APPLOVIN

2022

Annual Report

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2022

OR

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

For transition period from to

Commission File Number 001-40325

AppLovin Corporation

(Exact name of registrant as specified in its charter)

Delaware	**45-3264542**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1100 Page Mill Road
Palo Alto, California 94304
(Address of registrant's principal executive offices, including zip code)
(800) 839-9646
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Class A common stock, par value $0.00003 per share	APP	The Nasdaq Stock Market LLC

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

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

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

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

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

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

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

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

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

The aggregate market value of the registrant’s voting and non-voting common equity held by non-affiliates of the registrant on June 30, 2022, the last business day of its most recently completed second fiscal quarter, was $7.50 billion based on the closing sales price of the registrant’s Class A common stock on that date. Shares of the registrant's Class A common stock and Class B common stock held by each executive officer and director and by each person who may be deemed to be an affiliate of the registrant have been excluded from this computation. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 22, 2023, the number of shares of the registrant's Class A common stock outstanding was 305,240,598 and the number of shares of the registrant's Class B common stock outstanding was 71,162,622. No shares of the registrant’s Class C common stock were outstanding as of February 22, 2023.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s Definitive Proxy Statement for the 2023 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such Definitive Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of the registrant’s fiscal year ended December 31, 2022.

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NOTE ABOUT FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential,” or “continue” or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans, or intentions. Forward-looking statements contained in this Annual Report on Form 10-K include statements about:

- our future financial performance, including our expectations regarding our revenue, cost of revenue, and operating expenses, and our ability to achieve or maintain future profitability;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- the demand for our AppLovin Software Platform and AppLovin Apps;
- our ability to attract and retain clients and users;
- our ability to develop new products, features, and enhancements for our AppLovin Core Technologies and AppLovin Software Platform and to launch or acquire new AppLovin Apps and successfully monetize them;
- our ability to compete with existing and new competitors in existing and new markets and offerings;
- our ability to successfully acquire and integrate companies and assets and to expand and diversify our operations through strategic acquisitions and partnerships;
- our ability to maintain the security and availability of our AppLovin Core Technologies, AppLovin Software Platform, and AppLovin Apps;
- our expectations regarding the effects of existing and developing laws and regulations, including with respect to taxation and privacy and data protection;
- our ability to manage risk associated with our business;
- our expectations regarding new and evolving markets;
- our ability to develop and protect our brand;
- our expectations and management of future growth;
- our expectations concerning relationships with third parties;
- our ability to attract and retain employees and key personnel;
- our expectations regarding our share repurchase program;
- our expectations regarding the impact of COVID-19, the macroeconomic environment, including rising inflation and interest rates, and the war in Ukraine;
- our ability to maintain, protect and enhance our intellectual property; and
- the increased expenses associated with being a public company.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Annual Report on Form 10-K.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Annual Report on Form 10-K primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations, and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties, and other factors, including those described in the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Annual Report on Form 10-K. We cannot assure you that the results, events, and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events, or circumstances could differ materially from those described in the forward-looking statements.

Neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. Moreover, the forward-looking statements made in this Annual Report on Form 10-K relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Annual Report on Form 10-K to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, partnerships, mergers, dispositions, joint ventures, or investments we may make.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report on Form 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Part I

Item 1. Business

Our mission is to help companies grow their apps and accelerate their business. Our full stack software solution provides advanced tools for mobile app developers to grow their businesses by automating and optimizing the marketing and monetization of their apps. We also operate a portfolio of owned mobile apps and accelerated our market penetration through an active acquisition and partnership strategy. Our scaled business model sits at the nexus of the mobile app ecosystem, which creates a durable competitive advantage that has fueled our clients' success and our strong growth.

AppLovin is critical to the success of mobile app developers, in particular mobile game developers, solving key marketing and monetization challenges. Through our technologies and scaled distribution, developers are able to manage, optimize, and analyze their marketing investments, and improve the monetization of their apps. The key elements of our solutions are delivered through the AppLovin Core Technologies and AppLovin Software Platform:

- *AppLovin Core Technologies*: Our Core Technologies consist of our AXON machine-learning recommendation engine, our App Graph, and our elastic cloud infrastructure. Our App Graph stores and manages anonymized data from hundreds of millions of mobile devices we reach every day, which our AXON engine then leverages to better predict and match users to relevant advertising content.
- *AppLovin Software Platform*: Our Software Platform includes a comprehensive suite of tools for developers to get their mobile apps discovered and downloaded by the right users, optimize return on marketing spend, and maximize monetization of engagement.
    - AppDiscovery, our marketing software solution, is the cornerstone of our Software Platform, augmented by our rapidly growing MAX monetization solution. AppDiscovery is powered by AXON and provides the technology to match advertiser demand with publisher supply through auctions at vast scale and microsecond- level speeds.
    - Adjust is our SaaS mobile marketing platform which allows marketers to make smarter decisions through measurement, attribution, and fraud prevention.
    - MAX utilizes an advanced in-app bidding technology that optimizes the value of a developer's advertising inventory by running a real-time competitive auction, driving more competition, and higher returns for publishers.
    - Wurl is a connected TV (CTV) platform which primarily distributes streaming video for content companies, as well as provides solutions to maximize advertising revenue and attract consumers.

In 2018, given an opportunity to scale our own apps using our Software Platform, insights, and expertise in the mobile app ecosystem, we launched AppLovin Apps (Apps). Today, our Apps consist of a globally diversified portfolio of over 350 free-to-play mobile games across five genres, run by eleven studios including studios that we own (Owned Studios) and others that we partner with (Partner Studios). Our studios generally focus on the development of easy to learn and play games, which appeal to a broad range of demographics, but also develop several games for other genres.

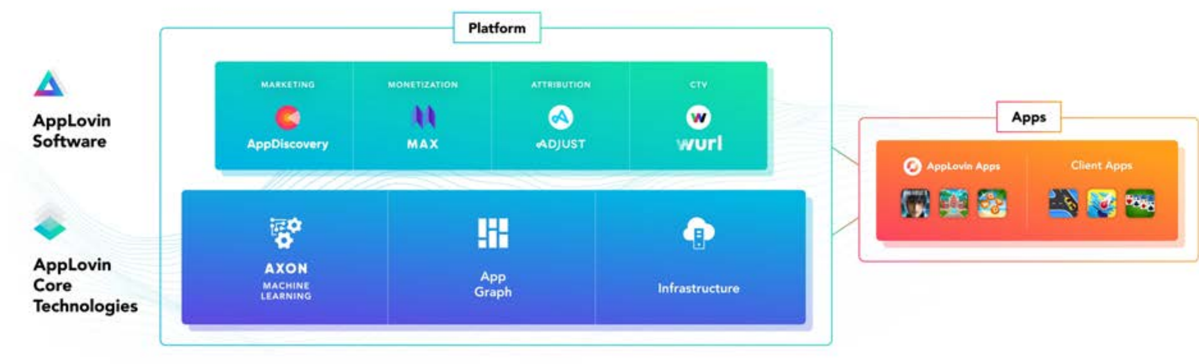
We generate our revenue from our Software Platform and Apps. As more developers use our Software Platform to market and monetize their mobile apps, we gain access to more users and more user engagement further strengthening our scaled distribution. As our distribution grows, we gain better insights for our App Graph and AXON recommendation engine, which then further enhances our Software Platform.

We accelerate our capabilities and enhance our strategic position by actively pursuing acquisitions and partnerships for new technologies and apps. From the beginning of 2018 through 2022, we have invested nearly $4.0 billion across 29 strategic acquisitions and partnerships with app studios, games, and software platforms.

We report our operating results through two reportable segments: Software Platform and Apps. These segments align with how our chief operating decision maker allocates resources and assesses performance of our business. The amount of revenue derived from our two segments and other relevant data for the years ended December 31, 2022, 2021 and 2020. For additional information, see Note 14 to the Company's consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Our Core Technologies, Software Platform and Apps

We have built and invested in our Core Technologies and Software Platform, which primarily focus on expanding the mobile app ecosystem by solving key developer growth challenges. We deliver value to mobile app developers by helping scale their businesses and maximize their revenue through our marketing and monetization technologies and expertise. Our Core Technologies and Software Platform combine marketing, monetization, and analytics into a single unified technology stack.



AppLovin Core Technologies

Our Core Technologies are our foundational technology infrastructure, which powers our Software Platform. Our Core Technologies consist of our AXON machine-learning recommendation engine, our App Graph data management layer, and our elastic cloud infrastructure. Our Core Technologies catalog and consolidate interactions every day into our proprietary App Graph. AXON receives information from our App Graph and uses its machine-learning algorithms to match each user to relevant advertising content, driving better engagement and monetization.

Our flexible, robust cloud infrastructure is the backbone of our Core Technologies. This proprietary system allows us to operate at massive scale and process significant data while maintaining a high degree of flexibility, so that we may keep pace with the ever-evolving needs of our customers. Our globally distributed data infrastructure ensures we are able to connect with devices worldwide and process aggregate user activity across our Software Platform.

AppLovin Software Platform

Our Software Platform provides a comprehensive suite of tools for developers to grow their businesses by automating and optimizing the marketing and monetization of their apps. This suite is primarily made up of three key solutions plus the addition of Wurl, which we acquired in April 2022:

- ***AppDiscovery*** is our marketing software solution, which matches advertiser demand with publisher supply through auctions at vast scale and microsecond-level speeds. AppDiscovery is powered by our AXON machine-learning recommendation engine with predictive algorithms that enable developers to match their apps to users that are more likely to download them.
- ***Adjust*** is an analytics platform that helps marketers grow their mobile apps with solutions for measuring and optimizing campaigns and protecting user data. Adjust powers thousands of apps with built-in intelligence and automation, backed by responsive global customer support.
- ***MAX*** is our in-app bidding software that optimizes the value of an app's advertising inventory by running a real-time competitive auction, driving more competition and higher returns for publishers. Many developers that integrate MAX have experienced a measurable increase in their average revenue per daily active user over traditional monetization tools and save countless hours because they are able to automate manual monetization work through its advanced feature set.
- ***Wurl*** is a connected TV (CTV) platform which primarily distributes streaming video for content companies, as well as provides solutions to maximize advertising revenue and attract consumers.

Our Software Platform is delivered through an integrated and seamless user interface, allowing developers to accelerate their revenue opportunities and reduce the time they spend on marketing and monetization.

AppLovin Apps

Our Apps consist of a globally diversified portfolio of over 350 free-to-play mobile games run by eleven studios with a deep bench of talented developers. Our diversified portfolio covers five gaming genres, the most frequent of which is casual games, and appeals to a broad global audience across different ages, genders, and locations. The strategy of our studios is to allow developers to focus on creating great Apps, while leveraging our Software Platform and expertise to unlock the potential of those Apps. Our Owned Studios and Partner Studios utilize our Software Platform to market and monetize our Apps. When using our Software Platform, our Apps have an economic advantage, which benefits our business as a whole.

Early in 2022, given the scale reached by our Software Platform solutions, in particular AppDiscovery and MAX, we determined we no longer required access to a first-party portfolio of Apps and therefore commenced a strategic review of our Apps. We are continuing the optimization of our Apps portfolio and its cost structure, focusing on how to best optimize each of those asset's contribution to our overall financial performance. This review has resulted in the divestiture or closure of certain studios, a reduction of headcount, restructuring of earn out arrangements, and other changes to our Apps portfolio, such as restructuring of certain assets or choosing to make changes to optimize the cost structure of certain Apps rather than investing in revenue growth. While we believe we have made substantial progress on this review, we may take similar actions in the future. We will continue to manage our Apps portfolio for financial return, including investing for growth through new game launches, while remaining open to evaluating opportunities for the retention, restructure, or sale of assets in the future.

Our Strategic Acquisitions and Partnerships

We have accelerated our technical capabilities, strategic positioning, and growth through strategic acquisitions and partnerships. We have developed a proven and repeatable process for acquiring sophisticated technologies that enhances our Core Technologies and Software Platform and for selecting and scaling our global Apps portfolio. Our business sits at the nexus of the mobile app ecosystem, which gives us deep insights into potential acquisitions and partnerships. Additionally, as a first-hand participant in the mobile app ecosystem, we have developed a strong relationship with other participants, allowing us to more easily identify and enter into partnerships or acquire companies and technologies. Our acquisitions and partnerships include investments in software, such as our acquisitions of Adjust, MAX, MoPub, Wurl, and SafeDK, and game studios, such as our acquisition of PeopleFun and partnership with Belka Games. From the beginning of 2018 through 2022, we have invested nearly $4.0 billion across 29 strategic acquisitions and partnerships with app studios, games, and software platforms.

Benefits to Mobile App Developers

We enable mobile app developers to:

- **Reach and attract users at scale.** Our Software Platform reaches millions of users per day, enabling developers to target and find the right users for their apps worldwide. Developers are able to set their user acquisition and revenue goals to target the most relevant, highest value users.
- **Maximize monetization of engagement.** Developers use our Software Platform to generate incremental revenue by maximizing the monetization of their mobile app ad inventory. Our tools operate at nearly instantaneous speeds and at vast scale to enhance monetization for developers while preserving the end user experience.
- **Leverage proprietary data and insights.** Developers benefit from accessing comprehensive real-time insights through our customized user dashboards, helping them optimize campaigns, improve user engagement, and manage their return on investment.
- **Automate time consuming and manual processes.** Our Software Platform automates marketing and monetization, allowing developers to focus on improving their apps rather than managing complex go-to-market processes manually.
- **Seamlessly adapt to industry innovation.** Our cloud-based Core Technologies and Software Platform are continuously updated as the mobile app ecosystem evolves. Developers on our Software Platform benefit from this ongoing advancement and optimization, and are able to rapidly adapt to industry changes in marketing and monetization without losing focus on mobile app creation.

Our Strategy for Growth

We have a comprehensive strategy to continue our growth and further enhance our market position in the mobile app ecosystem.

- **Attracting and retaining the best talent.** We intend to continue to invest in attracting and retaining talent who share our values and will help drive our future growth.
- **Existing market expansion.** We have an attractive market opportunity within our mobile app segments and will continue to invest across our Core Technologies, Software Platform, and Apps.
- **Enhance and extend machine-learning platform technologies.** As we increase our scale and reach, we benefit from compounding improvements to our AXON machine-learning recommendation engine, which in turn improves the efficacy and growth of our Software Platform solutions.

- **Optimize AppLovin Apps.** As the operational optimization of our AppLovin Apps portfolio nears completion, we continue to make appropriate user acquisition investments, use live-ops to enhance engagement and monetization of our Apps, leverage internal resources across our subsidiaries and studios and launch new titles, while remaining open to evaluating opportunities for the retention, restructure, or sale of assets in the future.
- **New market extensions.** We believe our technology and expertise are applicable to other market segments and geographies that we do not currently address:
  - **Expand into other mobile app segments and industries.** Our long-term objective is to provide critical tools to mobile app developers across multiple verticals. We also believe our deep expertise and capabilities will allow us to successfully apply our solutions to tangential sectors, including with mobile OEMs and carriers and the growing CTV industry.
  - **Geographic expansion and industry partnerships.** We have a large international expansion opportunity given only 39% of our total revenue came from outside of the United States in 2022. To expand our reach, we plan to further invest in our sales and marketing to increase penetration among new and existing clients.
- **Pursue accretive strategic acquisitions and partnerships.** Given our proven track record, long-standing relationships with key industry players, and reputation as a partner of choice, we will continue to explore and consider acquisition, partnership, and investment opportunities related to our business or industry.

Our Core Technologies, Software Platform, and Apps

We solve the marketing and monetization challenges facing mobile app developers through our Core Technologies and Software Platform. We help grow the worldwide mobile app ecosystem by enabling developers to scale their businesses while remaining focused on creating and improving their apps. We scale our own Apps by fully utilizing our Software Platform and expert insights, while continuously improving our software for the benefit of all developers.

AppLovin Core Technologies

Our Core Technologies power our client-facing Software Platform and consist of our AXON machine-learning recommendation engine, our App Graph, and a flexible, robust cloud infrastructure. The underlying elastic architecture is managed through multiple cloud providers and our own co-located data centers, handling massive amounts of data while remaining flexible enough to rapidly add new solutions and technology in response to changing market and customer needs. Our Core Technologies process device-level data from millions of devices. Our App Graph stores and manages this anonymized data allowing AXON to then leverage it to better predict and match users to relevant advertising content. These insights fuel our Software Platform, which better matches users to content and create a more personalized experience.

Our Software Platform also enables real-time auctions that optimize the value for each impression, while simultaneously enabling developers to attain an attractive value for each of the impressions from their inventory. The sum total of these mutually reinforcing software elements has created a robust and successful marketing and monetization engine that operates at high scale and speed.

AppLovin Software Platform

Our comprehensive Software Platform enables app developers to automate their mobile app marketing, engagement, and monetization efforts in three core ways. First, we provide marketing technology that allows developers to reach more of the most suitable users with personalized content, in order to increase the number of users who download and engage with their apps. Second, we provide developers with monetization and analytics technology to maximize the value of their inventory by obtaining a high price for each impression. Third, we provide developers a set of capabilities to optimize their apps and help streamline their businesses. We also are now starting to address the CTV advertising market with the acquisition of Wurl.

AppDiscovery

AppDiscovery is a suite of marketing solutions that enables developers to automate, optimize, and manage their marketing efforts. AppDiscovery is powered by machine-learning with predictive algorithms that enable developers to match their apps to users that are more likely to download them. This form of personalized advertising focuses on the end user, enabling the advertisers to find the right users and delivering to users more of what they are likely to be interested in. AppDiscovery leverages our AXON machine-learning recommendation engine to target the right users with the right marketing campaign, at scale. Advertisers not only attract users that download, but also find a high volume of users that stay and engage with their apps for greater retention and ultimately, increased opportunities for better monetization. Revenue from AppDiscovery comprises a vast majority of revenue from our Software Platform.

With AppDiscovery, advertisers can define the framework of their campaigns in the following ways:

- **Reach:** Advertisers identify what they are willing to pay to acquire their target users. Our technology finds the users at that value who are most likely to download and engage with the app.
- **Global scale:** Advertisers can choose to connect with users in different regions around the world, and our technology suggests the best locations based on their parameters.
- **Retain and engage:** Our algorithms automatically adjust based on the likelihood users will engage. Our clients can analyze by retention periods from initial app download onwards, so that advertisers understand the effectiveness of their marketing investments.
- **Targeted returns:** Advertisers set their goals and target return on ad sales and our algorithms adjust cost and campaign specifics to meet them.

AppDiscovery includes the following features:

- **Advanced campaign management:** An interface to create, manage, and automatically optimize campaigns based on return on ad sales goals.
- **Real-time analytics:** An interface to see results and optimize against them with our ROI-based analytics environment.
- **Life-Time-Value (LTV) reporting:** A tool that breaks down campaign results by source and location, allowing advertisers to make real-time, informed decisions about the value and longevity of their campaigns.
- **High quality and quantity creatives:** Advertisers can make and test as many creatives as needed. They also have access to our in-house creative team for expert ad creation and testing strategies.

Adjust

Adjust is our SaaS mobile marketing platform which allows clients to better understand their users' journey while allowing marketers to make smarter decisions through measurement, attribution, and fraud prevention.

MAX

MAX is a suite of monetization solutions that optimize the value of a developer's traffic by running a single unbiased auction in which advertisers bid simultaneously, driving more competition and higher prices for publishers. MAX auctions are more effective than historical tools and approaches because MAX yields more targeted users for advertisers and enables publishers to achieve better prices for each impression. MAX has become the preferred in-app bidding solution for many developers worldwide, helping drive meaningful growth and momentum for MAX.

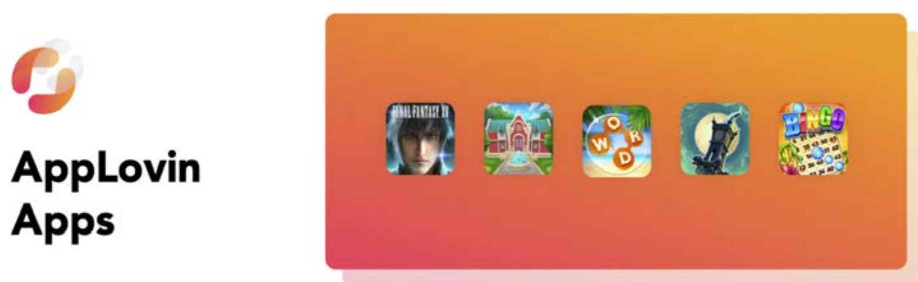
MAX includes the following features:

- **Advanced in-app bidding technology:** MAX's competitive auctions happen in real time with most bidding platforms in the industry bidding simultaneously for developers' inventory at high volume. The competitive global demand helps maximize average revenue per user on each impression with many developers experiencing a measurable increase when moving to MAX.
- **Automated monetization:** MAX saves developers time through its extensive suite of APIs for automation.
- **Ad quality assurance and review:** MAX drives superior user experience with exclusive features that automatically flag risky content to keep developers' brands safe.
- **Powerful insights:** MAX helps developers better understand the LTV for each user and increase revenue to maximize yield for each ad opportunity.

Wurl

Wurl is a connected TV (CTV) platform which primarily distributes streaming video for content companies, as well as provides solutions to maximize advertising revenue and attract consumers.

AppLovin Apps



Today, our Apps consist of a globally diversified portfolio of over 350 free-to-play mobile games across five genres, run by eleven studios located worldwide with a deep bench of talented developers. Our Owned Studios and Partner Studios have developed and published games across a number of genres including: casual, hypercasual, match-three, midcore, and card/casino. Our Apps contribute a highly predictable and diversified stream of revenue which we leverage to invest into acquiring more users and driving continued growth.

A diverse portfolio allows us to reach multiple user demographics and diversify our mobile game development across many different genres. We have a broad audience on our Apps and this allows our Software Platform to connect users to a wide range of content. A large segment of our portfolio is casual games which have a lower risk of development and generally have more predictable revenue streams and return on investments. Casual games can be played a few minutes at a time and appeal to a wide range of users across many highly attractive demographics.

Our Owned Studios and Partner Studios leverage live ops to quickly iterate and increase in-game monetization by optimizing app economies and improving in-game conversion on items and offers. Our Software Platform and expertise provide analytical tools, testing capabilities, and other solutions such as distributed development, competitive insights, localizations resources, creative services to develop and test ads and resource centers to access design and development expertise.

We also provide a set of services that help both our Apps and third-party developers optimize their games and leverage our expertise to better streamline their business operations.

Competition

We operate in a fragmented mobile app ecosystem composed of divisions of large, well-established companies as well as privately-held companies. The large companies in our ecosystem may play multiple different roles given the breadth of their businesses.

- Advertisers typically engage with several advertising platforms and networks to purchase advertisements on mobile games and other mobile apps, looking to optimize their marketing investments. Such advertising platform companies vary in size and include players such as Facebook, Google, Amazon, and Unity Software, as well as various private companies. Several of these platforms, including Facebook, Google, Amazon, and Unity Software, are also our partners and clients.
- There are many companies that develop online and mobile games and other mobile apps. The larger gaming companies in our ecosystem include Activision Blizzard (Microsoft), Tencent, and Zynga (Take-Two Interactive), as well as other public and private companies. Many of these companies are also our partners and clients. We also expect new developers to enter the market and existing companies to allocate more resources to develop and market more mobile games and apps.

We believe that the principal competitive factors in our market are:

- the ability to enhance and improve technologies and offerings;
- knowledge, expertise, and experience in the mobile app ecosystem;
- relationships with third parties in the mobile app ecosystem;
- the ability to reach and target a large number of users;
- the ability to identify and execute on strategic transactions;
- the ability to successfully launch and monetize mobile apps;
- the pricing and perceived value of offerings;
- brand and reputation; and
- ability to expand into new offerings and geographies.

We believe we compete favorably with respect to these factors.

Our Values

Our AppLovin Values capture our company's culture and guide our approach on how we build and grow our business with all stakeholders:

We seek excellence, together. We know that our customers trust us to deliver immersive experiences and best-in-class tools. We take this very seriously, challenging one another to always do better. We are our toughest critics and most loyal fans. While we value individual initiative, we collaborate to drive forward as one team.

We are tenacious, move fast, and deliver. We move quickly and intentionally. Together we set a fast pace with high expectations, and then move beyond. We leverage all of our resources so we do not miss opportunities and find ways to deliver exceptional solutions.

