: revenue and adjusted EBITDA less capital expenditures, referred to as capex, with each goal given equal weight. The compensation committee chose these financial metrics because they represent objectively determinable financial targets that we believe indicates our growth and overall success. For a description of how we calculate adjusted EBITDA, see the "Non-GAAP Financial Measures" section of the Management Discussion and Analysis of Financial Condition and Results of Operations in Part II, Item 7 of this Annual Report on Form 10-K.

Under the Executive Bonus Plan, we must achieve one of the threshold performance goals noted in the table below for any bonus to be payable for the fiscal year. If either threshold goal is achieved, each executive's bonus would be based 50% on revenue achieved and 50% on adjusted EBITDA less capex achieved, in each case against the performance goals set forth below. Performance is measured both at mid-year and at fiscal year-end. Following the end of the second quarter, the compensation committee determines our revenue and adjusted EBITDA less capex performance and determines the applicable bonus payout based on the mid-year performance goals set forth in the table below. This payout percentage is then multiplied by 50% of the executive's target bonus opportunity for the year, and the executive will receive a mid-year bonus for that amount. However, the executive's bonus with respect to the first half of the year is capped at 40% of the executive's total target bonus opportunity. At the end of the fiscal year, the compensation committee determines our performance and the final bonus payout based on the table below (with the amount of the final payout offset by any payment that was made to the executive as a mid-year bonus payment). If the mid-year bonus payment exceeds the total bonus the executive would be eligible to receive for the entire fiscal year, the compensation committee has discretion to reduce any future bonus or severance payments to be paid to the executive by such excess bonus amount. The compensation committee retains the discretion to reduce, but not increase, the amount of any bonus otherwise payable to our executive officers based on such factors as it deems appropriate.

Our performance targets and the corresponding payout percentages for mid-year and full-year performance, which were approved by the compensation committee at the beginning of 2019, are as follows (with the payout percentage determined by linear interpolation for performance between these levels):

Percentage of Target Bonus Paid	Threshold (50% payout)	95% payout	Target (100% payout)	105% payout	Maximum (150% payout)
Revenue (percentage of goal achieved)	75%	95%	100%	105%	125%
- Mid-year goal	$51.3 million	$65.0 million	$68.4 million	$71.9 million	$85.5 million
- Full-year goal	$112.8 million	$142.9 million	$150.4 million	$158.0 million	$188.0 million
Adjusted EBITDA less Capital Expenditures (percentage of goal achieved)	75%	95%	100%	105%	125%
- Mid-year goal	($13.8 million)	($12.7 million)	($10.4 million)	($7.5 million)	$11.4 million
- Full-year goal	($21.9 million)	($18.9 million)	($13.9 million)	($8.7 million)	$14.3 million

In July 2019, the compensation committee determined that for the first half of 2019, we achieved revenue of $70.3 and adjusted EBITDA less capex of ($2.2 million), resulting in a weighted payout percentage of 110.2% that was then capped at 40% of the named executive officers' target annual bonuses (which is the maximum bonus amount payable for the first half of the fiscal year). In February 2020, the compensation committee determined that for the full year of 2019, we achieved revenue of $156.4 million and adjusted EBITDA less capex of $5.7 million, resulting in a weighted payout percentage of 118.3% of each named executive officers' target annual bonuses.

Equity-Based Awards.

We grant equity-based compensation to our named executive officers in order to attract, retain and reward our executives and strengthen the mutuality of interests between our named executive officers and stockholders. The compensation committee annually determines the form and amount of equity-based incentives granted to executives. In making its determinations, the compensation committee considers factors such as peer group market data, recommendations from Semler Brossy, the executive's and our performance in the last year and the results achieved by the executive, the executive's base salary, target annual incentive opportunity and prior grants of equity awards, and the compensation committee's view regarding the future potential of long-term contributions of the executive. Recommendations of the chief executive officer are also taken into consideration for our named executive officers other than the chief executive officer.

In February 2019, each of our named executive officers received grants of stock options and RSUs. The number of stock options and RSUs granted to each of our named executive officers for 2019 is set forth in the table below:

Name	Number of Stock Options Granted	Number of RSUs Granted
Michael Barrett	300,000	350,000
David Day	161,000	188,000
Thomas Kershaw	179,000	209,000
Adam Soroca	134,000	157,000
Joseph Prusz	111,000	130,000

If our stock price were not to increase, the stock options will not deliver any economic value because the options have an exercise price equal to our stock price on the date of grant and our equity incentive plans prohibit stock option repricing. The stock options and RSUs vest over four years to provide an additional retention incentive. In determining the size of the 2019 annual awards for all named executive officers, the compensation committee calibrated award values to encourage equity ownership and ensure a stable leadership team through the organization's strategic re-positioning; specifically, the compensation committee (i) considered the retention value of all outstanding equity holdings at that time (all options grants made prior to 2018 had exercise prices that exceeded the closing price of our stock on the date the 2019 equity awards were made) and (ii) sought to deliver annual equity grant values in 2019 that were closer to the competitive market levels after delivering annual equity grant values in 2017 and 2018 that were generally low versus the competitive market. For Mr. Day, his 2019 grant values also recognize his sustained individual performance since becoming full-time chief financial officer in February 2017 with an intention to move his target total pay opportunity closer to competitive market levels as other similar chief financial officers.

See the table titled "Outstanding Equity Awards as of December 31, 2019" below for more information with respect to these grants.

Other Employee Benefits and Perquisites

We have generally not offered extensive benefits or other compensation programs to our named executive officers, apart from employee benefits made available generally to our employees such as participation in Rubicon Project's 401(k) plan and eligibility to receive a company match, and health and welfare benefit programs. Mr. Day is eligible for up to $30,000 in annual reimbursement for the use of a car service for transportation between his home and our headquarters for the purpose of allowing Mr. Day to devote his lengthy commute time to work duties.

Employment Arrangements

We have entered into an employment agreement with Mr. Barrett and offer letters with each of our other named executive officers. Each of the named executive officers serves on an at-will basis and the employment agreement and offer letters do not have a specified term. The employment agreement and offer letters provide for a base salary, eligibility to receive an annual performance bonus, and eligibility to participate in employee benefit or group insurance plans maintained from time to time by us.

Severance Agreements

We are also party to Executive Severance and Vesting Acceleration Agreements, referred to as the severance agreements, with each of our named executive officers that provide for severance and other termination benefits. These severance agreements are intended to provide economic protection so that an executive can remain focused on our business without undue personal concern in the event that his position is eliminated or, in some cases, significantly altered by us, which we believe is particularly important in light of the executives' leadership roles at Rubicon Project. The compensation committee believes that providing severance or similar benefits is common among similarly situated executives in our industry generally and remains important in recruiting and retaining key executives.

The prospect of a change in control of Rubicon Project can also cause significant distraction and uncertainty for executive officers and, accordingly, the compensation committee believes that appropriate change in control protections are important tools for aligning executives' interests with those of our stockholders by allowing our executive officers to focus on strategic transactions that may be in the best interest of our stockholders without undue concern regarding the effect of such transactions on their continued employment. Accordingly, the severance agreements also provide for enhanced severance payments and accelerated vesting of equity awards if the executives’ employment is terminated in connection with or following a change in control of Rubicon Project.

In December 2019, in connection with the approval of the merger agreement between Rubicon Project and Telaria, our board of directors approved the modification of the severance agreements to provide that if the executive officer is terminated in connection with or within 13 months following the closing of the merger between us and Telaria, the executive officer will be entitled to the enhanced change in control severance under the severance agreements.

For more information regarding the potential payments and benefits that would be provided to our named executive officers in connection with certain terminations of their employment (including terminations in connection with a change in control) on the last business day of fiscal year 2019, please see "Potential Payments upon Termination or Change in Control" below.

We do not provide our executives with tax “gross-up” payments in connection with a termination of their employment and/or a change in control of Rubicon Project.

Tax Considerations

Section 162(m) of the federal tax laws generally prohibits a publicly held company from deducting compensation paid to a current or former named executive officer that exceeds $1 million during the tax year. Certain awards granted before November 2, 2017 that were based upon attaining pre-established performance measures that were set by the company’s compensation committee under a plan approved by the company’s stockholders, as well as amounts payable to former executives pursuant to a written binding contract that was in effect on November 2, 2017, may qualify for an exception to the $1 million deductibility limit. As one of the factors in its consideration of compensation matters, the compensation committee notes this deductibility limitation. However, the compensation committee has the flexibility to take any compensation-related actions that it determines are in the best interests of Rubicon Project and our stockholders, including awarding compensation that may not be deductible for tax purposes. There can be no assurance that any compensation will in fact be deductible.

Recoupment Policy

Our board or the compensation committee shall, in circumstances it deems appropriate, require return to us of the excess portion of any payment made to an employee pursuant to an award issued after April 7, 2016 under our 2014 Equity Incentive Plan or 2014 Inducement Grant Equity Incentive Plan, or under our annual cash incentive plan, if: (1) the payment was predicated upon achieving certain financial results that became the subject of a substantial restatement of our financial statements filed with the SEC within the three full fiscal years after the payment; (2) our board or the compensation committee determines that the participant engaged in intentional misconduct that caused or substantially caused the need for the substantial restatement; and (3) a lower payment would have been made to the participant based upon the restated financial results. In each such instance, the “excess portion” of the payment is the amount (in terms of dollars or shares) by which the payment received exceeded the lower payment that would have been made based on the restated financial results. In each case, the return of payment will be net of any taxes paid by the employee in connection with original receipt or subsequent transfer of the payment. Our board or the compensation committee also has the discretion, in circumstances it deems appropriate, to require reimbursement of any or all payments received with respect to any award granted on or after April 7, 2016 to an employee who has engaged in fraud, bribery, or illegal acts similar to fraud or bribery related to employment, or knowingly failed to report such acts of another employee over whom the employee had direct supervisory responsibility. Our board or the compensation committee shall not seek recovery to the extent it determines (a) that to do so would be unreasonable or (b) that it would be better for us not to do so. In making such determination, and without limiting the scope of its discretion, our board or the compensation committee shall take into account such considerations as it deems appropriate, including, without limitation, the likelihood of success under governing law versus the cost and effort involved, whether the assertion of a claim may prejudice our interests, including in any related proceeding or investigation, the passage of time since the occurrence of the act in respect of the applicable fraud or intentional illegal conduct, and any pending legal proceeding relating to the applicable fraud or illegal conduct. Our board or the compensation committee also may in its discretion direct us to disclose the circumstances surrounding any recoupment made under this policy where not otherwise required by applicable regulation.

Executive Officer Equity Ownership Guidelines and Retention Holding Requirements

Under equity retention guidelines implemented by our board in April 2016, the chief executive officer and each of the other named executive officers are required to accumulate within five years from the later of the date the guidelines were implemented and the date he became a named executive officer, and thereafter to retain for the duration of employment, a minimum level of company equity. The minimum level of equity for the chief executive officer is equal to five times base salary and the minimum level of equity for the other named executive officers is equal to the named executive officer's base salary. Equity that counts toward the ownership requirement includes: (1) shares owned outright by the named executive officer or beneficially owned by the named executive officer by virtue of being held by a member of the named executive officer's immediate family residing in the same household or in a trust for the benefit of the named executive officer or immediate family members residing in the same household; (2) shares held in qualified plans or IRAs; (3) vested shares (or vested RSUs) deemed to be held in non-qualified plans; (4) the in-the-money portion of vested stock options (but not unvested stock options); and (5) unvested time-based restricted shares (or restricted stock units).

Until the minimum level of company equity is achieved, a named executive officer is prohibited from selling or otherwise transferring beneficial ownership of more than one-half of: (a) the vested after-tax shares of our common stock obtained as a result of the vesting of any restricted stock or RSU award made after implementation of the equity retention guidelines; or (b) the shares of our common stock subject to the vested portion of any stock option award made after implementation of the equity retention guidelines, net of any shares surrendered or sold to cover exercise price and/or income tax resulting from the exercise.

Policy Against Repricing and Cash Buyouts

Our 2014 Equity Incentive Plan and 2014 Inducement Grant Equity Incentive Plan prohibit our board from decreasing the exercise price of or otherwise repricing awards of stock options and stock appreciation rights unless such action is first approved by our stockholders. In addition, the plans prohibit us from redeeming or repurchasing stock options or stock appreciation rights unless such redemptions or repurchases are approved by our stockholders.

Policy Against Hedging

We recognize that hedging against losses in company shares may disturb the alignment between stockholders and employees that our equity awards are intended to build. Accordingly, we have incorporated prohibitions on various hedging activities within our Insider Trading Policy, which applies to directors, officers and other employees who we have designated as insiders, as well as such persons' family members, life partners, or owned or controlled entities. The policy prohibits all transactions that are designed to sell short, hedge or offset any decrease in the market value of our securities, including prepaid variable forward contracts, equity swaps, futures, collars, exchange funds, options, puts, and calls and purchases or sales of puts or calls for speculative purposes.

Risk Assessment in Compensation Programs

The compensation committee annually assesses our executive and broad-based compensation and benefits programs on an overall basis to determine whether the programs' provisions and operations create undesired or unintentional material risk. This risk assessment process takes into account numerous compensation terms and practices that we maintain that aid in controlling risk, including the mix of cash, equity, and near- and long-term incentive programs, the use of multi-year vesting periods for equity awards, and a variety of performance criteria for incentive compensation, the claw-back provisions that apply to our annual incentive cash plan and equity plan, and the cap on the maximum cash incentive awards that can be earned in a given year regardless of company performance. This risk assessment process also included a review of program policies and practices, program analysis to identify risk and risk controls, and determinations as to the sufficiency of risk identification and risk control, the balance of potential risk to potential reward, and the significance of the programs and their risks to company strategy. Although we reviewed all significant compensation programs, we focused on those programs with variable payout, in particular assessing the ability of participants to directly affect payouts, and the controls on such situations.

Based on the foregoing, we believe that our compensation policies and practices do not create risks that are reasonably likely to have a material adverse effect on us as a whole. We also believe that our incentive compensation programs do not encourage risk-taking beyond the organization's ability to effectively identify and manage significant risks; are compatible with effective internal controls and our risk-management practices; and are adequately supported by the compensation committee's oversight of our executive compensation programs.

