

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

(Mark One)

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: 001-36153

Criteo S.A.

(Exact name of registrant as specified in its charter)

France

Not Applicable

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer Identification
Number)

32, rue Blanche, 75009 Paris—France

(Address of principal executive offices including zip code)

Registrant's telephone number, including area code: **+33 1 40 40 22 90**

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

(Title of class)	(Trading Symbol(s))	(Name of exchange on which registered)
American Depositary Shares, each representing one ordinary share, nominal value €0.025 per share	CRTO	Nasdaq Global Select Market
Ordinary shares, nominal value €0.025 per share *		Nasdaq Global Select Market *

* Not for trading, but only in connection with the registration of the American Depositary Shares.

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

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

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of the last business day of the registrant's most recently completed second fiscal quarter was \$1.1 billion, based on the closing sale price of the American Depositary Shares as reported by the Nasdaq Global Select Market on June 30, 2019. Ordinary shares, nominal value €0.025 per share, held by each officer and director and by each person who owns or may be deemed to own 10% or more of the outstanding ordinary shares have been excluded since such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of January 31, 2020, the registrant had 61,920,758 ordinary shares, nominal value €0.025 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates certain information by reference from the registrant's proxy statement for the 2020 Annual Meeting of Shareholders. Such proxy statement will be filed no later than 120 days after the close of the registrant's fiscal year ended December 31, 2019.

CRITEO S.A.
ANNUAL REPORT ON FORM 10-K
For The Fiscal Year Ended December 31, 2019

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General

Except where the context otherwise requires, all references in this Annual Report on Form 10-K ("Form 10-K") to the "Company," "Criteo," "we," "us," "our" or similar words or phrases are to Criteo S.A. and its subsidiaries, taken together. In this Form 10-K, references to "\$" and "US\$" are to United States dollars. Our audited consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America, or U.S. GAAP. Unless otherwise indicated, the statistical and financial data contained in this Form 10-K are presented as of December 31, 2019.

Trademarks

"Criteo," the Criteo logo and other trademarks or service marks of Criteo S.A. appearing in this Form 10-K are the property of Criteo S.A. Trade names, trademarks and service marks of other companies appearing in this Form 10-K are the property of their respective holders.

Special Note Regarding Forward-Looking Statements

This Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are based on our management's beliefs and assumptions and on information currently available to our management. All statements other than present and historical facts and conditions contained in this Form 10-K, including statements regarding our future results of operations and financial position, business strategy, plans and our objectives for future operations, are forward-looking statements. When used in this Form 10-K, the words "anticipate," "believe," "can," "could," "estimate," "expect," "intend," "is designed to," "may," "might," "plan," "potential," "predict," "objective," "should," or the negative of these and similar expressions identify forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the ability of the Criteo Artificial Intelligence (AI) Engine to accurately predict engagement by a user;
- our ability to predict and adapt to changes in widely adopted industry platforms and other new technologies;
- our ability to continue to collect and utilize data about user behavior and interaction with advertisers;
- our ability to acquire an adequate supply of advertising inventory from publishers on terms that are favorable to us;
- our ability to meet the challenges of a growing and international company in a rapidly developing and changing industry, including our ability to forecast accurately;
- our ability to maintain an adequate rate of revenue growth and sustain profitability;
- our ability to manage our international operations and expansion and the integration of our acquisitions;
- the effects of increased competition in our market;
- our ability to adapt to regulatory, legislative or self-regulatory developments regarding internet privacy matters;
- our ability to protect users' information and adequately address privacy concerns;
- our ability to enhance our brand;
- our ability to enter new marketing channels and new geographies;
- our ability to effectively scale our technology platform;

- our ability to attract and retain qualified employees and key personnel;
- our ability to maintain, protect and enhance our brand and intellectual property; and
- failures in our systems or infrastructure.

You should refer to Item 1A "Risk Factors" of this Form 10-K for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this Form 10-K will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

You should read this Form 10-K and the documents that we reference in this Form 10-K and have filed as exhibits to this Form 10-K 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.

This Form 10-K contains market data and industry forecasts that were obtained from industry publications. These data and forecasts involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such information. We have not independently verified any third-party information. While we believe the market position, market opportunity and market size information included in this Form 10-K is generally reliable, such information is inherently imprecise.

PART I

Item 1. Business

History and Development of the Company

Criteo S.A. was initially incorporated as a *société par actions simplifiée*, or S.A.S., under the laws of the French Republic on November 3, 2005, for a period of 99 years and subsequently converted to a *société anonyme*, or S.A. We are registered at the Paris Commerce and Companies Register under the number 484 786 249. Our agent for service of process in the United States is National Registered Agents, Inc. We began selling elements of our offering in France in 2007 and have since expanded our business into other countries in Western Europe. In 2009, we expanded our business into North America and entered the Asia-Pacific region in late 2010. In 2016, we acquired HookLogic, Inc. ("HookLogic"), a New York-based company operating a performance marketing exchange connecting consumer brands with retail ecommerce sites via sponsored product ads.

Business Overview

We are a global technology company powering the world's marketers with trusted and impactful advertising. We strive to deliver measurable business results at scale across multiple marketing goals for retailers and brands, through our self-service Criteo Platform. Using shopping data, artificial intelligence ("AI") technology and extensive consumer reach, we help marketers drive Awareness, Consideration and Conversion for their products and services¹, and help retailers generate advertising revenues from consumer brands. Our data is pooled among our clients and offers deep insights into consumer intent and purchasing habits. To drive trusted and impactful advertising for marketers, we activate our data assets in a privacy-by-design way through proprietary AI technology to engage consumers in real time by designing, pricing and delivering highly relevant digital advertisements ("ads") across devices and environments. We price our offering on a range of pricing models and measure our value based on clear, well-defined performance metrics, making our impact on the business of our clients both transparent and easy to measure.

Our mission is to power the world's marketers, brands, retailers, publishers, content creators and agencies with trusted and impactful advertising. We enable our clients to address multiple goals across the marketing funnel through the Criteo Platform. Our vision is to build the leading advertising platform for the open Internet.

Over the past 14 years, we have established our market position by focusing on three pillars: actionable commerce data, predictive technology to activate data for multiple marketing goals, and large consumer reach. While continuously improving our technology and broadening our reach, we leverage and strengthen Criteo Shopper Graph, a highly differentiated group of data collectives built through collaboration and data pooling within our open ecosystem of commerce and consumer brand clients. With Criteo Shopper Graph, we are building one of the world's biggest and most open data sets focused on shoppers, retailers and brands.

Our clients include some of the largest and most sophisticated commerce companies in the world, along with world-class consumer brands. We partner with them to capture user activity on their websites and mobile applications ("apps"), which we define as digital properties, and optimize the performance of their ads based on that activity and other data. Demonstrating the depth and scale of our data, we collected data on \$900 billion in online sales transactions² on our clients' digital properties in the year ended December 31, 2019. Based on this data and other assets, we delivered targeted ads that generated over 11 billion clicks² in the year ended December 31, 2019. As of December 31, 2019, we served more than 20,000 clients and, in each of the last three years, our average client retention rate, as measured on a quarterly basis, was approximately 90%.

¹ Driving Awareness for an advertiser means exposing its brand name to consumers who have not been in touch with the advertiser before, thereby creating brand awareness from such consumers. Driving Consideration for an advertiser's products or services means attracting prospective new consumers to consider engaging with and/or buying this advertiser's products or services. Driving Conversion for an advertiser's products or services means triggering a purchase by consumers who have already engaged with this advertiser's products or services in the past.

² Excluding Criteo Retail Media and the business acquired from Manage.com Group, Inc.

Each day, we are presented with billions of opportunities to connect consumers with relevant advertising messages from our commerce and consumer brand clients. For each of these opportunities, our algorithms analyze massive volumes of shopping data to predict consumer preferences and intent, and deliver specific messaging for products or services that are likely to engage that particular consumer. The accuracy of our algorithms improves with every ad we deliver, as they incorporate new data while continuing to learn from prior interactions.

Historically, the Criteo model had focused solely on converting our clients' website visitors into customers, enabling us to charge our clients only when users engage with an ad we deliver, usually by clicking on it. This pay-for-performance pricing model clearly links the cost of an advertising campaign to its effectiveness in driving conversions, and has long been valued as such by our clients. More recently, we have expanded our solutions to address a broader range of marketing and monetization goals for our clients. Doing so, we also expanded our pricing models and now include a combination of cost-per-impression and cost-per-install for selected new solutions, in addition to cost-per-click, as well as a transactional-Software as a Service, or SaaS, pricing model for large retailers using our technology platform as part of a fast-growing share of our Criteo Retail Media offering. In the future, we intend to continue to evolve the pricing models of our solutions, including to provide additional transparency to marketers.

As commerce companies and consumer brands have embraced our offerings, we have achieved significant growth since our inception and are now operating in 103 countries.

Our financial results include:

- Revenue of \$2,296.7 million, \$2,300.3 million and 2,261.5 million for the years ended December 31, 2017, 2018 and 2019, respectively;
- Revenue excluding Traffic Acquisition Costs, or Revenue ex-TAC, which is a non-U.S. GAAP financial measure, of \$941.1 million, \$966.0 million and \$946.6 million for the years ended December 31, 2017, 2018 and 2019, respectively;
- Net income of \$96.7 million, \$95.9 million and \$96.0 million for the years ended December 31, 2017, 2018 and 2019, respectively; and
- Adjusted EBITDA, which is a non-U.S. GAAP financial measure, of \$309.6 million, \$321.1 million and \$299.0 million for the years ended December 31, 2017, 2018 and 2019, respectively.

Please see footnotes 3, 4 and 5 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for a reconciliation of revenue to Revenue ex-TAC, net income to Adjusted EBITDA and net income to Adjusted Net Income, respectively, in each case the most directly comparable financial measures calculated and presented in accordance with accounting principles generally accepted in the United States or "U.S. GAAP".

¹ Excluding Criteo Retail Media and the business acquired from Manage.com Group, Inc.

² Uncapped budgets represent clients' advertising budgets with us that have either no contractual financial cap or that are so large that the budget constraint does not restrict our ability to purchase inventory on those clients' behalf.

The Criteo Platform

Our offering, the Criteo Platform, is powered by AI technology and aims to cover the entire marketing funnel (Awareness, Consideration, Conversion). Our technology is optimized to drive trusted and impactful business results for advertisers across multiple marketing goals. We address a wide range of advertising objectives for our commerce and consumer brand clients, including, for example, consumer visits to a client website, installations of a mobile app, product sales and monetization of retailers' inventory with brands. We deliver these measurable business outcomes by efficiently and effectively driving engagement for our clients' brand, shops, app property, products and services, and generating advertising revenue for retailers by monetizing their data and audiences with consumer brands.

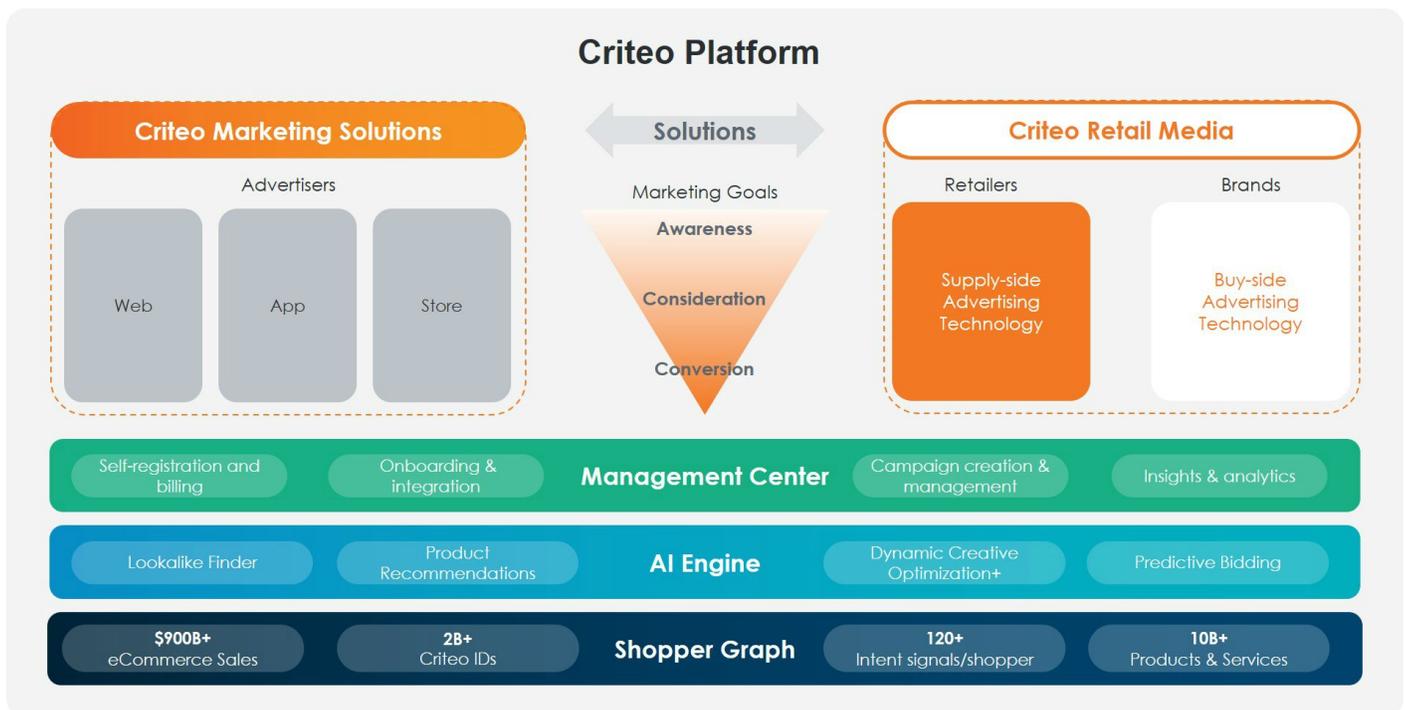
The Criteo Platform works seamlessly across digital devices (desktops, laptops, smartphones and tablets), commerce and advertising environments (web, mobile apps and physical retail stores), platforms and operating systems, advertising channels (Display Advertising, including social and native, video, and ads on retailers' properties) and publisher environments (thousands of direct publishers and mobile app developers in the open Internet, all major real-time bidding exchanges including Alphabet Inc.'s "Google Ad Manager", as well as Facebook, Inc. ("Facebook")).

The Criteo platform is currently available as a unique and comprehensive offering and cannot be broken down and purchased as separate services, except for individual advertising solutions and campaigns. In the future, we may look at unbundling components of the Criteo Platform and making individual elements available to some of our clients.

The Criteo Platform is comprised of:

- Criteo Shopper Graph
- Criteo AI Engine
- Criteo Management Center
- Criteo Solutions

In addition, the Criteo Platform leverages the extensive scale and user reach of our Publisher Network across both the open Internet and some closed publisher environments.



Criteo Shopper Graph

Our data assets include all insights derived from our clients' proprietary **commerce data**, such as transaction activity on their digital properties, representing \$900 billion in online sales on a combined basis in 2019¹, representing approximately 40% of the global ecommerce and digital travel markets excluding China².

Through integration with all of our clients' digital properties, we obtain large volumes of browsing behavior data, expressed consumer shopping intent and engagement, and transactional data at individual product user levels.

Using a range of cookie- and non-cookie based technologies, we collect information about the **interactions of consumers** with our clients' and publishers' digital properties. Our clients grant us access to their valuable data through direct integration with us, which requires our clients to place Criteo software code throughout their digital properties. The information we collect does not enable us to personally identify any particular consumer.

Access to high quality data assets **fuels the accuracy of our algorithms**, which improves with the **increasing quantity and quality of data** we obtain from our clients and publisher partners, as well as insights gained through our own extensive operational history. The combination of advertiser data, publisher data and proprietary metadata gives us powerful insights into consumer purchasing habits that we use to price inventory and create the most relevant ads to drive user engagement and impactful results for our clients. In addition to commerce data at the granular product level, we seek to use as much relevant information as possible about the context and intent of a given user, collected from clients and publisher partners, to further refine our prediction accuracy.

We believe our access to highly granular and qualitative commerce data validates **the trust that our clients place in us**. For example, most of our clients typically provide real-time access to the products or services a visitor has viewed, researched, added to their shopping cart, or bought from them, and continuously receive updated information on 10 billion products or services³, including pricing, images and descriptions, which are typically characterized as non-Personally Identifiable Information ("Non-PII"). A large number of our clients also provide us with their customers' purchase history data in formats that are also non-PII.

Over the past few years, we have built **three data collectives through data pooling among our clients**. The combination of these data collectives forms Criteo Shopper Graph. For each of these data collectives, we ask our clients to grant us the permission to mutualize a significant portion of their proprietary data in an anonymized way with other clients who also contribute data to this specific collective data pool. With Criteo Shopper Graph, we are building one of the world's largest and most open data sets focused on shoppers and their commerce activity across retailers and brands.

Criteo Shopper Graph is comprised of the following **three data collectives**:

- The ***Identity Graph*** allows us to match user identifiers across devices and environments, including online and offline. Our algorithms link user identifiers such as, for example, Criteo cookies, app identifiers, hashed customer logins and hashed emails, and regroup them into individual clusters ("Criteo IDs") when these identifiers are deemed to belong to the same user. The scope and scale of our Identity Graph are already among the best in the industry: as of December 31, 2019, our graph consisted of more than 2 billion Criteo IDs. In addition, over 95% of these Criteo IDs contain long-term persistent identifiers, such as logins or emails, rather than just basic cookies. As of December 31, 2019, 71% of our clients grant us access to some of their identity data, including their Customer Relationship Management (CRM) data, to enable us to match users across multiple digital devices or environments. In addition, the Identity Graph allows us to leverage offline CRM data of our clients' physical stores to match it with online user profiles, based on their offline shopping history. Since 2015, the Identity Graph has seen strong contribution from our client base and, we believe, has become a solid foundation to reach consumers across all devices and environments. The Identity Graph supports and benefits our entire suite of solutions.
- The ***Interest Map*** collects and organizes consumer intent and purchasing data across the products available in our network of commerce clients, in order to build a comprehensive and accurate non-identifying shopper profile for all consumers on whom we have collected data. In 2019, we collected data on \$900 billion in online sales¹ and saw close to 14 billion shopping transactions taking place within our commerce ecosystem¹. With the Interest Map, we seek our clients' permission to use their data, on an aggregated and anonymized basis, to power products that are jointly offered to our clients in the collective. We have built applications for the Interest Map, as well as its underlying infrastructure, including the *Universal Catalog*, which provides category and/or brand enrichment, as well as a unified view of the 10 billion products available across the combined product catalogs of our commerce clients³. The Interest Map is a key foundation to address Consideration objectives and help advertisers win new visitors and new customers.

¹ Excluding Criteo Retail Media and the business acquired from Manage.com Group, Inc.

² Source: eMarketer.

³ Products are not unique and may appear in different retailer catalogs.

- The **Measurement Network** provides SKU-level sales attribution for consumer brands across our network of retailer partners using our Criteo Retail Media solutions. This means that, using our deterministic measurement approach, our consumer brand clients can precisely track and measure the effectiveness of their advertising spend by attributing their sales at the SKU level to the clicks or impression that were generated on their ads across our network of retailers. This permission-based sales attribution, retailer by retailer, is typically not available to consumer brands, neither in the online nor offline world, where they still place most of their trade marketing investments. We plan to further widen the Measurement Network to all Criteo retailers with new applications and continue to add offline sales attribution for consumer brands.

The design and governance of Criteo Shopper Graph are based on **strict and differentiated guiding principles**:

- **Openness**: we commit to a two-way exchange of data with our clients, whereby all clients contributing data to the collectives, in return for their contribution, benefit from the collective dataset via the Criteo Platform, and access cross-device user IDs and relevant Key Performance Indicators to better inform and optimize their advertising.
- **Transparency**: our clients' contribution and sharing of data within the data pools are based on a clear and permission-based usage by Criteo for the mutual benefits of all participants in the data collectives.
- **Security**: as always, we apply the highest data security and user privacy standards to our three data collectives.
- **Fairness**: our data collectives are designed and governed in ways such that the value gained by each participating client largely exceeds the individual client's contribution to the collectives, irrespective of its size.

Criteo AI Engine

Criteo AI Engine has been developed **over the past 14 years** and consists of multiple artificial intelligence algorithms, and the proprietary global hardware and software infrastructure that enables the Criteo Platform to operate in real time at significant scale.

Criteo AI Engine leverages Criteo Shopper Graph, with the goal of **maximizing consumer engagement to drive impactful business results for clients** through the delivery of highly relevant and personalized ads in real time.

Criteo AI Engine consists of:

- **Lookalike finder algorithms**. These algorithms create similar audiences, or groups of consumers likely to be interested in and engage with a specific category of our clients' products or services, from a pre-determined audience seed based on other clients' audiences that were already targeted and exposed to similar products or services in the context of previous advertising campaigns. Once created, these similar audiences are used by Criteo AI Engine as targets to reach and be exposed to tailored ads for relevant products or services for the purpose of a dedicated campaign. This set of algorithms typically supports campaign types addressing Consideration advertising objectives, i.e. driving new prospects to consider products or services with which they have not yet engaged in the past.
- **Recommendation algorithms**. These algorithms create ads tailored to specific consumer interest and intent by determining the specific products or services to include in the ad. These products and services may be ones that the consumer has already been exposed to, or that the algorithms predict the customer could be interested in. Alternatively, these may be products and services that other consumers within Criteo Shopper Graph have been interested in.
- **Dynamic Creative Optimization+ (DCO+)**. Based on the results of our dynamic creative algorithms, Criteo AI Engine automatically and dynamically assembles customized creative ad content on an impression-per-impression basis in real time, by optimizing each individual creative component in the ad, from the font, color, size and format of product images to the "call to action" or price discount. Our patented *Dynamic Creative Optimization+* technology offers virtually unlimited personalization, with up to 17 trillion visual ad variations, without the need to define ad sizes or layouts upfront, while maintaining the consistency of our clients' brand image.
- **Predictive bidding algorithms**. These algorithms predict the probability and nature of a user's engagement with a given ad. Such predicted user engagement can take the form of, for example, retailer site visits, clicks, conversions, shopping basket value, specific product categories purchased, or even the gross margin of the purchased product or service that our client generates from such purchase. This prediction of engagement incorporates data from our clients, publishers and third-party sources, including user intent, who the client is, the products offered in the ad, as well as data on the creative content of the ad and, to a lesser extent, the publisher context in which the ad is displayed.

Together with our recommendation algorithms, the prediction algorithms allow us to determine the most appropriate price to pay for an ad impression, based on an individual user's predicted engagement, what the client is willing to pay for that engagement, as well as Criteo's own target Revenue ex-TAC margin from placing that individual ad. Our bidding engine executes campaigns based on certain objectives set by our clients (such as cost-per-click, cost-per-order, cost-of-sales, cost-per-visit, cost-per-impression, cost-per-install or total campaign budget). After a bid for an ad impression is placed and won, Criteo AI Engine assembles and delivers individualized ads, and provides campaign reporting in near-real time.

- **Software systems and processes.** Our algorithms are supported by robust software infrastructure that allows us to operate seamlessly at a very large scale, through our network of more than 43,000 servers as of the end of 2019. The architecture and processing capabilities of this technology have been designed to match the massive computational demands and complexity of our algorithms in real time. This technology enables data synchronization, storage and analysis across a large-scale distributed computing infrastructure in multiple geographies, as well as fast data collection and retrieval using multi-layered caching infrastructure.
- **Experimentation platform.** We use an online/offline testing platform to improve the capabilities and effectiveness of our prediction models by measuring the correlation of specific parameters with user engagement, usually measured by consumer visits, clicks and conversions, typically in the form of sales. A dedicated team is constantly testing new types and sources of data, as well as new variables, to determine whether they help diminish the gap between, for example, predicted visits, click-throughs and conversions, and actual visits, click-throughs and conversions over the course of a live campaign.

A key attribute of Criteo AI Engine is the vast **metadata of learnings on advertising and commerce effectiveness** that we have accumulated from having delivered and measured responses to over 7 trillion advertising impressions since our Company's inception. Our Research & Development team constantly tunes Criteo AI Engine via experimentation and A/B tests. For example, in 2019, we performed about 1,200 online A/B tests and 72,000 offline experiments and tests.

In addition, we have long established and adopted **Privacy-by-design** as a central element of our technology and product design and development cycles, with a strong commitment to ensuring best practices in privacy, security and safety for consumers and our commerce and consumer brand clients. Since 2013, we have had a designated Data Privacy Officer along with a team of privacy experts. These experts are integrated within our R&D and Product organizations and processes, and consider all facets of user privacy as key elements in the very design of any new technology, solution or feature of the Criteo Platform. They also perform ongoing Privacy Impact Assessments to monitor potential risks during the product lifecycle and proactively mitigate those risks. The Data Privacy team delivers company-wide privacy training, enforces our privacy policies and is integral to ensuring that we build the best solutions and services. We regularly review and document our internal privacy policies, amend existing policies as necessary and enforce these policies with our clients, publisher partners and vendors.

Criteo Management Center

We offer our clients access to an **integrated self-service customer interface** providing transparency, control and visibility over their advertising investments and campaigns with us, whatever their business and marketing goals may be. Criteo Management Center, our unified and easy-to-use self-service user interface ("UI"), enables the flexible and modular consumption of our various solutions directly by our clients, as well as the execution and management of their campaigns through a suite of software and services that automates key campaign processes. Using our Management Center, clients benefit from a high level of control over the objectives, parameters and performance of their various campaigns with us. Criteo Management Center reduces unnecessary complexity and cost associated with manual processes of having to use multiple Demand-Side Platforms ("DSPs") and sources of inventory supply, delivering efficiencies across the marketing funnel, even as campaigns grow in size, complexity and mix of marketing goals.

We believe that **transparency and control** over the objectives, parameters and performance of their advertising campaigns increases the confidence our clients have in Criteo, and further strengthen our relationship with them.

Criteo Management Center includes a comprehensive suite of tools, services and software, including:

- **A self-service registration and onboarding flow for client activation.** Targeted at small midmarket clients, we provide advertisers with online tools for end-to-end self-registration to the Criteo Platform, including onboarding and integration, campaign creation, creative creation, payment and billing.

- ***A unified self-service user interface for all advertisers to transparently and autonomously manage their campaigns, solution by solution.*** For each client campaign, our self-service interface automates a number of modular components, execution and management tasks. Key attributes of the interface include:
 - an easy-to-use user interface;
 - self-service tools for clients to control, on demand, the specific parameters of their campaigns in a modular and flexible way, including for example: specific audiences to reach and target, specific creative or branding elements to include in ads, specific categories of supply to favor or exclude from the campaign, specific categories of the product catalog to promote in the campaign, specific coupon and price discount management;
 - granular control over the price clients are ready to pay for each campaign, at their own product category level (for example on a cost-per-click, cost-per-impression or cost-per-install basis);
 - transparent, detailed reporting of key campaign metrics, such as, for example, cost-per-click, cost-per-impression or cost-per-install, impressions served, effective cost per thousand impressions, or eCPM, consumer visits, app installations, click-through rate and post-click sales; and
 - transparent standardized reports on purchased inventory detailing impression-level information, including publisher domains where ads are shown, time stamps of displayed ads and the value of each impression.
- ***A unified interface for certain clients to manage their advertising investments with us through API integrations*** with some of their other advertising or marketing technology partners or vendors.

In addition to self-service access to Criteo Management Center, we also offer **a managed-service approach to our larger clients**, providing deep business intelligence and analytics services. Our teams of advisers aid our larger clients in setting goals for, extracting insights from, and evaluating trends and performance of their various advertising campaigns with us across multiple marketing goals, sources of inventory, advertising channels, and the multiple digital devices that consumers may use.

In parallel with accessing transparent reporting and measurement from Criteo Management Center, a large proportion of our clients regularly use their own attribution tools and solutions from third-party vendors (such as, for example, Google Analytics, IBM Coremetrics or Adobe Analytics) to independently measure and assess the performance of the results that Criteo delivers, including visits, sales and other key metrics.

Our Solutions

We offer **two families of solutions** targeted at our commerce and consumer brand clients:

- **Criteo Marketing Solutions** allow commerce companies to engage consumers with personalized ads across the full marketing funnel. These ads can be shown across the web, mobile and offline store environments. Examples of expected results for clients using Criteo Marketing Solutions include:
 - **driving visits from new prospects** on the website of our clients by engaging such prospects, either in the web or on mobile apps, with personalized ads offering products or services that are tailored to their predicted interest based on the Shopper Graph data (Consideration goal, new visit objective, cost-per-impression (CPM) pricing);
 - **driving installations of our clients' mobile application** by new customers, by engaging such new customers, either in the web or on mobile apps, with personalized ads promoting our client's mobile app (Consideration goal, app install objective, cost-per-install (CPI) pricing);
 - **driving sales** for our commerce clients, either on their web or mobile app property, by engaging consumers, either in the web or on mobile apps, with personalized ads offering products or services for which they have already expressed shopping intent (Conversion goal, sales objective, CPC pricing);
 - **driving more sales from existing customers** for our commerce clients, either on their web or mobile application property, by accurately targeting and re-engaging such existing customers, either in the web or on mobile apps, with personalized ads offering new products or services that they have not yet purchased nor been exposed to (Conversion goal, re-engagement sales objective, largely CPC pricing).

- **Criteo Retail Media** allows retailers to generate advertising revenues from consumer brands, and/or to drive sales for themselves, by monetizing their traffic and audiences through personalized ads, either on their own digital property or on the open Internet, that address multiple marketing goals for brands. Examples of expected results for clients using Criteo Retail Media solutions include:
 - **generating advertising revenue for retailers** on their online store, by providing retailers with our technology platform for them to monetize their traffic and audiences directly with consumer brands across various marketing goals (Retailer Monetization goal, brand onsite advertising objective, transactional-SaaS pricing);
 - **driving sales for consumer brand clients** on the site of retailer partners, by connecting consumer brands and retailers and engaging consumers *on* the retailer's digital property with personalized ads offering specific brand products available on the retailer's digital store and for which consumers have expressed interest (Conversion goal for brand, **onsite** campaign, sales objective, mostly CPC or CPM pricing);
 - **driving sales for consumer brand clients** on the site of retailer partners, by connecting consumer brands and retailers and engaging consumers *outside* of the retailer property on the open Internet with personalized ads offering specific brand products available on the retailer's digital store and for which consumers have expressed interest (Conversion goal for brand, **offsite** campaign, sales objective, largely CPC pricing);

While our current solutions already allow our clients to cover a large part of the marketing funnel, through Consideration and Conversion marketing goals, we will continue to strengthen our solutions to address the Awareness marketing goal for clients.

Historically, the Criteo model had focused solely on converting our clients' website visitors into customers, enabling us to charge our clients only when users engage with an ad we deliver, usually by clicking on it. This pay-for-performance pricing model clearly links the cost of an advertising campaign to its effectiveness in driving conversions, and has long been valued as such by our clients. As we have expanded our solutions to address a broader range of marketing and monetization goals, we also started expanding our pricing models to now include a combination of cost-per-impression and cost-per-install for selected new solutions, in addition to cost-per-click, as well as transactional-SaaS pricing model for large retailers using our technology platform as part of a fast-growing share of our Criteo Retail Media offering. In the future, we may further evolve the pricing of our solutions, including to provide additional transparency to marketers.

Excluding our historical solution for driving Conversion through Criteo Marketing Solutions (formerly called *Criteo Dynamic Retargeting*), no individual solution accounted for more than 10% of total consolidated revenue for the periods presented.

Our Publisher Network

We provide our clients with extensive real-time access to advertising inventory through **direct relationships** with thousands of publisher partners, as well as real-time bidding (or "RTB") Display Advertising exchanges. We define inventory as the combination of desktop web, mobile web and mobile in-app Display Advertising impressions, including social display inventory, native display inventory, video inventory, and ad inventory on major retail ecommerce properties, including for *sponsored product* formats.

In some cases, we have negotiated **direct and privileged access** with publishers, giving us the opportunity to select, buy and price, on an impression-per-impression basis and in real time: (1) inventory that a publisher might otherwise only sell subject to minimum volume commitments; and/or (2) particular ad impressions before such impressions are made available to other potential buyers.

We believe that many of our direct publisher partners have granted us preferred access to portions of their inventory as a result of our ability to effectively monetize that inventory. For example, in Japan, we have entered into a strategic relationship with Yahoo! Japan, that grants us preferred access to its advertising inventory for delivering personalized display ads. In addition, within Criteo Retail Media, we access inventory from ecommerce sites that is generally not available to traditional advertising demand. We believe this inventory from ecommerce retailers is particularly valuable for consumer brands looking to advertise their products, whether with an Awareness, Consideration or Conversion marketing goal, in a multi-brand retail environment.

We **price and buy inventory in real time** and typically do not pre-buy any impression, and do not commit to buying any minimum volume of impressions, except in some limited cases related to our Criteo Retail Media solution. Across both our direct publisher relationships and inventory purchasing done on RTB exchanges, we leverage Criteo AI Engine's ability to quickly and accurately value available advertising inventory, and utilize that information to bid for inventory on a programmatic, automated basis.

Alongside our existing technologies to integrate directly with publishers, we have developed **Criteo Direct Bidder**, our header-bidding technology. Over the past few years, the publisher landscape has rapidly transitioned towards header-bidding technology, allowing publishers to make their inventory simultaneously available for public auction to several competitive bidders, including RTB exchanges. Thanks to our large scale, Criteo Direct Bidder allows us to connect directly to the ad server of publishers in situations where publishers use header bidding to monetize their inventory, allowing us, among other advantages, to bypass RTB exchanges in the bidding process and, doing so, to save publishers the take-rate RTBs would typically charge them. Using Criteo Direct Bidder, we were connected to over 4,500 large publishers globally, on both web and apps, as of December 31, 2019, including: NBC, The Weather Channel, Daily Mail, The Washington Post, eBay, AJA Japan, Orange, Viber, the LA Times, CBS, Fox News, Axel Springer's websites, Marktplaats and M6. Criteo Direct Bidder helps publishers to increase the average monetization of their inventory sold through Criteo Direct Bidder, relative to our overall spend through all channels.

For Criteo Marketing Solutions, we purchase inventory programmatically on a **CPM basis** from our direct publisher partners and RTBs, through standard terms and conditions for the purchase of Display Advertising inventory. This means that inventory purchased for Criteo Marketing Solutions is paid to the publisher irrespective of whether the user engages, in whatever form, with the advertisement delivered on that publisher's digital property. Pursuant to such arrangements, we purchase impressions for users that Criteo recognizes on publishers' digital properties. Such arrangements are cancellable upon short notice and without penalty.

For some of our Criteo Retail Media solutions, we pay for the inventory of the retailer publishers based on a **revenue share**, effectively paying the retailer publisher a portion of the click-based revenue generated by customers clicking on the ads displaying the products of our consumer brand clients. This means that, with these Criteo Retail Media solutions, retailer publishers only get paid if a user effectively clicks on the ad that is displayed on their site.

For our remaining Criteo Retail Media solutions, we either buy inventory on a **CPM basis** or do **not incur any media cost at all** as, in the latter case, we solely provide access to our technology platform for retailers to sell their inventory directly to consumer brands.

We believe that our ability to efficiently access and value inventory at scale results in a **deeply liquid marketplace** for both buyers and sellers of Display Advertising, allowing us to deliver effective ads at the right price for our clients, even as the size and complexity of the campaign increases.

In addition, we take a variety of **brand safety** measures to ensure that the brand equity of our clients is preserved at all possible times. These measures include determining that each publisher's inventory meets our content requirements and those of our clients to ensure that their ads are not shown in inappropriate content categories, such as in adult, violent or sensitive political content. For that purpose, we use numerous internal systems and processes to filter out inventory in real time, including the list of suspect IP addresses from the *Trustworthy Accountability Group* and the lists of invalid traffic from several specialized external vendors. With respect to inventory purchased through RTB exchanges, we utilize a combination of proprietary methodologies as well as third-party software, such as *Integral Ad Science* in the web and *Pixalate* in mobile apps, to verify that inventory where the ad is shown conforms to our advertising guidelines and the content expectations and branding guidelines of our clients. In addition, we are an active member of the *Coalition for Better Ads*, supported by Google, and are compliant with their recommendations for the most user-friendly advertising formats.

Industry Trends

The ability to engage customers across the various steps of the consumer journey is critical for most companies, especially for businesses in the broader commerce and consumer brand sectors, who often dedicate a significant portion of their cost base to developing such an ability. We believe the following trends are relevant in assessing our current and future business.

Ecommerce Continues to Grow Rapidly But Retailers Face Increasing Competition.

While the global retail commerce market, at \$25 trillion in 2019 according to eMarketer, is massive in size, the global retail ecommerce market represented "only" \$3.5 trillion. This means that, despite the rapid growth of ecommerce, physical stores still capture more than 85% of the global retail commerce market and remain key assets for retail companies looking to offer differentiated services and shopping experiences to consumers. Further, the global retail ecommerce market is expected to grow by a 17% compound annual growth rate, or CAGR, to \$6.5 trillion in 2023, according to eMarketer. Excluding China and Amazon.com ("Amazon"), we expect the global retail ecommerce market to grow at a 10% CAGR between 2019 and 2023, largely based on eMarketer data.

Retailers and consumer brands are facing increasing competition, in particular in markets dominated by Amazon, and have started to respond by being increasingly willing to share data within collectives. We believe that consumer brands and retailers not only realize the strong potential of their commerce data, but also increasingly view collaboration and pooled data as key assets that can be used to better meet customer needs, drive value for their business and better compete in today's environment. According to a study published by Forbes Insights in collaboration with Criteo in October 2017, 71% of retailers are willing to contribute online product searches data to a pool of collaborative participants¹. Sixty percent of surveyed retailers are already part of a data cooperative, with almost 70% of those companies already pleased with their collaboration as well as the data they receive. Additionally, 72% of marketers cite "increased revenue" as a key benefit they experience from pooled data.

In addition, we believe the increasing competition that Amazon exerts on most local ecommerce markets is enticing retailers to allocate a larger share of their online advertising budgets to the Consideration marketing goal, in order to drive increasing traffic to their online stores, may they be on the web or on mobile apps.

Digital Ad Spending Continues to Grow Fast and Provides Acceleration Opportunities in the Open Internet.

The display advertising market represents a large opportunity. Global digital ad spending of \$310 billion in 2019 was comprised of Search Advertising (\$139 billion) and Display Advertising (\$170 billion), according to eMarketer. Display Advertising involves placing images, video or ads incorporating animation, sound and/or interactivity, alongside website and mobile application content. Display Advertising is expected to grow by a 12% CAGR through 2023 to reach \$272 billion, faster than Search Advertising, and driven in part by the rapid rise of mobile Internet usage and the continued proliferation of free content across the Internet, in particular video content, including on social media platforms.

The walled-gardens, in particular Google and Facebook, today capture a significant share of the growth of the digital market. As a result, we believe that, together, they capture approximately 70% of the total digital ad spend while representing only half of the time spent online². This means that the open Internet, (i.e. what is outside of walled-gardens), only captures approximately 30% of the ad spend despite accounting for 50% of user time spend and, we believe, is therefore significantly under-monetized. We define the open Internet as the open, non-proprietary environment that allows advertisers and publishers to choose the partner they want to work with, control when and how they share their own data, and how to measure success in a transparent way.

Advertising Technology Has Become More Complex.

Display Advertising has become highly technology-driven, which comes with significant challenges for advertisers:

Artificial Intelligence. According to IDC Research, the sum of the world's data will grow by a 61% CAGR between 2018 and 2025 to reach 175 zettabytes³. The large and diverse data sets that make up the digital information universe, often referred to as big data, are generally categorized into: business application data, human-generated content and machine data. New computational approaches and the falling costs of computing power enable technology companies to process and draw insights from this data using AI and machine-learning approaches. These insights can be used to optimize Display Advertising campaigns in ways that were not previously possible. The ability to collect, collate and analyze shopping intent data points using AI and machine-learning technology, has become a key differentiator for advertisers, including consumer brands.

Programmatic Buying. Technologies for more automated and efficient buying and selling of Display Advertising have been gaining traction for several years with both advertising buyers and publishers. Programmatic buying from real-time, automated bidding platforms and exchanges, as well as through relationships with publishers, provides advertisers with dynamic, targeted and efficient ways to access the proper inventory, and helps publishers maximize the value of their inventory. In the United States, programmatic digital display ad spending represented 84% of total Display Advertising spend in 2019, according to eMarketer.

Mobile and Cross-Device Advertising & Commerce. Penetration of smartphones and tablets is driving rapid growth of global mobile commerce. Mobile retail commerce represented \$2.3 trillion globally in 2019, and is expected to grow at a 21% CAGR between 2019 and 2023, according to eMarketer. In parallel, consumers increasingly use multiple devices to shop across ecommerce websites and mobile apps. As a result, we believe that transactions involving the use of multiple devices, referred to as "cross-device" transactions, represent a significant portion of ecommerce, growing faster than ecommerce overall. Mobile ad spending represented \$241 billion in 2019 and is expected to grow at a 14% CAGR through 2023 to reach \$402 billion.

¹ "The Commerce Marketing Opportunity - How Collaboration Levels the Retail Playing Field", Forbes Insight, in collaboration with Criteo, October 10, 2017

² Based on Nielsen US DCR trends, eMarketer, ExchangeWire

³ Based on IDC Research's Global DataSphere, white paper date November 2018

In-App Advertising. The app environment is more complex than the web environment for advertising. However, users spend most of their mobile time within apps (79% in the United States in 2019, according to eMarketer). Consequently, in-app ad spending represents 83% of mobile ad spending in 2019 in the United States. In this context, it is critical for advertisers to be able to not only effectively reach their consumers while they are in the app environment, but also to engage with them within their own user-friendly mobile application.

Retailers Are Becoming the New Media Moguls by Collaborating Profitably With Brands.¹

By creating a successful media network, Amazon paved the way for retailers to build profitable and rapidly growing ad businesses. Retailers can programmatically serve onsite and offsite ads to their customers, creating new revenue streams with healthy margin for themselves while also delivering great customer experience. We believe these retailers are likely to take market share from the large digital media players and to increase customers' exposure to these ads in store as well.

Advertisers Need a Neutral Strategic Partner to Navigate This Complex and Challenging Environment.

We believe that over the past few years, Display Advertising has reached an inflection point, becoming both a brand awareness building medium and a more effective engagement channel for multiple marketing goals, including customer conversion.

In today's highly competitive environment, commerce companies and consumer brands increasingly focus on profitably reaching, engaging and converting consumers. In addition, we believe they increasingly look at diversifying their significant reliance on walled-garden digital advertising partners. To achieve this, they need a strategic partner, with no conflicting business agenda, able to activate, through AI technology, large amounts of identification data and consumer intent into relevant, personalized ads, in order to drive measurable results at scale across all their marketing goals.

Our Competitive Strengths

We believe the Criteo Platform is transforming the way marketers use digital advertising. We make their advertising investments with us more efficient, effective and measurable by driving trusted and impactful results across multiple marketing goals. We believe the following competitive strengths have enabled us and will continue to enable us to capture a significant share of the digital advertising opportunity:

We Have a Scaled Global Presence. We do business in 103 countries and have a direct operating presence through 29 offices in 19 countries. We have achieved this global presence by replicating and scaling our powerful business model across all geographic markets. In 2019, 42% of our revenue² was derived from clients who conducted advertising campaigns with us in more than one national market. Large businesses are increasingly seeking global advertising partners able to provide comprehensive offerings that are effective across multiple geographies. We believe we are able to meet this demand by leveraging our scalable AI technology and global network of relationships and are well positioned to serve our clients in virtually every market in which they seek to drive trusted, impactful and measurable business results.

Our Large and Loyal Base of Clients and Publisher Partners Provide for Stability and Positive Network Effects. As of December 31, 2019, we had over 20,000 clients, including some of the largest commerce companies in the world, and our client retention rate was approximately 90%. In parallel, as of the same date, we were working with over 4,500 direct publishers on both web and apps, in addition to all of our large global and local RTB partners. As we continue to grow our client base, we continue to grow the number of users who interact with our ads, allowing us to benefit from greater scale when we purchase inventory from publisher partners, many of whom have granted us preferred access to portions of their advertising inventory. We believe this large and loyal base of clients and publisher partners provides for stability in our business, as well as for significant opportunities to cross-sell and up-sell our product portfolio within our large existing client base. As clients may spend more with us and we attract more publisher inventory and deliver more ads, our data assets grow, enabling us to deliver even more precisely targeted and personalized ads and generate a greater impact for our clients. As a result, we believe more commerce and consumer brand clients may use our offering and potentially increase their spend with us. This, in turn, may enable us to increase advertising revenue for publishers, including retailers, further expanding our publisher network and enhancing our ability to drive better performance for clients. We believe this cycle of self-reinforcing network effects, based on our large and loyal base of clients and publishers, may continue to fuel our business in the future.

¹ Forrester report "Retailers: You're The Next Media Moguls", December 2018.

² Excluding Criteo Retail Media.

Criteo Shopper Graph Leverages a Massive, Granular and Open Data Set Focused on Shopping Behaviors. Since 2015, we have built Criteo Shopper Graph through data sharing among our clients. With over 2 billion Criteo IDs in our Identity Graph, we are building one of the largest data sets focused on shoppers, with a scope and scale among the largest in the industry. With 71% of our clients providing identity data, including CRM data, such as hashed emails and hashed log-ins, we believe the matching rates of our Identity Graph are, in some markets, similar to, if not higher than, Google's and Facebook's. In addition, over 95% of the Criteo IDs in our ID graph contain a significant number of persistent non-cookie identifiers, providing the basis for solid, reliable and resilient identity solutions. Besides, our Interest Map offers a comprehensive, accurate and non-identifying shopper profile for all consumers on whom we have collected information, and is the foundation for the development of compelling solutions -existing and new- that help our clients span the full marketing funnel, across the Awareness, Consideration and Conversion marketing goals. Importantly, we believe the guiding principles of Criteo Shopper Graph -in particular its open, transparent and fair approach to sharing and leveraging data within collectives-, highly differentiate it from the proprietary data management approaches of most of the large Internet companies, and therefore represent attractive attributes for marketers.

We Apply Privacy-By-Design Standards and Have Developed Effective Identity Solutions. We are strongly committed to consumer privacy. Criteo was one of the first companies in the industry to include an "Ad Choices" link in all the ads we deliver, giving users access to clear, transparent, detailed and user-friendly information about personalized ads and the data practices associated with the ads they receive. We have long established *Privacy-by-design* as a central element of our technology and product design and development cycles, with a strong commitment to ensuring best practices in privacy, security and safety for consumers and our commerce and brand clients. Since 2013, we have had a designated *Data Privacy Officer* along with a team of privacy experts. These experts are integrated within our R&D and Product organizations and processes, and consider all facets of user privacy as key elements in the very design of any new technology, solution or feature. Aligning with *data minimization* principles, our technologies only rely on categories of data that are strictly necessary for the purpose of our services. The user information we collect relates primarily to purchase intent and is therefore not considered as information that can directly identify a user. In addition, we provide consumers with easy-to-use and easy-to-access mechanisms to control their advertising experience and opt out of receiving targeted ads we deliver, either for all campaigns, or for a specific client or a specific period of time. We believe this transparent, consumer-centric, and controllable approach to privacy empowers consumers to make better-informed decisions about our use of their data. We also actively encourage our clients and publishers to provide transparent and clear information to consumers about our collection and use of data relating to the ads we deliver and monitor. We believe our industry-leading privacy, security and safety standards for consumers and our commerce and consumer brand clients are key competitive advantages on the market.

In addition to standing for users' right to have a clear individual choice with regards to their ad experience, we believe that personalized advertising brings multiple benefits to the ecosystem, including at the user level, and that browsers should not control data portability. We have solutions, through our direct publisher integrations, our mobile ID-based solutions in apps and Retail Media, that operate using multiple first-party or cookie-less mechanisms, representing close to 50% of our business for fiscal year 2019 on a Revenue ex-TAC basis. We believe our identity resolution strategy, leveraging our differentiated assets and providing for complementary layers around first-party data access, our unrivaled ID graph and expanding more into cookie-less inventory supply, will help us increase significantly over time the contribution of the solutions operating using multiple first-party or cookie-less mechanism to our business.

Our Powerful AI Technology Activates Our Datasets for Effective Advertising. While shopping data is readily available in significant volumes to our commerce and consumer brand clients, and plays a critical role for them, we believe the real challenge in driving trusted and impactful advertising is the ability to effectively activate this dataset to drive tangible results for both retailers and brand advertisers. The Criteo Platform is the result of 14 years of research and development and investment in our AI technology, with a single focus on driving trusted, impactful and measurable business results, including sales, for clients. Through our deep data-driven understanding of consumer intent and behavior, we are able to deliver highly relevant, targeted and personalized ads across multiple marketing goals and digital devices. The scale and breadth of our data is constantly expanding as users interact with our clients and as we deliver targeted ads. For example, in 2019 alone, we delivered over 1.4 trillion targeted ads. By dynamically matching a user's intent or interest with a personalized ad, we are able to deliver more relevant and engaging ads to users, which are more likely to achieve targeted results for advertisers.

Criteo AI Engine is supported by a flexible and scalable high-performance computing infrastructure, made of two Hadoop clusters hosting 200,000 processing cores with total storage capacity of 750,000 terabytes and 2,000 terabytes of random-access memory. Every day, our platform processes 250 terabytes of additional compressed data. We own over 43,000 servers through a global network of ten data centers. We believe the power and scalability of our AI technology assets are increasingly hard to replicate by other market participants.

The Criteo Platform Covers the Marketing Funnel With Transparency, Control and Clear Measurement. Our offering is powered by AI technology and helps our clients cover the full marketing funnel (Awareness, Consideration, Conversion) as consumers travel across the multiple steps of their consumer journey. In 2019, our new solutions outside of our legacy *retargeting* product grew 54% on a Revenue ex-TAC basis and already represented 12% of our business, including 16% in the fourth quarter of 2019. We continue to build and develop new solutions to help commerce and brand clients address additional marketing goals and drive new business outcomes, including, for example, brand Awareness. We believe our ability to drive trusted and impactful results across multiple goals in the marketing funnel, for both commerce companies and brands, is a key competitive advantage on the market. In particular, we believe the value proposition of our Criteo Retail Media offering, helping retailers to monetize their data and inventory with brands, is quite unique in the marketplace outside of Amazon.

Our solutions work seamlessly across digital devices, commerce and advertising environments, platforms and operating systems, advertising channels, and publisher environments. We believe that, for advertisers looking to engage their prospects or existing customers, irrespective of their position in the consumer journey, their digital device, commerce or advertising environment, platform and operating system, advertising channel or publisher environment where consumers may be reached, the completeness of our offering provides a clear advantage over the many point solutions available on the market.

Our self-service interface provides marketers with transparency and control over their advertising investments. All our clients have 24/7 access in self-service through Criteo Management Center to a set of automated tools allowing them to control and monitor the objectives, parameters and performance of their advertising campaigns, and to manage their spend, solution by solution, and campaign by campaign. We also provide our clients with transparent, detailed reporting of key campaign metrics, including reports detailing impression-level information. We believe the transparency, control, flexibility and ease of use of our offering are key strengths on the market.

In addition, our variety of pricing models provides clear measurement for advertisers. As Criteo AI Engine becomes more sophisticated, we are optimizing our technology to maximize a wider range of expected advertising objectives, including, for example, customer visits, installations of mobile apps and sales. While the Criteo model has historically focused solely on converting our clients' website visitors into customers, linking our proven pay-for-performance model to its effectiveness in driving sales for clients, we have more recently evolved our pricing models alongside our broader suite of solutions. Our pricing models now include a combination of cost-per-impression and cost-per-install for selected new solutions, in addition to cost-per-click, as well as a transactional-SaaS pricing model for large retailers using our technology platform as part of a fast-growing share of Criteo Retail Media. We believe our clients value our various pricing models and related measurement metrics, as they provide a clear link between the cost of their advertising campaigns and their effectiveness in generating trusted, impactful and measurable results aligned with their marketing objectives.

Our Profitable, Cash-Generative Financial Model Allows Us to Invest While Maintaining Healthy Profitability. Our company has been profitable early in its history and has since grown substantially its profitability margin. For example, for the fiscal year ended December 31, 2019, our operating profit margin was 6.2% of revenue, compared to just 2.4% at the time of our Initial Public Offering at the end of 2013, and our Adjusted EBITDA as a percentage of Revenue ex-TAC was 32%, compared to approximately 17% at the time of our Initial Public Offering. In addition, we manage our expense base in a disciplined way and focus on driving productivity through operational excellence and automation across the entire company. Efficiency gains allow us to be in a position to reinvest a portion of the savings generated by such gains into strategic investments areas, while maintaining healthy profitability. Our financial model allows us to generate a significant amount of free cash flow. For the fiscal year ended December 31, 2019, we had a transformation of Adjusted EBITDA into free cash flow of approximately 42%, which we believe is a solid conversion level. As a result, our company is in a position to maintain a reasonably comfortable cash position, standing at \$419 million at the end of fiscal 2019, which, together with very low financial liabilities, provides for significant financial flexibility. We believe having a profitable, cash-generative financial model providing for financial flexibility and allowing for an investment capacity is a competitive advantage, in particular compared to multiple sub-scale companies in our industry.

Our Business & Growth Opportunities

Our mission is to power the world's marketers, brands, retailers, publishers, content creators and agencies with trusted and impactful advertising. We enable our clients to address multiple goals across the marketing funnel through the Criteo Platform. Our vision is to build the leading advertising technology platform for the open Internet.

We are currently strengthening the Criteo Platform and expanding our business through several opportunities, both within our existing suite of solutions and in new areas, always focused on driving trusted and impactful results for clients. One of our key priorities is to make our revenue model more sustainable and resilient over time, which, among other things, will involve broadening our value proposition beyond a pure return on ad spend proposition. In parallel, we are also focused on driving efficiency across the entire company in order to continue to invest into our strategic priorities. The core elements of our business strategy include:

Strengthen the Core. We intend to strengthen our legacy *retargeting* business within Criteo Marketing Solutions, aimed at converting our clients' customers in both the web and apps. We intend to achieve this by keeping our strong differentiators, including around Criteo Shopper Graph and user identification, continuously improving Criteo's AI Engine technology and the strong performance of our core product in all environments, providing more transparency on our value proposition, and adding new clients and publishers. We may as well bring further capabilities, like third-party measurement, to enhance our core solution.