We operate with integrity and intellectual honesty. We may move quickly and deliver, but we do it the right way. We do what is fair and operate with integrity because that is always the best course for customers, partners and all other stakeholders.

We foster entrepreneurship to challenge what is next. Taking risks and embracing challenges are part of our DNA. We empower our employees to try new things, question others, and innovate. This opens doors to new opportunities, which leads to more successful outcomes.

We excel through our culture of equality. Diversity and inclusion are principles that guide how we build our teams, grow our employees, and develop our company. We celebrate different approaches, points of view, and our diverse voices. It connects us with the players, developers, and global communities we serve.

Research and Development

Continued investment in research and development is important to advancing our Core Technologies, Software Platform, and Apps. These advancements are key to attaining our strategic objectives and meeting the evolving needs of our customers. The underlying elastic architecture of our Core Technologies allows us to create, test, and deploy new features rapidly while distributing them globally. We also continue to invest in new and existing Apps.

Our research and development team is working on cutting edge technologies, which allows us to attract top talent globally. As of December 31, 2022, we had approximately 810 employees, or 48% of our total headcount, involved in research and development and related activities. Our research and development organization is based in Palo Alto, California with additional resources around the world.

Intellectual Property

Our success depends in part upon our ability to protect our intellectual property rights with respect to our Core Technologies, Software Platform, and Apps, and to operate without infringing, misappropriating or otherwise violating valid and enforceable third-party intellectual property. We seek to accomplish that objective by establishing intellectual property rights in and protecting those assets through a combination of patents, patent applications, registered and unregistered trademarks, copyrights, trade secrets, license agreements, confidentiality procedures, non-disclosure agreements with third parties, and other contractual measures. Though we rely in part upon these legal and contractual protections, we believe that factors, such as our unique position in the mobile app ecosystem and as one of the largest mobile game publishers, our flywheel advantage, our expertise and determination of our employees, and the functionality and flexibility of our Core Technologies and Software Platform in an ever-evolving industry, are also key contributors to our success.

As of December 31, 2022, we owned the following trademarks related to the business: 49 registered trademarks in the United States, 14 pending trademark applications in the United States, as well as 531 registered trademarks in non-U.S. jurisdictions, and 33 pending trademark applications in various non-U.S. jurisdictions. We also have registered domain names for websites that we use in our business, such as www.applovin.com. Finally, as of December 31, 2022, we owned the following patents related to the business: 56 issued U.S. patents, 1 U.S. patent applications, 10 non-U.S. issued patents, and 15 non-U.S. pending patent applications. Our issued U.S. patents, and any patents that may issue from our pending applications, are scheduled to expire at dates ranging between 2023 and 2041, excluding any additional term for patent term adjustments or extensions. We have acquired a number of patents through our acquisitions that are not critical to the combined business on a post-closing basis. As such, we regularly review our patent portfolio, and have and expect to continue to abandon the prosecution of patents that are not critical to our operations.

We intend to pursue additional intellectual property protection to the extent we believe it would advance our business objectives and maintain our competitive position. Notwithstanding these efforts, there can be no assurance that we will adequately protect our intellectual property or that it will provide any competitive advantage. We take steps to protect our proprietary information, in part, by entering into confidentiality agreements with our employees, consultants, developers, and vendors, and generally limiting access to and distribution of our proprietary information. However, we cannot assure you that the steps taken by us will prevent misappropriation of our proprietary rights. Despite our efforts to protect our intellectual property rights, unauthorized parties may attempt to copy aspects of our Core Technologies, Software Platform, or Apps or obtain and use information that we regard as proprietary. Policing unauthorized use of our proprietary rights is difficult and time consuming. Further, our intellectual property rights may be invalidated, circumvented, or challenged. In addition, the laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the United States, and many foreign countries do not enforce these laws as diligently as government agencies and private parties in the United States. See the section titled “Risk Factors—Risks Related to Intellectual Property” for more information regarding risks related to intellectual property.

Employees and Human Capital Resources

As of December 31, 2022, we had a total of 1,707 employees, comprised of 1,675 full-time and 32 part-time/intern employees, located in 17 countries. As a result of our historical strategic acquisition and partnership activity, we also have access to approximately 2,500 additional team members, a majority of whom are research and development resources and all of whom are located outside of the United States. Our geographic diversification enhances our ability to retain and attract highly skilled talent as well as manage our headcount costs. As of December 31, 2022, approximately 48% of our global employees were located outside of the U.S. and 52% in the U.S. Approximately 51% of our U.S. employees are from one or more diverse groups, including Asian, Hispanic or Latino, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or Two or More Races and approximately 33% of our U.S. employees are female. None of our employees are represented by a labor union. In certain countries in which we operate, we are subject to, and comply with, local labor law requirements, which may automatically make our employees subject to industry-wide collective bargaining agreements. We have not experienced any work stoppages and we consider our relations with our employees as positive.

Our employees are a key reason for our success and essential for our continued growth. We benefit from a distributed global workforce and plan to continue investing in our employees. We provide competitive compensation packages designed to attract and retain talent, as informed by market compensation surveys and data. We have multiple incentive programs throughout the organization designed to provide short-term and long-term incentives, including base cash, equity and/or performance cash awards.

Our culture and industry success further enable us to successfully hire and retain employees aligned with our mission. We were named one of the Hottest Adtech Companies of 2021 by Business Insider, as well as a Certified Great Place to Work in 2021 and 2022. The San Francisco Business Times and Silicon Valley Business Journal awarded us one of the Bay Area’s Best Places to Work in 2019, 2020, 2021 and 2022. Inc. further recognized us as a Best Workplace 2022.

Compliance with Government Regulation

We are subject to various federal, state, and international laws and regulations that affect companies conducting business on mobile platforms, including those relating to privacy, data protection, and the use and protection of data from employees, users and others (including minors), the internet, behavioral advertising, mobile apps, content, advertising and marketing activities, sweepstakes and giveaways, and anti-corruption. Additional laws and regulations relating to these areas likely will be passed in the future, and these or existing laws and regulations may be interpreted or enforced in new or expanded manners, each of which could result in significant limitations on ways we can collect and process data of users, employees and others, communicate with users, and operate our business. New and evolving laws and regulations, and changes in their enforcement and interpretation, may require changes to our Core Technologies, Software Platform, Apps, or business practices, and may significantly increase our compliance costs and otherwise adversely affect our business and results of operations. As our business expands to scale our Software Platform and include additional Apps, and our operations continue to expand internationally, our compliance requirements and costs may increase and we may be subject to increased regulatory scrutiny.

Data Privacy and Security Laws

The data we collect and otherwise process is integral to our Core Technologies, Software Platform and Apps, providing us with insights to improve our developer tools, to optimize app discovery and monetization and to improve our Apps. Our collection, use, receipt, and other processing of data in our business subjects us to numerous U.S. state and federal laws and regulations, and foreign laws and regulations, addressing privacy, data protection and the collection, storing, sharing, use, transfer, disclosure, protection and processing of certain types of data. Such regulations include, for example, the European Union General Data Protection Regulation, the Children's Online Privacy Protection Act, Section 5(a) of the Federal Trade Commission Act, and the California Consumer Privacy Act. We work to comply with, and to help allow developers and ecosystem partners to comply with, applicable laws and regulations relating to privacy, data protection and information security. This helps underpin our strategy of building trust and providing a strong experience to ecosystem partners and clients. See the section titled "Risk Factors—Risks Related to Our Business—We are subject to laws and regulations concerning privacy, information security, data protection, consumer protection, and protection of minors, and these laws and regulations are continually evolving. Our actual or perceived failure to comply with these laws and regulations could adversely affect our business, financial condition, and results of operations" for additional information about our approach to laws and regulations relating to privacy, data protection, and information security.

Corporate Information

We were incorporated under the laws of the state of Delaware in July 2011. Our principal executive offices are located at 1100 Page Mill Road, Palo Alto, California 94304, and our telephone number is (800) 839-9646. Our website address is www.applovin.com. Information contained on, or that can be accessed through, our website does not constitute part of this Annual Report on Form 10-K and inclusions of our website address in this Annual Report on Form 10-K are inactive textual references only. You should not consider information contained on our website to be part of this Annual Report on Form 10-K or in deciding whether to purchase shares of our Class A common stock.

"AppLovin," our logo, and our other registered or common law trademarks, service marks, or trade names appearing in this Annual Report on Form 10-K are the property of AppLovin Corporation. Other trademarks and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are filed with the SEC. Such reports and other information filed by us with the SEC are available free of charge on our website at www.investors.applovin.com when such reports are available on the SEC's website. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov. The information contained on the websites referenced in this Annual Report on Form 10-K is not incorporated by reference into this filing. Further, our references to website URLs are intended to be inactive textual references only.

We announce material information to the public through filings with the SEC, the investor relations page on our website, press releases, public conference calls, webcasts, and our corporate blog at blog.applovin.com in order to achieve broad, non-exclusionary distribution of information to the public and for complying with our disclosure obligations under Regulation FD. We encourage investors, the media, and others to follow the channels listed above and to review the information disclosed through such channels. Any updates to the list of disclosure channels through which we will announce information will be posted on the investor relations page on our website.

ITEM 1A. RISK FACTORS

You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our consolidated financial statements and the related notes, included elsewhere in this Annual Report on Form 10-K before making a decision to invest in our Class A common stock. Our business, financial condition, results of operations, or prospects could also be adversely affected by risks and uncertainties that are not presently known to us or that we currently believe are not material. If any of the risks actually occur, our business, financial condition, results of operations, and prospects could be adversely affected. In that event, the market price of our Class A common stock could decline, and you could lose all or part of your investment.

Risk Factor Summary

Investing in our Class A common stock involves a high degree of risk because our business is subject to numerous risks and uncertainties, as fully described below. The principal factors and uncertainties that make investing in our Class A common stock subject to risk include, among other things:

Business, Operational, and Industry Factors

- our limited operating history and the unpredictability of our results of operations;
- our ability to attract new clients, the loss of clients, or reduction in spend by clients;
- security breaches, improper access to or disclosure of data, or other cyber incidents;
- competition in our industry and our ability to adapt to technological change;
- our ability to address or mitigate technical limitations in our systems and to maintain and scale our technical infrastructure;
- our reliance on certain key employees and our ability to attract, retain, and motivate key personnel;
- risks related to our strategic acquisitions and partnerships, including integration, managing growth, and tax risks;
- risks related to the expansion and diversification of our operations, possibly through future strategic acquisitions and partnerships;
- our ability to realize the value of our ongoing strategic review of our Apps portfolio;
- our ability to maintain relationships with our Partner Studios;
- our reliance on third-party platforms to distribute our AppLovin Apps and collect revenue;
- our ability to launch or acquire new AppLovin Apps and successfully monetize or improve them and existing Apps;
- our ability to retain existing users or add new users cost-effectively, or if users decrease their level of engagement;
- concentration of our revenue sources;
- our recent rapid growth, and ability to manage growth;
- our expansion into new business opportunities and our ability to effectively manage our growing international operations;
- the impact of the geopolitical climate on our operations, including, as a result of war, terrorism, or armed conflict;
- our ability to increase in-app purchases, respond to changes with respect to in-app purchases, and manage the economies in our AppLovin Apps;
- our ability to achieve or maintain profitability with increasing operating expenses;
- our ability to maintain company culture and to establish and maintain awareness of the AppLovin brand;
- our ability to maintain a customer support ecosystem amongst the proliferation of "cheating" programs and scam offers seeking to exploit our mobile games and users;

Legal and Regulatory Matters

- changes in laws and regulations concerning privacy, information security, data protection, consumer protection, advertising, tracking, targeting, and protection of minors;
- changes in U.S. and foreign laws, many of which are unsettled and still developing;
- compliance with governmental anti-bribery, export controls and economic sanctions laws;
- changes in tax laws or tax rulings or exposure to greater than anticipated tax liabilities;

- assertions by taxing authorities that we should have collected or in the future should collect sales and use, value added, or similar taxes;
- liability for content that is distributed through or advertising that is served through our Software Platform or Apps;
- expenses related to legal or regulatory proceedings and settlements;

Intellectual Property Factors

- our ability to protect or enforce our proprietary and intellectual property rights or the costs involved in such enforcement;
- our involvement in intellectual property disputes;
- our use of and compliance with open source software;
- our ability to acquire and maintain licenses to intellectual property;

Financial and Accounting Matters

- our ability to maintain an effective system of disclosure controls and internal control over financial reporting;
- changes to segment reporting as a result of our evolving business;
- our reliance on assumptions and estimates to calculate certain of our key metrics;
- the possibility that we may be required to record a significant charge to earnings if our goodwill becomes impaired;
- substantial indebtedness under our senior secured credit facilities;
- our ability to generate sufficient cash flow to satisfy our significant debt service obligations;
- the availability of additional capital on acceptable terms;
- changes with the London Interbank Offered Rate;

Ownership of our Class A common stock and Governance

- the multi-class structure of our common stock and the Voting Agreement among the Voting Agreement Parties;
- our status as a “controlled company” within the meaning of the Nasdaq corporate governance requirements;
- the effect our multi-class structure may have on the market price of our Class A common stock;
- volatility of the market price of our Class A common stock;
- the possibility that we may not realize the anticipated long-term stockholder value of our share repurchase programs;
- the issuance of additional stock in connection with financings, acquisitions, investments, our equity incentive plans, or otherwise;
- provisions of Delaware law, the Voting Agreement, our amended and restated certificate of incorporation, and our amended and restated bylaws could make a merger, tender offer, or proxy contest difficult; and
- exclusive forum provisions in our amended and restated bylaws.

Risks Related to Our Business and Industry

We have a limited operating history, especially with respect to our AppLovin Apps, which makes it difficult to evaluate our current business and future performance and the risks we may encounter.

Our limited operating history, especially with respect to our AppLovin Apps, which we launched in 2018, may make it difficult to evaluate our current business and our future performance. We have encountered and will continue to encounter risks and difficulties frequently experienced by growing companies in rapidly changing industries, such as the mobile app ecosystem, including our ability to:

- accurately forecast our revenue and plan our operating expenses;
- attract new and retain existing clients using AppLovin Software Platform and users of our Apps;
- successfully compete with current and future competitors, some of whom are also our clients;
- successfully expand our business in existing markets and enter new markets and geographies;
- successfully execute strategic acquisitions and partnerships;
- develop a scalable, high-performance technology infrastructure that can efficiently and reliably handle increased usage, as well as the deployment of new features and services;

- comply with existing and new laws and regulations applicable to our business;
- anticipate and respond to macroeconomic changes and changes in the markets in which we operate;
- establish and maintain our brand and reputation;
- adapt to rapidly evolving trends in the ways businesses and consumers interact with technology;
- effectively manage our rapid growth;
- avoid interruptions or disruptions in our AppLovin Core Technologies, Software Platform, or Apps; and
- hire, integrate, and retain key personnel.

Further, because we have limited historical financial data, including limited data regarding the integration of our strategic acquisitions and partnerships, and operate in a rapidly evolving market, any financial planning and forecasting, including predictions about our future revenue and expenses, may not be as accurate as they would be if we had a longer operating history or operated in a more predictable market. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations. If we fail to address the risks and uncertainties that we face, including those described elsewhere in this “Risk Factors” section, our business, financial condition, and results of operations could be adversely affected.

Our results of operations are likely to fluctuate from period-to-period, which could cause the market price of our Class A common stock to decline.

Our results of operations have fluctuated in the past and are likely to fluctuate significantly from quarter-to-quarter and year-to-year in the future for a variety of reasons, many of which are outside of our control and difficult to predict. As a result, you should not rely upon our historical results of operations as indicators of future performance. Numerous factors can influence our results of operations, including:

- our ability to maintain and grow our client and user bases;
- changes to our Core Technologies, Software Platform, Apps, or other offerings, or the development and introduction of new software or development of new mobile apps by our studios or our competitors;
- changes to the policies or practices of companies or governmental agencies that determine access to third-party platforms, such as the Apple App Store and the Google Play Store, or to our Software Platform, Apps, website, or the internet generally;
- changes to the policies or practices of third-party platforms, such as the Apple App Store and the Google Play Store, including with respect to Apple’s Identifier for Advertisers ("IDFA"), which helps advertisers assess the effectiveness of their advertising efforts, and with respect to transparency regarding data processing;
- the diversification and growth of revenue sources beyond our current Software Platform and Apps;
- our ability to achieve the anticipated synergies from our strategic acquisitions and effectively integrate new assets and businesses acquired by us;
- our ongoing strategic review of our Apps portfolio;
- the actions of our competitors, both with respect to their own offerings and, to the extent such competitors are also our clients, with respect to their use of our Software Platform;
- costs and expenses related to the strategic acquisitions and partnerships, including costs related to integrating mobile gaming studios or other companies that we acquire, as well as costs and expenses related to the development of our Core Technologies, Software Platform, or Apps;
- our ability to achieve or maintain profitability;
- increases in and timing of operating expenses that we may incur to grow and expand our operations and to remain competitive;
- system failures or outages, or actual or perceived breaches of security or privacy, and the costs associated with preventing, responding to, or remediating any such outages or breaches;
- changes in the legislative or regulatory environment, including with respect to privacy and data protection, or actions by governments or regulators, including fines, orders, or consent decrees;
- charges associated with impairment of any assets on our balance sheet or changes in our expected estimated useful life of property and equipment and intangible assets;
- adverse litigation judgments, settlements, or other litigation-related costs and the fees associated with investigating and defending claims;

- the overall tax rate for our business, which may be affected by the mix of income we earn in the United States and in jurisdictions with comparatively lower tax rates;
- the impact of changes in tax laws or judicial or regulatory interpretations of tax laws, which are recorded in the period such laws are enacted or interpretations are issued and may significantly affect the effective tax rate of that period;
- the application of new or changing financial accounting standards or practices; and
- changes in regional or global business or macroeconomic conditions, including as a result of the COVID-19 pandemic, inflation, and rising interest rates, which may impact the other factors described above.

In particular, it is difficult to predict if, when, or how quickly newly-launched software may begin to generate revenue or decline in popularity. Further, we cannot be certain if a new App will become popular amongst users and generate revenue. The success of our business depends in part on our ability to develop and enhance our Core Technologies, Software Platform, and consistently and timely launch new Apps. It is difficult for us to predict with certainty when we will expand our Software Platform suite or launch a new App as we may require longer development schedules or soft launch periods to meet our quality standards and expectations. If our clients do not adopt our new Software Platform offerings, or develop or further invest in their own competing alternatives, or if we are unable to successfully launch or acquire new Apps or maintain or improve existing Apps, our business and results of operations could be adversely affected. Fluctuations in our results of operations may cause such results to fall below our financial guidance or the expectations of analysts or investors, which could cause the market price of our Class A common stock to decline.

The failure to attract new clients, the loss of clients, or a reduction in spending by these clients could adversely affect our business, financial condition, and results of operations.

A significant portion of our revenue is Software Platform Revenue and In-App Advertising (IAA) Revenue from our Apps. Software Platform Revenue is mostly from AppDiscovery, is generated from our advertisers, typically on a performance-based, cost-per-install basis, then shared with our advertising publishers, typically on a cost per impression model. IAA Revenue generated from our Apps comes from advertisers that purchase ad inventory from our diverse portfolio of mobile games. As is common in the mobile app ecosystem and in the advertising industry, our clients do not have long-term advertising commitments with us. Our success depends in part on our ability to satisfy our advertising partners.

Revenue could also be impacted by a number of other factors, including:

- our ability to attract and retain clients;
- our ability to improve the effectiveness and predictability of our advertising and maintain and improve our machine-learning ("ML") engine AXON;
- our ability to maintain or increase advertiser demand and third-party publisher supply, the quantity, or quality of advertisements shown to users, or our pricing of advertisements;
- our ability to continue to increase user access to and engagement with our Apps;
- mobile app changes or inventory management decisions we may make that change the size, format, frequency, or relative prominence of advertisements displayed on our Apps;
- our ability to recruit, train, and retain personnel to support continued growth of our Core Technologies and Software Platform;
- our ability to establish and maintain our brand and reputation;
- loss of market share to our competitors, including if competitors offer lower priced, more integrated, or otherwise more effective products;
- the development and success of technologies designed to block the display of advertisements or block our ad measurement tools, which have in the past impacted and may in the future impact our business, or technologies that make it easier for users to opt out of behavioral targeting;
- the availability, accuracy, utility, and security of analytics and measurement solutions offered by us or third parties that demonstrate the value of our Software Platform to advertisers, developers and publishers, or our ability to further improve such tools;
- government actions or legislative, regulatory, or other legal developments relating to advertising, including developments that may impact our ability to deliver, target, or measure the effectiveness of advertising;
- changes that limit our ability to deliver, target, or measure the effectiveness of advertising, including changes to policies by mobile operating system and third-party platform providers, and the degree to which users opt out of certain types of ad targeting as a result of changes and controls implemented in connection with such policy changes and with the E.U. General Data Protection Regulation (the "GDPR"), ePrivacy Directive, the California Consumer Privacy Rights Act (the "CPRA"), and the Children’s Online Privacy Protection Act (the "COPPA");

- decisions by clients to reduce their advertising due to concerns about legal liability or uncertainty regarding their own legal and compliance obligations, or due to negative publicity, regardless of its accuracy, involving us, our user data practices, advertising metrics or tools, our Software Platform or Apps, or other companies in our industry; and
- the impact of macroeconomic conditions, including the impact of the COVID-19 pandemic and responses thereto, inflation, rising interest rates, the war in Ukraine, and seasonality, whether in the advertising industry in general, or among specific types of advertisers or within particular geographies.

From time to time, certain of these factors have adversely affected our revenue to varying degrees. The occurrence of any of these or other factors in the future could result in a reduction in demand for our Software Platform and use of our Apps, which may reduce the prices we receive for our advertisements or cause clients to stop advertising with us altogether, either of which would adversely affect our business and results of operations. The failure to attract new clients, loss of clients, or reduction in spending by clients could adversely affect our business, financial condition, and results of operations.

Security breaches, improper access to or disclosure of our data or user data, other hacking and phishing attacks on our systems, or other cyber incidents could harm our reputation and adversely affect our business.

The mobile app ecosystem is prone to cyberattacks by third parties seeking unauthorized access to our data or the data of our clients or users or to disrupt our ability to provide service. Our Core Technologies, Software Platform, Apps, and other offerings involve the collection, storage, processing, and transmission of a large amount of data, including personal information, and we and our third-party service providers otherwise store and process information, including our confidential and proprietary business information, and personal information and other information relating to our employees and clients or other third parties. We also store and implement measures designed to secure the source code for our Core Technologies, Software Platform and Apps as they are created. Any failure to prevent or mitigate security breaches or incidents impacting our systems or other systems used in our business, or improper access to or disclosure of our data, including source code, or user data, including personal information, content, or payment information from users, or information from clients or other third parties, that is stored or otherwise processed in our business could result in the unauthorized loss, modification, disclosure, destruction, or other misuse of such data, or unavailability of data or of our Core Technologies, Software Platform, Apps, or other offerings. Any such event, or the perception it has occurred, could adversely affect our business and reputation, damage our operations, result in claims, litigation, or regulatory investigations or enforcement actions, fines, penalties, or other liability or obligations, and diminish our competitive position. In particular, a breach or incident, whether physical, electronic, or otherwise, impacting systems on which source code or other sensitive data are stored could lead to loss, disruption, unavailability, or piracy of, or damage to, our offerings, lost or reduced ability to protect our intellectual property, and diminished competitive position.

Computer malware (including ransomware), viruses, social engineering (predominantly spear phishing attacks or smishing), and general hacking have become more prevalent in the mobile app ecosystem. Some of these have occurred on our systems and otherwise in our business in the past, and we expect will continue to occur in the future. We regularly encounter attempts to create false or undesirable user accounts or take other actions for purposes such as spamming or other objectionable ends. Any actual or attempted breaches, incidents, or attacks may cause disruptions or interruptions to our Core Technologies, Software Platform, Apps, or other offerings, degrade the user experience, impair, disrupt, or interrupt our internal systems and other systems and networks used in our business, or adversely affect our reputation, business, financial condition, and results of operations. Our efforts to protect our data, user data, and information from clients, partners, and other third parties, and to disable or otherwise respond to undesirable activities on our Core Technologies, Software Platform, Apps, or other offerings, may also be unsuccessful due to software bugs or other technical defects, errors, or malfunctions; employee, contractor, vendor, or partner error or malfeasance, including defects or vulnerabilities in information technology systems or offerings; cyberattacks, attacks designed to disrupt systems or facilities, or breaches of physical security of our facilities or technical infrastructure; or other threats that evolve. Additionally, any such breach, incident, attack, malfunction, defect, or vulnerability, or the perception that any of these has occurred, may cause clients or users to lose confidence and trust in our Core Technologies, Software Platform or Apps and otherwise harm our reputation and market position.