Compensation Committee Interlocks and Insider Participation

Ms. Harden and Messrs. Coleman, Frankenberg, Mandal, and Spillane served on Rubicon Project's compensation committee during the last completed fiscal year. Mr. Mandal's service on the compensation committee ended with his resignation from the Rubicon Project board in May 2019. Ms. Harden's service on the compensation committee commenced in

July 2019. None of the members of the compensation committee is or has at any time been an officer or employee of Rubicon Project. There are no interlocking relationships (and there were no such interlocking relationships during 2019) between the our board, executive officers or the compensation committee and the our board, executive officers or the compensation committee of any other company.

Compensation Committee Report

The compensation committee has reviewed and discussed our Compensation Discussion and Analysis section with management and, based on the review and discussions, recommended to the board that the Compensation Discussion and Analysis section be included in this Annual Report on Form 10-K.

Compensation Committee

Robert J. Frankenberg, Chair
Lewis W. Coleman
Sarah P. Harden
Robert F. Spillane

The foregoing report of the Compensation Committee is not soliciting material, is not deemed filed with the SEC and is not incorporated by reference in any Rubicon Project filing under the Securities Act or the Exchange Act, whether made before or after the date of this Annual Report and irrespective of any general incorporation language in such filing.

Director Compensation

Each director who is not employed by us or any of our subsidiaries, referred to as a non-employee director, is compensated for service on our board through a combination of annual cash retainers and equity awards. For purposes of our director compensation program, a non-employee director is a member of our board who is not, and has not been within the previous 180 days, either an employee of ours or any of our subsidiaries or a consultant performing material services to us or any of our subsidiaries. In order to align the interests of non-employee directors and stockholders, equity awards constitute a majority of total director compensation.

Directors are reimbursed for travel, food, lodging and other expenses directly related to their activities as directors, such as attendance at board or committee meetings. Directors are also entitled to the protection provided by their indemnification agreements and the indemnification provisions in our certificate of incorporation and bylaws, and they receive coverage under a director and officer insurance policy that we maintain.

Annual Cash Fees

Our non-employee directors receive annual retainer fees as described in the table below for board and committee service. The fees are paid in four equal quarterly advance installments and prorated for any partial year of board service.

Position	Retainer ($)
Board Member	30,000
Audit Committee Chair	20,000
Compensation Committee Chair	12,500
Nominating & Governance Committee Chair	7,500
Audit Committee Member	10,000
Compensation Committee Member	5,000
Nominating & Governance Committee Member	3,500
Lead Director	15,000

Equity Awards

For 2019, equity compensation for non-employee directors consisted of (i) an initial equity award with a calculated value of $375,000 for each newly-elected or appointed non-employee director, and (ii) annual awards with a calculated value of $125,000. For 2019, equity awards for directors consisted solely of restricted stock units covering a number of shares determined by dividing the calculated value of the award by the closing price of a share of our common stock on the grant date.

The initial equity award is granted on the date of appointment to the board or attainment of non-employee director status, unless the board or compensation committee specified another issuance date. Annual equity awards are issued on the date of each annual meeting or the date of attainment of non-employee director status. If no intervening annual meeting has been held, annual equity awards will be granted on a date specified by the compensation committee that is at least 30 calendar days after the first anniversary of the prior year’s annual meeting. The first annual award for non-employee directors who join the board at any time other than the date of an annual meeting is subject to proration for the partial year of service ending on the date of the next annual meeting.

Initial equity awards vest, subject to continued board service, in three equal annual increments, on the first, second, and third anniversaries of the date of commencement of board service or attainment of non-employee director status or, if earlier, upon (but effective immediately prior to) the occurrence of a change in control of Rubicon Project. Annual equity awards vest, subject to continued board service, on the first anniversary of the date of grant (or, if no intervening annual meeting has been held, annual equity awards will vest on the second anniversary of the prior year’s annual meeting) or, if earlier, upon the occurrence of either (1) a change in control of Rubicon Project (effective immediately prior thereto) or (2) the first regular annual meeting occurring in the year immediately following the year in which such annual equity awards were granted. In addition, if a non-employee director ceases board service for any reason other than removal for cause before vesting in full of equity awards, then the director’s awards vest with respect to a pro-rata portion of the underlying shares (up to but not exceeding the number of unvested shares remaining subject to such awards) determined based upon the period of board service. Vesting of equity awards will cease, and unvested equity awards will lapse, upon a recipient’s removal for cause from board service.

Director Equity Retention Guidelines

Under equity retention guidelines implemented by the board in April 2016, each director is required to accumulate within five years from the later of the date the guidelines were implemented and the date of commencement of service for a new director, and thereafter to retain for the duration of board service, an amount of equity equal to five times the director’s base board cash compensation. Equity that counts toward the ownership requirement includes: (1) shares owned outright by the director or beneficially owned by the director by virtue of being held by a member of the director’s immediate family members residing in the same household or in a trust for the benefit of the director or his or her immediate family residing in the same household; (2) shares held in qualified plans or IRAs; (3) vested shares (or vested restricted stock units) deemed to be held in non-qualified plans; (4) the in-the-money portion of vested stock options (but not unvested stock options); and (5) unvested time-based restricted shares (or restricted stock units). Until the minimum level of company equity is achieved, a director is prohibited from selling or otherwise transferring beneficial ownership of more than one-half of: (a) the vested after-tax shares of our common stock obtained as a result of the vesting of any restricted stock or restricted stock unit award made after implementation of the equity retention guidelines; or (b) the shares of our common stock subject to the vested portion of any stock option award made after implementation of the equity retention guidelines, net of any shares surrendered or sold to cover exercise price and/or income tax resulting from the exercise.

2019 Director Compensation Table

The following table sets forth all compensation provided to our non-employee directors for 2019. The compensation for Mr. Barrett, our President and Chief Executive Officer, is described in the "Executive Compensation" section below. Mr. Barrett did not receive any compensation for his services as a director in 2019.

Name	Fees Earned or Paid in Cash ($)(1)	Stock Awards ($)(2)(3)	Option Awards ($)(4)	Total ($)
Frank Addante(5)	30,000	167,987	—	197,987
Lewis W. Coleman	45,000	125,001	—	170,001
Robert J. Frankenberg	67,250	125,001	—	192,251
Sarah P. Harden(6)	17,500	480,003	—	497,503
Sumant Mandal(7)	15,938	—	—	15,938
Robert F. Spillane	42,500	125,001	—	167,501
Lisa L. Troe	53,500	125,001	—	178,501

(1) Consists of annual board retainer and fees for service as a committee chair, committee member, or Lead Director, as the case may be. See the narrative disclosure above for a description of such fees.

(2) In accordance with the rules of the SEC, these amounts represent the aggregate grant date fair value of the stock awards and option awards granted to the non-employee directors during the applicable fiscal year computed in accordance with ASC 718. Our equity awards valuation approach and related underlying assumptions for awards granted in 2019 are described in Note 2 "Organization and Summary of Significant Accounting Policies—Stock-Based Compensation" and Note 13 "Stock-Based Compensation" to the Consolidated Financial Statements in this Annual Report on Form 10-K (and the assumptions for awards granted prior to 2019 are set forth in the corresponding notes in the Annual Report on Form 10-K for the applicable fiscal year). The reported amounts do not necessarily reflect the value that may be realized by the executive with respect to the awards, which will depend on future changes in stock value and may be more or less than the amount shown.

(3) Stock awards consist of an annual award of 19,562 restricted stock units issued on May 15, 2019 to each director, other than Ms. Harden and Mr. Mandal, with an aggregate grant date fair market value as described in footnote 2 of $125,001. On February 15, 2019, Mr. Addante was granted a pro-rated annual equity award of 8,737 restricted stock units. On July 1, 2019, Ms. Harden was granted an initial equity award of 56,647 restricted stock units and a pro-rated annual equity award of 15,861 restricted stock units in connection with her appointment to the board. As of December 31, 2019, the aggregate number of shares of our common stock covered by unvested stock awards held by each of our non-employee directors was as follows:

Frank Addante	19,562
Lewis W. Coleman	19,562
Robert J. Frankenberg	19,562
Sarah P. Harden	72,508
Sumant Mandal	—
Robert F. Spillane	19,562
Lisa L. Troe	19,562

(4) As of December 31, 2019, the aggregate number of shares of our common stock covered by stock options held by each of our non-employee directors was as follows:

Frank Addante	183,464
Lewis W. Coleman	65,633
Robert J. Frankenberg	86,500
Sarah P. Harden	—
Sumant Mandal	—
Robert F. Spillane	86,500
Lisa L. Troe	86,500

(5) Mr. Addante became a non-employee director effective December 27, 2018.

(6) Ms. Harden was appointed to the Board effective July 1, 2019.

(7) Mr. Mandal resigned from the Board effective May 15, 2019.

Rubicon Project Named Executive Officer Compensation Tables

Summary Compensation Table - 2019

The following table and narratives that follow describe the 2019, 2018 and 2017 compensation provided to our named executive officers. Mr. Soroca and Mr. Prusz were not named executive officers of Rubicon Project prior to 2019, thus, pursuant to SEC guidance, we have only included compensation information for them for 2019.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($) (1)	Option Awards ($) (1)	Non-Equity Incentive Plan Compensation ($) (2)	All Other Compensation ($)	Total ($)
Michael Barrett	2019	515,000	—	1,799,000	883,827	609,503	5,735 (3)	3,813,065
President and CEO	2018	515,000	—	689,500	327,468	515,000	5,006	2,051,974
	2017	407,708 (4)	—	6,375,000	2,110,085	315,037	1,728	9,209,558
David Day	2019	400,000	—	924,960	454,019	307,710	28,540 (5)	2,115,229
Chief Financial Officer	2018	400,000	100,000 (6)	334,108	45,646	260,000	28,571	1,168,325
	2017	402,520 (7)	100,000 (6)	227,420	103,379	190,747	15,550	1,039,616
Thomas Kershaw	2019	425,000	—	1,028,280	504,779	325,463	5,735 (8)	2,289,257
Chief Technology Officer	2018	425,000	150,000 (9)	675,189	94,602	275,000	5,650	1,625,441
	2017	425,000	150,000 (9)	616,835	214,256	211,763	1,832	1,619,686
Adam Soroca(10)	2019	325,000	—	772,440	377,879	266,288	7,682 (11)	1,749,289
Head of Global Buyer Team								
Joseph Prusz(12)	2019	325,000	—	639,600	313,019	266,288	135 (13)	1,544,042
Chief Revenue Officer								

(1) In accordance with the rules of the SEC, these amounts represent the aggregate grant date fair value of the stock awards and option awards granted to the named executive officer during the applicable fiscal year computed in accordance with ASC 718. Rubicon Project's equity awards valuation approach and related underlying assumptions for awards granted in 2019 are described in Note 2 "Organization and Summary of Significant Accounting Policies—Stock-Based Compensation" and Note 13 "Stock-Based Compensation" to the Consolidated Financial Statements in this Annual Report on Form 10-K (and the assumptions for awards granted prior to 2019 are set forth in the corresponding notes in the Annual Report on Form 10-K for the applicable fiscal year). The reported amounts do not necessarily reflect the value that may be realized by the executive with respect to the awards, which will depend on future changes in stock value and may be more or less than the amount shown.

(2) Cash incentive amounts earned by the named executive officers for service during the year, including amounts paid subsequent to that year based upon performance during that year. In February 2020, the compensation committee determined that for the full year of 2019, we achieved revenue of $156.4 million and adjusted EBITDA less capex of $5.7 million, resulting in a weighted payout percentage of 118.3% pursuant to the annual incentive program for the named executive officers for 2019 as described in the Compensation Discussion and Analysis section above. As described in such section, each named executive officer was paid a portion of his annual bonus in July 2019 based on performance during the first half of the year. The final 2019 award for each executive, which appears in the table above, will be paid in March 2020 (less the amount of the incentive already paid to the named executive officer for the first half of 2019).

(3) Represents $5,600 in 401(k) plan matching contributions and $135 in life insurance premiums.

(4) Mr. Barrett joined Rubicon Project in March 2017 with an annual salary of $515,000.

(5) Represent $8,400 in 401(k) plan matching contributions, $135 in life insurance premiums and $20,005 in transportation reimbursement.

(6) Represents a $100,000 retention bonus that vested during the applicable year.

(7) Mr. Day's base salary was increased effective February 22, 2017 in connection with his appointment as permanent chief financial officer. This amount represents 10.2 months of base salary at an annual rate of $400,000 and 1.8 months of base salary at an annual rate of $295,625 and also includes $17,500 in supplemental compensation for service as interim chief financial officer for 2017 through his appointment as permanent chief financial officer on February 22, 2017.

(8) Represents $5,600 in 401(k) plan matching contributions and $135 in life insurance premiums.

(9) Represents a $150,000 retention bonus that vested during the applicable year.

(10) Mr. Soroca was not a named executive officer of Rubicon Project prior to 2019.

(11) Represents $6,094 in 401(k) plan matching contributions, $135 in life insurance premiums, and $1,453 in transit benefit plan matching contributions.

(12) Mr. Prusz was not a named executive officer of Rubicon Project prior to 2019.

(13) Represents $135 in life insurance premiums.

Grants of Plan-Based Awards - 2019

The following table provides information regarding the equity and non-equity incentive plan awards that were granted to Rubicon Project's named executive officers in 2019.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards			All Other Stock Awards: Number of Shares of Stock or Units (#)	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards ($/Sh)	Grant Date Fair Value of Stock and Option Awards[1]
		Threshold ($)	Target ($)	Maximum ($)				
Michael Barrett	—	257,500	515,000	772,500	—	—	—	—
	2/22/2019	—	—	—	350,000	—	—	1,799,000
	2/22/2019	—	—	—	—	300,000	5.14	883,827
David Day	—	130,000	260,000	390,000	—	—	—	—
	2/20/2019	—	—	—	188,000	—	—	924,960
	2/20/2019	—	—	—	—	161,000	4.92	454,019
Thomas Kershaw	—	137,500	275,000	412,500	—	—	—	—
	2/20/2019	—	—	—	209,000	—	—	1,028,280
	2/20/2019	—	—	—	—	179,000	4.92	504,779
Adam Soroca	—	112,500	225,000	337,500	—	—	—	—
	2/20/2019	—	—	—	157,000	—	—	772,440
	2/20/2019	—	—	—	—	134,000	4.92	377,879
Joseph Prusz	—	112,500	225,000	337,500	—	—	—	—
	2/20/2019	—	—	—	130,000	—	—	639,600
	2/20/2019	—	—	—	—	111,000	4.92	313,019

(1) In accordance with the rules of the SEC, these amounts represent the aggregate grant date fair value of the stock awards and option awards granted to the named executive officer during 2019 computed in accordance with ASC 718. Our equity awards valuation approach and related underlying assumptions for awards granted in 2019 are described in Note 2 "Organization and Summary of Significant Accounting Policies-Stock-Based Compensation" and Note 13 "Stock-Based Compensation" to the Consolidated Financial Statements in this Annual Report on Form 10-K (and the assumptions for awards granted prior to 2019 are set forth in the corresponding notes in the Annual Report on Form 10-K for the applicable fiscal year). The reported amounts do not necessarily reflect the value that may be realized by the executive with respect to the awards, which will depend on future changes in stock value and may be more or less than the amount shown.