Over the past two years, the growth of *retargeting* has been slowing down and turned negative more recently. Over the period, cookie restrictions on several browsers have had a significant negative impact on our business on the web, including on *retargeting*. Beyond these headwinds, and while the growth of *retargeting* is still healthy in the midmarket, the softness has been more pronounced with large customers as a result of several factors: higher penetration of our legacy product with large customers in our major markets, the slow transition of our large customers in investing into fully effective mobile apps, occasional shift of their *retargeting* budgets towards upper funnel marketing budgets, and some increasing requests for more price transparency from some large customers. We are taking several measures to stabilize our *retargeting* business, including by: accelerating our initiatives to build out a differentiated full-stack Demand-Side-Platform, adding capabilities for upper-funnel marketing on top of our strengths in lower funnel, and offering more flexibility throughout the stack, driving more proactive initiatives around user identity and adjusting our pricing model to increase the transparency of our value proposition for this product.

We also intend to strengthen our core by further expanding our global client base across customer categories. We have a track-record of entering new geographic markets, adding new clients successfully and rapidly gaining commercial traction. We intend to continue to grow our client base, both in the large customer and midmarket categories. In particular, we will continue to build and roll out our self-registration sales channel for smaller clients, and to expand our partnerships with Ecommerce Platform Partners, to increase our penetration of the large opportunity we see in the low end of the midmarket. We believe opportunities also remain to grow our business with large customers in markets where we already operate, including in Western Europe, the U.S. and Japan.

In addition, we intend to maintain a high level of preferred publishers relationships in order to strengthen our core. In 2019, 32% of the yield, i.e. the monetization rate per inventory unit, we generated to publisher partners was derived from inventory directly sourced from publishers with whom we have a direct, preferred relationship. We will continue to increase the deployment of Criteo Direct Bidder with large publishers, both on the web and on mobile apps.

We also plan to leverage our identity resolution strategy to strengthen our core.

Expand Our Product Portfolio. We intend to continue to leverage our existing assets to strengthen our business outside of the *retargeting* core, continue to build or expand our fast-growing adjacent solutions, and build further competitive moats around our core assets.

Our current families of solutions, Criteo Marketing Solutions and Criteo Retail Media, help our clients cover a large part of the marketing funnel across all commerce environments and drive advertising revenues for retailers from consumer brands. In fiscal year 2019, our new solutions outside of *retargeting* already represented 12% of our total business, as measured on a Revenue ex-TAC basis, including 16% in the fourth quarter 2019. We intend to continue growing all our solutions outside of *retargeting*, namely our Consideration and Awareness offerings in Marketing Solutions, both online and omnichannel, as well as Retail Media. To achieve this, we intend to continue to upsell our existing commerce clients to more or all of our new solutions within Criteo Marketing Solutions. We also intend to continue to offer Criteo Retail Media to the digital stores of large retailers as a key advertising channel to generate high gross margin revenue from consumer brands. We believe Criteo Retail Media is a particularly differentiated offering in the marketplace and offers significant growth opportunities for us. Overall, we intend to continue to grow the share of our new solutions as a percentage of our total business over time, and believe this share can reach approximately 30% over the mid term.

In addition, we continue to build and leverage Criteo Shopper Graph that is central to our approach of bringing compelling new solutions to market. We will continue to enhance the three data collectives that make up Criteo Shopper Graph, with a particular focus around identity resolution. In the future, we may consider monetizing Criteo Shopper Graph as a standalone value proposition to consumer brands and advertising agencies.

Expanding our portfolio also involves providing even more transparency and control to advertisers and their agencies. Self-service transparency, control, flexibility and ease of use have become increasingly important to marketers in the way they consider and manage their advertising investments. Through their 24/7 access to Criteo Management Center, all our clients can control and monitor the objectives, parameters and performance of their campaigns. Beyond allowing them to manage their spend, and providing transparent, detailed reporting of key campaign metrics, our self-service interface provides control over the key parameters of their campaigns with us. We believe that providing comprehensive and user-friendly self-service control over advertising investments across the full marketing funnel will help us attract and retain more clients, including commerce players, brands and advertising agencies. As a result, we will continue to broaden and improve our self-service functionalities.

Within our new solutions, we also intend to grow our Omnichannel capabilities. A large portion of our commerce client base operates physical stores and still generates a significant percentage of their sales from offline stores. While retailers extract massive amounts of sales data from their physical stores, they often lack the sophisticated technology necessary to activate this dataset for sales generation, both online and offline. As a result, retailers are increasingly interested in omnichannel advertising solutions that allow them to target their customers everywhere and, doing so, to bridge the gap between online and offline. While still a small contribution to our business, Omnichannel is one of the fastest-growing opportunities for Criteo. In fiscal year 2019, our Omnichannel business grew close to 300% on a Revenue ex-TAC basis. We intend to further expand our solutions for omnichannel advertising, including by feeding our clients' offline CRM data into our Identity Graph, in order to match offline consumers with their online profile.

Explore Strategic Game Changers. We intend to look for opportunities to extend and accelerate the growth of our business by exploring and bringing strategic assets and capabilities outside of the current scope of our business, in line with our strategy to keep us ahead and relevant for the future. These strategic initiatives may involve a combination of organic developments, partnerships and acquisitions.

For example, we may partner with other Demand-Side-Platforms or other ecosystem players to extend our customer reach to new client categories or agencies, and extend the capabilities and functionalities of the Criteo Platform, beyond what we currently do on a standalone basis. In addition, to support the growth of our Awareness and Consideration solutions and potential other new solutions, we may look at expanding our access to video inventory, both in Web and App, as well as accessing Connected TV inventory on a much larger scale. This may involve strengthening and expanding our existing partnerships or signing new partnerships in these areas.

On the M&A side, we have executed 11 acquisitions since inception, ranging from small asset deals to a mid-size acquisition like HookLogic. We selectively evaluate technologies and businesses that we believe have potential to enhance, complement or expand our strategic capabilities, including our technology, our solutions, go-to-market, or R&D team. We target acquisitions that, over time, can be efficiently integrated into the Criteo Platform, including into our AI technology, global operations and company culture, while preserving the quality and performance of our offering. We are increasingly focused and selective, and tend to favor acquisition target companies that have already demonstrated revenue traction with a proven value proposition for their clients and partners, are reasonably profitable, and can bring value with little or no short-term integration into our current organization. We believe we are an acquirer of choice among prospective acquisition targets thanks to our entrepreneurial culture, growth opportunity, global scale, financial profile, strong brand and market position. We will therefore continue to opportunistically yet selectively pursue our acquisition strategy in the future.

Drive Technology and Operations Excellence. We intend to continue to drive productivity and efficiency gains through operational excellence across the entire company, in order to reinvest a portion of such gains into technology innovation and other strategic priorities, while maintaining healthy profitability. We believe these are the conditions for the long-term sustainability of our business.

Driving operational excellence through the company involves increasing automation and the scalability of our operations, as well as having a responsible and effective approach to expense management, across all teams and functions. Leveraging operational excellence and efficiency gains, we intend to continue to make investments in our technology innovation and new product development in Criteo Marketing Solutions. We will for example invest in further scaling the Criteo Platform with a focus on making self-service functionalities even more comprehensive and flexible for clients. Our Product development for Criteo Retail Media will also remain a key area of investment for us. And, we will continue to make our technology more resilient to decisions of web browser vendors and further diversify our data collection away from relying on third-party cookies.

Strategic Relationship with Yahoo! Japan

In August 2012, we entered into a strategic relationship with Yahoo! Japan, a leading provider of advertising inventory in Japan, which grants us preferred access to their performance-based display inventory. In connection with this strategic relationship, Yahoo! Japan invested in our subsidiary, Criteo K.K. We retain 66% ownership of Criteo K.K. and Yahoo! Japan holds a 34% ownership. Yahoo! Japan has the right to require us to buy back its interest upon the occurrence of certain events (such as bankruptcy or breach of obligations), and we have the right to require them to sell their interest in Criteo K.K. under specified circumstances, such as a termination of the commercial relationship.

This strategic relationship may be terminated by either party for material breach and other customary events. The term of this strategic relationship automatically renewed to August 2020 and will continue to renew automatically thereafter for one-year terms if neither party provides advance written notice of its intent not to renew within a specified period of time.

Infrastructure

Our ability to execute depends on our highly sophisticated global technology software and hardware infrastructure. As of December 31, 2019, our global infrastructure included over 43,000 servers, including two Hadoop clusters, that comprise close to 9,800 servers providing a storage capacity exceeding 750,000 terabytes and 2,000 terabytes of random-access memory. Our global infrastructure is divided into three independent geographic zones in the Americas, Asia-Pacific and EMEA. In each of these geographic zones, our services are delivered through data centers that support this particular zone. We generally rely on more than one data center in any given zone. Within large zones, the data centers are strategically placed to be close to our clients, publishers and users. This provides the benefit of minimizing the impact of network latency within a particular zone, especially for time-constrained services such as RTB. In addition, we replicate data across multiple data centers to maximize availability and performance. We also generally seek to distribute workload across multiple locations to avoid overloads in our systems and increase reliability through redundancy. Within each data center, computing power is provided by horizontal build-outs of commodity servers arranged in multiple, highly redundant pools. Some of these pools are dedicated to handling incoming traffic and delivering ads while others are devoted to the data analytics involved in creating these ads. In particular, we use software specifically designed for processing large data sets, such as Hadoop, to run offline data analyzes and to train our AI and Machine Learning models. The results are then fed back to refresh and improve our prediction and recommendation algorithms.

We use multiple-layered security controls to protect Criteo AI Engine and our data assets, including hardware- and software-based access controls for our source code and production systems, segregated networks for different components of our production systems and centralized production systems management.

Our Clients

Our client base consists primarily of companies in the retail, travel and classifieds verticals, which we refer to as "commerce companies" or "commerce clients", and includes some of the largest and most sophisticated commerce companies in the world. These companies range from large, global, diversified commerce companies to mid-sized regional companies.

With Criteo Retail Media, we also serve consumer brand manufacturers, which we refer to as "consumer brands" or "consumer brand clients". As of December 31, 2019, we had more than 20,000 clients (both commerce and consumer brand clients combined). In 2019, approximately 75% of our client relationships¹ were held directly with the client, whereby there was no advertising agency or any other third-party involved in our client relationship.

We believe our business is not substantially dependent on any particular client or group of clients. In 2017, 2018 and 2019, our largest client represented 1.9%, 2.0% and 2.8% of our revenue, respectively, and in 2017, 2018 and 2019, our largest 10 clients represented 11.2%, 11.7% and 11.4% of our revenue in the aggregate, respectively.

There is no group of customers under common control or customers that are affiliates of each other constituting an aggregate amount equal to 10% or more of our consolidated revenues, the loss of which would have a material adverse effect on Criteo.

We define a client to be a unique party from whom we have received an insertion order and delivered an advertisement during the previous 12 months. We count specific brands or divisions within the same business as distinct clients so long as those entities have signed separate insertion orders with us. On the other hand, we count a client who runs campaigns in multiple geographies as a single client, even though multiple insertion orders may be involved. When the insertion order is with an advertising agency, we generally consider the client on whose behalf the advertising campaign is conducted as the "client" for purposes of this calculation. In the event a client has its advertising spend with us managed by multiple agencies, that client is counted as a single client.

Our client base is composed of two client categories: the large customer category and the midmarket category. We define large customers as the top-50 or the top-100 commerce websites per vertical in a given geographic market, depending on the depth of that market, based on the number of monthly unique visitors as measured by comScore or other third-party providers of such information. We define a midmarket client as any client outside of the large customer category per vertical in a given geographic market, depending on the depth of that market, and with a certain minimum threshold number of unique monthly visitors to their digital property, as measured by comScore or other third-party providers of such information. This minimum threshold varies by market, but is generally around 40,000 unique monthly visitors for our more developed markets. The delineation between the large customer and midmarket categories is fluid and the Company may decide, from time to time, to move some clients from one category to another.

In 2018, we began a go-to-market transformation aimed at maximizing the commercial opportunity for our multi-solution offering. As part of this go-to-market transformation, we have taken a more granular approach to the segmentation of our client base and have divided our existing and addressable clients into six segments, based on clients' size and business potential with us. The top-two client segments belong to the large customer category and are serviced through a consultative approach delivered by a fully dedicated team of Criteo sales and account strategists. The middle-two client segments belong to the midmarket category and are serviced by an integrated and largely automated telesales approach. The lowest-two client segments also belong to the midmarket category and are meant to be entirely serviced through our self-service client platform, the self-registration and onboarding modules of which we started to roll out in 2019.

¹ Excluding Criteo Retail Media.

Research and Development

We invest substantial resources in research and development to conduct fundamental research on artificial intelligence, machine-learning models, enhance the algorithms in Criteo AI Engine, develop new features and solutions, conduct quality assurance testing, improve our core technology and enhance our technology infrastructure. Our engineering group is primarily located in research and development centers in Paris, France; Grenoble, France; Palo Alto, California (until early 2020) and Ann Arbor, Michigan. We expect to continue to expand capabilities of our technology in the future and to invest significantly in continued research and development and new solutions efforts. We had close to 700 employees primarily engaged Research and Development and Product as of December 31, 2019. Research and development expenses, including expenses related to the Product group, totaled \$173.9 million, \$179.3 million and \$172.6 million for 2017, 2018 and 2019, respectively.

Intellectual Property

Our intellectual property rights are a key component of our success. We rely on a combination of patent, trademark, copyright and trade secret laws, as well as confidentiality procedures and contractual restrictions, to establish, maintain and protect our proprietary rights. We generally require employees, consultants, clients, publishers, suppliers and partners to execute confidentiality agreements with us that restrict the disclosure of our intellectual property. We also generally require our employees and consultants to execute invention assignment agreements with us that protect our intellectual property rights.

Intellectual property laws, together with our efforts to protect our proprietary rights, provide only limited protection, and any of our intellectual property rights may be challenged, invalidated, circumvented, infringed or misappropriated. The laws of certain countries do not protect proprietary rights to the same extent as the laws of France and the United States and, therefore, in certain jurisdictions, we may be unable to protect our proprietary technology.

Agreements with our employees and consultants may also be breached, and we may not have adequate remedies to address any breach. Further, to the extent that our employees or consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights to know-how and inventions relating thereto or resulting therefrom. Finally, our trade secrets may otherwise become known or be independently discovered by competitors and unauthorized parties may attempt to copy aspects of the Criteo Platform or obtain and use information that we regard as proprietary.

As of December 31, 2019, we held five patents issued by the U.S. Patent and Trademark Office, one patent issued by the French Patent Office, one patent issued by the European Patent Office, one patent issued by the Japan Patent Office and one patent issued by the Korean Intellectual Property Office, and had filed 29 non-provisional U.S. patent applications, five European patent applications and one international patent application under the Patent Cooperation Treaty. We also own and use registered and unregistered trademarks on or in connection with our products and services in numerous jurisdictions. In addition, we have also registered numerous internet domain names.

Our industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. In particular, leading companies in the technology industry have extensive patent portfolios. From time to time, third parties, including certain of these leading companies, have asserted and may assert patent, copyright, trademark and other intellectual property rights against us, our clients or our publishers. Litigation and associated expenses may be necessary to enforce our proprietary rights.

Privacy, Data Protection and Content Control

Legal and Regulatory

Privacy and data protection laws play a significant role in our business. The regulatory environment for the collection and use of consumer data by advertising networks, advertisers and publishers is frequently evolving in the United States, Europe and elsewhere. The United States and foreign governments have enacted, considered or are considering legislation or regulations that could significantly restrict industry participants' ability to collect, augment, analyze, use and share non-identifying data, such as by regulating the level of consumer notice and consent required before a company can utilize cookies or other tracking technologies.

In the United States, at both the federal and state level, there are laws that govern activities such as the collection and use of data by companies like us. At the federal level, online advertising activities in the United States have primarily been subject to regulation by the Federal Trade Commission, or the FTC, which has regularly relied upon Section 5 of the Federal Trade Commission Act, or Section 5, to enforce against unfair and deceptive trade practices, including alleged violations of consumer privacy interests. Various states have also enacted legislation that governs these practices. For example, on September 27, 2013, the governor of California signed into law AB 370, an amendment to the California Online Privacy Protection Act of 2003, or CalOPPA. This amendment requires that we disclose in our privacy policy how we respond to web browser "do not track" signals. Our current privacy policy discloses that we do not respond to web browser "do not track" signals but that we do respond to opt-out requests made through our proprietary opt-out button or through industry opt-out platforms (namely Network Advertising Initiative and Digital Advertising Alliance). However, the US privacy law framework may be subject to significant evolutions in the near future both at a federal and at a state level. At a federal level, law makers are currently considering the possibility of adopting a federal privacy law. While we cannot anticipate the chances of success and potential output of this initiative, the State of California already passed a new law (the California Consumer Privacy Act) intended to better protect the privacy of consumers. This new law came into force on January 1, 2020 and will notably impose more stringent obligations on companies regarding the level of information and control they provide to consumers about the collection and sharing of their data. This act also offers the possibility to any consumer who has suffered a violation of this act to recover statutory damages and could therefore open the door to additional risks of individual and class-action lawsuits.

In addition, the Criteo Platform reaches users throughout the world, including in Europe, Australia, Canada, South America and Asia-Pacific. As a result, some of our activities may also be subject to the laws of foreign jurisdictions. In particular, data protection laws in Europe can be more restrictive regarding the collection and use of data than those in U.S. jurisdictions.

In the European Union, the two main pillars of the data protection legal framework are the E-Privacy Directive (Directive on Privacy and Electronic Communications) and the General Data Protection Regulation, which was implemented in May 2018.

Directive 2002/581-EC (also called the E-Privacy Directive) was amended in November 2009 by Directive 2009/136/EC (the E-Privacy Directive Amendment) to introduce new requirements for EU companies like ours, along with advertisers and publishers, to present users with an information notice and obtain their consent prior to placing cookies or other tracking technologies for targeted advertising purposes. As there were different transpositions of the E-Privacy Directive Amendment in domestic laws across the EU Member States, there are currently different interpretations of what constitutes valid consent (e.g. explicit versus implied consent) across the EU, posing a risk of regulatory divergence and creating legal uncertainty for businesses.

The European institutions are in the process of examining a regulation proposal to review the E-Privacy Directive and the mechanisms for "cookie" consent are being re-discussed. The regulation proposal, which has been discussed within the European Council Working Group for more than 2 years, was finally rejected by a large majority by the European Council at the COREPER meeting on November 22nd. An amended proposal is expected to be prepared by the European Commission in the coming weeks/months and submitted to European Council for review.

In December 2016, the EU institutions reached an agreement on a draft regulation that was formally adopted in April 2016, referred to as the General Data Protection Regulation ("GDPR"). The GDPR has updated principles drawn from the 1995 Data Protection Directive while imposing new levels of sanctions for non-compliance. The EU data protection authorities have also been granted power to impose administrative fines of up to a maximum of €20 million or 4% of the data controller's or data processor's global turnover for the preceding financial year, whichever is higher. We believe that the regulation has no material impact on our business or the way our technologies operate. However, GDPR is still a recent regulation with no established case law. Therefore interpretations of the GDPR may vary, especially with respect to the articulation between GDPR (*lex generalis*) and E-Privacy Directive (*lex specialis*) and the conditions for the collection of a valid "cookie" consent, and thus there can be no assurance that this will not have any particular impact on our business, technologies or practices in the medium to long term.

To illustrate this risk of different interpretations by the competent authorities, the Spanish Data Protection Authority (Agencia Espanola de Proteccion de Datos) recently published updated guidance in which it is stated that continuing to browse a website could constitute consent of a user for cookie tracking, while the French Data Protection Authority (Commission Nationale de l'Informatique et des Libertés) and UK Data Protection Authority (Information Commissioner's Office) are listing stricter requirements in their own updated guidance and seem to impose a very clear and specific statement of consent.

On January 14, 2020, CNIL published its draft recommendations on the use of cookies and other tracking technologies. The draft recommendations provide that, when required, consent must be indicated by a clear and positive action of the data subject, such as by clicking on an “accept all” button on the first layer of the consent management platform. CNIL also noted that it should be as easy to refuse consent to the use of cookies as it is to accept consent, and a “refuse all” button should be present on the first layer of the consent management platform, equivalent to the “accept all” button in terms of size, position and color. The recommendations are not binding, nor are they intended to be prescriptive and exhaustive. The recommendations were open to public consultation until February 25, 2020. We expect that a final version of the recommendations will be submitted for adoption soon thereafter.

As we continue to expand into other foreign jurisdictions, we may be subject to additional laws and regulations that may affect how we conduct business.

Self-Regulation

In addition to complying with extensive government regulations, we voluntarily and actively participate in several trade associations and industry self-regulatory groups that promulgate best practices or codes of conduct relating to targeted advertising. For example, the Internet Advertising Bureau EU & US, the Network Advertising Initiative, the European Digital Advertising Alliance and the Digital Advertising Alliance have developed and implemented guidance for companies to provide notice and choice to users regarding targeted advertising.

In addition to complying with such guidance, we provide consumers with notice about our use of cookies and our collection and use of data in connection with the delivery of targeted advertising, and allow them to opt out from the use of such data for the delivery of targeted advertising. In an effort to harmonize the industry’s approach to internet-based advertising, these programs facilitate a user's ability to disable services of integrated providers, but also educate users on the potential benefits of online advertising, including access to free content and display of more relevant advertisements to them. The rules and policies of the self-regulatory programs that we participate in are updated from time to time and may impose additional restrictions upon us in the future.

Criteo became one of the first companies to broadly include an "Ad Choices" link in all the advertisements we deliver, which gives users access to clear, transparent, detailed and user-friendly information about personalized advertisements and the data practices associated with the advertisements they receive. In addition, we provide consumers with an easy-to-use and easy-to-access mechanism to control their advertising experience and opt out of receiving targeted advertisements we deliver, either for all campaigns or for a specific client or specific period of time.

We believe that this transparent consumer-centric approach to privacy empowers consumers to make better-informed decisions about our use of their data. We also actively encourage our clients and publishers to provide information to consumers about our collection and use of data relating to the advertisements we deliver and monitor.

Content Control and Brand Safety

To protect against unlawful advertiser and publisher content, we include restrictions on content in our terms and conditions. We also take a large variety of brand safety measures to ensure that the brand equity of our clients is preserved as much as possible. These measures include determining that each publisher's inventory meets our content requirements and those of our clients to ensure that their display advertisements are not shown in inappropriate content categories. For that purpose, we use numerous internal systems and processes to filter out inventory in real time, including the list of suspect IP addresses from the *Trustworthy Accountability Group* and the lists of invalid traffic from several specialized external vendors. With respect to our inventory purchased through RTB exchanges, we utilize a mix of proprietary methodologies as well as third-party software to verify that inventory where the advertisement placement is shown conforms to our advertising guidelines and the content expectations and branding guidelines of our clients.

Government Regulation

In addition to the laws and regulations governing privacy and data protection described above, we are subject to numerous domestic and foreign laws and regulations covering a wide variety of subject matters. New laws and regulations (or new interpretations of existing laws and regulations) may also impact our business. The costs of compliance with these laws and regulations are high and are likely to increase in the future and any failure on our part to comply with these laws may subject us to significant liabilities and other penalties.

Competition

We compete in the broader market for digital advertising, primarily through Display Advertising. Our market is complex, rapidly evolving, highly competitive, and still fragmented yet rapidly consolidating. We face significant competition in this market, which we expect to intensify in the future, partially as a result of potential new entrants in our market, including but not limited to large well-established internet publishers and players, in particular as we continue to expand the breadth of the Criteo Platform. We currently compete with large, well-established companies, such as Google, Amazon and Facebook, independent Demand-Side Platforms ("DSPs") such as The Trade Desk or MediaMath, as well as smaller, privately held companies. Potential competition could emerge from large enterprise marketing platforms, like Adobe Systems Inc. ("Adobe"), Oracle Corporation ("Oracle") and Salesforce.com, Inc. ("Salesforce"), or public and private companies specialized in the Marketing Technology ("MarTech") space. In addition, web browsers, and desktop and mobile operating systems developed by large software companies like Google and Apple Inc. ("Apple") can have a significant influence and impact on the way we operate. We believe the principal competitive factors in our industry include:

- access to granular data, in particular commerce data, on a large scale;
- technology-based ability to activate data, in particular commerce data, for multiple marketing goals, including customer conversion;
- technology-based ability to generate advertisers' desired business outcomes, including, but not limited to, high return on advertising spend at scale;
- relevance and breadth of solutions to address numerous marketing goals;
- breadth and depth of consumer reach;
- advertiser control over the objectives, parameters and performance of their advertising campaigns through a modular, flexible and easy-to-use self-service interface;
- measurability of the advertising spend performance, based on clear and transparent measurement metrics;
- completeness and effectiveness of solutions across digital devices, commerce and advertising environments, platforms and operating systems, advertising channels and publisher environments;
- transparency of pricing models, aligning with the value propositions provided to advertisers;
- openness, transparency, security and fairness of data sharing and data management practices;
- client trust;
- global presence;
- client service and detailed, transparent client reporting available on a self-service basis;
- commitment to data protection and user privacy; and
- ease of use.

We believe that we are well positioned with respect to all of these factors and expect to continue to capture an increasing share of digital advertising budgets worldwide.

Seasonality

Our client base consists primarily of commerce of companies in the retail, travel and classifieds industries, which we refer to as “commerce companies” or “commerce clients”. In the digital retail industry in particular, many businesses devote the largest portion of their advertising spend to the fourth quarter of the calendar year, to coincide with increased holiday spending by consumers. With respect to Criteo Retail Media, the concentration of advertising spend in the fourth quarter of the calendar year may be particularly pronounced. Our commerce clients in the retail industry typically conduct fewer advertising campaigns in the first and second quarters than they do in other quarters, while our commerce clients in the travel industry typically increase their travel campaigns in the first and third quarters and conduct fewer advertising campaigns in the second quarter. As a result, our revenue tends to be seasonal in nature. If the seasonal fluctuations become more pronounced, our operating cash flows could fluctuate materially from period to period.

Employees

As of December 31, 2019, we had 2,755 employees. Our employees employed by French entities (1,032 employees) are represented by a labor union, employee representative bodies (works' council, employee delegates and a health and safety committee) and covered by collective bargaining agreements. We consider labor relations to be good and have not experienced any work stoppages, slowdowns or other serious labor problems that have materially impeded our business operations.

Financial Information about Segments and Regions

We manage our operations as a single reportable segment. For information about revenues, net income and total assets of our reporting segment, please see our audited consolidated financial statements included elsewhere in this Form 10-K. For a breakdown of our revenue and non-current assets by region, please see Note 26 to our audited consolidated financial statements included elsewhere in this Form 10-K. For information regarding risks associated with our international operations, please refer to the section entitled "Risk Factors" in Item 1A of Part I in this Form 10-K.

Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act are made available, free of charge on our website, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the U.S. Securities and Exchange Commission (the "SEC"). These documents may be accessed through our website at www.criteo.com under "Investors." Information contained on, or that can be accessed through, our website does not constitute a part of this Form 10-K. We have included our website address in this Form 10-K solely as an inactive textual reference.

The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements and other information regarding registrants, such as Criteo, that file electronically with the SEC. With respect to references made in this Form 10-K to any contract or other document of Criteo, such references are not necessarily complete and you should refer to the exhibits attached or incorporated by reference to this Form 10-K for copies of the actual contract or document.

Item 1A Risk Factors

Investing in our ADSs involves a high degree of risk. You should carefully consider the following risks and all other information contained in this Form 10-K, including our consolidated financial statements and the related notes thereto, before investing in our ADSs. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, also may become important factors that affect us. If any of the following risks materialize, our business, financial condition and results of operations could be materially harmed. In that case, the trading price of our ADSs could decline, and you may lose some or all of your investment.

Risks Related to Our Business and Industry

If we fail to innovate, adapt and respond effectively to rapidly changing technology, our offerings may become less competitive or obsolete. Our investments in new solutions and technologies to address new marketing goals for our clients are inherently risky and may not be successful.

Our industry and business is subject to rapid and frequent changes in technology, evolving client needs and the frequent introduction by our competitors of new and enhanced offerings. Our future success will depend on our ability to continuously enhance and improve our offerings to meet client needs, add functionality to and improve the performance of the Criteo Platform, and address technological and industry advancements. If we are unable to enhance our solutions to meet market demand in a timely manner, we may not be able to maintain our existing clients or attract new clients.

Historically, the Criteo model focused solely on converting our clients' website visitors into customers through our historical solution, *Criteo Dynamic Retargeting*. Since then, we have broadened our solutions portfolio to include additional marketing and monetization goals (including Awareness and Consideration) for commerce companies and consumer brands across web, apps and stores, which has required the investment of substantial resources.

However, our investments into these new solutions and technologies are inherently risky and may not be successful. First, we believe that broadening our solutions portfolio to include additional marketing and monetization goals is important to achieving our vision for the Company and positioning Criteo for future success. However, many of these marketing and monetization goals are new to us, and we have had to invest substantial resources to adapt our model, pricing and organization to support this expansion. Similarly, we do not have a long or established track record of competing successfully in this space. If we are not successful in expanding our solutions along broader marketing goals, in particular along the Awareness and Consideration marketing goals, our results of operations could be adversely affected. Further, our current and potential clients may not shift as quickly as we expect or at all to new advertising methods, such as in-app, reducing our growth potential. If the market for these channels deteriorates or develops more slowly than we expect, it could reduce our growth prospects and our financial condition may be adversely affected.

In addition, we have made, and intend to continue to make, substantial investments in research and development in order to further strengthen Criteo AI Engine and scale our technology platform. However, if we are unable to continuously enhance and improve our offerings, we may be unable to respond effectively to changes in our industry, technology or user preferences, and our solutions may become less competitive or obsolete.

Our ability to generate revenue depends on our collection of significant amounts of data from various sources, which may be restricted by consumer choice, restrictions imposed by clients, publishers and browsers or other software, changes in technology, and new developments in laws, regulations and industry standards.

Our ability to optimize the delivery of internet advertisements for our clients depends on our ability to successfully leverage data, including data that we collect from our clients, data we receive from our publisher partners and third parties, and data from our own operating history. Using cookies and non-cookie based mechanisms, such as hashed emails, mobile advertising identifiers, we collect information about the interactions of users with our clients' and publishers' digital properties (including, for example, information about the placement of advertisements and users' shopping or other interactions with our clients' websites or advertisements). Our ability to successfully leverage such data depends on our continued ability to access and use such data, which could be restricted by a number of factors, including consumer choice, restrictions imposed by counterparties (including clients, supply sources and publishers, who may also compete with us for advertising spend and inventory) and web browser developers or other software developers, changes in technology, including changes in web browser technology, and new developments in, or new interpretations of, laws, regulations and industry standards.

Consumer resistance to the collection and sharing of the data used to deliver targeted advertising, increased visibility of consent or "do not track" mechanisms as a result of industry regulatory and/or legal developments or industry practices, the adoption by consumers of browsers settings or "ad-blocking" software and the development and deployment of new technologies could materially impact our ability to collect data or reduce our ability to deliver relevant advertisements, which could materially impair the results of our operations.

Similarly, web browser developers, such as Apple, Mozilla Foundation, Microsoft Corp. ("Microsoft") or Google, have implemented or may implement changes in browser or device functionality that impair our ability to understand the preferences of consumers, including by limiting the use of third-party cookies or other tracking technologies or data indicating or predicting consumer preferences. For example, Google previously announced that it will introduce privacy features to its Chrome web browser, which aim to provide users with increased transparency and control with respect to the collection and use of user data by third parties or limit the use of third-party cookies. Additionally, in January 2020 Google announced that it plans to phase out support for third-party cookies in Chrome within the next two years. Google controls more than 60% of the browser market and has an even more dominant position in the digital advertising market. These web browser developers have significant resources at their disposal and command substantial market share, and any restrictions they impose could foreclose our ability to understand the preferences of a substantial number of consumers. We already have solutions, through our direct publisher integrations, our mobile-ID based solutions in apps and Criteo Retail Media, that operate using either first-party or cookie-less mechanisms, representing close to 50% of our business in fiscal year 2019. This means close to 50% of our business was already independent from third-party cookies as of the end of 2019. In addition, we have a detailed identity resolution plan, leveraging our differentiated assets around first-party integrations with all our clients and our direct publishers, as well as our larger ID Graph and other capabilities, to help us make the remaining 50% of our business independent from third-party cookies. However, if we are blocked from serving advertisements to a significant portion of internet users, our business could suffer and our results of operations could be harmed.

Furthermore, any restrictions on our access to data could cause the overall quantity of the data we collect on consumers to be diminished. If we are unable to mitigate the impacts on our business of any such restrictions for a substantial period of time, as a result of such diminution in collected data, the accuracy, effectiveness and value of our offerings could be materially impacted.

Similarly, Internet users are increasingly able to download free or paid "ad-blocking" software, including on mobile devices, which prevent third-party cookies from being stored on a user's computer and block advertisements from being displayed to such user.

In addition, search engines and other service providers that explicitly do not allow the tracking of data, such as DuckDuckGo, Inc., may be growing in popularity. If a significant number of web browser users download such "ad-blocking" software or switch to advertising-free services or platforms, our business could be materially impacted. Further, mobile devices allow users to opt out of the use of mobile device IDs for targeted advertising. For in-app advertising, data regarding interactions between users and devices are tracked mostly through stable, pseudonymous mobile device identifiers that are built into the device operating system with privacy controls that allow users to express a preference with respect to data collection for advertising, including to disable the identifier. These identifiers and privacy controls are defined by the developers of the mobile platforms and could be changed by the mobile platforms in a way that may negatively impact our business.

Further, operating systems such as Apple's iOS and Google's Android may implement changes in how app developers should use advertising identifiers. If this occurs, our business, including our App business and our Criteo Shopper Graph, may be materially impacted. In addition, if we fail to comply with user choices and settings, we may experience legal and reputational harm to our business. User privacy features of other channels of programmatic advertising, such as Connected TV or over-the-top video, are still developing. Technical or policy changes, including regulation or industry self-regulation, could harm our growth in those channels.

The data we gather is important to the continued development and success of Criteo Shopper Graph, which is a key element of the Criteo Platform. With Criteo Shopper Graph, we are building one of the world's largest data sets focused on shopping data. If too few of our clients provide us with the permission to share their data or if our clients choose to stop sharing their data, or if regulatory or other factors inhibit or restrict us from maintaining the data collectives underlying Criteo Shopper Graph, the value of Criteo Shopper Graph could be materially diminished and our business could be materially impacted.

In addition, our ability to collect and use data may be restricted or prevented by a number of other factors, including:

- the failure of our network, hardware, or software systems, or the network, hardware, or software systems of our clients;
- decisions by some of our clients or publishers to restrict our ability to collect data from them, third parties and users or to refuse to implement mechanisms we request to ensure compliance with our legal obligations;
- changes in device functionality and settings, and other new technologies, which make it easier for users to prevent the placement of cookies or other tracking technologies and impact our publishers' or our clients' ability to collect and use data;
- changes by large internet and technology companies to the nature of Display Advertising (for example, any changes in Apple's Identifier for Advertising, or IDFA, that could prevent us from identifying users and associating particular browsing behaviors to those users as they use mobile applications that run on Apple's operating system);
- changes in traffic filtering performed by various internet service providers, causing some of the information we use for tracking to be removed before requests are sent to our servers;
- our inability to develop an identity graph that is strong enough to properly match users and track sales across an increasing number of devices and environments;
- our inability to grow our client and publisher base in new industry verticals and geographic markets in order to obtain the critical mass of data necessary for Criteo AI Engine to perform optimally in such new industry verticals or geographic markets;
- the growth of advertising inventory available within "walled-garden" publisher environments, which may restrict our ability to use such inventory effectively and in an optimized way for advertisers, outstripping the growth of other advertising inventory available on the market;
- malicious traffic (such as non-human traffic) that introduces "noise" in the information that we collect from clients and publishers;
- interruptions, failures or defects in our data collection, mining, analysis and storage systems; and
- changes in laws, rules, regulations and industry standards or increased enforcement of laws, rules, regulations and industry standards in or across any of the geographies in which we operate or may want to operate in the future.

Any of the above described limitations on our ability to successfully collect, utilize and leverage data could also materially impair the optimal performance of Criteo AI Engine and severely limit our ability to reach and engage users with our advertisements, which would harm our business and adversely impact our future results of operations.

The third parties upon which we rely for access to data and revenue opportunities may implement technical restrictions that impede our access to such data and revenue opportunities, which could materially impact our business and results of operations.

A substantial portion of the data we rely on comes from our publisher partners and other third parties, including advertising exchange platforms (including supply-side platforms, or “SSPs”, such as Google’s Ad Manager). Similarly, we rely on our publisher partners, advertising exchange platforms and other third parties for opportunities to serve advertisements through which we generate our revenue. Our ability to successfully leverage such data and successfully generate revenue from such opportunities could be impacted by restrictions imposed by or on our publisher partners or other third parties, including restrictions on our ability to use or read cookies or other tracking features or our ability to use real-time bidding networks or other bidding networks.

For example, in light of the GDPR, some SSPs imposed restrictions on our ability to bid on opportunities to serve ads. Third-party publishers are responsible under GDPR for gathering necessary user consents and indicating to SSPs that Criteo has been approved by the applicable users. As part of their efforts to comply with their understanding of the requirements of the GDPR, which are subject to interpretation, certain SSPs that run advertising exchanges have required actions from such third party publishers with respect to such consents that appear to be stricter than what the regulations require. Similarly, SSPs and other relevant third parties may take similar actions in response to any new legislation or regulatory developments or interpretations in the future, in response to perceived user preferences, or for other reasons.

If third parties on which we rely for data or opportunities to serve advertisements impose similar restrictions or are not able to comply with restrictions imposed by other ecosystem participants, we may lose the ability to access data, bid on opportunities, or purchase digital ad space, which could have a substantial impact on our revenue.

We face intense and increasing competition for employee talent, and if we do not retain and continue to attract highly skilled talent or retain our senior management team and other key employees, we may not be able to sustain our growth or achieve our business objectives.

Our future success depends on our ability to continue to attract, retain and motivate highly skilled employees, particularly AI experts, software engineers and other employees with the technical skills that enable us to deliver effective advertising solutions, client sales and publisher partnership representatives with experience in digital advertising, in particular in Display Advertising, and more broadly employees that are highly qualified in their areas of expertise to support and grow our operations. Competition for highly skilled employees in our industry is intense, in particular in the fields of artificial intelligence and data science, and we expect certain of our key competitors, who generally are larger than us and have access to more substantial resources, to pursue top talent even more aggressively.

Our future success also depends on the continued service of our senior management team. Our management team has been and may again be spread across multiple physical locations and geographies, which can strain the organization and make coordinated management more challenging.

We may be unable to attract or retain the management and highly skilled personnel who are critical to our success, which could hinder our ability to keep pace with innovation and technological change in our industry or result in harm to our key client and publisher relationships, loss of key information, expertise or proprietary knowledge and unanticipated recruitment and training costs. The loss of the services of our senior management or other key employees could make it more difficult to successfully operate our business and pursue our business goals.

The market in which we participate is intensely competitive, and we may not be able to compete successfully with our current or future competitors.

The market for internet advertising solutions is highly competitive and rapidly changing. New technologies and methods of buying advertising present a dynamic competitive challenge as market participants offer multiple new products and services aimed at facilitating and/or capturing advertising spend. With the introduction of new technologies and the influx of new entrants to the market, we expect competition to persist and intensify in the future, which could harm our ability to increase sales and maintain our profitability.

We compete in the broader market for digital advertising, primarily through Display Advertising. This market is rapidly evolving, highly competitive, complex and still fragmented, although rapidly consolidating. We face significant competition in this market, and we expect that competition will intensify in the future, in particular as we continue to expand the breadth of our offerings.

In addition to competing for advertising spend, we compete with many companies for advertising inventory, some of whom also operate their own advertising networks or exchanges from which we buy advertising inventory. Some of these companies that we compete with, either for advertising spend or for advertising inventory, may also be our clients or affiliated with our clients or important sources of advertising inventory. Competitive pressure may incentivize such companies to cease to be our clients or cease to provide us with access to their advertising inventory. If this were to occur, our ability to place advertisements would be significantly impaired and our results of operations would be adversely affected.

Along with existing competitors and intermediaries, new competitors are entering our marketplace and may continue to do so in the future. In particular, large established companies such as Adobe (which acquired Omniture, Inc., Efficient Frontier, Inc. and TubeMogul, Inc.), Verizon, Inc. (which acquired AOL, Inc., which in turn had previously acquired Platform-A, Inc. (advertising.com), Millennial Media, and Yahoo!), Alliance Data (which acquired Conversant, Inc., which in turn had previously acquired Dotomi), Ve Interactive (which acquired eBay's display retargeting business, which in turn had previously acquired both Fetchback, Inc. and GSI Commerce Inc.), Tesco plc (which acquired Sociomantic Labs) and AdRoll have been entering our marketplace. Similarly, existing competitors may intensify or broaden the manner in which they compete with us. Notably, for example, Amazon, Google and Facebook have been expanding their advertising and marketing platforms and have been making substantial investments in artificial intelligence and data science capabilities, which, to a large extent, could compete with Criteo AI Engine. Large and established internet and technology companies such as those mentioned above may have the power to significantly change the very nature of the Display Advertising marketplaces in ways that could materially disadvantage us. For example, Amazon, Apple, Facebook, Google and Microsoft have a significant share of widely adopted industry platforms such as web browsers, mobile operating systems and advertising exchanges and networks.

These companies could leverage their positions to make changes to their web browsers, mobile operating systems, platforms, exchanges, networks or other solutions or services that could be significantly harmful to our business and results of operations. These companies also have significantly larger resources than we do, and in many cases have advantageous competitive positions in popular products and services like Gmail, YouTube, Chrome, Facebook and Instagram, which they can use to their advantage. Furthermore, our competitors include large and established internet and technology companies that have invested substantial resources in innovation, which could lead to technological advancements that change the competitive dynamics of our business in ways that we may not be able to predict.

In addition to direct competition, we also face competition for advertising spend from within our own clients. Large advertisers are increasingly developing in-house advertising technologies, facilitated by self-service tools offered by internet and technology companies like Adobe and Google. Similarly, large enterprise marketing platforms, like Adobe, Oracle, and Salesforce.com, Inc., could create tools that offer our clients additional opportunities to allocate advertising dollars to in-house campaigns.

Competition could also hinder the success of new advertising solutions that we offer in the future.

For example, Amazon has a strong presence in "sponsored products" and other advertising formats on its platform and directly competes with certain Criteo Retail Media solutions for advertising spend. As we seek to grow our business and expand our offerings, such competition could become more intense.

Our current and potential competitors may have significantly more financial, technical, marketing and other resources than we have, be able to devote greater resources to the development, promotion, sale and support of their products and services, have more extensive client bases and broader publisher relationships than we have, and have longer operating histories and greater name recognition than we have. As a result, these competitors may be able to respond more quickly to technological changes, develop deeper client relationships or offer services at lower prices.

Existing or new competitors could develop, market or resell competitive high-value advertising solutions or services, acquire one of our existing competitors or form a strategic alliance with one of our competitors. If any of such risks were to materialize, our ability to compete effectively could be significantly compromised and our results of operations could be harmed. Any of these developments would make it more difficult for us to sell our offerings and could result in increased pricing pressure, reduced gross margins, increased sales and marketing expense and/or the loss of market share.

If we fail to access a consistent supply of advertising inventory and expand our access to such inventory, our business and results of operations could be harmed.

Essentially all of our revenue is derived from placing advertisements on publisher digital properties that we do not own. As a result, we do not own or control the advertising inventory upon which our business depends. We currently access advertising inventory through various channels, including through direct relationships with publishers, advertising exchange platforms (such as Google's Ad Manager, Twitter's MoPub and Microsoft's Ad Exchange) and other platforms that aggregate the supply of advertising inventory, such as Appnexus Inc., The Rubicon Project, Inc., PubMatic, Inc., Taboola, Inc., Baidu, Inc. and Yandex N.V.

Since many widely used aggregators of advertising inventory are owned by companies that may compete with us for clients, competitive pressure may incentivize these companies to limit our access to advertising inventory available through their platforms. For example, in September 2019 we filed a complaint with the French Competition Authority against Facebook, due to Facebook's gradual exclusion of companies including Criteo from the Facebook platform. The fact that advertising inventory available within "walled-garden" publisher environments, which may restrict our ability to use such inventory effectively and in an optimized way for advertisers, tends to grow faster than other advertising inventory available on the market, may limit the growth of our access to advertising inventory or our mere access to it overall. In addition, industry or technological changes may affect our access to inventory or the price we pay for inventory.

Similarly, our ability to continue to purchase inventory from many of the publishers with whom we have direct relationships depends in part on our ability to consistently pay sufficiently competitive CPMs for their advertising inventory, or in the case of some Criteo Retail Media solutions, to generate sufficient advertising revenue for retailers, as well as our ability to offer advertisements from high quality companies. As more companies compete for advertising impressions on advertising exchange platforms and other platforms that aggregate supply of advertising inventory, advertising inventory may become more expensive, which may adversely affect our ability to acquire it and to deliver internet display advertisements on a profitable basis. We may in the future have to increasingly rely on direct relationships with strong publisher partners in order to maintain the necessary access to quality advertising inventory, and we may not be able to do so on terms that are favorable to us. In addition, to support the growth of our solutions for the Awareness and Consideration marketing goals—aimed at generating brand awareness for clients and driving new visitors or prospective customers for clients—we will need to expand our access to video inventory, both in the web and in mobile applications, the price of which may not be available on terms that are favorable to us.

Additionally, we are party to certain agreements with partners that provide us with preferred access to inventory. If the terms of those agreements change and we lose our preferred access, then our financial results could be adversely affected.

We cannot guarantee that we will successfully grow our direct relationships with new publishers or maintain or expand our access to quality advertising inventory through other channels. In addition, even if we do grow our direct relationships, we cannot assure you that those direct relationships with publishers will be on terms favorable to us. Similarly, we may not be able to expand our access to video inventory and in-app inventory to the extent necessary to monetize these opportunities. If we are not successful, our business and results of operations could be harmed.

The failure by Criteo AI Engine to accurately predict engagement by users could result in significant costs to us, lost revenue and diminished advertising inventory.

The effective delivery of our digital advertising solution depends on the ability of Criteo AI Engine to predict the likelihood that a consumer will engage with any given internet display advertisement with a sufficient degree of accuracy that our clients can achieve desirable returns on their advertising spend. We historically charged our clients primarily based on a cost-per-click pricing model, and our clients only paid us when a user engaged with the advertisement, usually by clicking on it.

Although we have more recently started evolving our pricing models alongside our broader suite of solutions, to now include a combination of cost-per-install and cost-per-impression for selected new solutions, in addition to cost-per-click, as well as subscription-type pricing model for large retailers using our technology platform as part of our Criteo Retail Media offering, the majority of our revenue is generated through cost-per-click pricing models.

Our agreements with clients are open-ended and often do not include a spending minimum. Similarly, our contracts with publishers generally do not include long-term obligations requiring them to make their inventory available to us over long periods of time. Therefore, we need to continuously deliver satisfactory results for our clients and publishers in order to maintain and increase revenue, which in turn depends in part on the optimal functioning of Criteo AI Engine.

In addition, as we have increased the number of clients and publishers that use our offerings on a global basis, we have experienced significant growth in the amount and complexity of data processed by Criteo AI Engine and the number of advertising impressions we deliver.

As the amount of data and number of variables processed by Criteo AI Engine increase, the risk of errors in the type of data collected, stored, generated or accessed also increases. In addition, the calculations that the algorithms must compute become increasingly complex and the likelihood of any defects or errors increases.

If we were to experience significant errors or defects in Criteo AI Engine, our solution could be impaired or stop working altogether, which could prevent us from purchasing any advertising inventory and generating any revenue until the errors or defects were detected and corrected. Other negative consequences from significant errors or defects in Criteo AI Engine could include:

- a loss of clients and publishers;
- a decrease in inventory purchased by clients;
- fewer consumer visits to our client websites or mobile applications;
- lower click-through rates;
- lower conversion rates;
- lower profitability per impression, up to and including negative margins;
- faulty inventory purchase decisions for which we may need to bear the cost;
- lower return on advertising spend for our clients;
- lower price for the advertising inventory we are able to offer to publishers;
- delivery of advertisements that are less relevant or irrelevant to users;
- liability for damages or regulatory inquiries or lawsuits; and
- harm to our reputation.

Furthermore, the ability of Criteo AI Engine to accurately predict engagement by a user depends in part on our ability to continuously innovate and improve the algorithms underlying Criteo AI Engine in order to deliver positive results for our clients and publishers that can be clearly attributed to the services we provide. The failure to do so could result in delivering poor performance for our clients and a reduced ability to secure advertising inventory from publishers.

If failures in Criteo AI Engine or our inability to innovate and improve the algorithms underlying Criteo AI Engine result in our clients and publishers ceasing to partner with us, we cannot guarantee that we will be able to replace, in a timely or effective manner, departing clients with new clients that generate comparable revenue or departing publishers with new publishers that offer similar internet advertising inventory.

As a result, the failure by Criteo AI Engine to accurately predict engagement of users and to continue to do so over time could result in significant costs to us, lost revenue and diminished advertising inventory.

The proper functioning of Criteo AI Engine may be impaired by fraudulent or malicious activity, including non-human traffic.

Fraudulent or malicious activity, including non-human traffic, could impair the proper functioning of Criteo AI Engine. For example, the use of bots or other automated or manual mechanisms to generate fraudulent clicks or misattribute clicks on advertisements we deliver could overstate the performance of our advertising. Preventing and combating fraud requires constant vigilance, and we may not always be successful in our efforts to do so. It may be difficult to detect fraudulent or malicious activity, particularly because the perpetrators of such activity, which may include foreign governments, may have significant resources at their disposal, may frequently change their tactics and may become more sophisticated, requiring us to improve our processes for detecting and controlling such activity. Such fraudulent or malicious activity could result in negative publicity and reputational harm and require significant additional management time and attention.

Further, if we fail to detect or prevent fraudulent or malicious activity, our clients may experience or perceive a reduced return on their investment or heightened risk associated with the use of our solutions, resulting in refusals to pay, demands for refunds, loss of confidence, withdrawal of future business and potential legal claims. Due to the higher CPM paid for video advertisements, the risk of fraudulent traffic may increase as we increase our purchasing of video inventory.

If we show advertising or inventory that is fraudulent, we may lose the trust of our clients, which would harm our brand and reputation. If potential clients perceive that Criteo AI Engine is vulnerable to bots or similar non-human traffic, fraudulent clicks or other malicious activity, we may not be able to maintain our existing clients or attract new clients. As a result, our business could suffer and our results of operations could be materially impacted.

Regulatory, legislative or self-regulatory developments regarding internet privacy matters could adversely affect our ability to conduct our business.

The United States and foreign governments have enacted, considered or are considering legislation or regulations that could significantly restrict our ability to collect, process, use, transfer and pool data collected from and about consumers and devices. Trade associations and industry self-regulatory groups have also promulgated best practices and other industry standards relating to targeted advertising. Various U.S. and foreign governments, self-regulatory bodies and public advocacy groups have called for new regulations specifically directed at the digital advertising industry, and we expect to see an increase in legislation, regulation and self-regulation in this area. The legal, regulatory and judicial environment we face around privacy and other matters is constantly evolving and can be subject to significant change. For example, the General Data Protection Regulation, or GDPR, which was agreed by EU institutions in 2016 and came into effect after a two year transition period on May 25, 2018, updated and modernized the principles of the 1995 Data Protection Directive and significantly increases the level of sanctions for non-compliance.

In the European Union, the two main pillars of the data protection legal framework are the E-Privacy Directive (Directive on Privacy and Electronic Communications) and the General Data Protection Regulation.

The E-Privacy Directive was amended in November 2009 by Directive 2009/136/EC (the E-Privacy Directive Amendment) to introduce new requirements for EU companies like ours, along with advertisers and publishers, to present users with an information notice and obtain their consent prior to placing cookies or other tracking technologies for targeted advertising purposes. As there were different transpositions of the E-Privacy Directive Amendment in domestic laws across the EU Member States, there are currently different interpretations of what constitutes valid consent (e.g. explicit versus implied consent) across the EU, posing a risk of regulatory divergence and creating legal uncertainty for businesses.

To illustrate this risk of different interpretations by the competent authorities, the Spanish Data Protection Authority (Agencia Espanola de Proteccion de Datos) recently published updated guidance in which it is stated that continuing to browse a website could constitute consent of a user for cookie tracking, while the French Data Protection Authority (Commission Nationale de l'Informatique et des Libertés, or CNIL) and UK Data Protection Authority (Information Commissioner's Office) are listing stricter requirements in their own updated guidance and seem to impose a very clear and specific statement of consent.

On January 14, 2020, CNIL published its draft recommendations on the use of cookies and other tracking technologies. The draft recommendations provide that, when required, consent must be indicated by a clear and positive action of the data subject, such as by clicking on an "accept all" button on the first layer of the consent management platform. CNIL also noted that it should be as easy to refuse consent to the use of cookies as it is to accept consent, and a "refuse all" button should be present on the first layer of the consent management platform, equivalent to the "accept all" button in terms of size, position and color. The recommendations are not binding, nor are they intended to be prescriptive and exhaustive. The recommendations were open to public consultation until February 25, 2020. We expect that a final version of the recommendations will be submitted for adoption soon thereafter.

Data Protection Authorities will have the power to impose administrative fines of up to a maximum of €20 million or 4% of the data controller's or data processor's total worldwide turnover of the preceding financial year. Similarly, the E-Privacy Regulation, which drafting was launched by the European Parliament in October 2016, could result in, once new regulation is enacted, new rules and mechanisms for "cookie" consent.

In addition, the interpretation and application of data protection laws in the United States, Europe and elsewhere are often uncertain and in flux. For example, on October 6, 2015, the European Court of Justice invalidated the EU-US Safe Harbor framework, which we relied on to operate our data transfers both internally (for HR, CRM and other back-office data processing) and with several U.S.-based partners (notably RTB platforms). Following the Safe Harbor invalidation, in July 2016, the European Commission announced the formal adoption of the "EU-US Privacy Shield." We elected to rely on the Standard Contractual Clauses of the European Commission to secure our data transfers, but we cannot anticipate whether this legal scheme will be compromised in the future. Legislative and regulatory authorities around the world may decide to enact additional legislation or regulations, which could reduce the amount of data we can collect or process and, as a result, significantly impact our business.