In addition, some developers or other business partners, such as those that help us measure the effectiveness of advertisements, may receive or store information provided by us or by our users through mobile or web apps or other means. These third parties may misappropriate our information and engage in unauthorized use of it. If these third parties fail to adopt or adhere to adequate data security practices, or experience a breach of, or other security incident impacting, their networks or systems, our data or our users' data may be lost, destroyed, or improperly accessed, modified, disclosed, or otherwise misused. In such an event, or if such an event is perceived to have occurred, we may suffer damage to our reputation, may have increased costs arising from the restoration or implementation of additional security measures, and we may face claims, demands, investigations, and other proceedings by private parties or governmental actors, and fines, penalties, and other liability or obligations, any of which could adversely affect our business, financial condition, and results of operations. Any theft or unauthorized use or publication of our trade secrets and other confidential business information as a result of such an event could also adversely affect our business, competitive position, and results of operations.

Cyberattacks continue to evolve in sophistication and volume, and may be inherently difficult to detect for long periods of time. Although we have developed systems and processes that are designed to protect our data, user data, and information from our partners; to prevent data loss, disable undesirable accounts and activities on our Core Technologies, Software Platform or Apps; and to prevent and detect security breaches; we cannot assure you that such measures will provide comprehensive security, that we will be able to identify breaches or other incidents or to react to them in a timely manner or that our remediation efforts will be successful. We experience cyberattacks and other security incidents of varying degrees from time to time, and we may incur significant costs in investigating, protecting against, litigating, or remediating such incidents. We may face increased risks of cyberattacks and other security incidents as a result of more employees working remotely, our use of third-party systems designed to enable the transition to a remote workforce introducing security risks and increased cyberattacks, such as phishing attacks by threat actors as a method for targeting personnel. Further, in connection with the war in Ukraine, there may be a heightened risk of potential cyberattacks by state actors or others.

Additionally, our Core Technologies, Software Platform, and other offerings operate in conjunction with, and we are in some cases dependent upon, third-party products, services, and components. Our ability to monitor our third-party service providers' data security is limited, and in any event, attackers may be able to circumvent our third-party service providers' data security measures. There have been and may continue to be significant attacks on certain third-party providers, and we cannot guarantee that our or our third-party providers' systems and networks have not been breached or that they do not contain exploitable defects or bugs that could result in a breach of or disruption to our systems and networks or the systems and networks of third parties that support us and our platform and service. If there is a security vulnerability, error, or other bug in one of these third-party products, services, and components and if there is a security exploit targeting them, we could face increased costs, claims, liability, and additional or new obligations, reduced revenue, and harm to our reputation or competitive position. We and our service providers may be unable to anticipate these techniques, react, remediate or otherwise address any security vulnerability, breach or other security incident in a timely manner, or implement adequate preventative measures.

In addition to our efforts to mitigate cybersecurity risks, we are making significant investments in privacy, safety, security, and content review efforts to combat misuse of our services and user data by third parties. As a result of these efforts, we anticipate that we will discover incidents of misuse of user data or other undesirable activity by third parties. We may not discover all such incidents or activity, whether as a result of our data limitations, the scale of activity on our Core Technologies and Software Platform, challenges related to our personnel working remotely, the re-allocation of resources to other projects, or other factors, and we may be notified of such incidents or activity by users, the media, or other third parties. Such incidents and activities have in the past, and may in the future, include the use or other processing of user data or our systems in a manner inconsistent with our terms, contracts or policies, the existence of false or undesirable user accounts, improper advertising practices, activities that threaten people's safety on- or offline or instances of spamming, scraping, data harvesting, or unsecured datasets. We may also be unsuccessful in our efforts to enforce our policies or otherwise remediate or respond to any such incidents effectively or in a timely manner. Any of the foregoing developments, or any reports of them occurring or the perception that any of them has occurred, could adversely affect user trust and engagement, harm our brand and reputation, require us to change our business practices, result in claims, demands, investigations, and other proceedings by private parties or governmental actors, and fines, penalties, and other liability or obligations, and adversely affect our business, financial condition, and results of operations.

We are subject to a variety of laws and regulations in the United States and abroad relating to cybersecurity and data protection, a number of which provide a private right of action. Many jurisdictions have enacted breach notification obligations, and our agreements with certain customers or partners may require us to notify them in the event of a security breach. Affected users or government authorities could initiate legal or regulatory actions against us in connection with any actual or perceived security breaches or improper access to or disclosure of data, which has occurred in the past and which could cause us to incur significant expense and liability, distract management and technical personnel, and result in orders or consent decrees forcing us to modify our business practices. Such actual or perceived incidents or our efforts to remediate such incidents may also result in a decline in our active user base or engagement levels. We are seeing an increase in inquiries from our partners regarding audit certifications, such as SOC 2, Type II or ISO 27001, which we have not yet achieved. Any of these events could adversely affect our reputation, business, financial condition, or results of operations.

Our insurance coverage may not extend to all types of privacy and data security breaches or other incidents, and it may be insufficient to cover all costs and expenses associated with such incidents. Further, such insurance may not continue to be available to us in the future on economically reasonable terms, or at all, and insurers may deny us coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, including our reputation, financial condition, or results of operations.

The mobile app ecosystem is intensely competitive. If clients or users prefer our competitors' products or services over our own, our business, financial condition, and results of operations could be adversely affected.

We face significant competition in the mobile app ecosystem. We offer a suite of solutions for developers to get their mobile apps discovered and downloaded by the right users, optimize return on marketing spend, and maximize the monetization of their engagement. We collect revenue from clients for fees paid by mobile app advertisers, including developers, that use our Software Platform and from the sale of advertising inventory of our Apps. Advertisers often engage with several advertising platforms and networks to purchase advertisements on mobile apps and developers often engage with multiple tools to market and monetize their apps. Accordingly, we face significant competition from traditional, online, and mobile businesses that provide ad networks and platforms, mobile apps and games, media, and other services for advertisers to reach relevant audiences. We also face competition from providers of developer tools that enable developers to reach their audiences or manage or optimize their advertising campaigns. These companies vary in size and include Facebook, Google, and Unity Software as well as various private companies. Several of these companies, including Facebook, Google, and Unity Software, are also our partners and clients. Additionally, our studios build many of our Apps using the development kits offered by Unity Software. Clients who are also competitors may decide to invest in their own offerings rather than continue to use our Software Platform or advertise on our Apps.

Additionally, we also compete with businesses that develop online and mobile games and other mobile apps, which vary in size and include companies such as Activision Blizzard (expected to be acquired by Microsoft), Tencent, and Zynga (Take-Two Interactive), as well as other public and private companies. Many of these companies are also our partners and clients. As we expand our global operations and mobile app offerings, we increasingly face competition from high-profile companies with significant online presences that may introduce new or expanded offerings, such as Apple, Facebook, Google, Microsoft, and Snap. In addition, other large companies that to date have not actively focused on mobile apps or gaming may decide to develop mobile apps or gaming offerings, such as Amazon's games platform, or partner with other developers. Some of these current and potential competitors have significantly greater resources that can be used to develop, acquire, or brand additional mobile apps or gaming alternatives, and may have more diversified revenue sources than we do and therefore may be less severely affected by changes in consumer preferences, regulations, or other developments that may impact our business or industry.

Further, as there are relatively low barriers to entry to develop and publish a mobile app, we expect new competitors to enter the market and existing competitors to allocate more resources towards developing and marketing competing games and apps. Because our mobile games are free-to-play, our Apps compete primarily on the basis of user experience rather than price. The proliferation of apps makes it difficult for us to differentiate ourselves from our competitors and compete for users and the success of our Apps will depend in part on our Software Platform continuing to provide effective marketing and monetization tools.

We also face competition for advertising spending and for the discretionary spending, leisure time, and attention of our users from game platforms such as personal computer and console games, and other leisure time activities, such as television, movies, music, sports, and the internet. During periods of macroeconomic uncertainty, levels of advertising and discretionary spending have historically decreased and are likely to decrease and therefore this competition may intensify, which has at times harmed and may in the future harm our revenue. In addition, non-game applications for mobile devices, such as social media and messaging, television, movies, music, dating, and sports, have become increasingly popular, making the overall mobile app ecosystem highly fragmented and making it more difficult for any mobile app to differentiate itself. To the extent we explore new business opportunities in the mobile app ecosystem or otherwise, we may also compete with established businesses with more experience in such areas. Our future growth depends in part on the overall health of the mobile app ecosystem and in particular, mobile gaming. Increasing competition could result in decreases in our App users, increased user acquisition costs, lower engagement with our Apps, and loss of key personnel, all of which could adversely affect our business, financial condition, or results of operations.

Some of our current and potential competitors may be domiciled in different countries and subject to political, legal, and regulatory regimes that enable them to compete more effectively than us, particularly outside of the United States. Some of our current and potential competitors may have greater resources, more diversified revenue streams, better technological or data analytics capabilities, or stronger brands or competitive positions in certain product segments, geographic regions, or user demographics than we do. If clients or users prefer our competitors' products or services over our own, or if our competitors are better able to adapt to changes in the preferences of advertisers or users, regulations, or other developments, our business, financial condition, and results of operations could be adversely affected.

The mobile app ecosystem is subject to rapid technological change, and if we do not adapt to, and appropriately allocate our resources among, emerging technologies and business models, our business, financial condition, and results of operations could be adversely affected.

Technology changes rapidly in the mobile app ecosystem. Our future success depends in part on our ability to adapt to trends and to innovate. To attract new clients and users and increase revenue from our current clients and users, we will need to enhance and improve our Core Technologies, Software Platform, and Apps. Enhancements of our existing technology and offerings, and new offerings, may not be introduced in a timely or cost-effective manner and may contain errors or defects.

Our business also currently depends in part on the growth and evolution of the internet, especially mobile internet-enabled devices. The number of people using mobile internet-enabled devices has increased rapidly over time, and we expect that this trend will continue. However, the mobile app ecosystem may not grow in the way we anticipate. We must continually anticipate and adapt to emerging technologies to stay competitive. As the technological infrastructure for internet access improves and evolves, consumers will be presented with more opportunities to access apps and play games on a variety of devices and platforms and to experience other leisure activities that may compete with mobile apps. Forecasting the financial impact of these emerging technologies and business models is inherently uncertain and volatile. If we decide to support a new technology or business model in the future, it may require partnering with a new platform, technology, or business partner, which may be on terms that are less favorable to us than those for traditional technologies or business models.

To invest in a new technology or expand our offerings, we must invest financial resources and management attention. We may invest significant resources in a new offering or in a strategic acquisition or partnership, which could prove unsuccessful or prevent us from directing these resources towards other opportunities. We may never recover the often-substantial up-front costs of developing and marketing emerging technologies or business models, or recover the opportunity cost of diverting management and financial resources. Further, our competitors may adopt an emerging technology or business model more quickly or effectively than we do, creating products that are technologically superior to ours or attract more users than ours.

If, on the other hand, we do not continue to enhance our Core Technologies, Software Platform, or Apps, or do not appropriately allocate our resources amongst opportunities, or we otherwise elect not to pursue new business models that achieve significant commercial success, we may face adverse consequences. For example, we do not currently offer our Apps on all devices or all gaming platforms. If the devices on which our Apps are available decline in popularity or become obsolete faster than anticipated, or if new platforms emerge other than those on which our games are offered, we could experience a decline in revenue and in our number of App users, and we may not achieve the anticipated return on our development efforts. It may take significant time and expenditures to shift product development resources to new technologies, and it may be more difficult to compete against existing products incorporating such technologies. If new technologies render mobile devices obsolete or we are unable to successfully adapt to and appropriately allocate our resources amongst current and new technologies, our business, financial condition, and results of operations could be adversely affected.

Our Core Technologies, Software Platform, and Apps, as well as our internal systems, rely on software and hardware that is highly technical, and any errors, bugs, or vulnerabilities in these systems, or failures to address or mitigate technical limitations in our systems, could adversely affect our business, financial condition, and results of operations.

Our Core Technologies, Software Platform, and Apps, as well as our internal systems, rely on software and hardware that is highly technical and complex. In addition, our Core Technologies, Software Platform, and Apps, as well as our internal systems, depend in part on the ability of such software and hardware to store, retrieve, process, and manage immense amounts of data. The software and hardware on which we rely has contained, and will in the future contain, errors, bugs, or vulnerabilities and our systems are subject to certain technical limitations that may compromise our ability to meet our objectives. Some errors, bugs, or vulnerabilities inherently may be difficult to detect and may only be discovered after the code has been released for external or internal use. Errors, bugs, vulnerabilities, design defects, or technical limitations within the software and hardware on which we rely have in the past led to, and may in the future lead to, outcomes including a negative experience for clients and users who use our offerings, compromised ability of our offerings to perform in a manner consistent with our terms, contracts, or policies, delayed product or App launches or enhancements, targeting, measurement, or billing errors, compromised ability to protect the data of our users and/or our intellectual property, or reductions in our ability to provide some or all of our services. To the extent such errors, bugs, vulnerabilities, or defects impact our Core Technologies or Software Platform or the accuracy of data in any such Core Technology or Software Platform, our clients may become dissatisfied with our offerings, our brand and reputation may be harmed, and we may make operational decisions, such as with respect to our Apps using such Software Platform or any future strategic acquisition, that are based on inaccurate data. Any errors, bugs, vulnerabilities, or defects in our systems or the software and hardware on which we rely, failures to properly address or mitigate the technical limitations in our systems, or associated degradations or interruptions of service or failures to fulfill our commitments to our clients may lead to outcomes including damage to our reputation, increased product engineering expenses, regulatory inquiries, litigation, or liability for fines, damages, or other remedies, any of which could adversely affect our business, financial condition, and results of operations.

Our business depends in part on our ability to maintain and scale our technical infrastructure, and any significant disruption to our Core Technologies, Software Platform, or Apps could damage our reputation, result in a potential loss of engagement, and adversely affect our business, financial condition, and results of operations.

Our reputation and ability to attract and retain our clients and users depends in part on the reliable performance of our Core Technologies, Software Platform, and Apps. We have in the past experienced, and may in the future experience, interruptions in the availability or performance of our offerings from time to time. Our systems may not be adequately designed or may not operate with the reliability and redundancy necessary to avoid performance delays or outages that could be harmful to our business. If our offerings are unavailable when users attempt to access them, or if they do not load as quickly as expected, users may not use our offerings as often in the future, or at all, which could adversely affect our business and results of operations. As we continue to grow, we will need an increasing amount of technical infrastructure, including network capacity and computing power, to continue to satisfy our needs and the needs of our clients and users. It is possible that we may fail to continue to effectively scale and grow our technical infrastructure to accommodate these increased demands, which may adversely affect our user engagement and revenue growth. Additionally, we rely in part on third-party data centers and cloud hosting infrastructure. Our business may be subject to interruptions, delays, or failures resulting from natural disasters and other events outside of our control that impact us or these third-party providers. If such an event were to occur, users may be subject to service disruptions or outages and we may not be able to recover our technical infrastructure and user data in a timely manner to restart or provide our services. If we fail to efficiently scale and manage our infrastructure, or if events disrupt our infrastructure or those of our third-party providers, our business, financial condition, and results of operations could be adversely affected.

Our business is subject to global economic, market, public health, and geopolitical conditions as well as to natural disasters beyond our control and could adversely affect our revenue and results of operations.

General macro-economic conditions, such as inflation, rising interest rates, or a recession or economic slowdown in the United States or internationally, including those resulting from the COVID-19 pandemic, Russia's invasion of Ukraine and other geopolitical issues, could create uncertainty and adversely affect discretionary consumer spending habits and preferences as well as advertising spending. Our revenue is driven in part by discretionary consumer spending habits and preferences, and by advertising spending patterns. Historically, consumer purchasing and advertising spending have each declined during economic downturns and periods of uncertainty regarding future economic prospects or when disposable income or consumer lending is lower. Recently, we have experienced the impacts of the macroeconomic deterioration as advertisers have been more closely managing budgets and reducing overall spend, which has resulted in slowed growth for our Software Platform. Uncertain economic conditions may also adversely affect our clients. As a result, we may be unable to continue to grow in the event of future economic slowdowns. In addition, the economic conditions affecting the financial markets, and uncertainty in global economic conditions may result in a number of adverse effects including a low level of liquidity in domestic and global markets, volatility in credit, equity, and currencies and instability in the stock market. There could be a number of other follow-on effects from these economic developments on our business, including customer insolvencies, decreased demand for our marketing solutions; decreased customer ability to pay their accounts, and increased collections risk and defaults. We are particularly susceptible to market conditions and risks associated with the mobile app ecosystem, including changes in user demographics, the availability and popularity of other forms of entertainment, and critical reviews and public tastes and preferences, which may change rapidly and cannot necessarily be predicted.

Our business is subject to economic, market, public health, and geopolitical conditions, as well as natural disasters beyond our control. For example, we have a partner studio located in Belarus with additional operations in Ukraine. The impact of Russia's invasion of Ukraine and the resulting geopolitical environment in those regions on their operations and other consulting resources may result in our continuing to incur costs to support our team members and address related challenges. In addition, our management has spent time and attention on these and related events and will continue to monitor and assess the ongoing disruptions to our team members, our management, and our operations, each of which could potentially harm our business. We may also experience interruptions or delays in the services they provide to us as a result of such geopolitical volatilities. While not material to the operation of our business, management and our board of directors have discussed and assessed, and will continue to discuss and assess, any risks related to Russia's invasion of Ukraine, including but not limited to, risks related to cybersecurity, sanctions, and personnel based in affected regions to ensure we are prepared to react to new developments or further sanctions as they arise. If we are unable to promptly or properly react to new developments or further sanctions related to that region, we may be subject to penalties or other negative consequences which could adversely impact our business.

Our principal offices are located in the San Francisco Bay Area, an area known for earthquakes and susceptible to fires, and are thus vulnerable to damage. All of our facilities are also vulnerable to damage from natural or manmade disasters, including power loss, earthquakes, fires, explosions, floods, communications failures, terrorist attacks, contagious disease outbreak (such as the COVID-19 pandemic), and similar events. If any disaster were to occur, our ability to operate our business at our facilities could be impaired and we could incur significant losses, recovery from which may require substantial time and expense.

We are highly dependent on our co-founder and chief executive officer, as well as our senior management team, and our business and growth may be adversely affected if we fail to attract, retain, and motivate key personnel.

Our future success depends in significant part on the continued service of our key management and engineering personnel, including our co-founder, CEO, and Chairperson, Adam Foroughi. Our ability to compete and grow depends in part on the efforts and talents of these employees and executives, who are important to our vision, strategic direction, culture, products, and technology. We do not have employment agreements, other than offer letters, with Mr. Foroughi or other members of our senior management team, and we do not maintain key-man insurance for members of our senior management team. The loss of Mr. Foroughi or any other member of our senior management team could cause disruption and adversely affect our business, financial condition, or results of operations.

In addition, our ability to execute our strategy depends in part on our continued ability and the continued ability of our Partner Studios to identify, hire, develop, motivate, and retain highly skilled employees, particularly in the competitive fields of game development, product management, engineering, and data science. We believe that our corporate culture has been an important factor in our ability to hire and retain key employees, and if we are unable to maintain our corporate culture as we grow, we may be unable to foster the innovation, creativity, and teamwork we believe we need to support our growth. While we believe we compete favorably, competition for highly skilled employees is intense, particularly in the San Francisco Bay Area, where our headquarters is located. Interviewing, hiring, and integrating new employees has been and will continue to be particularly challenging as we continue to navigate the global remote working environment. We have and will continue to devote increased efforts to maintaining our collaborative culture, including through the use of videoconferencing and other online communication and sharing tools, and to monitoring the health, safety, morale, and productivity of our employees, including new employees, as we evaluate the impacts of the global remote working environment on our business and employees. If we are unable to identify, hire, and retain highly skilled employees, our business, financial condition, and results of operations could be adversely affected.

We have historically hired a number of key personnel and additional team members working on our Apps through strategic acquisitions and partnerships, and as competition within the mobile app ecosystem for attractive target companies with a skilled employee base persists and increases, we may incur significant expenses and difficulty in continuing this practice. The loss of talented employees with experience in the assets we acquire could result in significant disruptions to our business and the integration of acquired assets and businesses. If we do not succeed in recruiting, retaining, and motivating these key employees, we may not achieve the anticipated results of acquisitions.

We have experienced significant growth through strategic acquisitions and partnerships, and we face risks related to the integration of such acquisitions and the management of such growth.

As part of our growth strategy, we have frequently acquired companies, businesses, personnel, and technologies in the past, and we intend to continue to evaluate and pursue strategic acquisitions and partnerships. For example, we acquired Machine Zone, Inc. ("Machine Zone") in May 2020, Adjust in April 2021, the MoPub business in January 2022 and Wurl, Inc. in April 2022. Each acquisition requires unique approaches to integration due to, among other reasons, the structure of the acquisition, the size, locations, and cultural differences among their team and ours, and has required, and will continue to require, attention from our management team. As we continue to grow, the size of our acquisitions and investments has increased and may continue to increase. In addition to the larger purchase prices associated with such acquisitions and investments, larger acquisitions and investments may also require additional management resources to integrate more significant and often more complex businesses into our company. We will continue to explore and evaluate additional acquisitions, some of which may be the same size or even larger in scale and investment than our recent acquisitions.

Our future success depends in part on our ability to integrate these acquisitions and manage these businesses, partnerships, and transactions effectively. If we are unable to obtain the anticipated benefits or synergies of such acquisitions, or we encounter difficulties integrating acquired businesses with ours, our business, financial condition, and results of operations could be adversely affected.

Challenges and risks from such strategic acquisitions and partnerships include:

- diversion of our management's attention in the acquisition and integration process, including oversight over acquired businesses which continue their operations under contingent consideration provisions in acquisition agreements;
- declining employee morale and retention issues resulting from changes in compensation, or changes in management, reporting relationships, or future performance;
- the need to integrate the operations, systems, technologies, products, and personnel of each acquired company, the inefficiencies and lack of control that may result if such integration is delayed or not implemented, and unforeseen difficulties and expenditures that may arise in connection with integration;
- costs associated with onboarding clients of an acquired business;
- the need to implement internal controls, procedures, and policies appropriate for a larger, U.S.-based public company at companies that prior to acquisition may not have as robust controls, procedures, and policies, in particular, with respect to the effectiveness of internal controls, cyber and information security practices and incident response plans, compliance with privacy, data protection, and other regulations protecting the rights of clients and users, and compliance with U.S.-based economic policies and sanctions which may not have previously been applicable to the acquired company's operations;
- the difficulty in accurately forecasting and accounting for the financial impact of an acquisition transaction, including accounting charges, write-offs of deferred revenue under purchase accounting, and integrating and reporting results for acquired companies that have not historically followed GAAP;
- the implementation of restructuring actions and cost reduction initiatives to streamline operations and improve cost efficiencies;
- the fact that we may be required to pay contingent consideration in excess of the initial fair value, and contingent consideration may become payable at a time when we do not have sufficient cash available to pay such consideration;
- in the case of foreign acquisitions, the need to integrate operations across different cultures and languages and to address the particular economic, currency, political, and regulatory risks associated with specific countries as well as tax risks that may arise from the acquisition;
- increasing legal, regulatory, and compliance exposure, and the additional costs related to mitigate each of those, as a result of adding new offices, employees and other service providers, benefit plans, equity, job types, and lines of business globally; and
- liability for activities of the acquired company before the acquisition, including intellectual property, commercial, and other litigation claims or disputes, cyber and information security vulnerabilities, violations of laws, rules and regulations, including with respect to employee classification, tax liabilities, and other known and unknown liabilities.

If we are unable to successfully integrate and manage our acquisitions and strategic partnerships, we may not realize the expected benefits of such transactions or become exposed to additional liabilities, and our business, financial condition, and results of operations could be adversely affected.

We plan to continue to consider opportunities to expand and diversify our operations through strategic acquisitions and partnerships. We face a number of risks related to strategic transactions we may pursue.

We will continue to consider opportunities to expand and diversify our operations with additional strategic acquisitions or partnerships, strategic collaborations, joint ventures, or licensing arrangements. As we continue to grow, these transactions may be larger and require significant investments, such as our acquisitions of Machine Zone, Adjust, the MoPub business, and Wurl.