Narrative Disclosure to Summary Compensation Table and Grants of Plan-Based Awards Table

Employment Agreement/Offer Letters

We have entered into an employment agreement with Mr. Barrett and offer letters with each of our other named executive officers. Each of our named executive officers serves on an at-will basis and the employment agreement and offer letters do not have a specified term. The employment agreement and offer letters provide for a base salary, eligibility to receive an annual performance bonus, and eligibility to participate in employee benefit or group insurance plans maintained from time to time by us. We are also party to agreements with the named executive officers providing for the severance benefits described below under “Potential Payments upon Termination or Change in Control.”

Non-Equity Incentive Plan Awards

For a description of the material terms of the non-equity incentive plan awards reported in the table above, see “Compensation Discussion and Analysis — Current Executive Compensation Program Elements—Annual Performance-Based Cash Awards” above.

Equity Incentive Plan Awards

Each of the equity incentive awards reported in the “Grants of Plan-Based Awards - 2019” table above was granted under, and is subject to, the terms of our 2014 Equity Incentive Plan, referred to as the 2014 Plan. The 2014 Plan is administered by the compensation committee. The compensation committee has authority to interpret the plan provisions and make all required determinations under the plan. Awards granted under the plan are generally not transferable other than by will or the laws of descent and distribution, except that the plan administrator may authorize certain transfers.

Generally, and subject to limited exceptions set forth in the 2014 Plan, if we undergo certain corporate transactions such as a merger, consolidation or similar transaction, or a sale of all or substantially all of our assets or securities, the plan administrator has the discretion to determine how outstanding equity awards will be treated in connection with such corporate transaction (including discretion to provide for accelerated vesting of such awards in connection with the transaction), and if no affirmative determination is made, all outstanding equity awards will fully vest and options will be fully exercisable, and will terminate or be terminated in connection with such corporate transaction, unless the awards are to be assumed or substituted by the successor corporation. The named executive officers are also party to agreements that provide for acceleration of their equity awards in connection with certain terminations of their employment as described below under “Potential Payments upon Termination or Change in Control.”

The equity awards granted to our named executive officers in 2019 were in the form of stock options and restricted stock units, referred to as RSUs. The vesting requirements applicable to each equity award granted to the named executive officers are described in the footnotes to the table below and in the section above entitled “Compensation Discussion and Analysis.” RSUs are payable on vesting in an equal number of shares of our common stock. Stock options represent the right to receive a share of our common stock upon exercise of the option and payment of the exercise price. The named executive officers do not have the right to vote the shares subject to the awards and do not have any dividend rights with respect to the RSUs or stock options.

Outstanding Equity Awards as of December 31, 2019

The following table provides information regarding outstanding equity awards made to our named executive officers as of December 31, 2019.

		Option Awards			Stock Awards		
Name	**Grant Date**	**Number of Securities Underlying Unexercised Options (#) Exercisable**	**Number of Securities Underlying Unexercised Options (#) Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**	**Number of Shares or Units of Stock that Have Not Vested (#)**	**Market Value of Shares or Units of Stock that Have Not Vested ($)(1)**
Michael Barrett	2/22/19	—	300,000 [2]	5.14	2/22/29		
	3/15/18	137,500	162,500 [3]	1.97	3/15/28		
	3/17/17	471,735	214,425 [4]	5.80	3/17/27		
	2/22/19					350,000 [5]	2,856,000
	3/15/18					98,438 [6]	803,254
	3/15/18					87,500 [7]	714,000
	3/17/17					389,279 [8]	3,176,517
David Day	2/20/19	—	161,000 [2]	4.92	2/20/29		
	3/15/18	19,166	22,651 [3]	1.97	3/15/28		
	3/15/17	22,784	9,383 [9]	6.06	3/15/27		
	5/19/15	9,300	—	16.75	5/19/25		
	4/24/13	140,000	—	7.80	4/24/23		
	2/20/19					188,000 [10]	1,534,080
	3/15/18					27,442 [10]	223,927
	1/15/18					50,000 [7]	408,000
	3/15/17					11,728 [12]	95,701
	1/31/16					1,875 [13]	15,300
Thomas Kershaw	2/20/19	—	179,000 [2]	4.92	2/20/29		
	3/15/18	16,250	46,945 [3]	1.97	3/15/28		
	3/15/17	47,222	19,445 [9]	6.06	3/15/27		
	11/15/16	39,583	10,417 [14]	7.72	11/15/26		
	2/20/19					209,000 [15]	1,705,440
	3/15/18					56,875 [16]	464,100
	1/15/18					100,000 [7]	816,000
	3/15/17					24,306 [17]	198,337
	11/15/16					31,250 [18]	255,000
Adam Soroca	2/20/19	—	134,000 [2]	4.92	2/20/29		
	3/15/18	19,309	22,821 [3]	1.97	3/15/28		
	2/20/19					157,000 [19]	1,281,120
	3/15/18					27,648 [20]	225,608
	1/15/18					100,000 [7]	816,000
	7/14/17					15,313 [21]	124,954
Joseph Prusz	2/20/19	—	111,000 [2]	4.92	2/20/29		
	3/15/18	19,309	22,821 [3]	1.97	3/15/28		
	3/15/17	12,750	5,250 [9]	6.06	3/15/27		
	5/19/15	6,500	—	16.75	5/19/25		
	12/13/12	25,000	—	4.70	12/13/22		
	2/20/19					130,000 [22]	1,060,800
	3/15/18					16,250 [23]	132,600
	3/15/18					27,648 [24]	225,608
	1/15/18					50,000 [7]	408,000
	3/15/17					6,563 [25]	53,554
	1/31/16					1,875 [26]	15,300

(1)In accordance with the rules of the SEC, the values represent the product of the number of shares that have not vested and $8.16, which was the closing market price of our common stock on December 31, 2019. The reported amount does not necessarily reflect the value that may be realized by the individual because the awards vest over a specified period of time from the date of grant contingent upon continued employment, and the actual amount received upon sale of shares will depend upon the fair market value of the shares at the times they are sold.

(2)These stock options vest (or vested) with respect to 25% of the underlying shares on February 1, 2020 and with respect to the remaining 75% of the underlying shares in equal monthly installments over the following 36 months.

(3)These stock options vest (or vested) with respect to 25% of the underlying shares on February 1, 2019 and with respect to the remaining 75% of the underlying shares in equal monthly installments over the following 36 months.

(4)These stock options vest (or vested) with respect to 25% of the underlying shares on March 17, 2018 and with respect to the remaining 75% of the underlying shares in equal monthly installments over the following 36 months.

(5)These RSUs vest with respect to 109,375 of the underlying shares on May 15, 2020; with respect to 43,750 shares on each November 15 and May 15 thereafter until November 15, 2022, and with respect to 21,875 of such shares on May 15, 2023.

(6)These RSUs vest with respect to 21,875 of the underlying shares on each May 15 and November 15 until November 15, 2021; and with respect to 10,938 of such shares on May 15, 2022.

(7)These RSUs vested on January 15, 2020.

(8)These RSUs vest with respect to 137,392 of the underlying shares on each May 15 and November 15 through November 15, 2020 and with respect to 114,495 of such shares on May 15, 2021.

(9)These stock options vest (or vested) with respect to 25% of the underlying shares on February 1, 2018 and with respect to the remaining 75% of the underlying shares in equal monthly installments over the following 36 months.

(10)These RSUs vest with respect to 58,750 of the underlying shares on May 15, 2020, with respect to 23,500 shares on each November 15 and May 15 hereafter until November 15, 2022, and with respect to 11,750 of such shares on May 15, 2023.

(11)These RSUs vest with respect to 6,098 of the underlying shares on each May 15 and November 15 until November 15, 2021; and with respect to 3,050 of such shares on May 15, 2022.

(12)These RSUs vest with respect to 4,691 of the underlying shares on each May 15 and November 15 through November 15, 2020 and with respect to 2,346 of such shares on May 15, 2021.

(13)These shares of restrict stock vest on May 15, 2020.

(14)These stock options vest (or vested) with respect to 25% of the underlying shares on October 3, 2017 and with respect to the remaining 75% of the underlying shares in equal monthly installments over the following 36 months.

(15)These RSUs vest with respect to 65,312 of the underlying shares on May 15, 2020, with respect to 26,125 shares on each November 15 and May 15 hereafter until November 15, 2022, and with respect to 13,063 of such shares on May 15, 2023.

(16)These RSUs vest with respect to 12,639 of the underlying shares on each May 15 and November 15 until November 15, 2021; and with respect to 6,319 of such shares on May 15, 2022.

(17)These RSUs vest with respect to 9,722 of the underlying shares on each May 15 and November 15 through November 15, 2020; and with respect to 4,862 of such shares on May 15, 2021.

(18)These RSUs vest with respect to 15,625 of the underlying shares on each of May 15, 2020 and November 15, 2020.

(19)These RSUs vest with respect to 49,062 of the underlying shares on May 15, 2020, with respect to 19,625 shares on each November 15 and May 15 hereafter until November 15, 2022, and with respect to 9,813 of such shares on May 15, 2023.

(20)These RSUs vest with respect to 6,144 of the underlying shares on each May 15 and November 15 until November 15, 2021, and with respect to 3,072 of such shares on May 15, 2022.

(21) These RSUs vest with respect to 4,375 of the underlying shares on each May 15 and November 15 through May 15, 2021, and with respect to 2,188 of such shares on November 15, 2021.

(22) These RSUs vest with respect to 40,625 of the underlying shares on May 15, 2020, with respect to 16,250 shares on each November 15 and May 15 hereafter until November 15, 2022, and with respect to 8,125 of such shares on May 15, 2023.

(23) These RSUs vest with respect to 3,750 of the underlying shares on each May 15 and November 15 until November 15, 2021, and with respect to 1,250 of such shares on May 15, 2022.

(24) These RSUs vest with respect to 6,144 of the underlying shares on each May 15 and November 15 until November 15, 2021, and with respect to 3,072 of such shares on May 15, 2022.

(25) These RSUs vest with respect to 2,625 of the underlying shares on each of May 15, 2020 and November 15, 2020, and with respect to 1,313 of such shares on May 15, 2022.

(26) These RSUs vest on May 15, 2020.

Option Exercises and Stock Vested - 2019

The following table provides information regarding stock options that were exercised by our named executive officers during 2019 and the restricted stock unit awards granted to our named executive officers that vested during 2019.

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)(1)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)(2)
Michael Barrett	—	—	438,846	2,867,605
David Day	—	—	89,795	480,006
Thomas Kershaw	23,472	$ 115,907	194,930	1,073,179
Adam Soroca	—	—	130,254	613,205
Joseph Prusz	—	—	102,931	568,537

(1) The value realized upon the exercise of a stock option is calculated by multiplying (i) the number of shares of our common stock to which the exercise of the option related, by (ii) the difference between the per-share closing price of our common stock on the date the stock option was exercised and the per-share exercise price of the options.

(2) The value realized upon the vesting of a stock award is calculated by multiplying (i) the number of shares of our common stock that vested, by (ii) the per-share closing price of our common stock on the vesting date. Represents the gross value realized prior to any applicable tax withholding.

Potential Payments upon Termination or Change in Control

The following section describes the benefits that may become payable to our named executive officers in connection with a termination of their employment with us and/or a change in control of Rubicon Project. Due to the number of factors that affect the nature and amount of any benefits provided upon the events discussed below, any actual amounts paid or distributed may be different from the amounts presented below. Factors that could affect these amounts include the timing during the year of any such event.

We are a party to an Executive Severance and Vesting Acceleration Agreement, referred to as the severance agreement, with each of our named executive officers. These agreements provide that if we terminate the employment of any of these executives without “cause”, if any of these executives resigns for “good reason”, or if the executive’s employment terminates due to the executive’s death or “disability” (as such terms are defined in the severance agreement), and prior to and not in connection with the consummation of a “sale transaction” (as such term is defined in the severance agreement), the executive will be entitled to receive continuation of his then-current base salary for a specified period (12 months for Messrs. Barrett and Day, 6 months for Messrs. Kershaw and Soroca, and 3 months for Mr. Prusz), a pro-rata target bonus for the year of termination based upon the portion of the year worked and net of bonus amounts previously paid for the year, continuation of group health insurance coverage or reimbursement of premiums for each executive and his respective dependents for a specified period (12 months for Mr. Barrett, 6 months for Messrs. Day and Soroca, and 3 months for Messrs. Kershaw and Prusz), and accelerated vesting of equity awards for a specified period (12 months for Messrs. Barrett and Day, 6 months for Messrs. Kershaw and Soroca, and 3 months for Mr. Prusz).

If we terminate the employment of any of these executives without cause, if any of them resigns for good reason or if any the executive’s employment terminates due to the executive’s death or disability, in any case in connection with or following a change in control of Rubicon Project (within thirteen months of the change in control for Mr. Barrett), the benefits described above will be increased to include for Messrs. Barrett and Day, additional cash severance equal to one year’s target bonus (paid over 12 months); for Messrs. Kershaw and Prusz, a longer period of continuation of base salary equal to 12 months for Mr. Kershaw and 6 months for Mr. Prusz; for all the executives, full acceleration of vesting of all equity awards; and for all executives, except Mr. Soroca, a longer period of group health insurance coverage or reimbursement of premiums (12 months for Messrs. Barrett and Day and 6 months for Messrs. Kershaw and Prusz). As noted above in the Compensation Discussion and Analysis section, in December 2019, in connection with the approval of the merger agreement between us and Telaria, our board approved the modification of the severance agreements to provide that if the executive officer is terminated in connection with or within 13 months following the closing of the merger between us and Telaria, the executive officer will be entitled to the enhanced change in control severance benefits described in this paragraph.