In 2018, the State of California adopted the California Consumer Privacy Act of 2018, or the CCPA. The CCPA has been characterized as the first "GDPR-like" privacy statute to be enacted in the U.S. because its scope, and a number of the key provisions, resemble the GDPR.

The CCPA establishes a new privacy framework for covered businesses by, among other requirements, creating an expanded definition of personal information, establishing new data privacy rights for consumers in the State of California, imposing special rules on the collection of personal data from minors, creating new notice obligations and new limits on the sale of personal information, and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches. As currently enacted, we and partners in our industry have been required to comply with these requirements since January 1, 2020, when the CCPA became effective. As with GDPR, the advertising technology marketplace may have to adapt to operating under the CCPA where it applies. Our advertising or publishing partners may impose new CCPA restrictions with which we must adapt and comply. We cannot predict the timing or outcome of this adaptation or the effect on our business. Adapting our business to the CCPA could involve substantial resources and expense, and may cause us to divert resources from other aspects of our business, all of which may adversely affect our business.

Similarly, clarifications of and changes to these existing and proposed laws, regulations, judicial interpretations and industry standards can be costly to comply with, and we may be unable to pass along those costs to our clients in the form of increased fees, which may negatively affect our operating results.

Such changes can also delay or impede the development of new solutions, result in negative publicity and reputational harm, require significant incremental management time and attention, increase our risk of non-compliance and subject us to claims or other remedies, including fines or demands that we modify or cease existing business practices, including our ability to charge per click or the scope of clicks for which we charge. Additionally, any perception of our practices or solutions as an invasion of privacy, whether or not such practices or solutions are consistent with current or future regulations and industry practices, may subject us to public criticism, private class actions, reputational harm or claims by regulators, which could disrupt our business and expose us to increased liability.

Finally, our legal and financial exposure often depends in part on our clients' or other third parties' adherence to privacy laws and regulations and their use of our services in ways consistent with visitors' expectations. We rely on representations made to us by clients that they will comply with all applicable laws, including all relevant privacy and data protection regulations. We make reasonable efforts to enforce such representations and contractual requirements, but we do not fully audit our clients' compliance with our recommended disclosures or their adherence to privacy laws and regulations.

If our clients fail to adhere to our contracts in this regard, or a court or governmental agency determines that we have not adequately, accurately or completely described our own solutions, services and data collection, use and sharing practices in our own disclosures to consumers, then we and our clients may be subject to potentially adverse publicity, damages and related possible investigation or other regulatory activity in connection with our privacy practices or those of our clients.

In 2016, the *Commission Nationale de l'Informatique et des Libertés* ("CNIL") commenced an inquiry into our compliance with French data privacy laws. The inquiry is now closed. At this stage, there can be no assurance that there will not be further inquiries with respect to our compliance with privacy laws from CNIL or regulatory bodies in other jurisdictions.

Similarly, in November 2018, Privacy International filed a complaint with relevant data protection authorities against Criteo and a number of other similarly situated advertising technology companies, arguing that certain of these companies' practices do not comply with the GDPR. In January 2020, CNIL opened a formal investigation into Criteo in response to this complaint. There can be no assurance that action will not be required as a result.

Our business depends on our ability to maintain the quality of content for our clients and publishers.

Our clients' satisfaction depends on our ability to place advertisements with publisher content that is well-suited to the client's product or service. If we are unable to keep our clients' advertisements from being placed in unlawful or inappropriate content, our reputation and business may suffer. In particular, we could be treated as a spammer and blocked by internet service providers or regulators. In addition, if we place advertisements on websites containing content that is not permitted under the terms of the applicable agreements with a client, we may be unable to charge the client for impressions or clicks generated on those sites, the client may terminate their campaign, the client may require us to indemnify them for any resulting third party claims, or the client may allege breach of contract. Further, our publishers and exchange partners rely upon us not to place advertisements on their websites, the content of which is unlawful or inappropriate. As we grow our business to serve a larger number of smaller clients using self-service tools with less intervention by us, it could become more challenging to prevent inappropriate or unlawful advertisements from being shown. If we are unable to maintain the quality of our client and publisher content as the number of clients and publishers we work with continues to grow, our reputation and business may suffer and we may not be able to retain or secure additional clients or publisher relationships.

We may not be able to effectively integrate the businesses we acquire, which may adversely affect our ability to achieve our growth and business objectives.

Over the past five years, we have acquired Manage.com Group, Inc., Storetail SA, HookLogic, Monsieur Drive SAS and three other businesses. We may seek to acquire additional businesses, products, solutions, technologies or teams in the future. If we identify an appropriate acquisition candidate, we may not be successful in negotiating the terms and/or financing of the acquisition, and our due diligence may fail to identify all of the problems, liabilities or other shortcomings or challenges of an acquired business, product, solution or technology, including issues related to intellectual property, product quality or architecture, employees or clients, regulatory compliance practices or revenue recognition or other accounting practices.

Any acquisition or investment may require us to use significant amounts of cash, issue potentially dilutive equity securities or incur debt, contingent liabilities or amortization of expenses, or impairment of goodwill and/or purchased long-lived assets, and restructuring charges, any of which could harm our financial condition or results. In addition, acquisitions, including our recent acquisitions, involve numerous risks, any of which could harm our business, including:

- difficulties in integrating the operations, technologies, services and personnel of acquired businesses, especially if those businesses operate outside of our core competency;
- the need to integrate operations across different geographies, cultures and languages and to address the particular economic, currency, political and regulatory risks associated with specific countries;
- cultural challenges associated with integrating employees from the acquired company into our organization;
- ineffectiveness, lack of scalability, or incompatibility of acquired technologies or services;
- potential loss of key employees of acquired businesses;
- inability to maintain the key business relationships and the reputation of acquired businesses;
- failure to successfully further develop the acquired technology in order to recoup our investment;
- unfavorable reputation and perception of the acquired product or technology by the general public;
- diversion of management's attention from other business concerns;
- liability or litigation for activities of the acquired business, including claims from terminated employees, clients, former shareholders or other third parties;
- implementation or remediation of controls, practices, procedures and policies at acquired businesses, including the costs necessary to establish and maintain effective internal controls; and
- increased fixed costs.

There can be no assurance that we will be able to successfully integrate the businesses that we acquire or that we will be able to leverage the acquired commercial relationships or technologies in the manner we anticipate. If we are unable to successfully integrate the businesses we have acquired or any business, product, solution or technology we acquire in the future, our business and results of operations could suffer, and we may not be able to achieve our business and growth objectives.

Our international operations and expansion expose us to several risks.

As of December 31, 2019, we had a direct operating presence through 29 offices located in 19 countries and did business in 103 countries. Our primary research and development operations are located in France and the United States. In addition, we currently have international offices outside of France and the United States, which focus primarily on selling and implementing our offerings in those regions. In the future, we may expand to other international locations. Our current global operations and future initiatives involve a variety of risks, including:

- localization of the product interface and systems, including translation into foreign languages and adaptation for local practices;
- compliance with (and liability for failure to comply with) applicable local laws and regulations, including, among other things, laws and regulations with respect to data protection (including requirements that user data be stored locally in a given country) and user privacy, consumer protection, spam and content, which laws and regulations may be inconsistent across jurisdictions;
- more stringent regulations relating to data security and the unauthorized use of, or access to, commercial and personal information, particularly in the European Union;
- taxation in a variety of jurisdictions with increasingly complex tax laws, the application of which can be uncertain;
- intensity of local competition for digital advertising budgets and internet display inventory;
- unexpected changes in laws and regulatory requirements, trade laws, tariffs, export quotas, customs duties or other trade restrictions;
- labor regulations and labor laws that can be interpreted as more advantageous to employees than those in the United States, including with respect to deemed hourly wage and overtime regulations;
- changes in a specific country's or region's political or economic conditions;
- challenges inherent to hiring and efficiently managing an increased number of employees over large geographic distances, including the need to implement appropriate systems, policies, benefits and compliance programs, and the increasing complexity of the organizational structure required to support expansion into multiple geographies;
- the difficulty of maintaining our corporate culture of rapid innovation and teamwork that has been central to our growth in the face of an increasingly geographically diverse workforce;
- risks resulting from changes in currency exchange rates and the implementation of exchange controls, including restrictions promulgated by the Office of Foreign Assets Control of the U.S. Department of the Treasury, and other similar trade protection regulations and measures in the United States or in other jurisdictions;
- reduced ability to timely collect amounts owed to us by our clients in countries where our recourse may be more limited;
- limitations on our ability to reinvest earnings from operations derived from one country to fund the capital needs of our operations in other countries
- restrictions on foreign ownership and investments;
- limited or unfavorable intellectual property protection;
- exposure to liabilities under anti-money laundering laws, international and international sanction requirements and anti-corruption laws, including the U.S. Foreign Corrupt Practices Act and similar laws and regulations in other jurisdictions; and

- restrictions on repatriation of earnings.

We have one U.K. subsidiary, some of our operations are in the U.K., and some of our customers and partners pay us in British Pounds and Euros. It is unclear what impact Brexit will have on our business in the U.K., EU and elsewhere globally. Brexit may adversely affect economic conditions in the U.K., EU and elsewhere across the globe, and could contribute to volatility in foreign exchange markets with respect to the British Pound and Euro, which we may not be able to effectively manage, and our financial results could be adversely affected. Further, Brexit may add additional complexity to our European operations, which are headquartered in Paris, France. Accordingly, we cannot predict the additional expense, impact on revenue, or other business impact that may stem from Brexit.

We have established operations in geographies such as China, India, Brazil and Russia, and may establish operations in additional geographies in the near future, where we may face more complex regulatory environments and market conditions than those we have experienced in markets where we currently operate. If we invest substantial time and resources to expand our international operations and are unable to execute successfully or in a timely manner, our business and results of operations could suffer, and we may not be able to achieve our business and growth objectives.

Additionally, operating in international markets also requires significant management attention and financial resources. We cannot be certain that the investment and additional resources required in establishing operations in other countries will produce desired levels of revenue or profitability.

Our future success depends on our ability to scale our offerings as our business grows.

As our business grows, it may become increasingly difficult to maintain the proper functioning of Criteo AI Engine as we continue to collect increasing amounts of data from new geographic markets, new advertising channels, new industry verticals and a growing base of clients. We currently process 250 terabytes of additional compressed data every day, with total storage capacity exceeding 750,000 terabytes and 2,000 terabytes of random-access memory. However, future growth could exceed these rates, and our ability to scale our offerings to keep pace with the amount of data we process may be impaired by failure of software or hardware (including storage, processing, support and security infrastructure).

As a result, our operations might suffer from unanticipated system disruptions or slow processing or reporting which could negatively affect our reputation and ability to attract and retain clients. In addition, the expansion and improvement of our systems and infrastructure may require us to commit substantial financial, operational and technical resources, with no assurance our business will increase.

Furthermore, inventory-related traffic continues to increase faster than our revenue has grown over the past few years. Reducing the cost and improving the efficiency of our infrastructure may require us to invest an increasing percentage of our revenue, and there can be no assurance that we will be successful. Similarly, advancements in machine learning approaches and other technology may require us to upgrade or replace essential hardware (such as GPUs), which could involve substantial resources and could be difficult to implement.

If we fail to respond to technological change or to adequately maintain, expand, upgrade and develop our systems and infrastructure in a timely fashion, our growth prospects and results of operations could be adversely affected.

Moreover, even if we are able to expand our computing and other infrastructure to keep pace with the industry-related traffic growth, it may be too costly for us to continue to provide services under our current business model and capital expense assumptions and our profitability and results of operations may suffer.

If we fail to manage our growth and the shift in our client portfolio towards the midmarket effectively, we may be unable to execute our business plan or maintain high levels of client and publisher satisfaction.

We have experienced, and may in the future experience, rapid growth and changes in our client portfolio, which have created, and may continue to create, challenges to the quality of our service to our clients, and which have placed, and may continue to place, significant demands on our management and our operational and financial resources.

For example, over the past few years, the size of our midmarket business has grown significantly as a proportion of our overall business, and we expect it to continue to do so in the future. As our business shifts toward the midmarket category, there are several additional risks to our business, including risks relating to the financial stability of our clients and our ability to collect accounts receivable from such clients. In addition, since our midmarket business is comprised of thousands of smaller clients which require significant resources to support, it is currently less profitable than our large client business, and overall there may not be a direct correlation between a change in the number of clients in a particular period and an increase or decrease in our revenue. In 2018, we started to implement a new go-to-market strategy, aimed at maximizing our commercial opportunity for our multi-solution offering, by providing the right level of services to each our client segments (based on their size and business potential with us) and scaling our midmarket operations more efficiently and profitably. However, due to the growing number of midmarket clients that require support, we will need to continue automating certain of our processes to service the midmarket category as it continues to grow globally. There can be no assurance that we will be able to successfully adjust to these shifting dynamics and remain profitable.

As we continue to expand, we also must maintain a high level of service to ensure client and publisher satisfaction. To the extent our client and publisher base grows, we will need to expand our account management, publisher support and other personnel in order to continue to provide adequate account management and services, the quality of which has been central to our growth to date. To do so will require significant expenses, significant capital expenditures and valuable management resources.

If we fail to manage the anticipated changes in our client portfolio in a manner that preserves our attention to our clients, our brand and reputation may suffer, which would in turn impair our ability to attract and retain clients and publishers.

If we are unable to successfully manage the changes in our client portfolio and the associated changes in employee headcount and our organizational structure, our results of operations could suffer.

The development and deployment of the self-registration and onboarding module of the Criteo Platform and associated processes may be delayed or may experience technical issues.

In 2018, we started undertaking a transformation of our go-to-market model, aimed at maximizing the commercial opportunity for our multi-solution offering, by providing the right level of services to each of our client segments - based on their size and business potential with us - and by scaling our midmarket operations more efficiently and profitably. This includes the roll out of the self-registration and onboarding module of the Criteo Platform, supported by appropriate sales and marketing services and channels, to enable lower segments of midmarket clients to sign up and be self-served in a more automated, scalable and profitable way.

If our ability to develop the right capabilities internally, planning for roles and responsibilities, redeployment of resources, or training of teams fails or is lacking, then we may not be able to operate our self-registration and onboarding module in an effective manner. Further, if we lack coordination in anticipating project dependencies or lack project management and change management skills, the deployment of this self-registration and onboarding module may be delayed or may experience technical issues. As a result, we may not be able to timely leverage our self-registration and onboarding module to profitability scale, which could result in significant costs to us, lost revenue and reputational harm.

If we fail to successfully enhance our brand, our ability to protect and expand our client base will be impaired and our financial condition may suffer.

We believe that developing and maintaining awareness of the Criteo brand is critical to achieving widespread acceptance of our existing offering and any future solutions, such as new solutions directed toward capturing broader advertising budgets, and is an important element in attracting new commerce clients, consumer brand clients, retailer partners and publisher partners. Furthermore, we believe that the importance of brand recognition will increase as competition in our market increases.

Successful promotion of our brand will depend largely on the effectiveness of our marketing efforts and on our ability to deliver valuable solutions for our commerce clients, consumer brand clients, retailer partners and publisher partners. In the past, our efforts to build our brand have involved significant expenses and they may continue to do so in the future. As a result, we may not be able to develop our brand in a cost-effective manner. Furthermore, brand promotion activities may not yield any increased revenue, and even if they do, any increased revenue may not offset the expenses we incurred in building our brand.

If we fail to successfully promote and maintain our brand we may fail to attract enough new commerce clients, consumer brand clients, retailer partners and publisher partners or retain enough of our existing commerce clients, consumer brand clients, retailer partners and publisher partners, and our business could suffer.

Our future success will depend in part on our ability to expand into new industry verticals.

As we market our offering to a wider group of consumer brands and companies outside of our historical three key industry verticals of retail, travel and classifieds, including businesses in the automotive, telecommunications, consumer goods and finance industries, as well as mobile app-first verticals such as gaming, ride sharing and food delivery, we will need to adapt our solutions and effectively market our value to businesses in these new industry verticals. Our success into new industry verticals will depend on various factors, including our ability to:

- design solutions that are attractive to businesses in such industries;
- provide high returns on advertising spend in such industries and maintain such high returns on advertising spend at scale;
- transparently measure the performance of such advertising spend based on clear, measurable metrics;
- hire personnel with relevant industry vertical experience to lead sales and product teams;
- work with clients in new industry verticals through the advertising agencies that manage their advertising budgets; and
- accumulate sufficient data sets relevant for those industry verticals to ensure that Criteo AI Engine has sufficient quantity and quality of information to deliver efficient and effective internet display advertisements within the relevant industry.

For example, with the acquisition of Manage.com Group, Inc. in 2018, we further expanded our offering into gaming and other app-first areas such as food delivery and ride sharing. Similarly, with the acquisition of HookLogic in 2016 and the introduction of Criteo Retail Media, we expanded our offering to benefit consumer brands. However, there can be no assurance that we will be able to maintain the client base built by Manage or HookLogic or that we will be able to expand the Criteo Retail Media business successfully.

If we are unable to successfully adapt our offering to appeal to businesses in industries other than our core verticals, or are unable to effectively market such solutions to businesses in such industries, we may not be able to achieve our growth or business objectives. Further, as we expand our client base and offering into new industry verticals, we may be unable to maintain our current client retention rates.

As we expand the market for our solutions, we may become more dependent on advertising agencies as intermediaries, which may adversely affect our ability to attract and retain business, or exert downward pressure on our margins.

As we market our solutions, we may increasingly need advertising agencies to work with us in assisting businesses in planning and purchasing for broader marketing goals. In particular, many of our Criteo Retail Media clients, whom we have started working with since our acquisition of HookLogic, work with us through advertising agencies: 72%, 66% and 62% of Criteo sold sponsored products revenue for 2017, 2018 and 2019, respectively, relied on advertising agencies. Historically, however, direct relationships with our clients accounted for 73%, 73% and 74% of our revenue for 2017, 2018 and 2019, respectively, for Criteo Marketing Solutions.

We believe several elements of our growth strategy, including the increasing deployment and availability of self-service platform capabilities for our clients to have greater control and transparency over the management and execution of their advertising campaigns with us, as well as the ongoing expansion of our solutions into advertising scenarios to address Consideration marketing goals, may make our overall value proposition more attractive to advertisers, including to the potential advertising agencies that help them manage their advertising budgets. Overall, we believe that accessing broader advertising budgets by partnering with advertising agencies represents a significant incremental business opportunity for us.

However, an increasing exposure to advertising agencies may also represent significant risks. For example, if we have an unsuccessful engagement with an advertising agency on a particular advertising campaign, we risk losing the ability to work not only for the client for whom the campaign was run, but also for other clients represented by that agency. Further, if our business evolves such that we are increasingly working through advertising agency intermediaries, we would have less of a direct relationship with our clients. This may drive our clients to attribute the value we provide to the advertising agency rather than to us, further limiting our ability to develop long-term relationships directly with our clients. Additionally, our clients may move from one advertising agency to another, and, accordingly, even if we have a positive relationship with an advertising agency, we may lose the underlying client's business when the client switches to a new agency. The presence of advertising agencies as intermediaries between us and our clients thus creates a challenge to building our own brand awareness and maintaining an affinity with our clients, who are the ultimate sources of our revenue. In the event we were to become more dependent on advertising agencies as intermediaries, this may adversely affect our ability to attract and retain business. In addition, an increased dependency on advertising agencies may harm our results of operations, as a result of the increased agency fees we may be required to pay and/or as a result of longer payment terms from agencies.

Our future success will depend in part on our ability to expand into new advertising channels.

We define an advertising channel as a specific advertisement medium to engage with a user or a consumer for which we currently purchase inventory through a specific source. We started delivering elements of our offering through internet display advertisements in desktop browsers. Since then, we have expanded into mobile in-browser and in-app, native display, including on social media platforms, and video inventory.

In the future, we may decide to broaden the spectrum of our advertising channels further if we believe that doing so would significantly increase the value we can offer to clients. We believe a broader platform delivering our solutions through complementary advertising channels can enhance our value proposition for existing and prospective clients.

However, any future attempts to enter new advertising channels may not be successful. For example, we launched our *Criteo Email Retargeting* offering in 2014 after we acquired Tedemis SA in 2014. In 2016, we decided to discontinue our *Criteo Email Retargeting* offering based on country-specific circumstances. Similarly, we launched our *Criteo Predictive Search* offering in 2016. In 2017, we decided to discontinue our *Criteo Predictive Search* offering based on client and country-specific circumstances.

Our success in expanding into any additional advertising channels will depend on various factors, including our ability to:

- identify additional advertising channels where our solutions could perform;
- adapt our solutions to additional advertising channels and effectively market it for such additional advertising channels to our existing and prospective clients;
- integrate newly developed or acquired advertising channels into our pricing and measurement models, with a clear and measurable performance attribution mechanism that works across all channels, and in a manner that is consistent with our privacy standards;
- accumulate sufficient data sets relevant for those advertising channels to ensure that Criteo AI Engine has a sufficient quantity and quality of information to deliver relevant personalized advertisements through those additional advertising channels;
- achieve client performance levels through the new advertising channels that are similar to those delivered through existing advertising channels, and in any case that are not dilutive to the overall client performance;

- identify and establish acceptable business arrangements with inventory partners and platforms to access inventories in sufficient quality and quantity for these new advertising channels;
- maintain our gross margin at a consistent level upon entering one or more additional advertising marketing channels;
- compete with new market participants active in these additional advertising channels; and
- hire and retain key personnel with relevant technology and product expertise to lead the integration of additional advertising channels onto our platform, and sales and operations teams to sell and integrate additional advertising channels.

If we are unable to successfully adapt our solutions to additional advertising channels and effectively market such offerings to our existing and prospective clients, or if we are unable to maintain our pricing and measurement models in these additional advertising channels, we may not be able to achieve our growth or business objectives.

Our revenue would decline if we fail to effectively coordinate the demand for and supply of advertising inventory in a specific geographic market.

The performance of Criteo AI Engine in a specific geographic market depends on having sufficient clients implemented and utilizing our offering, and our ability to coordinate the demand for and supply of advertising inventory with the publishers in that market. Since we cannot consistently predict the demand for advertising inventory by our clients or the advertising inventory available to us, including on a priority basis, the demand for and supply of advertising inventory in that market may not be sufficient or sufficiently coordinated for Criteo AI Engine to function optimally. As such, as we target new geographic markets, we will need to adequately coordinate the timing to onboard local clients and publishers. A failure to effectively manage demand for, and the supply of, advertising inventory processed through Criteo AI Engine could impair its ability to accurately predict user engagement in that market, which could result in:

- a reduction in the amount of inventory our publishers make available to us in the future;
- a loss of existing clients or publishers;
- changes in the priority given to our advertisements by publishers;
- an adverse effect on our ability to attract new publishers willing to give us preferred access;
- harm to our reputation;
- increased cost; and
- lost revenue.

Our sales efforts with both potential clients and publishers require significant time and expense, and our success will depend on effectively expanding and integrating our sales and marketing operations and activities to grow our base of clients and publishers.

Attempting to increase our base of clients and publishers is a key component of our growth strategy. However, attracting clients and publishers requires substantial time and expense, and it may be difficult to identify, engage and market to potential clients that are unfamiliar with Criteo and our offering, particularly as we seek to address new marketing goals for clients, or enter new advertising channels or new industry verticals. Furthermore, many potential clients require input from multiple internal constituencies to make advertising decisions, or delegate advertising decisions to advertising agencies. As a result, we must identify those involved in the purchasing decision and devote a sufficient amount of time to presenting our offering to those individuals (including providing demonstrations and comparisons of our value relative to other available solutions), which can be a costly and time-consuming process.

Our ability to grow our client and publisher base will depend to a significant extent on our ability to effectively expand our sales, marketing and publisher support operations. In particular, as we target new industry verticals, we will need to attract sales and publisher support personnel that are familiar with the relevant industries and geographic markets. We believe that there is significant competition for direct sales and support personnel with the sales skills and technical knowledge that we require.

Therefore, our ability to grow our client and publisher base will depend, in large part, on our success in recruiting, training and retaining the sales and publisher support personnel we require. Over the past years, we have hired a number of new sales personnel and expanded our marketing department. However, we may not be successful in growing headcount to the extent necessary to support and expand our operations. Similarly, we cannot be sure that newly hired personnel will be integrated effectively, and such personnel may require significant training and may not become productive as quickly as we would like, or at all. If we are not successful in recruiting and training our client sales and publisher support personnel and streamlining our sales and business development processes to cost-effectively grow our client and publisher base, our ability to grow our business and our results of operations could be adversely affected.

If we are unable to protect our proprietary information or other intellectual property, our business could be adversely affected.

We rely largely on trade secret law to protect our proprietary information and technology. We generally seek to protect our proprietary information through confidentiality, non-disclosure and assignment of invention agreements with our employees, contractors and parties with which we do business. However, we may not execute these agreements with every party who has access to our confidential information or contributes to the development of our intellectual property. In addition, those agreements may be breached, and we may not have adequate remedies for any such breach.

Breaches of the security of our data center systems and infrastructure or other IT resources could also result in the exposure of our proprietary information. Additionally, our trade secrets may be independently developed by competitors. We cannot be certain that the steps we have taken to protect our trade secrets and proprietary information will prevent unauthorized use or reverse engineering of our trade secrets or proprietary information.

Although we also rely on copyright laws to protect works of authorship created by us, including software, we do not register the copyrights in any of our copyrightable works. We will need to register the copyright before we can file an infringement suit in the United States, and our remedies in any such infringement suit may be limited.

In the United States and internationally, we have filed various applications for protection of certain aspects of our intellectual property, including patent applications. Effective protection of our intellectual property rights may require additional filings and applications in the future. However, pending and future applications may not be approved, and any of our existing or future patents, trademarks or other intellectual property rights may not provide sufficient protection for our business as currently conducted or may be challenged by others or invalidated through administrative process or litigation. Additionally, patent rights in the United States have switched from the former “first-to-invent” system to a “first-to-file” system, which may favor larger competitors that have the resources to file more patent applications. Furthermore, our existing patents and any patents issued in the future may give rise to ownership claims or to claims for the payment of additional remuneration of fair price by persons having participated in the creation of the inventions. Similarly, to the extent that our employees, contractors or other third parties with whom we do business use intellectual property owned by others in their work for us, disputes may arise as to the rights to such intellectual property.

Further, the laws of certain countries do not protect proprietary rights to the same extent as the laws of the United States and, therefore, in certain jurisdictions, we may be unable to protect our proprietary technology adequately against unauthorized third-party copying, infringement or use, which could adversely affect our competitive position.

To protect or enforce our intellectual property rights, we may initiate litigation against third parties. Any lawsuits that we initiate could be expensive, take significant time and divert management’s attention from other business concerns. Additionally, we may unintentionally provoke third parties to assert claims against us. These claims could invalidate or narrow the scope of our own intellectual property. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially valuable. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our intellectual property. The occurrence of any of these events may adversely affect our business, financial condition and results of operations.

Our business may suffer if it is alleged or determined that our technology or another aspect of our business infringes the intellectual property rights of others.

The online and mobile advertising industries are characterized by the existence of large numbers of patents, copyrights, trademarks, trade secrets and other intellectual property and proprietary rights. Companies in these industries are often required to defend against litigation claims that are based on allegations of infringement or other violations of intellectual property rights. Our technologies may not be able to withstand any third-party claims or rights against their use.

Our success depends, in part, upon non-infringement of intellectual property rights owned by others and being able to resolve claims of intellectual property infringement or misappropriation without major financial expenditures or adverse consequences. From time to time, we may be the subject of claims that our solutions and underlying technology infringe or violate the intellectual property rights of others, particularly as we expand the scope and complexity of our business.

Regardless of whether claims that we are infringing patents or other intellectual property rights have any merit, these claims are time-consuming and costly to evaluate and defend, and the outcome of any litigation is inherently uncertain. 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. Claims that we are infringing patents or other intellectual property rights could:

- subject us to significant liabilities for monetary damages, which may be tripled in certain instances;
- prohibit us from developing, commercializing or continuing to provide some or all of our offering unless we obtain licenses from, and pay royalties to, the holders of the patents or other intellectual property rights, who may not be willing to offer them on terms that are acceptable to us, or at all;
- subject us to indemnification obligations or obligations to refund fees to, and adversely affect our relationships with, our current or future clients, advertising agencies, media networks and exchanges or publishers;
- cause delays or stoppages in providing our offering;
- cause clients, potential clients, advertising agencies, media networks and exchanges or publishers to avoid working with us;
- divert the attention and resources of management and technical personnel;
- harm our reputation; and
- require technology or branding changes to our offering that would cause us to incur substantial cost and that we may be unable to execute effectively or at all.

In addition, we may be exposed to claims that the content contained in advertising campaigns violates the intellectual property or other rights of third parties. Such claims could be made directly against us or against the advertising agencies we work with, and media networks and exchanges and publishers from whom we purchase advertising inventory.

Generally, under our agreements with advertising agencies, media networks and exchanges and publishers, we are required to indemnify the advertising agencies, media networks and exchanges and publishers against any such claim with respect to an advertisement we served. We generally require our clients to indemnify us for any damages from any such claims. There can be no assurance, however, that our clients will have the ability to satisfy their indemnification obligations to us, and pursuing any claims for indemnification may be costly or unsuccessful.

As a result, we may be required to satisfy our indemnification obligations to advertising agencies, media networks and exchanges and publishers or claims against us with our assets. This result could harm our reputation, business, financial condition and results of operations.

Our business involves the use, transmission and storage of personal data and confidential information, and the failure to properly safeguard such information could result in significant reputational harm and monetary damages.

Our business involves the use, storage and transmission of confidential consumer, client and publisher information and personal data, including certain purchaser data, as well as proprietary software and financial, employee and operational information. Security breaches could expose us to unauthorized disclosure of this information, litigation and possible liability, as well as damage to our relationships with our clients and publishers. If our security measures are breached as a result of third-party action, employee or contractor error, malfeasance or otherwise and, as a result, someone obtains unauthorized access to our data or the data of consumers, our clients, publishers, employees or other third parties, our reputation could be damaged, our business may suffer and we could incur significant liability.

Our industry is prone to cyber-attacks by third parties seeking unauthorized access to our data or users' data or to disrupt our ability to provide service. As a result of our prominence, the size of our user base, and the types and volume of personal data on our systems, we believe that we are a particularly attractive target for such breaches and attacks. Any failure to prevent or mitigate security breaches and improper access to or disclosure of our data or user data, including personal information, or information from marketers, could result in the loss or misuse of such data, which could harm our business and reputation and diminish our competitive position. In addition, computer malware, viruses, unauthorized access or system compromises and hacking by sophisticated actors have become more prevalent in our industry. Security incidents have occurred on our systems in the past, and will likely occur on our systems in the future. For example, in November 2019, we became aware of a compromise of certain of our systems. We have taken and continue to take additional steps to fully identify the incident and have and continue to implement remedial measures to increase the security of our systems and networks to respond to these types of threats. As of the date of this filing, we do not believe that this incident has resulted in a material adverse effect on our business or any material damage to us or any loss or misuse of customer data. However, the investigation is ongoing and there can be no assurance that this or any other breach or incident will not have a material impact on our operations and financial results in the future.

Techniques used to obtain unauthorized access or to sabotage systems change frequently and generally are not recognized until launched against a target. As a result, we are unable to anticipate some of these techniques or to implement adequate preventative measures for such techniques. In addition, the perpetrators of such activity often are very sophisticated, and can include foreign governments and other parties with significant resources at their disposal. Cyber-attacks continue to evolve in sophistication and volume, and inherently may be difficult to detect for long periods of time. Although we have developed systems and processes that are designed to protect our data and user data, to prevent data loss, and to prevent or detect security breaches, such measures have not provided, and cannot be expected to provide, absolute security, and we may incur significant costs in protecting against and remediating cyber-attacks. We may also have to expend considerable resources on determining the nature and extent of such attacks.

If an actual or perceived security breach occurs, the market perception of our security measures could be harmed and we could lose both clients and revenue. Any significant violations of data privacy or other security breaches could result in the loss of business, litigation and regulatory investigations and penalties that could damage our reputation and adversely impact our results of operations and financial condition.

Moreover, if a high profile security breach occurs with respect to another provider of digital advertising solutions, our clients and potential clients may lose trust in the security of providers of digital advertising in general, and Display Advertising solutions in particular, which could adversely impact our ability to retain existing clients or attract new ones.

Additionally, third parties may attempt to fraudulently induce employees, consumers, our clients, our publishers or third-party providers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our data, our clients' data or our publishers' data, which could result in significant legal and financial exposure and a loss of confidence in the security of our offering and, ultimately, harm to our future business prospects. A party who is able to compromise the security of our facilities, including our data centers or office facilities, or any device, such as a smartphone or laptop, connected to our systems could misappropriate our proprietary information or the proprietary information of consumers, our clients and/or our publishers, or cause interruptions or malfunctions in our operations or those of our clients and/or publishers. We have expended significant resources to protect against such threats and to alleviate problems caused by breaches in security and may have to expend additional resources for such purposes in the future. Finally, computer viruses or malware may harm our systems or cause the loss or alteration of data, and the transmission of computer viruses or malware via Criteo technology could expose us to litigation and a loss of confidence in the security of our technology. Our errors and omissions insurance may be inadequate or may not be available in the future on acceptable

terms, or at all. In addition, our policy may not cover any claim against us for loss of data or other indirect or consequential damages and defending a suit, regardless of its merit, could be costly and divert management's attention.

While we have dedicated resources to privacy and security matters, our response process may not be adequate, may fail to accurately assess the severity of an incident, may not respond quickly enough, or may fail to sufficiently remediate an incident, among other issues. Our efforts to address undesirable activity on our platform may also increase the risk of retaliatory attacks. As a result, we may suffer significant legal, reputational, or financial exposure, which could adversely affect our business and results of operations.

Failures in the systems and infrastructure supporting our solutions and operations could significantly disrupt our operations and cause us to lose clients.

In addition to the optimal performance of Criteo AI Engine, our business relies on the continued and uninterrupted performance of our software and hardware infrastructures. We currently place close to four billion advertisements per day and each of those advertisements can be placed in under 100 milliseconds.

Sustained or repeated system failures of our software or hardware infrastructures (such as massive and sustained data center outages) or of the software or hardware infrastructures of our third-party providers, which interrupt our ability to deliver advertisements quickly and accurately, our ability to serve and track advertisements, our ability to process consumers' responses to those advertisements or otherwise disrupt our internal operations, could significantly reduce the attractiveness of our offering to clients and publishers, reduce our revenue or otherwise negatively impact our financial situation, impair our reputation and subject us to significant liability.

In addition, while we seek to maintain excess capacity to facilitate the rapid provision of new client deployments and the expansion of existing client deployments, we may need to increase data center hosting capacity, bandwidth, storage, power or other elements of our system architecture and our infrastructure as our client base and/or our traffic continues to grow.

Our existing systems may not be able to scale up in a manner satisfactory to our existing or prospective clients, and may not be adequately designed with the necessary reliability and redundancy of certain critical portions of our infrastructure to avoid performance delays or outages that could be harmful to our business.

Our failure to continuously upgrade or increase the reliability and redundancy of our infrastructure to meet the demands of a growing base of global clients and publishers could adversely affect the functioning and performance of our technology and could in turn affect our results of operations.

Finally, our systems are vulnerable to damage from a variety of sources, some of which are outside of our control, including telecommunications failures, natural disasters, terrorism, power outages, a variety of other possible outages affecting data centers, and malicious human acts, including hacking, computer viruses, malware and other security breaches. Techniques used to obtain unauthorized access or to sabotage systems change frequently and generally are not recognized until launched against a target. As a result, we may be unable to anticipate some of these techniques or to implement adequate preventive measures.

Any steps we take to increase the security, reliability and redundancy of our systems supporting the Criteo technology or operations may be expensive and may not be successful in preventing system failures.

If we are unable to prevent system failures, the functioning and performance of our solutions could suffer, which in turn could interrupt our business and harm our results of operations.

We are a company operating in a rapidly evolving industry, which makes it difficult to evaluate our future prospects and may increase the risk that we will not be successful. Our recent growth rates may not be indicative of our future growth, and we expect our operating expenses to continue to increase in the foreseeable future. Accordingly, we may have difficulty sustaining profitability.

We are a company operating in a rapidly evolving industry. Our ability to forecast our future operating results is subject to a number of uncertainties, including our ability to plan for and model future growth in both our business and the digital advertising market generally, and the Display Advertising market in particular. We have encountered and will continue to encounter risks and uncertainties frequently experienced by growing companies in rapidly evolving industries, including challenges in forecasting accuracy, determining appropriate investments, achieving market acceptance of our existing and future offerings, managing client implementations and developing new solutions. For example, the Criteo model historically focused solely on converting our clients' website visitors into customers through our historical solution, *Criteo Dynamic Retargeting*. Since then, we have broadened our solutions portfolio to include additional marketing and monetization goals (including Awareness and Consideration) for commerce companies and consumer brands across web, apps and stores, many of which are new to us and for which we do not have a long and established track record. If our assumptions regarding these uncertainties, which we use to plan our business, are incorrect or change in reaction to changes in our markets, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations and our business could suffer.

You should not consider our revenue growth in past periods to be indicative of our future performance. In future periods, our revenue could decline or grow more slowly than we expect. We believe the growth of our revenue depends on a number of factors, including our ability to:

- attract new clients, and retain and expand our relationships with existing clients;
- maintain the breadth of our publisher network and attract new publishers, including publishers of web content, mobile applications and video and social games, in order to grow the volume and breadth of advertising inventory available to us;
- broaden our solutions portfolio to include additional marketing and monetization goals (including Awareness and Consideration) for commerce companies and consumer brands across the open Internet, including web, apps and stores;

- adapt our offering to meet evolving needs of businesses, including to address market trends such as (i) the migration of consumers from desktop to mobile and from websites to mobile applications, (ii) the increasing percentage of sales that involve multiple digital devices, (iii) the growing adoption by consumers of “ad-blocking” software on web browsers on desktop and/or on mobile devices and use or consumption by consumers of advertising-free services such as Netflix, (iv) changes in the marketplace for and supply of advertising inventory, including the shift toward header bidding; and (v) changes in the overall ecosystem such as Apple's introduction of its *Intelligent Tracking Prevention* feature into its Safari browser, Microsoft's *Tracking Prevention* feature in its Edge browser, and Mozilla's introduction of *Enhanced Tracking Protection* into its Firefox browser; and (vi) changes in consumer acceptance of tracking technologies for targeted or behavioral advertising purposes;
- maintain and increase our access to data necessary for the performance of Criteo AI Engine;
- continuously improve the algorithms underlying Criteo AI Engine and apply the state of the art in Machine Learning approaches and hardware; and
- continue to adapt to a changing regulatory landscape governing data protection and privacy matters.

We also anticipate that our operating expenses will continue to increase as we scale our business, grow our headcount and expand our operations. In particular, we plan to continue to focus on maximizing our revenue after traffic acquisition costs on an absolute basis, or the revenue we derive after deducting the costs we incur to purchase advertising inventory, which we call Revenue ex-TAC, as we believe this focus fortifies a number of our competitive strengths, including access to advertising inventory, breadth and depth of data and continuous improvement of Criteo AI Engine's performance. As part of this focus, we are continuing to invest in (i) building relationships with direct publishers on both web and mobile application properties, (ii) increasing access to leading advertising exchanges on both web and mobile application properties, and (iii) enhancing the liquidity of our advertising inventory supply, which may include purchasing advertising inventory that may result in lower margin on an individual impression basis and may be less effective in generating user engagement and driving measurable results, including sales, for our clients. In addition, we are experiencing, and expect to continue to experience, increased competition for advertising inventory purchased on a programmatic basis. Our focus on maximizing Revenue ex-TAC on an absolute basis may have an adverse impact on our gross margin and we cannot be certain that this strategy will be successful or result in increased liquidity or long-term value for our shareholders.

In addition, as our business expands, we may not be able to maintain our current profitability margin or to achieve our long-term profitability margin target. For example, our midmarket business is currently less profitable than our large client business. As we expect our midmarket business to grow as a proportion of our overall business, our profitability may be negatively affected. Similarly, as we transition to a multi-solution company, with solutions available to clients across several advertising channels, new solutions may require additional investments in sales, business development and marketing, such as product sales specialists or similar resources to enable sales. As a result of such additional investments, our new solutions may be less profitable than our existing business and therefore drive down our overall profitability.

In periods of economic uncertainty, businesses may delay or reduce their spending on advertising, which could materially harm our business.

General worldwide economic conditions have been significantly unstable in recent years, especially in the European Union where we generated 29% of our revenue for 2019. Unstable conditions make it difficult for our clients and us to accurately forecast and plan future business activities, and could cause our clients to reduce or delay their advertising spending with us. Historically, economic downturns have resulted in overall reductions in advertising spending, and businesses may curtail spending both on advertising in general and on a solution such as ours. We cannot predict the timing, strength or duration of any economic slowdown or recovery. Any macroeconomic deterioration in the future, especially further deterioration in the European Union and some emerging markets, such as Brazil and Russia, could impair our revenue and results of operations.

Furthermore, we have recently expanded our offerings to serve a larger number of smaller clients, and have expanded into emerging markets such as Brazil, India, and Russia. Our changing client portfolio exposes us to additional credit risk, which could result in further exposure in the event of economic uncertainty or an economic downturn.

In addition, even if the overall economy improves, we cannot assure you that the market for digital advertising and Display Advertising will experience growth or that we will experience growth. Furthermore, we generally sell through insertion orders with our clients. These insertion orders generally do not include long-term obligations and are cancellable upon short notice and without penalty. Any reduction in advertising spending could limit our ability to grow our business and negatively affect our results of operations.

We derive a significant portion of our revenue from companies in the retail, travel and classified industries, and any downturn in these industries or any changes in regulations affecting these industries could harm our business.

A significant portion of our revenue is derived from companies in the retail, travel and classifieds industries. For example, in 2017, 2018 and 2019, 67.8%, 69.1% and 68.9%, respectively, of our combined revenue for Criteo Marketing Solutions¹ was derived from advertisements placed for retail commerce businesses. While we have been growing our client base in additional industries such as gaming, ride-sharing and food delivery, and expect to continue to do so in the future, any downturn or increased competitive pressure in any of our core industries, or other industries we may target in the future, may cause our clients to reduce their spending with us, or delay or cancel their advertising campaigns with us.

Furthermore, our business could be negatively impacted by the application of existing laws and regulations or the enactment of new laws by federal, state and foreign governmental or regulatory agencies which would impose taxes on goods and services provided over the internet. To the extent such taxes discourage the use of the internet as a means of commercial marketing or reduce the amount of products and services offered through ecommerce websites, online advertising spending may decline and the use or attractiveness of our offering by our clients or potential clients may be adversely affected.

We have substantial client concentration in certain local markets and solutions, with a limited number of clients accounting for a substantial portion of our revenues in those areas.

Although our overall customer base is well-diversified, in certain of our local markets and specific solutions we derive a substantial portion of revenues from a limited number of clients. For example, for fiscal year 2019, one single large client accounted for a third of our revenues in Korea, and four clients accounted for more than 50% of our revenues within the mobile marketing solutions of our business previously known as Manage.com. There are inherent risks whenever a large percentage of revenues within any specific market or solution are concentrated within a limited number of clients. We cannot predict the future level of demand for our services and products that will be generated by these clients. In addition, revenues from these clients may fluctuate from time to time. Further, some of our contracts with these clients may permit them to terminate use of our products at any time (subject to notice and certain other provisions). If any of these clients terminate or reduce use of our products, our revenues within local markets or specific solutions may be negatively impacted.

Our inability to use software licensed from third parties, or our use of open source software under license terms that interfere with our proprietary rights, could disrupt our business.

Our technology platform and internal systems incorporate software licensed from third parties, including some software, known as open source software, which we use without charge. Although we monitor our use of open source software, the terms of many open source licenses to which we are subject have not been interpreted by U.S. or foreign courts, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to provide our technology offering to our clients. In the future, we could be required to seek licenses from third parties in order to continue offering our solutions, which licenses may not be available on terms that are acceptable to us, or at all.

¹ Excluding the business acquired from Manage.

Alternatively, we may need to re-engineer our offering or discontinue using portions of the functionality provided by our technology. In addition, the terms of open source software licenses may require us to provide software that we develop using such software to others on unfavorable terms, such as by precluding us from charging license fees or by requiring us to disclose our source code. Any such restriction on the use of our own software, or our inability to use open source or third-party software, could result in disruptions to our business or operations, or delays in our development of future offerings or enhancements of our existing platform, which could impair our business.

We experience quarterly fluctuations in our results of operations due to a number of factors which make our future results difficult to predict and could cause our operating results to fall below expectations or our guidance.

Our quarterly results of operations fluctuate due to a variety of factors, many of which are outside of our control. As a result, comparing our results of operations on a period-to-period basis may not be meaningful. You should not rely on our past results as an indication of our future performance.

If our revenue or results of operations fall below the expectations of investors or securities analysts, or below any guidance we may provide to the market, the price of our ADSs could decline substantially.

Our operating results and cash flows from operations may vary from quarter to quarter due to the seasonal nature of our clients' spending. For example, many businesses in the online retail industry devote the largest portion of their advertising spend to the fourth quarter of the calendar year, and many of our commerce clients typically conduct fewer advertising campaigns in the second quarter than they do in other quarters. With respect to Criteo Retail Media, the concentration of advertising spend in the fourth quarter of the year is particularly pronounced. If, and to the extent that, seasonal fluctuations are significant, our operating cash flows could fluctuate materially from period to period as a result.

Additionally, implementing our advertising solutions for a client can be a long process, which generally requires clients to integrate software code on their digital property. This process can be complex and time-consuming, and can delay the deployment and use of our offering by a client even after the client has signed up to utilize it.

Depending upon the time and resources that a client is willing to devote to the integration of our technology with their digital property and the nature and complexity of a client's network and systems, the actual implementation of our solution may occur long after a client has signed up to use our solution.

As a result, we may incur substantial expenses in one period without any guarantee of revenue generation in the near term, or at all. This possibly lengthy implementation cycle may result in difficulty in predicting our future results of operations.

We also plan to continue to substantially increase our investment in research and development, product development and sales and marketing, as we seek to continue to expand geographically, into new marketing goals, into new solutions, into new advertising channels and into new industry verticals to capitalize on what we see as a growing global opportunity for us. Our general and administrative expenses may also increase to support our growing operations and due to the increased costs of operating as a public company. For the foregoing reasons or other reasons we may not anticipate, historical patterns should not be considered as indicative of our future quarterly results of operations.

Other factors that may affect our quarterly results of operations include:

- the nature of our clients' products or services;
- demand for our offering and the size, scope and timing of digital advertising campaigns;
- the lack of long-term agreements with our clients and publishers;
- client and publisher retention rates;
- market acceptance of our offering and future solutions and services (i) in current industry verticals and new industry verticals, (ii) in new geographic markets, (iii) in new advertising channels, or (iv) for broader marketing goals;

- the timing of large expenditures related to expansion into new solutions, new geographic markets, new industry verticals, acquisitions and/or capital projects;
- the timing of adding support for new digital devices, platforms and operating systems;
- the amount of inventory purchased through direct relationships with publishers versus internet advertising exchanges or networks;
- our clients' budgeting cycles;
- changes in the competitive dynamics of our industry, including consolidation among competitors;
- consumers' response to our clients' advertisements, to online advertising in general and to tracking technologies for targeted or behavioral advertising purposes;
- our ability to control costs, including our operating expenses;
- network outages, errors in our technology or security breaches and any associated expense and collateral effects;
- foreign currency exchange rate fluctuations, as some of our foreign sales and costs are denominated in their local currencies;
- failure to successfully manage any acquisitions; and
- general economic and political conditions in our domestic and international markets.

As a result, we may have a limited ability to forecast the amount of future revenue and expense, and our results of operations may from time to time fall below our estimates or the expectations of public market analysts and investors.

We have significant global sales and operations and face risks related to health epidemics that could impact our sales and operating results.

Our business could be adversely affected by the effects of a widespread outbreak of contagious disease, including the recent outbreak of respiratory illness caused by a novel strain of coronavirus (COVID-19) first identified in Wuhan, Hubei Province, China. Any outbreak of contagious diseases, and other adverse public health developments, could have a material adverse effect on our business operations. These could include disruptions or restrictions on our ability to travel or hold in-person commercial interactions, as well as temporary closures of our facilities or the facilities of our customers, the deferral of elective procedures in impacted countries, a disruption of supply chain for our customers, or the temporary suspension of operations by us or our customers. Additionally, because our revenues are, in part, tied to the revenues of our advertising customers, any impact on the business or revenues of our advertising customers may result in an impact on our own business or revenues. While the duration of business interruption from this outbreak and related financial impact cannot be reasonably estimated at this time, we expect that any disruption of our operations, or those of our customers, would likely impact our sales and operating results. In addition, a significant outbreak of contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for our offerings and likely impact our operating results.

Interruptions or delays in services provided by third-party providers that we rely upon could impair the performance of the Criteo technology or operations and harm our business.

We currently lease space from third-party data center hosting facilities for our servers and/or networking equipment located in the United States (California, New York, Virginia), France, The Netherlands, Hong Kong and Japan. All of our data gathering and analytics are conducted on, and the advertisements we deliver are processed through, our servers and network equipment located in these facilities.

We also rely on bandwidth providers and internet service providers to deliver advertisements. Any damage to, or failure of, the systems or facilities of our third-party providers could adversely impact our ability to deliver technology offering to our clients. If, for any reason, our arrangement with one or more data centers is terminated, we could experience additional expense in arranging for new facilities and support.

The occurrence of a natural disaster, an act of terrorism, vandalism or sabotage, a decision to close any data center or the facilities of any other third-party provider without adequate notice, or other unanticipated problems at these facilities could result in lengthy interruptions in the availability of our technology or operations. Our testing of our services in actual disasters or similar events has been limited. If any such event were to occur, our business, results of operations and financial condition could be adversely affected.

We are exposed to foreign currency exchange rate fluctuations.

The functional currency of the Company is the euro, while our reporting currency is the U.S. dollar. Since we incur large portions of our expenses and derive significant revenues in currencies other than the euro, we are exposed to foreign currency exchange risk to the extent that our results of operations and cash flows are subject to fluctuations in foreign currency exchange rates. Foreign currency exchange risk exposure also arises from intra-company transactions and financing with subsidiaries that have a functional currency different than the euro.

The statements of financial position of consolidated entities having a functional currency different from the U.S. dollar are translated into U.S. dollars at the closing exchange rate (spot exchange rate at the statement of financial position date) and the statement of income, statement of comprehensive income and statement of cash flow of such consolidated entities are translated at the average period to date exchange rate. The resulting translation adjustments are included in equity under the caption “Accumulated Other Comprehensive Income” in the consolidated statement of changes in equity.

While we are engaging in hedging transactions to minimize the impact of uncertainty in future exchange rates on intra-company transactions and financing, we may not hedge all of our foreign currency exchange rate risk. In addition, hedging transactions carry their own risks and costs, including the possibility of a default by the counterparty to the hedge transaction. There can be no assurance that we will be successful in managing our foreign currency exchange rate risk. We cannot predict the impact of foreign currency fluctuations, and foreign currency fluctuations in the future may adversely affect our financial condition, results of operations and cash flows.

Our failure to maintain certain tax benefits applicable to French technology companies may adversely affect our results of operations.

As a French technology company, we have benefited from certain tax advantages, including, for example, a reduced tax rate in France on technology royalty income received from subsidiaries and the French research tax credit (*crédit d’impôt recherche*), or CIR. The CIR is a French tax credit aimed at stimulating research and development. The CIR can be offset against French corporate income tax due and the portion in excess (if any) may be refunded at the end of a three fiscal-year period.

The CIR is calculated based on our claimed amount of eligible research and development expenditures in France and represented \$6.3 million, \$10.9 million and \$16.2 million for 2017, 2018 and 2019, respectively and is classified as a reduction of our research and development expenses.

The French tax authority, with the assistance of the Research and Technology Ministry, may audit each research and development program in respect of which a CIR benefit has been claimed and assess whether such program qualifies, in their view, for the CIR benefit. If the French tax authority determines that our research and development programs do not meet the requirements for the CIR benefit, or challenges our calculations with respect to the CIR benefit, we could be liable for additional corporate tax, and penalties and interest related thereto, which could have a significant impact on our results of operations and future cash flows.

Furthermore, if the French Parliament decides to modify the regime of the reduced tax rate on technology royalty income or to reduce the scope or the rate of the CIR benefit, which it could decide to do at any time, our results of operations could be adversely affected.

We are a multinational organization faced with increasingly complex tax issues in many jurisdictions, and we could be obligated to pay additional taxes in various jurisdictions as a result of new taxes or laws, or revised interpretations thereof, which may negatively affect our business.

As a multinational organization operating in multiple jurisdictions we are subject to taxation in several jurisdictions around the world with increasingly complex tax laws, the application of which can be uncertain. The amount of taxes we pay in these jurisdictions could increase substantially as a result of changes in the applicable tax principles, including increased tax rates, new tax laws or revised interpretations of existing tax laws and precedents, which could have a material adverse effect on our liquidity and results of operations.

For example, many of the jurisdictions in which we conduct business have detailed transfer pricing rules which require that all transactions with non-resident related parties be priced using arm's length pricing principles. Contemporaneous documentation must exist to support this pricing. The tax authorities in these jurisdictions could challenge whether our related party transfer pricing policies are at arm's length and, as a consequence, challenge our tax treatment of corresponding expenses and income. International transfer pricing is an area of taxation that depends heavily on the underlying facts and circumstances and generally involves a significant degree of judgment. If any of these tax authorities were successful in challenging our transfer pricing policies, we may be liable for additional corporate income tax, and penalties, fines and interest related thereto, which may have a significant impact on our effective tax rate, results of operations and future cash flows.

The European Union and its member states, as well as a number of other countries, are actively considering changes to existing tax laws or have enacted new tax laws applicable to digital business activities. Such taxes could increase our tax liability in many countries where we do business.

U.S. holders of our ADSs may suffer adverse tax consequences if we are characterized as a passive foreign investment company.