In addition, in August 2022, we submitted a non-binding proposal to combine with Unity. While we ultimately withdrew our proposal, the proposal involved significant management attention and our stock price fluctuated based on developments during the pendency and withdrawal of the proposal.

We may be unable to identify or complete prospective acquisitions or partnerships for many reasons, including our ability to identify suitable targets, increasing competition from other potential acquirers, the effects of consolidation in our industries, potentially high valuations of acquisition candidates, and the availability of financing to complete larger acquisitions. Even if we do complete any such transactions, we may incur significant costs, such as professional service fees or publisher bonuses. Further, completing larger acquisitions or other strategic transactions can involve significantly more risk in that such transactions involve complicated integrations and require significant management attention to complete, and these large strategic transactions could introduce additional exposure to regulatory and compliance risk. In addition, applicable antitrust laws and other regulations may limit our ability to acquire targets, particularly larger targets, or force us to divest an acquired business. If we are unable to identify suitable targets or complete acquisitions, or if such acquisitions lead to heightened regulatory or compliance risk, our growth prospects could be adversely affected, and we may not be able to realize sufficient scale and technological advantages to compete effectively in all markets.

To complete large strategic transactions, we may need to spend significant amounts of cash, which may not be available to us on acceptable terms, if at all, or which could lead us to incur additional debt (and increased interest expense), assume contingent liabilities or amortization expenses related to intangible assets, or write-offs of goodwill and intangible assets. In addition, we may need to issue significant amounts of equity or equity-linked consideration, which may dilute our current stockholders' ownership and could adversely affect the price of our Class A common stock. Further, we generally devote more time and resources towards performing diligence on larger transactions and may be required to devote more resources towards regulatory requirements in connection with such transactions. To the extent that we do not perform sufficient diligence on a larger acquisition or such a transaction does not generate the expected benefits, our business, financial condition, and results of operations will be harmed, and to a greater extent than would occur with a smaller transaction.

Absent such strategic transactions, we would need to undertake additional development or commercialization activities at our own expense. If we elect to fund and undertake such additional efforts on our own, we may need to obtain additional expertise and additional capital, which may not be available to our company on acceptable terms, if at all. If we are unable to do any of the foregoing, we may not be able to develop our Core Technologies, Software Platform, and Apps effectively or achieve our expected product roadmap on a timely basis, which could adversely affect our business, financial condition, and results of operations.

The benefits of a strategic acquisition or partnership may also take considerable time to develop, and we cannot be certain that any particular strategic acquisition or partnership will produce the intended benefits. If we are unable to identify and complete strategic acquisitions or partnerships or realize the anticipated benefits from such transactions, our business, financial condition, and results of operations could be adversely affected.

Our ongoing strategic review of our Apps portfolio may not result in improvements to our financial performance, strategy, or operations, and we face a number of risks related to such review.

We are continuing our strategic review and optimization of our Apps portfolio and its cost structure, focusing on identifying those assets which contribute value and how best to optimize each of those asset's contribution to our overall financial performance. This review has resulted in the divestiture or closure of certain studios, a reduction of headcount, restructuring of earn out arrangements, and other changes to our Apps portfolio, such as restructuring of certain assets or choosing to make changes to optimize the cost structure of certain Apps rather than investing in revenue growth. For example, we have reduced our user acquisition spend for our portfolio of Apps as we increased our desired return goals, which has led to improved App segment Adjusted EBITDA margin, but also contributed to a decline in Apps revenue and MAPs compared to periods before such adjustments. We may not achieve the desired strategic, operational, and financial benefits of any divestiture or other strategic transaction, or any other action taken as a result of our strategic review, and we may incur near term impacts to our results of operations due to our strategic review. For example, in 2022 we incurred $127.9 million in impairment and loss in connection with the sale of certain assets resulting from our strategic review of the Apps portfolio. Further, we may not be able to successfully execute the desired changes. During the pendency of this review or any transaction that may occur as a result of this review, we may be subject to risks related to a decline in the business or employee morale and turnover, as well as distraction of management from our business and customers, and investors may not react favorably to our decisions, which could adversely affect our business, results of operations and the market price of our Class A common stock. If we are unable to successfully complete our strategic review or we are unable to complete the proposed outcomes of this review or they do not meet our strategic objectives, our business, results of operations and financial condition could be adversely affected.

Our portfolio review and optimization is ongoing, and we continue to carefully consider the full range of options for maximizing value to our shareholders, including a separation of certain of our Apps businesses, potential transactions with third parties and other strategic and financial alternatives. There can be no assurance that the ongoing portfolio review will result in any particular action or that a transaction will be consummated, nor can there be any assurance regarding the timing of any action or transaction. As of the date of this filing, there is no defined timetable for completion of the portfolio review, and we can provide no assurance that any transaction or other strategic alternative we may pursue will have a positive impact on our results of operations or financial condition.

Our strategic acquisitions and partnerships may expose us to tax risks.

From time to time, we have acquired and may acquire companies, assets, businesses, and technologies and we have entered into and may enter into other strategic partnerships and transactions. We face a variety of tax risks related to such transactions, including that we may be required to make tax withholdings in various jurisdictions in connection with such transactions or as part of our continuing operations following a transaction, and that the companies or businesses we acquire may cause us to alter our international tax structure or otherwise create more complexity with respect to tax matters. Additionally, while we typically include indemnification provisions in our definitive agreements related to strategic acquisitions and partnerships, these indemnification provisions may be insufficient in the event that tax liabilities are greater than expected or in areas that are not fully covered by indemnification. If we are unable to adequately predict and address such tax issues as they arise, our business, financial condition, and results of operations could be adversely affected.

We have entered into strategic partnerships with mobile gaming studios, and a failure to maintain such relationships may harm our ability to launch new Apps as well as our brand and reputation.

From time to time, we have entered into strategic partnerships with mobile gaming studios (our Partner Studios). We have historically allowed these Partner Studios to continue their operations with a degree of autonomy. In certain of these transactions, we have bought games from such Partner Studios and entered into development agreements whereby such Partner Studios provide us support in developing and improving games and grant us a right of first refusal with respect to future games. These agreements typically have a fixed term, after which our Partner Studios may choose not to continue working with us. Any deterioration in our relationship with these Partner Studios may harm our ability to monetize the games we purchase and launch future mobile games developed by these Partner Studios and may lead to such Partner Studios choosing not to renew their partnerships with us. Further, if a Partner Studio becomes dissatisfied with us, our brand and reputation may be harmed and we may have more difficulty entering into similar partnerships in the future. Additionally, our international Partner Studios may be located in areas with less certain legal and regulatory regimes or more potential risks, which may increase our costs to maintain such strategic partnership. If we are unable to maintain any of these partnerships, we may be required to invest significant resources in expanding our other studios or entering into agreements with additional mobile gaming studios in order to continue producing the same volume and quality of Apps, and our business, financial condition, and results of operations could be adversely affected.

We rely on third-party platforms to distribute our Apps and collect revenue, and if our ability to do so is harmed, or such third-party platforms change their policies in such a way that restricts our business, increases our expenses, or limits the information we derive from our Apps, our business, financial condition, and results of operations could be adversely affected.

The mobile app ecosystem depends in part on a relatively small number of third-party distribution platforms, such as the Apple App Store, the Google Play Store, and Facebook, some of which are direct competitors. We derive significant revenue from the distribution of our Apps through these third-party platforms and almost all of our IAPs are made through the payment processing systems of these third-party platforms. We are subject to the standard policies and terms of service of such third-party platforms, which generally govern the promotion, distribution, content, and operation of applications on such platforms. Each platform provider has broad discretion to change and interpret its terms of service and other policies with respect to us and other mobile app companies, and those changes may be unfavorable to us. A platform provider may also change its fee structure, add fees associated with access to and use of its platform, alter how mobile apps are labeled or are able to advertise on its platform, change how the personal information of its users is made available to developers on its platform, limit the use of personal information for advertising purposes, restrict how users can share information on its platform or across platforms, or significantly increase the level of compliance or requirements necessary to use its platform. For example, in April 2021, Apple started implementing its application tracking transparency framework that, among other things, requires users' opt-in consent for certain types of tracking. While this transparency framework has not had a significant impact on our overall business, it may in the future, including with respect to the effectiveness of our advertising practices and/or our ability to efficiently generate revenue for our Apps. We rely in part on IDFA to provide us with data that helps our Software Platform better market and monetize Apps. In light of the IDFA and transparency changes, we made changes to our data collection practices. To the extent we are unable to utilize IDFA or a similar offering, or if the transparency changes and any related opt-in or other requirements result in decreases in the availability or utility of data relating to Apps, our Software Platform may not be as effective, we may not be able to continue to efficiently generate revenue for our Apps, and our revenue and results of operations may be harmed. Additionally, Apple implemented new requirements for consumer disclosures regarding privacy and data processing practices in December 2020, which has resulted in increased compliance requirements and could result in decreased usage of our Apps. In February 2022, Google announced its Privacy Sandbox initiative for Android, expecting to restrict tracking activity and limit advertisers' ability to collect app and user data across Android devices by the third quarter of 2023. These or any similar changes to the policies of Apple or Google may materially and adversely affect our business, financial condition, and results of operations. To date, these data privacy changes have had some impact on the discoverability of apps across these platforms, though they have had a relatively muted aggregate impact on our overall results of operations.

If we violate, or a distribution platform provider believes we have violated, a distribution platform's terms of service, or if there is any change or deterioration in our relationship with such distribution provider, that platform provider could limit or discontinue our access to its platform. For example, in August 2020, Apple and Google removed a mobile game developed by one of our competitors from their platforms for violating their standard policies and terms of service. If one of our distribution platform partners were to limit or discontinue the distribution of our Apps on their platform, it could adversely affect our business, financial condition, and results of operations.

We also rely on the continued popularity, user adoption, and functionality of third-party platforms. In the past, some of these platform providers have been unavailable for short periods of time or experienced issues with their in-app purchasing functionality. In addition, third-party platforms also impose certain file size limitations, which may limit the ability of users to download some of our larger Apps in over-the-air updates. Aside from these over-the-air file size limitations, a larger game file size could cause users to delete our mobile games once the file size grows beyond the capacity of their devices' storage limitations or could reduce the number of downloads of these mobile games.

If issues arise with third-party platforms that impact the visibility or availability of our Apps, our users' ability to access our Apps or our ability to monetize our Apps, or otherwise impact the design or effectiveness of our Software Platform, our business, financial condition, and results of operations could be adversely affected.

If we are unable to launch or acquire new Apps and successfully monetize them, or continue to improve the experience and monetization of our existing Apps, our business, financial condition, and results of operations could be adversely affected.

Our Apps portfolio depends in part on launching or acquiring, and continuing to service, mobile apps that users will download and spend time and money using. We have devoted and we may in the future continue to devote substantial resources to the research, development, analytics, and marketing of our Apps. Our development and marketing efforts are focused on improving the experience of our existing Apps, developing new Apps, and successfully monetizing our Apps. Our Apps generate revenue primarily through the sale of advertising, a substantial portion of which comes from other mobile gaming clients, and in-app purchases (IAPs). For Apps distributed through third-party platforms, we are required to share a portion of the proceeds from in-game sales with the platform providers, which share may be subject to changes or increases over time. In order to achieve and maintain our profitability, we need to generate sufficient revenue from our existing and new Apps to offset our ongoing development, marketing, and other operating expenses.

Successfully monetizing our Apps is difficult and requires that we deliver user experiences that a sufficient number of users will pay for through IAPs or we are able to otherwise sufficiently monetize our Apps, including by serving in-app advertising. The success of our Apps depends in part on unpredictable and volatile factors beyond our control including user preferences, competing apps, new third-party platforms, and the availability of other entertainment experiences. If our Apps do not meet user expectations or if they are not brought to market in a timely and effective manner, our business and results of operations could be adversely affected.

In addition, our ability to successfully launch or acquire Apps and their ability to achieve commercial success will depend in part on our ability to:

- effectively market our Apps to existing and new users;
- achieve a positive return on investment from our marketing and user acquisition costs or achieve organic user growth;
- adapt to changing trends, user preferences, new technologies, and new feature sets for mobile and other devices, including determining whether to invest in development for any new technologies, and achieve a positive return on the costs associated with such adaptation;
- continue to adapt mobile app feature sets for an increasingly diverse set of mobile devices, including various operating systems and specifications, limited bandwidth, and varying processing power and screen sizes;
- achieve and maintain successful user engagement and effectively monetize our Apps;
- develop mobile games that can build upon or become franchise games and expand and enhance our mobile games after their initial releases;
- develop Apps other than mobile games;
- identify and execute strategic acquisitions and partnerships;
- attract advertisers to advertise on our Apps;
- partner with third-party platforms and obtain featuring opportunities;
- compete successfully against a large and growing number of competitors;
- accurately forecast the timing and expense of our operations, including mobile app and feature development, marketing, and user acquisition;
- minimize and quickly resolve bugs or outages;

- acquire, or invest in, and successfully integrate high quality mobile app companies or technologies;
- retain and motivate talented and experienced developers and other key personnel from such acquisitions and investments; and
- manage our strategic review of our Apps portfolio, including actions we may take that reduce Apps revenue in order to seek higher margins and the effects of the review on morale and personnel.

These and other uncertainties make it difficult to know whether we will succeed in continuing to develop and launch new Apps. Even if successful, certain genres of mobile apps, such as casual games, may have a relatively short lifespan. Further, as our Apps expand into additional genres of mobile games or additional categories of mobile apps, we will face risks as well as market, legal and regulatory challenges specific to those genres or categories. For example, in mid-core games, there is typically a higher upfront investment prior to the launch of a game compared to casual games, which means publishing a new game in that genre will expose us to greater risks as our financial condition and results of operations will be more significantly adversely affected to the extent such a game does not become popular and commercially successful. If we are not successful in launching new mobile games or expanding into other genres of mobile games or categories of mobile apps, our business, financial condition, and results of operations could be adversely affected.

If we fail to retain existing users or add new users cost-effectively, or if our users decrease their level of engagement with Apps, our business, financial condition, and results of operations could be adversely affected.

The size of our user base and the level of user engagement with our Apps are critical to our success. Our results of operations have been and will continue to be significantly determined by our success in acquiring and engaging App users. We expect that the number of our App users may fluctuate or decline as a result of apps divestitures or other actions we take in connection with our review of our Apps portfolio, or in one or more markets from time to time, particularly in markets where we have achieved higher penetration rates or where the macro economic conditions have been negatively impacted. For example, we have reduced our user acquisition spend for our portfolio of Apps as we increased our desired return goals, which has contributed to a decline in MAPs compared to periods before such adjustments. In addition, if people do not perceive our Apps as useful or entertaining, we may not be able to attract or retain users or otherwise maintain or increase the frequency and duration of their engagement, which could harm our revenue. A number of mobile apps that achieved early popularity have since seen their user bases or user engagement levels decline. There is no guarantee that we will not experience a similar erosion of our App users or user engagement levels. Our user engagement patterns have changed over time, and user engagement can be difficult to measure, particularly as we introduce new and different Apps. Any number of factors can adversely affect user growth and engagement, including if:

- users increasingly engage with mobile apps offered by competitors or mobile apps in categories other than those of our Apps;
- we fail to introduce new Apps or features that users find engaging or that achieve a high level of market acceptance or we introduce new Apps, or make changes to existing Apps that are not favorably received;
- users feel that their experience is diminished as a result of the decisions we make with respect to the frequency, prominence, format, size, and quality of advertisements that we display;
- users have difficulty installing, updating, or otherwise accessing our Apps as a result of actions by us or third parties;
- we are unable to continue to develop Apps that work with a variety of mobile operating systems and networks; and
- questions about the quality of our Apps, our data practices or concerns related to privacy and sharing of personal information and other user data, safety, security, or other factors.

Additionally, we expect it will become increasingly difficult and more expensive for us to acquire users for our Apps for a variety of reasons, including the increasingly competitive nature of the mobile app ecosystem and the significant amount of time and attention users are dedicating to competing entertainment options. Further, we believe that the changes that Apple has implemented during the last several years to its platform, particularly the removal of the Top Grossing rankings and decreasing the prominence of the Top Free rankings as well as transparency and IDFA changes, have adversely affected the number of organic downloads of our Apps. If our competitors increase their user acquisition spending, we could experience higher costs per an install for our Apps, which would adversely affect our revenue and margins. Furthermore, our spending on user acquisition is based on certain assumptions about their projected behavior, particularly for new Apps for which we do not have similar Apps in our portfolio to aid us in our modeling efforts. If we are unable to grow our user base and increase our user engagement levels, or unable to do so cost effectively, our business, financial condition, and results of operations could be adversely affected.

Our revenue has been concentrated in various ways and the loss of, or a significant reduction in, any such revenue source, or our failure to successfully expand and diversify our revenue sources could adversely affect our business, financial condition, and results of operations.

We have historically experienced revenue concentration with respect to certain Apps as well as other facets of our business. Our future success depends, in part, on launching or acquiring and successfully monetizing additional Apps and on establishing and maintaining successful relationships with a diverse set of clients. While our Apps consist of over 350 mobile games, currently a limited number of those are responsible for a significant portion of our revenue. In the twelve months ended December 31, 2022, three games, Project Makeover, Matchington Mansion and Wordscapes, collectively represented approximately 20% of our revenue. The loss or failure to successfully monetize one of these Apps could have a significant impact on our results of operations. For example, in the twelve months ended December 31, 2022, our IAP Revenue decreased, primarily due to decreases in revenue from Project Makeover and Matchington Mansion, and continued declines in these Apps may significantly impact of Apps segment. Similarly, our future success depends, in part, on the ability of our Owned Studios and Partner Studios to launch and monetize additional mobile games and other mobile apps, as well as, on our ability to successfully acquire and monetize additional mobile games and other mobile apps, and these Apps may not successfully diversify our revenue concentration. If we are unable to successfully launch or acquire new Apps, our reliance on a limited number of Apps may increase. Additionally, certain genres of games typically rely on only a small portion of their total users for a significant amount of their revenue, and as we expand our number of Apps in these genres, such as mid-core, we may experience these effects and need to attract, engage, and increase the spending levels of these particular users to achieve success.

More generally, we face concentration risk in that our Software Platform and Apps operate in the mobile app ecosystem and specifically mobile gaming. As such, our business depends, in part, on the continued health and growth of these app ecosystems, which have been adversely affected in recent periods by global macroeconomic conditions. Further, a significant amount of our total revenue is derived through a limited number of third-party distribution platforms, such as the Apple App Store, the Google Play Store, and Facebook. Because Facebook and Google are also significant partners of Adjust, a deterioration in our or Adjust's relationship with such companies would have a greater impact on our business, financial condition, and results of operations. If any of these concentrated portions of our revenue are harmed or are lost, our business, financial condition, and results of operations could be adversely affected.

We have experienced recent rapid growth, which may not be indicative of our future growth. We may be unable to effectively manage the growth of our business, which could adversely affect our business, financial condition, and results of operations.

We have experienced rapid growth in the scale, scope, and complexity of our business. For example, our Software Platform revenue has expanded rapidly, in particular since the launch of our ML-engine AXON. Our growth in any prior period should not be relied upon as an indication of our future performance, as we may not be able to sustain our growth rate in the future. Even if our revenue continues to increase, we expect that our revenue growth rate may decline in the future as a result of a variety of factors, including because of more difficult comparisons to prior periods and the saturation of the market. The overall growth of our revenue depends in part on our ability to execute on our growth strategies.

Additionally, the growth and expansion of our business has placed and continues to place a significant strain on our management, operations, financial infrastructure, and corporate culture. Our future success depends in part on our ability to manage this expanded business. If not managed effectively, this growth could result in the over-extension of our management systems and information technology systems and our internal controls and procedures may not be adequate to support this growth. Failure to adequately manage our growth in any of these ways may cause damage to our brand and reputation and adversely affect our business, financial condition, and results of operations.

Our future growth may involve expansion into new business opportunities, and any efforts to do so that are unsuccessful or are not cost-effective could adversely affect our business, financial condition, and results of operations.

In the past, we have grown by expanding our offerings into new business opportunities and we expect to continue to do so. We have dedicated resources to expanding into adjacent business opportunities in which large competitors have an established presence. Additionally, our future growth may include expansion into additional features for mobile apps, other mobile app sectors, connected TV markets, OEM and carrier-related markets, blockchain-related markets or other opportunities which may require significant investment in order to launch and which may not be prove successful. Further, any such expansion may subject us to new or additional laws and regulations, compliance with which may be burdensome and costly. Our future growth depends in part on our ability to correctly identify areas of investment and to cost-effectively execute on our plans. For example, we generate revenue through our recently acquired Wurl CTV business which provides streaming content distribution and advertising services. The market for CTV platforms is relatively new and evolving and this market may develop slower or differently than we expect. There can be no assurance that the evolution of CTV and its content and services will continue to grow or that we can successfully navigate any shifts in consumer demand in this market.

We have in the past and may in the future expend significant resources in connection with strategic acquisitions and partnerships to expand into new business opportunities. Even if successful, the growth of any new business opportunity could create significant challenges for our management and operational resources and could require considerable investment. The deployment of significant resources towards a new opportunity that proves unsuccessful, or our inability to choose the correct investment opportunities for our future, could adversely affect our business, financial condition, and results of operations.

Our international operations are subject to increased challenges and risks.

We expect to continue to expand our international operations in the future by opening new offices, entering into strategic partnerships with new international game studios, acquiring companies that may have international operations, and providing our Apps in additional countries and languages. For example, our Owned Studios and Partner Studios are located throughout the world, including in areas with less certain legal and regulatory regimes or more potential risks, such as Belarus, China, and Vietnam and with partners in Russia and Ukraine. Expanding our international operations may subject us to risks associated with:

- recruiting and retaining talented and capable management and employees in foreign countries;
- the diversion of senior management attention;
- challenges caused by distance, language, and cultural differences;
- developing and customizing Software Platform and Apps that appeal to the tastes and preferences of users in international markets;
- the inability to offer certain Software Platform or Apps in certain foreign countries;
- competition from local mobile app developers with intellectual property rights and significant market share in those markets and with a better understanding of user preferences;
- utilizing, protecting, defending, and enforcing our intellectual property rights;
- negotiating agreements with local distribution platforms that are sufficiently economically beneficial to us and protective of our rights;
- the inability to extend proprietary rights in our brand, content, or technology into new jurisdictions;
- implementing alternative payment methods for features and virtual goods in a manner that complies with local laws and practices and protects us from fraud;
- compliance with applicable foreign laws and regulations, including anti-bribery laws, privacy laws, and laws relating to content and consumer protection (for example, the United Kingdom's Office of Fair Trading's 2014 principles relating to IAPs in free-to-play games that are directed toward children 16 and under);
- credit risk and higher levels of payment fraud;
- currency exchange rate fluctuations;
- protectionist laws and business practices that favor local businesses in certain countries;
- double taxation of our international earnings and potentially adverse tax consequences due to changes in the tax laws in the United States or the foreign jurisdictions in which we operate;
- political, economic, macro-economic climate and social instability, including impacts related to labor, supply chain disruptions, inflation, and as a result of war, terrorism, or armed conflict, including Russia's invasion of Ukraine and its impacts on the region and the regional and global economy;
- public health crises, such as the COVID-19 pandemic, which can result in varying impacts to our employees, clients, users, advertisers, app developers, and business partners internationally;
- higher costs associated with doing business internationally, including costs related to local advisors;
- export or import regulations; and
- trade and tariff restrictions.

Our ability to successfully gain market acceptance in any particular international market is uncertain and, in the past, we have experienced difficulties and have not been successful in all the countries we have entered. If we are unable to continue to expand internationally or manage the complexity of our global operations successfully, our business, financial condition, and results of operations could be adversely affected.

Our business depends in part on our ability to increase in-app purchases, manage the economies in our Apps and respond to changes with respect to in-app purchases, and any failure to do so could adversely affect our business, financial condition, and results of operations.