All severance benefits are conditioned upon these executives entering into a release of claims with us and abiding by the restrictive covenants contained in our standard confidentiality agreement (which includes an indefinite confidentiality covenant and one-year post-termination non-solicitation of employees covenant). The severance agreements also provide that if the payments or benefits made to the executive in connection with a change in control of Rubicon Project would result in an excise tax under Section 280G and 4999 of the U.S. Internal Revenue Code, such payments or benefits will be reduced if and to the extent such a reduction would result in a greater after-tax benefit for the executive.

The following tables present our estimates of the value of the payments and benefits that each of the named executive officers would have been entitled to receive (1) had his employment been terminated by us without “cause,” by the executive for “good reason”, or due to the executive’s death or “disability” on December 31, 2019 and (2) had both such a termination of the executive’s employment and a change in control of Rubicon Project occurred on that date. The actual amounts that would be paid upon a named executive officer’s termination of employment and/or a change in control can only be determined at the time of such event.

Severance Benefits (No Change in Control)

Name	Cash Severance ($)(1)	Pro-Rata Bonus ($)(2)	Continued Health Insurance Coverage ($)(3)	Value of Accelerated Vesting of Equity Awards ($)(4)	Total ($)
Michael Barrett	515,000	309,000	32,079	6,194,535	7,050,614
David Day	400,000	156,000	16,040	1,652,694	2,224,734
Thomas Kershaw	212,500	165,000	8,020	2,014,388	2,399,908
Adam Soroca	162,500	135,000	16,040	1,525,473	1,839,013
Joseph Prusz	81,250	135,000	8,020	912,751	1,137,021

(1) The cash severance amount included in the table above is equal to 12 months base salary (in the case of Messrs. Barrett and Day), 6 months base salary (in the case of Messrs. Kershaw and Soroca) and 3 months base salary (in the case of Mr. Prusz), which will be paid in equal installments in accordance Rubicon Project's normal payroll schedule beginning on or after the 60th day following the termination date.

(2) The pro-rata bonus amount included in the table above is equal to the executive's target bonus for the 2019 fiscal year, reduced by the mid-year bonus amounts which were previously paid to the executive for 2019. Such pro-rata bonus amount will be paid in a lump sum on or after the 60th day following the termination date.

(3) The executive is entitled to continuation of group health insurance coverage or reimbursement of premiums for the executive and his dependents for a specified period (12 months for Mr. Barrett, 6 months for Messrs. Day and Soroca, and 3 months for Messrs. Kershaw and Prusz).

(4) The equity acceleration amount included in the table represents the value of the equity awards that would vest in connection with the termination of the executive's employment. Messrs. Barrett and Day would be credited with an additional 12 months vesting, Messrs. Kershaw and Soroca would be credited with an additional 6 months vesting and Mr. Prusz would be credited with an additional 3 months vesting (or 6 months in the case of a termination due to Mr. Prusz's death or disability). The value of the accelerated options and RSUs presented in the table is calculated based on our closing stock price on December 31, 2019 of $8.16, and, in the case of the accelerated options, less the exercise price of the options.

Severance Benefits (Change in Control)

Name	Cash Severance ($)(1)	Pro-Rata Bonus ($)(2)	Continued Health Insurance Coverage ($)(3)	Value of Accelerated Vesting of Equity Awards ($)(4)	Total ($)
Michael Barrett	1,030,000	309,000	32,079	9,967,689	11,338,768
David Day	660,000	156,000	32,079	2,958,561	3,806,640
Thomas Kershaw	425,000	165,000	16,040	4,354,845	4,960,885
Adam Soroca	162,500	135,000	16,040	3,023,104	3,336,644
Joseph Prusz	162,500	135,000	16,040	2,407,789	2,721,329

(1) The cash severance amount included in the table above is equal to 12 months base salary plus target bonus (in the case of Messrs. Barrett and Day), 12 months base salary (in the case of Mr. Kershaw) or 6 months base salary (in the case of Messrs. Soroca and Prusz), which will be paid in equal installments in accordance with our normal payroll schedule beginning on or after the 60th day following the termination date.

(2) The pro-rata bonus amount included in the table above is equal to the executive's target bonus for the 2019 fiscal year, reduced by the mid-year bonus amounts which were previously paid to the executive for 2019. Such pro-rata bonus amount will be paid in a lump sum on or after the 60th day following the termination date.

(3) The executive is entitled to continuation of group health insurance coverage or reimbursement of premiums for the executive and his dependents for a specified period (12 months for Messrs. Barrett and Day, and 6 months for Messrs. Kershaw, Soroca and Prusz).

(4) The equity acceleration amount included in the table represents the value of the full acceleration of the executive's then-unvested equity awards. The value of the accelerated options and RSUs presented in the table is calculated based on our closing stock price on December 31, 2019 of $8.16, and, in the case of the accelerated options, less the exercise price of the options.

CEO Pay-Ratio Disclosure

Pursuant to the Exchange Act, we are required to disclose the ratio of the total annual compensation of our President and CEO, Michael Barrett, to the median of the total annual compensation of all of our employees (excluding our CEO). Based on SEC rules for this disclosure and applying the methodology described above, we have determined that our CEO's total compensation for 2019 was $3,813,065, and the median of the total 2019 compensation of all of our employees (excluding our CEO) was $134,169. Accordingly, we estimate the ratio of our CEO's total compensation for 2019 to the median of the total 2019 compensation of all of our employees (excluding our CEO) to be 28.4 to 1.

We identified the median employee by taking into account the annualized total cash compensation for 2019 for all individuals, excluding our CEO, who were employed by us or one of our affiliates on December 31, 2019. We included all employees, whether employed on a full-time or part-time basis. We did not make any assumptions, adjustments or estimates with respect to their total cash compensation for 2019, but we did annualize the compensation for any employees who were not employed by us for all of 2019. We believe total cash compensation for all employees is an appropriate measure because we do not distribute annual equity awards to all employees.

Once the median employee was identified as described above, that employee's total annual compensation for 2019 was determined using the same rules that apply to reporting the compensation of our named executive officers (including our CEO) in the "Total" column of the Summary Compensation Table. The total compensation amounts included in the first paragraph of this pay-ratio disclosure were determined based on that methodology.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

EQUITY COMPENSATION PLAN INFORMATION

The following table provides information as of December 31, 2019 with respect to the shares of our common stock that may be issued under our existing equity compensation plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights		Weighted-average Exercise Price of Outstanding Options and Rights[4]	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))	
	(a)		(b)	(c)	
Equity Compensation Plans Approved by Stockholders[1]	11,023,230		$7.38	4,823.535	(5)
Equity Compensation Plans Not Approved by Stockholders[2]	1,315.412		$4.66	848.725	(6)
Total	12,338,642	(3)	$6.82	5,672,260	

(1) Consists of our 2007 Stock Incentive Plan, 2014 Equity Incentive Plan, and 2014 Employee Stock Purchase Plan.

(2) Consists of our 2014 Inducement Grant Equity Incentive Plan, the iSocket, Inc. 2009 Equity Incentive Plan, the Chango Inc. 2009 Stock Option Plan, and the nToggle, Inc. 2014 Equity Incentive Plan, each described below.

(3) Represents 4,262,059 shares to be issued upon exercise of outstanding options and 8,076,583 shares subject to outstanding unvested restricted stock units. Does not include 1,875 unvested restricted stock awards, which are included in outstanding shares.

(4) Represents the weighted-average exercise price of outstanding options. Shares subject to outstanding unvested restricted stock units become issuable upon vesting without any exercise price or other cash consideration required.

(5) Consists of 2,931,722 shares that were available for future issuance under the 2014 Equity Incentive Plan and 1,891,813 shares that were available for future issuance under the 2014 Employee Stock Purchase Plan as of December 31, 2019. On January 1, 2020, an additional 2,694,390 shares became available for future issuance under the 2014 Equity Incentive Plan pursuant to the plan's evergreen provisions. No future awards will be made under our 2007 Stock Incentive Plan.

(6) Shares available for future issuance under the 2014 Inducement Grant Equity Incentive Plan as of December 31, 2019.

Our 2014 Inducement Grant Equity Incentive Plan was adopted by our board in November 2014 for use in making employment inducement awards pursuant to New York Stock Exchange Rule 303A.08. A total of 1,000,000 shares of our common stock was initially reserved for granting stock options, restricted stock, restricted stock units, stock appreciation rights, performance stock awards, and other awards under our 2014 Inducement Grant Equity Incentive Plan. Our board or the compensation committee may increase the number of shares reserved for granting awards under this plan in its discretion, from time to time. The share reserve under this plan was increased by 1,700,000 shares in March 2017 to provide shares underlying the initial equity awards granted to Mr. Barrett in connection with his hire as our President and Chief Executive Officer, which were made as inducement awards. Our board and the compensation committee have discretion to determine the terms of awards granted under our 2014 Inducement Grant Equity Incentive Plan, including vesting, forfeiture and acceleration. The exercise price for stock options granted under our 2014 Inducement Grant Equity Incentive Plan will not be less than the fair market value of our common stock on the date of grant. Restricted stock units may be granted in exchange for any form of legal consideration acceptable to our board and restricted stock may be granted in exchange for the payment of a purchase price, past or future services to our company or any other form of legal consideration. In connection with our acquisition of iSocket, Inc. in November 2014, we issued 132,000 stock options under our 2014 Inducement Grant Equity Incentive Plan with an exercise price of $14.62 per share and a ten-year term, and vesting over approximately four years, with 25% of the total shares granted vesting on the first anniversary of the date of the acquisition of iSocket, Inc. and the balance vesting in 36 equal monthly installments thereafter. In connection with the acquisition of iSocket, we also issued 126,050 restricted stock unit awards under the 2014 Inducement Grant Equity Incentive Plan, vesting over approximately 54 months. In connection with our acquisition of nToggle, Inc. in July 2014, we issued an aggregate of 174,117 restricted stock units under the 2014 Inducement Grant Equity Incentive Plan, vesting over approximately four years.

We assumed the iSocket, Inc. 2009 Equity Incentive Plan in connection with our acquisition of iSocket, Inc. in November 2014. In connection with the acquisition, and giving effect to the exchange ratio used to determine the number of shares we issued to pay the purchase price in the acquisition, we assumed a total of 318,685 outstanding stock options previously granted under the iSocket, Inc. 2009 Equity Incentive Plan, with a weighted-average exercise price per share of $4.31, remaining terms ranging to September 2024 and remaining vesting periods ranging to September 2018. In addition, 95,080 shares of common stock remaining available under the iSocket 2009 Equity Incentive Plan were added to the pool of available shares under our 2014 Equity Incentive Plan, and can be used for awards during the period when they would have been available for grant under the iSocket, Inc. 2009 Equity Incentive Plan to persons who were not employed by the company or its affiliates immediately before the iSocket acquisition, and otherwise in accordance with the New York Stock Exchange Rule 303A.08. No further awards will be made under the iSocket 2009 Equity Incentive Plan.

We assumed the Chango 2009 Stock Option Plan in connection with our acquisition of Chango in April 2015. In connection with the acquisition, and giving effect to the exchange ratio used to determine the number of shares we issued to pay the purchase price in the acquisition, we assumed a total of 428,798 outstanding stock options previously granted under the Chango 2009 Stock Option Plan, with a weighted-average exercise price per share of $4.43, remaining terms ranging to March 2020 and remaining vesting periods ranging to March 2019. In addition, 247,686 shares of common stock remaining available under the Chango 2009 Stock Option Plan were added to the pool of available shares under our 2014 Equity Incentive Plan, and can be used for awards during the period when they would have been available for grant under the Chango 2009 Stock Option Plan to persons who were not employed by the company or its affiliates immediately before the Chango acquisition, and otherwise in accordance with the New York Stock Exchange Rule 303A.08. No further awards will be made under the Chango 2009 Stock Option Plan.

We assumed the nToggle, Inc. 2014 Equity Incentive Plan in connection with our acquisition of nToggle, Inc. in July 2017. In connection with the acquisition, and giving effect to the exchange ratio used to determine the number of Rubicon Project options we issued in exchange for outstanding nToggle options, we assumed a total of 432,482 options previously granted under the nToggle, Inc. 2014 Equity Incentive Plan, with a weighted-average exercise price per share of $0.51, remaining terms ranging to April 2027 and remaining vesting periods ranging to April 2021. We also assumed 77,499 shares of unvested restricted stock with a remaining vesting period to October 2019. In addition, 480,673 shares of common stock remaining available under the nToggle, Inc. 2014 Equity Incentive Plan were added to the pool of available shares under our 2014 Equity Incentive Plan, and can be used for awards during the period when they would have been available for grant under the nToggle 2014 Equity Incentive Plan to persons who were not employed by the company or its affiliates immediately before the nToggle acquisition, and otherwise in accordance with the New York Stock Exchange Rule 303A.08. No Further awards will be made under the nToggle 2014 Equity Incentive Plan.

COMMON STOCK OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table presents information regarding beneficial ownership of Rubicon Project's equity interests as of February 23, 2020 by: (1) each stockholder or group of stockholders known by Rubicon Project to be the beneficial owner of more than 5% of Rubicon Project common stock; (2) each of Rubicon Project's directors; (3) each of Rubicon Project's named executive officers; and (4) all of Rubicon Project's current directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC, and thus represents voting or investment power with respect to Rubicon Project securities. Unless otherwise indicated below, to Rubicon Project's knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares beneficially owned, subject to community property laws where applicable. Percentage ownership of Rubicon Project common stock is based on 55,040,645 shares of our common stock outstanding as of February 23, 2020.

Name and Address of Beneficial Owner(1)	Common Stock(2)	Percent
5% Stockholders		
BlackRock,Inc.(3)	3,481,724	6.3 %
Named Executive Officers		
Michael Barrett(4)	1,558,696	2.8 %
Thomas Kershaw(5)	362,678	*
David Day(6)	253,076	*
Joe Prusz(7)	245,916	*
Adam Soroca(8)	193,314	*
Directors and Director Nominees		
Frank Addante(9)	1,324,971	2.4 %
Robert F. Spillane(10)	133,424	*
Robert J. Frankenberg(11)	133,424	*
Lisa L. Troe(12)	131,274	*
Lewis W. Coleman(13)	101,774	*
Sarah Harden(14)	—	—
All Current Executive Officers and Directors as a Group (14 persons)(15)	4,614,339	8.1 %

*Indicates ownership of less than one percent.

(1) Except as noted, the address of the named beneficial owner is c/o The Rubicon Project, Inc., 12181 Bluff Creek Drive, Suite 400, Los Angeles, California 90094.