A non-U.S. corporation will be considered a passive foreign investment company, or PFIC, for U.S. federal income tax purposes, any taxable year if either (1) at least 75% of its gross income for such year is passive income or (2) at least 50% of the value of its assets (based on an average of the quarterly values of the assets during such year) is attributable to assets that produce or are held for the production of passive income. Based on the value and composition of our assets, although not free from doubt, we do not believe we were a PFIC for the taxable year ended December 31, 2019, and we do not expect to be a PFIC in the current taxable year or the foreseeable future. Since a separate factual determination as to whether we are or have become a PFIC must be made each year (after the close of such year), we cannot assure you that we will not be or become a PFIC in the current year or any future taxable year. If we are a PFIC for any taxable year during which a U.S. holder holds ADSs, the U.S. holder may be subject to adverse tax consequences, including (1) the treatment of all or a portion of any gain on disposition as ordinary income, (2) the application of an interest charge with respect to such gain and certain dividends and (3) compliance with certain reporting requirements. Each U.S. holder is strongly urged to consult its tax advisor regarding the application of these rules and the availability of any potential elections.

If a United States person is treated as owning at least 10% of our ADSs, such person may be subject to adverse U.S. federal income tax consequences.

If a United States person is treated as owning (directly, indirectly, or constructively) at least 10% of the value or voting power of our ADSs, such person may be treated as a "United States shareholder" with respect to each "controlled foreign corporation" in our group (if any). Because our group includes one or more U.S. subsidiaries, certain of our non-U.S. subsidiaries could be treated as controlled foreign corporations (regardless of whether or not we are treated as a controlled foreign corporation). A United States shareholder of a controlled foreign corporation may be required to report annually and include in its U.S. taxable income its pro rata share of "Subpart F income," "global intangible low-taxed income," and investments in U.S. property by controlled foreign corporations, regardless of whether we make any distributions. Failure to comply with such reporting requirements could result in adverse tax effects for United States shareholders and potentially significant monetary penalties. An individual that is a United States shareholder with respect to a controlled foreign corporation generally would not be allowed certain tax deductions or foreign tax credits that would be allowed to a United States shareholder that is a U.S. corporation. We cannot provide any assurances that we will assist investors in determining whether any of our non-U.S. subsidiaries is treated as a controlled foreign corporation or furnish to any United States shareholders information that may be necessary to comply with the aforementioned obligations. A United States investor should consult its advisors regarding the potential application of these rules to an investment in our ADSs.

Risks Related to Ownership of Our Shares and the ADSs and the Trading of the ADSs

The market price for the ADSs have been and may continue to be volatile or may decline regardless of our operating performance.

The trading price of the ADSs has significantly fluctuated, and is likely to continue to fluctuate, substantially. The trading price of the ADSs depends on a number of factors, including those described in this “Risk Factors” section, many of which are beyond our control and may not be related to our operating performance. Since the ADSs were sold at our initial public offering in October 2013 at a price of \$31.00 per share, the price per ADS has ranged as low as \$15.90 and as high as \$60.95 through December 31, 2019. The market price of the ADSs may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- actual or anticipated fluctuations in our revenue and other results of operations;
- the guidance we may provide to the public, any changes in this guidance or our failure to meet this guidance;
- investor perception of risks in our industry, including but not limited to the competitive concentration of supply inventory or risks of fraudulent or malicious activity;
- failure of securities analysts to initiate or maintain coverage of us and our securities, changes in financial estimates by any securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- announcements by us, our competitors or large influential technology companies of significant technical innovations or changes, acquisitions, strategic partnerships, joint ventures or capital commitments;
- changes in operating performance and stock market valuations of advertising technology or other technology companies, or those in our industry in particular;
- investor sentiment with respect to our competitors, our business partners or our industry in general;
- price and volume fluctuations in the overall stock market, including as a result of trends in the economy as a whole;
- additional ADSs being sold into the market by us or the Company's insiders;
- media coverage of our business and financial performance;
- developments in anticipated or new legislation or new or pending lawsuits or regulatory actions;
- other events or factors, including those resulting from war, incidents of terrorism or responses to these events; and
- any other risks identified in this Form 10-K.

In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many technology companies. Stock prices of many technology companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, shareholders have instituted securities class action litigation following periods of market volatility. Because of the past and the potential future volatility of our stock price, we may become the target of securities litigation in the future. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and adversely affect our business.

If securities or industry analysts cease publishing research or publish inaccurate or unfavorable research about our business or our industry, the price and trading volume of the ADSs could decline.

The trading market for the ADSs depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who covers us downgrades the ADSs or publishes incorrect or unfavorable research about our business, the price of the ADSs would likely decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for the ADSs could decrease, which could cause the price of the ADSs or trading volume to decline.

Our business could be negatively impacted by the activities of predatory hedge funds or short sellers.

There is the risk that we may be subject, from time to time, to challenges arising from the activities of predatory hedge funds, short sellers or similar individuals who do not have the best interests of shareholders or the Company in mind. Reports or other publications prepared and disseminated by such hedge funds or short sellers may cause significant fluctuations in our stock price based on temporary or speculative market perceptions or other factors that do not necessarily reflect the underlying fundamentals and prospects of our business, and could cause the price of our ADSs or trading volume to decline. Furthermore, responding to such activities could be costly and time-consuming and may be intended to, and may in fact, divert the attention of our board of directors and senior management from the pursuit of our business strategies and adversely affect our business.

We may need additional capital in the future to meet our financial obligations and to pursue our business objectives. Additional capital may not be available on favorable terms, or at all, which could compromise our ability to meet our financial obligations and grow our business.

While we anticipate that our existing cash and cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months, we may need to raise additional capital to fund operations in the future or to finance acquisitions. If adequate funds are not available on acceptable terms, we may be unable to fund the expansion of our research and development and sales and marketing efforts, increase working capital, take advantage of acquisition or other opportunities, or adequately respond to competitive pressures which could seriously harm our business and results of operations.

We currently have a senior unsecured revolving credit facility under which we may borrow up to €350 million (or its equivalent in U.S. dollars or, subject to the satisfaction of certain conditions, other optional currencies) for general corporate purposes, including the funding of business combinations (the "General RCF").

To the extent we draw on the General RCF or incur new debt, the debt holders have rights senior to shareholders to make claims on our assets, and the terms of such debt could restrict our operations, including our ability to pay dividends on our ordinary shares. In addition, pursuant to the terms of our credit facilities, we may be restricted in the use of such facilities to fund capital expenditures and information technology-related expenses may be restricted.

If adequate additional funds are not available, we may be required to delay, reduce the scope of, or eliminate material parts of our business strategy, including potential additional acquisitions or development of new technologies.

Furthermore, if we issue additional equity securities, shareholders will experience dilution, and the new equity securities could have rights senior to those of our ordinary shares.

Because our decision to issue securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. As a result, our shareholders bear the risk of our future securities offerings reducing the market price of the ADSs and diluting their interest.

We do not currently intend to pay dividends on our securities and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of the ADSs. In addition, French law may limit the amount of dividends we are able to distribute.

We have never declared or paid any cash dividends on our ordinary shares and do not currently intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth, both organic and inorganic. In addition, we have used a portion of our available liquidity to repurchase our Company's shares in the past, and may continue to do so from time to time in the future.

Further, the credit agreement for the General RCF contains restrictions on our ability to pay dividends.

In addition, to the extent any dividends are paid in the future, under French law, payment of such dividends may subject us to additional taxes, and the determination of whether we have been sufficiently profitable to pay dividends is made on the basis of our statutory financial statements prepared and presented in accordance with accounting principles generally accepted in France. Therefore, we may be more restricted in our ability to declare dividends than companies not based in France.

Please see the section entitled "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities-Taxation-French Tax Consequences" in Item 5 of Part II in this Form 10-K for further details on the limitations on our ability to declare and pay dividends and the taxes that may become payable by us if we elect to pay a dividend.

Finally, exchange rate fluctuations may affect the amount of euros that we are able to distribute, and the amount in U.S. dollars that our shareholders receive upon the payment of cash dividends or other distributions we declare and pay in euros, if any. These factors could harm the value of the ADSs, and, in turn, the U.S. dollar proceeds that holders receive from the sale of the ADSs.

Because you are not likely to receive any dividends on your ADSs for the foreseeable future, the success of an investment in ADSs will depend upon any future appreciation in their value. Consequently, investors may need to sell all or part of their holdings of ADSs after price appreciation, which may never occur, as the only way to realize any future gains on their investment.

In July 2019, our board of directors authorized a share repurchase program of up to \$80.0 million (€70.5 million) of our outstanding ADSs. We intend to use repurchased shares to satisfy employee equity plan vesting in lieu of issuing new shares, and potentially in connection with M&A transactions. The repurchase program commenced in July 2019 and remains in effect until May 15, 2020. If we adopt another such program in the future, the actual amount and timing of future share repurchases, if any, will depend on market and economic conditions, applicable SEC rules, federal and state regulatory restrictions, cash availability and various other factors. Further, as a French private company, we are subject to certain limitations with respect to share repurchase programs that would not apply if we were a U.S. company, which may limit our flexibility. If we were to adopt another such share buyback program, there would be no guarantee that it would enhance shareholder value. Any share repurchases could increase volatility in the trading price of our ADSs and would diminish our available cash. Any share buyback program we adopt may also be suspended or terminated at any time, which may result in a decrease in the trading price of our ADSs.

Our credit agreement contains, and future debt agreements may contain, restrictions that may limit our flexibility in operating our business.

The credit agreement for the General RCF contains, and documents governing our future indebtedness may contain, numerous covenants that limit the discretion of management with respect to certain business matters. These covenants place restrictions on, among other things, our ability and the ability of our subsidiaries to incur or guarantee additional indebtedness, pay dividends and make other distributions and restricted payments, make certain acquisitions and other investments, sell certain assets or engage in mergers, acquisitions and other business combinations, and create liens. Our credit agreement also requires, and documents governing our future indebtedness may require, us or our subsidiaries to meet certain financial ratios and tests in order to incur certain additional debt, make certain loans, acquisitions or other investments, or pay dividends or make other distributions or restricted payments.

Our ability and the ability of our subsidiaries to comply with these and other provisions of our debt agreements are dependent on our future performance, which will be subject to many factors, some of which are beyond our control.

The breach of any of these covenants or noncompliance with any of these financial ratios and tests could result in an event of default under the applicable debt agreement, which, if not cured or waived, could result in acceleration of the related debt and the acceleration of debt under other instruments evidencing indebtedness that may contain cross-acceleration or cross-default provisions.

Our by-laws and French corporate law contain provisions that may delay or discourage a sale of the Company.

Provisions contained in our by-laws and the corporate laws of France, the country in which we are incorporated, could make it more difficult for a third party to acquire us, even if doing so might be beneficial to our shareholders. In addition, provisions of our by-laws impose various procedural and other requirements, which could make it more difficult for shareholders to effect certain corporate actions. These provisions include the following:

- our ordinary shares are in registered form only and we must be notified of any transfer of our shares in order for such transfer to be validly registered;
- under French law, a non-resident of France as well as any French entity controlled by non-French residents may have to file a declaration for statistical purposes with the Bank of France (*Banque de France*) following the date of certain direct or indirect investments in us (see the section entitled "Exchange Controls & Ownership by Non-French Residents" in Item 5 to Part II in this Form 10-K);
- under French law, any individual or entity located outside of the European Union may need to seek the authorization of the French Minister of Economy prior to acquiring the control of, all or part of a business of, or more than 33.33% of the share capital or voting rights of the Company (see the section entitled "Exchange Controls & Ownership by Non-French Residents" in Item 5 to Part II in this Form 10-K);
- provisions of French law allowing the owner of 95% of the share capital or voting rights of a public company to force out the minority shareholders following a tender offer made to all shareholders are only applicable to companies listed on a stock exchange of the European Union and will therefore not be applicable to us;
- a merger (i.e., in a French law context, a stock-for-stock exchange following which our company would be dissolved into the acquiring entity and our shareholders would become shareholders of the acquiring entity) of our company into a company incorporated outside of the European Union would require the unanimous approval of our shareholders;
- a merger of our company into a company incorporated in the European Union would require the approval of our board of directors as well as a two-thirds majority of the votes held by the shareholders present, represented by proxy or voting by mail at the relevant extraordinary shareholders' meeting;
- under French law, a cash merger is treated as a share purchase and would require the consent of each participating shareholder;
- our shareholders have granted and may grant in the future our board of directors broad authorizations to increase our share capital or to issue additional ordinary shares or other securities (for example, warrants) to our shareholders, the public or qualified investors, including as a possible defense following the launching of a tender offer for our shares;
- our shareholders have preferential subscription rights proportionally to their shareholding in our company on the issuance by us of any additional securities for cash or a set-off of cash debts, which rights may only be waived by the extraordinary general meeting (by a two-thirds majority vote) of our shareholders or on an individual basis by each shareholder;
- our board of directors has the right to appoint directors to fill a vacancy created by the resignation or death of a director, subject to the approval by the shareholders of such appointment at the next shareholders' meeting, which prevents shareholders from having the sole right to fill vacancies on our board of directors;
- our board of directors can only be convened by its chairman or, when no board meeting has been held for more than two consecutive months, by directors representing at least one third of the total number of directors;
- our board of directors meetings can only be regularly held if at least half of the directors attend either physically or by way of videoconference or teleconference enabling the directors' identification and ensuring their effective participation in the board's decisions;

- approval of at least a majority of the votes held by shareholders present, represented by a proxy, or voting by mail at the relevant ordinary shareholders' general meeting, is required to remove directors with or without cause;
- advance notice is required for nominations to the board of directors or for proposing matters to be acted upon at a shareholders' meeting, except that a vote to remove and replace a director can be proposed at any shareholders' meeting without notice; and
- pursuant to French law, the sections of the by-laws relating to the number of directors and election and removal of a director from office may only be modified by a resolution adopted by a two-thirds majority of the votes of our shareholders present, represented by a proxy or voting by mail at the relevant extraordinary shareholders' meeting.

You may not be able to exercise your right to vote the ordinary shares underlying your ADSs.

Holders of ADSs may exercise voting rights with respect to the ordinary shares represented by the ADSs only in accordance with the provisions of the deposit agreement. The deposit agreement provides that, upon receipt of notice of any meeting of holders of our ordinary shares, the depositary will fix a record date for the determination of ADS holders who shall be entitled to give instructions for the exercise of voting rights. Upon timely receipt of notice from us, if we so request, the depositary shall distribute to the holders as of the record date (1) the notice of the meeting or solicitation of consent or proxy sent by us and (2) a statement as to the manner in which instructions may be given by the holders.

You may instruct the depositary of your ADSs to vote the ordinary shares underlying your ADSs. Otherwise, you will not be able to exercise your right to vote, unless you withdraw the ordinary shares underlying the ADSs you hold. However, you may not know about the meeting far enough in advance to withdraw those ordinary shares. If we ask for your instructions, the depositary, upon timely notice from us, will notify you of the upcoming vote and arrange to deliver our voting materials to you. We cannot guarantee you that you will receive the voting materials in time to ensure that you can instruct the depositary to vote your ordinary shares or to withdraw your ordinary shares so that you can vote them yourself.

If the depositary does not receive timely voting instructions from you, it may give a proxy to a person designated by us to vote the ordinary shares underlying your ADSs. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for the manner of carrying out voting instructions. This means that you may not be able to exercise your right to vote, and there may be nothing you can do if the ordinary shares underlying your ADSs are not voted as you requested.

Your right as a holder of ADSs to participate in any future preferential subscription rights or to elect to receive dividends in shares may be limited, which may cause dilution to your holdings.

According to French law, if we issue additional securities for cash, current shareholders will have preferential subscription rights for these securities proportionally to their shareholding in our company unless they waive those rights at an extraordinary meeting of our shareholders (by a two-thirds majority vote) or individually by each shareholder.

However, our ADS holders in the United States will not be entitled to exercise or sell such rights unless we register the rights and the securities to which the rights relate under the Securities Act or an exemption from the registration requirements is available.

In addition, the deposit agreement provides that the depositary will not make rights available to you unless the distribution to ADS holders of both the rights and any related securities are either registered under the Securities Act or exempted from registration under the Securities Act.

Further, if we offer holders of our ordinary shares the option to receive dividends in either cash or shares, under the deposit agreement the depositary may require satisfactory assurances from us that extending the offer to holders of ADSs does not require registration of any securities under the Securities Act before making the option available to holders of ADSs. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act.

Accordingly, ADS holders may be unable to participate in our rights offerings or to elect to receive dividends in shares and may experience dilution in their holdings. In addition, if the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case you will receive no value for these rights.

You may be subject to limitations on the transfer of your ADSs and the withdrawal of the underlying ordinary shares.

Your ADSs, which may be evidenced by ADRs, are transferable on the books of the depositary. However, the depositary may close its books at any time or from time to time when it deems expedient in connection with the performance of its duties. The depositary may refuse to deliver, transfer or register transfers of your ADSs generally when our books or the books of the depositary are closed, or at any time if we or the depositary think it is advisable to do so because of any requirement of law, government or governmental body, or under any provision of the deposit agreement, or for any other reason subject to your right to cancel your ADSs and withdraw the underlying ordinary shares.

Temporary delays in the cancellation of your ADSs and your withdrawal of the underlying ordinary shares may arise because the depositary has closed its transfer books or we have closed our transfer books, the transfer of ordinary shares is blocked to permit voting at a shareholders' meeting or we are paying a dividend on our ordinary shares.

In addition, you may not be able to cancel your ADSs and withdraw the underlying ordinary shares when you owe money for fees, taxes and similar charges and when it is necessary to prohibit withdrawals in order to comply with any laws or governmental regulations that apply to ADSs or to the withdrawal of ordinary shares or other deposited securities.

If we fail to maintain an effective system of internal controls, we may be unable to accurately report our financial results or prevent fraud, and investor confidence and the market price of the ADSs may, therefore, be adversely impacted.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control.

In addition, we are required to submit a report by management to the Audit Committee and external auditors on the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act and our independent registered public accounting firm is required to attest to the effectiveness of our internal controls over financial reporting. If we identify material weaknesses in our internal controls over financial reporting, if we are unable to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner or assert that our internal controls over financial reporting are effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal controls over financial reporting when required, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of the ADSs may be adversely impacted, and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, which could require additional financial and management resources.

U.S. investors may have difficulty enforcing civil liabilities against our company and directors and senior management.

Certain of our directors and members of senior management, and those of certain of our subsidiaries, are non-residents of the United States, and all or a substantial portion of our assets and the assets of such persons are located outside the United States.

As a result, it may not be possible to serve process on such persons or us in the United States or to enforce judgments obtained in U.S. courts against them or us based on civil liability provisions of the securities laws of the United States. Additionally, it may be difficult to assert U.S. securities law claims in actions originally instituted outside of the United States.

Foreign courts may refuse to hear a U.S. securities law claim because foreign courts may not be the most appropriate forums in which to bring such a claim. Even if a foreign court agrees to hear a U.S. securities law claim, it may determine that the law of the jurisdiction in which the foreign court resides, and not U.S. law, is applicable to the claim.

Further, if U.S. law is found to be applicable, the content of applicable U.S. law must be proved as a fact, which can be a time-consuming and costly process, and certain matters of procedure would still be governed by the law of the jurisdiction in which the foreign court resides. In particular, there is some doubt as to whether French courts would recognize and enforce certain civil liabilities under U.S. securities laws in original actions or judgments of U.S. courts based upon these civil liability provisions. In addition, awards of punitive damages in actions brought in the United States or elsewhere may be unenforceable in France.

The enforceability of any judgment in France will depend on the particular facts of the case as well as the laws and treaties in effect at the time. The United States and France do not currently have a treaty providing for recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters; therefore the recognition and enforcement of any such judgment would be subject to French procedural law and may not be granted.

The rights of shareholders in companies subject to French corporate law differ in material respects from the rights of shareholders of corporations incorporated in the United States.

We are a French company with limited liability. Our corporate affairs are governed by our by-laws and by the laws governing companies incorporated in France. The rights of shareholders and the responsibilities of members of our board of directors are in many ways different from the rights and obligations of shareholders in companies governed by the laws of U.S. jurisdictions.

For example, in the performance of its duties, our board of directors is required by French law to consider the interests of our company, its shareholders, its employees and other stakeholders, rather than solely our shareholders and/or creditors. It is possible that some of these parties will have interests that are different from, or in addition to, your interests as a shareholder.

Item 1B. Unresolved Staff Comments

We do not have any unresolved comments from the SEC staff.

Item 2. Properties

Our headquarters are located in Paris, France, in an approximately 16,000 square meter facility, under a lease agreement expiring on June 14, 2023. In addition, we had 29 offices as of December 31, 2019. We currently lease space in data centers from third-party hosting providers to operate our servers located in the United States (California, Texas, Virginia), France, the Netherlands, Hong Kong, and Japan. We believe that our facilities are adequate for our current needs.

Item 3. Legal Proceedings

From time to time we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, results of operations, financial condition or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

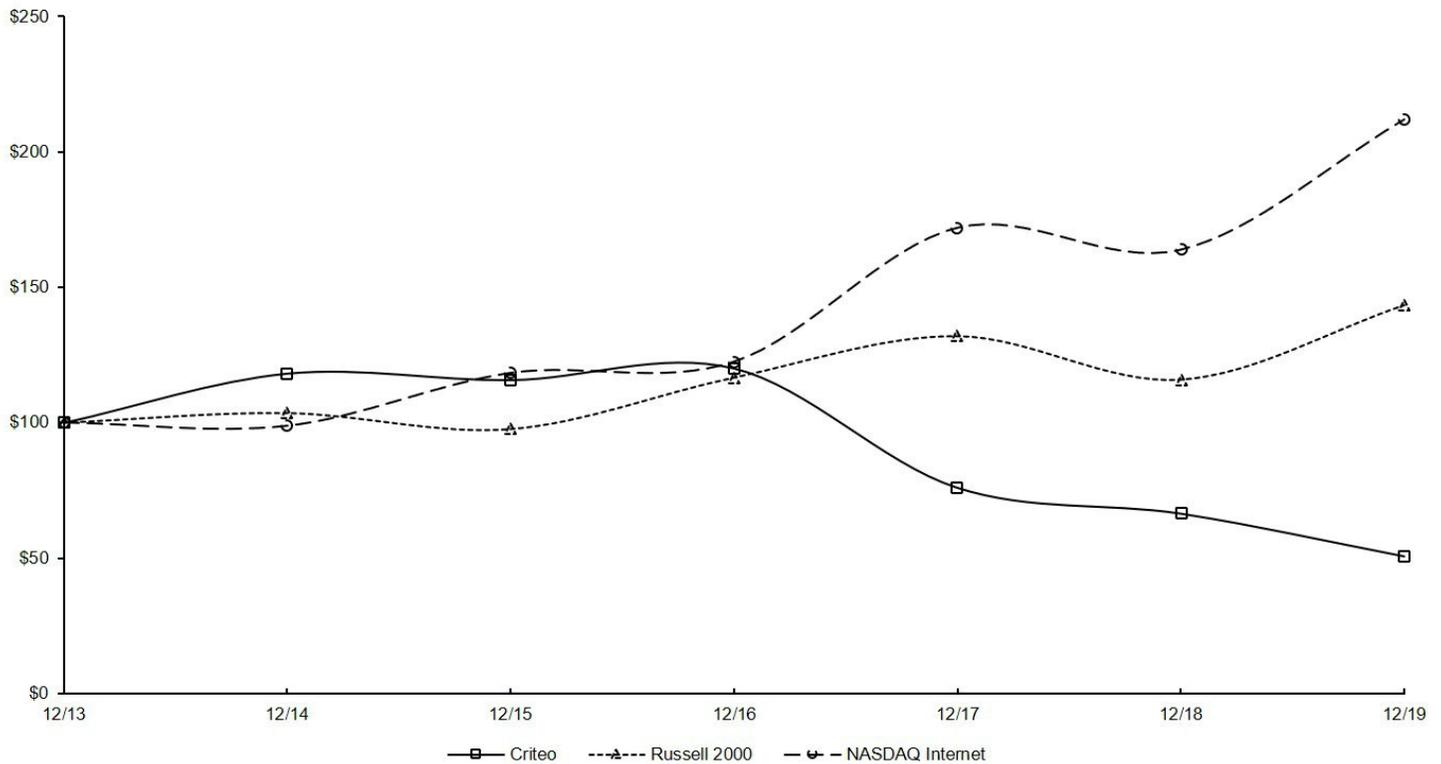
Our ADSs have been listed on the Nasdaq Global Select Market under the symbol "CRTO" since October 30, 2013. Prior to that date, there was no public trading market for ADSs or our ordinary shares.

Holdings

As of January 31, 2020, there were 38 holders of record of our ordinary shares and 130 participants in DTC that held our ADSs. The actual number of holders is greater, and includes beneficial owners whose ADSs are held in street name by brokers and other nominees. This number of holders of record and DTC participants also does not include holders whose shares may be held in trust by other entities.

ADS Performance Graph

The following graph matches our cumulative five-year total shareholder return on our ADSs with the cumulative total returns of the Russell 2000 Index and the Nasdaq Internet Index. The graph tracks the performance of a \$100 investment in our ADSs and in each index (with the reinvestment of all dividends) from December 31, 2014 to December 31, 2019. The returns shown are based on historical results and are not intended to suggest future performance.



The foregoing performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filings under the Securities Act or the Exchange Act, except to the extent we specifically incorporate it by reference into such filing.

Dividends

We have never declared or paid any cash dividends on our ordinary shares. We do not anticipate paying cash dividends on our equity securities in the foreseeable future and intend to retain all available funds and any future earnings to fund our growth.

Subject to the requirements of French law and our by-laws, dividends may only be distributed from our statutory retained earnings. Dividend distributions, if any, will be made in euros and converted into U.S. dollars with respect to the ADSs, as provided in the deposit agreement. In addition, under the General RCF, we may not declare, make or pay dividends if our net debt to Adjusted EBITDA leverage ratio exceeds 2.0x.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information as of December 31, 2019 regarding compensation plans under which our equity securities are authorized for issuance.

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights ⁽¹⁾	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	7,902,288	\$27.00 ⁽²⁾	2,513,566
Equity compensation plans not approved by security holders	—	—	—
Total	7,902,288	\$27.00 ⁽²⁾	2,513,566

⁽¹⁾ The weighted-average exercise price does not reflect the ordinary shares that will be issued in connection with the vesting of free shares, since free shares have no exercise price.

⁽²⁾ The weighted-average exercise price was €24.12 and has been converted to U.S. dollars based on the average exchange rate for the year ended December 31, 2019 of €1.00=\$1.119574.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In July 2019, the Board of Directors authorized a program to repurchase up to \$80 million of our ADSs. The repurchase program commenced in July 2019 and remains in effect until May 15, 2020. As of December 31, 2019, we had repurchased a total of 3,241,932 ADSs under the July 2019 share repurchase program. The following table summarizes the share repurchase activity for the three months ended December 31, 2019:

	Total Number of Shares Purchased	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs
October 1 to 31, 2019	469,047	18.56	469,047	53,700,529.96
November 1 to 30, 2019	1,046,354	17.33	1,046,354	35,567,215.14
December 1 to 31, 2019	811,623	17.40	811,623	21,444,974.94
Total	2,327,024	\$17.60	2,327,024	21,444,974.94

⁽¹⁾ Average price paid per share excludes any broker commissions paid.

Recent Sales of Unregistered Securities and Use of Proceeds

There were no unregistered sales of equity securities during 2019.

Exchange Controls & Ownership by Non-French Residents

Under current French foreign exchange control regulations there are no limitations on the amount of cash payments that we may remit to residents of foreign countries. Laws and regulations concerning foreign exchange controls do, however, require that all payments or transfers of funds made by a French resident to a non-resident, such as dividend payments, be handled by an accredited intermediary. All registered banks and substantially all credit institutions in France are accredited intermediaries.

Neither the French Commercial Code nor our by-laws presently impose any restrictions on the right of non-French residents or non-French shareholders to own and vote shares. However, non-French residents must file a declaration for statistical purposes with the Bank of France (*Banque de France*) within 20 working days following the date of certain direct foreign investments in us, including any purchase of our ADSs. In particular, such filings are required in connection with investments exceeding €15,000,000 that lead to the acquisition of at least 10% of our outstanding ordinary shares or voting rights or the crossing of either such 10% threshold. Violation of this filing requirement may be sanctioned by five years of imprisonment and a fine of up to twice the amount of the relevant investment. This amount may be increased fivefold if the violation is made by a legal entity.

Further, any investment (i) by an individual or entity located in a country that is not a member State of the European Union or of a member State of the European Economic Area having entered into a convention on administrative assistance against tax evasion and fraud with France, or by a French citizen not residing in France, and (ii) that will result in the relevant investor acquiring the control of, all or part of a business of, or more than 33.33% of the share capital or voting rights of, a company registered in France and developing activities in certain strategic industries, such as telecommunications, cybersecurity or data collection, is subject to the prior authorization by the French Minister of Economy. In the absence of such authorization, the relevant investment shall be deemed null and void.

Taxation

French Tax Consequences

The following describes the material French income tax consequences to U.S. Holders (as defined below) of purchasing, owning and disposing of the ADSs and ordinary shares, or the Securities as in force on the date of this Form 10-K.

This discussion does not purport to be a complete analysis or listing of all potential tax effects of the acquisition, ownership or disposition of our securities to any particular investor, and does not discuss tax considerations that arise from rules of general application or that are generally assumed to be known by investors. All of the following is subject to change. Such changes could apply retroactively and could affect the consequences described below.

In 2011, France introduced a comprehensive set of new tax rules applicable to French assets that are held by or in foreign trusts. These rules, among other things, provide for the inclusion of trust assets in the settlor's net assets for purpose of applying the French wealth tax, for the application of French gift and death duties to French assets held in trust, for a specific tax on capital on the French assets of foreign trusts not already subject to the French wealth tax and for a number of French tax reporting and disclosure obligations. The following discussion does not address the French tax consequences applicable to securities held in trusts. If securities are held in trust, the grantor, trustee and beneficiary are urged to consult their own tax adviser regarding the specific tax consequences of acquiring, owning and disposing of securities.

The description of the French income tax and wealth tax consequences set forth below is based on the Convention Between the Government of the United States of America and the Government of the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Income and Capital dated August 31, 1994, or the Treaty, which came into force on December 30, 1995 (as amended by additional protocols of December 8, 2004 and January 13, 2009), and the tax guidelines issued by the French tax authorities in force as of the date of this Form 10-K.

For the purposes of this discussion, the term “U.S. Holder” means a beneficial owner of securities that is (1) an individual who is a U.S. citizen or resident for U.S. federal income tax purposes, (2) a U.S. domestic corporation or certain other entities created or organized in or under the laws of the United States or any state thereof, including the District of Columbia, or (3) otherwise subject to U.S. federal income taxation on a net income basis in respect of securities.

If a partnership (or any other entity treated as a partnership for U.S. federal income tax purposes) holds securities, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. If a U.S. Holder is a partner in a partnership that holds securities, such holder is urged to consult its own tax adviser regarding the specific tax consequences of acquiring, owning and disposing of securities.

This discussion applies only to investors that hold our securities as capital assets that have the U.S. dollar as their functional currency, that are entitled to Treaty benefits under the “Limitation on Benefits” provision contained in the Treaty, and whose ownership of the securities is not effectively connected to a permanent establishment or a fixed base in France.

Certain U.S. Holders (including, but not limited to, U.S. expatriates, partnerships or other entities classified as partnerships for U.S. federal income tax purposes, banks, insurance companies, regulated investment companies, tax-exempt organizations, financial institutions, persons subject to the alternative minimum tax, persons who acquired the securities pursuant to the exercise of employee share options or otherwise as compensation, persons that own (directly, indirectly or by attribution) 5% or more of our voting stock or 5% or more of our outstanding share capital, dealers in securities or currencies, persons that elect to mark their securities to market for U.S. federal income tax purposes and persons holding securities as a position in a synthetic security, straddle or conversion transaction) may be subject to special rules not discussed below.

U.S. Holders are urged to consult their own tax advisers regarding the tax consequences of the purchase, ownership and disposition of securities in light of their particular circumstances, especially with regard to the “Limitations on Benefits” provision.

Estate and Gift Taxes and Transfer Taxes

In general, a transfer of securities by gift or by reason of death of a U.S. Holder that would otherwise be subject to French gift or inheritance tax, respectively, will not be subject to such French tax by reason of the Convention between the Government of the United States and the Government of the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Estates, Inheritances and Gifts, dated November 24, 1978 (as amended by the protocol of December 8, 2004), unless the donor or the transferor is domiciled in France at the time of making the gift or at the time of his or her death, or the securities were used in, or held for use in, the conduct of a business through a permanent establishment or a fixed base in France.

Financial Transactions Tax

Pursuant to Article 235 ter ZD of the Code général des impôts (French Tax Code, or FTC), purchases of shares or ADSs of a French company listed on a regulated market of the European Union or an exchange formally acknowledged by the French Financial Market Authority (AMF) are subject to a 0.3% French tax on financial transactions provided that the issuer’s market capitalization exceeds €1 billion as of December 1 of the year preceding the taxation year.

A list of companies whose market capitalization exceeds €1 billion as of December 1 of the year preceding the taxation year within the meaning of Article 235 ter ZD of the French Tax Code is published annually by the French tax authorities. Pursuant to Regulations BOI-ANNX-000467-20191218 issued on December 18, 2019, Criteo is currently not included in such list. Please note that such list may be updated from time to time, or may not be published anymore in the future.

Furthermore, Nasdaq is not currently acknowledged by the French AMF but this may change in the future.

Consequently, Criteo’s securities should not fall within the scope of the tax on financial transactions described above. In the future, purchases of Criteo’s securities may become subject to such tax if Nasdaq is acknowledged by the French AMF.

Registration Duties

In the case where Article 235 ter ZD of the FTC is not applicable, (i) transfers of shares issued by a listed French company are subject to uncapped registration duties at the rate of 0.1% if the transfer is evidenced by a written statement (“acte”) executed either in France or outside France, whereas (ii) transfers of shares which are not listed are subject to uncapped registration duties at the rate of 0.1% notwithstanding the existence of a written statement (“acte”). As ordinary shares of Criteo are not listed, their transfer is subject to uncapped registration duties at the rate of 0.1% notwithstanding the existence of a written agreement (“acte”).

Although the official guidelines published by the French tax authorities are silent on this point, ADSs should remain outside of the scope of the aforementioned 0.1% registration duties.

Wealth Tax

The French wealth tax (*impôt de solidarité sur la fortune*) has been repealed by the finance bill for 2018 (*loi de finances pour 2018*) dated December 30, 2017. It used to apply only to individuals and did not generally apply to securities held by a U.S. Holder who is a resident pursuant to the provisions of the Treaty, provided that such U.S. Holder does not own directly or indirectly more than 25% of the issuer’s financial rights.

As from January 1, 2018, it has been replaced by a new real estate wealth tax (*impôt sur la fortune immobilière*) which applies only to individuals owning French real estate assets or rights, directly or indirectly through one or more legal entities and whose net taxable assets amount to at least 1,300,000 euros.

French real estate wealth tax may only apply to a U.S. individual to the extent such individual holds, directly or indirectly, financial rights into a company the assets of which comprise French real estate assets that are not allocated to its operational activity. Such financial rights may be taxable for the fraction of their value representing the French real estate assets that are not allocated to an operational activity.

In any case, pursuant to Article 965 2° of the FTC, shares of an operating company holding French real estate assets in which the relevant individual holds, directly and indirectly, less than 10% of the share capital or voting rights are exempt from real estate wealth tax.

Taxation of Dividends

Dividends paid by a French corporation to non-residents of France are generally subject to French withholding tax at a rate of 30% for corporate bodies or other legal entities (which is expected in principle to be progressively decreased to 25% in the coming years) or 12.8% for individuals. Dividends paid by a French corporation in a non-cooperative State or territory, as set out in the list referred to in Article 238-0 A of the FTC, will generally be subject to French withholding tax at a rate of 75%. However, eligible U.S. Holders entitled to Treaty benefits under the “Limitation on Benefits” provision contained in the Treaty who are U.S. residents, as defined pursuant to the provisions of the Treaty, will not be subject to the 12.8%, 30% in 2019 and 28% in 2020, or 75% withholding tax rate, but may be subject to the withholding tax at a reduced rate (as described below).

Under the Treaty, the rate of French withholding tax on dividends paid to an eligible U.S. Holder who is a U.S. resident as defined pursuant to the provisions of the Treaty and whose ownership of the ordinary shares or ADSs is not effectively connected with a permanent establishment or fixed base that such U.S. Holder has in France, is generally reduced to 15%, or to 5% if such U.S. Holder is a corporation and owns directly or indirectly at least 10% of the share capital of the issuer; such U.S. Holder may claim a refund from the French tax authorities of the amount withheld in excess of the Treaty rates of 15% or 5%, if any.

For U.S. Holders that are not individuals but are U.S. residents, as defined pursuant to the provisions of the Treaty, the requirements for eligibility for Treaty benefits, including the reduced 5% or 15% withholding tax rates contained in the “Limitation on Benefits” provision of the Treaty, are complicated, and certain technical changes were made to these requirements by the protocol of January 13, 2009. U.S. Holders are advised to consult their own tax advisers regarding their eligibility for Treaty benefits in light of their own particular circumstances.

Dividends paid to an eligible U.S. Holder may immediately be subject to the reduced rates of 5% or 15% provided that such holder establishes before the date of payment that it is a U.S. resident under the Treaty by completing and providing the depositary with a treaty form (Form 5000).

Dividends paid to a U.S. Holder that has not filed the Form 5000 before the dividend payment date will be subject to French withholding tax at the rate of 12.8%, 30% (in 2019), or 75% if paid in a non-cooperative State or territory (as defined in Article 238-0 A of the FTC), and then reduced at a later date to 5% or 15%, provided that such holder duly completes and provides the French tax authorities with the treaty forms Form 5000 and Form 5001 before December 31 of the second calendar year following the year during which the dividend is paid. Certain qualifying pension funds and certain other tax-exempt entities are subject to the same general filing requirements as other U.S. Holders except that they may have to supply additional documentation evidencing their entitlement to these benefits.

Form 5000 and Form 5001, together with instructions, will be provided by the depositary to all U.S. Holders registered with the depositary. The depositary will arrange for the filing with the French Tax authorities of all such forms properly completed and executed by U.S. Holders of ordinary shares or ADSs and returned to the depositary in sufficient time so that they may be filed with the French tax authorities before the distribution in order to obtain immediately a reduced withholding tax rate.

The withholding tax refund, if any, ordinarily occurs within 12 months from filing the applicable French Treasury Form, but not before January 15 of the year following the calendar year in which the related dividend was paid.

Tax on Sale or Other Disposition

As a matter of principle, under French tax law, U.S. Holder should not be subject to any French tax on any capital gain from the sale, exchange, repurchase or redemption by us of ordinary shares or ADSs, provided that all of the following apply to such U.S. Holder:

- U.S. Holder is not a French tax resident for French tax purposes; and,
- U.S. Holder has not held more than 25% of our dividend rights, known as “*droits aux bénéfices sociaux*” at any time during the preceding five years, either directly or indirectly, and, as relates to individuals, alone or with relatives; and,
- U.S. Holder has not transferred ordinary shares or ADSs as part of redemption by Criteo, in which case the proceeds may under certain circumstances be partially or fully characterized as dividends under French domestic law and, as result, be subject to French dividend withholding tax. As an exception, a U.S. Holder, established, domiciled or incorporated in a non-cooperative State or territory as defined in Article 238-0 A of the FTC should be subject to a 75% withholding tax in France on any such capital gain, regardless of the fraction of the dividend rights it holds.

In case an applicable double tax treaty between France and the U.S. Holder country of residence contains more favorable provisions, a U.S. Holder may not be subject to any French income tax or capital gains tax in case of sale or disposal of any ordinary shares or ADSs of Criteo even if one or more of the above mentioned statements are not applicable.

Particularly, a U.S. Holder who is a U.S. tax resident for purposes of the Treaty and is entitled to Treaty benefit will not be subject to French tax on any such capital gain, unless the ordinary shares or the ADSs form part of the business property of a permanent establishment or fixed base that the U.S. Holder has in France.

U.S. Holders who own ordinary shares or ADSs through U.S. partnerships that are not residents for Treaty purposes are advised to consult their own tax advisors regarding their French tax treatment and their eligibility for Treaty benefits in light of their own particular circumstances.

A U.S. Holder that is not a U.S. resident for Treaty purposes or is not entitled to Treaty benefit (and in both cases is not resident, established or incorporated in a non-cooperative State or territory as defined in Article 238-0 A of the FTC) and has held more than 25% of our dividend rights, known as “*droits aux bénéfices sociaux*” at any time during the preceding five years, either directly or indirectly, and, as relates to individuals, alone or with relatives will be subject to a levy in France at the rate of 31% in 2019 (and 28% in 2020) (which is anticipated to be progressively decreased to 25% in the coming years), if such U.S. Holder is a legal person, or 12.8% if such U.S. Holder is an individual.

Special rules apply to U.S. Holders who are residents of more than one country. The discussion above is a summary of the material French tax consequences of an investment in our shares or ADSs and is based upon laws and relevant interpretations thereof in effect as of the date hereof, all of which are subject to change, possibly with retroactive effect. It does not cover all tax matters that may be of importance to a prospective investor. Each prospective investor is urged to consult its own tax advisor about the tax consequences to it of an investment in shares or ADSs in light of the investor's own circumstances.

Item 6. Selected Financial Data

Our audited consolidated financial statements have been prepared in accordance with U.S. GAAP. We derived the selected consolidated statements of income data for the years ended December 31, 2017, 2018 and 2019 and selected consolidated statements of financial position data as of December 31, 2018 and 2019 from our audited consolidated financial statements included in Part IV, Item 15 “Exhibits and Financial Statements” of this Form 10-K. The selected consolidated statements of income data for the years ended December 31, 2015 and 2016 and the selected consolidated financial position data as of December 31, 2015, 2016 and 2017 have been derived from our audited consolidated financial statements and notes thereto which are not included in this Form 10-K. This data should be read together with Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” as well as our audited consolidated financial statements and notes thereto appearing elsewhere in this Form 10-K. Our historical results are not necessarily indicative of the results to be expected in the future.

Consolidated Statements of Income Data:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands, except share and per share data)				
Revenue	\$ 1,323,169	\$ 1,799,146	\$ 2,296,692	\$ 2,300,314	\$ 2,261,516
Cost of revenue ⁽¹⁾ :					
Traffic acquisition costs	(789,152)	(1,068,911)	(1,355,556)	(1,334,334)	(1,314,947)
Other cost of revenue	(62,201)	(85,260)	(121,641)	(131,744)	(117,533)
Gross profit	471,816	644,975	819,495	834,236	829,036
Operating expenses					
Research and development expenses ⁽¹⁾	(86,807)	(123,649)	(173,925)	(179,263)	(172,591)
Sales and operations expenses ⁽¹⁾	(229,530)	(282,853)	(380,649)	(372,707)	(375,477)
General and administrative expenses ⁽¹⁾	(79,145)	(117,469)	(127,077)	(135,159)	(139,754)
Total operating expenses	(395,482)	(523,971)	(681,651)	(687,129)	(687,822)
Income from operations	76,334	121,004	137,844	147,107	141,214
Financial income (expense)	(4,541)	(546)	(9,534)	(5,084)	(5,749)
Income before taxes	71,793	120,458	128,310	142,023	135,465
Provision for income taxes	(9,517)	(33,129)	(31,651)	(46,144)	(39,496)
Net income	\$ 62,276	\$ 87,329	\$ 96,659	\$ 95,879	\$ 95,969
Net income available to shareholders of Criteo S.A. ⁽²⁾	\$ 59,553	\$ 82,272	\$ 91,214	\$ 88,644	\$ 90,745
Net income available to shareholders per share:					
Basic	\$ 0.96	\$ 1.30	\$ 1.40	\$ 1.33	\$ 1.41
Diluted	\$ 0.91	\$ 1.25	\$ 1.34	\$ 1.31	\$ 1.38
Weighted average shares outstanding used in computing per share amounts:					
Basic	61,835,499	63,337,792	65,143,036	66,456,890	64,305,965
Diluted	65,096,486	65,633,470	67,851,971	67,662,904	65,598,588

⁽¹⁾ Cost of revenue and operating expenses include equity awards compensation expense, pension service costs, depreciation and amortization expense, acquisition-related costs, restructuring costs and deferred price consideration as follows:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Equity awards compensation expense					
Research and development expenses	\$ 6,520	\$ 12,108	\$ 21,093	\$ 21,232	\$ 15,036
Sales and operations expenses	11,678	16,838	31,386	29,244	19,301
General and administrative expenses	5,791	14,313	19,872	16,600	14,795
Total equity awards compensation expense ^(a)	23,989	43,259	72,351	67,076	49,132
Pension service costs					
Research and development expenses	163	211	621	844	760
Sales and operations expenses	153	144	247	325	283
General and administrative expenses	125	169	363	522	513
Total pension service costs	441	524	1,231	1,691	1,556
Depreciation and amortization expense					
Cost of revenue	29,866	38,469	53,988	67,347	44,866
Research and development expenses ^(b)	7,995	7,211	11,226	10,602	16,508
Sales and operations expenses ^(c)	5,178	7,757	19,844	18,245	24,914
General and administrative expenses	1,526	3,342	5,738	7,306	7,200
Total depreciation and amortization expense	44,565	56,779	90,796	103,500	93,488
Acquisition-related costs					
General and administrative expenses	—	2,921	6	1,738	—
Total acquisition-related costs	—	2,921	6	1,738	—
Acquisition-related deferred price consideration					
Research and development expense	324	85	—	—	—
Sales and operations expenses	—	—	—	—	—
General and administrative expenses	(2,218)	—	—	—	—
Total acquisition-related deferred price considerations	(1,894)	85	—	—	—
Restructuring					
Cost of revenue	—	—	2,497	—	—
Research and development expenses	—	—	2,911	(332)	2,000
Sales and operations expenses	—	—	1,825	290	8,810
General and administrative expenses	—	—	123	(11)	2,772
Total Restructuring ^(d)	\$ —	\$ —	\$ 7,356	\$ (53)	\$ 13,582

^(a) Excludes \$0.7 million, \$(0.5) million and \$(8.1) million disclosed as restructuring costs as of December 31, 2017, 2018 and 2019, respectively.

^(b) Includes acquisition-related amortization of intangible assets of \$6.3 million, \$4.1 million, \$17.7 million, \$15.8 million and \$12.3 million (including the accelerated amortization for Manage technology due to a revised useful life for \$2.2 million) as of December 31, 2015, 2016, 2017, 2018 and 2019, respectively.

^(c) Includes acquisition-related amortization of intangible assets of \$3.2 million, \$0.8 million, \$10.0 million, \$9.1 million and \$15.6 million (including an impairment loss for Manage customers relationships for \$4.6 million as of December 31, 2015, 2016, 2017, 2018 and 2019, respectively).

^(d) The Company recognized restructuring charges for its new organizational structure implemented to support its multi-product platform strategy as detailed below as of December 31, 2019:

	Year Ended December 31, 2019
(Gain) from forfeitures of share-based compensation expense	(4,849)
Depreciation and amortization expense	(67)
Facilities and impairment related costs	9,432
Payroll and Facilities related costs	6,145
Total restructuring costs	10,661

⁽²⁾ For the years ended December 31, 2015, 2016, 2017, 2018 and 2019, this excludes \$2.7 million, \$5.1 million, \$5.4 million, \$7.2 million and \$5.2 million, respectively, of net income available to non-controlling interests in our Japanese subsidiary held by Yahoo! Japan.

Reconciliation from Non-GAAP Operating Expenses to Operating Expenses under GAAP:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Research and development expenses	\$ (86,807)	\$ (123,649)	\$ (173,925)	\$ (179,263)	\$ (172,591)
Equity awards compensation expense	6,520	12,108	21,093	21,232	15,036
Depreciation and amortization expense	7,995	7,211	11,226	10,602	16,508
Pension service costs	163	211	621	844	760
Acquisition-related deferred price consideration	324	85	—	—	—
Restructuring	—	—	2,911	(332)	2,000
Non-GAAP - Research and development expenses	\$ (71,805)	\$ (104,034)	\$ (138,074)	\$ (146,917)	\$ (138,287)
Sales and operations expenses	(229,530)	(282,853)	(380,649)	(372,707)	(375,477)
Equity awards compensation expense	11,678	16,838	31,386	29,244	19,301
Depreciation and amortization expense	5,178	7,757	19,844	18,245	24,914
Pension service costs	153	144	247	325	283
Restructuring	—	—	1,825	290	8,810
Non-GAAP - Sales and operations expenses	(212,521)	(258,114)	(327,347)	(324,603)	(322,169)
General and administrative expenses	(79,145)	(117,469)	(127,077)	(135,159)	(139,754)
Equity awards compensation expense	5,791	14,313	19,872	16,600	14,795
Depreciation and amortization expense	1,526	3,342	5,738	7,306	7,200
Pension service costs	125	169	363	522	513
Acquisition-related costs	—	2,921	6	1,738	—
Acquisition-related deferred price consideration	(2,218)	—	—	—	—
Restructuring	—	—	123	(11)	2,772
Non-GAAP - General and administrative expenses	(73,921)	(96,724)	(100,975)	(109,004)	(114,474)
Total Operating expenses	(395,482)	(523,971)	(681,651)	(687,129)	(687,822)
Equity awards compensation expense	23,989	43,259	72,351	67,076	49,132
Depreciation and Amortization expense	14,699	18,310	36,808	36,153	48,622
Pension service costs	441	524	1,231	1,691	1,556
Acquisition-related costs	—	2,921	6	1,738	—
Acquisition-related deferred price consideration	(1,894)	85	—	—	—
Restructuring	—	—	7,356	(53)	13,582
Total Non-GAAP Operating expenses	\$ (358,247)	\$ (458,872)	\$ (566,396)	\$ (580,524)	\$ (574,930)

Non-GAAP Operating Expenses are our consolidated operating expenses adjusted to eliminate the impact of depreciation and amortization, equity awards compensation expense, pension service costs, restructuring costs, acquisition-related costs and deferred price consideration. The Company uses Non-GAAP Operating Expenses to understand and compare operating results across accounting periods, for internal budgeting and forecasting purposes, for short-term and long-term operational plans, and to assess and measure our financial performance and the ability of our operations to generate cash. We believe Non-GAAP Operating Expenses reflects our ongoing operating expenses in a manner that allows for meaningful period-to-period comparisons and analysis of trends in our business. As a result, we believe that Non-GAAP Operating Expenses provides useful information to investors in understanding and evaluating our core operating performance and trends in the same manner as our management and in comparing financial results across periods. In addition, Non-GAAP Operating Expenses is a key component in calculating Adjusted EBITDA, which is one of the key measures we use to provide our quarterly and annual business outlook to the investment community.

Consolidated Statements of Financial Position Data:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Cash and cash equivalents	\$ 353,537	\$ 270,317	\$ 414,111	\$ 364,426	\$ 418,763
Total assets	\$ 841,719	\$ 1,211,186	\$ 1,531,300	\$ 1,597,135	\$ 1,790,384
Trade receivables, net of allowances for doubtful accounts	\$ 261,581	\$ 397,244	\$ 484,101	\$ 473,901	\$ 481,732
Total financial liabilities	\$ 10,428	\$ 85,580	\$ 3,657	\$ 3,508	\$ 4,405
Total liabilities	\$ 362,696	\$ 601,309	\$ 633,602	\$ 629,244	\$ 752,396
Total equity	\$ 479,023	\$ 609,877	\$ 897,698	\$ 967,891	\$ 1,037,988

Other Financial and Operating Data:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands, except number of clients)				
Number of clients	10,198	14,468	18,118	19,419	20,247
Revenue ex-TAC ⁽³⁾	\$ 534,017	\$ 730,235	\$ 941,136	\$ 965,980	\$ 946,569
Adjusted net income ⁽⁴⁾	\$ 89,835	\$ 136,777	\$ 183,311	\$ 168,738	\$ 175,399
Adjusted EBITDA ⁽⁵⁾	\$ 143,435	\$ 224,572	\$ 309,584	\$ 321,059	\$ 298,972

⁽³⁾ We define Revenue ex-TAC as our revenue excluding traffic acquisition costs, or TAC, generated over the applicable measurement period. Revenue ex-TAC is not a measure calculated in accordance with U.S. GAAP. We have included Revenue ex-TAC in this Form 10-K because it is a key measure used by our management and board of directors to evaluate operating performance, generate future operating plans and make strategic decisions regarding the allocation of capital. In particular, we believe that the elimination of TAC from revenue can provide a useful measure for period-to-period comparisons of our core business. Accordingly, we believe that Revenue ex-TAC provides useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Revenue ex-TAC has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under U.S. GAAP. Some of these limitations are: (a) other companies, including companies in our industry which have similar business arrangements, may address the impact of TAC differently; and (b) other companies may report Revenue ex-TAC or similarly titled measures but calculate them differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Revenue ex-TAC alongside our U.S. GAAP financial results, including revenue. The following table presents a reconciliation of Revenue ex-TAC to revenue, the most directly comparable U.S. GAAP measure, for each of the periods indicated:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Revenue	\$ 1,323,169	\$ 1,799,146	\$ 2,296,692	\$ 2,300,314	\$ 2,261,516
Adjustment:					
Traffic acquisition costs	(789,152)	(1,068,911)	(1,355,556)	(1,334,334)	(1,314,947)
Revenue ex-TAC	\$ 534,017	\$ 730,235	\$ 941,136	\$ 965,980	\$ 946,569

⁽⁴⁾ We define Adjusted Net Income as our net income adjusted to eliminate the impact of equity awards compensation expense, amortization of acquisition-related intangible assets, restructuring costs, acquisition-related costs and deferred price consideration and the tax impact of the foregoing adjustments. Adjusted Net Income is not a measure calculated in accordance with U.S. GAAP. We have included Adjusted Net Income in this Form 10-K because it is a key measure used by our management and board of directors to evaluate operating performance, generate future operating plans and make strategic decisions regarding the allocation of capital. In particular, we believe that the elimination of equity awards compensation expense, amortization of acquisition-related intangible assets, restructuring costs, acquisition-related costs and deferred price consideration and the tax impact of the foregoing adjustments in calculating Adjusted Net Income can provide a useful measure for period-to-period comparisons of our core business. Accordingly, we believe that Adjusted Net Income provides useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Our use of Adjusted Net Income has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under U.S. GAAP. Some of these limitations are: (a) Adjusted Net Income does not reflect the potentially dilutive impact of equity-based compensation or the impact of certain acquisition related costs; and (b) other companies, including companies in our industry, may calculate Adjusted Net Income or similarly titled measures differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Adjusted Net Income alongside our U.S. GAAP financial results, including net income. The following table presents a reconciliation of Adjusted Net Income to net income, the most directly comparable U.S. GAAP measure, for each of the periods indicated:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Net income	\$ 62,276	\$ 87,329	\$ 96,659	\$ 95,879	\$ 95,969
Adjustments:					
Equity awards compensation expense ^(a)	23,989	43,259	72,351	67,076	49,132
Amortization of acquisition-related intangible assets	6,342	4,131	17,731	15,821	27,906
Acquisition-related costs	—	2,921	6	1,738	—
Acquisition-related deferred price consideration	(1,894)	85	—	—	—
Restructuring costs	—	—	7,356	(53)	13,582
Tax impact of the above adjustments	(878)	(948)	(10,792)	(11,723)	(11,190)
Adjusted net income	\$ 89,835	\$ 136,777	\$ 183,311	\$ 168,738	\$ 175,399

^(a) Excludes \$0.7 million, \$(0.5) million and \$(8.1) million disclosed as restructuring costs as of December 31, 2017, 2018 and 2019, respectively.