Our Apps portfolio depends in part on our ability to increase the amount of IAPs in our Apps, which requires our studios to effectively design mobile games and other apps that create features and virtual goods for which users will pay. Users make IAPs because of the perceived in-app value of virtual goods, which is dependent on the relative ease of obtaining an equivalent good by playing our mobile games. The perceived in-app value of these virtual goods can be impacted by various actions that we take in the mobile games including offering discounts for virtual goods, giving away virtual goods in promotions, or providing easier non-paid means to secure these goods. Managing virtual economies is difficult and relies on our assumptions and judgement. Further, changes in user preferences, including with respect to how they interact with mobile apps and general views towards IAPs, could decrease levels of spending on IAPs on our Apps and in the mobile app ecosystem generally. If we fail to manage our virtual economies properly or fail to promptly and successfully respond to any disruption in such economies, our reputation may be harmed and our users may be less likely to play our mobile games and to purchase virtual goods from us in the future, which could adversely affect our business, financial condition, and results of operations.

In addition, changes in the policies of Apple, Google, or other third-party platforms, or changes in accounting policies promulgated by the SEC, and national accounting standards bodies affecting software and virtual goods revenue recognition, could further significantly affect the way we report revenue related to IAPs, which could adversely affect our results of operations. Any changes in user, third-party platform, or regulator views towards IAPs, or any inability by us to respond to changing trends with respect to IAPs, could adversely affect our business, financial condition, and results of operations.

We anticipate increasing our operating expenses in the future, and we may not be able to achieve or maintain our profitability in any given period. If we cannot achieve or maintain our profitability, our business could be adversely affected.

Although we have been profitable on a GAAP basis and had positive cash flow from operations in certain prior periods, we may not always achieve sufficient revenue or manage our expenses in order to achieve positive cash flow from operations or profitability in any given period. Our operating expenses may continue to rise over the long term as we implement additional initiatives designed to increase revenue, potentially including: developing our Core Technologies, Software Platform and technology stack, launching Apps, strategic acquisitions and partnerships, In-App Advertising client and user acquisition spending, international expansion, hiring additional employees, and taking other steps to strengthen and grow our company. We are likely to recognize costs associated with these investments earlier than some of the anticipated benefits, and the return on these investments may be lower, or may develop more slowly, than we expect. We also anticipate that the costs of acquiring new clients and mobile app users, and otherwise marketing our Software Platform and Apps, will continue to rise. Further, we may continue to incur significant costs in connection with strategic acquisitions and partnerships, which costs may increase or become more concentrated to the extent we enter into larger transactions. If we are not able to maintain positive cash flow in the long term, we may require additional financing, which may not be available on favorable terms or at all, and which may be dilutive to our stockholders. If we are unable to generate adequate revenue growth and manage our expenses, we may incur significant losses in the future and may not be able to maintain positive cash flow from operations or profitability.

The COVID-19 pandemic and global responses thereto have caused economic disruption and altered our business practices, and may continue to harm our business.

The COVID-19 pandemic and resulting social distancing and shelter-in-place orders put in place around the world caused widespread disruption in global economies, productivity, and financial markets and altered the way in which we conduct our day-to-day business.

The global economy has experienced, and may continue to experience, significant volatility as a result of COVID-19 pandemic and actions taken in response thereto. A weakened global economy has negatively impacted and may continue to negatively impact our business partners as well as our users' in-app purchasing decisions and users' buying decisions across the globe generally, which could adversely affect advertiser activity. We may experience heightened levels of variability in the pricing of advertising both in terms of user acquisition and as it relates to our Software Platform and Apps. If these conditions result in significant decreased pricing of advertising, the revenue we make from our Software Platform and advertisers paying to display advertisements in our Apps could be adversely affected, particularly if the levels of user engagement in our Apps are not sufficient to offset these declines, and we may experience increased pressure on our overall margins. If we are not able to respond to and manage the direct and indirect impact of the COVID-19 pandemic on our business, then our business, financial condition, and results of operations could be adversely affected.

With the general shift to remote work, we are able to tap into candidate pools previously unavailable to us, but candidates have also sought increased flexibility and may have more options available to them. We will continue to actively monitor the issues raised by the COVID-19 pandemic and may take further actions that alter our business operations. If we are not able to respond to and manage the direct and indirect impact of the COVID-19 pandemic on our business, then our business, financial condition, and results of operations could be adversely affected.

Our company culture has contributed to our success and if we cannot maintain this culture as we grow, our business could be harmed.

We believe that our company culture has been critical to our success and will be important for our continued growth. We face a number of challenges that may affect our ability to sustain our corporate culture, including: failure to identify, attract, reward, and retain people in leadership positions in our organization who share and further our culture and values; the increasing size and geographic diversity of our workforce; competitive pressures to move in directions that may divert us from our culture and values; the continued challenges of a rapidly-evolving industry; the increasing need to develop expertise in new areas of business that affect us; a negative perception of our treatment of employees or our response to employee sentiment related to political or social causes or actions of management; and the integration of new personnel and businesses from acquisitions. For example, during 2022 we implemented a reduction in force that affected approximately 15% of our employees, which may adversely affect employee morale, our culture and our ability to attract and retain employees. If we are not able to maintain our culture, we could lose the innovation, passion, and dedication of our team and as a result, our business, financial condition, and results of operations could be adversely affected.

If we do not successfully or cost-effectively invest in, establish, and maintain awareness of the AppLovin brand, our business, financial condition, and results of operations could be adversely affected.

We believe that establishing and maintaining the AppLovin brand is critical to maintaining and creating favorable relationships with, and our ability to attract, new clients, particularly Software Platform Enterprise Clients, and key personnel. Increasing awareness of the AppLovin brand will depend largely upon our marketing efforts and our ability to successfully differentiate our Software Platform from the offerings of our competitors. In addition, successfully globalizing and extending our brand requires significant investment and extensive management time. If we fail to maintain and increase brand awareness and recognition of our Software Platform, our business, financial condition, and results of operations could be adversely affected.

We have made public commitments to our corporate Environmental, Social and Governance (ESG) and human capital management initiatives, including our environmental impact towards a sustainable future. Any perceived changes in our dedication to these commitments or our failure to achieve progress in these areas could adversely impact our relationships with our customers and employees, affect our reputation and the value of our brand.

We generally do not have long-term agreements with our clients.

Our clients are not required to enter into long-term agreements with us and may choose to stop using our Software Platform at any time. For example, our advertising agreements can be executed in as little as one day and can be terminated for convenience on two days' notice. In order to continue to grow our Software Platform, we must consistently provide offerings that clients see as valuable and choose to use. If we fail to maintain our relationships with our clients, or if the terms of these relationships become less favorable to us, our results of operations would be harmed. Additionally, as certain of our clients are also our competitors, these clients may choose to invest in their own offerings rather than continue to use our Software Platform. Any failure to maintain our relationships with clients could adversely affect our business, financial condition, and results of operations.

If our Apps do not meet user expectations, or contain objectionable content, our reputation, business, financial condition, and results of operations could be adversely affected.

Expectations regarding the quality, performance, and integrity of our Apps are high. We must continually adapt to changing user preferences including the popularity of various game categories, style of play, and IAP options. Users may be critical of our Apps, business models, or business practices for a wide variety of reasons, including perceptions about gameplay, fairness, game content, features, or services. Independent industry analysts may publish reviews of our Apps from time to time, as well as those of our competitors, and perception of our Apps in the marketplace may be significantly influenced by these reviews. We have no control over what users or these industry analysts report. If users and industry analysts negatively respond to our Apps or changes that we make to our Apps, or provide negative reviews of our Apps, our reputation, business, financial condition, and results of operations could be adversely affected.

Further, despite reasonable precautions, some users may be offended by certain mobile app content, advertisements displayed in our Apps or by the treatment of other users. For example, if users believe that an advertisement displayed in an App contains objectionable content, we could experience damage to our brand and reputation and users could refuse to play such game and pressure platform providers to remove the App from their platforms. While such content may violate our terms and we may subsequently remove it, our brand and reputation may nonetheless be harmed and our clients may become dissatisfied with our services. Furthermore, steps that we may take in response to such instances, such as temporarily or permanently shutting off access of a user to our Apps, could adversely affect our business and results of operations. Any failure to meet user expectations or provide our Apps without objectionable content could adversely affect our reputation, business, financial condition, and results of operations.

The proliferation of "cheating" programs and scam offers that seek to exploit our mobile games and users may adversely affect game-playing experiences and lead users to stop playing our mobile games. Our failure to maintain a customer support ecosystem may enhance these risks.

Our users rely on our customer support organization to resolve any issues relating to our mobile games. Customer support is important for satisfying user expectations regarding the quality, performance, and integrity of our mobile games. We currently have limited customer support operations. If we do not effectively train, supplement, and manage our customer support organization to assist our users, and if that support organization does not succeed in helping users quickly resolve issues or provide effective ongoing support, we could experience decreased user engagement and harm to our reputation with potential new users.

Additionally, unrelated third parties have developed, and may continue to develop, "cheating" programs that enable users to exploit vulnerabilities in our mobile games, play them in an automated way, collude to alter the intended game play, or obtain unfair advantages over other users who do play fairly. These programs harm the experience of users who play fairly and may disrupt the virtual economies of our mobile games and reduce the demand for certain IAPs. In addition, unrelated third parties have attempted to scam our users with fake offers for virtual goods or other game benefits. These unauthorized or fraudulent transactions are usually arranged on third-party websites and the virtual goods offered may have been obtained through unauthorized means, such as exploiting vulnerabilities in our mobile games, or may be fraudulent offers. We do not generate any revenue from these transactions. These unauthorized purchases and sales from third-party sellers have in the past and could in the future impede our revenue and profit growth.

There can be no assurance that our customer support and other efforts to detect, prevent, or minimize these unauthorized or fraudulent transactions will be successful, that these actions will not increase over time or that our customer support efforts will be successful in resolving user issues. Any failure to maintain adequate customer support or success of third-party cheating programs or scams may negatively affect game-playing experiences and lead users to stop playing our mobile games, which could adversely affect our business, financial condition, and results of operations.

Risks Related to Legal and Regulatory Matters

We are subject to laws and regulations concerning privacy, information security, data protection, consumer protection, advertising, tracking, targeting, and protection of minors, and these laws and regulations are continually evolving. Our actual or perceived failure to comply with these laws and regulations could adversely affect our business, financial condition, and results of operations.

We receive, store, and process personal information and other data, including data relating to individuals and households, and we enable our users to share their personal information with each other and with third parties, including within our Apps. There are numerous federal, state, and local laws around the world regarding privacy and the collection, storing, sharing, use, processing, disclosure, deletion, and protection of personal information and other data, including data relating to individuals and households, the scope of which are changing, subject to differing interpretations, and may be inconsistent between countries or conflict with other rules.

Various government and consumer agencies have called for new regulation and changes in industry practices and are continuing to review the need for greater regulation for the collection of information concerning consumer behavior on the internet, including regulation aimed at restricting certain targeted advertising practices. For example, the GDPR, which became effective in May 2018, created new individual privacy rights and imposed worldwide obligations on companies processing personal data of European Union ("EU") users, which has created a greater compliance burden for us and other companies with European users, and subjects violators to substantial monetary penalties. The United Kingdom has implemented legislation that substantially implements the GDPR and which also provides for substantial monetary penalties. In June 2021, the European Commission announced a decision of "adequacy" concluding that the United Kingdom ensures an equivalent level of data protection to the GDPR, which provides some relief regarding the legality of continued personal data flows from the European Economic Area to the United Kingdom. Such adequacy decision must, however, be renewed after four years and may be modified or revoked in the interim. In October 2022, the United Kingdom announced its plans to depart from the GDPR and implement its own framework. We cannot fully predict how United Kingdom data protection laws or regulations may develop in the medium to longer term, nor the effects of divergent laws and guidance regarding how data transfers to and from the United Kingdom will be regulated.

With regard to transfers to the United States of personal data (as such term is used in the GDPR and applicable EU member state legislation) from our employees and European users and other third parties, we have relied upon the EU-U.S. and Swiss-U.S. Privacy Shield as well as certain standard contractual clauses approved by the EU Commission (the "SCCs"); however, both the EU-U.S. Privacy Shield and the SCCs have been subject to legal challenge, and on July 16, 2020, the Court of Justice of the EU, Europe's highest court, held in the *Schrems II* case that the E.U.-U.S. Privacy Shield was invalid, and imposed obligations in connection with the use of the SCCs. EU regulators since have issued guidance regarding these obligations that we and other companies must consider and undertake when using the SCCs. On June 4, 2021, the European Commission adopted new SCCs, taking into account the *Schrems II* case and reflecting requirements under the GDPR. Additionally, the United Kingdom's Information Commissioner's Office issued new standard contractual clauses to support personal data transfers out of the United Kingdom on February 2, 2022 that became effective March 21, 2022, were required to be used for new contractual arrangements as of September 21, 2022, and must replace prior standard contractual clauses as of March 21, 2024. Further, in the European Economic Area, the Austrian, French, Italian, and Danish data protection authorities recently indicated that use of Google Analytics by European website operators involves the unlawful transfer of personal data to the United States. In March 2022, the EU and U.S. announced that they reached an agreement in principle on a new EU-U.S. Data Privacy Framework. In October 2022, the U.S. issued an executive order in furtherance of this framework. In December 2022, the EU Commission has launched the process for the adoption of its adequacy decision. We are in the process of assessing these developments and their impact on our data transfer mechanisms. The SCCs and other cross-border data transfer mechanisms may face additional legal challenges or be the subject of additional legislative activity and regulatory guidance. We and many other companies may need to implement different or additional measures to establish or maintain legitimate means for the transfer and receipt of personal data from the European Economic Area, Switzerland, the United Kingdom, or other jurisdictions to the United States, and we may, in addition to other impacts, experience additional costs associated with increased compliance burdens, and we and our clients face the potential for regulators to apply different standards to the transfer of personal data from the European Economic Area, Switzerland, the United Kingdom, or other jurisdictions to the United States, and to block, or require ad hoc verification of measures taken with respect to, certain data flows. We also may be required to engage in contract negotiations with third parties that aid in processing data on our behalf, to the extent that any of our service providers, or consultants have been relying on invalidated or insufficient contractual protections for compliance with evolving interpretations of and guidance for cross-border data transfers pursuant to the GDPR or other privacy laws. In such cases, we may not be able to find alternative service providers which could limit our ability to process personal data from the European Economic Area, Switzerland, the United Kingdom, or other impacted jurisdictions and increase our costs and/or impact our Core Technologies, Software Platform, Apps, or other offerings. We and our clients may face a risk of enforcement actions by data protection authorities relating to personal data transfers. Any such enforcement actions could result in substantial costs and diversion of resources, distract management and technical personnel, and adversely affect our business, financial condition, and results of operations. Similar to GDPR, in September 2020, Brazil enacted the Brazilian General Data Protection Law ("LGPD"). In August 2021, China passed a new data privacy law known as PIPL, effective November 1, 2021, which adopts a stringent data transfer regime requiring, among other things, data subject consent for certain data transfers. Any of these developments may have an adverse effect on our business.

Moreover, the GDPR and other similar regulations require companies to give specific types of notice and in some cases seek consent from consumers and other data subjects before collecting or using their data for certain purposes, including some marketing activities. In addition to the GDPR, the European Commission has another draft regulation in the approval process that focuses on a person's right to conduct a private life. The proposed legislation, known as the Regulation of Privacy and Electronic Communications ("ePrivacy Regulation"), would replace the current ePrivacy Directive. Originally planned to be adopted and implemented at the same time as the GDPR, the ePrivacy Regulation is still being negotiated. On February 10, 2021, the Council of the EU agreed on its version of the draft ePrivacy Regulation. If adopted, the earliest date for entry into force is in 2023, with broad potential impacts on the use of internet-based services and tracking technologies, such as cookies. Aspects of the ePrivacy Regulation remain for negotiation between the European Commission and the Council.

Another example is California's passage of the CCPA, which went into effect on January 1, 2020, with implementing regulations taking effect August 14, 2020, and which created new privacy rights for users residing in the state, including a private right of action for data breaches. The CPRA was approved by California voters in November 2020, went into effect on January 1, 2023, and significantly modifies the CCPA, resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply. Additionally, other states are considering comprehensive privacy legislation, some of which contemplate private rights of action, which may increase the likelihood of class action litigation, that could also adversely affect our reputation, business, financial condition, and results of operations. For example, Nevada, Virginia, Colorado, Utah, and Connecticut have similarly enacted comprehensive privacy laws - The Nevada Privacy Law taking effect October 1, 2019, the Consumer Data Protection Act taking effect on January 1, 2023, the Colorado Privacy Act taking effect on July 1, 2023, the Utah Consumer Privacy Act taking effect on December 31, 2023, and Connecticut's Act Concerning Personal Data Privacy and Online Monitoring taking effect on July 1, 2023, respectively. All of these laws emulate the CCPA and CPRA in many respects. Broad federal privacy legislation has also been proposed. Our efforts to comply with the GDPR, CCPA, COPPA, and similar legal requirements, such as Brazil's LGPD and China's PIPL, have required us and will continue to require us to devote significant operational resources and incur significant expenses. Our privacy and data protection compliance and oversight efforts will require significant time and attention from our management and board of directors.

Further, children’s privacy has been a focus of recent enforcement activities and subjects our business to potential liability that could adversely affect our business, financial condition, or operating results. Enforcement of COPPA, which requires companies to obtain parental consent before collecting personal information from children known to be under the age of thirteen or from child-directed websites or online services, has increased in recent years. In addition, the GDPR prohibits certain processing of the personal information of children under the age of thirteen to sixteen (depending on jurisdiction) without parental consent where consent is used as the lawful basis for processing that personal information. The CCPA, as amended and supplemented by the CPRA, requires companies to obtain the consent of children in California under the age of sixteen (or parental consent for children under the age of thirteen) before selling their personal information. There also may be various laws, regulations, industry standards, codes of conduct, or other actual or asserted obligations relating to children’s privacy to which we may be, or be asserted to be, subject, or that may otherwise impact our business and operations. For example, the United Kingdom’s Age Appropriate Design Code (“AADC”) is one such regulatory framework that has been adopted in the United Kingdom that focuses on online safety and protection of children’s privacy online, and similar frameworks are being considered for adoption in other jurisdictions. California also has enacted the California Age-Appropriate Design Code Act (“ADCA”), which will take effect on July 1, 2024. The ADCA implements into law certain principles taken from the AADC, among other things, and imposes substantial new obligations upon companies that offer online services, products, or features “likely to be accessed” by children, defined under the ADCA as anyone under 18 years of age. Although we take reasonable efforts to comply with applicable laws and regulations and certain other standards, we may in the future face claims under COPPA, the GDPR, the CCPA, the CPRA, or other laws, regulations, or other actual or asserted obligations relating to children’s privacy.

All of our mobile games are subject to privacy policies and terms of service located in application storefronts, within our mobile games, and on our respective websites. We endeavor to comply with industry standards and are subject to the terms of our privacy-related obligations and commitments to users and third parties. We strive to comply with all applicable laws, policies, legal obligations, and certain industry codes of conduct relating to privacy and data protection, to the extent reasonably attainable. However, it is possible that these or other actual or asserted obligations relating to privacy, data protection, or information security may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our practices. It is also possible that new laws, policies, legal obligations, or industry codes of conduct may be passed, or existing laws, policies, legal obligations, or industry codes of conduct may be interpreted in such a way that could prevent us from being able to offer services to residents of a certain jurisdiction or may make it costlier or more difficult for us to do so. Any failure or perceived failure by us to comply with our terms of service or privacy policy, or with applicable laws, regulations, or legal, contractual, or other actual or asserted obligations to users or third parties, concerning privacy, information security, data protection, consumer protection, or protection of minors; or our privacy-related legal obligations, or any compromise of security that results in the unauthorized release or transfer of personal information or other user data, may result in governmental enforcement actions or other proceedings, claims, demands, and litigation by private parties, or public statements against us by consumer advocacy groups or others and could cause our users to lose trust in us, which could adversely affect our business, financial condition, or results of operations. Additionally, if third parties we work with, such as users, developers, vendors, service providers, or other business partners violate applicable laws or our policies, such violations may also put our users’ information at risk and could in turn adversely affect our reputation, business, financial condition, and results of operations.

Our business is subject to a variety of U.S. and foreign laws, many of which are unsettled and still developing, which could subject us to claims or otherwise adversely affect our business, financial condition, and results of operations.

We are subject to a variety of laws in the United States and abroad that affect our business, including state and federal laws regarding consumer protection, electronic marketing, protection of minors, data protection, and privacy, competition, taxation, intellectual property, money transmission, money laundering, investment screening, export, and national security, which are continuously evolving and developing. The scope and interpretation of the laws that are or may be applicable to us are often uncertain and may be conflicting, particularly laws outside the United States. There is a risk that existing or future laws may be interpreted in a manner that is not consistent with our current practices and which could adversely affect our business. As our Software Platform grows and evolves and our Software Platform and our Apps are used in a greater number of countries, we may also become subject to laws and regulations in additional jurisdictions or other jurisdictions may claim that we are required to comply with their laws and regulations.

With respect to our Apps, we are potentially subject to a number of foreign and domestic laws and regulations that affect the offering of certain types of content, such as content that depicts violence, the social casino game genre, or loot boxes, many of which are ambiguous or still evolving and could be interpreted in ways that could adversely affect our business or expose us to liability. Some state attorney generals as well as other international regulatory bodies have brought and may continue to bring legal actions against social casino app developers and the third-party distribution platforms for such apps. Further, several jurisdictions have been regulating and continue to regulate the use of loot boxes in mobile games. Loot boxes are a commonly used monetization technique in free-to-play mobile games in which a user can acquire a virtual loot box, typically through mobile game play or by using virtual goods, but the user does not know which virtual good(s) he or she will receive (which may be a common, rare, or extremely rare item, and may be a duplicate of an item the user already has in his or her inventory) until the loot box is opened. The user will always receive one or more virtual goods when he or she opens the loot box, but the user does not know exactly which item(s) until the loot box is opened. In April 2018, each of the Belgian Gaming Commission and the Dutch Gambling Authority declared that loot boxes as implemented in certain games by other companies that they reviewed constituted illegal gambling under each country's laws. Further, the Federal Trade Commission (the "FTC") has examined consumer protection issues related to loot boxes and various other jurisdictions, including certain U.S. states, Australia, Brazil, and the United Kingdom are reviewing or have indicated that they intend to review the legality of loot boxes and whether they constitute gambling. Additionally, in 2021, Germany approved a new Youth Protection Act, that came into effect on May 1, 2021, which makes it unlawful to sell video games that contain loot boxes to minors. In some of our mobile games, certain mechanics may be deemed as "loot boxes". New regulation by the FTC, U.S. states, or other international jurisdictions could require that these game mechanics be modified or removed from games or that such apps be changed entirely, both of which could increase the costs of operating our mobile games, impact user engagement and monetization, or otherwise adversely affect our business. In addition, the increased attention focused upon liability issues as a result of lawsuits and legislative proposals could harm our reputation or otherwise impact the growth of our business. It is difficult to predict how existing or new laws may be applied to these or similar game mechanics or genres. Further, laws or regulations may vary significantly across jurisdictions.

It is possible that a number of laws and regulations may be adopted or construed to apply to us in the United States and elsewhere that could restrict the mobile app ecosystem, including user privacy, data protection, advertising, communications, taxation, content suitability, copyright, distribution, and antitrust. Furthermore, the growth and development of electronic commerce and virtual goods may prompt calls for more stringent consumer protection laws that may impose additional burdens on companies such as ours conducting business through the internet and mobile devices. For example, China implemented a new policy in September 2021 that restricts online gaming for those under age 18 to one hour in the evening on Fridays, weekends and public holidays. We anticipate that scrutiny and regulation of our industry will increase and we will be required to devote legal and other resources to addressing such regulation. For example, existing laws or new laws regarding the marketing of IAPs, labeling of free-to-play mobile games, or regulation of currency, banking institutions, unclaimed property or money transmission may be interpreted to cover our mobile games and the virtual currency, goods, or payments that we receive. We may also expand into new business opportunities that subject us to additional laws and regulations. As such, we may be required to seek licenses, authorizations, or approvals from relevant regulators, the granting of which may be dependent on us meeting certain capital and other requirements and we may be subject to additional regulation and oversight, all of which could significantly increase our operating costs. Changes in current laws or regulations or the imposition of new laws and regulations in the United States or elsewhere regarding these activities may lessen the growth of the mobile app ecosystem. Any costs incurred as a result of adapting to laws and regulations, or as a result of liability in connection therewith, could adversely affect our business, financial condition, and results of operations.

We are subject to the Foreign Corrupt Practices Act, and similar anti-corruption and anti-bribery laws, and non-compliance with such laws could subject us to criminal penalties or significant fines and adversely affect our business and reputation.