(2) The number of shares beneficially owned by each stockholder is determined under rules promulgated by the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes shares (i) as to which the individual or entity has sole or shared voting power or investment power, and (ii) the individual owns or has the right to acquire beneficial ownership of within 60 days of February 23, 2020. Shares not owned but which the individual has the right to acquire beneficial ownership within 60 days of February 23, 2020 are included in the numerator and denominator for that specific individual in calculating that individual's beneficial ownership percentage, but not deemed outstanding in the aggregate for computing the ownership percentage for others.

(3) Beneficial ownership information is based solely upon a Schedule 13G filed with the SEC on February 7, 2020 by BlackRock, Inc. According to the Schedule 13G, as of December 31, 2019, BlackRock has sole voting power with respect to 3,404,728 shares and sole dispositive power with respect to 3,481,724 shares. The address for BlackRock, Inc. is 55 East 52nd Street, New York, NY 10055.

(4) Includes 778,915 shares issuable pursuant to outstanding stock options exercisable by Mr. Barrett within 60 days of February 23, 2020, of which 725,325 were fully vested as of such date. Excludes options to purchase 507,245 shares of common stock and 837,717 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020. Also includes 7,313 shares owned by Ichabod Farm Ventures LLC, of which Mr. Barrett is the beneficial owner.

(5) Includes 172,208 shares issuable pursuant to outstanding stock options exercisable by Mr. Kershaw within 60 days of February 23, 2020, of which 156,277 were fully vested as of such date. Excludes options to purchase 186,654 shares of common stock and 321,431 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(6) Includes 244,373 shares issuable pursuant to outstanding stock options exercisable by Mr. Day within 60 days of February 23, 2020, of which 234,583 were fully vested as of such date, and 1,875 shares of unvested time-based restricted stock. Excludes options to purchase 139,911 shares of common stock and 227,170 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(7) Includes 100,945 shares issuable pursuant to outstanding stock options exercisable by Mr. Prusz within 60 days of February 23, 2020, of which 93,815 were fully vested as of such date. Excludes options to purchase 101,685 shares of common stock and 182,336 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(8) Includes 61,903 shares issuable pursuant to outstanding stock options exercisable by Mr. Soroca within 60 days of February 23, 2020, of which 54,565 were fully vested as of such date. Excludes options to purchase 114,227 shares of common stock and 199,961 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(9) Includes 183,464 shares issuable pursuant to outstanding stock options exercisable by Mr. Addante within 60 days of February 23, 2020, all of which were fully vested as of such date. Also includes 1,250 shares owned by his spouse. Excludes 19,562 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(10) Includes 86,500 shares issuable pursuant to outstanding stock options exercisable by Mr. Spillane within 60 days of February 23, 20200, all of which were fully vested as of such date. Excludes 19,562 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(11) Includes 86,500 shares issuable pursuant to outstanding stock options exercisable by Mr. Frankenberg within 60 days of February 23, 2020, all of which were fully vested as of such date. Excludes 19,562 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(12) Includes 86,500 shares issuable pursuant to stock options exercisable by Ms. Troe within 60 days of February 23, 2020, all of which were fully vested as of such date. Excludes 19,562 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(13) Includes 65,633 shares issuable pursuant to stock options exercisable by Mr. Coleman within 60 days of February 23, 2020, all of which were fully vested as of such date. Excludes 19,562 restricted stock units that are unvested and unexercisable within 60 days of February 23, 2020.

(14) Excludes 72,508 restricted stock units held by Ms. Harden that are unvested and unexercisable within 60 days of February 23, 2020.

(15) Includes 1,947,273 shares issuable pursuant to outstanding stock options exercisable within 60 days of February 23, 2020, of which 1,849,162 were fully vested as of such date and 1,875 shares of unvested time-based restricted stock. Excludes options to purchase 1,123,390 shares of common stock that are unvested and unexercisable within 60 days of February 23, 2020 and 2,153,584 restricted stock units that are unvested within 60 days of February 23, 2020.

Item 13. Certain Relationships and Related Transactions, and Director Independence

There are no transactions since January 1, 2019 to which the company has been a participant, in which the amount involved in the transaction exceeded or will exceed $120,000, and in which any of our directors, executive officers or beneficial holders of more than 5% of our capital stock, or their family members, had or will have a direct or indirect material interest. Compensation arrangements with our directors and officers are described under “Director Compensation” and “Executive Compensation.”

Indemnification Agreements

We have entered into indemnification agreements with each of our current directors, executive officers and certain other officers. The indemnification agreements and our amended and restated certificate of incorporation and amended and restated bylaws require us to indemnify our directors and officers to the fullest extent permitted by Delaware law.

Procedures for Approval of Related Person Transactions

We have adopted a formal written policy providing that related person transactions may be consummated or continued only if approved or ratified by the audit committee. The policy defines “related person transactions” as transactions in which we are or will be a participant, the aggregate amount involved since the beginning of the company’s last fiscal year exceeds or may be expected to exceed $100,000, and a related person has or will have a direct or indirect interest. For purposes of this policy, a related person is a person who is or was since the beginning of our last fiscal year a director, nominee for director, or executive officer; a greater than 5% beneficial owner of our common stock; or an immediate family member of any such person. The policy provides that our legal department will review each proposed related person transaction and prepare a description for the audit committee, which will review the proposed transaction and consider such factors, as it deems appropriate, including at least the following factors:

- the terms of the transaction as compared to terms available for a similar transaction with a non-related party;
- the extent of the related person's interest in the transaction;
- the disclosure requirements associated with the transaction;
- the effect of the transaction upon the independence of any director involved;
- the effect of the transaction upon the ability of the related person to fulfill his or her duties to the company; and
- the appearance of the transaction.

DIRECTOR INDEPENDENCE

Rubicon Project is listed on the New York Stock Exchange, which requires that a majority of a listed company's board of directors be independent. In addition, the rules of the New York Stock Exchange require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating/corporate governance committees be independent. Under the rules of the New York Stock Exchange, a director will only qualify as an "independent director" if the board of directors affirmatively determines that the director has no material relationship with the company.

Our board of directors has undertaken a review of the independence of each director and considered whether each director has any material relationships with us. As a result of this review, our board of directors has determined that Mses. Troe and Harden and Messrs. Coleman, Frankenberg, and Spillane are independent directors as defined under the applicable rules and regulations of the SEC and the listing requirements and rules of the New York Stock Exchange for purposes of service on the board and its committees.

Audit committee members must also satisfy the additional, heightened independence criteria set forth in Rule 10A-3 under the Exchange Act, which provides that a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (i) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries; or (ii) be an affiliated person of the listed company or any of its subsidiaries. Our board of directors has determined that each of our audit committee members satisfies these heightened independence criteria.

Members of our compensation committee must also satisfy the additional, heightened independence criteria set forth under Rule 10C-1 of the Exchange Act and under the rules and regulations of the New York Stock Exchange. In determining independence for these purposes, a listed company's board of directors must consider: (i) the source of all compensation paid by the company to a director serving on the compensation committee, other than compensation for serving on the board, including any consulting, advisory or other fees; and (ii) whether the director is an affiliated person of the listed company, any of its subsidiaries or any affiliate of a subsidiary. Our board of directors has determined that each of our compensation committee members satisfies these heightened independence criteria.

Item 14. Principal Accountant Fees and Services

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FEES

The aggregate fees billed for audit and other services provided in the last two fiscal years by Deloitte are as follows:

Fee Category	2019	2018
Audit Fees[(1)]	$ 932,775	$ 812,516
Audit-Related Fees[(2)]	325,289	—
Tax Fees[(3)]	—	—
All Other Fees[(4)]	3,790	3,790
Total	$ 1,261,854	$ 816,306

The aggregate fees billed for audit and other services provided in the last two fiscal years by PwC are as follows:

Fee Category	2019	2018
Audit Fees[(1)]	$ —	$ 292,200
Audit-Related Fees[(2)]	—	44,000
Tax Fees[(3)]	—	—
All Other Fees[(4)]	—	4,543
Total	$ —	$ 340,743

(1) Audit Fees cover professional services rendered for the audit of our annual financial statements and review of financial statements included in our quarterly reports on Form 10-Q, and services normally provided by the accountant in connection with statutory and regulatory filings or engagements.
(2) Audit-Related Fees cover assurance and related services that are reasonably related to the performance of audit or review of our financial statements and not reported as Audit Fees.
(3) Tax Fees cover tax compliance, advice, and planning services and consisted primarily of review of consolidated federal income tax returns and foreign tax issues.
(4) All Other Fees in 2019 and 2018 related to license fees for accounting research software.

Pre-Approval Policy and Procedures

The audit committee has adopted policies and procedures relating to the pre-approval of all audit and non-audit services that are to be provided by our independent registered public accounting firm. The audit committee will not approve non-audit services that the independent registered public accounting firm is not permitted to perform under the rules of the SEC and Public Company Accounting Oversight Board.

On an annual basis, the independent registered public accounting firm will propose to the audit committee an audit plan and engagement letter describing the services the auditor expects to provide and related fees. The final engagement letter and fees agreed by Rubicon Project acting pursuant to the direction of the audit committee, and all of the services covered by the final engagement letter, will be considered pre-approved by the audit committee.

The audit committee or the Chair of the audit committee acting by delegated authority will approve, if necessary, any changes in terms, conditions and fees under the engagement letter resulting from changes in the audit scope, company structure or other matters.

The audit committee has delegated to the Chair of the audit committee the authority to approve on a case-by-case basis any audit or non-audit services, in amounts up to $200,000 (1) per engagement, (2) per additional category of services, or (3) in excess of pre-approved amounts for the specified service. The Chair then reports any services so approved to the audit committee at its next regularly scheduled meeting.

All services rendered for fiscal 2019 and fiscal 2018 were pre-approved by the audit committee in accordance with the audit committee's pre-approval policies and procedures described above.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) We have filed the following documents as part of this Annual Report on Form 10-K:

1. Consolidated Financial Statements

2. Financial Statement Schedules

No financial statement schedules are provided because the information called for is not required or is shown in the financial statements of the notes thereto.

3. Exhibits

EXHIBIT INDEX

Number	Description
2.1	Agreement and Plan of Merger, dated July 11, 2017, by and among the Registrant, Caviar Acquisition Corp., nToggle, Inc., Shareholder Representative Services LLC, solely in its capacity as the initial Holder Representative thereunder, and certain persons delivering joinder agreements therewith (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the Commission on July 17, 2017).†
2.2	Agreement and Plan of Merger, dated as of December 19, 2019, by and among The Rubicon Project, Inc., Madison Merger Corp., and Telaria, Inc. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the Commission on December 20, 2019).†
3.1	Sixth Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on May 15, 2014).
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016).
4.1*	Description of Securities
10.1+	The Rubicon Project, Inc. 2007 Stock Incentive Plan and forms of agreements for employees thereunder (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1/A filed with the Commission on March 20, 2014).
10.2+	The Rubicon Project, Inc. 2014 Equity Incentive Plan, as amended and restated (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016).
10.3+	Form of Stock Option Grant Notice and Award Agreement for Employees under The Rubicon Project, Inc. 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.2(B) to the Registrant's Annual Report on Form 10-K filed with the Commission on March 6, 2015).
10.4+	Form of Restricted Stock Unit Grant Notice and Award Agreement for Employees under The Rubicon Project, Inc. 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.2(C) to the Registrant's Annual Report on Form 10-K filed with the Commission on March 6, 2015).
10.5+	Form of Stock Option Grant Notice and Award Agreement for Non-Employee Directors under The Rubicon Project, Inc. 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.2(D) to the Registrant's Annual Report on Form 10-K filed with the Commission on March 6, 2015).

10.6+	Form of Restricted Stock Unit Grant Notice and Award Agreement for Non-Employee Directors under The Rubicon Project, Inc. 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.2(E) to the Registrant's Annual Report on Form 10-K filed with the Commission on March 6, 2015).
10.7+	Form Market Stock Award Notice and Award Agreement under The Rubicon Project, Inc. 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.7 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 4, 2016).
10.8+	The Rubicon Project, Inc. 2014 Employee Stock Purchase Plan, as amended and restated on July 26, 2018 (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 7, 2018).
10.9+	Form of Enrollment Agreement under The Rubicon Project, Inc. 2014 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.3(B) to the Registrant's Annual Report on Form 10-K filed with the Commission on March 6, 2015).
10.10+	The Rubicon Project, Inc. 2014 Inducement Grant Equity Incentive Plan, as amended and restated (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016).
10.11+	Form of Restricted Stock Unit Grant Notice under The Rubicon Project, Inc. 2014 Inducement Grant Equity Incentive Plan (incorporated by reference to Exhibit 4.7 to the Registrant's Registration Statement on Form S-8 filed with the Commission on December 19, 2014).
10.12+	Form of Stock Option Grant Notice under The Rubicon Project, Inc. 2014 Inducement Grant Equity Incentive Plan (incorporated by reference to Exhibit 4.8 to the Registrant's Registration Statement on Form S-8 filed with the Commission on December 19, 2014).
10.13+	Form of Restricted Stock Grant Notice under The Rubicon Project, Inc. 2014 Inducement Grant Equity Incentive Plan (incorporated by reference to Exhibit 4.9 to the Registrant's Registration Statement on Form S-8 filed with the Commission on December 19, 2014).
10.14+	The Rubicon Project, Inc. 2015 Executive Cash Incentive Plan (incorporated by reference to Exhibit A to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on April 2, 2015).
10.15+	Executive Employment Agreement, dated May 4, 2007, between adMonitor, Inc. and Frank Addante, as amended December 14, 2007 (incorporated by reference to Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 filed with the Commission on February 4, 2014).
10.16+	Agreement, dated August 16, 2017, by and between Frank Addante and the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 22, 2017).
10.17	Amended and Restated Loan and Security Agreement, dated as of September 26, 2018, by and among Silicon Valley Bank, the Registrant, Rubicon Project Hopper, Inc., and Rubicon Project Bell, Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 8, 2018).
10.18	Stock Pledge Agreement, dated October 3, 2013, by and between Silicon Valley Bank and the Registrant (incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1 filed with the Commission on February 4, 2014).
10.19	First Amendment to Stock Pledge Agreement, dated July 29, 2015, by and between Silicon Valley Bank and the Registrant (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on August 5, 2015).
10.20	Stock Pledge Agreement, dated as of July 29, 2015, by and between Silicon Valley Bank and Rubicon Project Unlatch, Inc. (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on August 5, 2015).
10.21	Second Amendment to Stock Pledge Agreement, dated as of September 26, 2018, by and between Silicon Valley Bank and the Registrant (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 8, 2018.
10.22+	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers (incorporated by reference to Exhibit 10.17 to the Registrant's Registration Statement on Form S-1/A filed with the Commission on March 20, 2014).
10.23*+	Form of Executive Severance and Vesting Acceleration Agreement by and between the Registrant and certain of its executive officers.