⁽⁵⁾ We define Adjusted EBITDA as our consolidated earnings before financial income (expense), income taxes, depreciation and amortization, adjusted to eliminate the impact of equity awards compensation expense, pension service costs, restructuring costs, acquisition-related costs and deferred price consideration. Adjusted EBITDA is not a measure calculated in accordance with U.S. GAAP. We have included Adjusted EBITDA in this Form 10-K because it is a key measure used by our management and board of directors to evaluate operating performance, generate future operating plans and make strategic decisions regarding the allocation of capital. In particular, we believe that the elimination of equity awards compensation expense, pension service costs, restructuring costs, acquisition-related costs and deferred price consideration in calculating Adjusted EBITDA can provide a useful measure for period-to-period comparisons of our core business. Accordingly, we believe that Adjusted EBITDA provides useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Our use of Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under U.S. GAAP. Some of these limitations are: (a) although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and Adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements; (b) Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs; (c) Adjusted EBITDA does not reflect the potentially dilutive impact of equity-based compensation; (d) Adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us; and (e) other companies, including companies in our industry, may calculate Adjusted EBITDA or similarly titled measures differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Adjusted EBITDA alongside our U.S. GAAP financial results, including net income. The following table presents a reconciliation of Adjusted EBITDA to net income, the most directly comparable U.S. GAAP measure, for each of the periods indicated:

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in thousands)				
Net income	\$ 62,276	\$ 87,329	\$ 96,659	\$ 95,879	\$ 95,969
Adjustments:					
Financial expense (income) net	4,541	546	9,534	5,084	5,749
Provision for income taxes	9,517	33,129	31,651	46,144	39,496
Equity awards compensation expense ^(a)	23,989	43,259	72,351	67,076	49,132
Pension service costs	441	524	1,231	1,691	1,556
Depreciation and amortization expense	44,565	56,779	90,796	103,500	93,488
Acquisition-related costs	—	2,921	6	1,738	—
Acquisition-related deferred price consideration	(1,894)	85	—	—	—
Restructuring costs	—	—	7,356	(53)	13,582
Total net adjustments	81,159	137,243	212,925	225,180	203,003
Adjusted EBITDA	\$ 143,435	\$ 224,572	\$ 309,584	\$ 321,059	\$ 298,972

^(a) Excludes \$0.7 million, \$(0.5) million and \$(8.1) million disclosed as restructuring costs as of December 31, 2017, 2018 and 2019, respectively.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Form 10-K.

Overview

We are a global technology company powering marketers with trusted and impactful advertising. We strive to deliver measurable business results at scale across multiple marketing goals for retailers and brands, through our self-service Criteo Platform. Using shopping data, artificial intelligence ("AI") technology and extensive consumer reach, we help marketers drive Awareness, Consideration and Conversion for their products and services¹, and help retailers generate advertising revenues from consumer brands. Our data is pooled among our clients and offers deep insights into consumer intent and purchasing habits. To drive trusted and impactful advertising for marketers, we activate our data assets in a privacy-by-design way through proprietary AI technology to engage consumers in real time by designing, pricing and delivering highly relevant digital advertisements ("ads") across devices and environments. We price our offering on a range of pricing models and measure our value based on clear, well-defined performance metrics, making our impact on the business of our clients both transparent and easy to measure.

Our clients include some of the largest and most sophisticated commerce companies in the world, along with world-class consumer brands. We partner with them to capture user activity on their websites and mobile applications ("apps"), which we define as digital properties, and optimize the performance of their ads based on that activity and other data. Demonstrating the depth and scale of our data, we collected data on \$900 billion in online sales transactions² on our clients' digital properties in the year ended December 31, 2019. Based on this data and other assets, we delivered targeted ads that generated over 11 billion clicks² in the year ended December 31, 2019. As of December 31, 2019, we served more than 20,000 clients and, in each of the last three years, our average client retention rate, as measured on a quarterly basis, was approximately 90%.

We serve a wide range of clients and our revenue is not concentrated within any single client or group of clients. In 2017, 2018 and 2019, our largest client represented 1.9%, 2.0% and 2.8% of our revenue, respectively, and in 2017, 2018 and 2019, our largest 10 clients represented 11.2%, 11.7% and 11.4% of our revenue in the aggregate, respectively. There is no group of customers under common control or customers that are affiliates of each other constituting an aggregate amount equal to 10% or more of our consolidated revenues, the loss of which would have a material adverse effect on the Company.

We operate in 103 countries through a network of 29 offices located in Europe, Middle East, Africa (EMEA), the Americas and Asia-Pacific. As a result of our significant international operations, our revenue from outside of France, our home country, accounted for 93.6% of our revenue for year ended December 31, 2019.

The Company's foreign currency risk exposure to the British pound, the Japanese yen, the Brazilian real and the U.S dollar against the euro (the euro still remains the Group's functional currency) is described in Item 7 note B. Liquidity and Capital Resources to our Management's Discussion and Analysis included elsewhere in this Form 10-K.

¹ Driving Awareness for a brand means exposing its brand name to consumers who have not been in touch with the brand before, thereby creating brand awareness from such consumers. Driving Consideration for an advertiser's products or services means attracting prospective new consumers to consider engaging with and/or buying this advertiser's products or services. Driving Conversion for an advertisers' products or services means triggering a purchase by consumers who have already engaged with this advertisers products or services in the past.

² Excluding Criteo Retail Media

Our financial results include:

- Revenue of \$2,296.7 million, \$2,300.3 million and 2,261.5 million for the years ended December 31, 2017, 2018 and 2019, respectively;
- Revenue ex-TAC, which is a non-U.S. GAAP financial measure, of \$941.1 million, \$966.0 million and \$946.6 million for the years ended December 31, 2017, 2018 and 2019, respectively;
- Net Income of \$96.7 million, \$95.9 million and \$96.0 million for the years ended December 31, 2017, 2018 and 2019, respectively; and
- Adjusted EBITDA, which is a non-U.S. GAAP financial measure, of \$309.6 million, \$321.1 million and \$299.0 million for the years ended December 31, 2017, 2018 and 2019, respectively.

Please see footnotes 3, 4 and 5 to the Other Financial and Operating Data table in “Item 6. Selected Financial Data” in this Form 10-K for a reconciliation of Revenue to Revenue ex-TAC, Net Income to Adjusted EBITDA and Net Income to Adjusted Net Income respectively, in each case the most directly comparable financial measures calculated and presented in accordance with accounting principles generally accepted in the United States or "U.S. GAAP".

We are focused on maximizing Revenue ex-TAC. We believe this focus builds sustainable long-term value for our business and fortifies a number of our competitive strengths, including a highly liquid marketplace for digital advertising inventory. As part of this focus, we seek to maximize our percentage of overall marketing spend in the digital advertising market over the long-term. In addition, this focus enriches liquidity for both advertisers and publishers resulting in more effective advertising for clients, better monetization for publishers and more relevant advertisements for consumers. We believe our results of operations reflect this focus.

Acquisitions

On October 29, 2018, we acquired Manage, a Silicon Valley-based company with an attractive app install advertising solution.

On August 3, 2018, we acquired Storetail, a Paris-based pioneering retail media technology platform enabling retailers to monetize native placements on their ecommerce sites.

Transition to U.S. GAAP and Change in Reporting Currency

As of June 30, 2015, we no longer met the requirements to qualify as a foreign private issuer under the Exchange Act. As a result, we began reporting as a domestic registrant as of January 1, 2016 and we are required under current SEC rules to prepare our financial statements in accordance with U.S. GAAP, rather than IFRS, and to present our financial information in U.S. dollars instead of euros. The transition from consolidated financial statements under IFRS to U.S. GAAP only impacted the presentation of our consolidated statement of financial position (order of liquidity) and of our consolidated statement of cash flows (effect of exchange rate changes on cash and cash equivalents). The functional currency of the Company remains the euro, while our reporting currency changed from the euro to the U.S. dollar. Consequently, since we incur portions of our expenses and derive revenues in currencies other than the euro, we are exposed to foreign currency exchange risk as our results of operations and cash flows are subject to fluctuations in foreign currency exchange rates. Foreign exchange risk exposure also arises from intra-company transactions and financing with subsidiaries that have a functional currency different than the euro.

A. *Operating Results.*

Basis of Presentation

The key elements of our results of operations include:

Revenue

We sell personalized display advertisements featuring product-level recommendations either directly to clients or to advertising agencies. Historically, the Criteo model has focused solely on converting our clients' website visitors into customers, enabling us to charge our clients only when users engage with an ad we deliver, usually by clicking on it. More recently, we have expanded our solutions to address a broader range of marketing goals for our clients.

We offer two families of solutions to our commerce and brand clients:

- *Criteo Marketing Solutions* allow commerce companies to address multiple marketing goals by engaging their consumers with personalized ads across the web, mobile and offline store environments.
- *Criteo Retail Media* solutions allow retailers to generate advertising revenues from consumer brands, and/or to drive sales for themselves, by monetizing their data and audiences through personalized ads, either on their own digital property or on the open Internet, that address multiple marketing goals.

In conjunction with expanding our solutions, we have also started expanding our pricing models to now include a combination of cost-per-install and cost-per-impression for selected new solutions, in addition to cost-per-click.

We recognize revenues when we transfer control of promised services directly to our clients or to advertising agencies, which we collectively refer to as our clients, in an amount that reflects the consideration to which we expect to be entitled to in exchange for those services.

For campaigns priced on a cost-per-click and cost-per-install basis, we bill our clients when a user clicks on an advertisement we deliver or installs an application by clicking on an advertisement we delivered, respectively. For these pricing models, we recognize revenue when a user clicks on an advertisement or installs an application.

For campaigns priced on a cost-per-impression basis, we bill our clients based on the number of times an advertisement is displayed to a user. For this pricing model, we recognize revenue when an advertisement is displayed.

We act as principal in our arrangements because (i) we control the advertising inventory (spaces on websites) before it is transferred to our clients; (ii) we bear sole responsibility for fulfillment of the advertising promise and inventory risks and (iii) we have full discretion in establishing prices. Therefore, based on these factors, we report revenue earned and the related costs incurred on a gross basis.

Cost of Revenue

Our cost of revenue primarily includes traffic acquisition costs and other cost of revenue.

Traffic Acquisition Costs. Traffic acquisition costs consist primarily of purchases of impressions from publishers on a CPM basis. We purchase impressions directly from publishers or third-party intermediaries, such as advertisement exchanges. We recognize cost of revenue on a publisher by publisher basis as incurred. Costs owed to publishers but not yet paid are recorded in our Consolidated Statements of Financial Position as trade payables.

For some solutions within Criteo Retail Media, we pay for the inventory of our retailer partners on a revenue sharing basis, effectively paying the retailers a portion of the click-based revenue generated by user clicks on the sponsored products advertisements displaying the products of our consumer brand clients.

For a discussion of the trends we expect to see in traffic acquisition costs, see the section entitled " - Highlights and Trends - Revenue ex-TAC" in Item 7.D - Trend Information below.

Other Cost of Revenue. Other cost of revenue includes expenses related to third-party hosting fees, depreciation of data center equipment and the cost of data purchased from third parties. The Company does not build or operate its own data centers and none of its Research and Development employments are dedicated to revenue generating activities. As a result, we do not include the costs of such personnel in other cost of revenue.

Operating Expenses

Operating expenses consist of research and development, sales and operations, and general and administrative expenses. Salaries, bonuses, equity awards compensation, pension benefits and other personnel-related costs are the most significant components of each of these expense categories. We grew from 2,503 employees at January 1, 2017 to 2,755 employees at December 31, 2019.

We include equity awards compensation expense in connection with grants of share options, warrants, and restricted share units ("RSUs") in the applicable operating expense category based on the respective equity award recipient's function (Research and development, Sales and operations, General and administrative).

Research and Development Expense. Research and development expense consists primarily of personnel-related costs for our employees working in the engine, platform, site reliability engineering, scalability, infrastructure, engineering program management, product, analytics and other teams, including salaries, bonuses, equity awards compensation and other personnel related costs. Our research and development function was supplemented in January 2013 to include a dedicated product organization following the appointment of a Chief Product Officer. Also included are non-personnel costs such as subcontracting, consulting and professional fees to third-party development resources, allocated overhead and depreciation and amortization costs. These expenses are partially offset by the French research tax credit that is conditional upon the level of our expenditures in research and development.

Our research and development efforts are focused on enhancing the performance of our solution and improving the efficiency of the services we deliver to our clients and publisher partners. All development costs, principally headcount-related costs, are expensed as management determines that technological feasibility is reached, shortly before the release of the developed products or features. As a result, the development costs incurred after the establishment of technological feasibility and before the release of those products or features are not material and, accordingly, are expensed as incurred. Capitalized costs mainly relates to internally developed internal-use software and IT licenses.

The number of employees in research and development functions grew from 603 at January 1, 2017 to 681 at December 31, 2019. On October 7, 2019, in connection with the new organization structure, the Company announced a plan to restructure its R&D activities with the closing of its R&D operations in Palo Alto, and we expect our headcount to be slightly reduced upon completion of this restructuring. We expect research and development expenses to slightly decrease as a percentage of our revenue. We believe our continued investment in research and development to be critical to maintaining and improving our technology within the Criteo Platform, our quality of service and our competitive position.

Sales and Operations Expense. Sales and operations expense consists primarily of personnel-related costs for our employees working in our sales, account strategy, sales operations, publisher business development, analytics, marketing, technical solutions, creative services and other teams, including salaries, bonuses, equity awards compensation, and other personnel-related costs. Additional expenses in this category include travel and entertainment, marketing and promotional events, marketing activities, provisions for doubtful accounts, subcontracting, consulting and professional fees paid to third parties, allocated overhead and depreciation and amortization costs. The number of employees in sales and operations functions declined from 1,489 at January 1, 2017 to 1,578 at December 31, 2019. In order to expand our business, we expect to make targeted investments in our resources in some areas of our sales and operations. Yet, we expect sales and operations expenses to remain fairly flat as a percentage of revenue over time as we increase the productivity of our sales and operations teams.

General and Administrative Expense. General and administrative expense consists primarily of personnel costs, including salaries, bonuses, equity awards compensation, pension benefits and other personnel-related costs for our administrative, legal, information technology, human resources, facilities and finance teams. Additional expenses included in this category include travel-related expenses, subcontracting and professional fees, audit fees, tax services and legal fees, as well as insurance and other corporate expenses, along with allocated overhead and depreciation and amortization costs. The number of employees in general and administrative functions grew from 411 at January 1, 2017 to 496 at December 31, 2019. We expect our general and administrative expense to decrease as a percentage of revenue over time as we increase the productivity of our general and administrative teams.

Financial Income (Expense)

Financial income (expense) primarily consists of:

- exchange differences arising on the settlement or translation into local currency of monetary balance sheet items labeled in euros (the Company's functional currency). We are exposed to changes in exchange rates primarily in the United States, the United Kingdom, Japan, Korea and Brazil. The U.S. dollar, the British pound, the Korean won, the Japanese yen and the Brazilian real are our most significant foreign currency exchange risks. At December 31, 2019, our exposure to foreign currency risk was centralized at parent company level and hedged. These exchange differences in euro are then translated into U.S. dollars (the Company's reporting currency) according to the average euro/U.S. dollar exchange rate.
- interest received on our cash and cash equivalents and interest incurred on outstanding borrowings under our debt loan agreements and revolving credit facilities ("RCFs").

We monitor foreign currency exposure and look to mitigate exposures through normal business operations and hedging strategies.

Provision for Income Taxes

We are subject to potential income taxes in France, the United States and numerous other jurisdictions. We recognize tax liabilities based on estimates of whether additional taxes will be due. These tax liabilities are recognized when we believe that certain positions may not be fully sustained upon review by tax authorities, notwithstanding our belief that our tax return positions are supportable.

Our effective tax rates differ from the statutory rate applicable to us primarily due to valuation allowance on deferred tax assets, differences between domestic and foreign jurisdiction tax rates, Research Tax Credit offsets, which are non-taxable items, potential tax audit provision settlements, share-based compensation expenses that are non-deductible in some jurisdictions under certain circumstances, and transfer pricing adjustments. We license access to our technology to our subsidiaries and charge a royalty fee to these subsidiaries for such access. In France, we benefit from a reduced tax rate of 10% on a large portion of this technology royalty income.

On September 27, 2017, we received a draft notice of proposed adjustment from the Internal Revenue Service ("IRS") audit of Criteo Corp. for the year ended December 31, 2014, confirmed by the definitive notice dated February 8, 2018. If the IRS prevails in its position, it could result in an additional federal tax liability of an estimated maximum aggregate amount of \$15.0 million, excluding relative fees, interest and penalties. We strongly disagree with the IRS's position as asserted in the draft notice of proposed adjustment and intend to contest it.

No uncertain tax positions were identified as of December 31, 2019.

Critical Accounting Policies and Significant Judgments and Estimates

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

An accounting policy is deemed to be critical if it requires an accounting estimate to be made on assumptions about matters that are highly uncertain at the time the estimate is made, if different estimates reasonably could have been used, or if changes in the estimate that are reasonably possible could materially impact the financial statements. We believe estimates associated with revenue recognition, trade receivables, net of allowances for doubtful accounts, deferred tax assets, uncertain tax positions, impact of tax reforms in the U.S., goodwill and intangible assets, internal-use software and equity awards compensation have the greatest potential impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates. See Note 1. Principles and Accounting Methods to our audited consolidated financial statements beginning on page F-1 for a description of our other significant accounting policies.

Revenue Recognition

We recognize revenues when we transfer control of promised services directly to our clients or to advertising agencies, which we collectively refer to as our clients, in an amount that reflects the consideration to which we expect to be entitled to in exchange for those services.

For campaigns priced on a cost-per-click and cost-per-install basis, we bill our clients when a user clicks on an advertisement we deliver or installs an application by clicking on an advertisement we delivered, respectively. For these pricing models, we recognize revenue when a user clicks on an advertisement or installs an application.

For campaigns priced on a cost-per-impression basis, we bill our clients based on the number of times an advertisement is displayed to a user. For this pricing model, we recognize revenue when an advertisement is displayed.

We act as principal in our arrangements because (i) we control the advertising inventory (spaces on websites) before it is transferred to our clients; (ii) we bear sole responsibility for fulfillment of the advertising promise and inventory risks and (iii) we have full discretion in establishing prices. Therefore, based on these factors, we report revenue earned and the related costs incurred on a gross basis.

Trade Receivables, Net of Allowances for Doubtful Accounts

We carry our accounts receivable at net realizable value. On a periodic basis, our management evaluates our accounts receivable and determines whether to provide an allowance or if any accounts should be written down and charged to expense as a bad debt. The evaluation is based on a past history of collections, current credit conditions, the length of time the trade receivable is past due and a past history of write downs. A trade receivable is considered past due if we have not received payments based on agreed-upon terms. A higher default rate than estimated or a deterioration in our major clients' creditworthiness could have an adverse impact on our future results. Allowances for doubtful accounts on trade receivables are recorded in "Sales and Operations" in our consolidated statements of income. We generally do not require any security or collateral to support our trade receivables. The amount of allowance for doubtful accounts charged to our consolidated statements of income for the years ended December 31, 2017, 2018 and 2019 was \$13.3 million, \$17.7 million and \$11.1 million, respectively and represented 2.7%, 3.7% and 2.3% of our trade receivables, net of allowances, as of December 31, 2017, 2018, and 2019, respectively.

Deferred Tax Assets

Deferred taxes are recorded on all temporary differences between the financial reporting and tax bases of assets and liabilities, and on tax losses, using the liability method. Differences are defined as temporary when they are expected to reverse within a foreseeable future. We may only recognize deferred tax assets if, based on the projected taxable incomes within the next three years, we determine that it is probable that future taxable profit will be available against which the unused tax losses and tax credits can be utilized. As a result, the measurement of deferred income tax assets is reduced, if necessary, by a valuation allowance for any tax benefits which are not expected to be realized. If future taxable profits are considerably different from those forecasted that support recording deferred tax assets, we will have to revise downwards or upwards the amount of the deferred tax assets, which could have a significant impact on our financial results.

This determination requires many estimates and judgments by our management for which the ultimate tax determination may be uncertain.

Uncertain Tax Positions

We recognize tax benefits from uncertain tax positions only if we believe that 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. These uncertain tax positions include our estimates for transfer pricing that have been developed based upon analyses of appropriate arms-length prices. Similarly, our estimates related to uncertain tax positions concerning research tax credits are based on an assessment of whether our available documentation corroborating the nature of our activities supporting the tax credits will be sufficient. Although we believe that we have adequately reserved for our uncertain tax positions (including net interest and penalties), we can provide no assurance that the final tax outcome of these matters will not be materially different. We make adjustments to these reserves in accordance with the income tax accounting guidance when facts and circumstances change, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made, and could have a material impact on our financial condition and operating results.

Goodwill and Intangible Assets

Acquired intangible assets are accounted for at acquisition cost less accumulated amortization and any impairment loss. Acquired intangible assets are amortized over their estimated useful lives of three to nine years on a straight-line method. Intangible assets are reviewed for impairment whenever events or changes in circumstances such as, but not limited to, significant declines in revenue, earnings or cash flows or material adverse changes in the financial and economic environment indicate that the carrying amount of an asset may be impaired.

Goodwill is not amortized and is tested for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The Company has determined that it operates as a single reporting unit and has selected December 31 as the date to perform its annual impairment test. In the impairment assessment of its goodwill, the Company performs a two-step impairment test, which involves assumptions regarding estimated future cash flows to be derived from the Company. If these estimates or their related assumptions change in the future, the Company may be required to record impairment for these assets.

The first step of the impairment test involves comparing the fair value of the reporting unit to its net book value, including goodwill. If the net book value exceeds its fair value, then the Company would perform the second step of the goodwill impairment test to determine the amount of the impairment loss. The impairment loss to be recognized would be calculated by comparing the implied fair value of the Company to its net book value. In calculating the implied fair value of the Company's goodwill, the fair value of the Company would be allocated to all of the other assets and liabilities based on their fair values. The excess of the fair value of the Company over the amount assigned to its other assets and liabilities is the implied fair value of goodwill. An impairment loss would be recognized in the Consolidated Statement of Income when the carrying amount of goodwill exceeds its implied fair value.

There has been no impairment of goodwill during the years ended December 31, 2017, 2018 and 2019, as the Company's reporting unit's fair value was substantially in excess of the carrying value based on the annual goodwill impairment test.

Internal-Use Software

Costs related to customized internal-use software that have reached the application development stage are capitalized. Capitalization of such costs begins when the preliminary project stage is complete and stops when the project is substantially complete and is ready for its intended purpose. In making this determination, several analyses for each phase are performed, including analysis of the feasibility, availability of resources, intention to use and future economic benefits. Amortization of these costs begins when capitalization stops and is calculated on a straight-line basis over the assets' useful lives estimated at three to five years. Costs incurred during the preliminary development stage, as well as maintenance and training costs, are expensed as incurred.

Equity Awards Compensation

We account for share-based compensation in accordance with ASC 718 - *Compensation - Stock Compensation*. Under the fair value recognition provisions of this guidance, share-based compensation is measured at the grant date based on the fair value of the award and is recognized as expense, over the requisite service period, which is generally the vesting period of the respective award.

Determining the fair value of share-based awards at the grant date requires judgment. The determination of the grant date fair value of RSUs is based on the share price on the grant date. We use the Black-Scholes option-pricing model to determine the fair value of share options. The determination of the grant date fair value of options using an option-pricing model is affected by our estimated ordinary share fair value as well as assumptions regarding a number of other complex and subjective variables.

These variables include the fair value of our ordinary shares, the exercise price of the option, the expected term of the options, our expected share price volatility, risk-free interest rates, and expected dividends, which are estimated as follows:

- *Fair value of our ordinary shares.* Following our initial public offering, we established a policy of using the closing sales price per ADS as quoted on the Nasdaq on the date of grant for purposes of determining the fair value of ordinary shares.
- *Exercise price of the option.* Following our initial public offering, we established a policy of using the closing sales price per ADS as quoted on the Nasdaq on the date of grant for purposes of determining the exercise price with a floor value of 95% of the average of the closing sales price per ADS for the 20 trading days preceding the grant.
- *Expected term.* The expected term represents the period that our share-based awards are expected to be outstanding. As we do not have sufficient historical experience for determining the expected term of the ordinary share option awards granted, we have based our expected term on the simplified method, which represents the average period from vesting to the expiration of the award.
- *Expected volatility.* Prior to our initial public offering, as we did not have a trading history for our ordinary shares, the expected share price volatility for our ordinary shares was estimated by taking the average historic price volatility for industry peers based on daily price observations over a period equivalent to the expected term of the ordinary share option grants. From the initial public offering, the expected share price volatility takes into account the Criteo closing share price from the initial public offering date to the grant date and closing share price of industry peers for the remaining expected term of the ordinary share option grant.
- *Risk-free rate.* The risk-free interest rate is based on the yields of France Treasury securities with maturities similar to the expected term of the options for each option group.
- *Dividend yield.* We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future. Consequently, we use an expected dividend yield of zero.

If any of the assumptions used in the Black-Scholes model changes significantly, share-based compensation for future awards may differ materially compared with the awards granted previously.

The following table presents the range of assumptions used to estimate the fair value of options granted during the periods presented:

	Year Ended December 31,		
	2017	2018	2019
Volatility	41.3%	40.7% - 41.5%	39.2% - 41.2%
Risk-free interest rate	0.00%	0.60% - 0.90%	0.00% - 0.10%
Expected life (in years)	6 years	6 years	6 years
Dividend yield	—%	—%	—%

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements applicable to us, see Note 1 to our audited consolidated financial statements beginning on page F-1.

Results of Operations for the Years Ended December 31, 2017, 2018 and 2019

Revenue

Information in this Form 10-K with respect to results presented on a constant currency basis was calculated by applying prior period average exchange rates to current period results. Management reviews and analyzes business results excluding the effect of foreign currency translation because they believe this better represents our underlying business trends. Below is a table which reconciles the actual results presented in this section with the results presented on a constant currency basis.

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands)				
Revenue as reported	\$ 2,296,692	\$ 2,300,314	\$ 2,261,516	0.2 %	(2)%
Conversion impact U.S. dollar/other currencies	\$ (4,809)	(19,118)	51,373		
Revenue at constant currency ^(*)	2,291,883	2,281,196	2,312,889	(1)%	1 %
<u>Americas</u>					
Revenue as reported	\$ 990,424	\$ 954,073	\$ 952,154	(4)%	(0.2)%
Conversion impact U.S. dollar/other currencies	(6,812)	7,693	4,584		
Revenue at constant currency ^(*)	\$ 983,612	\$ 961,766	\$ 956,738	(3)%	0.3 %
<u>EMEA</u>					
Revenue as reported	\$ 808,961	\$ 839,825	\$ 806,197	4 %	(4)%
Conversion impact U.S. dollar/other currencies	(7,179)	(21,553)	44,478		
Revenue at constant currency ^(*)	\$ 801,782	\$ 818,272	\$ 850,675	1 %	1 %
<u>Asia-Pacific</u>					
Revenue as reported	\$ 497,307	\$ 506,416	\$ 503,165	2 %	(1)%
Conversion impact U.S. dollar/other currencies	9,186	(5,258)	2,311		
Revenue at constant currency ^(*)	\$ 506,493	\$ 501,158	\$ 505,476	1 %	(0.2)%

^(*) Revenue at constant currency excludes the impact of foreign currency fluctuations and is computed by applying the average exchange rates for the prior year to the following year figures.

2019 Compared to 2018

Revenue for 2019 decreased \$(38.8) million, or (2)% (or increased 1% on a constant currency basis) to \$2,261.5 million, compared to 2018. The year-over-year increase in revenue at constant currency was entirely driven by new clients, offsetting the decrease in our business with existing clients. We added 828 net new clients across regions and client sizes over the period, a lower volume than the prior year. This was primarily driven by focused execution and productivity improvements in the midmarket category leading to higher additions of higher-value midmarket clients. Contribution from existing clients was impacted by lower retargeting spend from large clients, as well as by a general softness in the web environment, where users tend to progressively spend less time than in apps, where our solutions do not yet contribute significantly to our revenue growth, despite continued adoption of our new products.

Our revenue in the Americas region decreased (0.2)% (or increased 0.3% on a constant currency basis) to \$952.2 million for 2019 compared to 2018. Growth was driven by the acceleration of our midmarket business driven by larger midmarket clients, as well as continued traction in our Criteo Retail Media business in the U.S., partly offset by lower retargeting spend by large clients.

Our revenue in the EMEA region decreased (4)% (or increased 1% on a constant currency basis) to \$806.2 million for 2019 compared to 2018. This increase at constant currency was largely driven by accelerated growth in our midmarket business and by the positive traction of our new solutions, including Retail Media, partly offset by softer business with large customers.

Our revenue in the Asia-Pacific region decreased (1)% (or (0.2)% on a constant currency basis) to \$503.2 million for 2019 compared to 2018. This slight decrease at constant currency was driven by a slow-down in our large customer business in Japan, South-East Asia and Australia, despite strong growth across client categories in Korea and our growing midmarket business across the region.

Additionally, our \$2,261.5 million of revenue for 2019 was negatively impacted by \$(51.4) million of currency fluctuations, particularly as a result of the depreciation of the Japanese yen, the British pound, the Korean won, the Brazilian real and the Euro, compared to the U.S. dollar.

The year-over-year growth in revenue on a constant currency basis was entirely attributable to an increased number of clicks delivered on the advertising banners displayed by us and the increased number of impressions delivered by us, offsetting the decrease in the average cost-per-click charged to advertisers.

2018 Compared to 2017

Revenue for 2018 increased \$3.6 million, or 0.2% (or decreased (1)% on a constant currency basis) to \$2,300.3 million, compared to 2017. Revenue was impacted by the discontinuation of certain products over the period. Revenue from new clients contributed 63% to the year-over-year revenue growth of the period, while revenue from existing clients contributed 37%. Business with our existing clients was generally resilient despite significant headwinds resulting in softer contribution to revenue growth. We added 1,301 net new clients across regions and client sizes over the period, a lower volume than the prior year, primarily driven by delayed sales headcount hiring and increased employee attrition, particularly in the midmarket.

Offsetting this, clients increasingly used our Criteo Marketing Solutions to address new marketing goals, particularly Consideration, as well as Criteo Retail Media solutions, launched campaigns in new environments, such as apps, and benefited from our broader direct connections with publishers through Criteo Direct Bidder.

Our revenue in the Americas region decreased (4)% (or (3)% on a constant currency basis) to \$954.1 million for 2018 compared to 2017. While we saw continued strength with our largest existing clients in the United States, execution was more difficult in the midmarket across the region and we experienced prolonged difficult market conditions in Latin America.

We saw a positive impact from the continued ramp up of our expanded Criteo Marketing Solutions and Criteo Retail Media solutions, in particular in the United States. Contribution from existing clients was negatively impacted by user coverage limitations across the region, and the discontinuation of certain products over the period. Contribution from new clients was negatively impacted by hiring delays within our sales teams.

Our revenue in the EMEA region increased 4% (or 1% on a constant currency basis) to \$839.8 million for 2018 compared to 2017. This was largely driven by solid growth in Germany, Russia and Middle-East, as well as the traction from our broader solutions offering. External negative factors, including the implementation of the GDPR, as well as some short-term disturbance related to the implementation of our new go-to-market model across the region had a temporary negative impact on revenue growth.

Our revenue in the Asia-Pacific region increased 2% (or 1% on a constant currency basis) to \$506.4 million for 2018 compared to 2017. Overall, revenue growth was driven by a stronger business in Korea (particularly in apps) and India and Japan (particularly with large clients).

Additionally, our \$2,300.3 million of revenue for 2018 was positively impacted by \$19.1 million of currency fluctuations, particularly as a result of the strengthening of the Japanese yen, the British pound and the euro partially offset by the depreciation of the Brazilian real and the Turkish lira, compared to the U.S. dollar.

The year-over-year decrease in revenue on a constant currency basis was attributable to a slight decrease in the average cost-per-click, not entirely offset by growth in the volume of clicks delivered on the advertisements displayed by us.

Cost of Revenue

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percentages)				
Traffic acquisition costs	\$ (1,355,556)	\$ (1,334,334)	\$ (1,314,947)	(2)%	(1)%
Other cost of revenue	(121,641)	(131,744)	(117,533)	8%	(11)%
Total cost of revenue	\$ (1,477,197)	\$ (1,466,078)	\$ (1,432,480)	(1)%	(2)%
% of revenue	(64)%	(64)%	(63)%		
Gross profit %	36 %	36 %	37 %		

2019 Compared to 2018

Cost of revenue for 2019 decreased \$(33.6) million, or (2)%, compared to 2018. This decrease was primarily the result of a \$(19.4) million, or (1)% decrease in traffic acquisition costs (or an increase of 1% on a constant currency basis), and a \$(14.2) million, or (11)% (or (9)% on a constant currency basis), decrease in other cost of revenue.

The increase in traffic acquisition costs on a constant currency basis related primarily to an increase of 9.2% in the total number of impressions we purchased, partly offset by a (9.8)% decrease (or (7.8)% decrease on a constant currency basis) in the average CPM for inventory purchased. The increase in the volume of purchased impressions reflects our expanding relationships with existing and new publisher partners to support the growth in our client demand for advertising campaigns. The year-over-year decrease in average CPM was driven by a combination of factors, including the effectiveness of our Criteo Direct Bidder, which allows us to buy quality inventory directly from large publishers and remove intermediary fees in the process, as well as of the growing share of in-app inventory in our business, which inventory cost tends to be slightly lower than that in the web browser environment.

The decrease in other cost of revenue includes a \$(22.5) million decrease in the allocated depreciation and amortization expense following the changes in our estimation of the useful life of the servers and other equipment used in our data centers from 3 to 5 years, partially offset by a \$5.9 million increase in other cost of sales and a \$2.4 million increase in hosting costs.

2018 Compared to 2017

Cost of revenue for 2018 decreased \$(11.1) million, or (1)%, compared to 2017. This decrease was primarily the result of a \$(21.2) million, or (2)% (or (2)% on a constant currency basis), decrease in traffic acquisition costs and a \$10.1 million, or 8% (or 8% on a constant currency basis), increase in other cost of revenue.

The decrease in traffic acquisition costs related primarily to a (2.7)% decrease (or (3.2)% decrease on a constant currency basis) in the average CPM for inventory purchased, partly offset by an increase of 1.2% in the total number of impressions we purchased. The increase in the volume of purchased impressions reflects our expanding relationships with existing and new publisher partners to support the growth in our client demand for advertising campaigns. The year-over-year decrease in average CPM was driven by a combination of factors, including the effectiveness of our Criteo Direct Bidder, which allows to buy quality inventory directly from large publishers and remove intermediary fees in the process, as well as of the growing share of in-app inventory in our business, which inventory cost tends to be slightly lower than that in the web browser environment.

The increase in other cost of revenue includes a \$13.1 million increase in allocated depreciation and amortization expense and a \$0.1 million increase in other cost of sales partially offset by a \$3.1 million decrease in hosting costs.

Revenue excluding Traffic Acquisition Costs

We consider Revenue ex-TAC as a key measure of our business activity. Our strategy focuses on maximizing our Revenue ex-TAC on an absolute basis over maximizing our near-term gross margin. We believe this focus builds sustainable long-term value for our business by fortifying a number of our competitive strengths, including access to advertising inventory, breadth and depth of data and continuous improvement of the Criteo AI Engine's performance, allowing it to deliver more relevant advertisements at scale. As part of this focus, we continue to invest in building relationships with direct publishers and pursue access to leading advertising exchanges.

The following table sets forth our revenue, traffic acquisition costs and Revenue ex-TAC by region, including the Americas (North and South America), Europe, Middle East and Africa, or EMEA, and Asia-Pacific:

	Region	Year Ended December 31,		
		2017	2018	2019
		(in thousands)		
Revenue	Americas	\$ 990,424	\$ 954,073	\$ 952,154
	EMEA	808,961	839,825	806,197
	Asia-Pacific	497,307	506,416	503,165
	Total	<u>\$ 2,296,692</u>	<u>\$ 2,300,314</u>	<u>\$ 2,261,516</u>
Traffic acquisition costs	Americas	\$ (619,393)	\$ (579,597)	\$ (579,175)
	EMEA	(450,297)	(471,654)	(453,530)
	Asia-Pacific	(285,866)	(283,083)	(282,242)
	Total	<u>\$ (1,355,556)</u>	<u>\$ (1,334,334)</u>	<u>\$ (1,314,947)</u>
Revenue ex-TAC ⁽¹⁾	Americas	\$ 371,031	\$ 374,476	\$ 372,979
	EMEA	358,664	368,171	352,667
	Asia-Pacific	211,441	223,333	220,923
	Total	<u>\$ 941,136</u>	<u>\$ 965,980</u>	<u>\$ 946,569</u>

⁽¹⁾ We define Revenue ex-TAC as our revenue excluding traffic acquisition costs generated over the applicable measurement period. Revenue ex-TAC and Revenue ex-TAC by Region are not measures calculated in accordance with U.S. GAAP. We have included Revenue ex-TAC and Revenue ex-TAC by Region in this Form 10-K because they are key measures used by our management and board of directors to evaluate operating performance and generate future operating plans. In particular, we believe that the elimination of TAC from revenue and review of these measures by region can provide useful measures for period-to-period comparisons of our core business. Accordingly, we believe that Revenue ex-TAC and Revenue ex-TAC by Region provide useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Our use of Revenue ex-TAC and Revenue ex-TAC by Region has limitations as an analytical tool, and you should not consider them in isolation or as a substitute for analysis of our financial results as reported under U.S. GAAP. Some of these limitations are: (a) other companies, including companies in our industry which have similar business arrangements, may address the impact of TAC differently; (b) other companies may report Revenue ex-TAC and Revenue ex-TAC by Region or similarly titled measures but define the regions differently, which reduces their effectiveness as a comparative measure; and (c) other companies may report Revenue ex-TAC or similarly titled measures but calculate them differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Revenue ex-TAC and Revenue ex-TAC by Region alongside our other U.S. GAAP financial results, including revenue. The above table provides a reconciliation of Revenue ex-TAC by region to revenue by region. Please also refer to footnote 3 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for a reconciliation of Revenue ex-TAC to revenue, the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP.

Constant Currency Reconciliation

Information in this Form 10-K with respect to results presented on a constant currency basis was calculated by applying prior period average exchange rates to current period results. Management reviews and analyzes business results excluding the effect of foreign currency translation because they believe this better represents our underlying business trends. Below is a table which reconciles the actual results presented in this section with the results presented on a constant currency basis:

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands)				
Revenue as reported	\$ 2,296,692	\$ 2,300,314	\$ 2,261,516	0.2%	(2)%
Conversion impact U.S. dollar/other currencies	(4,809)	(19,118)	51,373		
Revenue at constant currency	\$ 2,291,883	\$ 2,281,196	\$ 2,312,889	(1)%	1%
Traffic acquisition costs as reported	\$ (1,355,556)	\$ (1,334,334)	\$ (1,314,947)	(2)%	(1)%
Conversion impact U.S. dollar/other currencies	2,186	10,433	(28,831)		
Traffic acquisition cost at constant currency	\$ (1,353,370)	\$ (1,323,901)	\$ (1,343,778)	(2)%	1%
Revenue ex-TAC as reported	\$ 941,136	\$ 965,980	\$ 946,569	3%	(2)%
Conversion impact U.S. dollar/other currencies	(2,624)	(8,686)	22,542		
Revenue ex-TAC at constant currency	\$ 938,512	\$ 957,294	\$ 969,111	2%	0.3%
Other cost of revenue as reported	\$ (121,641)	\$ (131,744)	\$ (117,533)	8%	(11)%
Conversion impact U.S. dollar/other currencies	(990)	(114)	(1,856)		
Other cost of revenue at constant currency	\$ (122,631)	\$ (131,858)	\$ (119,389)	8%	(9)%

Research and Development Expenses

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent of revenue)				
Research and development expenses	\$ (173,925)	\$ (179,263)	\$ (172,591)	3%	(4)%
% of revenue	(8)%	(8)%	(8)%		

2019 Compared to 2018

Research and development expenses for 2019 decreased \$(6.7) million, or (4)%, compared to 2018. This decrease mainly related to an increase in the French Research Tax Credit and a decrease of headcount-related costs due to a lower share-based compensation expense, partially offset by an increased amortization expense for Manage technology due to a revised useful life (see Note 8). On October 7, 2019, in connection with the new organization structure, the Company announced a plan to restructure its R&D activities with the closing of its R&D operations in Palo Alto. The company incurred net restructuring costs of \$0.7 million (see Note 2).

2018 Compared to 2017

Research and development expenses for 2018 increased \$5.3 million, or 3%, compared to 2017. This increase mainly related to an increase of headcount-related costs and other expenses, partially offset by an increase in the French Research Tax Credit.

Sales and Operations Expenses

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent of revenue)				
Sales and operations expenses	\$ (380,649)	\$ (372,707)	\$ (375,477)	(2)%	1%
% of revenue	(17)%	(16)%	(17)%		

2019 Compared to 2018

Sales and operations expenses for 2019 increased \$2.8 million, or 1%, compared to 2018. This increase mainly related to impairment of facilities following our offices right sizing policy implementation (see Note 2), the \$4.8 million impairment loss recognized on Manage customers relationships (see Note 8) and a \$5.0 million increase following an exceptional charge related to an invoicing dispute partially offset by a positive change in provisions for doubtful receivables.

2018 Compared to 2017

Sales and operations expenses for 2018 decreased \$(7.9) million, or (2)%, compared to 2017. This decrease mainly related to a decrease in headcount-related costs, internal and marketing events costs and operating taxes in Brazil and Singapore partially offset by an increase of bad debt expense.

General and Administrative Expenses

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent of revenue)				
General and administrative expenses	\$ (127,077)	\$ (135,159)	\$ (139,754)	6%	3%
% of revenue	(6)%	(6)%	(6)%		

2019 Compared to 2018

General and administrative expenses for 2019 increased \$4.6 million, or 3%, compared to 2018. This increase was mostly driven by an increase in consulting fees for process optimization projects and the proceeds from the disposal of the HookLogic travel business in March 31, 2018.

2018 Compared to 2017

General and administrative expenses for 2018 increased \$8.1 million, or 6%, compared to 2017. This increase mainly related to an increase of headcount-related costs and consulting fees relating to the Storetail and Manage acquisitions.

Financial Expense

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent of revenue)				
Financial expense	\$ (9,534)	\$ (5,084)	\$ (5,749)	(47)%	13%
% of revenue	(0.4)%	(0.2)%	(0.3)%		

2019 Compared to 2018

Financial expense for 2019 increased by \$0.7 million, or 13% compared to 2018. The \$5.7 million financial expense for the period ended December 31, 2019 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available RCF financing and the recognition of a negative impact of foreign exchange revaluations net of related hedging. At December 31, 2019, our exposure to foreign currency risk was centralized at Criteo S.A. and hedged using foreign currency swaps or forward purchases or sales of foreign currencies.

2018 Compared to 2017

Financial expense for 2018 decreased by \$(4.5) million, or (47)% compared to 2017. The \$5.1 million financial expense for the period ended December 31, 2018 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available revolving credit facility RCF financing. The hedging costs related to the intra-group position between Criteo S.A. and its U.S subsidiary in the context of the funding of the HookLogic acquisition was lower in the year ended December 31, 2018 compared to the same period ended in 2017 as this intra-group position no longer requires hedging following the qualification as a net investment in a foreign operation in February 2018. At December 31, 2018, our exposure to foreign currency risk was centralized at Criteo S.A. and hedged using foreign currency swaps or forward purchases or sales of foreign currencies.

Provision for Income Taxes

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent information)				
Provision for income taxes	\$ (31,651)	\$ (46,144)	\$ (39,496)	46%	(14)%
% of revenue	(1)%	(2)%	(2)%		
Effective tax rate	24.7 %	32.5 %	29.2 %		

2019 Compared to 2018

The provision for income taxes for 2019 decreased by \$(6.6) million, or 14%, compared to 2018. The annual effective tax rate for 2019 was 29.2%, compared to an annual effective tax rate of 32.5% for 2018. Generally, the annual effective tax rates differ from statutory rates primarily due to the impact of the domestic tax deduction applicable to technology royalty income we received from our subsidiaries, differences in tax rates in foreign jurisdictions, tax loss carryforwards in certain of our foreign subsidiaries, non-recognition of deferred tax assets related to tax losses and temporary differences, recognition of previously unrecognized tax losses and equity awards compensation expense.

In 2019, our income before taxes decreased by \$(6.6) million to \$135.5 million, compared to 2018, generating a \$46.6 million theoretical income tax expense at a nominal standard French tax rate of 34.43%. This theoretical tax expense is impacted primarily by the following items contributing to a \$39.5 million effective tax expense and a 29.2% effective tax rate: \$13.4 million of net effect of share-based compensation, \$2.7 million of deferred tax assets on which we recognized a valuation allowance, \$16.0 million resulting from the BEAT waiver election issued by the United States Treasury and IRS in December 2019, \$7.7 million of permanent differences (mainly based on employee costs, depreciation expenses and intercompany transactions), \$3.6 million related to the French business tax Cotisation sur la Valeur Ajoutée des Entreprises, or “CVAE”, offset by a \$15.9 million tax deduction resulting from technology royalty income we received from our subsidiaries, \$10.9 million Research and Development tax credit and the recognition or reversal of valuation allowance on deferred tax assets for \$20.6 million (mainly for Criteo Corp). Please see Note 22 to our audited consolidated financial statements for more detailed information on the provision for income taxes.

Amounts recognized in our consolidated financial statements are calculated at the level of each subsidiary within our consolidated financial statements. As at December 31, 2019, the valuation allowance against deferred tax assets amounted to \$25.3 million. It mainly related to Criteo Corp. (\$12.8 million), Criteo Ltd (\$7.5 million), Criteo China (\$3.3 million), Criteo Brazil (\$3.2 million), and Criteo France (\$7.7 million).

2018 Compared to 2017

The provision for income taxes for 2018 increased by \$14.5 million, or 46%, compared to 2017. The annual effective tax rate for 2018 was 32.5%, compared to an annual effective tax rate of 24.7% for 2017. Generally, the annual effective tax rates differ from statutory rates primarily due to the impact of the domestic tax deduction applicable to technology royalty income we received from our subsidiaries, differences in tax rates in foreign jurisdictions, tax loss carryforwards in certain of our foreign subsidiaries and equity awards compensation expense.

In 2018, our income before taxes increased by \$13.7 million to \$142.0 million, compared to 2017, generating a \$48.9 million theoretical income tax expense at a nominal standard French tax rate of 34.43%. This theoretical tax expense is impacted primarily by the following items contributing to a \$46.1 million effective tax expense and a 32.5% effective tax rate: \$17.7 million of net effect of share-based compensation, \$11.7 million of deferred tax assets on which we recognized a valuation allowance (mainly related to Criteo Ltd, Criteo Corp., Criteo Pty and Criteo do Brasil LTDA), \$12.0 million of permanent differences (mainly based on employee costs, depreciation expenses and intercompany transactions), \$3.8 million related to the French business tax Cotisation sur la Valeur Ajoutée des Entreprises, or “CVAE”, offset by a \$38.6 million tax deduction resulting from technology royalty income we received from our subsidiaries, \$10.2 million Research and Development tax credit and the recognition or reversal of valuation allowance on deferred tax assets for \$4.5 million (mainly for Criteo Advertising (Beijing) Co. Ltd) and \$1.8 million relating to other tax adjustments. Please see Note 22 to our audited consolidated financial statements for more detailed information on the provision for income taxes.

Amounts recognized in our consolidated financial statements are calculated at the level of each subsidiary within our consolidated financial statements. As at December 31, 2018, the valuation allowance against deferred tax assets amounted to \$43.2 million. It mainly related to Criteo Corp (\$18.6 million), Criteo Ltd (\$7.2 million), Criteo China (\$3.5 million), Criteo Brazil (\$3.6 million), Criteo Singapore (\$2.9 million) and Criteo France (\$3.9 million).

Net Income

	Year Ended December 31,			% change	
	2017	2018	2019	2017 vs 2018	2018 vs 2019
	(in thousands, except percent of revenue)				
Net income	\$ 96,659	\$ 95,879	\$ 95,969	(1)%	0.1%
% of revenue	4%	4%	4%		

2019 Compared to 2018

Net income for 2019 increased \$0.1 million, or 0.1% compared to 2018. This increase was the result of the factors discussed above, in particular a \$(5.9) million decrease in income from operations and a \$(0.7) million increase in financial expense offset by a \$6.7 million decrease in provision for income taxes compared to 2018.

2018 Compared to 2017

Net income for 2018 decreased \$(0.8) million, or (1)% compared to 2017. This decrease was the result of the factors discussed above, in particular a \$9.3 million increase in income from operations and a \$(4.5) million decrease in financial expense offset by a \$14.5 million increase in provision for income taxes compared to 2017.

Unaudited Quarterly Results of Operations

The following tables set forth our unaudited consolidated statement of income data for the last eight quarters, as well as the percentage of revenue for each line item shown. We derived this information from our unaudited interim consolidated financial information, which, in the opinion of management, includes all adjustments, consisting only of normal recurring adjustments, necessary for the fair presentation of the information for the quarters presented. The quarterly results of operations have been prepared by, and are the responsibility of, our management and have not been audited or reviewed by our independent registered public accounting firm. You should read this information together with our audited consolidated financial statements and related notes beginning on page F-1.

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
(in thousands)								
Consolidated Statements of Income Data:								
Revenue	\$ 564,164	\$ 537,185	\$ 528,869	\$ 670,096	\$ 558,123	\$ 528,147	\$ 522,606	\$ 652,640
Cost of revenue ⁽¹⁾								
Traffic acquisition costs	(323,746)	(306,963)	(305,387)	(398,238)	(322,429)	(304,229)	(301,901)	(386,388)
Other cost of revenue	(30,059)	(29,957)	(32,921)	(38,807)	(26,045)	(29,059)	(31,101)	(31,328)
Gross profit	210,359	200,265	190,561	233,051	209,649	194,859	189,604	234,924
Operating expenses ⁽¹⁾:								
Research and development expenses	(45,318)	(47,544)	(41,796)	(44,605)	(46,577)	(44,015)	(41,414)	(40,585)
Sales and operations expenses	(95,649)	(92,726)	(90,526)	(93,806)	(95,909)	(95,503)	(85,985)	(98,080)
General and administrative expenses	(34,591)	(35,644)	(32,463)	(32,461)	(33,770)	(35,767)	(32,835)	(37,382)
Total operating expenses	(175,558)	(175,914)	(164,785)	(170,872)	(176,256)	(175,285)	(160,234)	(176,047)
Income from operations	34,801	24,351	25,776	62,179	33,393	19,574	29,370	58,877
Financial income (expense)	(1,325)	(1,006)	(1,007)	(1,746)	(1,974)	(1,354)	(900)	(1,521)
Income before taxes	33,476	23,345	24,769	60,433	31,419	18,220	28,470	57,356
Provision for income taxes	(12,386)	(8,638)	(6,821)	(18,299)	(10,018)	(5,683)	(7,913)	(15,882)
Net income	\$ 21,090	\$ 14,707	\$ 17,948	\$ 42,134	\$ 21,401	\$ 12,537	\$ 20,557	\$ 41,474
Net income available to shareholders of Criteo S.A.	19,809	13,726	17,143	37,966	19,120	10,823	18,778	42,024
Other Financial Data:								
Revenue ex-TAC ⁽²⁾	\$ 240,418	\$ 230,222	\$ 223,482	\$ 271,858	\$ 235,694	\$ 223,918	\$ 220,705	\$ 266,252
Adjusted EBITDA ⁽³⁾	\$ 77,932	\$ 68,774	\$ 69,591	\$ 104,762	\$ 68,855	\$ 56,399	\$ 64,219	\$ 109,499

(1) Cost of revenue and operating expenses include equity awards compensation expense, pension service costs, depreciation and amortization expense and acquisition-related costs and deferred price consideration as follows:

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands)							
Equity awards compensation expense								
Research and development expenses	\$ 4,555	\$ 6,771	\$ 4,901	\$ 5,005	\$ 4,025	\$ 4,203	\$ 3,230	\$ 3,578
Sales and operations expenses	7,832	8,668	6,952	5,793	6,201	5,693	4,398	3,009
General and administrative expenses	6,916	4,806	5,408	(531)	3,656	4,495	4,142	2,502
Total equity awards compensation expense ^(a)	\$ 19,303	\$ 20,245	\$ 17,261	\$ 10,267	\$ 13,882	\$ 14,391	\$ 11,770	\$ 9,089
Pension service costs								
Research and development expenses	\$ 220	\$ 212	\$ 208	\$ 204	\$ 193	\$ 191	\$ 188	\$ 188
Sales and operations expenses	79	75	83	88	72	71	71	69
General and administrative expenses	135	132	128	127	129	129	129	126
Total pension service costs	\$ 434	\$ 419	\$ 419	\$ 419	\$ 394	\$ 391	\$ 388	\$ 383
Depreciation and amortization expense								
Cost of revenue	\$ 15,249	\$ 15,050	\$ 16,571	\$ 20,477	\$ 9,135	\$ 10,847	\$ 12,193	\$ 12,691
Research and development expenses ^(b)	2,221	2,245	2,724	3,412	3,477	3,534	4,249	5,248
Sales and operations expenses ^(b)	4,454	4,518	4,442	4,831	4,864	5,109	4,178	10,763
General and administrative expenses	1,722	1,747	1,882	1,955	1,820	1,825	1,768	1,787
Total depreciation and amortization expense	\$ 23,646	\$ 23,560	\$ 25,619	\$ 30,675	\$ 19,296	\$ 21,315	\$ 22,388	\$ 30,489
Acquisition-related costs								
General and administrative expenses	\$ —	\$ —	\$ 516	\$ 1,222	\$ —	\$ —	\$ —	\$ —
Total depreciation and amortization expense	\$ —	\$ —	\$ 516	\$ 1,222	\$ —	\$ —	\$ —	\$ —
Restructuring								
Cost of revenue	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Research and development expenses	(348)	16	—	—	—	124	172	1,704
Sales and operations expenses	107	183	—	—	1,890	175	131	6,614
General and administrative expenses	(11)	—	—	—	—	429	—	2,343
Total restructuring ^(c)	\$ (252)	\$ 199	\$ —	\$ —	\$ 1,890	\$ 728	\$ 303	\$ 10,661

(a) Excludes \$0.7 million, \$(0.5) million and \$(4.8) million disclosed as restructuring costs as of December 31, 2017, 2018 and 2019, respectively.