We are subject to the Foreign Corrupt Practices Act (the "FCPA"), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, and similar anti-corruption and anti-bribery laws applicable in the jurisdictions in which we conduct business. Anti-corruption and anti-bribery laws have been enforced aggressively in recent years, are interpreted broadly and prohibit companies, their employees, and third party business partners, representatives, and agents from promising, authorizing, making or offering improper payments or other benefits, directly or indirectly, to government officials and others in the private sector in order to influence official action, direct business to any person, gain any improper advantage, or obtain or retain business. As we continue to expand our business internationally, our risks under these laws increase.

We and our third-party business partners, representatives, and agents may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and we may be held liable for the corrupt or other illegal activities of our employees, third-party business partners, representatives, and agents, even if we do not explicitly authorize such activities. These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address compliance with such laws, we cannot assure you that our employees, third-party business partners, representatives, and agents will not take actions in violation of our policies or applicable law, for which we may be ultimately held responsible and our exposure for violating these laws increases as our international presence expands and as we increase sales and operations in foreign jurisdictions.

Any violation of the FCPA or other applicable anti-corruption laws could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions, suspension or disbarment from U.S. government contracts, substantial diversion of management's attention, significant legal fees and fines, severe criminal or civil sanctions against us, our officers, or our employees, disgorgement of profits, other sanctions and remedial measures, and prohibitions on the conduct of our business, any of which could adversely affect our reputation, business, financial condition, and results of operations.

We are subject to governmental export controls and economic sanctions laws that could impair our ability to compete in global markets or subject us to liability if we violate the controls.

Our Core Technologies, Software Platform, and Apps may be subject to U.S. export controls. Exports of our products and the underlying technology may require export authorizations, including by license, a license exception, or other appropriate government authorizations, including the filing of an encryption classification request or self-classification report, as applicable.

Furthermore, our activities are subject to U.S. economic sanctions laws and regulations administered by the U.S. Department of Treasury's Office of Foreign Assets Control that prohibit the shipment of most technologies to embargoed jurisdictions or sanctioned parties without the required export authorizations. These laws, regulations, and sanctions are rapidly evolving and may be in conflict across international jurisdictions, leading to uncertainty and difficulty in achieving full compliance. Should we violate such existing or similar future sanctions or regulations, we may be subject to substantial monetary fines or suffer reputational damage and other penalties that could negatively impact our business. If we need to obtain any necessary export license or other authorization for a particular sale, the process may be time-consuming and may result in the delay or loss of opportunities to sell our products.

We take precautions to prevent our products and the underlying technology from being provided, deployed or used in violation of export control and sanctions laws, including implementation of IP address blocking and sanctioned person screening, and are in the process of further enhancing our policies and procedures relating to export control and sanctions compliance. However, we cannot assure you that our policies and procedures relating to export control and sanctions compliance will prevent violations in the future by us or our partners or agents. If we are found to be in violation of U.S. sanctions or export control regulations, including failure to obtain appropriate import, export, or re-export licenses or permits, it can result in significant penalties and government investigations, as well as reputational harm and loss of business. Knowing and willful violations can result in possible incarcerations for responsible employees and managers.

In addition to the United States, various other countries regulate the import and export of certain encryption and other technology, including import and export licensing requirements, and have enacted laws that could limit our ability to distribute our products or could limit our clients' ability to implement our products in those countries. Changes in our Core Technologies, Software Platform, or Apps, or future changes in export and import regulations may create delays in the introduction of our products and the underlying technology in international markets, prevent our clients with global operations from deploying our products globally, or, in some cases, prevent the export or import of our products to certain countries, governments, or persons altogether. From time to time, various governmental agencies have proposed additional regulation of encryption technology.

Our growth strategy includes further expanding our operations and client and user base in international markets and acquiring companies that may operate in countries where we do not already do business. Such acquisitions may subject us to additional or expanded export regulations. Further, any change in export or import regulations or controls, economic sanctions or related legislation, or change in the countries, governments, persons, or technologies targeted by such regulations, could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential clients with global operations. Any decreased use of our products or limitation on our ability to export or sell our products in major international markets could adversely affect our business, financial condition, and results of operations.

Changes in tax laws or tax rulings could adversely affect our effective tax rates, business, financial condition, and results of operations.

The tax regimes we are subject to or operate under are unsettled and may be subject to significant change. Changes in tax laws (including in response to the COVID-19 pandemic) or tax rulings, or changes in interpretations of existing laws, could cause us to be subject to additional income-based taxes and non-income taxes (such as payroll, sales, use, value-added, digital, net worth, property, and goods and services taxes), which in turn could adversely affect our financial condition and results of operations. For example, in December 2017, the U.S. federal government enacted the tax reform legislation known as the Tax Cuts and Jobs Act (the "2017 Tax Act"). The 2017 Tax Act significantly changed the existing U.S. corporate income tax laws by, among other things, lowering the U.S. corporate tax rate, implementing a partially territorial tax system, and imposing a one-time deemed repatriation tax on certain post-1986 foreign earnings. Further, beginning in 2022, the 2017 Tax Act requires U.S. research and experimental expenditures to be capitalized and amortized ratably over a five-year period. Any such expenditures attributable to research conducted outside the U.S. must be capitalized and amortized over a 15-year period. Although Congress is considering legislation that would repeal or defer this capitalization and amortization requirement, it is not certain that this provision will be repealed or otherwise modified. Recently, the Inflation Reduction Act of 2022 (the "IRA"), enacted on August 16, 2022, imposed a one-percent non-deductible excise tax on repurchases of stock that are made by U.S. publicly traded corporations on or after January 1, 2023, which may affect our share repurchase program. The IRA also imposes a 15% minimum tax on global adjusted financial statement income for tax years beginning after December 31, 2022 for certain large companies. Finally, many countries in the European Union, as well as a number of other countries and organizations such as the Organisation for Economic Cooperation and Development, have recently proposed or recommended changes to existing tax laws or have enacted new laws that could impact our tax obligations. Some of these or other new rules could result in double taxation of our international earnings. Any significant changes to our future effective tax rate could adversely affect our business, financial condition, and results of operations.

We may have exposure to greater than anticipated tax liabilities.

Our income tax obligations are based in part on our corporate operating structure and intercompany arrangements, including the manner in which we develop, value, manage, and use our intellectual property and the valuation of our intercompany transactions. The tax laws applicable to our business, including the laws of the United States and other jurisdictions, are subject to interpretation and certain jurisdictions are aggressively interpreting their laws in new ways in an effort to raise additional tax revenue. Our existing corporate structure and intercompany arrangements have been implemented in a manner we believe is in compliance with current prevailing tax laws. However, the taxing authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology or intercompany arrangements, which could impact our worldwide effective tax rate and adversely affect our financial condition and results of operations. Moreover, changes to our corporate structure and intercompany agreements, including through acquisitions, could impact our worldwide effective tax rate and adversely affect our business, financial condition, and results of operations.

In addition, we are subject to federal, state, and local taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in evaluating our tax positions and our worldwide provision for (benefit from) taxes. During the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. Our tax obligations and effective tax rates could be adversely affected by changes in the relevant tax, accounting, and other laws, regulations, principles, and interpretations, including those relating to income tax nexus, by our earnings being lower than anticipated in jurisdictions where we have lower statutory rates and higher than anticipated in jurisdictions where we have higher statutory rates, and by challenges to our intercompany relationships and transfer pricing arrangements. The relevant taxing authorities may disagree with our determinations as to the income and expenses attributable to specific jurisdictions. If such a disagreement were to occur, and our position were not sustained, we could be required to pay additional taxes, interest, and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our business, with some changes possibly affecting our tax obligations in future or past years. We believe that our financial statements reflect adequate reserves to cover such a contingency, but there can be no assurances in that regard.

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value added or similar taxes, and any such assessments could adversely affect our business, financial condition, and results of operations.

We do not collect sales and use, value added, and similar taxes in all jurisdictions in which we have sales, based on our belief that such taxes are not applicable in certain jurisdictions. Sales and use, value added, and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable or that our presence in such jurisdictions is sufficient to require us to collect taxes, which could result in tax assessments, penalties, and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties, and interest or future requirements may adversely affect our financial condition and results of operations. Further, in June 2018, the Supreme Court held in *South Dakota v. Wayfair, Inc.* that states could impose sales tax collection obligations on out-of-state sellers even if those sellers lack any physical presence within the states imposing the sales taxes. Under the *Wayfair* decision, a person requires only a “substantial nexus” with the taxing state before the state may subject the person to sales tax collection obligations therein. An increasing number of states (both before and after the publication of the *Wayfair* decision) have considered or adopted laws that attempt to impose sales tax collection obligations on out-of-state sellers. The Supreme Court’s *Wayfair* decision has removed a significant impediment to the enactment and enforcement of these laws, and it is possible that states may seek to tax out-of-state sellers on sales that occurred in prior tax years, which could create additional administrative burdens for us, put us at a competitive disadvantage if such states do not impose similar obligations on our competitors, and decrease our future sales, which could adversely affect our business, financial condition, and results of operations.

If we are found liable for content that is distributed through or advertising that is served through our Software Platform or Apps, our business could be adversely affected.

As a distributor of content, we face potential liability for negligence, copyright, patent or trademark infringement, public performance royalties, or other claims based on the nature and content of materials that we distribute. The Digital Millennium Copyright Act (the "DMCA") is intended, in part, to limit the liability of eligible service providers for caching, hosting, or linking to user content that includes materials that infringe copyrights or other rights. We rely on the protections provided by the DMCA in conducting our business. Similarly, Section 230 of the Communications Decency Act ("Section 230") protects online distribution platforms, such as ours, from actions taken under various laws that might otherwise impose liability on the platform provider for what content creators develop or the actions they take or inspire.

However, the DMCA, Section 230, and similar statutes and doctrines that we may rely on in the future are subject to uncertain judicial interpretation and regulatory and legislative amendments. Future regulatory or legislative changes may ultimately require us to take a more active approach towards content moderation, which could diminish the depth, breadth, and variety of content we offer and, in so doing, reduce our revenue. Moreover, the DMCA and Section 230 provide protections primarily in the United States. If the rules around these statutes and doctrines change, if international jurisdictions refuse to apply similar protections, or if a court were to disagree with our application of those rules to our business, we could incur liability and our business could be adversely affected. If we become liable for these types of claims as a result of the content that is included in our Apps or the advertisements that are served through our Software Platform, then our business may be adversely affected. Litigation to defend these claims could be costly and the expenses and damages arising from any liability could adversely affect our business. Our insurance may not be adequate to cover these types of claims or any liability that may be imposed on us.

In addition, regardless of any legal protections that may limit our liability for the actions of third parties, we may incur significant legal expenses and other costs if copyright holders assert claims, or commence litigation, alleging copyright infringement against our third-party developers. While we prohibit mobile apps without distribution rights from the copyright holder, and we maintain processes and systems for the reporting and removal of infringing mobile apps, such prohibitions, processes, and systems may not always be successful. If other developers, licensees, platform providers, business partners, and personnel are influenced by the existence of types of claims or proceedings and are deterred from working with us as a consequence, our ability to maintain or expand our business, including through international expansion plans, could be adversely affected.

We have incurred and will continue to incur increased costs and demands upon management as a result of complying with the laws and regulations affecting public companies, which could adversely affect our business, financial condition, and results of operations.

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act"), and the rules and regulations of the SEC and the Nasdaq listing standards. The Exchange Act requires, among other things, that we file annual, quarterly, and current reports with respect to our business and results of operations. Compliance with these requirements has increased and will continue to increase our legal, accounting, and financial compliance costs and increase demand on our systems, making some activities more time-consuming and costly. We expect these rules and regulations to make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to maintain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified individuals to serve on our board of directors or as our executive officers. As a public company, we have incurred and expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act. In addition, as a public company, we may be subject to shareholder activism, which can lead to substantial costs, distract management, and impact the manner in which we operate our business in ways we cannot currently anticipate.

As a result of disclosure of information in our public filings with the SEC as required of a public company, our business and financial condition will become more visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business, financial condition, and results of operations could be adversely affected, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and our board of directors and adversely affect our business, financial condition, and results of operations.

Legal or regulatory proceedings and settlements could cause us to incur additional expenses or otherwise adversely affect our business, financial condition, and results of operations.

We are involved in or may become involved in claims, suits, government investigations, including formal and informal inquiries from government authorities and regulators, and proceedings arising in the ordinary course of our business, including actions with respect to intellectual property claims, securities claims, privacy, data protection, or law enforcement matters, tax matters, labor and employment claims, commercial and acquisition-related claims, and other matters. We may become the subject of investigations, inquiries, data requests, requests for information, actions, and audits in the United States, Europe, and around the world, particularly in the areas of privacy, data protection, law enforcement, consumer protection, and competition, as we continue to grow and expand our operations. In addition, we are currently, and may in the future be, subject to regulatory orders or consent decrees. For example, data protection, competition, and consumer protection authorities in the European Union have initiated actions, investigations, or administrative orders seeking to restrict the ways in which we collect and use information, or impose sanctions, and other authorities may do the same.

Any such claims, suits, government investigations, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of their outcomes, such legal or regulatory proceedings can have an adverse impact on us because of legal costs, diversion of management and other personnel attention, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in substantial costs, civil and criminal liability, penalties, or sanctions, as well as judgments, consent decrees, or orders preventing us from offering certain features, functionalities, products or services, or requiring a change in our business practices, products or technologies, which could adversely affect our reputation, business, financial condition, and results of operations.

Risks Related to Our Intellectual Property

Failure to protect or enforce our proprietary and intellectual property rights or the costs involved in such enforcement could adversely affect our business, financial condition, and results of operations.

We regard our Core Technologies, Software Platform, and Apps and related source code as proprietary and rely on a variety of methods, including a combination of copyright, patent, trademark, and trade secret laws and employee and third-party non-disclosure agreements, to protect our proprietary rights. We view the protection of our trade secrets, copyrights, trademarks, service marks, trade dress, domain names, patents, and other product rights as critical to our success. We strive to protect our intellectual property rights by relying on federal, state, and common law rights, as well as contractual restrictions and business practices. We also enter into confidentiality and invention assignment agreements with our employees and contractors and confidentiality agreements with parties with whom we conduct business in order to limit access to, and disclosure and use of, our proprietary information. However, these contractual arrangements and business practices may not prevent the misappropriation of our proprietary information or deter independent development of similar technologies by others.

We own or license, and pursue the registration of, copyrights, trademarks, service marks, domain names, and patents in the United States and in certain locations outside the United States. This process can be expensive and time-consuming, may not always be successful depending on local laws or other circumstances, and we also may choose not to pursue registrations in every location depending on the nature of the project to which the intellectual property rights pertain. We may, over time, increase our investments in protecting our creative works.

We are aware that some unauthorized copying of our Apps occurs, and if a significantly greater amount of unauthorized copying of our Apps were to occur, it could adversely affect our business. In addition, even if authorized copying of our Apps occurs, third-party platforms may not remove infringing material. We also cannot be certain that existing intellectual property laws will provide adequate protection for our products in connection with emerging technologies. Litigation may be necessary to enforce our intellectual property rights, protect our trade secrets, or determine the validity and scope of proprietary rights claimed by others. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs, adverse publicity, and diversion of management and technical resources. If we fail to maintain, protect, and enhance our intellectual property rights, our business, financial condition, and results of operations could be adversely affected.

We are, and may in the future be, subject to intellectual property disputes, which are costly to defend and could require us to pay significant damages and could limit our ability to use certain technologies in the future.

From time to time, we have faced, and we may face in the future, allegations that we have infringed the trademarks, copyrights, patents, and other intellectual property rights of third parties, including from our competitors, non-practicing entities and former employers of our personnel. Intellectual property litigation may be protracted and expensive, and the results are difficult to predict. As the result of any court judgment or settlement, we may be obligated to alter our Software Platform or Apps, in a particular geographic region or worldwide, pay royalties or significant settlement costs, purchase licenses, or develop substitutes.

In certain of our agreements, we also indemnify our licensees and other business partners. We may incur significant expenses defending these business partners if they are sued for intellectual property infringement based on allegations related to our technology. If a business partner were to lose a lawsuit and in turn seek indemnification from us, we also could be subject to significant monetary liabilities. In addition, because our Core Technologies, Software Platform, and Apps often involve the use of third-party technology, this increases our exposure to litigation in circumstances where there is a claim of infringement asserted against one of our mobile games or other products and services in question, even if the claim does not pertain to our technology.

Many of our products and services contain open source software, and we license some of our software through open source projects, which may pose particular risks to our proprietary software, products, and services in a manner that could adversely affect our business, financial condition, and results of operations.

We use open source software in our Core Technologies, Software Platform, and Apps and expect to continue to use open source software in the future. In addition, we contribute software source code to open source projects under open source licenses or release internal software projects under open source licenses, and anticipate continuing to do so in the future. 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 open source software licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to provide or distribute our products or services. Additionally, under some open source licenses, if we combine our proprietary software with open source software in a certain manner, third parties may claim ownership of, a license to, or demand release of, the open source software or derivative works that we developed using such software, which could include our proprietary source code. Such third parties may also seek to enforce the terms of the applicable open source license through litigation which, if successful, could require us to make our proprietary software source code freely available, purchase a costly license, or cease offering the implicated products or services unless and until we can re-engineer them to avoid infringement. This re-engineering process could require significant additional research and development resources, and we may not be able to complete it successfully. In addition to risks related to open source license requirements, use of certain open source software may pose greater risks than use of third-party commercial software, since open source licensors generally do not provide warranties or controls on the origin of software. Any of these risks could be difficult to eliminate or manage, and, if not addressed, could adversely affect our business, financial condition, and results of operations.

Our ability to acquire and maintain licenses to intellectual property may affect our business, financial condition, and results of operations. Competition for these licenses may make them more expensive and increase our costs.

While most of the intellectual property we use in our Core Technologies, Software Platform, and Apps is created by us, from time to time, we also acquire rights to third-party intellectual property. Proprietary licenses may limit our use of intellectual property to specific uses and for specific time periods, require time and attention of licensors in providing guidance and related approvals, and include other contractual obligations with which we must comply. Additionally, competition for these licenses is intense and often results in increased advances, minimum payment guarantees, and royalties to the licensor, and as such we may be unable to identify suitable licensing targets or complete licensing arrangements. If we are unable to obtain and remain in compliance with the terms of these licenses or obtain additional licenses on reasonable economic terms, our business and results of operations could be adversely affected. Further, if the mix of IAPs shifts toward mobile games in which we use licensed intellectual property or if we develop additional Apps that require licensing of third-party intellectual property, our overall margins may be reduced due to royalty obligations.

In addition, many of our Apps are built on proprietary source code of third parties, such as Unity Software. Unity Software offers certain solutions that may compete with our offerings. If we are unable to renew licenses to proprietary source code underlying our mobile games, or the terms and conditions of these licenses change at the time of renewal, our business, financial condition, and results of operations could be adversely affected. We rely on third parties, including Unity Software, to maintain versions of their proprietary engines that allow us to distribute our mobile games on multiple platforms. If a third party from whom we license source code discontinues support for one or more of these platforms, our business, financial condition, and results of operations could be adversely affected.

Risks Related to Financial and Accounting Matters

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, and the rules and regulations of the applicable Nasdaq listing standards. We expect that the requirements of these rules and regulations will continue to increase our legal, accounting, and financial compliance costs, make some activities more difficult, time-consuming and costly, and place significant strain on our personnel, systems, and resources.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we will file with the SEC is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers.

In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight. If any of these new or improved controls and systems do not perform as expected, we may experience deficiencies in our controls.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, to the extent we acquire other businesses, the acquired company may not have a sufficiently robust system of controls and we may discover deficiencies. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could adversely affect our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely cause the market price of our Class A common stock to decline. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Global Select Market. Prior to our initial public offering, we were not required to comply with the SEC rules that implement Section 404 of the Sarbanes-Oxley Act and were therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. As a public company, we are required to provide an annual management report on the effectiveness of our internal control over financial reporting and our independent registered public accounting firm is required to formally attest to the effectiveness of our internal control over financial reporting. Our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed, or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could adversely affect our business, financial condition, and results of operations and could cause the market price of our Class A common stock to decline.

We rely on assumptions and estimates to calculate certain of our key metrics and real or perceived inaccuracies in such metrics could adversely affect our reputation and our business.

Certain of the metrics that we disclose are calculated using internal company data that has not been independently verified or data from third-party attribution partners. While these metrics and figures are based on what we believe to be reasonable calculations for the applicable period of measurement, there are inherent challenges in measuring these metrics and figures across our worldwide client base and user base. We regularly review and may adjust our processes for calculating our metrics and other figures to improve their accuracy, but these efforts may not prove successful and we may discover material inaccuracies. In addition, our methodology for calculating these metrics may be updated from time to time and may differ from the methodology used by other companies to calculate similar metrics and figures. We may also discover unexpected errors in the data that we are using that resulted from technical or other errors. If we determine that any of our metrics or figures are not accurate, we may be required to revise or cease reporting such metrics or figures. Any real or perceived inaccuracies in our metrics and other figures could harm our reputation and adversely affect our business.

We have adopted a two-segment reporting structure. Our two-segments are designated as our Software Platform and Apps and have been in effect for a limited period of time. This change to segment reporting could be confusing to investors and may not have the desired effects.

Beginning with the quarter ended June 30, 2022, we began reporting as two separate segments. We have provided disclosures about our new segment reporting structure, but there is no guarantee that investors or the market will understand this change to our financial reporting. There is also no guarantee that this change will have the desired effect. Failure of investors or analysts to understand our revised segment reporting structure may negatively affect their ability to understand our business and operating results which could adversely affect our stock price.

As a result of our portfolio review, we determined to focus on two separate segments, our Software Platform and our Apps. Management has been focused on our plan to reduce our operating costs and the development of our restructuring plan into two segments. These changes and our diversified operations have placed, and may continue to place, significant demands on our management and our operational and financial infrastructure. For example, our portfolio review and cost reduction activities, among other activities, have placed and will continue to place significant demands on our management team. Managing these changes has required, and may continue to require, significant expenditures and allocation of valuable management resources. If we fail to achieve the necessary level of efficiency in our organization as it changes, our business, financial condition and results of operations would be adversely impacted.

In addition, we test for goodwill impairment at the reporting segment level and consider the difference between the fair value of a reporting segment and its’ carrying value, when determining whether any impairment exists. In connection with our portfolio review and the subsequent restructuring to a two-segment reporting company, there can be no assurance that the change to our segment reporting structure will not result in impairment charges in future periods.

We may be required to record a significant charge to earnings if our goodwill becomes impaired.

We are required under GAAP to review our goodwill for impairment at least annually or more frequently when events or changes in circumstances indicate the carrying value may not be recoverable. Factors that may be considered a change in circumstances, indicating a requirement to reevaluate whether our goodwill continues to be recoverable, include a significant decline in the market price of our Class A common stock and our market capitalization, slower growth rates in our industry, underperformance of certain assets, or other materially adverse events. We may be required to record a significant charge to earnings in our financial statements during the period in which any impairment of our goodwill is determined.

We have substantial indebtedness under our senior secured credit facilities and our obligations thereunder may limit our operational flexibility or otherwise adversely affect our business, financial condition, and results of operations.

We are party to a credit agreement that provides for senior secured credit consisting of term loans and a revolving credit facility, with varying maturity dates through 2028. As of December 31, 2022, the aggregate principal amount of our outstanding indebtedness under our credit facilities was $3.25 billion. There can be no assurance that we will be able to repay this indebtedness when due, or that we will be able to refinance this indebtedness on acceptable terms or at all.

Our indebtedness could adversely impact us. For example, these obligations could among other things:

- make it difficult for us to pay other obligations;
- increase our cost of borrowing;
- make it difficult to obtain favorable terms for any necessary future financing for working capital, capital expenditures, strategic acquisitions and partnerships, debt service requirements, or other purposes;
- restrict us from making strategic acquisitions and partnerships or cause us to make divestitures or similar transactions;
- adversely affect our liquidity and result in a material adverse effect on our financial condition upon repayment of the indebtedness;
- require us to dedicate a substantial portion of our cash flow from operations to service and repay the indebtedness, reducing the amount of cash flow available for other purposes;
- increase our vulnerability to adverse and economic conditions;
- increase our exposure to interest rate risk from variable rate indebtedness;
- place us at a competitive disadvantage compared to our less leveraged competitors; and
- limit our flexibility in planning for and reacting to changes in our business.