10.24+	Executive Employment Agreement between the Registrant and Michael Barrett, dated March 16, 2017 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on March 22, 2017).
10.25+	Executive Severance and Vesting Acceleration Agreement between the Registrant and Michael Barrett, dated March 16, 2017 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on March 22, 2017).
10.26	Sublease, dated January 9, 2013, by and between Fox Interactive Media, Inc. and the Registrant (incorporated by reference to Exhibit 10.19 to the Company's Registration Statement on Form S-1 filed with the Commission on February 4, 2014).
10.27	Form of Rubicon Project Voting Agreement (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on December 20, 2019).
21.1*	List of Subsidiaries of The Rubicon Project, Inc.
23.1*	Consent of Deloitte & Touche LLP.
31.1*	Certification of Principal 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.
31.2*	Certification of Principal 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.
32*(1)	Certification of the Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.ins *	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.
101.sch *	XBRL Taxonomy Schema Linkbase Document
101.cal *	XBRL Taxonomy Calculation Linkbase Document
101.def *	XBRL Taxonomy Definition Linkbase Document
101.lab *	XBRL Taxonomy Label Linkbase Document
101.pre *	XBRL Taxonomy Presentation Linkbase Document

* Filed herewith

\+ Indicates a management contract or compensatory plan or arrangement

†Certain schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company agrees to furnish supplemental copies of any of the omitted schedules upon request by the Securities and Exchange Commission.

(1) The information in this exhibit is furnished and deemed not filed with the Securities and Exchange Commission for purposes of Section 18 of the Exchange Act of 1934, as amended (the "Exchange Act"), and is not to be incorporated by reference into any filing of The Rubicon Project, Inc. under the Securities Act of 1933, as amended (the "Securities Act"), 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 Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

THE RUBICON PROJECT, INC.
(Registrant)

/s/ David Day
David Day
Chief Financial Officer
(Principal Financial Officer)

Date February 26, 2020

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

Name	Title	Date
/s/ Michael Barrett Michael Barrett	President, Chief Executive Officer and Director (Principal Executive Officer)	February 26, 2020
/s/ David Day David Day	Chief Financial Officer (Principal Financial Officer)	February 26, 2020
/s/ Blima Tuller Blima Tuller	Chief Accounting Officer (Principal Accounting Officer)	February 26, 2020
/s/ Frank Addante Frank Addante	Director	February 26, 2020
/s/ Robert J. Frankenberg Robert J. Frankenberg	Director	February 26, 2020
/s/ Sarah P. Harden Sarah P. Harden	Director	February 26, 2020
/s/ Robert F. Spillane Robert F. Spillane	Director	February 26, 2020
/s/ Lisa L. Troe Lisa L. Troe	Director	February 26, 2020
/s/ Lewis W. Coleman Lewis W. Coleman	Director	February 26, 2020

Exhibit 4.1

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The Rubicon Project, Inc. ("Rubicon Project," the "Company," "we," "us" or "our") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): our common stock, par value $0.00001 per share (the "common stock").

DESCRIPTION OF COMMON STOCK

General

Our authorized capital stock consists of 500,000,000 shares of common stock, $0.00001 par value per share, and 10,000,000 shares of undesignated preferred stock, $0.00001 par value per share.

The following description of the terms of our common stock is not complete and is qualified in its entirety by reference to our Sixth Amended and Restated Certificate of Incorporation ("Certificate of Incorporation") and our Amended and Restated Bylaws ("Bylaws"), each of which is incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this exhibit is a part.

Voting Rights

Holders of our common stock are entitled to one vote on all matters submitted to a vote of stockholders; provided, however, that, except as otherwise required by law, holders of our common stock, as such, shall not be entitled to vote on any amendment to our Certificate of Incorporation that relates solely to the terms of one or more outstanding series of preferred stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to our Certificate of Incorporation.

Dividend and Liquidation Rights

Subject to the rights, if any, of the holders of any outstanding series of preferred stock, holders of our common stock shall be entitled to receive dividends out of any of our funds legally available when, as and if declared by the Company's board of directors (the "Board"). Upon the dissolution, liquidation or winding up of the Company, subject to the rights, if any, of the holders of our preferred stock, the holders of shares of our common stock shall be entitled to receive the assets of the Company available for distribution to its stockholders ratably in proportion to the number of shares held by them.

Other Rights

Holders of our common stock do not have preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to our common stock. All outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

The Board is authorized to issue not more than an aggregate of 10,000,000 shares of preferred stock in one or more series, without stockholder approval and is authorized to establish, from time to time, the number of shares to be included in each series of preferred stock, and to fix the designation, powers, privileges, preferences, and relative participating, optional or other rights, if any, of the shares of each series of preferred stock, and any of its qualifications, limitations or restrictions. The Board is also able to increase or decrease the number of shares of any series of preferred stock without any vote or action by stockholders.

Anti-Takeover Effects of Delaware Law, Our Certificate of Incorporation and Bylaws

Certain provisions of Delaware law (the "DGCL") and our Certificate of Incorporation and Bylaws have the effect of making the acquisition of the Company more difficult. These provisions of the DGCL and Certificate of Incorporation and Bylaws could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us. These provisions, summarized below, are expected to discourage certain types of takeover practices and takeover bids that the Board might consider to be coercive or inadequate, and are designed to encourage persons seeking to acquire control of us to negotiate with our Board.

Delaware Anti-Takeover Law. We are subject to Section 203 of the DGCL, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date the person became an interested stockholder, unless the "business combination" or the transaction in which the person became an interested stockholder is approved by the Board in a prescribed manner. Generally, a "business combination" includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own, 15% or more of a corporation's voting stock. The applicability of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the Board, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Requirements for Advance Notification of Stockholder Nominations and Proposals. Our Bylaws include advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors and specify certain requirements regarding the form and content of a stockholder's notice. These provisions preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions might also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Elimination of Stockholder Action by Written Consent or Ability to Call a Special Meeting. Our Certificate of Incorporation eliminates the right of stockholders to act by written consent without a meeting. As a result, a holder controlling a majority of our capital stock would not be able to amend our Bylaws or remove directors without holding a meeting of our stockholders called in accordance with our Bylaws. This provision will make it more difficult for stockholders to take action opposed by the Board. Our Bylaws further provide that special meetings of our stockholders may be called only by the Board, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal, or stockholders controlling a majority of our capital stock to take any action, including the removal of directors.

Election and Removal of Directors. Our Board is divided into three classes, each serving staggered three-year terms. As a result, only a portion of our Board is elected each year. The Board has the exclusive right to increase or decrease the size of the Board and to fill vacancies on the Board. This system of electing directors may discourage a third party from making a tender offer or otherwise attempting to obtain control of the Company, because it generally makes it more difficult for stockholders to replace a majority of the directors. Additionally, directors may be removed only for cause and only with the approval of the holders of 66 2/3% of our outstanding common stock. Pursuant to our Certificate of Incorporation, at any meeting of stockholders at which directors are to be elected, each nominee for election in an uncontested election is elected if the number of votes cast for the nominee's election exceeds the number of votes cast against the nominee's election. In all director elections other than uncontested elections, directors are elected by a plurality of the votes cast. Holders of our common stock are not entitled to cumulative voting in the election of directors.

Undesignated Preferred Stock. The authorization of undesignated preferred stock will make it possible for the board of directors, without stockholder approval, to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to obtain control of the company. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of the company.

Amendment of Provisions in the Certificate of Incorporation. Our Certificate of Incorporation requires the affirmative vote of the holders of at least 66 2/3% of our outstanding voting stock in order to amend any provision of our certificate of incorporation concerning:

- the required vote to amend or repeal the section of the Certificate of Incorporation providing for the right to amend or repeal provisions of the Certificate of Incorporation;
- number of directors and structure of the Board;
- absence of the authority of stockholders to act by written consent;
- authority to call a special meeting of stockholders; and
- the required vote to amend or repeal provisions of the Bylaws.

Amendment of Provisions in the Bylaws. In addition to the limitation on amending our Bylaws as provided in our Certificate of Incorporation, our Bylaws require the affirmative vote of the holders of at least 66 2/3% of our outstanding voting stock in order to amend any provision of our Bylaws.

Forum Selection Provision. Our Certificate of Incorporation provides that unless Rubicon Project otherwise consents in writing to the selection of an alternative forum, the sole and exclusive forum for any stockholder (including any beneficial owner) to bring: (a) any derivative action or proceeding brought on behalf of the Company, (b) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or employee of the Company to the Company or the Company's stockholders, (c) any action asserting a claim arising pursuant to any provision of the DGCL or the Certificate of Incorporation or Bylaws, or (d) any action asserting a claim governed by the internal affairs doctrine shall be a state court located within the State of Delaware (or, if no state court located within the State of Delaware has jurisdiction, the federal district court for the District of Delaware); in all cases subject to the court's having personal jurisdiction over the indispensable parties named as defendants. This exclusive forum provision is intended to apply to claims arising under Delaware state law and would not apply to claims brought pursuant to the Exchange Act or Securities Act, or any other claim for which the federal courts have exclusive jurisdiction.

Exchange Listing

Our common stock is currently listed on the NYSE under the ticker "RUBI."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

EXHIBIT 10.23

EXECUTIVE SEVERANCE AND VESTING ACCELERATION AGREEMENT

THIS EXECUTIVE SEVERANCE AND VESTING ACCELERATION AGREEMENT (this “***Agreement***”), dated as of [_______], is entered into by and between The Rubicon Project, Inc. (the “***Company***”), and [_______] (“***Executive***”).

The Company and Executive are currently, or are expected to become, parties to:

(i) an Employment Letter or Offer Letter setting forth terms of Executive’s employment (the “***Employment Letter***”) and

(ii) Grant Notices or other documents documenting the issuance of Stock Options or other equity awards to Executive (the “***Equity Agreements***”).

The undersigned desire to enter into this Agreement to set forth the terms by which Executive would receive certain accelerated vesting and severance pay under certain circumstances in connection with a termination of Executive’s employment. With respect to severance and change in control protection, this Agreement supersedes the Employment Letter, Equity Agreements, and any other contracts between Executive and the Company or policies of the Company (collectively with the Employment Letter and Equity Agreements, the “***Existing Documents***”) as set forth below.

1. Certain Defined Terms. As used herein:

(a) “***Base Salary***” means Executive’s then-current base salary.

(b) “***Cause***” means the occurrence of one or more of the following:

(i) Executive’s refusal to materially perform Executive’s duties and responsibilities, or to devote substantially all of Executive’s normal business time to the business and affairs of the Company or its successor (except in the case of Disability);

(ii) Executive’s material misappropriation of the Company’s or its successor’s funds or property;

(iii) Executive’s conviction of, or plea of guilty to or admission of, a felony;

(iv) Executive’s willful misconduct or gross negligence which materially injures or could reasonably be expected to materially injure the reputation, business or business relationships of the Company, its successor or their respective affiliates; or

(v) Executive’s material breach of any material provision of any written agreement between Executive and the Company or its successor.

Notwithstanding the foregoing, in no event shall Executive’s termination be for “Cause” unless (1) an event or circumstance set forth in clauses (i) through (v) shall have occurred and the Company or its successor provides Executive with written notice thereof within thirty days after it first has knowledge of the occurrence or existence of any such event or circumstance, which notice specifically identifies the event or circumstance that it believes constitutes Cause, and (2) to the extent correctable, Executive fails to correct the circumstance or event so identified within thirty days after receipt of such notice.

(c) “***Code***” means Internal Revenue Code of 1986, as amended and “***Section 409A***” and “***Section 280G***” refer to Sections 409A and 280G of the Code.

(d) "***Date of Termination***" means the date of the Separation of Service.

(e) "***Disability***" means Executive is "disabled" within the meaning of Section 409A.

(f) "***Good Reason***" means the occurrence of any one or more of the following events:

(i) the Company or its successor relocates Executive's principal place of employment by more than twenty miles;

(ii) a material reduction in Executive's compensation (including Executive's base salary and/or performance-related bonuses targets, but excluding discretionary bonuses (if any)); or

(iii) Executive's position, duties, or reporting relationship are materially and adversely changed, resulting in a position of materially less stature or responsibility; *provided*, that a change in Executive's title alone will not constitute "Good Reason" unless there is also a material and adverse change in Executive's position, duties, or reporting relationship. Without limiting other instances of material reduction in Executive's position, duties, or reporting relationship, a material reduction of Executive's position, duties, or reporting relationship is deemed to occur if [(i) Executive no longer reports to the Chief Executive Officer of the Company or its successor, or (ii)] following a Sale Transaction Executive's position and duties with the successor acquirer result in materially less stature or responsibility.

Notwithstanding the foregoing, Executive's termination shall not constitute a termination for "Good Reason" as a result of any event in (i)-(iii) above unless (1) Executive first provides the Company or its successor with written notice thereof within ninety days after the occurrence of such event, (2) to the extent correctable, the Company or its successor fails to cure the circumstance or event so identified within thirty days after receipt of such notice, and (3) Executive designates an effective date for Executive's termination for Good Reason no later than thirty days after the expiration of the Company's cure period, subject to any extension of such effective date requested by the Company or its successor and agreed by Executive.

(g) "***Involuntary Termination***" means a termination of Executive's employment by the Company without Cause or by Executive for Good Reason.