(b) For the Three Months Ended December 31, 2019, the Company recognized accelerated amortization for Manage technology due to a revised useful life (\$2.2 million in Research and development) and an impairment loss for Manage customers relationships (\$4.6 million in Sales and operations).

^(c) For the Three Months Ended December 31, 2019 the Company recognized restructuring charges for its new organizational structure implemented to support its multi-product platform strategy as detailed below:

	Year Ended December 31, 2019
(Gain) from forfeitures of share-based compensation expense	(4,849)
Depreciation and amortization expense	(67)
Facilities and impairment related costs	9,432
Payroll and Facilities related costs	6,145
Total restructuring costs	<u>10,661</u>

⁽²⁾ We define Revenue ex-TAC as our revenue excluding traffic acquisition costs generated over the applicable measurement period. Revenue ex-TAC is not a measure calculated in accordance with U.S. GAAP. Please see footnote 3 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for more information. Below is a reconciliation of Revenue ex-TAC to revenue, the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP.

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands)							
Reconciliation of Revenue ex-TAC to Revenue:								
Revenue	\$ 564,164	\$ 537,185	\$ 528,869	\$ 670,096	\$ 558,123	\$ 528,147	\$ 522,606	\$ 652,640
Adjustment:								
Traffic acquisition costs	(323,746)	(306,963)	(305,387)	(398,238)	(322,429)	(304,229)	(301,901)	(386,388)
Revenue ex-TAC	\$ 240,418	\$ 230,222	\$ 223,482	\$ 271,858	\$ 235,694	\$ 223,918	\$ 220,705	\$ 266,252

⁽³⁾ We define Adjusted EBITDA as our consolidated earnings before financial income (expense), income taxes, depreciation and amortization, adjusted to eliminate the impact of equity awards compensation expense, pension service costs, restructuring costs, acquisition-related costs and deferred price consideration. Adjusted EBITDA is not a measure calculated in accordance with U.S. GAAP. Please see footnote 5 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for more information. Below is a reconciliation of Adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP.

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands)							
Reconciliation of Adjusted EBITDA to Net Income:								
Net Income	\$ 21,090	\$ 14,707	\$ 17,948	\$ 42,134	\$ 21,401	\$ 12,537	\$ 20,557	\$ 41,474
Adjustments:								
Financial (income) expense	1,325	1,006	1,007	1,746	1,974	1,354	900	1,521
Provision for income taxes	12,386	8,638	6,821	18,299	10,018	5,683	7,913	15,882
Equity awards compensation expense ^(a)	19,303	20,245	17,261	10,267	13,882	14,391	11,770	9,089
Pension service costs	434	419	419	419	394	391	388	383
Depreciation and amortization expense ^(b)	23,646	23,560	25,619	30,675	19,296	21,315	22,388	30,489
Acquisition-related costs	—	—	516	1,222	—	—	—	—
Acquisition-related deferred price consideration	—	—	—	—	—	—	—	—
Restructuring costs ^(c)	(252)	199	—	—	1,890	728	303	10,661
Total net adjustments	56,841	54,067	51,643	62,628	47,454	43,862	43,662	68,025
Adjusted EBITDA	\$ 77,931	\$ 68,774	\$ 69,591	\$ 104,762	\$ 68,855	\$ 56,399	\$ 64,219	\$ 109,499

^(a) Excludes \$0.7 million, \$(0.5) million and \$(4.8) million disclosed as restructuring costs as of December 31, 2017, 2018 and 2019, respectively.

^(b) For the Three Months Ended December 31, 2019, the Company recognized accelerated amortization for Manage technology due to a revised useful life (\$2.2 million in Research and development) and an impairment loss for Manage customers relationships (\$4.6 million in Sales and operations).

^(c) For the Three Months Ended December 31, 2019 the Company recognized restructuring charges for its new organizational structure implemented to support its multi-product platform strategy as detailed below:

	Year Ended December 31, 2019
(Gain) from forfeitures of share-based compensation expense	(4,849)
Depreciation and amortization expense	(67)
Facilities and impairment related costs	9,432
Payroll and Facilities related costs	6,145
Total restructuring costs	10,661

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(as a percentage of revenue)							
Statements of Operations Data:								
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenue								
Traffic acquisition costs	(57.4)	(57.1)	(57.7)	(59.4)	(57.8)	(57.6)	(57.8)	(59.2)
Other cost of revenue	(5.3)	(5.6)	(6.2)	(5.8)	(4.7)	(5.5)	(6.0)	(4.8)
Gross profit	37.3	37.3	36.0	34.8	37.6	36.9	36.3	36.0
Operating expenses:								
Research and development expenses	(8.0)	(8.9)	(7.9)	(6.7)	(8.3)	(8.3)	(7.9)	(6.2)
Sales and operations expenses	(17.0)	(17.3)	(17.1)	(14.0)	(17.2)	(18.1)	(16.5)	(15.0)
General and administrative expenses	(6.1)	(6.6)	(6.1)	(4.8)	(6.1)	(6.8)	(6.3)	(5.7)
Total operating expenses	(31.1)	(32.7)	(31.2)	(25.5)	(31.6)	(33.2)	(30.7)	(27.0)
Income from operations	6.2	4.5	4.9	9.3	6.0	3.7	5.6	9.0
Financial income (expense)	(0.2)	(0.2)	(0.2)	(0.3)	(0.4)	(0.3)	(0.2)	(0.2)
Income before taxes	5.9	4.3	4.7	9.0	5.6	3.4	5.4	8.8
Provision for income taxes	(2.2)	(1.6)	(1.3)	(2.7)	(1.8)	(1.1)	(1.5)	(2.4)
Net income	3.7%	2.7%	3.4%	6.3%	3.8%	2.4%	3.9%	6.4%
Net income available to shareholders of Criteo S.A.	3.5%	2.6%	3.2%	5.7%	3.4%	2.0%	3.6%	6.4%
Other Financial Data:								
Revenue ex-TAC	42.6%	42.9%	42.3%	40.6%	42.2%	42.4%	42.2%	40.8%
Adjusted EBITDA	13.8%	12.8%	13.2%	15.6%	12.3%	10.7%	12.3%	16.8%

B. *Liquidity and Capital Resources.*

Market Risk

We are mainly exposed to changes of foreign currency exchange rate fluctuations.

The functional currency of the Company is the euro, while our reporting currency is the U.S. dollar. Consequently, as a first step, since we incur portions of our expenses and derive revenues in currencies other than the euro, we are exposed to foreign currency exchange risk as our results of operations and cash flows are subject to fluctuations in foreign currency exchange rates. Foreign exchange risk exposure also arises from intra-company transactions and financing with subsidiaries that have a functional currency different than the euro. The statements of financial position of consolidated entities having a functional currency different from the U.S. dollar are translated into U.S. dollars at the closing exchange rate (spot exchange rate at the statement of financial position date) and the statement of income, statement of comprehensive income and statement of cash flow of such consolidated entities are translated at the average period to date exchange rate. The resulting translation adjustments are included in equity under the caption “Accumulated Other Comprehensive Income” in the Consolidated Statement of Changes in Equity.

The \$9.5 million financial expense for the period ended December 31, 2017 resulted from the interest incurred as a result of the \$75.0 million drawn on the RCF entered into in September 2015 (as amended in March 2017) and the hedging cost related to an intra-group position between Criteo S.A. and its U.S. subsidiary, both in the context of the funding of the HookLogic acquisition in November 2016, as well as the non-utilization fees incurred as part of our available RCF financing.

The \$5.1 million financial expense for the period ended December 31, 2018 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available RCF financing. The intra-group position between Criteo S.A. and its U.S. subsidiary in the context of the funding of the HookLogic acquisition is qualified as a net investment in a foreign operation from February 2018 and no longer requires hedging, resulting in reduced costs compared to the same period ended December 31, 2017.

The \$5.7 million financial expense for the period ended December 31, 2019 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available RCF financing and the recognition of a negative impact of foreign exchange revaluations net of related hedging.

Since 2013, the Company has had a foreign currency risk management policy in place. At December 31, 2019, our exposure to foreign currency risk was centralized at Criteo S.A. and hedged using foreign currency swaps or forward purchases or sales of foreign currencies.

Foreign Currency Risk

A 10% increase or decrease of the British pound, the euro, the Japanese yen or the Brazilian real against the U.S. dollar would have impacted the Consolidated Statements of Income including non-controlling interests as follows:

	Year Ended December 31,					
	2017		2018		2019	
	(in thousands)					
GBP/USD	+10%	-10%	+10%	-10%	+10%	-10%
Net income impact	\$ (707)	\$ 707	\$ (785)	\$ 785	\$ (386)	\$ 386

	Year Ended December 31,					
	2017		2018		2019	
	(in thousands)					
BRL/USD	+10%	-10%	+10%	-10%	+10%	-10%
Net income impact	\$ 1,236	\$ (1,236)	\$ (645)	\$ 645	\$ (71)	\$ 71

	Year Ended December 31,					
	2017		2018		2019	
	(in thousands)					
JPY/USD	+10%	-10%	+10%	-10%	+10%	-10%
Net income impact	\$ 970	\$ (970)	\$ 1,404	\$ (1,404)	\$ 1,019	\$ (1,019)

	Year Ended December 31,					
	2017		2018		2019	
	(in thousands)					
EUR/USD	+10%	-10%	+10%	-10%	+10%	-10%
Net income impact	\$ 13,047	\$ (13,047)	\$ 11,552	\$ (11,552)	\$ 10,755	\$ (10,755)

Counterparty Risk

As of December 31, 2019, we show a positive net cash position. Since 2012, we utilize a cash pooling arrangement, reinforcing cash management centralization. Investment and financing decisions are carried out by our internal central treasury function. We only deal with counterparties with high credit ratings. In addition, under our Investment and Risk Management Policy, our central treasury function ensures a balanced distribution between counterparties of the investments, no matter the rating of such counterparty.

Liquidity Risk

We are mainly exposed to changes of foreign currency exchange rate fluctuations.

Working Capital

The following table summarizes our cash flows from operations, trade receivables, net of allowances and working capital for the periods indicated:

	Year Ended December 31,	
	2018	2019
Cash flows provided by operating activities	\$260,726	\$222,832
Trade receivables, net of allowances	\$473,901	\$481,732
Working capital (<i>current assets less current liabilities</i>)	\$328,507	\$390,122

In addition, the cash flows were also negatively impacted by a \$5.5 million change in foreign exchange rates on our cash position over the period. We do not enter into investments for trading or speculative purposes.

Our policy is to invest any cash in excess of our immediate requirements in investments designed to preserve the principal balance and provide liquidity. Accordingly, our cash and cash equivalents are invested primarily in demand deposit accounts and money market funds that are currently providing only a minimal return.

Sources of Liquidity

Our principal sources of liquidity are our cash and cash equivalents and cash generated from operations. We have never declared or paid any cash dividends on our ordinary shares. We do not anticipate paying cash dividends on our equity securities in the foreseeable future. Since our inception, we raised a total of \$51.1 million aggregate net proceeds from the sale of preferred shares through four private placements. In November 2013, we received aggregate net proceeds before expenses of \$269.0 million from our initial public offering. In March 2014, we received aggregate net proceeds before expenses of \$22.6 million from our secondary equity offering. We also benefited to a much lesser extent from the proceeds of the exercise of share options and warrants and expect to continue to do so in the future, as such securities are exercised by holders. In 2018, we completed an \$80 million share repurchase program. In July 2019, the Board of Directors authorized a new share repurchase program of up to \$80 million of the Company's outstanding American Depositary Shares. Other than these repurchase programs, we intend to retail all available funds any future earnings to fund our growth.

We are party to a loan agreement and several RCFs with third-party financial institutions. Our loan and RCF agreements as of December 31, 2019 are presented in the table below:

<u>Nature</u>	Nominal/ Authorized amounts (RCF Only)		Amount drawn as of December 31, 2019 (RCF only)		Amount Outstanding as of December 31, 2019		Interest rate	Settlement date
			(in thousands)					
BPI Loan - February 2014	NA	NA	NA	\$	1,011		Fixed: 2.09%	May 2021
Other BPI Loans	NA	NA	NA	\$	901		0%	2023 and after
Other Loans	NA	NA	NA	\$	166		0%	2024
Bank Syndicate RCF - September 2015	€	350,000	€	—	€	—	Floating rate: EURIBOR / LIBOR + margin depending on leverage ratio	March 2022

For additional information regarding our loan and RCF agreements, please refer to Note 12 - Financial Liabilities and Note 24 - Commitments.

All of these loans and RCFs are unsecured and contain customary events of default but do not contain any affirmative, financial or negative covenants, with the exception of the September 2015 RCF which contains covenants, including compliance with a total net debt to Adjusted EBITDA ratio and restrictions on the incurrence of additional indebtedness. At December 31, 2019, we were in compliance with the required leverage ratio.

We are also party to short-term credit lines and overdraft facilities with HSBC Holdings plc, LCL and BNP Paribas. We are authorized to draw up to a maximum of €21.5 million (\$24.2 million) in the aggregate under the short-term credit lines and overdraft facilities. As of December 31, 2019, we had not drawn on either of these facilities. Any loans or overdrafts under these short-term facilities bear interest based on the one month EURIBOR rate or three month EURIBOR rate. As these facilities are exclusively short-term credit and overdraft facilities, our banks have the ability to terminate such facilities on short notice.

Operating and Capital Expenditure Requirements

In 2017, 2018 and 2019, our actual capital expenditures were \$108.5 million, \$125.5 million and \$97.9 million, respectively, primarily related to the acquisition of data center and server equipment, and internal IT systems. We expect our capital expenditures to remain at, or slightly below, 3% of revenue for 2020, as we plan to continue to build and maintain additional data center equipment capacity in all regions and increase our redundancy capacity to strengthen our infrastructure.

As part of our strategy to build upon our market and technology leadership, in 2016 we acquired all of the outstanding shares of HookLogic for a final purchase price of \$249.0 million financed by (i) a \$75.0 million amount drawn on the General RCF and (ii) a \$175.1 million amount financed by the available cash resources and in 2018 we acquired all of the outstanding shares of Storetail and Manage for \$43.7 million and \$60.0 million respectively, financed by the available cash resources.

We believe our existing cash balances will be sufficient to meet our anticipated cash requirements through at least the next 12 months.

Our future working capital requirements will depend on many factors, including the rate of our revenue growth, the amount and timing of our investments in personnel and capital equipment, and the timing and extent of our introduction of new products and product enhancements.

If our cash and cash equivalents balances and cash flows from operating activities are insufficient to satisfy our liquidity requirements, we may need to raise additional funds through equity, equity-linked or debt financings to support our operations, and such financings may not be available to us on acceptable terms, or at all. We may also need to raise additional funds in the event we determine in the future to effect one or more acquisitions of businesses, technologies, assets or products.

If we are unable to raise additional funds when needed, our operations and ability to execute our business strategy could be adversely affected. If we raise additional funds through the incurrence of indebtedness, such indebtedness would have rights that are senior to holders of our equity securities and could contain covenants that restrict our operations. Any additional equity financing will be dilutive to our shareholders.

Historical Cash Flows

The following table sets forth our cash flows for 2017, 2018 and 2019:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Cash flows provided by operating activities	\$ 245,458	\$ 260,726	\$ 222,832
Cash used in investing activities	(106,253)	(226,717)	(103,888)
Cash used for financing activities	\$ (29,468)	\$ (62,676)	\$ (59,111)

Our cash and cash equivalents at December 31, 2019 were held for working capital and general corporate purposes, which could include acquisitions. The increase in cash and cash equivalents compared with December 31, 2018, primarily resulted from \$222.8 million in cash flows from operating activities partially offset by \$(103.9) million in cash flows used for investing activities and \$(59.1) million used for financing activities.

Operating Activities

Cash provided by operating activities is primarily impacted by the increase in the number of clients using our solution and by the amount of cash we invest in personnel to support the anticipated growth of our business. Cash provided by operating activities has typically been generated from net income and by changes in our operating assets and liabilities, particularly in the areas of accounts receivable and accounts payable and accrued expenses, adjusted for certain non-cash and non-operating expense items such as depreciation, amortization, equity awards compensation, deferred tax assets and income taxes.

In 2019, net cash flows provided by operating activities were \$222.8 million and consisted of net income of \$96.0 million, \$126.3 million in adjustments for non-cash and non-operating items and \$0.6 million of cash flows from working capital. Adjustments for non-cash and non-operating items primarily consisted of depreciation and amortization expense of \$97.1 million, equity awards compensation expense of \$41.0 million, \$15.4 million of changes in deferred tax assets and \$0.8 million of changes in other items, partially offset by \$28.0 million of accrued income taxes net of income tax paid. The \$0.6 million increase in cash resulting from changes in working capital primarily consisted of a \$11.4 million increase in accrued expenses such as payroll and payroll related expenses and VAT payables, a \$7.6 million decrease in other current assets (including prepaid expenses and VAT receivables) and a \$0.9 million decrease in accounts receivable partially offset by a \$14.1 million decrease in accounts payable and a \$5.2 million decrease due to changes in operating lease liabilities and right of use assets.

In 2018, net cash flows provided by operating activities were \$260.7 million and consisted of net income of \$95.9 million, \$154.4 million in adjustments for non-cash and non-operating items and by \$10.4 million of cash flows from working capital. Adjustments for non-cash and non-operating items primarily consisted of depreciation and amortization expense of \$111.8 million, equity awards compensation expense of \$66.6 million, partially offset by \$12.7 million of accrued income taxes net of income tax paid, \$8.2 million of changes in deferred tax assets and other items for \$3.1 million including \$2.3 million reclassification of the cash impact of the settlement of hedging derivatives to financing activities. The \$10.4 million increase in cash resulting from changes in working capital primarily consisted of \$1.4 million decrease in accounts receivable, a \$4.0 million decrease in other current assets (including prepaid expenses and VAT receivables) and a \$9.0 million increase in accounts payable partially offset by a \$4.0 million decrease in accrued expenses such as payroll and payroll related expenses and VAT payables.

In 2017 net cash flows provided by operating activities were \$245.5 million and consisted of net income of \$96.7 million and \$155.9 million in adjustments for non-cash and non-operating items partially offset by \$7.1 million of cash flows used for working capital. Adjustments for non-cash and non-operating items primarily consisted of depreciation and amortization expense of \$104.0 million, equity awards compensation expense of \$71.6 million and other items for a total amount of \$4.9 million including the reclassification of the cash impact of the settlement of hedging derivatives to financing activities of \$4.1 million, partially offset by \$13.3 million of changes in deferred tax assets and \$11.5 million of accrued income taxes net of income tax paid. The \$7.1 million decrease in cash resulting from changes in working capital primarily consisted of \$76.9 million increase in accounts receivable and \$3.4 million increase in other current assets (including prepaid expenses and VAT receivables) driven by increased revenue during the year and, to a lesser extent, an increase in office rental advance payments. This was partially offset by an \$32.9 million increase in accounts payable and \$40.3 million increase in accrued expenses such as payroll and payroll related expenses and VAT payables, explained primarily by an increase in traffic acquisition costs, and an increase in accrued payroll and payroll-related expenses resulting from an increase in the number of our employees.

Investing Activities

Our investing activities to date have consisted primarily of purchases of servers and other data-center equipment and business acquisitions.

In 2019, net cash flows used in investing activities were \$103.9 million and consisted of \$97.9 million for purchases of servers and other data-center equipment, \$4.6 million for business acquisitions and \$1.2 million in other financial liabilities.

In 2018, net cash flows used in investing activities were \$226.7 million and consisted of \$125.5 million for purchases of property and equipment, and by \$101.2 million related to the Storetail and Manage acquisitions and disposal of a business.

In 2017, net cash flows used in investing activities were \$106.3 million and consisted of \$108.5 million for purchases of property and equipment, partially offset by \$1.1 million related to change in acquisition price of HookLogic due to the working capital adjustment and \$1.1 million of lease deposits refunds.

Financing Activities

In 2019, net cash used in financing activities was \$59.1 million resulting from \$58.6 million relating to the share repurchase program, \$1.2 million of changes in other financial liabilities and \$1.0 million for the repayment of borrowings, partially offset by \$1.7 million related to proceeds from capital increase.

In 2018, net cash used in financing activities was \$62.7 million resulting from \$1.5 million from proceeds of share option exercises and \$16.8 million of changes in other financial liabilities relating to the cash impact of the settlement of hedging derivatives, offset by \$80.0 million relating to the share repurchase program and by \$1.0 million for the repayment of borrowings.

In 2017, net cash provided by financing activities was \$29.5 million resulting from \$3.7 million of the drawing on the China RCF, \$32.0 million from proceeds of share option exercises and \$24.6 million of changes in the other financial liabilities relating to the cash impact of the settlement of hedging derivatives, offset by \$89.7 million for the repayment of drawings on the General RCF used in the context of the acquisition of HookLogic in 2016 and on the China RCF.

C. *Research and Development, Patents and Licenses, etc.*

We invest substantial resources in research and development to enhance our solution and technology infrastructure, develop new features, conduct quality assurance testing and improve our core technology. Our engineering group is primarily located in research and development centers in Paris, France and Ann Arbor, Michigan. We expect to continue to expand the capabilities of our technology in the future and to invest significantly in continued research and development efforts. We had 681 employees primarily engaged in research and development at December 31, 2019. Research and development expense totaled \$173.9 million, \$179.3 million and \$172.6 million for 2017, 2018 and 2019, respectively.

D. *Trend Information.*

Key Metrics

We review three key metrics to help us monitor the performance of our business and to identify trends affecting our business. These key metrics include number of clients, Revenue ex-TAC, and Adjusted EBITDA. We believe these metrics are useful to understanding the underlying trends in our business. The following table summarizes our key metrics for 2017, 2018 and 2019.

	Year Ended December 31,		
	2017	2018	2019
	(in thousands, except number of clients)		
Number of clients	18,118	19,419	20,247
Revenue ex-TAC	\$ 941,136	\$ 965,980	\$ 946,569
Adjusted EBITDA	\$ 309,584	\$ 321,059	\$ 298,972

Number of Clients

We define a client to be a unique party from whom we have received an insertion order and delivered an advertisement during the previous 12 months. We believe this criteria best identifies clients who are actively using our solution. We count specific brands or divisions within the same business as distinct clients so long as those entities have separately signed insertion orders with us. In the case of some solutions within Criteo Retail Media, we count the parent company of the brands as an individual client, even if several distinct brands pertaining to the same parent company have signed separate insertion orders with us. On the other hand, we count a client who runs campaigns in multiple geographies as a single client, even though multiple insertion orders may be involved. When the insertion order is with an advertising agency, we generally consider the client on whose behalf the advertising campaign is conducted as the "client" for purposes of this calculation. In the event a client has its advertising spend with us managed by multiple agencies, that client is counted as a single client.

We believe that our ability to increase the number of clients is an important indicator of our ability to grow revenue over time. While our client count has increased over time, this metric can also fluctuate from quarter to quarter due to the seasonal trends in advertising spend of clients and the timing and amount of revenue contribution from new clients. In addition, over time we have added an increasing number of midmarket clients that generate a lower revenue per client than large clients on average, and may continue to add a significant number of midmarket clients in the future. Therefore, there is not necessarily a direct correlation between a change in clients in a particular period and an increase or decrease in our revenue.

Revenue ex-TAC

We consider Revenue ex-TAC as a key measure of our business activity. Our traffic acquisition costs primarily consist of purchases of impressions from publishers on a CPM basis.

Our management views our Revenue ex-TAC as a key measure to evaluate, plan and make decisions on our business activities and sales performance. In particular, we believe that the elimination of TAC from revenue can provide a useful measure for period-to-period comparisons of our business. Accordingly, we believe that Revenue ex-TAC provides useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Revenue ex-TAC is not a measure calculated in accordance with U.S. GAAP. Please see footnote 3 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for a discussion of the limitations of Revenue ex-TAC and a reconciliation of Revenue ex-TAC to revenue, the most comparable U.S. GAAP measure, for 2015, 2016, 2017, 2018 and 2019.

Adjusted EBITDA

Adjusted EBITDA represents our consolidated earnings before financial income (expense), income taxes, depreciation and amortization, adjusted to eliminate the impact of equity awards compensation expense, pension service costs, restructuring costs and acquisition-related costs and deferred price consideration. Adjusted EBITDA is a key measure used by management to evaluate operating performance, generate future operating plans and make strategic decisions regarding the allocation of capital. In particular, we believe that the elimination of equity awards compensation expense, pension service costs, restructuring costs and acquisition-related costs and deferred price consideration in calculating Adjusted EBITDA can provide a useful measure for period-to-period comparisons of our business.

Accordingly, we believe that Adjusted EBITDA provides useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management and board of directors. Adjusted EBITDA is not a measure calculated in accordance with U.S. GAAP. Please see footnote 5 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for a discussion of the limitations of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to net income, the most comparable U.S. GAAP measure, for 2015, 2016, 2017, 2018 and 2019.

Highlights and Trends

Revenue

We believe the expansion of our business with existing clients as well as the addition of new clients have both been significant drivers of our historical growth. We believe significant opportunities exist for us to continue to expand our business going forward. Specifically, we believe that we can strengthen our core business, expand our product portfolio, explore strategic game changes and drive further technology excellence and innovation to further expand our business over time. However, due to external challenges and other factors, we may not be able to maintain our historical growth rates in the future.

Revenue ex-TAC

We are focused on maximizing our Revenue ex-TAC on an absolute basis. We believe this focus builds sustainable long-term value for our business by fortifying a number of our competitive strengths, including access to digital advertising inventory, breadth and depth of data and continuous improvement of the Criteo AI Engine's performance, allowing us to deliver more relevant advertisements at scale. As part of this focus we are continuing to invest in building relationships with direct publishers, including with ecommerce retailers, and increasing access to leading advertising exchanges, which includes purchasing advertising inventory that may have lower margins on an individual impression basis, but generates incremental Revenue ex-TAC. We believe this strategy maximizes the growth of our Revenue ex-TAC on an absolute basis and strengthens our market position. As a result, we expect our traffic acquisition costs to continue to increase on an absolute basis as we continue to grow our revenue. However, our traffic acquisition costs might also increase as a percentage of revenue as we continue to invest in building liquidity and long-term value for clients and publishers over optimizing near-term gross margins, and as we grow our new solutions, some of which might involve a higher level of traffic acquisition costs as a percentage of revenue relative to our historical trends.

Adjusted EBITDA

Our Adjusted EBITDA for 2019 was \$299.0 million, a (7)% decrease over 2018. Our decrease in Adjusted EBITDA for 2019 compared to 2018 was primarily the result of the (2)% decrease in Revenue ex-TAC over the period, slightly offset by the decrease in our Non-GAAP operating expenses. In the short-term, we expect to continue to have a disciplined management of our expense base across the company and to drive efficiency through more automation and operational excellence across all functions, in order to be in a position to reinvest a portion of savings driven by such efficiency gains into strategic areas of our business. We anticipate a slight decrease in our Adjusted EBITDA margin as a percentage of Revenue ex-TAC in 2020. Over time, we expect Adjusted EBITDA to increase slightly as a percentage of our Revenue ex-TAC, as we benefit from disciplined expenses management and operating leverage. Adjusted EBITDA is not a measure calculated in accordance with U.S. GAAP. Please see footnote 5 to the "Other Financial and Operating Data" table in "Item 6. Selected Financial Data" in this Form 10-K for a discussion of the limitations of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to net income, the most comparable U.S. GAAP measure.

Number of Clients

Since our inception, we have significantly grown the number of clients with which we do business. Our base of clients increased to more than 20,000 at December 31, 2019, a 4% increase over December 31, 2018. This growth in our number of clients has been driven by a number of factors, including our global footprint and our commercial expansion in existing markets, our continued development of large clients in the retail, travel and classifieds industry verticals, our expansion of midmarket clients and our penetration into the consumer brand vertical through some of our Criteo Retail Media offerings. We believe that our ability to increase our number of clients is a leading indicator of our ability to grow revenue over time. We expect to continue to focus our attention and investment on further growing our client base across all regions, client categories and verticals. While we intend to grow our client base across all categories, we expect midmarket customers to continue to increase their contribution in the mix of our total revenue.

Client Retention

We believe our ability to retain and grow revenue from our existing clients is a useful indicator of the stability of our revenue base and the long-term value of our client relationships. Our offering, the Criteo Platform, is powered by AI technology and aims to cover the entire marketing funnel (Awareness, Consideration, Conversion). Our technology is optimized to drive impactful business results for advertisers across multiple marketing goals. We measure our client satisfaction through our ability to retain them and the revenue they generate quarter after quarter. We define client retention rate as the percentage of live clients during the previous quarter that continued to be live clients during the current quarter. This metric is calculated on a quarterly basis, and for annual periods, we use an average of the quarterly metrics. We define a live client as a client whose advertising campaign has or had been generating Revenue ex-TAC for us on any day over the relevant measurement period. In each of 2017, 2018 and 2019, our client retention rate was approximately 90%¹. We define our revenue retention rate with respect to a given 12-month period as (1) revenue recognized during such period from clients that contributed to revenue recognized in the prior 12-month period divided by (2) total revenue recognized in such prior 12-month period. Our revenue retention rate was 115%, 101% and 94% for the years ended December 31, 2017, 2018 and 2019, respectively¹.

Seasonality

Our client base consists primarily of businesses in the digital retail, travel and classifieds industries, which we define as commerce clients. In the digital retail industry in particular, many businesses devote the largest portion of their advertising spend to the fourth quarter of the calendar year, to coincide with increased holiday spending by consumers. With respect to Criteo Retail Media, the concentration of advertising spend in the fourth quarter of the calendar year is particularly pronounced. Our retail commerce clients typically conduct fewer advertising campaigns in the first and second quarters than they do in other quarters, while our travel clients typically increase their travel campaigns in the first and third quarters and conduct fewer advertising campaigns in the second quarter. As a result, our revenue tends to be seasonal in nature, but the impact of this seasonality has, to date, been partly offset by our significant growth and geographic expansion. If the seasonal fluctuations become more pronounced, our operating cash flows could fluctuate materially from period to period.

¹ Excluding Criteo Retail Media.

E. Off-balance Sheet Arrangements.

We do not have any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. In addition, we do not engage in trading activities involving non-exchange traded contracts. We therefore believe that we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

F. Tabular Disclosure of Contractual Obligations.

The following table discloses aggregate information about material contractual obligations and periods in which payments were due as of December 31, 2019. Future events could cause actual payments to differ from these estimates.

	<u>Less than 1 year</u>	<u>1 to 5 years</u>	<u>More than 5 years</u>	<u>Total</u>
	(in thousands of U.S. Dollars)			
Long-term debt	\$ 1,557	\$ 638	\$ 14	\$ 2,209
Other financial liabilities	537	433	—	970
Financial derivatives	1,284	—	—	1,284
Other purchase obligations	7,435	346	—	7,781
Total	<u>\$ 10,813</u>	<u>\$ 1,417</u>	<u>\$ 14</u>	<u>\$ 12,244</u>

The commitment amounts in the table above are associated with contracts that are enforceable and legally binding and that specify all significant terms, including interest on long-term debt, fixed or minimum services to be used, fixed, minimum or variable price provisions, and the approximate timing of the actions under the contracts. The table does not include obligations under agreements that we can cancel without a significant penalty. Long-term debt includes interest of \$0.1 million. Pension contributions and cash outflows have not been included in the above table as they have been deemed immaterial.

G. Safe Harbor.

This Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act and as defined in the Private Securities Litigation Reform Act of 1995. See "Special Note Regarding Forward-Looking Statements."

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are mainly exposed to changes of foreign currency exchange rate fluctuations.

For a description of our foreign exchange risk and a sensitivity analysis of the impact of foreign currency exchange rates on our net income, please see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – B. Liquidity and Capital Resources" in this Form 10-K.

Item 8. Financial Statements and Supplementary Data

The information required by Item 8 is set forth on pages F-1 through F-65 of this Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

There have been no changes in our independent registered public accounting firm, Deloitte & Associés, or disagreements with our accountants on matters of accounting and financial disclosure.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Criteo carried out an evaluation as of December 31, 2019, under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Disclosure controls and procedures are controls and other procedures designed to reasonably assure that information required to be disclosed in our reports filed or furnished under the Exchange Act, such as this Annual Report on Form 10-K, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

Disclosure controls and procedures are also designed to reasonably assure that this information is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, to allow timely decisions regarding required disclosure.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2019, our disclosure controls and procedures were effective to provide reasonable assurance.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) under the Exchange Act. Our management assessed, with the oversight of our board of directors, the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, our management used the criteria established in the Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, our management has concluded that the Company's internal control over financial reporting was effective as of December 31, 2019. The effectiveness of the Company's internal control over financial reporting as of December 31, 2019 has been audited by Deloitte & Associés, our independent registered public accounting firm, as stated in its attestation report, which appears on page F-3 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, that occurred during the quarter ended December 31, 2019, that have materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within Criteo have been detected. These inherent limitations include the realities that judgments in decisions making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on 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 deterioration in the degree of compliance with policies and procedures. 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

On March 2, 2020, the board of directors amended and restated the By-laws (*statuts*) of the Company, effective immediately. Article 6 of the By-laws has been amended to provide that, as of the date of the amendment, the Company has a share capital of €1,651,008.05, divided into 66,040,322 shares with a par value of €0.025 each, increased from €1,648,944.85, divided into 65,957,794 shares with a par value of €0.025 each. The foregoing description is qualified in its entirety by the amended By-laws, the English translation of which is attached hereto as Exhibit 3.1 and incorporated herein by reference.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item (other than the information set forth in the next paragraph in this Item 10) will be included in our definitive proxy statement with respect to our 2020 Annual Meeting of Shareholders to be filed with the SEC, and is incorporated herein by reference.

We have adopted a Code of Business Conduct and Ethics (the "Code of Conduct") that is applicable to all of our employees, officers and directors, including our chief executive and senior financial officers. The Code of Conduct is available on our website at criteo.investorroom.com under "Governance." The Audit Committee of our board of directors is responsible for overseeing the Code of Conduct and our board of directors is required to approve any waivers of the Code of Conduct for employees, executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements required to be disclosed under the rules of the SEC or Nasdaq will be disclosed on our website.

Item 11. Executive Compensation

The information called for by this item will be included in our definitive proxy statement with respect to our 2020 Annual Meeting of Shareholders to be filed with the SEC, and is incorporated herein by reference.

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

The information called for by this item will be included in our definitive proxy statement with respect to our 2020 Annual Meeting of Shareholders to be filed with the SEC, and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information called for by this item will be included in our definitive proxy statement with respect to our 2020 Annual Meeting of Shareholders to be filed with the SEC, and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information called for by this item will be included in our definitive proxy statement with respect to our 2020 Annual Meeting of Shareholders to be filed with the SEC, and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Financial Statements

The financial statements listed in the accompanying Index to Consolidated Financial Statements on page F-1 are filed as part of this Form 10-K. All schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(b) Exhibits

Exhibit	Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	File Date
2.1	Merger Agreement, dated as of October 3, 2016, by and among Criteo Corp., TBL Holdings, Inc., Hooklogic, Inc. and Fortis Advisors LLC	8-K	001-36153	2.1	October 4, 2016
3.1#	By-laws (statuts) (English translation)				
4.1	Form of Deposit Agreement, including the Form of American Depositary Receipt	F-1	333-191223	4.1	October 2, 2013
4.2#	Agreement to Furnish Debt Instruments				
4.3#	Description of Registrant's Securities				
10.1	Commercial Lease between Orosdi and the registrant dated January 20, 2012 (English translation)	F-1	333-191223	10.1	October 2, 2013
10.2	Form of Registration Rights Agreement by and among the registrant and certain investors signatory thereto, dated as of August 30, 2013	F-1	333-191223	10.3	October 23, 2013
10.3†	Non-Compete Agreement between the registrant and each of Messrs. Rudelle, Le Ouay and Niccoli	F-1	333-191223	10.5	October 2, 2013
10.4†	Stock Option Plans—2009, 2010, 2011, 2012, 2013 (including forms of Stock Option Grant Agreement and Exercise Notice)	F-1	333-191223	10.6	October 2, 2013
10.5†	2014 Stock Option Plan (including forms of Stock Option Grant Agreement and Exercise Notice)	S-8	333-197373	99.1	July 11, 2014
10.6†	Amended 2016 Stock Option Plan (including form of Stock Option Grant Agreement and Exercise Notice) (English Translation)	S-8	333-232329	99.1	June 25, 2019
10.7†	Summary of BSA Terms and Conditions	10-K	001-36153	10.7	February 29, 2016
10.8†	Form of BSA Grant Document (English translation)	10-K	001-36153	10.9	March 1, 2017

Exhibit	Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	File Date
10.9†	Summary of BSPCE Plan	F-1	333-191223	10.8	September 18, 2013
10.10†	Form of BSPCE Grant Document (English translation)	F-1	333-191223	10.11	September 18, 2013
10.11†	Amended and Restated 2015 Performance-Based Free Share Plan (including form of Allocation Letter) (English Translation)	S-8	333-232329	99.2	June 25, 2019
10.12†	Amended and Restated 2015 Time-Based Free Share Plan (including form of Allocation Letter) (English Translation)	S-8	333-232329	99.3	June 25, 2019
10.13†	Criteo Executive Bonus Plan	10-K	001-36153	10.15	February 29, 2016
10.14†	Employment Agreement between the registrant and Benoit Fouilland, dated November 18, 2011 (English translation)	F-1	333-191223	10.12	October 2, 2013
10.15	Amendment and Restatement Agreement, dated as of March 29, 2017, by and among the registrant, as borrower, and BNP Paribas, Crédit Lyonnais (LCL), HSBC France, Natixis and Société Générale Corporate & Investment Banking	8-K	001-36153	4.1	March 30, 2017
10.16	Form of Offer to Directors, Officers or Specifically Designated Persons to Subscribe Liability Insurance and Provide Indemnification	10-K	001-36153	10.22	March 1, 2019
10.17†	Management Agreement between the registrant and Megan Clarken, dated October 2, 2019	8-K	001-36153	10.1	October 30, 2019
10.18†#	Amendment to Management Agreement between the registrant and Megan Clarken, dated November 22, 2019				
10.19†#	Employment Agreement between the registrant and Ryan Damon, dated August 1, 2018				
10.20	Consulting Agreement between the registrant and Rocabella, dated December 17, 2019	8-K	001-36153	10.1	December 17, 2019
10.21	Mutually Agreed Termination of a Permanent Employment Contract and Approval Application, dated as of June 19, 2019, by and between the Registrant and Dan Teodosiu	10-Q	001-36153	10.1	August 2, 2019
21.1#	List of Subsidiaries				

Incorporated by Reference

Exhibit	Description	Schedule/ Form	File Number	Exhibit	File Date
23.1#	Consent of Deloitte & Associés				
31.1#	Certificate of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
31.2#	Certificate of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
32.1*	Certificate of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
101#	The following financial statements from Criteo S.A.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2019, formatted in iXBRL (Inline Extensible Business Reporting Language): (i) the Consolidated Statements of Financial Position, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Changes in Shareholders' Equity, (v) the Consolidated Statements of Cash Flows and (vi) Notes to Consolidated Financial Statements				
104	Cover Page Interactive Data File (formatted as iXBRL and contained in Exhibit 101)				

- † Indicates management contract or compensatory plan.
- # Filed herewith.
- * Furnished herewith.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

CRITEO S.A.

March 2, 2020

By: /s/ Megan Clarken
Megan Clarken
Chief Executive Officer

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

Signature	Title	Date
<u>/s/ Megan Clarcken</u> Megan Clarcken	Chief Executive Officer (Principal Executive Officer)	March 2, 2020
<u>/s/ Benoit Fouillard</u> Benoit Fouillard	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 2, 2020
<u>/s/ Jean-Baptiste Rudelle</u> Jean-Baptiste Rudelle	Director	March 2, 2020
<u>/s/ Nathalie Balla</u> Nathalie Balla	Director	March 2, 2020
<u>/s/ Marie Lalleman</u> Marie Lalleman	Director	March 2, 2020
<u>/s/ Edmond Mesrobian</u> Edmond Mesrobian	Director	March 2, 2020
<u>/s/ Hubert de Pesquidoux</u> Hubert de Pesquidoux	Director	March 2, 2020
<u>/s/ Rachel Picard</u> Rachel Picard	Director	March 2, 2020
<u>/s/ James Warner</u> James Warner	Director	March 2, 2020

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Criteo S.A.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Criteo S.A. and subsidiaries (the “**Company**”) as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the “**financial statements**”). In our opinion, the financial statements 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 three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), 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 and our report dated March 2, 2020, expressed an unqualified opinion on the Company's internal control over financial reporting.

Adoption of New Accounting Standard

As discussed in Note 1 to the financial statements, the Company has changed its method for accounting for leases in 2019 due to the adoption of ASU No. 2016-02, *Leases* (Topic 842).

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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

Revenue - Refer to Note 17 to the financial statements

Critical Audit Matter Description

The Company's revenue consists of selling personalized display advertisements featuring product-level recommendations either directly to clients or to advertising agencies. This is achieved by converting the Company's clients' website visitors into customers, enabling the Company to charge its clients when users engage with an ad the Company delivers, either by clicking on it (cost-per-click basis), through installing an application by clicking on an advertiser the Company delivers (cost-per-install and cost-per-impression basis), made up of a significant volume of low-dollar transactions, sourced from multiple databases, and other tools. Because of the nature of the Company's transactions are based either on a cost-per-click or cost-per-install, the Company uses highly automated systems to process and record its revenue transactions based on contractual terms with advertisers.

We identified revenue as a critical audit matter because the Company's systems to process and record its revenue transactions are highly automated and thus required significantly more involvement and effort from our information technology (IT) internal specialist team to identify, test, and evaluate the Company's system, software applications, and automated controls.

How the Critical Audit Matter Was Addressed in the Audit

With the assistance of our IT specialists, our audit procedures related to the Company's system to process and record its revenue transactions included the following:

- Identified the significant applications and systems used to process revenue transactions and tested the general IT controls over each of these applications and systems, including testing of user access controls, change management controls, and IT operations controls.
- Performed testing of system interface controls and automated controls within the relevant revenue solutions, as well as the controls designed to address the occurrence, accuracy and completeness of revenue.
- Tested internal controls within the relevant revenue business process, including those in place to reconcile the various applications to the Company's general ledger.
- Tested the underlying data of the revenue transactions by agreeing the amounts recognized in the financial statements to the source transactional systems and tested the mathematical accuracy of the recorded revenue.

/s/ Deloitte & Associés

Paris-La Défense, France
March 2, 2020

We have served as the Company's auditor since 2011.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Criteo S.A.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Criteo S.A. and subsidiaries (the “**Company**”) 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 Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019 of the Company and our report dated March 2, 2020, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company’s management is responsible 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 Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 & Associés

Paris-La Défense, France
March 2, 2020

Criteo S.A. and subsidiaries
Consolidated Statements of Financial Position

	Notes	Year Ended December 31,	
		2018	2019
(in thousands)			
Assets			
Current assets:			
Cash and cash equivalents	4	\$ 364,426	\$ 418,763
Trade receivables, net of allowances of \$25.9 million and \$16.1 million as of December 2018 and 2019, respectively.	5	473,901	481,732
Income taxes		19,370	21,817
Other taxes		53,338	60,924
Other current assets	6	22,816	17,225
Total current assets		933,851	1,000,461
Property, plant and equipment, net	7	184,013	194,161
Intangible assets, net	8	112,036	86,886
Goodwill	9	312,881	317,100
Right of use asset - operating lease	13	—	142,044
Non-current financial assets	10	20,460	21,747
Deferred tax assets	22	33,894	27,985
Total non current assets		663,284	789,923
Total assets		\$ 1,597,135	\$ 1,790,384
Liabilities and shareholders' equity			
Current liabilities:			
Trade payables		\$ 425,376	\$ 390,277
Contingencies	11	2,640	6,385
Income taxes		7,725	3,422
Financial liabilities - current portion	12	1,018	3,636
Lease liability - operating - current portion	13	—	45,853
Other taxes		55,592	50,099
Employee-related payables		65,878	74,781
Other current liabilities	14	47,115	35,886
Total current liabilities		605,344	610,339
Deferred tax liabilities	22	10,770	9,272
Retirement benefit obligation	15	5,537	8,485
Financial liabilities - non current portion	12	2,490	769
Lease liability - operating - non current portion	13	—	117,988
Other non-current liabilities		5,103	5,543
Total non-current liabilities		23,900	142,057
Total liabilities		629,244	752,396
Commitments and contingencies			
Shareholders' equity:			
Common shares, €0.025 per value, 67,708,203 and 66,197,181 shares authorized, issued and outstanding at December 31, 2018 and December 31, 2019, respectively.		2,201	2,158
Treasury stock, 3,459,119 and 3,903,673 shares at cost as of December 31, 2018 and December 31, 2019, respectively.		(79,159)	(74,900)
Additional paid-in capital		663,281	668,389
Accumulated other comprehensive (loss)		(30,522)	(40,105)
Retained earnings		387,869	451,725
Equity - attributable to shareholders of Criteo S.A.		943,670	1,007,267
Non-controlling interests		24,221	30,721
Total equity		967,891	1,037,988
Total equity and liabilities		\$ 1,597,135	\$ 1,790,384

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

Criteo S.A. and subsidiaries
Consolidated Statements of Income

	Notes	Year Ended December 31,		
		2017	2018	2019
(in thousands, except share and per share data)				
Revenue	17	\$ 2,296,692	\$ 2,300,314	\$ 2,261,516
Cost of revenue				
Traffic acquisition costs	18	(1,355,556)	(1,334,334)	(1,314,947)
Other cost of revenue	18	(121,641)	(131,744)	(117,533)
Gross profit		819,495	834,236	829,036
Operating expenses:				
Research and development expenses	18,19	(173,925)	(179,263)	(172,591)
Sales and operations expenses	18,19	(380,649)	(372,707)	(375,477)
General and administrative expenses	18,19	(127,077)	(135,159)	(139,754)
Total operating expenses		(681,651)	(687,129)	(687,822)
Income from operations		137,844	147,107	141,214
Financial (expense)	21	(9,534)	(5,084)	(5,749)
Income before taxes		128,310	142,023	135,465
Provision for income taxes	22	(31,651)	(46,144)	(39,496)
Net income		\$ 96,659	\$ 95,879	\$ 95,969
Net income available to shareholders of Criteo S.A.		\$ 91,214	\$ 88,644	\$ 90,745
Net income available to non-controlling interests		\$ 5,445	\$ 7,235	\$ 5,224
Net income allocated to shareholders per share:				
Basic	23	\$ 1.40	\$ 1.33	\$ 1.41
Diluted	23	\$ 1.34	\$ 1.31	\$ 1.38
Weighted average shares outstanding used in computing per share amounts:				
Basic	23	65,143,036	66,456,890	64,305,965
Diluted	23	67,851,971	67,662,904	65,598,588

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

Criteo S.A. and subsidiaries
Consolidated Statements of Comprehensive Income

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Net income	\$ 96,659	\$ 95,879	\$ 95,969
Foreign currency translation differences, net of taxes	77,023	(18,781)	(8,070)
Foreign currency translation differences	77,023	(18,781)	(8,070)
Income tax effect	—	—	—
Actuarial (losses) gains on employee benefits, net of taxes	(87)	916	(1,211)
Actuarial (losses) gains on employee benefits	(103)	1,235	(1,373)
Income tax effect	16	(319)	162
Comprehensive income	173,595	78,014	86,688
Attributable to shareholders of Criteo S.A.	167,566	77,594	86,353
Attributable to non-controlling interests	\$ 6,029	\$ 420	\$ 335

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

Criteo S.A. and subsidiaries
Consolidated Statements of Changes in Shareholders' Equity

	Share capital		Treasury stock		Additional paid-in capital	Accumulated other comprehensive (loss) income	Retained earnings	Equity - attributable to shareholders of Criteo S.A.	Non controlling interests	Total equity
(in thousands, except share data)										
	(Common shares)		(Shares)							
Balance at January 1, 2017	63,978,204	\$ 2,093	—	\$ —	\$ 488,277	\$ (88,593)	\$ 198,355	\$ 600,132	\$ 9,745	\$ 609,877
Net income	—	—	—	—	—	—	91,214	91,214	5,445	96,659
Other comprehensive income (loss)	—	—	—	—	—	76,352	—	76,352	584	76,936
Issuance of ordinary shares	2,106,893	49	—	—	33,617	—	—	33,666	—	33,666
Shared-based compensation	—	—	—	—	69,510	—	—	69,510	399	69,909
Other changes in equity ⁽¹⁾	—	10	—	—	—	—	10,641	10,651	—	10,651
Balance at December 31, 2017	66,085,097	2,152	—	—	591,404	(12,241)	300,210	881,525	16,173	897,698
Net income	—	—	—	—	—	—	88,644	88,644	7,235	95,879
Other comprehensive income (loss)	—	—	—	—	—	(18,285)	—	(18,285)	420	(17,865)
Issuance of ordinary shares	1,623,106	4	—	—	2,951	—	—	2,955	—	2,955
Change in treasury stock ⁽³⁾	—	—	(3,459,119)	(79,159)	—	—	—	(79,159)	—	(79,159)
Shared-based compensation	—	—	—	—	64,725	—	—	64,725	393	65,118
Other changes in equity ⁽²⁾	—	45	—	—	4,201	4	(985)	3,265	—	3,265
Balance at December 31, 2018	67,708,203	2,201	(3,459,119)	(79,159)	663,281	(30,522)	387,869	943,670	24,221	967,891
Net income	—	—	—	—	—	—	90,745	90,745	5,224	95,969
Other comprehensive income (loss)	—	—	—	—	—	(9,617)	—	(9,617)	335	(9,282)
Issuance of ordinary shares	83,266	2	—	—	1,829	—	—	1,831	—	1,831
Change in treasury stock ⁽³⁾	(1,594,288)	(45)	(444,554)	4,259	(36,091)	(296)	(26,710)	(58,883)	—	(58,883)
Shared-based compensation	—	—	—	—	39,399	—	—	39,399	214	39,613
Other changes in equity	—	—	—	—	(29)	330	(179)	122	727	849
Balance at December 31, 2019	66,197,181	\$ 2,158	(3,903,673)	\$ (74,900)	\$ 668,389	\$ (40,105)	\$ 451,725	\$ 1,007,267	\$ 30,721	\$ 1,037,988

⁽¹⁾ From January 1, 2017, we adopted ASU 2016-09, *Compensation-Stock Compensation (Topic 718): Improvement to Employee Share-based Payment Accounting* issued by the Financial Accounting Standards Board (FASB).

⁽²⁾ Deferred consideration in the context of Storetail Marketing Services SAS acquisition (see note 9).

⁽³⁾ Share repurchase program (see note 2)

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

Criteo S.A. and subsidiaries
Consolidated Statements of Cash Flows

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Net income	\$ 96,659	\$ 95,879	\$ 95,969
Non-cash and non-operating items	155,894	154,436	126,281
Amortization and provisions	104,025	111,825	97,110
Equity awards compensation expense ⁽¹⁾	71,612	66,600	40,999
Change in deferred taxes	(13,269)	(8,157)	15,418
Income tax for the period	(11,439)	(12,744)	(28,015)
Other ⁽²⁾	4,965	(3,088)	769
Change in working capital related to operating activities	(7,095)	10,411	582
(Increase) / Decrease in trade receivables	(76,907)	1,358	876
Increase / (Decrease) in trade payables	32,915	9,047	(14,145)
(Increase) / Decrease in other current assets	(3,381)	3,974	7,631
Increase / (Decrease) in other current liabilities ⁽²⁾	40,278	(3,968)	11,390
Change in operating lease liabilities and right of use assets	—	—	(5,170)
Cash from operating activities	245,458	260,726	222,832
Acquisition of intangibles assets, property, plant and equipment	(122,203)	(116,984)	(82,716)
Change in accounts payable related to intangible assets, property, plant and equipment	13,692	(8,494)	(15,224)
(Payment for) Disposal of businesses, net of cash acquired (disposed)	1,110	(101,180)	(4,582)
Change in other financial non-current assets	1,148	(59)	(1,366)
Cash used for investing activities	(106,253)	(226,717)	(103,888)
Issuance of long term borrowings	3,700	—	—
Repayment of borrowings	(89,731)	(964)	(1,022)
Proceeds from capital increase	31,961	1,473	1,691
Change in treasury stocks	—	(80,000)	(58,588)
Change in other financial liabilities ⁽²⁾	24,602	16,815	(1,192)
Cash used for financing activities	(29,468)	(62,676)	(59,111)
Effect of exchange rate changes on cash and cash equivalents ⁽²⁾	34,057	(21,018)	(5,496)
Net increase (decrease) in cash and cash equivalents	143,794	(49,685)	54,337
Net cash and cash equivalents - beginning of period	270,317	414,111	364,426
Net cash and cash equivalents - end of period	\$ 414,111	\$ 364,426	\$ 418,763
Supplemental disclosures of Cash Flow information			
Cash paid for taxes, net of refunds	\$ (56,360)	\$ (67,045)	\$ (52,093)
Cash paid for interest, net of amounts capitalized	\$ (2,102)	\$ (1,695)	\$ (1,403)

⁽¹⁾ Of which \$65.1 million and \$39.6 million of equity awards compensation expense consisted of share-based compensation expense according to ASC 718 Compensation - stock compensation for the twelve month period ended December 31, 2018 and 2019, respectively.

⁽²⁾ From 2017, the Company reported the cash impact of the settlement of hedging derivatives related to financing activities in cash from (used for) financing activities in the consolidated statements of cash flows.