In addition, from time to time we have entered into interest rate swap instruments to limit our exposure to changes in variable interest rates. While our hedging strategy is designed to minimize the impact of increases in interest rates applicable to our variable rate debt, including our credit facility, there can be no guarantee that our hedging strategy will be effective, and we may experience credit-related losses in some circumstances.

Our credit agreement also imposes restrictions on us and requires us to maintain compliance with specified covenants. Our ability to comply with these covenants may be affected by market, economic, financial, competitive, legislative, and regulatory factors, as well as other factors that are beyond our control. A breach of any of the covenants in the credit agreement governing our credit facilities could result in an event of default, which, if not cured or waived, could trigger acceleration of our indebtedness and an increase in the interest rates applicable to such indebtedness, and may result in the acceleration of or default under any other debt we may incur in the future to which a cross-acceleration or cross-default provision applies. In addition, we have granted a security interest in a significant portion of our assets to secure our obligations under our credit facility. During the existence of an event of default under our credit agreement, the applicable lenders could exercise their rights and remedies thereunder, including by way of initiating foreclosure proceedings against any assets constituting collateral for our obligations under the credit facility. The acceleration of the indebtedness under our credit agreement or under any other indebtedness could have a material and adverse effect on our business, financial condition, and results of operations.

We may be unable to generate sufficient cash flow to satisfy our significant debt service obligations, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our ability to make scheduled payments on or to refinance our debt obligations depends on our financial condition and results of operations, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory, and other factors beyond our control. We may not be able to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, or interest on our indebtedness. If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay strategic acquisitions and partnerships, capital expenditures, and payments on account of other obligations, seek additional capital, restructure or refinance our indebtedness, or sell assets. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. Our ability to restructure or refinance our debt will depend on the condition of the capital markets and our financial condition at such time. Any refinancing of our debt could be at higher interest rates and could require us to comply with more onerous covenants, which could further restrict our business operations. In addition, we cannot assure you that we will be able to refinance any of our indebtedness on commercially reasonable terms, or at all.

If we are unable to repay or otherwise refinance our indebtedness when due, or if any other event of default is not cured or waived, the applicable lenders could accelerate our outstanding obligations or proceed against the collateral granted to them to secure that indebtedness, which could force us into bankruptcy or liquidation. In the event the applicable lenders accelerate the repayment of our borrowings, we and our subsidiaries may not have sufficient assets to repay that indebtedness. Any acceleration of amounts due under the agreements governing our credit facility or the exercise by the applicable lenders of their rights under the security documents could have a material and adverse effect on our business.

We may require additional capital to meet our financial obligations and support business growth, and this capital may not be available on acceptable terms or at all.

We intend to continue to make significant investments to support our business growth and may require additional funds to respond to business challenges, including the need to continue to develop our Core Technology and Software Platform, enhance our existing Apps and develop new Apps and features, improve our operating infrastructure, or enter into strategic acquisitions and partnerships. Accordingly, we may need to engage in equity, equity-linked, or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could experience significant dilution, and any new equity securities we issue could have rights, preferences, and privileges superior to those of holders of our Class A common stock. Any debt financing that we secure in the future could involve offering additional security interests and undertaking restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. Our credit agreement, which provides for a term loan and revolving credit facility, contains financial covenants with which we must comply. We may not be able to obtain additional financing on terms favorable to us, if at all. Additionally, if we seek to access additional capital or increase our borrowing, there can be no assurance that financing and credit may be available on favorable terms, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business, financial condition, or results of operations could be adversely affected.

Risks Related to Ownership of Our Class A Common Stock and Governance

The multi-class structure of our common stock and the Voting Agreement among the Voting Agreement Parties have the effect of concentrating voting power with the Voting Agreement Parties, which will limit your ability to influence the outcome of matters submitted to our stockholders for approval, including the election of our board of directors, the adoption of amendments to our certificate of incorporation and bylaws, and the approval of any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transactions.

We have three classes of common stock. Our Class A common stock has one vote per share, our Class B common stock has 20 votes per share, and our Class C common stock has no voting rights, except as otherwise required by law. Adam Foroughi, our co-founder, CEO, and Chairperson; Herald Chen, our President and Chief Financial Officer, and a member of our board of directors; and KKR Denali Holdings L.P. (collectively with certain affiliates, the "Voting Agreement Parties") together hold all of the issued and outstanding shares of our Class B common stock. As of December 31, 2022, the Voting Agreement Parties collectively held approximately 82% of the voting power of our outstanding capital stock in the aggregate. This voting power includes shares of Class A common stock deemed beneficially owned in accordance with Rule 13d-3(d)(1) under the Exchange Act. The Voting Agreement Parties have entered into a voting agreement (the "Voting Agreement") whereby all Class B common stock held by the Voting Agreement Parties and their respective permitted entities and permitted transferees will be voted as determined by two of Mr. Foroughi, Mr. Chen, and KKR Denali Holdings L.P. (one of which must be Mr. Foroughi). As a result, the Voting Agreement Parties will collectively be able to determine or significantly influence any action requiring the approval of our stockholders, including the election of our board of directors, the adoption of amendments to our certificate of incorporation and bylaws, and the approval of any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction. The Voting Agreement Parties may have interests that differ from yours and may vote in a way with which you disagree, and which may be adverse to your interests. This concentrated control may have the effect of delaying, preventing, or deterring a change in control of our company, could deprive our stockholders of an opportunity to receive a premium for their capital stock as part of a sale of our company, and might ultimately affect the market price of our Class A common stock.

Future transfers by the holders of Class B common stock will generally result in those shares automatically converting into shares of Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning, transfers among affiliates, of KKR Denali Holdings L.P., or other transfers among the Voting Agreement Parties. In addition, each share of Class B common stock will convert automatically into one share of Class A common stock upon certain events specified in our amended and restated certificate of incorporation.

In addition, because our Class C common stock carries no voting rights (except as otherwise required by law), if we issue Class C common stock in the future, the holders of Class B common stock may be able to elect all of our directors and to determine the outcome of most matters submitted to a vote of our stockholders for a longer period of time than would be the case if we issued Class A common stock rather than Class C common stock in such transactions.

We are considered a "controlled company" within the meaning of the Nasdaq corporate governance requirements, and, as a result, we qualify for, and currently rely on, exemptions from certain corporate governance requirements.

As a result of our multi-class common stock structure and the Voting Agreement among the Voting Agreement Parties, the Voting Agreement Parties collectively hold greater than a majority of the voting power of our outstanding capital stock and the Voting Agreement Parties have the authority to vote the shares of all Class B common stock, subject to the terms of the Voting Agreement, at their discretion on all matters to be voted upon by stockholders. Therefore, we are considered a "controlled company" as that term is set forth in the Nasdaq corporate governance requirements. Under these corporate governance requirements, a company in which over 50% of the voting power for the election of directors is held by an individual, a group, or another company is a "controlled company" and may elect not to comply with certain corporate governance requirements, including:

- the requirement that a majority of its board of directors consist of independent directors;
- the requirement that we have a nominating/corporate governance committee that is comprised entirely of independent directors with a written charter addressing the committee's purpose and responsibilities;
- the requirement that we have a compensation committee that is comprised entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and
- the requirement for an annual performance evaluation of the nominating and corporate governance and compensation committees.

We currently utilize, and intend to continue to utilize, certain of these exemptions. As a result, our compensation committee does not consist entirely of independent directors. Accordingly, you will not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements. In the event that we cease to be a "controlled company" and our Class A common stock continues to be listed on Nasdaq, we will be required to comply with these provisions within the applicable transaction periods.

We cannot predict the effect our multi-class structure may have on the market price of our Class A common stock.

We cannot predict whether our multi-class structure will result in a lower or more volatile market price of our Class A common stock, in adverse publicity, or other adverse consequences. For example, certain index providers have announced restrictions on including companies with multi-class share structures in certain of their indices. Under such announced policies, the multi-class structure of our common stock would make us ineligible for inclusion in certain indices and, as a result, mutual funds, exchange-traded funds, and other investment vehicles that attempt to track those indices would not invest in our Class A common stock. Given the sustained flow of investment funds into passive strategies that seek to track certain indices, exclusion from certain stock indices would likely preclude investment by many of these funds and could make our Class A common stock less attractive to other investors. As a result, the market price of our Class A common stock could be adversely affected.

The market price of our Class A common stock could be volatile, and you could lose all or part of your investment.

The market price of our Class A common stock has, and may continue to, fluctuate substantially depending 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. These fluctuations could cause you to lose all or part of your investment in our Class A common stock. Factors that could cause fluctuations in the market price of our Class A common stock include the following:

- price and volume fluctuations in the overall stock market from time to time, including fluctuations due to general economic uncertainty or negative market sentiment;
- volatility in the market and trading volumes of technology stocks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our Class A common stock by us or our stockholders;
- rumors and market speculation involving us or other companies in our industry;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;

- actual or perceived significant data breaches involving our Core Technologies, Software Platform or Apps;
- the financial or non-financial metric projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- third-party data published about us or other mobile gaming companies, whether or not such data accurately reflects actual levels of usage;
- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements, and filings with the SEC;
- fluctuations in the trading volume of shares of our Class A common stock or the size of our public float;
- short selling of our Class A common stock or related derivative securities;
- actual or anticipated changes or fluctuations in our results of operations;
- actual or anticipated developments in our business, our competitors' businesses, or the competitive landscape generally;
- our issuance or repurchase of shares of our Class A common stock;
- litigation or regulatory action involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws, regulations or app store policies or new interpretations of existing laws, regulations or app store policies applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations, or principles;
- major catastrophic events in our domestic and foreign markets;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

In addition, if the market for technology stocks or the stock market in general experiences a loss of investor confidence, the market price of our Class A common stock could decline for reasons unrelated to our business, financial condition, or results of operations. The market price of our Class A common stock might also decline in reaction to events that affect other companies in our industry even if these events do not directly affect us. Accordingly, we cannot assure you of the liquidity of any trading market, your ability to sell your shares of our Class A common stock when desired, or the prices that you may obtain for your shares of our Class A common stock.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. If the market price of our Class A common stock is volatile, we may become the target of securities litigation. Securities litigation could result in substantial costs and divert our management's attention and resources from our business. Such litigation could adversely affect our business, financial condition, and results of operations.

We may not realize the anticipated long-term stockholder value of our share repurchase programs and any failure to repurchase our Class A common stock after we have announced our intention to do so may negatively impact our stock price.

In February 2022, we announced that our board of directors authorized the repurchase of up to $750.0 million of our Class A common stock over time. Under this or any other future share repurchase programs, we may make share repurchases through a variety of methods, including open share market purchases, block transactions or privately negotiated transactions, in accordance with applicable federal securities laws. Our share repurchase program has no time limit, does not obligate us to repurchase any specific number of shares and may be suspended at any time at our discretion and without prior notice. The timing and amount of any repurchases, if any, will be subject to liquidity, stock price, market and economic conditions, compliance with applicable legal requirements such as Delaware surplus and solvency tests, compliance with our credit agreement, and other relevant factors. Any failure to repurchase stock after we have announced our intention to do so may negatively impact our reputation and investor confidence in us and may negatively impact our stock price.

The existence of this share repurchase program could cause our stock price to be higher than it otherwise would be and could potentially reduce the market liquidity for our stock. Although this program is intended to enhance long-term stockholder value, there is no assurance it will do so because the market price of our Class A common stock may decline below the levels at which we repurchased shares and short-term stock price fluctuations could reduce the effectiveness of the program.

Repurchasing our Class A common stock will reduce the amount of cash we have available to fund working capital, capital expenditures, strategic acquisitions or business opportunities, and other general corporate requirements, and we may fail to realize the anticipated long-term stockholder value of any share repurchase programs.

Future sales of our Class A common stock could depress the market price of our Class A common stock.

The market price of our Class A common stock could decline as a result of sales of a large number of shares of our Class A common stock in the market, and the perception that these sales could occur may also depress the market price of our Class A common stock.

Certain stockholders are entitled, under our investors' rights agreement, to certain demand registration rights. In addition, we filed a registration statement to register shares reserved for future issuance under our equity compensation plans and a registration statement to register shares of Class A common stock issued pursuant to our 2011 Equity Incentive Plan for resale. As a result, subject to the satisfaction of applicable exercise periods, the registered shares, including those issued upon exercise of outstanding stock options, will be available for immediate resale in the United States in the open market.

Sales of our Class A common stock as restrictions end or pursuant to registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the market price of our Class A common stock to fall and make it more difficult for you to sell shares of our Class A common stock.

The issuance of additional stock in connection with financings, acquisitions, investments, our equity incentive plans, or otherwise will dilute all other stockholders.

Our amended and restated certificate of incorporation authorizes us to issue up to 1,500,000,000 shares of Class A common stock, up to 150,000,000 shares of Class C common stock, and up to 100,000,000 shares of preferred stock with such rights and preferences as may be determined by our board of directors. Subject to compliance with applicable rules and regulations, we may issue shares of Class A common stock or securities convertible into shares of our Class A common stock from time to time in connection with a financing, acquisition, investment, our equity incentive plans, or otherwise. For example, in connection with our acquisition of Adjust in April 2021, we issued convertible securities that converted into an aggregate of 6,320,688 shares of our Class A common stock. Any such issuance could result in substantial dilution to our existing stockholders and cause the market price of our Class A common stock to decline.

Our multi-class stock structure, the Voting Agreement, and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make a merger, tender offer, or proxy contest difficult, thereby depressing the market price of our Class A common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that may make the acquisition of our company more difficult, including the following:

- our multi-class common stock structure and the Voting Agreement, which provide the Voting Agreement Parties with the ability to determine or significantly influence the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the shares of our outstanding common stock;
- vacancies on our board of directors may be filled only by our board of directors and not by stockholders;
- a special meeting of our stockholders may only be called by a majority of our board of directors, the chairperson of our board of directors, our Chief Executive Officer, or our President;
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders;
- our amended and restated certificate of incorporation does not provide for cumulative voting;
- our amended and restated certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued by our board of directors, without further action by our stockholders;
- after the first date on which the outstanding shares of our Class B common stock represent less than a majority of the total combined voting power of our Class A common stock and our Class B common stock (the "Voting Threshold Date"), our stockholders will only be able to take action at a meeting of stockholders and will not be able to take action by written consent for any matter; and
- certain litigation against us may only be brought in Delaware.

These provisions, alone or together, could discourage, delay, or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and to cause us to take other corporate actions they desire, any of which, under certain circumstances, could limit the opportunity for our stockholders to receive a premium for their shares of our Class A common stock, and could also affect the market price of our Class A common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware and the federal district courts of the United States as the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, or employees.

Our amended and restated bylaws provide that, unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, or other employees to us or our stockholders, (iii) any action arising pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws, or (iv) any other action asserting a claim that is governed by the internal affairs doctrine shall be the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware), in all cases subject to the court having jurisdiction over indispensable parties named as defendants, and provided that this exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Exchange Act.

Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws also provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. However, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts will enforce our federal forum provision. If the federal forum provision is found to be unenforceable, we may incur additional costs associated with resolving such matters.

Any person or entity purchasing or otherwise acquiring or holding or owning (or continuing to hold or own) any interest in any of our securities shall be deemed to have notice of and consented to the foregoing bylaw provisions. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, officers, stockholders, or other employees, which may discourage lawsuits with respect to such claims against us and our current and former directors, officers, stockholders, or other employees. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions. Further, in the event a court finds either exclusive forum provision contained in our amended and restated bylaws to be unenforceable or inapplicable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our results of operations.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Our corporate headquarters is in Palo Alto, California, where we currently lease approximately 72,812 square feet under a lease agreement that expires in May 2028. We also lease and license additional facilities in the United States in Palo Alto, San Francisco, Santa Monica, California; Las Vegas, Nevada; Secaucus, New Jersey; and Richardson, Texas; and internationally in Toronto, Canada; Beijing, Hangzhou and Shanghai, China; Limassol, Cyprus; London, England; Paris, France; Berlin, Germany; Jakarta, Indonesia; Dublin, Ireland; Herzliya, Israel; Tokyo, Japan; Seoul, South Korea; Singapore; Madrid, Spain; Bangkok, Thailand; Istanbul, Turkey; Dubai, United Arab Emirates; and Ho Chi Minh City, Vietnam.

We believe that our facilities are suitable to meet our current needs. However, we intend to expand our facilities and add new facilities as we add employees and enter new geographic markets, and we believe that suitable additional or alternative space will be available as needed to accommodate any such growth. We expect to incur additional expenses in connection with such new or expanded facilities.

Item 3. Legal Proceedings

From time to time, we may be subject to legal proceedings and claims that arise in the ordinary course of business, as well as governmental and other regulatory investigations and proceedings. In addition, third parties may from time to time assert claims against us in the form of letters and other communications. We are not currently a party to any legal proceedings that, if determined adversely to us, would, in our opinion, have a material adverse effect on our business, financial condition, results of operations, or cash flows. Future litigation may be necessary to defend ourselves and our business partners and to determine the scope, enforceability, and validity of third-party proprietary rights, or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and 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 for Common Stock

Our Class A common stock is traded on the Nasdaq Global Select Market under the symbol “APP.” Our Class B and Class C common stock are neither listed nor traded.

Holders of Record

As of December 31, 2022, there were approximately 117 stockholders of record of our Class A common stock, 10 stockholders of records of our Class B common stock and no holders of record of our Class C common stock. Because many of our shares of Class A common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. All shares of Class B common stock are beneficially held by Adam Foroughi, Herald Chen, and KKR Denali Holdings L.P., collectively with certain affiliated trusts.

Dividend Policy

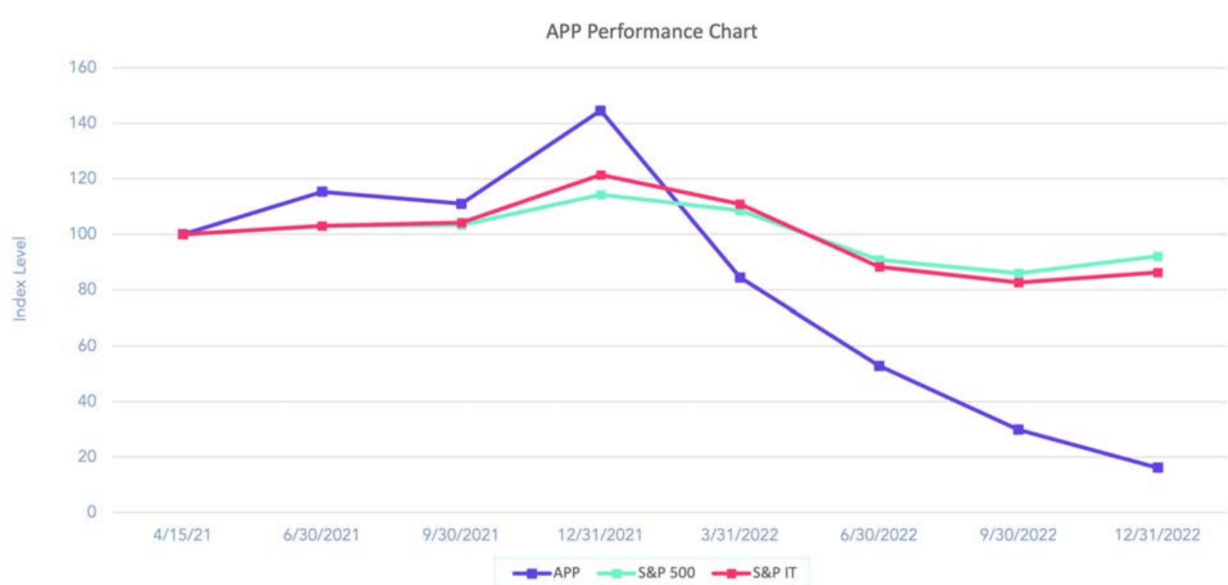
We have never paid cash dividends on our capital stock and we do not anticipate paying any cash dividends in the foreseeable future.

Stock Performance Graph

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

The graph below compares the cumulative total stockholder return on our Class A common stock with the cumulative total return on the Standard & Poor's 500 Stock Index ("S&P 500") and the S&P 500 Information Technology Index ("S&P IT") through December 31, 2022. The graph assumes $100 was invested at the market close on April 15, 2021, which was the first day our Class A common stock began trading. Data for the S&P 500 and S&P IT assumes reinvestment of dividends. The offering price of our Class A common stock in our initial public offering on April 15, 2021 was $80.00 per share. The graph uses the closing market price on April 15, 2021 of $65.20 per share as the initial value of our Class A common stock.

The comparisons in the graph below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our Class A common stock.



Recent Sale of Unregistered Securities and Use of Proceeds

Recent Sale of Unregistered Securities

During the three months ended December 31, 2022, we issued RSUs covering 36,416 shares of our Class A common stock under our 2021 Partner Studio Incentive Plan. During the three months ended December 31, 2022, we issued 61,481 shares of our Class A common stock upon the vesting of RSUs under our 2021 Partner Studio Incentive Plan.

The foregoing transactions did not involve any underwriters, any underwriting discounts or commissions, or any public offering. We believe the offer, sale, and issuance of the above securities was exempt from registration under the Securities Act by virtue of Section 4(a)(2) of the Securities Act and Regulation S promulgated under the Securities Act, because the issuance of securities to the recipients did not involve a public offering. The recipients of the securities in the transaction represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in the transaction. All recipients had adequate access, through their relationships with us or otherwise, to information about us. The issuance of these securities was made without any general solicitation or advertising.

Use of Proceeds

None.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Factors that could cause or contribute to such differences include those identified below and those discussed in the section titled "Risk Factors" and other parts of this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that may be expected for any period in the future.

Overview

Our mission is to help companies grow their apps and accelerate their business. Our full stack software solution provides advanced tools for mobile app developers to grow their businesses by automating and optimizing the marketing and monetization of their apps. We also operate a portfolio of owned mobile apps and accelerated our market penetration through an active acquisition and partnership strategy. Our scaled business model sits at the nexus of the mobile app ecosystem, which creates a durable competitive advantage that has fueled our clients' success and our strong growth.

Since our founding in 2011, we have been focused on building a software-based platform for mobile app developers to improve the marketing and monetization of their apps. Our founders, who are mobile app developers themselves, quickly realized the real impediment to success and growth in the mobile app ecosystem was a discovery and monetization problem—breaking through the congested app stores to efficiently find users and successfully grow their business. Their first-hand experience with these developer challenges led to the development of our infrastructure and software—AppLovin Core Technologies and AppLovin Software Platform. We capitalized on our success and understanding of the mobile app ecosystem by launching AppLovin Apps in 2018. Our Apps now consist of a globally diversified portfolio of over 350 free-to-play mobile games across five genres, run by eleven studios.

For 2022, our revenue grew 1% year-over-year from 2021, from $2.79 billion in 2021 to $2.82 billion in 2022. For 2021, our revenue grew 92% year-over-year from 2020, from $1.45 billion in 2020 to $2.79 billion in 2021. We generated a net loss of $192.9 million in 2022, net income of $35.3 million in 2021, and a net loss of $125.9 million in 2020. We generated Adjusted EBITDA of $1.1 billion, $726.8 million, and $345.5 million in 2022, 2021 and 2020, respectively. Additionally, we have generated strong cash flows, with net cash provided by operating activities of $412.8 million, $361.9 million, and $222.9 million in 2022, 2021, and 2020, respectively. Given our strong financial position, we have been able to reinvest in our expansion and growth and consummate strategic acquisitions and partnerships. See the section titled "—Non-GAAP Financial Measures" for a definition of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to net income (loss), the most directly comparable financial measure calculated in accordance with GAAP.

In February 2022, our board of directors authorized a share repurchase program to repurchase $750.0 million of our Class A common stock over time. We will continuously evaluate efficient alternatives to using cash on hand to fund the program, including accessing the capital markets, subject to market conditions.

Our Business Model

We collect revenue from our Software Platform and our Apps. In 2022, Software Platform Revenue represented 37% of total revenue and Apps Revenue represented 63% of total revenue.

In the second quarter of 2022, we revised the presentation of segment information to align with changes to how our chief operating decision maker ("CODM"), the Chief Executive Officer, allocates resources and assesses performance. Effective in May 2022, we report our operating results through two reportable segments: Software Platform and Apps. Previously we had a single operating and reportable segment.

The CODM evaluates performance of each segment based on several factors, of which the financial measures are segment revenue and segment adjusted EBITDA, as defined in Note 14 to the Company's consolidated financial statements.