(h) "***Sale Transaction***" means a Change in Control as defined in the Company's 2014 Equity Incentive Plan or any successor plan, as well as: (i) the Company shall sell, lease, transfer, convey, or otherwise dispose of, in any single transaction or series of related transactions, all or substantially all of the assets or intellectual property of the Company and its subsidiaries, taken as a whole (except where such sale, lease, transfer, conveyance or disposition is to a wholly owned subsidiary of the Company), or the sale or disposition, whether by merger or otherwise, of one or more of the Company's subsidiaries if all or substantially all of the assets or intellectual property of the Company and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries (except where such sale or other disposition is to the Company or another of the Company's wholly-owned subsidiaries); (ii) upon a transaction or series of related transactions to which the Company is a party in which a majority of the Company's voting power is transferred (other than a transaction or series of related transactions solely for bona fide equity financing purposes in which cash is received by the Company or any successor, in which indebtedness of the Company is cancelled or converted or in which both cash is received and indebtedness is cancelled or converted); or (iii) upon a merger, consolidation or similar transaction or series of transactions in which the Company or a subsidiary of the Company is a constituent party and the Company issues shares of its capital stock pursuant to such merger, consolidation or similar transaction or series of transactions, other than a merger or consolidation in which the shares of capital stock of the Company outstanding immediately prior to such merger or consolidation continue to represent, or are converted or exchanged for shares of capital stock which represent, immediately following such merger or consolidation, a majority of the voting power of the surviving or resulting corporation or other entity (or the parent corporation or other entity of such surviving or resulting corporation or other entity).

(i) “***Separation of Service”*** means a “separation of service” from the Company within the meaning of Section 409A.

(j) “***Target Bonus***” means, for any given year, the amount that would be paid if Executive earned 100% of the sum of his then current on-target performance-based bonuses.

2. Payments and Vesting Acceleration Upon Involuntary Termination.

(a) Accrued Obligations. In the event that Executive’s employment under this Agreement terminates for any reason, upon such termination, the Company will pay to Executive in a single lump sum payment, within thirty days after the Date of Termination (as defined below), or such earlier date as may be required by applicable law, the aggregate amount of (i) any earned but unpaid Base Salary, (ii) any accrued, but unused vacation (if any), (iii) unreimbursed business expenses incurred prior to the Date of Termination that that are reimbursable in accordance with applicable Company policies, and (iv) any earned but unpaid incentive bonus or commission payments (together, the “***Accrued Obligations***”). Vested or earned benefits under any employee benefit plan shall be governed by the terms and conditions of the applicable plans except as expressly set forth herein.

(b) Involuntary Termination Prior To a Sale Transaction. Subject to Section 3, in the event of an Involuntary Termination prior to and not in connection with the consummation of a Sale Transaction, Executive will be entitled, upon Executive’s Separation from Service, to the payments and benefits set forth in this Section 2(b):

(i) [___] Months Salary Severance. The Company shall pay to Executive an amount equal to [____] months of Executive’s Base Salary, payable in substantially equal installments in accordance with the Company’s normal payroll practices during the [____]-month period following the Date of Termination (the “***Salary Severance***”), *provided, however*, that no payments under this Section 2(b)(i) shall be made prior to the Company’s first regularly scheduled payroll date occurring on or after the 60th day following the Date of Termination (the “***First Payment Date***”) and any amounts that would otherwise have been paid pursuant to this Section 2(b)(i) prior to the First Payment Date shall instead be paid on the First Payment Date (without interest thereon).

(ii) Pro-Rated Bonus. The Company shall pay to Executive a pro-rated portion of the Target Bonus for the year in which the Date of Termination occurs, determined by (i) multiplying Executive’s Target Bonus for the full calendar year in which the Date of Termination occurs by a fraction, the numerator of which equals the number of days elapsed during the calendar year in which the Date of Termination occurs through and including the Date of Termination and the denominator of which equals 365 and (ii) subtracting the amount of any portion of Executive’s performance-bonus paid to Executive prior to the Date of Termination (the “***Pro-Rated Bonus***”). The Pro-Rated Bonus shall be payable in a single lump-sum payment on the First Payment Date, without regard to any performance conditions or requirements.

(iii) [__] Months Health Benefits. During the [____] month period following the Date of Termination or, if earlier, the date on which Executive becomes eligible for coverage under a subsequent employer’s group health plan (in any case, the “***COBRA Period***”), subject to Executive’s valid election to continue healthcare coverage under Section 4980B of the Code and the regulation thereunder, the Company shall, in its sole discretion, either (A) provide to Executive (and Executive’s dependents to the extent covered under the Company’s group health plan at the time of termination), at the Company’s expense, or (B) reimburse Executive for, coverage under its group health plan at the same levels in effect on the Date of Termination; *provided, however,* that if (I) any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the continuation coverage period to be, exempt from the application of Section 409A under Treasury Regulation Section 1.409A-1(a)(5), (II) the Company is otherwise unable to continue to cover Executive (or Executive’s dependents if applicable) under its group health plans, or (III) the Company cannot provide the benefit without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then, in any such case, an amount equal to each remaining Company obligation shall thereafter be paid to Executive in substantially equal monthly installments over the COBRA Period (or remaining portion thereof).

(iv) [__] Months Vesting Acceleration and Exercise Term Extension.

(A) Vesting Acceleration. All outstanding options to purchase Company common stock and any restricted stock, restricted stock units or other equity interest in the Company (each separate award is an "***Equity Interest***") held by Executive as of the Date of Termination that are described in subsections (1) and (2) below shall become vested and exercisable on the First Payment Date (or upon a Sale Transaction, if earlier).

(1) Any Equity Interest that would have otherwise vested in accordance with its terms, absent termination of employment, during the [___]-day period immediately following the Date of Termination (the "***Acceleration Period***").

(2) With respect to each Equity Interest that vests less frequently than monthly and/or has not already passed, as of the end of the Acceleration Period, any vesting cliff imposed on such Equity Interest, the product of (A) the number of shares of such Equity Interest that would have vested, absent termination of employment, on the first vesting date scheduled to occur after the Acceleration Period, and (B) the quotient obtained by dividing (X) the total number of calendar days between (i) the immediately preceding vesting date for such Equity Interest, even if such immediately preceding vesting date occurs during the Acceleration Period or (ii) the vesting commencement date of such Equity Interest if no vesting date will have occurred by the end of the Acceleration Period, and the end of Acceleration Period, by (Y) the total number of calendar days between (i) the immediately preceding vesting date for such Equity Interest, even if such immediately preceding vesting date occurs during the Acceleration Period or (ii) the vesting commencement date of such Equity Interest if no vesting date will have occurred by the end of the Acceleration Period, and the vesting date first occurring after the Acceleration Period.

(B) Extension of Exercise Term. The term during which Executive may exercise any stock option or other exercisable Equity Interest shall be extended until the earlier of the first anniversary of the Date of Termination or the expiration date that would apply to such stock option or other exercisable Equity Interest had Executive remained employed with the Company.

(c) Involuntary Termination In Connection With or Following a Sale Transaction. Subject to Section 3, in the event of an Involuntary Termination that occurs in connection with or following the consummation of a Sale Transaction, Executive will be entitled to all of the payments and benefits set forth in Section 2(b) above on the terms and conditions provided therein, except that:

(i) [[__] Months' Salary Severance. [The Salary Severance shall equal [____] months of Executive's Base Salary (instead of [____] months), payable over the [____] months following the Date of Termination in accordance with Section 2(b)(i) above;] ***[or]*** [The Salary Severance shall be an amount equal to the sum of (1) [____] months of Executive's Base Salary and (2) the Target Bonus. Such aggregate amount shall be payable over the [____] months following the Date of Termination in accordance with Section 2(b)(i) above;]]

(ii) [[__] Months Health Benefits. The COBRA Period shall continue for a period of [____] months following the Date of Termination (instead of [____] months) or, if earlier, the date on which Executive becomes eligible for coverage under a subsequent employer's group health plan;] and

(iii) Full Vesting Acceleration. All of Executive's Equity Interests shall vest in full effective upon the Involuntary Termination, and shall remain exercisable for the period set forth in Section 2(b)(iv)(B) above.

(d) Death or Disability. If Executive's employment is terminated for Death or Disability prior to the consummation of a Sale Transaction, Executive will be entitled to all of the payments and benefits set forth in Section 2(b) above on the terms and conditions provided therein[, except that the Acceleration Period shall be [___] days (instead of [___] days)]. If Executive's employment is terminated as a result of Death or Disability following the consummation of a Sale Transaction, Executive will be entitled to all of the payments and benefits set forth in Section 2(c) above on the terms and conditions provided therein.

(e) Other Terminations. If Executive's employment is terminated for any reason not described in Sections 2(b) or (c) or (d) above including, without limitation, due to a termination of Executive's employment by the Company for Cause or by Executive without Good Reason, the Company will pay Executive only the Accrued Obligations.

(f) No Other Payments. Except to the extent required by law, the Company shall not be obligated to pay Executive any other amounts upon termination of Employee's employment for any reason except as set forth in this Section 2.

3. Conditions to Severance and Vesting. As a condition to Executive's right to receive any payments or benefits under Section 2 hereof:

(a) Release. Executive shall execute and deliver to the Company a release agreement in substantially the form attached hereto as Exhibit A (the "***Release***") within twenty-one days (or such longer period of time as may be required by applicable law in order to make it enforceable) following the Date of Termination and that Executive not revoke such Release during any applicable revocation period. The form of the Release may be modified as needed to reflect changes in applicable law or regulations that are needed to provide a legally enforceable and binding release of the scope contemplated by the Release at the time of execution.

(b) Intellectual Property Assignment and Confidential Information Agreement. Executive shall acknowledge in writing, and honor, Executive's obligations under the Intellectual Property Assignment and Confidential Information Agreement executed by Executive in favor of the Company (or any other agreement providing for confidentiality or the assignment of intellectual property).

(c) Recoupment of Benefits. In the event of any material breach by Executive of any term of this Agreement or the Release that is not cured within 30 days of receipt by Executive from the Company or its successor of written notice of such breach and demand for cure, without limiting any other remedy available to the Company, the Company shall have the right to (i) terminate any payments or benefits provided for herein; and (ii) recoup any sums previously paid, or the benefits of any vesting acceleration or Equity Interest term extension provided for, hereunder.

4. Certain Tax Matters.

(a) Six-Month Delay. Notwithstanding anything to the contrary in this Agreement, no compensation or benefits, including without limitation any severance payments under Section 2 hereof, shall be paid to Executive during the six month period following Executive's Separation from Service if the Company determines that paying such amounts at the time or times indicated in this Agreement would be a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code. If the payment of any such amounts is delayed as a result of the previous sentence, then on the first business day following the end of such six-month period (or such earlier date upon which such amount can be paid under Section 409A of the Code without resulting in a prohibited distribution, including as a result of Executive's death), the Company shall pay Executive a lump-sum amount equal to the cumulative amount that would have otherwise been payable to Executive during such period (without interest).

(b) 280G - Best Results.

(i) Best Results Provision. If a Sale Transaction occurs and any payments or benefits received (or to be received) by Executive whether pursuant to the terms of this Agreement or any other plan, arrangement or agreement ("**Payments**") constitute "parachute payments" as defined in Section 280G(b)(2) of the Code (**"Parachute Payments**") and are subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**") and the net after-tax amount of any such Parachute Payments, taking into account the Excise Tax, is less than the net after-tax amount if the Payments were three times Executive's "base amount" (as defined in Section 280G(b)(3) of the Code) less $1.00, then the Parachute Payments shall be reduced to an amount equal to three times Executive's base amount less $1.00. If a reduction in Parachute Payments to three times Executive's base amount less $1.00 is necessary pursuant to the preceding sentence, the reduction will occur in the following order: (1) reduction of cash payments; (2) cancellation of accelerated vesting of equity awards; and (3) reduction of employee benefits.

(ii) All calculations and analysis required by Section 4(b) shall be performed in a manner consistent with this Section 4(b)(ii) by an independent, nationally recognized accounting firm (the "**Independent Advisors**") selected by the Company and reasonably acceptable to Executive. For purposes of determining whether and the extent to which any Payments are Parachute Payments and/or would be subject to the Excise Tax, (1) no portion of the Payments the receipt or enjoyment of which Executive shall have waived at such time and in such manner so as not to constitute a "payment" within the meaning of Section 280G(b) of the Code shall be taken into account; (2) no portion of the Payments shall be taken into account which, in the written opinion of the Independent Advisors, does not constitute a Parachute Payment" (including by reason of Section 280G(b)(4)(A) of the Code) and, in calculating the Excise Tax, no portion of such Payments shall be taken into account which, in the written opinion of Independent Advisors, constitutes reasonable compensation for services actually rendered, within the meaning of Section 280G(b)(4)(B) of the Code, in excess of the "base amount" (as defined in Section 280G(b)(3) of the Code) allocable to such reasonable compensation; and (3) the value of any non-cash benefit or any deferred payment or benefit included in the Payments shall be determined by the Independent Advisors in accordance with the principles of Sections 280G(d)(3) and (4) of the Code.

(c) Section 409A.

(i) To the extent applicable, this Agreement shall be interpreted in accordance with Section 409A of the Code and Department of Treasury regulations and other interpretative guidance issued thereunder, including without limitation any such regulations or other such guidance that may be issued after the Effective Date (collectively, "***Section 409A***"). Notwithstanding any provision of this Agreement to the contrary, in the event that following the Effective Date, the Company determines that any compensation or benefits payable under this Agreement may be subject to Section 409A, the Company may adopt such amendments to this Agreement or adopt other policies or procedures (including amendments, policies and procedures with retroactive effect), or take any other actions that the Company determines are necessary or appropriate to preserve the intended tax treatment of the compensation and benefits payable hereunder, including without limitation actions intended to (i) exempt the compensation and benefits payable under this Agreement from Section 409A, and/or (ii) comply with the requirements of Section 409A, *provided*, *however*, that this Section 4(c) does not, and shall not be construed so as to, create any obligation on the part of the Company to adopt any such amendments, policies or procedures or to take any other such actions or to create any liability on the part of the Company for any failure to do so.

(ii) Any right to a series of installment payments pursuant to this Agreement is to be treated as a right to a series of separate payments. To the extent permitted under Section 409A, any separate payment or benefit under this Agreement or otherwise shall not be deemed "nonqualified deferred compensation" subject to Section 409A to the extent provided in the exceptions in Treasury Regulation Section 1.409A-1(b)(4), Section 1.409A-1(b)(9) or any other applicable exception or provision of Section 409A.

(d) Modification of Incentive Stock Options. Executive acknowledges that, to the extent any of Executive's Equity Interests were intended to be, and qualified as, an "incentive stock option" within the meaning of Section 422 of the Code, the vesting acceleration and extension of exercise term benefits provided to Executive pursuant to this Agreement will result in the entire grant losing "incentive stock option" status within the meaning of Section 422 of the Code and therefore being treated as a non-statutory stock option.

5. At-Will. Nothing herein shall be deemed to affect the "at-will" nature of Executive's employment. Accordingly, Executive's employment with the Company may be terminated at any time, with or without cause or notice, and without any severance payment or similar obligation except to the extent set forth herein. The "at will" nature of Executive's employment cannot be changed by an oral agreement and can only be changed by a written agreement, executed by the Company, expressly providing therefor.