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

Notes to the Consolidated Financial Statements

Criteo S.A. was initially incorporated as a société par actions simplifiée, or S.A.S., under the laws of the French Republic on November 3, 2005, for a period of 99 years and subsequently converted to a société anonyme, or S.A.

We are a global technology company powering marketers with trusted and impactful advertising. We strive to deliver measurable business results at scale across multiple marketing goals for retailers and brands, through our self-service Criteo Platform. Using shopping data, artificial intelligence ("AI") technology and extensive consumer reach, we help marketers drive Awareness, Consideration and Conversion for their products and services¹, and help retailers generate advertising revenues from consumer brands. Our data is pooled among our clients and offers deep insights into consumer intent and purchasing habits. To drive trusted and impactful advertising for marketers, we activate our data assets in a privacy-by-design way through proprietary AI technology to engage consumers in real time by designing, pricing and delivering highly relevant digital advertisements ("ads") across devices and environments. We price our offering on a range of pricing models and measure our value based on clear, well-defined performance metrics, making our impact on the business of our clients both transparent and easy to measure.

In these notes, Criteo S.A. is referred to as the Parent company and together with its subsidiaries, collectively, as "Criteo," the "Company," the "Group," or "we".

¹ Driving Awareness for a brand means exposing its brand name to consumers who have not been in touch with the brand before, thereby creating brand awareness from such consumers. Driving Consideration for an advertiser's products or services means attracting prospective new consumers to consider engaging with and/or buying this advertiser's products or services. Driving Conversion for an advertisers' products or services means triggering a purchase by consumers who have already engaged with this advertisers products or services in the past.

Note 1. Principles and Accounting Methods

Basis of Preparation

We prepared the consolidated financial statements in accordance with the U.S generally accepted accounting principles (“U.S. GAAP”). The consolidated financial statements include the accounts of Criteo S.A and its wholly owned subsidiaries.

Consolidation Methods

We have control over all our subsidiaries, and consequently they are all fully consolidated. Intercompany transactions and balances have been eliminated. The table below presents at each period’s end and for all entities included in the consolidation scope the following information: the country of incorporation and the percentage of voting rights and ownership interests.

	2018		2019		Consolidation Method	
	Country	Voting rights	Ownership Interest	Voting rights		Ownership Interest
Parent company						
Criteo S.A ⁽¹⁾	France	100%	100%	100%	100%	Parent company
French subsidiaries						
Criteo France SAS	France	100%	100%	100%	100%	Fully consolidated
Criteo Finance SAS	France	100%	100%	100%	100%	Fully consolidated
Storetail Marketing Services SAS	France	100%	100%	100%	100%	Fully consolidated
Condigolabs SAS	France	—%	—%	100%	40%	Fully consolidated
Foreign subsidiaries						
Criteo Ltd	United Kingdom	100%	100%	100%	100%	Fully consolidated
HookLogic Ltd ⁽²⁾	United Kingdom	100%	100%	—	—	Fully consolidated
Storetail Marketing Services Ltd	United Kingdom	100%	100%	100%	100%	Fully consolidated
Criteo Corp	United States	100%	100%	100%	100%	Fully consolidated
Manage, Inc.	United States	100%	100%	100%	100%	Fully consolidated
Criteo Gmbh	Germany	100%	100%	100%	100%	Fully consolidated
Criteo Nordics AB ⁽³⁾	Sweden	—%	—%	100%	100%	Fully consolidated
Criteo Korea Ltd. ⁽³⁾	Korea	—%	—%	100%	100%	Fully consolidated
Criteo KK	Japan	66%	66%	66%	66%	Fully consolidated
Criteo Do Brasil LTDA	Brazil	100%	100%	100%	100%	Fully consolidated
Criteo BV	The Netherlands	100%	100%	100%	100%	Fully consolidated
Criteo Pty	Australia	100%	100%	100%	100%	Fully consolidated
Criteo Srl	Italy	100%	100%	100%	100%	Fully consolidated
Criteo Advertising (Beijing) Co. Ltd	China	100%	100%	100%	100%	Fully consolidated
Criteo Singapore Pte. Ltd.	Singapore	100%	100%	100%	100%	Fully consolidated
Criteo LLC	Russia	100%	100%	100%	100%	Fully consolidated
Criteo Europa S.L.	Spain	100%	100%	100%	100%	Fully consolidated
Criteo Espana S.L.	Spain	100%	100%	100%	100%	Fully consolidated
Storetail Marketing Services S.L.U	Spain	100%	100%	100%	100%	Fully consolidated
Criteo Canada Corp.	Canada	100%	100%	100%	100%	Fully consolidated
Criteo Reklamcılık Hizmetleri ve Ticaret Anonim Şirketi	Turkey	100%	100%	100%	100%	Fully consolidated
Criteo MEA FZ-LLC	United Arab Emirates	100%	100%	100%	100%	Fully consolidated
Criteo India Private Ltd.	India	100%	100%	100%	100%	Fully consolidated

⁽¹⁾ including Criteo Korea and Criteo AB (Sweden) branches activities until 2018

⁽²⁾ merged with Criteo Ltd

⁽³⁾ from 2019 Criteo Korea and Criteo AB (Sweden) branches had been transformed into subsidiaries

Functional Currency and Translation of Financial Statements in Foreign Currency

The Consolidated Financial Statements are presented in U.S. dollars, which differs from the functional currency of the Parent, being the Euro. The statements of financial position of consolidated entities having a functional currency different from the U.S. dollar are translated into U.S. dollars at the closing exchange rate (spot exchange rate at the statement of financial position date) and the statements of income, statements of comprehensive income and statements of cash flow of such consolidated entities are translated at the average period to date exchange rate. The resulting translation adjustments are included in equity under the caption “Accumulated other comprehensive income (loss)” in the Consolidated Statements of Changes in Shareholders' Equity.

Conversion of Foreign Currency Transactions

Foreign currency transactions are converted to U.S. dollars at the rate of exchange applicable on the transaction date. At period-end, foreign currency monetary assets and liabilities are converted at the rate of exchange prevailing on that date. The resulting exchange gains or losses are recorded in the Consolidated Statements of Income in “Other financial income (expense)” with the exception of exchange differences arising from monetary items that form part of the reporting entity’s net investment in a foreign operation which are recognized in other comprehensive income (loss); they will be recognized in profit or loss on disposal of the net investment.

Use of Estimates

The preparation of our Consolidated Financial Statements requires the use of estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amount of revenue and expenses during the period. We base our estimates and assumptions on historical experience and other factors that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates.

On an on-going basis, management evaluates its estimates, primarily those related to: (1) revenue recognition criteria (2) allowances for doubtful accounts, (3) research tax credits (4) income taxes, including i) recognition of deferred tax assets arising from the subsidiaries projected taxable profit for future years, ii) evaluation of uncertain tax positions associated with our transfer pricing policy and iii) recognition of income tax position in respect with tax reforms recently enacted in countries we operate, (5) assumptions used in valuing acquired assets and assumed liabilities in business combinations, (6) assumptions used in the valuation of goodwill, intangible assets and right of use assets - operating lease, and (7) assumptions used in the valuation model to determine the fair value of share-based compensation plan.

Business combinations

We include the results of operations of the businesses that we acquire as of the acquisition date. We allocate the purchase price of our acquisitions to the assets acquired and liabilities assumed based on their estimated fair values. The excess of the purchase price over the fair values of these identifiable assets and liabilities is recorded as goodwill. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

Intangible Assets

Acquired intangible assets are accounted for at acquisition cost, less accumulated amortization. Acquired intangible assets are composed of software, technology and customer relationships amortized on a straight-line basis over their estimated useful lives comprised between one and three years for the software, and three and nine years, for the technology and customer relationships. Intangible assets are reviewed for impairment whenever events or changes in circumstances such as, but not limited to, significant declines in revenue, earnings or cash flows or material adverse changes in the business climate indicate that the carrying amount of an asset may be impaired.

We expense software development costs, including costs to develop software products or the software component of products to be sold, leased, or marketed to external users, before technological feasibility is reached. Technological feasibility is typically reached shortly before the release of such products and as a result, development costs that meet the criteria for capitalization were not material for the periods presented.

Software development costs also include costs to develop software to be used solely to meet internal needs and cloud based applications used to deliver our services. We capitalize development costs related to these software applications once the preliminary project stage is complete and it is probable that the project will be completed and the software will be used to perform the function intended. Amortization of these costs begins when assets are placed in service and is calculated on a straight-line basis over the assets’ useful lives estimated at three to five years.

Property, Plant and Equipment

Property, plant and equipment are accounted for at acquisition cost less cumulative depreciation and any impairment loss. Depreciation is calculated on a straight-line basis over the assets' estimated useful lives as follows:

Servers.....	5 years over the life of the warranty
Furniture and IT equipments.....	3 to 5 years

Leasehold improvements are depreciated over their useful life or over the lease term, whichever is shorter.

Impairment of Assets

Goodwill and Intangible Assets

Goodwill represents the excess of the aggregate purchase price paid over the fair value of the net tangible and intangible assets acquired. Intangible assets that are not considered to have an indefinite useful life are amortized over their useful lives. The Company evaluates the estimated remaining useful lives of purchased intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization.

Goodwill is not amortized and is tested for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The Company has determined that it operates as a single reporting unit and has selected December 31 as the date to perform its annual impairment test.

In the impairment assessment of its goodwill, the Company performs a two-step impairment test, which involves assumptions regarding estimated future cash flows to be derived from the Company. If these estimates or their related assumptions change in the future, the Company may be required to record impairment for these assets. The first step of the impairment test involves comparing the fair value of the reporting unit to its net book value, including goodwill.

If the net book value exceeds its fair value, then the Company would perform the second step of the goodwill impairment test to determine the amount of the impairment loss. The impairment loss to be recognized would be calculated by comparing the implied fair value of the Company to its net book value. In calculating the implied fair value of the Company's goodwill, the fair value of the Company would be allocated to all of the other assets and liabilities based on their fair values. The excess of the fair value of the Company over the amount assigned to its other assets and liabilities is the implied fair value of goodwill. An impairment loss would be recognized in the Consolidated Statement of Income when the carrying amount of goodwill exceeds its implied fair value.

With respect to intangible assets, acquired intangible assets are accounted for at acquisition cost less cumulative amortization and any impairment loss. Acquired intangible assets are amortized over their estimated useful lives of one to nine years on a straight-line method. Intangible assets are reviewed for impairment whenever events or changes in circumstances such as, but not limited to, significant declines in revenue, earnings or cash flows or material adverse changes in the financial and economic environment indicate that the carrying amount of an asset may be impaired.

Property, Plant and Equipment and Impairment of Long-lived Assets

The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset is impaired or the estimated useful life is no longer appropriate. If indicators of impairment exist and the undiscounted projected cash flows associated with an asset are less than the carrying amount of the asset, an impairment loss is recorded to write the asset down to its estimated fair value. Fair value is estimated based on discounted future cash flows.

Leases

We lease office space and data centers mainly under non-cancellable operating lease agreements. Our leases typically include rent free periods, rent escalation periods, renewal options and may also include leasehold improvement incentives. Both office and data center leases may contain non-lease components such as maintenance, electrical costs, and other service charges. Non-lease components are accounted for separately. Office and data center leases typically contain options to renew, and/or terminate the lease early.

Operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. Options have been included in the calculation if management has determined that it is reasonably certain that the option will be exercised.

We do not recognize a lease liability or right of use asset for leases with a term of 12 months or less, and we do not recognize a lease liability or right of use asset for low value leases.

We recognize a single lease cost under which the operating lease right of use and liability are amortized on a straight-line basis over the lease term. Variable costs are expensed in the period incurred.

Financial Assets and Liabilities, Excluding Derivative Financial Instruments

Financial assets, excluding cash and cash equivalents, consist exclusively of loans and receivables. Loans and receivables are non-derivative financial assets with a payment, which is fixed or can be determined, not listed on an active market. They are included in current assets, except those that mature more than twelve months after the reporting date. Loans are measured at amortized cost using the effective interest method. The recoverable amount of loans and advances is estimated whenever there is an indication that the asset may be impaired and at least on each reporting date. If the recoverable amount is lower than the carrying amount, an impairment loss is recognized in the Consolidated Statements of Income.

Financial liabilities are initially recorded at their fair value at the transaction date. Subsequently they are measured at amortized cost using the effective interest method.

We carry our accounts receivable at net realizable value. On a periodic basis, our management evaluates our accounts receivable and determines whether to provide an allowance or if any accounts should be written down and charged to expense as a bad debt. The evaluation is based on, among other factors, a past history of collections, current credit conditions, the ageing of the receivable and a past history of write downs. A receivable is considered past due if we have not received payments based on agreed-upon terms. A higher default rate than estimated or a deterioration in our clients' creditworthiness could have an adverse impact on our future results. Allowances for doubtful accounts on trade receivables are recorded in "sales and operations expenses" in our Consolidated Statements of Income. We generally do not require any security or collateral to support our receivables.

Derivative financial instruments

We buy and sell derivative financial instruments (mainly put, forward buying and selling) in order to manage and reduce our exposure to the risk of exchange rate fluctuations. We deal only with major financial institutions. Financial instruments may only be classified as hedges when we can demonstrate and document the effectiveness of the hedging relationship at inception and throughout the life of the hedge. Derivatives not designated as hedging instruments mainly consist of put, forward buying and selling contracts that we use to hedge intercompany transactions and other monetary assets or liabilities denominated in currencies other than the local currency of a subsidiary.

We recognize gains and losses on these contracts, as well as the related costs in the financial income (expense), net, along with the foreign currency gains and losses on monetary assets and liabilities.

During the years ended December 31, 2017 and December 31, 2018, the Company reported the cash impact of the settlement of hedging derivatives in cash from (used for) financing activities in the consolidated statements of cash flows. This accounting policy choice results in the cash flows from the derivative instrument to be classified in the same category as the underlying cash flows.

Fair value measurements

Financial instruments are presented in three categories based on a hierarchical method used to determine their fair value : (i) level 1: fair value calculated using quoted prices in an active market for identical assets and liabilities; (ii) level 2: fair value calculated using valuation techniques based on observable market data such as prices of similar assets and liabilities or parameters quoted in an active market; (iii) level 3: fair value calculated using valuation techniques based wholly or partially on unobservable inputs such as prices in an active market or a valuation based on multiples for unlisted companies. The Company's valuation techniques used to measure the fair value of money market funds and certain short term investments were derived from quoted prices in active markets. The valuation techniques used to measure the fair value of the Company's financial liabilities and all other financial instruments, all of which have counterparties with high credit ratings, were valued based on quoted market prices or model-driven valuations using inputs derived from or corroborated by observable market data.

Cash and Cash Equivalents

Cash includes cash on hand and demand deposits with banks. Cash equivalents include short-term, highly liquid investments, with a remaining maturity at the date of purchase of three months or less for which the risk of changes in value is considered to be insignificant. Demand deposits therefore meet the definition of cash equivalents. Cash equivalents are measured at fair value using level 1 and level 2, respectively, for cash at hand and money market funds using quoted prices, and any changes are recognized in the Consolidated Statements of Income.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents and accounts receivable. The Company's cash and cash equivalents are held and foreign exchange contracts are transacted with major financial institutions that the Company's management has assessed to be of high credit quality. The Company has not experienced any losses in such accounts.

The Company mitigates its credit risk with respect to accounts receivable by performing credit evaluations and monitoring agencies' and advertisers' accounts receivable balances. As of December 31, 2019 and 2018 no customer accounted for 10% or more of accounts receivable. During the years ended December 31, 2019, 2018 and 2017, no single customer represented 10% or more of revenue.

Employee Benefits

Depending on the laws and practices of the countries in which we operate, employees may be entitled to compensation when they retire or to a pension following their retirement. For state-managed plans and other defined contribution plans, we recognize them as expenses when they become payable, our commitment being limited to our contributions.

The liability with respect to defined benefit plans is estimated using the following main assumptions:

- discount rate;
- future salary increases;
- employee turnover; and
- mortality tables.

Service costs are recognized in profit or loss and are allocated by function.

Actuarial gains and losses are recognized in other comprehensive income and subsequently amortized into the income statement over a specified period, which is generally the expected average remaining service period of the employees participating in the plan. Actuarial gains and losses arise as a result of changes in actuarial assumptions or experience adjustments (differences between the previous actuarial assumptions and what has actually occurred).

Contingencies

An estimated loss from a loss contingency is recognized if the following two conditions are met:

- information available before the financial statements are issued indicates that it is probable that an asset had been impaired or a liability had been incurred at the date of the financial statements;
- the amount of loss can be reasonably estimated.

With respect to litigation and claims that may result in a provision to be recognized, we exercise significant judgment in measuring and recognizing provisions or determining exposure to contingent liabilities that are related to pending litigation or other outstanding claims. These judgment and estimates are subject to change as new information becomes available.

Revenue Recognition

On January 1, 2018, we adopted Topic 606 using the modified retrospective method. The new standard had no significant impact on our Consolidated Financial Statements.

We recognize revenues when we transfer control of promised services directly to our clients or to advertising agencies, which we collectively refer to as our clients, in an amount that reflects the consideration to which we expect to be entitled to in exchange for those services.

Refer to Note 17. Revenue for further discussion regarding the adoption of ASC 606 and revenue.

Cost of Revenue

Our cost of revenue primarily includes traffic acquisition costs and other cost of revenue.

Traffic Acquisition Costs. Traffic acquisition costs consist primarily of purchases of impressions from publishers on a CPM basis. We purchase impressions directly from publishers or third-party intermediaries, such as advertisement exchanges. We recognize cost of revenue on a publisher by publisher basis as incurred. Costs owed to publishers but not yet paid are recorded in our Consolidated Statements of Financial Position as trade payables and other current liabilities.

For some solutions within Criteo Retail Media, we pay for the inventory of our ecommerce retailer partners on a revenue sharing basis, effectively paying the retailers a portion of the click-based revenue generated by user clicks on the sponsored products advertisements displaying the products of our brand manufacturer clients.

Other Cost of Revenue. Other cost of revenue includes expenses related to third-party hosting fees, depreciation of data center equipment and data purchased from third parties. The Company does not build or operate its own data centers and none of its Research and Development employments are dedicated to revenue generating activities. As a result, we do not include the costs of such personnel in other cost of revenue.

Share-Based Compensation

Shares, employee share options and employee and non-employee warrants are primarily awarded to our employees or directors. These awards are measured at their fair value on the date of grant. The fair value is calculated with the most relevant formula regarding the settlement and the conditions of each plan. The fair value is recorded in personnel expenses (allocated by function in the Consolidated Statements of Income) on a straight-line basis over each milestone composing the vesting period with a corresponding increase in shareholders' equity.

At each closing date, we re-examine the number of options likely to become exercisable. If applicable, the impact of the review of the estimate is recognized in the Consolidated Statements of Income with a corresponding adjustment in equity.

Income Taxes

Income taxes are accounted for under the asset and liability method of accounting. Deferred taxes are recorded on all temporary differences between the financial reporting and tax bases of assets and liabilities, and on tax losses, using the liability method. Differences are defined as temporary when they are expected to reverse within a foreseeable future. We may only recognize deferred tax assets on net operating losses if, based on the projected taxable incomes within the next three years, we determine that it is probable that future taxable profit will be available against which the unused tax losses and tax credits can be utilized. As a result, the measurement of deferred income tax assets is reduced, if necessary, by a valuation allowance for any tax benefits which are not expected to be realized. If future taxable profits are considerably different from those forecasted that support recording deferred tax assets, we will have to revise downwards or upwards the amount of deferred tax assets, which would have a significant impact on our financial results. Tax assets and liabilities are not discounted. Amounts recognized in the Consolidated Financial Statements are calculated at the level of each tax entity included in the consolidation scope. The effect on deferred income tax assets and liabilities of a change in tax rates is recognized in the period that such tax rate changes are enacted.

The French Research Tax Credit, *Crédit d'Impôt Recherche* ("CIR"), is a French tax incentive to stimulate research and development ("R&D"). Generally, the CIR offsets the income tax to be paid and the remaining portion (if any) can be refunded at the end of a three-fiscal year period. The CIR is calculated based on the claimed volume of eligible R&D expenditures by us. As a result, the CIR is presented as a deduction to "research and development expenses" in the Consolidated Statements of Income, as the CIR is not within the scope of ASC 740. We have exclusively claimed R&D performed in France for purposes of the CIR.

The U.S. Research Tax Credit is a U.S. tax credit to incentivize research and development activities in the U.S. Qualifying R&D expenses generating a tax credit which may be used to offset future taxable income once all net operating losses and foreign tax credits have been used. It is not refundable and as such, considered in the scope of ASC 740 as a component of income tax expense. We have exclusively claimed R&D performed in the U.S. for purposes of the U.S. Research Tax Credit.

Uncertain Tax Positions

We recognize tax benefits from uncertain tax positions only if we believe that 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. These uncertain tax positions include our estimates for transfer pricing that have been developed based upon analyses of appropriate arms-length prices. Similarly, our estimates related to uncertain tax positions concerning research tax credits are based on an assessment of whether our available documentation corroborating the nature of our activities supporting the tax credits will be sufficient. Although we believe that we have adequately reserved for our uncertain tax positions (including net interest and penalties), we can provide no assurance that the final tax outcome of these matters will not be materially different. We make adjustments to these reserves in accordance with the income tax accounting guidance when facts and circumstances change, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made, and could have a material impact on our financial condition and operating results.

Operating Segments

Segment information reported is built on the basis of internal management data used for performance analysis of businesses and for the allocation of resources (management approach). An operating segment is a component of the Company for which separate financial information is available that is evaluated regularly by our Chief Decision Maker in deciding how to allocate resources and assessing performance.

Our chief operating decision-maker is our CEO. The CEO reviews consolidated data for revenue, revenue excluding traffic acquisition costs (revenue ex-TAC) and Adjusted EBITDA (earnings before financial income (expense), income taxes, depreciation and amortization, adjusted to eliminate the impact of equity awards compensation expense, pension service costs, restructuring costs, acquisition-related costs and deferred price consideration) for the purposes of allocating resources and evaluating financial performance.

We have concluded that our operations constitute one operating and reportable segment.

Earnings Per Share

Basic earnings per share (“EPS”) are calculated by dividing the net income attributable to shareholders of the Parent by the weighted average number of shares outstanding. The weighted average number of shares outstanding is calculated according to movements in share capital.

In addition, we calculate diluted earnings per share by dividing the net income attributable to shareholders of the Parent company, Criteo S.A. by the weighted average number of shares outstanding plus any potentially dilutive shares not yet issued.

Accounting Pronouncements adopted in 2019

Effective January 1, 2019, we have adopted the Financial Accounting Standards Board, ("FASB") Accounting Standards Update ("ASU") 842 No. 2016-02, Leases (Topic 842) (ASU 2016-02), which generally requires companies to recognize operating and financing lease liabilities and corresponding right-of-use assets on the balance sheet for operating leases with terms of more than 12 months, in addition to those currently recorded. In August 2018, the FASB issued ASU 2018-11, Targeted Improvements to ASC 842, which included an option not to restate comparative periods in transition and use the effective date of ASC 842, Leases, as the date of the initial application of transition, which we elected. Prior periods have not been adjusted and continue to be accounted for in accordance with ASC 840. As a result of adopting ASU 842, we recognized total operating lease liabilities of \$223.5 million and operating right-of-use assets of \$204.3 million as of January 1, 2019. The adoption of ASC 842 had an immaterial impact on our condensed consolidated statements of income and our condensed consolidated statement of cash flows for the year ended December 31, 2019. Refer to Note 13. Leases, for additional information and required disclosures.

Effective January 1, 2019, we have adopted ASU 2018 - 07, Improvements to Non-Employee Share based Payment Accounting. The amendments in this ASU expands Topic 718 to include share base payments for goods or services to non employees. The adoption of ASU 2018-07 did not have a material impact on our financial position or results of operations.

Recent Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update No. 2016-13 (ASU 2016-13) Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost. ASU 2016-13 replaces the existing incurred loss impairment model with an expected loss model which requires the use of forward-looking information to calculate credit loss estimates. This will result in earlier recognition of credit losses. We will adopt ASU 2016-13 effective January 1, 2020 with the cumulative effect of adoption recorded as an adjustment to retained earnings. We are currently assessing the impact of the adoption of ASU 2016-13 on the Company's consolidated financial statements. The adoption of ASU 2016-13 is not expected to have a material impact on our financial position or results of operations.

In January 2017, the FASB issued ASU 2017-04 *Goodwill and Other (Topic 350)*. ASU 2017-04 simplifies the subsequent measurement of goodwill and reduces the cost and complexity of evaluating goodwill for impairment. It eliminates the need for entities to calculate the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. Under this amendment, an entity will perform its goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An impairment charge is recognized for the amount by which the carrying value exceeds the reporting unit's fair value. We intend to adopt the standard on the effective date of January 1, 2020. The adoption of ASU 2017-04 is not expected to have a material impact on our financial position or results of operations.

In August 2017, the FASB issued ASU 2017-12 *Derivatives and Hedging (Topic 815), Targeted Improvements to Accounting for Hedging Activities*. ASU 2017-12 was issued with the objective of improving the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements as well as to simplify the application of hedge accounting guidance in current GAAP. We intend to adopt the standard on the effective date of January 1, 2020. The adoption of ASU 2017-12 is not expected to have a material impact on our financial position or results of operations.

In August 2018, the FASB issued ASU 2018 - 13, *Fair Value Measurement - Disclosure Framework - Changes to the Disclosure Requirement for Fair Value Measurement*. This ASU modifies disclosure requirements for Fair Value including 1) removing existing disclosure requirements such as reasons for transfers from 1 to 2 level, policy of timing of transfers 2) modifying existing disclosure requirements, such as a rollforward of level 3 assets, investments in entities that calculate net asset value, and the measurement uncertainty disclosure 3) Adds additional disclosures such as changes in unrealized gains and losses in OCI, and the range and weight of significant unobservable inputs. We intend to adopt the standard on the effective date of January 1, 2020. The adoption of ASU 2018-13 is not expected to have a material impact on our financial position or results of operations.

In August 2018, the FASB issued ASU 2018 - 14, *Compensation - Retirement Benefits - Defined Benefit Plans - General*. The purpose of this update is to modify disclosure requirements for Defined Benefit Plans. It removes requirements to disclose the amounts in accumulated other comprehensive income expected to be recognized as components of net periodic benefit cost over the next fiscal year among others. It adds disclosure requirements for the items such as an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. We intend to adopt the standard on the effective date of January 1, 2021. The adoption of ASU 2018-14 is not expected to have a material impact on our financial position or results of operations but may have an impact on our disclosures.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal Use Software - Customer's Accounting for Implementation Costs incurred in a Cloud Computing Arrangement That is a Service Contract*. This ASU was issued to clarify the accounting for implementation costs incurred for SaaS agreements. Previously the guidance only referred to development of internal use software and the accounting for SaaS agreements was not clarified. This ASU states that the implementation costs of SaaS agreements should be capitalized. We will adopt ASU 2018-15 effective January 1, 2020. The adoption of ASU 2018-15 is not expected to have an impact on our financial position or results of operations on the date of the adoption but will have a minor impact on expense classification in future periods.

Other accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company's Consolidated Financial Statements upon adoption.

Note 2. Significant Events and Transactions of the Period

Change in estimated useful life of servers and other data center equipment

During the first quarter of 2019, we revised our estimate of the useful life of all servers and other equipment used in our data centers from 3 to 5 years. This change in estimate was determined based on a revised commissioning plan which extends the period equipment from 3 to 5 years prior to disposal, and was accounted for as a change in accounting estimate. This resulted in an increase in income from operations of \$42.0 million, increase in net income of \$35.8 million, or \$0.56 per share, from that which would have been reported had the previous expected useful life of 3 years been used for the twelve month period ended December 31, 2019. The impact on the three month period ended December 31, 2019 was an increase in income from operations of \$10.7 million, an increase in net income of \$9.1 million, or \$0.14 per share.

Share repurchase program

On October 25, 2018 Criteo's Board of Directors authorized a share repurchase program of up to \$80.0 million of the Company's outstanding American Depositary Shares. As of December 31, 2018, 3.5 million shares were held as treasury shares. We completed this share repurchase program in 2018.

On February 8, 2019, the Board of Directors authorized the reduction of capital resulting in the formal retirement of 1.6 million treasury shares.

On July 26, 2019, Criteo's Board of Directors authorized a share repurchase program of up to \$80.0 million of the Company's outstanding American Depositary Shares. As of December 31, 2019, 3.2 million shares were held as treasury shares as part of the share repurchase program authorized on July 26, 2019.

As of December 31, 2019, we have 3.9 million treasury shares remaining which may be used to satisfy the company's obligations under its employee equity plans upon RSU vestings in lieu of issuing new shares, and for M&A activity.

	Number of Treasury Shares	Amount (in thousands)
Balance at January 1, 2018	—	—
Treasury Shares Repurchased to potentially use for M&A	1,751,147	40,000
Treasury Shares Repurchased for RSU Vesting	1,748,111	40,000
Treasury Shares Issued for RSU Vesting	(40,139)	(841)
Balance at December 31, 2018	3,459,119	\$ 79,159
Treasury Shares Retired	(1,594,288)	(36,137)
Treasury Shares Repurchased to use for M&A or RSU Vesting	1,498,709	28,452
Treasury Shares Repurchased to use for RSU Vesting	1,743,223	30,136
Treasury Shares Issued for RSU Vesting	(1,203,090)	(26,710)
Balance at December 31, 2019	3,903,673	\$ 74,900

Restructuring

The Company implemented a new organization structure designed to best support its multi-product platform strategy, accelerate execution and generate cost efficiencies, in particular through right sizing facilities. As a result of this implementation, the Company incurred net restructuring costs of \$10.6 million and \$13.6 million for the three months and twelve months ended December 31, 2019, respectively. The restructuring costs comprised termination of R&D activities, costs for termination of a facility, impairment of right of use assets, and payroll expenses, offset by gains from forfeitures of equity instruments linked to share-based compensation expense.

Cease of our R&D operations in Palo Alto

On October 7, 2019, in connection with the new organization structure, the Company announced a plan to restructure its R&D activities with the closing of its R&D operations in Palo Alto. The company incurred net restructuring costs of \$0.7 million and \$0.7 million for the three months and the twelve months ended December 31, 2019, respectively.

	Three Months Ended	Twelve Months Ended
	December 31, 2019	
	(in thousands)	
Gain from forfeitures of share-based compensation expense	\$ 4,863	\$ 4,863
Payroll related costs	(5,581)	(5,581)
Total restructuring costs	(718)	(718)

As such, for the three months and the twelve months ended December 31, 2019, respectively, we included \$(0.7) million in Research and Development expenses.

The following table summarizes restructuring activities as of December 31, 2019 included in other current liabilities on the balance sheet :

	Restructuring Liability	
	(in thousands)	
Restructuring liability - January 1, 2019	\$	—
Restructuring costs		718
Restructuring costs - non cash items		4,863
Amounts paid		—
Restructuring liability - December 31, 2019	\$	5,581

Facilities right sizing program

The Company decided to implement a facilities right sizing program to generate cost efficiencies . The Company incurred net restructuring costs of \$9.4 million and \$12.2 million for the three months ended and the twelve months ended December 31, 2019, respectively, comprising of impairment of right of use assets and a termination of a lease facility.

	Three Months Ended	Twelve Months Ended
	December 31, 2019	
	(in thousands)	
Depreciation and amortization (expense)	67	(1,161)
Impairment related costs	(8,926)	(8,926)
Facilities related costs	(507)	(2,155)
Total restructuring costs	(9,366)	(12,242)

As such, for the three months and the twelve months ended December 31, 2019, respectively, we included \$(0.7) million and \$(0.7) million in Research and Development expenses, \$(6.3) million and \$(8.7) million in Sales and Operations expenses, \$(2.3) million and \$(2.8) million in General and Administrative expenses.

Impairment related costs for the three months and the twelve months ended December 31, 2019, respectively, were included in Research and Development expenses \$(0.7) million, Sales and Operations expenses \$(6.4) million and General and Administrative expenses \$(1.8) million.

The following table summarizes restructuring activities as of December 31, 2019 included in right of use assets and lease liability on the balance sheet :

	Restructuring Liability	
	(in thousands)	
Restructuring liability - January 1, 2019	\$	—
Restructuring costs		12,242
Restructuring costs - non cash items		(8,260)
Amounts paid		(3,175)
Restructuring liability - December 31, 2019	\$	807

New organization structure

As part of a new organization structure designed to best support its multi-product platform strategy and accelerate execution, the Company incurred net restructuring costs of \$0.6 million and \$0.6 million for the three months and twelve months ended December 31, 2019, respectively, comprising of payroll expenses, offset by gains from forfeitures of equity instruments linked to share-based compensation expense.

	Three Months Ended	Twelve Months Ended
	December 31, 2019	
	(in thousands)	
Gain from forfeitures of share-based compensation expense	\$ (13)	\$ 3,271
Payroll related costs	(564)	(3,893)
Total restructuring costs	(577)	(622)

For the three month period ended December, 2019, \$(0.3) million was included in Research and Development expenses, and \$(0.2) million in Sales and Operations expenses. For the twelve month periods ended December, 2019, \$\$0.5) million was included in Research and Development expenses, and \$(0.1) million in Sales and Operations expenses.

The following table summarizes restructuring activities as of December 31, 2019 included in other current liabilities on the balance sheet :

	Restructuring Liability	
	(in thousands)	
Restructuring liability - January 1, 2019	\$	—
Restructuring costs		622
Restructuring costs - non cash items		3,271
Amounts paid		(3,383)
Restructuring liability - December 31, 2019	\$	510

Note 3. Categories of Financial Assets and Financial Liabilities

Financial assets

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Trade receivables, net of allowances	\$ 473,901	\$ 481,732
Other taxes	53,338	60,924
Other current assets	22,816	17,225
Non-current financial assets	20,460	21,747
Total	<u>\$ 570,515</u>	<u>\$ 581,628</u>

Credit Risk

We maintain an allowance for estimated credit losses. During the years ended December 31, 2019 and 2018, our net change in allowance for doubtful accounts was \$(9.9) million and \$5.1 million, respectively.

For our financial assets, the fair value approximates the carrying amount, given the nature of the financial assets and the maturity of the expected cash flows.

Trade Receivables

Credit risk is defined as an unexpected loss in cash and earnings if the client is unable to pay its obligations in due time. We perform internal ongoing credit risk evaluations of our clients. When a possible risk exposure is identified, we require prepayments.

As of December 31, 2019 and 2018, no customer accounted for 10% or more of trade receivables.

Financial liabilities

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Trade payables	\$ 425,376	\$ 390,277
Other taxes	55,592	50,099
Employee - related payables	65,878	74,781
Other current liabilities	47,115	35,886
Financial liabilities	3,508	4,405
Total	<u>\$ 597,469</u>	<u>\$ 555,448</u>

The fair value of financial liabilities approximates the carrying amount, given the nature of the financial liabilities and the maturity of the expected cash flows.

Fair Value Measurements

We measure the fair value of our cash equivalents, which include interest bearing deposits, as level 2 measurements because they are valued using observable market data.

Financial assets or liabilities include derivative financial instruments used to manage our exposure to the risk of exchange rate fluctuations. These instruments are considered level 2 financial instruments as they are measured using valuation techniques based on observable market data.

Derivative Financial Instruments

Derivatives consist of foreign currency forward contracts that we use to hedge intercompany transactions and other monetary assets or liabilities denominated in currencies other than the local currency of a subsidiary. We recognize gains and losses on these contracts in financial income (expense), and their position on the balance sheet is based on their fair value at the end of each respective period. These instruments are considered level 2 financial instruments as they are measured using valuation techniques based on observable market data.

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Derivative Assets:		
<i>Included in other current assets</i>	\$ 1,703	\$ —
Derivative Liabilities:		
<i>Included in financial liabilities - current portion</i>	\$ —	\$ 1,284

The fair value of derivative financial instruments approximates the carrying amount, given the nature of the derivative financial instruments and the maturity of the expected cash flows.

Note 4. Cash and Cash Equivalents

The following table presents for each reported period, the breakdown of cash and cash equivalents:

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Cash equivalent	\$ 125,442	\$ 189,119
Cash on hand	238,984	229,644
Total Cash and cash equivalents	<u>\$ 364,426</u>	<u>\$ 418,763</u>

Investments in interest-bearing bank deposits which met ASC 230 - *Statement of Cash flows* criteria: short-term, highly liquid investments, for which the risks of changes in value are considered to be insignificant. Interest-bearing bank deposits are considered level 2 financial instruments as they are measured using valuation techniques based on observable market data. For our cash and cash equivalents, the fair value approximates the carrying amount, given the nature of the cash and cash equivalents and the maturity of the expected cash flows.

Note 5. Trade Receivables

The following table shows the breakdown in trade receivables net book value for the presented periods:

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Trade accounts receivables	\$ 499,819	\$ 497,800
(Less) Allowance for doubtful accounts	(25,918)	(16,068)
Net book value at end of period	<u>\$ 473,901</u>	<u>\$ 481,732</u>

Changes in allowance for doubtful accounts are summarized below:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Balance at beginning of period	\$ (11,598)	\$ (20,818)	\$ (25,918)
Provision for doubtful accounts	(13,315)	(17,656)	(11,072)
Reversal of provision	4,821	11,956	20,811
Change in consolidation scope	—	(150)	—
Currency translation adjustment	(726)	750	111
Balance at end of period	<u>\$ (20,818)</u>	<u>\$ (25,918)</u>	<u>\$ (16,068)</u>

We maintain an allowance for doubtful accounts which reflects our best estimate of potentially uncollectable trade receivables. The allowance is based on both specific and general reserves.

The amount charged to allowance for doubtful accounts decreased compared to the previous year due to a consistent application of the Company credit policy. The reversal of provision increased during the period mainly due to payments received and increased write-offs of long outstanding receivables already reserved for which it is certain we will not collect. The Company mitigates its credit risk with respect to accounts receivables by performing credit evaluations and monitoring agencies and advertisers' accounts receivables balances.

Note 6. Other Current Assets

The following table shows the breakdown in other current assets net book value for the presented periods:

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Prepayments to suppliers	\$ 4,056	\$ 5,109
Other debtors	4,762	4,225
Prepaid expenses	12,295	7,891
Derivative financial instruments	1,703	—
Gross book value at end of period	22,816	17,225
Net book value at end of period	\$ 22,816	\$ 17,225

Prepaid expenses mainly consist of office rental advance payments.

Derivative financial instruments include foreign currency swaps or forward purchases or sales contracts used to manage our exposure to the risk of exchange rate fluctuations. These instruments are considered level 2 financial instruments as they are measured using valuation techniques based on observable market data.

Note 7. Property, Plant and Equipment

Changes in net book value during the presented periods are summarized below:

	Fixtures and fittings	Furniture and equipment	Construction in Progress	Total
	(in thousands)			
Net book value at January 1, 2018	\$ 22,265	\$ 110,351	\$ 29,122	\$ 161,738
Additions to tangible assets	1,075	27,741	76,733	105,549
Disposal of tangible assets net of accumulated depreciation	(19)	(176)	(30)	(225)
Depreciation expense	(6,025)	(72,162)	—	(78,187)
Change in consolidation scope	26	103	—	129
Currency translation adjustment	(340)	(3,957)	(694)	(4,991)
Transfer into service	1,902	82,901	(84,803)	—
Net book value at December 31, 2018	18,884	144,801	20,328	184,013
Gross book value at end of period	36,458	366,299	20,328	423,085
Accumulated depreciation at end of period	(17,574)	(221,498)	—	(239,072)
Net book value at January 1, 2019	18,884	144,801	20,328	184,013
Additions to tangible assets	466	23,117	46,959	70,542
Disposal of tangible assets net of accumulated depreciation	(999)	(904)	(12)	(1,915)
Depreciation expense	(6,377)	(50,222)	—	(56,599)
Change in consolidation scope	—	3	—	3
Currency translation adjustment	(43)	(1,660)	(180)	(1,883)
Transfer into service	892	61,895	(62,787)	—
Net book value at December 31, 2019	\$ 12,823	\$ 177,030	\$ 4,308	\$ 194,161
Gross book value at end of period	35,456	412,915	4,308	452,679
Accumulated depreciation at end of period	(22,633)	(235,885)	—	(258,518)

The increase in property plant and equipment (gross book value and accumulated depreciation) mainly includes purchases of server equipment in the French, American and Japanese subsidiaries where the Company's data center equipment is located.

Note 8. Intangible assets

Changes in net book value during the presented periods are summarized below:

	Software	Technology and customer relationships	Construction in Progress	Total
	(in thousands)			
Net book value at January 1, 2018	\$ 13,153	\$ 78,601	\$ 4,469	\$ 96,223
Additions to intangible assets	—	—	11,436	11,436
Disposal of intangible assets	—	—	(19)	(19)
Amortization and impairment expense	(9,490)	(15,824)	—	(25,314)
Change in consolidation scope	—	31,192	18	31,210
Currency translation adjustment	(615)	(652)	(233)	(1,500)
Transfer into service	10,218	—	(10,218)	—
Net book value at December 31, 2018	13,266	93,317	5,453	112,036
Gross book value at end of period	42,161	144,734	5,453	192,348
Accumulated amortization and impairment at end of period	(28,895)	(51,417)	—	(80,312)
Net book value at January 1, 2019	13,266	93,317	5,453	112,036
Additions to intangible assets	2,627	—	9,548	12,175
Disposal of intangible assets	—	—	—	—
Amortization and impairment expense	(8,982)	(27,906)	—	(36,888)
Change in consolidation scope	111	—	—	111
Currency translation adjustment	(232)	(207)	(109)	(548)
Transfer into service	12,325	—	(12,325)	—
Net book value at December 31, 2019	\$ 19,115	\$ 65,204	\$ 2,567	\$ 86,886
Gross book value at end of period	56,501	144,226	2,567	203,294
Accumulated amortization and impairment at end of period	(37,386)	(79,022)	—	(116,408)

Additions to software mainly consist of capitalization of internally developed internal-use software and IT licenses.

Additions to technology and customer relationships in 2018 relate to the valuation of identified intangibles in the context of the business combinations with Storetail Marketing SAS ("Storetail") and Manage.com ("Manage"). Amortization on technology and customer relationships relates to HookLogic, Storetail and Manage intangibles resulting from each of the three business combinations respectively. In 2019 we accounted for in "Amortization and depreciation expense" to a change in useful life of Manage technology based on the early decommissioning of the Manage platform (\$2.2 million) and an impairment loss of Manage customers relationships (\$4.6 million) driven by lower business performance compared to expectations at the time of the acquisition, largely due to high client concentration and a volatile business environment. The Manage customer relationships were written down to their estimated fair value, calculated under the discounted cash flows model.

The average life of software is 3 years. The average life of technology and customer relationships, consisting of identified intangible assets arising from HookLogic and Storetail business combinations, is between 3 and 9 years.

As of December 31, 2019, expected amortization expense for intangible assets for the next five years and thereafter is as follows (in thousands):

	Software	Technology and customer relationships	Total
2020	\$ 9,189	\$ 15,456	\$ 24,645
2021	6,791	11,450	18,241
2022	4,141	11,450	15,591
2023	1,205	10,282	11,487
2024	357	8,700	9,057
Thereafter	—	7,865	7,865
Total	\$ 21,683	\$ 65,203	\$ 86,886

Note 9. Goodwill

	Goodwill (in thousands)
Balance at January 1, 2018	\$ 236,826
Additions to goodwill	77,905
Currency translation adjustment	(1,850)
Balance at December 31, 2018	312,881
Additions to goodwill	5,277
Currency translation adjustment	(1,058)
Balance at December 31, 2019	\$ 317,100

Additions to goodwill in 2019 were due to two business combinations considered as not material to our consolidated financial statements.

Additions to goodwill in 2018 were due to two business combinations with Manage.com Inc. and Storetail Marketing Services SAS. The total consideration paid was \$60.0 million for the acquisition of Manage financed by available cash resources. The total consideration paid for the acquisition of Storetail was \$47.8 million (€41.3 million) composed as follows : \$43.7 million (€37.7 million) financed by available cash resources at the acquisition date and \$4.1 million (€3.6 million) as deferred consideration, due at the end of a 2 year period. These transactions have been accounted for as a business combination under the acquisition method of accounting. A valuation of the fair value of Manage's and Storetail's assets acquired and liabilities assumed have been performed as of December 31, 2018. As regards Manage, a technology and customer relationships assets of \$9.8 million and \$7.3 million, respectively, and related deferred tax liability of \$4.4 million have been identified resulting in a goodwill of \$45.0 million, after working capital adjustments (\$0.6 million). As regards Storetail, a technology and related marketing solution of \$14.2 million (€12.2 million) and related deferred tax liability of \$4.1 million (€3.6 million) have been identified resulting in a goodwill of \$32.3 million (€27.8 million). In addition, acquisition costs amounting to \$1.7 million were fully expensed as incurred.

In addition, on the basis of our impairment assessment as of December 31, no impairment has been detected.

Note 10. Non-Current Financial Assets

Non-current financial assets are mainly composed of (i) an interest-bearing bank deposit amounting to \$6.3 million, which is pledged to the benefit of a bank in order to secure the first-demand bank guarantee in connection with our headquarters premises, and (ii) guarantee deposits for office rentals in France, Spain, the United Kingdom, the United States, Japan and Singapore.

Note 11. Contingencies

Changes in provisions during the presented periods are summarized below:

	Provision for employee- related litigation	Other provisions	Total
	(in thousands)		
Balance at January 1, 2018	\$ 545	\$ 1,253	\$ 1,798
Charges	325	1,868	2,193
Provision used	(180)	(220)	(400)
Provision released not used	(404)	(456)	(860)
Currency translation adjustments	(42)	(49)	(91)
Balance at January 1, 2019	\$ 244	\$ 2,396	\$ 2,640
Charges	461	3,797	4,258
Provision used	(82)	—	(82)
Provision released not used	—	(402)	(402)
Currency translation adjustments	(3)	(26)	(29)
Balance at December 31, 2019	\$ 620	\$ 5,765	\$ 6,385
- of which current	\$ 620	\$ 5,765	\$ 6,385

The amount of the provisions represent management's best estimate of the future outflow. The increase of Other provisions during the Twelve Months ended December 31, 2019 relates mainly to provision for operating taxes.

Note 12. Financial Liabilities

We are party to several loan agreements and revolving credit facilities, or RCF, with third-party financial institutions. Our loans and RCF agreements are presented in the table below:

<u>Nature</u>	<u>Nominal/ Authorized amounts (RCF Only)</u>	<u>Amount drawn as of December 31, 2019 (RCF only)</u>	<u>Amount Outstanding as of December 31, 2019</u>	<u>Interest rate</u>	<u>Settlement date</u>
		(in thousands)			
BPI Loan - February 2014	NA	NA	\$ 1,011	Fixed: 2.09%	May 2021
Other BPI Loans	NA	NA	\$ 901	—%	2023 and after
Other Loans	NA	NA	\$ 166	—%	2024
Bank Syndicate RCF - September 2015	€ 350,000	\$—	\$—	Floating rate: EURIBOR / LIBOR + margin depending on leverage ratio	March 2022

In September 2015, Criteo entered into a 5 year revolving credit facility for general corporate purposes, including acquisitions, for a maximum amount of €250 million (\$280.9 million), with a bank syndicate composed of Natixis (coordinator and documentation agent), Le Credit Lyonnais (LCL) (facility agent), HSBC France, Société Générale Corporate & Investment Banking and BNP Paribas (each acting individually as bookrunners and mandated lead arrangers). In 2017, this agreement was amended by, among other things, increasing the amount of facility from €250.0 million (\$280.9 million) to €350.0 million (\$393.2 million) and extending the term of the contract from 2020 to 2022. This multi-currency revolving credit facility bears interest rate at Euribor or the relevant Libor plus a margin to be adjusted on the basis of the leverage ratio.

Besides this RCF agreement, Criteo is part of many credit lines it entered into or maintained following acquisitions. Criteo specifically has agreements with Bpifrance Financement (French Public Investment Bank) for a total amount outstanding as of December 31, 2019 of €1.7 million (\$1.9 million).

All of these loans and revolving credit facilities are unsecured and contain customary events of default but do not contain any affirmative, financial or negative covenants, with the exception of the September 2015 revolving credit facility which contains covenants, including compliance with a total net debt to adjusted EBITDA ratio and restrictions on the incurrence of additional indebtedness. At December 31, 2019, we were in compliance with the required leverage ratio.

The following table shows the maturity of our financial liabilities:

	<u>Carrying value</u>	<u>Maturity</u>					
		<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
		(in thousands)					
Borrowings	\$ 2,116	\$ 1,480	\$ 428	\$ 100	\$ 62	\$ 33	\$ 13
Other financial liabilities	1,005	572	433	—	—	—	—
Financial derivatives	1,284	1,284	—	—	—	—	—
Financial liabilities	4,405	3,336	861	100	62	33	13

Note 13. Leases

On January 1, 2019, we adopted Accounting Standards Update No. 2016-02, *Leases (Topic 842)* which requires companies to recognize operating and financing lease liabilities and corresponding right-of-use assets on the balance sheet.

We have adopted Topic 842 effective January 1, 2019 on a modified retrospective basis and elected not to restate comparative periods. We chose to use certain practical expedients offered by the standard including:

- We did not reassess whether any expired or existing contracts are or contain leases, the lease classification for any expired or existing leases, or the initial direct costs for any existing leases.
- We do not recognize a lease liability or right of use asset for leases with a term of 12 months or less, and
- We used hindsight in determining the lease term.

We lease space under non-cancellable operating leases for our offices as well as our data centers. The company had no finance leases. Our office leases typically include free rent periods or rent escalation periods, and may also include leasehold improvement incentives. Leases for data centers may also include free rent periods or rent escalation periods. These leases typically do not include residual value guarantees. Both office and data center leases may contain both lease components (rent) and non-lease components (maintenance, electrical costs, and other service charges). Non-lease components are accounted for separately.

Both office and data center leases typically contain options to renew, and/or early terminate. We have evaluated management's expectations for these options as of December 31, 2019. Options have been included in the lease term if management has determined it is reasonably certain it will be exercised.

Operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate at lease commencement to determine the present value of future payments. We have a centralized treasury function, and the majority of our leases are negotiated and signed by representatives of Criteo SA. As such, the incremental borrowing rate of Criteo SA is used for all of our contracts. It is then adjusted in consideration of the currency of the lease and the lease term as of the lease commencement date.

Lease expense is recognized for minimum lease payments on a straight-line basis over the lease term. Variable costs are expensed in the period incurred. Variable expenses include changes in indexation. Leases for data centers may have variable costs based on electrical usage.

The components of lease expense are as follows:

	Three Months Ended			Twelve Months Ended		
	December 31, 2019					
	Offices	Data Centers	Total	Offices	Data Centers	Total
Lease expense	\$ 11,833	\$ 7,169	\$ 19,002	\$ 38,910	\$ 24,596	\$ 63,506
Short term lease expense	352	253	605	2,296	1,826	4,122
Variable lease expense	141	(958)	(817)	599	—	599
Sublease income	(378)	—	(378)	(2,916)	—	(2,916)
Total operating lease expense	<u>\$ 11,948</u>	<u>\$ 6,464</u>	<u>\$ 18,412</u>	<u>\$ 38,889</u>	<u>\$ 26,422</u>	<u>\$ 65,311</u>

Included in lease expense, are impairment related costs for the three months and the twelve months ended December 31, 2019, respectively, classified as Research and Development expenses \$(0.7) million, Sales and Operations expenses \$(6.4) million and General and Administrative expenses \$(1.8) million. The impairment charge was recognized as a result of the Company's facilities right sizing program (Note 2).

As of December 31, 2019, we had future minimum lease payments as follows:

	December 31, 2019		
	Offices	Data Centers	Total
	(in thousands)		
2020	\$ 30,490	\$ 18,860	\$ 49,350
2021	28,845	12,550	41,395
2022	28,045	8,619	36,664
2023	18,614	2,198	20,812
2024	9,436	—	9,436
Thereafter	14,285	—	14,285
Total minimum lease payments	129,715	42,227	171,942
Impact of Discount Rate	(7,484)	(617)	(8,101)
Total Lease Liability	\$ 122,231	\$ 41,610	\$ 163,841

The weighted average remaining lease term and discount rates as of December 31, 2019 are as follows:

	December 31, 2019
Weighted average remaining lease term (years)	
Offices	4.52
Data Centers	2.52
Weighted average discount rate	
Offices	2.47%
Data Centers	1.85%

Supplemental cash flow information related to our operating leases is as follows for the period December 31, 2019:

	Twelve Months Ended December 31, 2019	
	(in thousands)	
Cash paid for amounts included in the measurement of lease liabilities		
Cash flow for operating activities	\$	(54,259)
Right of use assets obtained in exchange for new operating lease liabilities	\$	15,714

As of December 31, 2019, we have additional operating leases, primarily for offices, that have not yet commenced which will result in additional operating lease liabilities and right of use assets of approximately \$11.8 million. These operating leases will commence in 2020.

For periods prior to January 1, 2019, we accounted for our lease commitments in accordance with ASC 840. We recognized rent expense for leases on a straight-line basis over the life of the lease. For the three months ended December 31, 2018, we recognized expense for office leases of \$9.3 million and data centers costs of \$15.9 million. For the twelve months ended December 31, 2018 we recognized expense for office leases of \$37.9 million and data center costs of \$54.8 million. The rent expense recognized in prior periods included amounts which are now considered non-lease components such as maintenance services and electricity charges.

Note 14. Other Current Liabilities

Other current liabilities are presented in the following table:

	Year Ended December 31,	
	2018	2019
	(in thousands)	
Clients' prepayments	\$ 10,328	\$ 13,618
Credit notes	13,183	16,420
Accounts payable relating to capital expenditures	21,454	4,408
Other creditors	1,527	1,213
Deferred revenue	623	227
Total	<u>\$ 47,115</u>	<u>\$ 35,886</u>

The changes in "accounts payable relating to capital expenditures" relate to significant data centers equipment and leasehold improvements acquisitions in 2018 paid during the year.

Note 15. Employee Benefits

Defined Benefit Plans

According to the French law and the Syntec Collective Agreement, French employees are entitled to compensation paid on retirement.

The following table summarizes the changes in the projected benefit obligation:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Projected benefit obligation present value - beginning of period	\$ 3,221	\$ 5,149	\$ 5,537
Service cost	1,231	1,690	1,556
Interest cost	66	86	113
Actuarial losses (gains)	103	(1,235)	1,374
Change in consolidation scope	—	98	—
Currency translation adjustment	528	(251)	(95)
Projected benefit obligation present value - end of period	<u>\$ 5,149</u>	<u>\$ 5,537</u>	<u>\$ 8,485</u>

The Company does not hold any plan assets for any of the periods presented.

The main assumptions used for the purposes of the actuarial valuations are listed below:

	Year Ended December 31,		
	2017	2018	2019
Discount rate (Corp AA)	1.7%	2.1%	1.1%
Expected rate of salary increase	5.0%	5.0%	5.0%
Expected rate of social charges	49.0% - 50.0%	49.0% - 50.0%	49.0% - 50.0%
Expected staff turnover	0 - 10.5%	0 - 10.5%	0 - 10.5%
Estimated retirement age	Progressive table	Progressive table	Progressive table
Life table	TH-TF 2000-2002 shifted	TH-TF 2000-2002 shifted	TH-TF 2000-2002 shifted

Defined Contribution Plans

The total expense represents contributions payable to these plans by us at specified rates.

In some countries, the Group's employees are eligible for pension payments and similar financial benefits. The Group provides these benefits via defined contribution plans. Under defined contribution plans, the Group has no obligation other than to pay the agreed contributions, with the corresponding expense charged to income for the year. The main contributions concern France, the United States, for 401k plans, and the United Kingdom.

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Defined contributions plans included in personnel expenses	\$ (14,345)	\$ (16,912)	\$ (15,686)

Note 16. Common shares

Change in Number of Shares

	Number of ordinary shares
Balance at January 1, 2018	66,085,097
Issuance of shares under share option and free share plans ⁽¹⁾	1,466,247
Balance at December 31, 2018 before Storetail deferred consideration and Share repurchase program	67,551,344
Storetail deferred consideration	156,859
Balance at December 31, 2018 after Storetail deferred consideration and before Share repurchase program	67,708,203
Share repurchase program	(3,459,119)
Balance at December 31, 2018	64,249,084
Issuance of shares under share option and free share plans ⁽²⁾	83,266
Treasury shares retired ⁽³⁾	(1,594,288)
Balance at December 31, 2019 after Storetail deferred consideration and before Share repurchase program	66,197,181
Share repurchase program <i>(see Note 2)</i> ⁽³⁾	(444,554)
Balance at December 31, 2019	62,293,508

⁽¹⁾ Adopted by the Board of Directors on March 1, 2018, March 16, 2018, April 25, 2018, June 26, 2018, July 26, 2018,, October 25, 2018 and December 12, 2018.

⁽²⁾ Adopted by the Board of Directors on March 1, 2019, April 25, 2019, June 25, 2019, July 25, 2019, October 24, 2019 and December 11, 2019.

⁽³⁾ On February 8th, 2019, the Board acknowledged the share capital decrease resulting from the cancellation of 1,594,288 shares and approved the related amendment of Article 6 of the Company's by-laws reflecting such decrease.

Note 17. Revenue

Adoption of ASC Topic 606, "Revenue from contracts with customers"

On January 1, 2018, we adopted Topic 606 using the modified retrospective method. The new standard had no significant impact on our Consolidated Financial Statements.

Revenue Recognition

We sell personalized display advertisements featuring product-level recommendations either directly to clients or to advertising agencies. Historically, the Criteo model has focused solely on converting our clients' website visitors into customers, enabling us to charge our clients only when users engage with an ad we deliver, usually by clicking on it. More recently, we have expanded our solutions to address a broader range of marketing goals for our clients.

We offer two families of solutions to our commerce and brand clients:

- *Criteo Marketing Solutions* allow commerce companies to address multiple marketing goals by engaging their consumers with personalized ads across the web, mobile and offline store environments.
- *Criteo Retail Media* solutions allow retailers to generate advertising revenues from consumer brands, and/or to drive sales for themselves, by monetizing their data and audiences through personalized ads, either on their own digital property or on the open Internet, that address multiple marketing goals.

In conjunction with expanding our solutions, we have also started expanding our pricing models to now include a combination of cost-per-install and cost-per-impression for selected new solutions, in addition to cost-per-click.

We recognize revenues when we transfer control of promised services directly to our clients or to advertising agencies, which we collectively refer to as our clients, in an amount that reflects the consideration to which we expect to be entitled to in exchange for those services.

For campaigns priced on a cost-per-click and cost-per-install basis, we bill our clients when a user clicks on an advertisement we deliver or installs an application by clicking on an advertisement we delivered, respectively. For these pricing models, we recognize revenue when a user clicks on an advertisement or installs an application.

For campaigns priced on a cost-per-impression basis, we bill our clients based on the number of times an advertisement is displayed to a user. For this pricing model, we recognize revenue when an advertisement is displayed.

We act as principal in our arrangements because (i) we control the advertising inventory (spaces on websites) before it is transferred to our clients; (ii) we bear sole responsibility for fulfillment of the advertising promise and inventory risks and (iii) we have full discretion in establishing prices. Therefore, based on these factors, we report revenue earned and the related costs incurred on a gross basis.

Disaggregation of revenue

The following tables disclose our consolidated revenue for each geographical area for each of the reported periods. Revenue by geographical area is based on the location of advertisers' campaigns.

	<u>Americas</u>	<u>EMEA</u>	<u>Asia-Pacific</u>	<u>Total</u>
	(in thousands)			
December 31, 2017	\$ 990,424	\$ 808,961	\$ 497,307	\$ 2,296,692
December 31, 2018	954,073	839,825	506,416	2,300,314
December 31, 2019	\$ 952,154	\$ 806,197	\$ 503,165	\$ 2,261,516

Excluding our historical solution for driving Conversion through Criteo Marketing Solution (formerly called Criteo Dynamic Retargeting), no individual solution accounted for more than 10% of total consolidated revenue for the periods presented.

Customer Credit Notes

We offer credit notes to certain customers as a form of incentive, which are accounted for as variable consideration. We estimate these amounts based on the expected amount to be provided to customers and they are recognized as a reduction of revenue. We believe that there will not be significant changes to our estimates of variable consideration.

Deferred Revenues

We record deferred revenues when cash payments are received or due in advance of our performance. Our payment terms vary depending on the service or the type of customer. For certain customers, we require payment before the services are delivered.

Practical Expedients

We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

We generally expense sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within sales and operating expenses.

Note 18. Nature of Expenses Allocated by Function

Nature of Expenses Allocated to Cost of Revenue

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Traffic acquisition costs	\$ (1,355,556)	\$ (1,334,334)	\$ (1,314,947)
Other cost of revenue	(121,641)	(131,744)	(117,533)
Hosting costs	(57,895)	(54,764)	(57,139)
Depreciation and amortization	(54,219)	(67,346)	(44,866)
Data acquisition	(269)	(282)	(2,410)
Other cost of sales	(9,258)	(9,352)	(13,118)
Total cost of revenue	\$ (1,477,197)	\$ (1,466,078)	\$ (1,432,480)

Nature of Expenses Allocated to Research and Development

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Personnel expenses	\$ (125,662)	\$ (130,696)	\$ (116,803)
Personnel expense excluding equity awards compensation expense and research tax credit	(110,939)	(120,024)	(123,696)
Equity awards compensation expense	(21,012)	(21,359)	(9,320)
Research tax credit	6,289	10,687	16,213
Other cash operating expenses	(34,073)	(37,119)	(37,820)
Subcontracting and other headcount related costs	(19,437)	(15,129)	(16,343)
Rent and facilities costs	(11,466)	(14,201)	(14,009)
Consulting and professional fees	(2,680)	(3,320)	(4,416)
Marketing costs	(909)	(4,976)	(3,818)
Other	419	507	766
Other non-cash operating expenses	(14,190)	(11,448)	(17,968)
Depreciation and amortization	(13,420)	(10,602)	(17,208)
Net change in other provisions	(770)	(846)	(760)
Total research and development expenses	\$ (173,925)	\$ (179,263)	\$ (172,591)

Nature of Expenses Allocated to Sales and Operations

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Personnel expenses	\$ (245,481)	\$ (244,256)	\$ (243,733)
Personnel expense excluding equity awards compensation expense	(214,750)	(215,615)	(226,849)
Equity awards compensation expense	(30,731)	(28,641)	(16,884)
Other cash operating expenses	(105,714)	(104,960)	(109,268)
Subcontracting and other headcount related costs	(29,053)	(25,706)	(24,655)
Rent and facilities costs	(32,952)	(32,398)	(32,353)
Marketing costs	(20,650)	(17,864)	(20,804)
Consulting and professional fees	(5,605)	(5,330)	(6,988)
Operating taxes	(14,120)	(11,788)	(6,197)
Other including bad debt expense	(3,334)	(11,874)	(18,271)
Other non-cash operating expenses	(29,454)	(23,491)	(22,476)
Depreciation and amortization	(19,844)	(18,245)	(30,620)
Net change in provisions for doubtful receivables	(8,493)	(5,453)	9,740
Net change in other provisions	(1,117)	207	(1,596)
Total sales and operations expenses	\$ (380,649)	\$ (372,707)	\$ (375,477)

Nature of Expenses Allocated to General and Administrative

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Personnel expenses	\$ (74,420)	\$ (76,476)	\$ (75,815)
Personnel expense excluding equity awards compensation expense	(54,551)	(59,876)	(61,020)
Equity awards compensation expense	(19,869)	(16,600)	(14,795)
Other cash operating expenses	(46,271)	(48,687)	(52,057)
Subcontracting and other headcount related costs	(15,583)	(16,638)	(14,781)
Rent and facilities costs	(9,846)	(11,081)	(11,951)
Marketing costs	(806)	(1,061)	(3,130)
Consulting and professional fees	(16,693)	(18,163)	(19,329)
Other	(3,343)	(1,744)	(2,866)
Other non-cash operating expenses	(6,386)	(9,996)	(11,882)
Depreciation and amortization	(5,738)	(7,306)	(8,825)
Net change in other provisions	(648)	(2,690)	(3,057)
Total general and administrative expenses	\$ (127,077)	\$ (135,159)	\$ (139,754)

Restructuring

Restructuring of our China Operations

In May 2017, the Company announced it would no longer continue to serve the domestic market in China and would refocus its China operations entirely on the export business. As such, we have recorded \$3.3 million in restructuring charges for the twelve months ended December 31, 2017, as follows:

	Twelve Months Ended	
	December 31, 2017	
	(in thousands)	
Severance costs	\$	802
Facility Exit Costs		2,265
Other		232
Total restructuring costs	\$	3,299

For the twelve months ended December 31, 2017, \$2.5 million was included in Other Cost of Revenue, \$0.7 million in Sales and Operations expenses, and \$0.1 million was included in General and Administrative expenses.

The following table summarizes restructuring activities as of December 31, 2017 included in other current liabilities on the balance sheet:

	Restructuring Liability	
	(in thousands)	
Restructuring liability - January 1, 2017	\$	—
Restructuring charges		3,299
Amounts paid		(2,855)
Other		(12)
Restructuring liability - December 31, 2017	\$	432

No additional charges related to restructuring were recorded in the twelve months ended December 31, 2018, and the remaining \$0.4 million was paid during the period resulting in the extinguishment of the restructuring liability as of December 31, 2018.

Discontinuation of Criteo Predictive Search

On October 31, 2017, we announced that we decided to discontinue the product Criteo Predictive Search. As such, we have recorded \$4.1 million in restructuring charges for the twelve months ended December 31, 2017. In 2018, we recognized a gain of \$0.1 million. This gain was due to a reduction of share-based compensation expenses due to forfeitures which was partially offset by additional charges for facilities and employee severance agreements.

	Twelve Months Ended	
	December 31, 2017	December 31, 2018
	(in thousands)	
Severance costs	\$ 2,602	\$ 127
Facility Exit Costs	—	297
Other	1,455	(477)
Total restructuring costs	<u>\$ 4,057</u>	<u>\$ (53)</u>

For the twelve months ended December 31, 2017, \$2.9 million was included in Research and Development expenses and \$1.1 million in Sales and Operations expenses. Other costs include the write-off of acquisition related intangible assets of \$2.2 million slightly offset by a reduction of share based compensation expenses of \$0.7 million due to forfeitures.

For the twelve months ended December 31, 2018, \$0.2 million was included in Sales and Operations expenses and \$(0.3) million in Research and Development expenses. Other costs relate to a reduction of share-based compensation expenses of \$(0.5) million due to forfeitures.

The following table summarizes restructuring activities as of December 31, 2018 included in other current liabilities on the balance sheet:

	Restructuring Liability	
	2017	2018
	(in thousands)	
Restructuring liability - January 1	\$ —	\$ 2,351
Restructuring charges	4,057	(53)
Amounts paid	(251)	(2,271)
Other	(1,455)	477
Restructuring liability - December 31	<u>\$ 2,351</u>	<u>\$ 504</u>

No additional charges related to restructuring were recorded in the twelve months ended December 31, 2019, and the remaining \$0.5 million was paid during the period resulting in the extinguishment of the restructuring liability as of December 31, 2019.

Note 19. Allocation of Personnel Expenses

Allocation of Personnel Expenses By Function

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Research and development expenses	\$ (125,662)	\$ (130,696)	\$ (116,803)
Sales and operations expenses	(245,481)	(244,256)	(243,733)
General and administrative expenses	(74,420)	(76,476)	(75,815)
Total personnel expenses	<u>\$ (445,563)</u>	<u>\$ (451,428)</u>	<u>\$ (436,351)</u>

Allocation of Personnel Expenses by Nature

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Wages and salaries	\$ (284,015)	\$ (296,336)	\$ (306,862)
Severance pay	(7,915)	(6,922)	(12,504)
Social charges	(70,130)	(77,284)	(76,594)
Other social expenses	(17,178)	(14,375)	(15,513)
Equity awards compensation expense	(71,612)	(66,600)	(40,999)
Profit sharing	(1,002)	(598)	(92)
Research tax credit (classified as a reduction of R&D expenses)	6,289	10,687	16,213
Total personnel expenses	<u>\$ (445,563)</u>	<u>\$ (451,428)</u>	<u>\$ (436,351)</u>

Note 20. Share-Based Compensation

Share Options Plans and Employee Warrants Grants (BSPCE)

The Board of Directors has been authorized by the general meeting of the shareholders to grant employee warrants (*Bons de Souscription de Parts de Créateur d'Entreprise* or "BSPCE") and to implement share options, free shares plans as follows:

- Issuance of 2,112,000 BSPCE, authorized at the General Meeting of Shareholders on October 24, 2008, making available up to 2,112,000 BSPCE until April 24, 2010 ("Plan 1");
- Issuance of 1,472,800 BSPCE, authorized at the General Meeting of Shareholders on April 16, 2009, making available up to 1,472,800 BSPCE until October 16, 2010 ("Plan 2");
- 1,584,000 Share Options, authorized at the General Meeting of Shareholders on September 9, 2009, making available up to 1,584,000 share options until November 8, 2012. This Plan has been amended at the General Meeting of Shareholders on November 16, 2010, making available up to 2,700,000 share options or BSPCE ("Plan 3");
- Issuance of 361,118 BSPCE, granted to Criteo co-founders at the General Meeting of Shareholders on April 23, 2010 ("Plan 4");
- 2,800,000 BSPCE or Share Options (*Options de Souscription d'Actions* or "OSA"), authorized at the General Meeting of Shareholders on November 18, 2011, making available up to 2,800,000 share options or BSPCE ("Plan 5");
- 1,654,290 BSPCE or Share Options, authorized at the General Meeting of Shareholders on September 14, 2012, making available up to 1,654,290 share options or BSPCE ("Plan 6");
- 6,627,237 BSPCE or Share Options, authorized at the General Meeting of Shareholders on August 2, 2013, making available up to 6,627,237 share options or BSPCE ("Plan 7");
- 9,935,710 Share Options, authorized at the General Meeting of Shareholders on June 18, 2014, making available up to 9,935,710 share options ("Plan 8"). The Board of Directors has also authorized free shares/restricted stock units ("RSUs") to Criteo employees under presence condition and to certain senior managers, employees and members of the Management, subject to the achievement of internal performance objectives and presence condition.
- 4,600,000 Share Options or RSUs, authorized at the General Meeting of Shareholders on June 29, 2016 and 100,000 BSAs (any BSA granted will also be deducted from the 4,600,000 limit), such authorizations collectively referred to as "Plan 9". The Board of Directors has authorized RSUs to Criteo employees subject to a presence condition and to certain senior managers, employees and members of management, subject to the achievement of internal performance objectives and a presence condition.
- 4,600,000 Share Options or RSUs, authorized at the General Meeting of Shareholders on June 28, 2017 and 120,000 BSAs (any BSA granted will also be deducted from the 4,600,000 limit), such authorizations collectively referred to as "Plan 10". The Board of Directors has authorized RSUs to Criteo employees subject to a presence condition and to certain senior managers, employees and members of management, subject to the achievement of internal performance objectives and a presence condition.
- 4,200,000 Share Options or RSUs, authorized at the General Meeting of Shareholders on June 27, 2018 and 150,000 BSAs (any BSA granted will also be deducted from the limit), such authorizations collectively referred to as "Plan 11". The Board of Directors has authorized RSUs to Criteo employees subject to a presence condition and to certain senior managers, employees and members of management, subject to the achievement of internal performance objectives and a presence condition.
- 6,200,000 Share Options or RSUs, authorized at the General Meeting of Shareholders on May 16, 2019 and 175,000 BSAs (any BSA granted will also be deducted from the limit), such authorizations collectively referred to as "Plan 12". The Board of Directors has authorized RSUs to Criteo employees subject to a presence condition and to members of management, subject to the achievement of internal performance objectives and a presence condition.

Upon the exercise of the BSPCEs or Share Options, we grant beneficiaries newly issued ordinary shares of the Parent. We also grant beneficiaries ordinary shares of the Parent upon the vesting of RSUs. Prior to the beginning of our share repurchase programs described elsewhere in this Form 10-K, these grants relating to vested RSUs were completed using newly issued ordinary shares. Since the initiation of our share repurchase programs, the grants relating to vested RSUs are completed using existing ordinary shares that were repurchased as part of our share repurchase programs.

The vesting schedule for the BSPCEs and OSAs is the following for the Plans 1, 2 and 3:

- up to one third (1/3) of the BSPCEs on the first anniversary of the date of grant;
- up to one twelfth (1/12) at the expiration of each quarter following the first anniversary of the date of grant, and this during twenty-four (24) months thereafter.
- The BSPCEs and OSAs may be exercised at the latest within ten (10) years from the date of grant.

For the Plan 3 amended to Plan 12, the vesting schedule is as follows:

- up to one fourth (1/4) of the BSPCEs/share options on the first anniversary of the date of grant;
- up to one-sixteenth (1/16) at the expiration of each quarter following the first anniversary of the date of grant, and this during thirty-six (36) months thereafter.
- The BSPCEs and OSAs may be exercised at the latest within ten (10) years from the date of grant.

The vesting schedule for the RSUs is as follows:

- 50% at the expiration of a two year period
- 6.25% at the expiration of each quarter following the first two years-period during twenty four (24) months.

When the Company was not listed, exercise prices were determined by reference to the latest capital increase as of the date of grant, unless the Board of Directors decided otherwise. Since our initial public offering, exercise prices are determined by reference to the closing share price the day before the date of the grant if higher than a floor value of 95% of the average of the closing share price for the last 20 trading days.

In the following tables, exercise prices, grant date share fair values and fair value per equity instruments are provided in euros, as the Company is incorporated in France and the euro is the currency used for the grants.

Details of BSPCE / OSA / RSU plans

	Plans 1 & 2	Plan 3	Plan 5	Plan 6	Plan 6	Plan 7	Plan 8	Plan 9	Plan 10	Plan 11	Plan 12
Dates of grant (Boards of Directors)	Oct 24, 2008 - Sept 14, 2010	Sept 9, 2009 - Sept 21, 2011	Nov 18, 2011 - May 22, 2012	Oct 25, 2012	Oct 25, 2012 - April 18, 2013	Sept 3, 2013 - April 23, 2014	July 30, 2014 - June 28, 2016	July 28, 2016 - June 27, 2017	July 27, 2017 - June 26, 2018	July 26, 2018 - June 25, 2019	July 25, 2019 - December 11, 2019
Vesting period	3 years	3 - 4 years	4 years	1 year	4-5 years	4 years	4 years	4 years	4 years	4 years	4 years
Contractual life	10 years	10 years	10 years	10 years	10 years	10 years	10 years	—	10 years	—	10 years
Expected option life	8 years	8 years	8 years	8 years	8 years	6 - 8 years	6 years	—	6 years	—	6 years
Number of instruments granted	1,819,120	4,289,940	1,184,747	257,688	1,065,520	2,317,374	4,318,551	2,534,262	502,410	2,556,315	947,565
Type : Share Option (S.O.) / BSPCE / RSU	BSPCE	BSPCE & OSA	BSPCE & OSA	BSPCE	BSPCE & OSA	BSPCE & OSA	OSA	RSU	OSA	RSU	OSA
Share entitlement per option	1	1	1	1	1	1	1	1	1	1	1
Exercise price	€0.45 - €2.10	€0.20 - €5.95	€5.95	€8.28	€8.28 - €10.43	€12.08 - €38.81	€22.95 - €47.47	—	€38.20 - €43.45	—	€24.63 - €28.69
Valuation method	Black & Scholes										
Grant date share fair value	€0.20 - €0.70	€0.20 - €4.98	€4.98	€6.43	€5.45 - €6.43	€12.08 - €38.81	€22.50 - €47.47	€35.18 - €35.58	€38.20 - €43.45	€33.98 - €49.08	€24.63 - €28.69
Expected volatility ⁽¹⁾	53.0% - 55.7%	55.2% - 57.8%	52.1% - 52.9%	50.2%	49.6% - 50.2%	44.2% - 50.1%	39.4% - 44.5%	—	40.6% - 41.3%	—	41.0% - 41.5%
Discount rate ⁽²⁾	2.74% - 4.10%	2.62% - 3.76%	2.79% - 3.53%	2.2%	1.80% - 2.27%	1.20% - 2.40%	0.00% - 0.71%	N/A	N/A	N/A	0.6% - 0.7%
Performance conditions	No	Yes (A)	No	Yes (B)	No	No	No	Yes (C)	No	Yes (D) (E)	No
Fair value per option / RSU	€0.08 - €0.45	€0.08 - €2.88	€2.75 - €2.85	€3.28	€3.28 - €5.83	€6.85 - €16.90	€9.47 - €17.97	€26.16 - €37.10	€14.49 - €16.82	€33.98 - €49.08	€9.85 - €11.40

(1) Based on similar listed entities.

(2) Based on Obligation Assimilables du Trésor, i.e. French government bonds with a ten-year maturity (“TEC 10 OAT floating-rate bonds”).

(A) Options subject to performance condition: Among the 960,000 share options granted in April 7, 2011, 180,000 are subjected to performance conditions based on revenue excluding traffic acquisition costs targets that were met in 2012.

(B) On October 25, 2012, the Board of Directors of the Parent also granted a total of 257,688 BSPCE to our co-founders. The conditions of exercise of these BSPCE are linked to a future liquidity event or a transfer of control of the Company, and the number of BSPCE that can be exercised are determined by the event’s date which cannot occur after March 31, 2014. Based on the assumptions known as at December 31, 2012, we determined that the share-based compensation expense would be recognized over a one-year period. This assumption was confirmed in 2013.

(C) On October 29, 2015, the Board of Directors of the Parent also granted a total of 337,960 RSU to Criteo employees under condition of presence and to certain senior managers, employees and members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2015, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion. This assumption was confirmed in 2016. On January 29, 2016, the Board of Directors of the Parent granted a total of 33,010 RSUs to members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2016, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion. This assumption was confirmed in 2016.

(D) On July 28, 2016, the Board of Directors of the Parent granted a total of 195,250 RSUs to certain senior managers and members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2016, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion. This assumption was confirmed in 2017.

(E) On June 27, 2017, the Board of Directors of the Parent granted a total of 135,500 RSUs to certain senior managers and members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2017, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion. This assumption was confirmed in 2018.

(F) On July 26, 2018, the Board of Directors of the Parent granted a total of 203,332 RSUs to certain senior managers and members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2018, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion.

(G) On April 25, 2019, the Board of Directors of the Parent granted a total of 257,291 RSUs to members of the management, subject to the achievement of internal performance objectives and condition of presence. Based on the assumptions known at December 31, 2019, we determined the share-based compensation expense by applying a probability ratio on performance objectives completion.

Change in Number of outstanding BSPCE / OSA / RSU

	OSAs	RSUs	Total
Balance at January 1, 2017	4,960,092	3,243,279	8,203,371
Granted	355,010	1,891,702	2,246,712
Exercised (BSPCE and OSA)	(1,668,838)	—	(1,668,838)
Vested (RSU)	—	(379,135)	(379,135)
Forfeited	(453,556)	(543,338)	(996,894)
Expired	—	—	—
Balance at December 31, 2017	3,192,708	4,212,508	7,405,216
Granted	1,013,065	3,133,644	4,146,709
Exercised (BSPCE and OSA)	(137,348)	—	(137,348)
Vested (RSU)	—	(1,362,873)	(1,362,873)
Forfeited	(880,960)	(1,203,142)	(2,084,102)
Expired	—	—	—
Balance at December 31, 2018	3,187,465	4,780,137	7,967,602
Granted	438,347	3,147,751	3,586,098
Exercised (BSPCE and OSA)	(83,266)	—	(83,266)
Vested (RSU)	—	(1,219,112)	(1,219,112)
Forfeited	(983,012)	(1,729,789)	(2,712,801)
Expired	—	—	—
Balance at December 31, 2019	2,559,534	4,978,987	7,538,521

Breakdown of the Closing Balance

	Plans 1 & 2	Plan 3	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Plan 10	Plan 11	Plan 12	RSUs	Total
Balance at December 31, 2017												
Number outstanding	15,020	89,921	251,306	70,803	372,590	1,929,403	463,665	—	—	—	4,212,508	7,405,216
Weighted-average exercise price	€ 0.87	€ 4.03	€ 5.95	€ 9.65	€ 17.70	€ 32.07	€ 42.04	€ —	€ —	€ —	€ —	€ 28.33
Number exercisable	15,020	89,921	251,306	70,803	359,702	1,145,511	38,867	—	—	—	—	1,971,130
Weighted-average exercise price	€ 0.87	€ 4.03	€ 5.95	€ 9.65	€ 17.31	€ 30.88	€ 38.20	€ —	€ —	€ —	€ —	€ 23.16
Weighted-average remaining contractual life	1.6 years	3.4 years	4.3 years	5.1 years	5.8 years	7.2 years	9.2 years	—	—	—	—	6.9 years
Balance at December 31, 2018												
Number outstanding	3,600	67,751	242,613	41,338	306,172	1,599,033	328,726	532,732	65,500	—	4,780,137	7,967,602
Weighted-average exercise price	€ 0.70	€ 4.43	€ 5.95	€ 9.26	€ 17.95	€ 30.99	€ 41.75	€ 25.79	€ 18.72	€ —	€ —	€ 26.94
Number exercisable	3,600	67,751	242,613	41,338	306,172	1,417,904	161,658	—	—	—	—	2,241,036
Weighted-average exercise price	€ 0.70	€ 4.43	€ 5.95	€ 9.26	€ 17.95	€ 30.04	€ 41.37	€ —	€ —	€ —	€ —	€ 25.39
Weighted-average remaining contractual life	1.2 years	2.4 years	3.3 years	4.0 years	4.9 years	6.2 years	8.2 years	9.3 years	9.8 years	—	—	6.7 years
Balance at December 31, 2019												
Number outstanding	3,600	63,544	230,673	26,350	216,157	1,080,017	116,580	318,766	128,380	375,467	4,978,987	7,538,521
Weighted-average exercise price	€ 0.70	€ 4.37	€ 5.95	€ 9.28	€ 17.70	€ 29.69	€ 41.50	€ 26.58	€ 17.32	€ 15.67	€ —	€ 23.09
Number exercisable	3,600	63,544	230,673	26,350	216,157	1,066,670	80,966	129,908	16,375	—	—	1,834,243
Weighted-average exercise price	€ 0.70	€ 4.37	€ 5.95	€ 9.28	€ 17.70	€ 29.58	€ 41.17	€ 26.42	€ —	—	€ —	€ 24.12
Weighted-average remaining contractual life	0.2 years	1.4 years	2.3 years	3.0 years	3.9 years	5.1 years	7.1 years	8.3 years	9.1 years	9.9 years	—	6.2 years

Non-Employee Warrants (Bons de Souscription d'Actions or BSA)

In addition to the RSUs, share options and BSPCE grants, the shareholders of the Parent also authorized the grant of non-employee warrants or *Bons de Souscription d'Actions* ("BSA"), as indicated below:

- Plan A : up to one-eighth (1/8) at the expiration of each quarter following the date of grant, and this during twenty-four (24) months; and at the latest within ten (10) years as from the date of grant.
- Plan B : up to one third (1/3) of the non-employee warrants on the first anniversary of the date of grant; then up to one twelfth (1/12) at the expiration of each quarter following the first anniversary of the beginning of the vesting period, and this during twenty-four (24) months thereafter; and at the latest within ten (10) years as from the date of grant.
- Plan C : up to one-twenty fourth (1/24) at the expiration of each month following the date of grant, and this during twenty-four (24) months, and at the latest within ten (10) years as from the date of grant.
- Plan D (member of the advisory board) : up to one-twenty fourth (1/24) at the expiration of each month following the date of grant, and this during twenty-four (24) months; and at the latest within ten (10) years as from the date of grant.
- Plan D (not member of the advisory board): one-third (1/3) at the date of grant; one third (1/3) at the first anniversary of the date of grant; one third (1/3) at the second anniversary of the date of grant; and at the latest within ten (10) years as from the date of grant.
- Plans E, F, G, H and I: up to one fourth (1/4) of the non-employee warrants on the first anniversary of the date of grant; up to one-sixteenth (1/16) at the expiration of each quarter following the first anniversary of the date of grant, and this during thirty-six (36) months thereafter; and at the latest within ten (10) years from the date of grant.

Upon exercise of the non-employee warrants, we offer settlement of the warrants in newly issued ordinary shares of the Parent.

Details of Non-Employee Warrants

	Plan A	Plan B	Plan C	Plan D	Plan E	Plan F	Plan G	Plan H	Plan I
Dates of grant (Boards of Directors)	November 17, 2009	March 11, 2010	November 16, 2010 - September 21, 2011	October 25, 2012 - March 6, 2013	March 19, 2015 - October 29, 2015	April 20, 2016 - March 1, 2017	July 27, 2017 - October 26, 2017	October 25, 2018	October 24, 2019
Vesting period	2 years	3 years	2 years	2 years	1 - 4 years	1 - 4 years	1 - 4 years	1 - 4 years	1 - 4 years
Contractual life	10 years	10 years	10 years	10 years	10 years	10 years	10 years	10 years	10 years
Number of warrants granted	231,792	277,200	192,000	125,784	38,070	59,480	46,465	125,000	105,680
Share entitlement per warrant	1	1	1	1	1	1	1	1	1
Share warrant price	€0.02	€0.07 - €0.11	€0.04 - €0.30	€0.43 - €0.48	€9.98 - €16.82	€13.89 - €17.44	€13.88 - €17.55	€ 6.91	€ 6.81
Exercise price	€0.70	€0.70	€0.70 - €5.95	€8.28 - €9.65	€35.18 - €41.02	€33.98 - €43.42	€35.80 - €44.37	€ 19.71	€ 17.44
Valuation method	Binomial method								
Grant date share fair value	€0.20	€0.70	€0.70 - €4.98	€6.43 - €9.65	€35.18 - €41.02	€33.98 - €44.33	€35.80 - €44.37	€ 19.71	€ 17.44
Expected volatility ⁽¹⁾	55.7%	55.2%	53.5% - 55.0%	50.0% - 50.2%	39.9%	40.6% - 40.9%	41.0% - 41.3%	40.7%	37.2 %
Discount rate ⁽²⁾	3.58%	3.44%	2.62% - 3.38%	2.13% - 2.27%	0% - 0.52%	0.10% - 0.66%	0.54% - 0.60%	0.6%	(0.2)%
Performance conditions	No	Yes (A)	No	No	No	No	No	No	No
Fair value per warrant	€0.05	€0.33 - €0.38	€0.40 - €2.58	€2.85 - €4.98	€9.98 - €16.82	€13.89 - €14.55	€13.88 - €17.55	€ 6.91	€ 6.81

⁽¹⁾ Based on similar listed entities.

⁽²⁾ Based on Obligations Assimilables du Trésor, i.e. French government bonds with a ten-year maturity (“TEC 10 OAT floating-rate bonds”).

(A) All the performance conditions were achieved during the period ended December 31, 2010.

Changes in Number of Non-Employee Warrants

Balance at January 1, 2017	188,125
Granted	57,290
Exercised	(59,139)
Forfeited	
Balance at December 31, 2017	186,276
Granted	125,000
Exercised	—
Forfeited	(19,606)
Balance at December 31, 2018	291,670
Granted	105,680
Exercised	—
Forfeited	(33,583)
Balance at December 31, 2019	363,767

Breakdown of the Closing Balance

	Non-employee warrants
Balance at December 31, 2017	
Number outstanding	186,276
Weighted-average exercise price	€ 23.93
Number exercisable	86,385
Weighted-average exercise price	€ 15.86
Weighted-average remaining contractual life	7.6 years
Balance at December 31, 2018	
Number outstanding	291,670
Weighted-average exercise price	€ 13.02
Number exercisable	108,780
Weighted-average exercise price	€ 18.95
Weighted-average remaining contractual life	7.9 years
Balance at December 31, 2019	
Number outstanding	363,767
Weighted-average exercise price	€ 14.83
Number exercisable	156,604
Weighted-average exercise price	€ 17.52
Weighted-average remaining contractual life	7.6 years

Reconciliation with the Consolidated Statements of Income

	Balance for the year ended December 31, 2017				Balance for the year ended December 31, 2018				Balance for the year ended December 31, 2019			
	R&D	S&O	G&A	Total	R&D	S&O	G&A	Total	R&D	S&O	G&A	Total
RSUs	(19,377)	(30,753)	(13,295)	(63,425)	(20,499)	(27,025)	(12,179)	(59,703)	(9,742)	(17,282)	(11,109)	(38,133)
Share options / BSPCE	(1,635)	22	(4,870)	(6,483)	(860)	(1,616)	(2,938)	(5,414)	422	398	(2,300)	(1,480)
Plan 5	—	—	—	—	—	—	—	—	—	—	—	—
Plan 6	(7)	1	(15)	(21)	—	—	—	—	—	—	—	—
Plan 7	(52)	224	(35)	137	(2)	(1)	(1)	(4)	—	—	—	—
Plan 8	(1,085)	186	(2,883)	(3,782)	169	(553)	(493)	(877)	131	90	(187)	34
Plan 9	(491)	(389)	(1,937)	(2,817)	(495)	(461)	(902)	(1,858)	202	258	(314)	146
Plan 10	—	—	—	—	(532)	(601)	(1,485)	(2,618)	89	178	(1,454)	(1,187)
Plan 11	—	—	—	—	—	—	(57)	(57)	—	(128)	(269)	(397)
Plan 12	—	—	—	—	—	—	—	—	—	—	(76)	(76)
Total share-based compensation	(21,012)	(30,731)	(18,165)	(69,908)	(21,359)	(28,641)	(15,117)	(65,117)	(9,320)	(16,884)	(13,409)	(39,613)
BSAs	—	—	(1,704)	(1,704)	—	—	(1,483)	(1,483)	—	—	(1,386)	(1,386)
Total equity awards compensation expense	\$ (21,012)	\$ (30,731)	\$ (19,869)	\$ (71,612)	\$ (21,359)	\$ (28,641)	\$ (16,600)	\$ (66,600)	\$ (9,320)	\$ (16,884)	\$ (14,795)	\$ (40,999)

Note 21. Financial Income and Expenses

The Consolidated Statements of Income line item “Financial income (expense)” can be broken down as follows:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Financial income from cash equivalents	\$ 883	\$ 1,055	\$ 1,528
Interest and fees	(2,856)	(2,107)	(2,383)
<i>Interest on debt</i>	(2,459)	(1,796)	(1,756)
<i>Fees</i>	(397)	(311)	(627)
Foreign exchange (loss) gain	(7,495)	(3,945)	(4,425)
Other financial expense	(66)	(87)	(469)
Total financial income (expense)	<u>\$ (9,534)</u>	<u>\$ (5,084)</u>	<u>\$ (5,749)</u>

The \$5.7 million financial expense for the period ended December 31, 2019 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available RCF financing and the recognition of a negative impact of foreign exchange reevaluations net of related hedging. At December 31, 2019, our exposure to foreign currency risk was centralized at Criteo S.A. and hedged using foreign currency swaps or forward purchases or sales of foreign currencies.

The \$5.1 million financial expense for the period ended December 31, 2018 was mainly driven by the non-utilization costs and upfront fees amortization incurred as part of our available RCF financing. The intra-group position between Criteo S.A. and its U.S subsidiary in the context of the funding of the Hooklogic acquisition is qualified as a net investment in a foreign operation from February 2018 and no longer requires hedging, resulting in reduced costs compared to the same period ended December 31, 2018.

Note 22. Income Taxes

Breakdown of Income Taxes

The Consolidated Statements of Income line item “Provision for income taxes” can be broken down as follows:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Current income tax	\$ (44,920)	\$ (54,301)	\$ (24,078)
France	(29,193)	(37,223)	(8,410)
International	(15,727)	(17,078)	(15,668)
Net change in deferred taxes	13,269	8,157	(15,418)
France	(1,080)	11,155	(14,109)
International	14,349	(2,998)	(1,309)
Provision for income tax	\$ (31,651)	\$ (46,144)	\$ (39,496)

As mentioned in Note 1 (Principles and Accounting Methods), the French Research Tax Credit is not included in the line item “Provision for income taxes” but is deducted from “Research and development expenses” (see Note 19 - Allocation of Personnel Expenses) unlike the U.S. Research Tax Credit for an amount of \$4.6 million, \$6.4 million and \$5.3 million and for the year ended December 31, 2017, 2018 and 2019, respectively. French business tax, CVAE, is included in the current tax balance for an amount of \$5.5 million, \$5.9 million and \$5.5 million, for the years ended December 31, 2017, 2018 and 2019, respectively.

Income before taxes included income from France of \$150.7 million, \$130.7 million and \$122.7 million for the periods ended December 31, 2017, 2018 and 2019 respectively. Income before taxes from countries outside of France totaled \$(22.4) million, \$11.3 million and \$12.8 million for the periods ended December 31, 2017, 2018 and 2019, respectively.

Reconciliation between the Effective and Nominal Tax Expense

The following table shows the reconciliation between the effective and nominal tax expense at the nominal standard French rate of 34.43% (excluding additional contributions):

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Income before taxes	\$ 128,310	\$ 142,023	\$ 135,465
Theoretical group tax-rates	34.43%	34.43%	34.43%
Nominal tax expense	<u>(44,177)</u>	<u>(48,899)</u>	<u>(46,641)</u>
Increase / decrease in tax expense arising from:			
Research tax credit ⁽¹⁾	6,829	10,211	10,851
Net effect of shared-based compensation ⁽²⁾	(605)	(17,674)	(13,432)
BEAT waiver election ⁽³⁾	—	—	(15,962)
Other permanent differences ⁽⁴⁾	(5,717)	(11,982)	(7,667)
Non recognition of deferred tax assets related to tax losses and temporary differences ⁽⁵⁾	(14,356)	(11,664)	(2,713)
Utilization or recognition of previously unrecognized tax losses ⁽⁶⁾	4,888	4,461	20,636
French CVAE included in income taxes	(2,867)	(3,849)	(3,632)
Special tax deductions ⁽⁷⁾	29,410	38,577	15,946
Effect of different tax rates	(6,667)	(377)	5,441
Other differences	1,611	(4,948)	(2,323)
Effective tax expense	<u>\$ (31,651)</u>	<u>\$ (46,144)</u>	<u>\$ (39,496)</u>
Effective tax rate	24.7%	32.5%	29.2%

Increases and decreases in tax expense are presented applying the theoretical Group tax rate to the concerned tax bases. The impact resulting from the differences between local tax rates and the Group theoretical rate is shown in the “effect of different tax rates.”

- (1) Included income tax effect of the French RTC deducted from the "Research and development expenses" and US Tax credits included in the line "Provision for income taxes".
- (2) While in most countries share-based compensation does not give rise to any tax effect either when granted or when exercised, the United States and the United Kingdom generally permit tax deductions in respect of share-based compensation. The tax deduction generated in the United States and United Kingdom in connection with the number of options exercised during the period was offset by the share-based compensation accounting expense exclusion.
- (3) Final and new proposed regulations on the Base Erosion Anti-abuse Tax (BEAT) have been issued by the United States Treasury and IRS, allowing a waiver election to permanently forgo deductions for all U.S. federal tax purposes, with the result that the foregone deductions will not be treated as a base erosion tax benefit.
- (4) Mainly related to employee costs, depreciation expenses and intercompany transactions.
- (5) Deferred tax assets on which a valuation allowance has been recognized over the periods mainly relate to Criteo Ltd, Criteo Corp, Criteo France, Criteo Singapore Pte. Ltd, Criteo do Brasil LTDA and Criteo Pty.
- (6) In 2019 recognition of previously unrecognized tax losses related to Criteo Corp., mainly generated by the BEAT waiver election implementation.
- (7) Special tax deductions refer to the application of a reduced income tax rate on the majority of the technology royalties income invoiced by the Parent to its subsidiaries.

Deferred Tax Assets and Liabilities

The following table shows the changes in the major sources of deferred tax assets and liabilities:

(in thousands)	Year ended December 31, 2017	Change recognized in profit or loss	Change recognized in OCI	Change in consolidation scope	Other	Currency translation adjustments	Year ended December 31, 2018
Deferred tax assets:							
Net operating loss carryforwards	\$ 37,272	\$ 18,715	\$ —	\$ 1,697	\$(820)	\$ (1,506)	\$ 55,358
Intangibles	(21,662)	5,215	—	(9,150)	—	252	(25,345)
Stock compensation	15,400	(960)	—	(40)	—	—	14,400
Bad debt allowance	3,089	840	—	—	—	(50)	3,879
Personnel-related accruals	6,507	944	—	—	—	(134)	7,317
Other accruals	4,914	(588)	—	—	(44)	(381)	3,901
Projected benefit obligation	1,774	612	(425)	34	(2)	(86)	1,907
Financial instruments	(1,776)	1,145	—	—	(1)	46	(586)
Other	12,273	(7,694)	—	(14)	882	32	5,479
Valuation allowance	(35,067)	(10,072)	107	562	(13)	1,297	(43,186)
Net Deferred Income Taxes	22,724	8,157	(318)	(6,911)	2	(530)	23,124

On December 22, 2017, the 2017 Tax Cuts and Jobs Act was enacted into law and the new legislation contains several key tax provisions that affected us, including a reduction of the federal income tax rate to 21% effective January 1, 2018. As a result of the reduction in the U.S. corporate income tax rate, our U.S. deferred taxes at December 31, 2017, were revalued and recognizes the effect of the tax law changes in the period of enactment.

(in thousands)	Year ended December 31, 2018	Change recognized in profit or loss	Change recognized in OCI	Change in consolidation scope	Other	Currency translation adjustments	Year ended December 31, 2019
Deferred tax assets:							
Net operating loss carryforwards	\$ 55,358	\$ (27,680)	\$ —	\$ (330)	\$ —	\$ (371)	\$ 26,977
Intangibles	(25,345)	7,214	—	—	—	91	(18,040)
Stock compensation	14,400	(3,515)	—	—	—	—	10,885
Bad debt allowance	3,879	(1,871)	—	—	—	(19)	1,989
Personnel-related accruals	7,317	219	—	—	—	(24)	7,512
Other accruals	3,901	290	—	—	—	(74)	4,117
Projected benefit obligation	1,907	575	473	—	—	(32)	2,923
Financial instruments	(586)	1,014	—	—	—	15	443
Other	5,479	(9,472)	—	—	11,105	84	7,196
Valuation allowance	(43,186)	17,808	(310)	330	—	69	(25,289)
Net Deferred Income Taxes	23,124	(15,418)	163	—	11,105	(261)	18,713

Amounts recognized in our Consolidated Financial Statements are calculated at the level of each subsidiary within our Consolidated Financial Statements. As at December 31, 2017, 2018 and 2019, the valuation allowance against net deferred income taxes amounted to \$35.1 million, \$43.2 million and \$25.3 million, which related mainly to Criteo Corp. (\$14.7 million, \$18.6 million and \$12.8 million, respectively), Criteo do Brasil (\$0.0 million, \$3.6 million and \$3.2 million, respectively), Criteo Ltd (\$6.3 million, \$7.2 million and \$7.5 million, respectively), Criteo China (\$6.5 million, \$3.5 million and \$3.3 million, respectively) and Criteo France (\$2.9 million, \$3.9 million and \$(7.7) million, respectively).

Other changes in 2019 mainly relate to the transfer from current tax asset to deferred tax assets of the U.S. research tax credit receivable ("Other").

In accordance with *ASC 740 - Income taxes*, no uncertain tax positions were identified as of December 31, 2019.

The Company has various net operating loss carryforwards in the U.S. and China for \$9.1 million and \$3.2 million, respectively, which begin to expire in 2030 and 2021, respectively. The Company has net operating loss carryforwards in the United Kingdom of \$6.9 million which have no expiration date.

Current tax assets and liabilities

The total amount of current tax assets mainly consists of prepayments of incomes taxes and credits of Criteo SA, Criteo GmbH and Criteo Nordics. The current tax liabilities mainly refer to the corporate tax payables of Criteo K.K and Criteo Korea.

Ongoing tax audits

As a multinational corporation, we are subject to regular review and audit by U.S. federal and state, and foreign tax authorities. Significant uncertainties exist with respect to the amount of our tax liabilities, including those arising from potential challenges with certain positions we have taken. Any unfavorable outcome of such a review or audit could have an adverse impact on our tax rate.

In September 27, 2017, we received a draft notice of proposed adjustment "NOPA" from the Internal Revenue Service ("IRS") audit of Criteo Corp. for the year ended December 31, 2014, confirmed by the definitive notice dated February 8, 2018. Although we disagree with the IRS's position and are currently contesting this issue, the ultimate resolution of this litigation is uncertain and, if resolved in a manner unfavorable to us, could result in an additional federal tax liability of an estimated maximum aggregate amount of approximately \$15.0 million, excluding related fees, interest and penalties.

Note 23. Earnings Per Share

Basic Earnings Per Share

We calculate basic earnings per share by dividing the net income for the period attributable to shareholders of the Parent by the weighted average number of shares outstanding.

	Year Ended December 31,		
	2017	2018	2019
	(in thousands, except share data)		
Net income attributable to shareholders of Criteo S.A.	\$ 91,214	\$ 88,644	\$ 90,745
Weighted average number of shares outstanding (note 16)	65,143,036	66,456,890	64,305,965
Basic earnings per share	\$ 1.40	\$ 1.33	\$ 1.41

Diluted Earnings Per Share

We calculate diluted earnings per share by dividing the net income attributable to shareholders of the Parent by the weighted average number of shares outstanding plus any potentially dilutive shares not yet issued from share-based compensation plans (see note 19). There were no other potentially dilutive instruments outstanding as of December 31, 2017, 2018 and 2019. Consequently all potential dilutive effects from shares are considered.

For each period presented, a contract to issue a certain number of shares (i.e. share option, share warrant, restricted share award or BSPCE contracts) is assessed as potentially dilutive, if it is “in the money” (i.e., the exercise or settlement price is inferior to the average market price).

	Year Ended December 31,		
	2017	2018	2019
	(in thousands, except share data)		
Net income attributable to shareholders of Criteo S.A.	\$ 91,214	\$ 88,644	\$ 90,745
Weighted average number of shares outstanding of Criteo S.A.	65,143,036	66,456,890	64,305,965
Dilutive effect of :			
Restricted share awards	1,401,957	786,932	978,521
Share options and BSPCE	1,239,149	382,512	279,270
Share warrants	67,829	36,570	34,832
Weighted average number of shares outstanding used to determine diluted earnings per share	67,851,971	67,662,904	65,598,588
Diluted earnings per share	\$ 1.34	\$ 1.31	\$ 1.38

The weighted average number of securities that were anti-dilutive for diluted EPS for the periods presented but which could potentially dilute EPS in the future are as follows:

	Year Ended December 31,		
	2017	2018	2019
Restricted share awards	758,859	1,464,145	1,120,439
Share options and BSPCE	272,146	40,573	142,380
Share warrants	—	—	—
Weighted average number of anti-dilutive securities excluded from diluted earnings per share	1,031,005	1,504,718	1,262,819

Note 24. Commitments and contingencies

Purchase Obligations

As of December 31, 2019, we had \$6.8 million of other non-cancellable contractual obligations, primarily related to software licenses, maintenance and \$1.0 million bandwidth for our servers.

Revolving Credit Facilities, Credit Lines Facilities and Bank Overdrafts

As mentioned in Note 12, we are party to one RCF with a syndicate of banks which allow us to draw up to €350.0 million (\$393.2 million).

We are also party to short-term credit lines and overdraft facilities with HSBC plc, BNP Paribas and LCL. We are authorized to draw up to a maximum of €21.5 million (\$24.2 million) in the aggregate under the short-term credit lines and overdraft facilities. As of December 31, 2019, we had not drawn on any of these facilities. Any loans or overdraft under these short-term facilities bear interest based on the one month EURIBOR rate or three month EURIBOR rate. As these facilities are exclusively short-term credit and overdraft facilities, our banks have the ability to terminate such facilities on short notice.

Contingencies

From time to time we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, results of operations, financial condition or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Note 25. Related Parties

During its meeting on December 17, 2015, the Board of Directors decided to separate the functions of Chairman of the Board and Chief Executive Officer. Effective January 1, 2016, Jean-Baptiste Rudelle became Executive Chairman and Eric Eichmann was appointed Chief Executive Officer.

On March 1, 2017, Mollie Spilman, Chief Operating Officer, and Dan Teodosiu, Chief Technical Officer were appointed Executive Officers.

On April 25, 2018, the Board appointed Jean-Baptiste Rudelle, the Executive Chairman of Criteo S.A., as the Company's Chairman and Chief Executive Officer.

On June 19, 2018 Criteo S.A. entered into a transition and separation agreement with Mr. Eric Eichmann, the Company's former Chief Executive Officer, pursuant to which Mr. Eichmann's Management Agreement with the Company has been terminated, effective as of April 25, 2018 and Mr. Eichmann continued employment with the Company in a non-executive capacity as advisor to the Chief Executive Officer to assist with transition duties from April 25, 2018 to August 31, 2018.

On July 5, 2019, Mollie Spilman resigned as Chief Operating Officer.

On July 26, 2019, Dan Teodosiu resigned as Chief Technical Officer with effect from September 30, 2019, replaced by Diarmuid Gill.

On November 25, 2019 the Board appointed Megan Clarcken as the Company's Chief Executive Officer, Jean-Baptiste Rudelle became Chairman and remains Chairman of the Board of directors.

The Executive Officers as of December 31, 2019 were:

- Jean-Baptiste Rudelle - Chairman
- Megan Clarcken - Chief Executive Officer
- Benoit Fouilland - Chief Financial Officer
- Ryan Damon - General Counsel and Corporate Secretary

Total compensation for the Executive Officers, including social contributions, is summarized in the following table:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Short-term benefits ⁽¹⁾	\$ (3,345)	\$ (3,150)	\$ (3,830)
Long-term benefits ⁽²⁾	(130)	(47)	(44)
Shared-based compensation	(11,802)	(8,016)	(4,605)
Total	\$ (15,277)	\$ (11,213)	\$ (8,479)

⁽¹⁾ wages, bonuses and other compensations

⁽²⁾ pension defined benefit plan

For the year ended December 31, 2019, 2018 and 2017, there were no material related party transactions.

Note 26. Breakdown of Revenue and Non-Current Assets by Geographical Areas

The Company operates in the following three geographical markets:

- Americas: North and South America;
- EMEA: Europe, Middle-East and Africa; and
- Asia-Pacific.

The following tables disclose our consolidated revenue for each geographical area for each of the reported periods. Revenue by geographical area is based on the location of advertisers' campaigns.

	Americas	EMEA	Asia-Pacific	Total
	(in thousands)			
December 31, 2017	\$ 990,424	\$ 808,961	\$ 497,307	\$ 2,296,692
December 31, 2018	954,073	839,825	506,416	2,300,314
December 31, 2019	\$ 952,154	\$ 806,197	\$ 503,165	\$ 2,261,516

Revenue generated in France amounted to \$149.6 million, \$153.3 million and \$144.3 million for the periods ended December 31, 2017, 2018 and 2019, respectively.

Revenue generated in other significant countries where we operate is presented in the following table:

	Year Ended December 31,		
	2017	2018	2019
	(in thousands)		
Americas			
United States	\$ 869,004	\$ 848,378	\$ 861,099
EMEA			
Germany	183,297	203,020	200,025
United Kingdom	115,226	97,849	88,928
Asia-Pacific			
Japan	\$ 355,338	\$ 351,441	\$ 342,298

Other Information

For each reported period, non-current assets (corresponding to the net book value of tangible and intangible assets) are presented in the table below. The geographical information results from the locations of legal entities.

	Holding	Americas	Of which United States	EMEA	Asia-Pacific	Of which Japan	Singapore	Total
	(in thousands)							
December 31, 2018	\$ 123,388	\$ 125,654	\$ 125,312	\$ 27,898	\$ 19,109	\$ 11,630	\$ 2,992	\$ 296,049
December 31, 2019	\$ 136,621	\$ 104,389	\$ 100,107	\$ 20,336	\$ 19,701	\$ 9,617	\$ 5,970	\$ 281,047

Note 27. Subsequent Events

As of December 31, 2019, the Company conducted its annual goodwill impairment test, based on a qualitative and quantitative assessment. The test concluded that no impairment had occurred (Refer to “Goodwill” in Note 9). Since December 31, 2019, the price of the Company’s common stock has declined.

A sustained decrease in the price of the Company’s common stock is one of the qualitative factors to be considered as part of an impairment test when evaluating whether events or changes in circumstances may indicate that it is more likely than not that a potential goodwill impairment exists. The Company will continue monitoring the analysis of the qualitative and quantitative factors used as a basis for the goodwill impairment test during fiscal year 2020.

The Company evaluated all other subsequent events that occurred after December 31, 2019 through the date of issuance of the consolidated financial statements and determined there are no significant events that require adjustments or disclosure.