6. Miscellaneous.

(a) Effect on Existing Documents. This Agreement shall supersede the Existing Documents with respect to the subject matter hereof. The Existing Documents shall otherwise remain in full force and effect with respect to any subject matter not covered by this Agreement.

(b) Successors. This Agreement is personal to Executive and, without the prior written consent of the Company, shall not be assignable by Executive otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns.

(c) Notice. For the purposes of this Agreement, notices, demands and all other communications provided for in this Agreement shall be in writing and shall be deemed to have been duly given when delivered either personally, by reputable overnight courier or by United States certified or registered mail, return receipt requested, postage prepaid, addressed (i) if to Executive at Executive's last known address evidenced on the Company's payroll records; and (ii) if to the Company, at the Company's principal executive offices, attention Head of Human Resources and General Counsel or, in each case, or to such other address as any party may have furnished to the other in writing in accordance with this Agreement, except that notices of change of address shall be effective only upon receipt.

(d) Withholding. All payments hereunder will be subject to any required withholding of federal, state and local taxes pursuant to any applicable law or regulation and the Company shall be entitled to withhold any and all such taxes from amounts payable hereunder.

(e) Amendment; Waiver; Survival. No provisions of this Agreement may be amended, modified, or waived unless agreed to in writing and signed by Executive and by a duly authorized officer of the Company. No waiver by either party of any breach by the other party of any condition or provision of this Agreement shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. The respective rights and obligations of the parties under this Agreement shall survive Executive's termination of employment and the termination of this Agreement to the extent necessary for the intended preservation of such rights and obligations. For avoidance of doubt, the provisions of this Agreement shall govern all future equity awards made to Executive unless the agreements for such future Awards specifically reference and waive this Section 6(e).

(f) Governing Law and Venue. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California without regard to its conflicts of law principles. The sole and exclusive venue for any actions filed with a court shall be the Superior Court of Los Angeles County and/or the United States District Court for the Southern District of California shall have exclusive jurisdiction and venue over all controversies in connection with this Agreement. Following a Sale Transaction, notwithstanding whether Executive and Company have previously entered into an agreement to arbitrate future disputes, Executive will be able to choose to bring a court action to enforce his rights under this Agreement.

(g) Attorney's Fees. In the event that Executive brings an action to enforce or effect his rights under this Agreement, Executive shall be entitled to recover his costs and expenses, including the costs of mediation, arbitration, litigation, court fees, and reasonable attorneys' fees incurred in connection with such an action.

(h) Validity. The invalidity or unenforceability of any provision or provisions of this Agreement will not affect the validity or enforceability of any other provision of this Agreement, which will remain in full force and effect.

(i) Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original but all of which together will constitute one and the same instrument.

(j) Section Headings. The section headings in this Agreement are for convenience of reference only, and they form no part of this Agreement and will not affect its interpretation.

(k) Entire Agreement. This Agreement sets forth the final and entire agreement of the parties with respect to the subject matter hereof and supersedes all prior agreements, promises, covenants, arrangements, communications, representations or warranties, whether oral or written, by the Company and Executive, or any representative of the Company or Executive, with respect to the subject matter hereof.

(l) Further Assurances. The parties hereby agree, without further consideration, to execute and deliver such other instruments and to take such other action as may reasonably be required to effectuate the terms and provisions of this Agreement.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the parties have executed this Executive Severance and Vesting Acceleration Agreement effective the date first above written.

THE COMPANY:

The Rubicon Project, Inc.

By:______________________________________

Name:

Title:

EXECUTIVE

[___________]

EXHIBIT A

RELEASE AGREEMENT

This Release Agreement (the "***Release***") is being executed in connection with the provision of certain severance, termination or other benefits, including those provided for under the Executive Severance and Vesting Acceleration Agreement (the "***Agreement***") to which this Release is attached as an exhibit. Terms used but not defined herein shall have the meanings given to them in the Agreement.

For valuable consideration, the receipt and adequacy of which are hereby acknowledged, Executive does hereby release and forever discharge the "***Releasees***" hereunder, consisting of The Rubicon Project, Inc. (the "***Company***") and its parents, subsidiaries, affiliates, shareholders, investors, partners, members, managers, associates, affiliates, subsidiaries, successors, heirs, assigns, agents, directors, officers, employees, shareholders, representatives, lawyers, insurers, and all persons acting by, through, under or in concert with them, or any of them, of and from any and all manner of action or actions, cause or causes of action, in law or in equity, suits, debts, liens, contracts, agreements, promises, liability, claims, demands, damages, losses, costs, attorneys' fees or expenses, of any nature whatsoever, known or unknown, fixed or contingent (hereinafter called "***Claims***"), which Executive now has or may hereafter have against the Releasees, or any of them, by reason of any matter, cause, or thing whatsoever from the beginning of time to the date hereof.

The Claims released herein include, without limiting the generality of the foregoing, any Claims in any way arising out of, based upon, or related to Executive's employment with, or service to, the Releasees, or any of them, or the termination thereof; any claim for wages, salary, commissions, bonuses, fees, incentive payments, profit-sharing payments, expense reimbursements, leave, vacation, severance pay or other benefits; any claim for benefits under any stock option, restricted stock or other equity-based incentive plan of the Releasees, or any of them (or any related agreement to which any Releasee is a party); any alleged breach of any express or implied contract of employment; any alleged torts or other alleged legal restrictions on any Releasee's right to terminate the employment of the undersigned; and any alleged violation of any federal, state or local statute or ordinance including, without limitation, Claims arising under: the Age Discrimination in Employment Act as amended, 29 U.S.C. § 621 et seq.; Title VII of the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1991, 42 U.S.C. § 2000 et seq.; Equal Pay Act, as amended, 29 U.S.C. § 206(d); the Civil Rights Act of 1866, 42 U.S.C. § 1981; the Family and Medical Leave Act of 1993, 29 U.S.C. § 2601 et seq.; the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 et seq.; the False Claims Act , 31 U.S.C. § 3729 et seq.; the Employee Retirement Income Security Act, as amended, 29 U.S.C. § 1001 et seq.; the Worker Adjustment and Retraining Notification Act, as amended, 29 U.S.C. § 2101 et seq. the Fair Labor Standards Act, 29 U.S.C. § 215 et seq., the Sarbanes-Oxley Act of 2002; or any other federal, state or local law.

[Notwithstanding the foregoing, this general release shall not operate to release any rights or claims which Executive may have to (i) payments and/or benefits under the Agreement; (ii) accrued or vested benefits, if any, as of the date hereof, under any applicable employee benefit plan within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended; or (iii) any Claims that cannot be waived as a matter of law]. Further, nothing in this Release waives or releases or prevents Executive from in any way pursuing any rights or claims Executive may have (i) to indemnity and defense from the Company and its subsidiaries and their successors pursuant to provisions of the charter documents the Company or its subsidiaries, any contract of indemnity, or applicable law; (ii) to coverage under policies of insurance maintained by the Company or its subsidiaries (including without limitation insurance covering directors' and officers' liability, fiduciary liability, employment practices liability, general liability, automobile damage and liability, and employed attorneys' liability) according to the terms of such policies; (iii) to reimbursement of expenses properly incurred by Executive in the course of service to the Company; (iv) under plans or contracts governing equity awards made to Executive; (vi) as a former employee under the Company's retirement and welfare plans under which Executive is a beneficiary or participant, including without limitation the Company's 401(k) plan and plans or policies or insurance providing for health care; or (v) as a stockholder of the Company.

Executive acknowledges that Executive has been advised by legal counsel and is familiar with the provisions of California Civil Code Section 1542, which provides as follows:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR."

Executive, being aware of said code section, hereby expressly waives any rights Executive may have thereunder, as well as under any other statutes or common law principles of similar effect.

[In accordance with the Older Workers Benefit Protection Act of 1990, Executive is hereby advised as follows: (1) Executive is hereby advised to consult with an attorney before signing this release; (2) Executive has at twenty-one days from the date of termination of employment (which is more than twenty-one days from Executive's receipt of this release) to consider the this release before signing it; (3) Executive waives any extension or renewal of the twenty-one day period in the event of a material change to this release or the consideration for it; and (3) if Executive signs this release prior to the expiration of the twenty-one day period, Executive waives the balance of that period; and (4) Executive has seven days under the Age Discrimination in Employment Act after signing this release to revoke it, and this release will become effective upon the expiration of those revocation periods. If Executive wishes to revoke this release, Executive shall provide written notice to the company's head of human resources and General Counsel so that such notice is received no later than 5:00 pm on the fifteenth day following Executive's execution of this Release, in which case Executive understands that Executive will not be entitled to the consideration offered for this Release.] *[if applicable]*

Executive acknowledges and represents that Executive has not suffered any discrimination or harassment by any of the Releasees and do not have any other claims against any of the Releasees. Executive acknowledges that Executive has not been denied any leave, benefits or rights to which Executive may have been entitled under any law, including the Family and Medical Leave Act, that Executive has not suffered any job-related wrongs or injuries for which Executive might still be entitled to compensation or relief. Executive further acknowledges and represents that, except as expressly provided in the Agreement, Executive has been paid all amounts that any of the Releasees have ever owed Executive and been issued all Equity Interests to which Executive is entitled and Executive understands that Executive will not receive any additional compensation or benefits after the Date of Termination except as expressly set forth in the Agreement.

Executive represents and warrants that there has been no assignment or other transfer of any interest in any Claim which Executive may have against Releasees, or any of them, and Executive agrees to indemnify and hold Releasees, and each of them, harmless from any liability, Claims, demands, damages, costs, expenses and attorneys' fees incurred by Releasees, or any of them, as the result of any such assignment or transfer or any rights or Claims under any such assignment or transfer. It is the intention of the parties that this indemnity does not require payment as a condition precedent to recovery by the Releasees against Executive under this indemnity.

Executive agrees that if Executive hereafter commences any suit arising out of, based upon, or relating to any of the Claims released hereunder or in any manner asserts against Releasees, or any of them, any of the Claims released hereunder, then Executive shall pay to Releasees, and each of them, in addition to any other damages caused to Releasees thereby, all attorneys' fees incurred by Releasees in defending or otherwise responding to said suit or Claim. Notwithstanding the foregoing, this provision shall not apply to any suit or Claim to the extent is challenges the effectiveness of this release with respect to a claim under the Age Discrimination in Employment Act.

Executive further understands and agrees that neither the payment of any sum of money nor the execution of this Release shall constitute or be construed as an admission of any liability whatsoever by the Releasees, or any of them, who have consistently taken the position that they have no liability whatsoever to Executive.

Executive agrees not to disparage the Company, its officers, directors, employees or agents in any manner likely to be harmful to them or their business, personal reputation or business reputation, and the Company shall not, and shall cause its officers not to, disparage Executive in any manner likely to be harmful to Executive or Executive's personal reputation or business reputation; provided however, that statements which are made in good faith in response to inquiries or requests for information required by legal process shall not violate this paragraph.

Executive acknowledges that different or additional facts may be discovered in addition to what is now known or believed to be true by him or her with respect to the matters released in this Release, and Executive agrees that this Agreement shall be and remain in effect in all respects as a complete and final release of the matters released, notwithstanding any different or additional facts.

IN WITNESS WHEREOF, Executive and the Company have executed this Release this ____ day of ___________________20---__.

Executive:

[____]

Company:

By:_________________________
Name:_______________________
Title:________________________

EXHIBIT 21.1

SUBSIDIARIES OF THE RUBICON PROJECT, INC.

Rubicon Project Hopper, Inc.	(Delaware)
Rubicon Project Unlatch, Inc.	(Delaware)
Rubicon Project Bell, Inc.	(Delaware)
Rubicon Project Daylight, Inc.	(Delaware)
Project Daylight, LLC	(Delaware)
Madison Merger Corp.	(Delaware)
Rubicon Project Apex, Inc.	(Delaware)
RTK.io, Inc.	(Delaware)
The Rubicon Project Canada, ULC	(Canada)
The Rubicon Project Canco, Inc.	(Canada)
The Rubicon Project Ltd.	(United Kingdom)
The Rubicon Project GmbH	(Germany)
RTK GmbH	(Switzerland)
The Rubicon Project SARL	(France)
The Rubicon Project SRL	(Italy)
Rubicon Project K.K.	(Japan)
The Rubicon Project Singapore Pte. Ltd.	(Singapore)
The Rubicon Project Australia PTY Limited	(Australia)
Rubicon Project Serviços De Internet LTDA.	(Brazil)
The Rubicon Project Netherlands B.V.	(The Netherlands)

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-195972, 333-201174, 333-204012, and 333-219563 on Form S-8 and Registration Statement No. 333-236174 on Form S-4 of our report dated February 26, 2020, relating to the consolidated financial statements of The Rubicon Project, Inc. and subsidiaries and the effectiveness of The Rubicon Project, Inc.'s internal controls over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2019.

/s/ Deloitte & Touche LLP

Los Angeles, California
February 26, 2020

Exhibit 31.1

Certification of Principal 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, Michael Barrett, certify that:

1. I have reviewed this Annual Report on Form 10-K of The Rubicon Project, 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(s) 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(s) 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.

Signature: /s/ Michael Barrett

Michael Barrett
President and Chief Executive Officer
(Principal Executive Officer)

Date February 26, 2020

Exhibit 31.2

Certification of Principal 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, David Day, certify that:

1. I have reviewed this Annual Report on Form 10-K of The Rubicon Project, 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(s) 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(s) 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.

Signature: /s/ David Day

David Day
Chief Financial Officer
(Principal Financial Officer)

Date February 26, 2020

Exhibit 32

CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. 1350), Michael Barrett, President and Chief Executive Officer (Principal Executive Officer) of The Rubicon Project, Inc. (the "Company"), and David Day, Chief Financial Officer (Principal Financial Officer) of the Company, each hereby certifies that, to the best of his knowledge:

1. Our Annual Report on Form 10-K for the quarter ended December 31, 2019, to which this certification is attached as Exhibit 32 (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.

Date February 26, 2020

/s/ Michael Barrett

Michael Barrett
President and Chief Executive Officer
(Principal Executive Officer)

/s/ David Day

David Day
Chief Financial Officer
(Principal Financial Officer)

The foregoing certifications are being furnished pursuant to 13 U.S.C. Section 1350. They are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of the Company, regardless of any general incorporation language in such filing.