The Software Platform and Apps segments provide a view into the organization of our business and generate revenue as follows:

Software Platform Revenue

We primarily generate Software Platform Revenue from fees paid by mobile app advertisers who use our Software Platform to grow and monetize their apps. We are able to grow our Software Platform Revenue by improving our various software technologies.

Software Platform clients include a wide variety of advertisers, from indie developer studios to some of the largest global internet platforms, such as Facebook and Google. While we have thousands of clients as of December 31, 2022, the vast majority of our revenue is derived from our Software Platform Enterprise Clients. See "Key Metrics" below for additional information on how we calculate Software Platform Enterprise Clients. We see multiple opportunities to gain new Software Platform clients, and to increase spend from existing clients, as we help them grow their businesses and make them more successful.

Our Software Platform includes AppDiscovery, MAX, Adjust, and Wurl.

Clients use AppDiscovery to automate, optimize, and manage their user acquisition investments. They set marketing and user growth goals, and AppDiscovery optimizes their ad spend in an effort to achieve their return on advertising spend targets and other marketing objectives. AppDiscovery comprises the vast majority of revenue from our Software Platform. Revenue is generated from our advertisers, typically on a performance-basis, and shared with our advertising publishers, typically on a cost per impression model. Our Software Platform Enterprise Clients had a Net Dollar-Based Retention Rate of approximately 134% for the twelve months ended December 31, 2022.[1]

Software Platform clients use MAX to optimize purchases of app advertising inventory. The Compass Analytics tool within MAX provides insights to manage against key performance indicators, understand the long-term value of users, and help manage profitability. Revenue from MAX is generated based on a percentage of client spend. As more developers move to in-app bidding monetization, we expect growth in the adoption of, and revenue from, MAX.

Software Platform clients use Adjust's SaaS mobile marketing platform to better understand their users' journey while allowing marketers to make smarter decisions through measurement, attribution and fraud prevention. Revenue from Adjust is primarily generated from an annual software subscription fee.

Software Platform clients use Wurl's CTV platform to distribute streaming video, maximize advertising revenue, and acquire and retain viewers or subscribers. Revenue from Wurl is primarily generated from content companies, typically on a usage-based model.

Apps Revenue

During the fourth quarter of 2022, we changed the terms used to describe our two Apps segment revenue streams to better align with market terminology. We now refer to our Apps "Business" revenue as "In-App Advertising" and "Consumer" revenue as "In-App Purchases." Apps Revenue is generated when a user of one of our Apps makes an in-app purchase ("IAP") and when clients purchase the digital advertising inventory of our portfolio of Apps ("In-App Advertising" or "IAA"). We are able to grow our Apps Revenue by adding more apps to our Apps portfolio and increasing engagement on our existing Apps.

Our Apps are generally free-to-play mobile games and generate IAP Revenue through IAPs. IAPs consist of virtual goods used to enhance gameplay, accelerate access to certain features or levels, and augment other mobile game progression opportunities for the user. IAPs drive more engagement and better economics from our Apps. The vast majority of our IAP revenue flows through two app stores, Apple App Store and Google Play, which charge us a standard commission on IAPs. IAP Revenue represented 67% of total Apps Revenue for the twelve months ended December 31, 2022.

During the twelve months ended December 31, 2022, we had an average of 2.3 million Monthly Active Payers ("MAPs") across our portfolio of Apps. Over that period, we had an Average Revenue Per Monthly Active Payer ("ARPMAP") of $43. See “Key Metrics” below for additional information on how we calculate MAPs and ARPMAP.

IAA clients that purchase advertising inventory from our Apps are able to target highly relevant users from our diverse and global portfolio of over 350 mobile games. Our clients leverage a broad set of high-performing mobile ad formats, including playable and rewarded video, and are able to match these ads with relevant users resulting in a better return on their advertising spend. By increasing the number of users and their engagement, as well as better matching ads with the appropriate target audience, we are able to increase our revenue from IAA clients that purchase advertising inventory from our Apps. IAA Revenue represented 33% of total Apps Revenue for the twelve months ended December 31, 2022.

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[1] We measure Net Dollar-Based Retention Rate for the twelve months ended December 31, 2022 for our Software Platform Enterprise Clients as current period revenue divided by prior period revenue. Prior period revenue is measured as revenue for the twelve months ended December 31, 2021 from our Software Platform Enterprise Clients as of December 31, 2021. Current period revenue is revenue for the twelve months ended December 31, 2022 from our Software Platform Enterprise Clients as of December 31, 2021.

Key Metrics

We review the following key metrics on a regular basis in order to evaluate the health of our business, identify trends affecting our performance, prepare financial projections, and make strategic decisions.

Update to our Key Metrics

As our Software Platform, which includes AppDiscovery, MAX, AppLovin Exchange, Adjust and Wurl, continues to evolve, we continue to evaluate metrics that facilitate an understanding of our business. Following the addition and integration of offerings like Adjust and Wurl, as well as the future launch of our Array OEM/carrier offering, the revenue mix within our Software Platform segment is shifting and we expect this shift will become more pronounced over time as these businesses grow. Given the structural differences in these businesses—in terms of their revenue models as well as the nature of their clients—we believe our current key metrics for the Software Platform will no longer provide a valuable method to understand fluctuations in the performance of our Software Platform revenue. As a result, beginning in first quarter of 2023, we will no longer provide certain key metrics related to our Software Platform segment including Total Software Transaction Value, Software Platform Enterprise Clients and Revenue per Software Platform Enterprise Client.

Software Platform Enterprise Clients ("SPECs"). We focus on the number of SPECs, which are third-party clients from whom we have collected greater than $125,000 of Software Platform Revenue in the trailing twelve months to a given date. SPECs generate the vast majority of our Software Platform Revenue and Software Platform Revenue growth.

Revenue Per Software Platform Enterprise Client ("Revenue per SPEC"). We define Revenue per SPEC as (i) the total revenue derived from our Software Platform Enterprise Clients in the trailing twelve months to a given period, divided by (ii) Software Platform Enterprise Clients as of the end of that same period. Revenue per SPEC shows how efficiently we are monetizing each SPEC. We expect to increase Revenue per SPEC over time as we enhance our Software Platform and Apps.

The following table shows our SPEC and Revenue per SPEC as of December 31, 2022, 2021 and 2020.

	Twelve Months Ended December 31,		
	2022	**2021**	**2020**
SPEC (trailing twelve months)	566	380	142
Revenue per SPEC (trailing twelve months) (in thousands)	$ 1,907	$ 1,634	$ 1,404

Total Software Transaction Value ("TSTV"). Software Platform Revenue is from third-party clients using our Software Platform to find new customers. We do not recognize revenue from our own spend on our Software Platform. Therefore, we use TSTV to measure the scale and growth rates of our Software Platform as it reflects the total value on our Software Platform including our first-party studios as though they were stand-alone businesses.

The following table shows our TSTV for the years ended December 31, 2022, 2021 and 2020.

	Year Ended December 31,		
	2022	**2021**	**2020**
Total Software Transaction Value (in thousands)	$1,222,160	$ 982,248	$ 295,698

Monthly Active Payers ("MAPs"). We define a MAP as a unique mobile device active on one of our Apps in a month that completed at least one IAP during that time period. A consumer who makes IAPs within two separate Apps on the same mobile device in a monthly period will be counted as two MAPs. MAPs for a particular time period longer than one month are the average MAPs for each month during that period. We estimate the number of MAPs by aggregating certain data from third-party attribution partners. Some of our Apps do not utilize such third-party attribution partners, and therefore our MAPs figure for any period does not capture every user that completed an IAP on our Apps. We estimate that our counted MAPs generated approximately 98% of our IAP Revenue during the year ended December 31, 2022, and as such, management believes that MAPs are still a useful metric to measure the engagement and monetization potential of our games.

Average Revenue Per Monthly Active Payer ("ARPMAP"). We define ARPMAP as (i) the total IAP Revenue derived from our Apps in a monthly period, divided by (ii) MAPs in that same period. ARPMAP for a particular time period longer than one month is the average ARPMAP for each month during that period. ARPMAP shows how efficiently we are monetizing each MAP.

The following table shows our Monthly Active Payers and Average Revenue Per Monthly Active Payer for the years ended December 31, 2022, 2021 and 2020.

	Year Ended December 31,		
	2022	**2021**	**2020**
Monthly Active Payers (millions)	2.3	3.0	1.5
Average Revenue Per Monthly Active Payer	$ 43	$ 43	$ 41

Our key metrics are not based on any standardized industry methodology and are not necessarily calculated in the same manner or comparable to similarly titled measures presented by other companies. Similarly, our key metrics may differ from estimates published by third parties or from similarly titled metrics of our competitors due to differences in methodology. The numbers that we use to calculate TSTV, MAP, and ARPMAP are based on internal data. While these numbers are based on what we believe to be reasonable judgments and estimates for the applicable period of measurement, there are inherent challenges in measuring usage and engagement. We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy.

Non-GAAP Financial Metrics

Adjusted EBITDA and Adjusted EBITDA Margin

We define Adjusted EBITDA for a particular period as net income (loss) before interest expense and loss on settlement of debt, other (income) expense, net (excluding certain recurring items), provision for (benefit from) income taxes, amortization, depreciation and write-offs and as further adjusted for stock-based compensation expense, acquisition-related expense and transaction bonus, publisher bonuses, MoPub acquisition transition services, restructuring costs, impairment and loss on disposal, loss (gain) on extinguishments of acquisition related contingent consideration, non-operating foreign exchange (gain) losses, lease modification and abandonment of leasehold improvements, and change in the fair value of contingent consideration. We define Adjusted EBITDA margin as Adjusted EBITDA divided by revenue for the same period.

Adjusted EBITDA and Adjusted EBITDA margin are key measures we use to assess our financial performance and are also used for internal planning and forecasting purposes. We believe Adjusted EBITDA and Adjusted EBITDA margin are helpful to investors, analysts, and other interested parties because they can assist in providing a more consistent and comparable overview of our operations across our historical financial periods. In addition, these measures are frequently used by analysts, investors, and other interested parties to evaluate and assess performance. We use Adjusted EBITDA and Adjusted EBITDA margin in conjunction with GAAP measures as part of our overall assessment of our performance, including the preparation of our annual operating budget and quarterly forecasts, to evaluate the effectiveness of our business strategies, and to communicate with our board of directors concerning our financial performance.

Adjusted EBITDA and Adjusted EBITDA margin are non-GAAP financial measures and are presented for supplemental informational purposes only and should not be considered as alternatives or substitutes to financial information presented in accordance with GAAP. These measures have certain limitations in that they do not include the impact of certain expenses that are reflected in our consolidated statement of operations that are necessary to run our business. Our definitions may differ from the definitions used by other companies and therefore comparability may be limited. In addition, other companies may not publish these or similar metrics. Thus, our Adjusted EBITDA and Adjusted EBITDA margin should be considered in addition to, not as substitutes for, or in isolation from, measures prepared in accordance with GAAP.

The following table provides our Adjusted EBITDA and Adjusted EBITDA margin for 2022, 2021, and 2020, and a reconciliation of net income (loss) to Adjusted EBITDA:

	Year Ended December 31,		
	2022	**2021**	**2020**
	(in thousands, except percentages)		
Net income (loss)	$ (192,947)	$ 35,338	$ (125,934)
Adjusted as follows:			
Interest expense and loss on settlement of debt	171,863	103,170	77,873
Other (income), net[1]	(18,647)	(7,545)	(6,183)
Provision for (benefit from) income taxes	(12,230)	10,973	(9,772)
Amortization, depreciation and write-offs	547,084	431,063	254,951
Impairment and loss in connection with sale of long-lived assets	127,892	—	—
Non-operating foreign exchange (gain) loss	(164)	(1,537)	1,210
Stock-based compensation[2]	191,612	135,468	62,387
Acquisition-related expense and transaction bonus	21,279	16,887	7,850
Publisher bonuses[3]	209,635	3,227	—
MoPub acquisition transition services[4]	6,999	—	—
Loss on extinguishments of acquisition related contingent consideration	—	—	74,820
Lease modification and abandonment of leasehold improvements	—	—	7,851
Restructuring costs	10,834	—	—
Change in the fair value of contingent consideration	—	(230)	442
Adjusted EBITDA	$ 1,063,210	$ 726,814	$ 345,495
Net income (loss) margin	(6.8)%	1.3%	(8.7)%
Adjusted EBITDA margin	37.7%	26.0%	23.8%

[1] Excludes recurring operational foreign exchange gains and losses and write-off investments included in Amortization, depreciation and write-offs.

[2] The twelve months ended December 31, 2021 includes $2.3 million of bonus compensation settled in stock outside of the scope of ASC 718.

[3] In association with the MoPub acquisition, we incurred certain costs to incentivize publishers to migrate to our MAX mediation solution, including existing publishers of MoPub as well as publishers on other competitor offerings. We have not historically incurred significant publisher migration costs, nor do we currently intend to incur significant publisher migration costs in the future. As such, we have removed the impact of these costs from Adjusted EBITDA.

[4] Reflects one-time transition services provided by Twitter to AppLovin.

In 2022, 2021 and 2020, our net income (loss) and Adjusted EBITDA included $0.8 million, $1.8 million and $62.0 million, related to the fair value adjustment of the deferred revenue balance assumed as a result of the acquisitions of Adjust in 2021 and Machine Zone in 2020.

Free Cash Flow

We define Free Cash Flow as net cash provided by operating activities less purchases of property and equipment and principal payment of finance leases. We use Free Cash Flow to help manage the health of our business, prepare budgets and for capital allocation purposes. We believe Free Cash Flow provides useful supplemental information to help investors understand underlying trends in our business and our liquidity. Free cash flow has certain limitations, including that it does not reflect our future contractual commitments. Our definition may differ from the definitions used by other companies and therefore comparability may be limited. In addition, other companies may not publish Free Cash Flow or similar metrics. Thus, our Free Cash Flow should be considered in addition to, not as a substitute for, or in isolation from, measures prepared in accordance with GAAP.

The following table provides our Free Cash Flow for 2022, 2021, and 2020, and a reconciliation of net cash provided by operating activities to Free Cash Flow:

	Year Ended December 31,		
	2022	**2021**	**2020**
	(in thousands, except percentages)		
Net cash provided by operating activities	$ 412,773	$ 361,851	$ 222,883
Less:			
Purchase of property and equipment	(662)	(1,390)	(3,241)
Principal payments of finance leases	(24,083)	(15,271)	(9,708)
Free Cash Flow	$ 388,028	$ 345,190	$ 209,934
Net cash used in investing activities	$ (1,371,468)	$ (1,214,930)	$ (679,891)
Net cash provided by (used in) financing activities	$ (526,848)	$ 3,109,546	$ 377,855

Factors Affecting Our Performance

We believe that the future success of our business depends on many factors, including the factors described below. While each of these factors presents significant opportunities for our business, they also pose important challenges that we must successfully address in order to continue to grow profitably while maintaining strong cash flow.

Continue to invest in innovation

We have made, and intend to continue to make, significant investments in our Core Technologies and Software Platform to enhance their effectiveness and value proposition for our clients. We expect that these investments will require spending on research and development, and acquisitions and partnerships related to technology components and products. We believe investments in our software, including our machine learning engine AXON, AppDiscovery, Adjust, and MAX, will further improve effectiveness for developers. Our investments will also allow us to enter new mobile app sectors outside of gaming. While our investments in research and development and acquisitions and partnerships may not result in revenue in the near term, we believe these investments position us to increase our revenue over time.

Retain and grow existing clients

We rely on existing clients for a significant portion of our revenue. As we improve our Software Platform and Apps, we can attract additional spend from these clients. Our clients include indie studio developers and some of the largest mobile advertising platforms in the world. We believe there is significant room for us to further expand our relationships with these clients and increase their usage of our Software Platform. We have invested in targeted sales and account-based marketing efforts, including through Adjust's sales and marketing teams, to identify and showcase opportunities to clients and plan to continue to do so in the future.

In the past, our clients have generally increased their usage of our Software Platform and Apps, and as a result, growth from existing clients has been a primary driver of our revenue growth. We must continue to retain our existing clients and expand their spend with us over time to continue to grow our revenue, increase profitability and drive greater cash flow.

Add new clients globally

Our future success depends in part on our ability to acquire new clients. We recently increased our focus on markets outside the United States to serve the needs of clients globally. In 2022, only 41% of our revenue from Software Platform and IAA Revenue clients was generated from outside of the United States. We believe that the global opportunity is significant and will continue to expand as developers and advertisers outside the United States adopt our Software Platform and advertise on our Apps. We also see opportunities to acquire new clients outside of mobile gaming, as the capabilities of our Core Technologies and Software Platform are relevant to the broader mobile app ecosystem. We are investing in direct sales, product development, education, and other capabilities to drive increased awareness and adoption of our Software Platform and Apps, which investments may impact our profitability in the near term as we seek further scale. We must continue to acquire new clients to grow our revenue, increase profitability, and drive greater cash flow.

Review of our AppLovin Apps portfolio

Over the past several years, our Apps have been critical in providing first-party data and audiences for our Software Platform to enable us to test, design, and scale our technologies. Given the recent development of our technology, the current scale of our Software Platform, and the reach of our MAX solution, we believe we can reduce our reliance on the data from our Apps. Therefore, we are continuing our strategic review and optimization of our Apps portfolio and its cost structure, focusing on how best to optimize each asset's contribution to our overall financial performance. This review has resulted in the divestiture or closure of certain studios, a reduction of headcount, restructuring of earn out arrangements, and other changes to our Apps portfolio, such as restructuring of certain assets or choosing to make changes to optimize the cost structure of certain Apps rather than investing in revenue growth. For example, we have reduced our user acquisition spend for our portfolio of Apps as we increased our desired return goals, which has led to improved App segment Adjusted EBITDA margin, but also contributed to a decline in revenue and MAPs. While we believe we have made substantial progress on this review, we may take similar actions in the future. We will continue to manage our Apps portfolio for financial return, including investing for growth through new game launches, while remaining open to evaluating opportunities for the retention, restructure, or sale of assets in the future. We believe that our execution of this review, and our ability to optimize the contribution of our Apps portfolio, will affect our revenue growth, profitability, and cash flow.

Continued execution of strategic acquisitions and partnerships

We intend to continue to make strategic acquisitions and enter into strategic partnerships to grow our business. From the beginning of 2018 through December 31, 2022, we have invested nearly $4.0 billion in 29 strategic acquisitions and partnerships with mobile app developers and for technologies to enhance our Software Platform including the acquisition of MAX in 2018, Adjust in April 2021, MoPub in January 2022, and Wurl in April 2022.

While we have a strong pipeline of strategic acquisition and partnership opportunities, we believe our future results of operations will be affected by our ability to continue to identify and execute such transactions that are accretive to our growth and profitability.

Growth and structure of the mobile app ecosystem

Our business and results of operations will be impacted by industry factors that drive overall performance of the mobile app ecosystem. The mobile app ecosystem has been affected by the recent economic uncertainty, including by advertisers more closely managing budgets and reducing overall spend, which has resulted in slowed growth for our Software Platform in recent quarters. We expect that any further slowing, or accelerations of our growth would affect our business and results of operations. In addition, even if the mobile app ecosystem continues to grow at its current rate, our ability to position ourselves within the market will impact our business and results of operations.

Mobile app developers, including AppLovin, rely on third-party platforms, such as the Apple App Store and Google Play Store, among others, to distribute games, collect payments made for IAPs, and target users with relevant advertising. We expect this to continue for the foreseeable future. These third-party platforms have significant market power and discretion to set platform fees, select which apps to promote, and decide how much consumer information to provide to advertising networks that enable our Core Technologies and Software Platform to target users with personalized and relevant advertising and allocate marketing campaigns in an efficient and cost-effective manner. Any changes made in the policies of third-party platforms could drive rapid change across the mobile app ecosystem. For example, in April 2021, Apple started implementing its application tracking transparency framework that, among other things, requires users' opt-in consent for certain types of tracking. While this transparency framework has not had a significant impact on our overall business, it may in the future, including with respect to the effectiveness of our advertising practices and/or our ability to efficiently generate revenue for our Apps. We rely in part on Identifier for Advertisers ("IDFA") to provide us with data that helps our Software Platform better market and monetize Apps. In light of the IDFA and transparency changes, we made changes to our data collection practices., To the extent we are unable to utilize IDFA or a similar offering, or if the transparency changes and any related opt-in or other requirements result in decreases in the availability or utility of data relating to Apps, our Software Platform may not be as effective, we may not be able to continue to efficiently generate revenue for our Apps, and our revenue and results of operations may be harmed. Additionally, Apple implemented new requirements for consumer disclosures regarding privacy and data processing practices in December 2020, which has resulted in increased compliance requirements and could result in decreased usage of our Apps. In February 2022, Google announced its Privacy Sandbox initiative for Android, expecting to restrict tracking activity and limit advertisers' ability to collect app and user data across Android devices by the third quarter of 2023. These or any similar changes to the policies of Apple or Google may materially and adversely affect our business, financial condition, and results of operations. To date, these data privacy changes have had some impact on the discoverability of apps across these platforms, though they have had a relatively muted aggregate impact on our overall results of operations.

New tools for developers, industry standards, and platforms may emerge in the future. We believe our focus on the mobile app ecosystem has allowed us to understand the needs of our clients and our relentless innovation has enabled us to quickly adapt to changes in the industry and pioneer new solutions. We must continue to innovate and stay ahead of developments in the mobile app ecosystem in order for our business to succeed and our results of operations to continue to improve.

Current Economic Conditions and COVID-19

We are subject to risks and uncertainties caused by global economic conditions and events with significant macroeconomic impacts, including but not limited to, the COVID-19 pandemic, the Russian invasion of Ukraine, and actions taken to counter inflation. Inflation, rising interest rates and reduced consumer confidence have caused and may continue to cause our clients to be cautious in their spending. The mobile gaming and app market continue to be affected by cautious advertiser demand, but we believe that demand is stabilizing when compared against the third quarter of 2022. The full impact of these macroeconomic events and the extent to which these macro factors may impact our business, financial condition, and results of operations in the future remains uncertain. The risks related to our business are further described in the section titled “Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K.

Ukraine/Russia Conflict

As the Russian invasion of Ukraine continues to evolve, we are closely monitoring the current and potential impact on our business, our people, and our clients. We have taken steps to comply with applicable domestic and international regulatory restrictions on international trade and financial transactions. In connection with our compliance efforts, we have identified active clients and vendors inside Russia and Belarus that are subject to evolving sanctions imposed by the United States and/or the European Union and have terminated or suspended our contracts with them. Revenues associated with clients and vendors in Russia and Belarus are not material to our consolidated financial results, and we anticipate that the termination of Russian and Belarus clients and vendors that are subject to duly authorized sanctions will not have a material impact on our business or other client relationships. Management and our Board of Directors are monitoring the regional and global ramifications of the continuing events. Our cybersecurity teams are continually monitoring for any attacks that could cause disruption to our platform, systems, and networks, which could result in security breaches or data loss, damage to our brand, or reduce demand for our products and services.

Components of Results of Operations

Revenue

We generate Software Platform Revenue primarily from fees collected from advertisers spending on AppDiscovery, typically on a performance basis, then shared with our advertising publishers, typically on a cost per impression model. Software Platform Revenue also includes fees generated based on a percentage of client spend through MAX and subscription fees for Adjust's SaaS mobile marketing platform.

We generate Apps Revenue from In-App Purchases made by the users within our Apps and from In-App Advertising generated from advertisers that purchase advertising inventory from our diverse portfolio of Apps. IAA Revenue from our Apps was 33%, 31% and 41% of total Apps Revenue in 2022, 2021 and 2020, respectively.

Cost of Revenue and Operating Expenses

Cost of revenue. Cost of revenue consists primarily of third-party payment processing fees for distribution partners, amortization of acquired technology-related intangible assets, and expenses associated with operating our network infrastructure. Third-party payment processing fees relate to IAP Revenue. The fees for IAPs are processed and collected by third-party distribution partners.

Network operating costs include bandwidth, energy, other equipment costs related to our co-located data centers, and costs for third-party cloud service providers. We expect our cost of revenue to increase in absolute dollars over the long term as our business and revenue continue to grow. We also expect our cost of revenue as a percentage of revenue to fluctuate period-over-period.

Sales and marketing. Sales and marketing expenses consist primarily of user acquisition costs, other advertising expenses, personnel-related expenses for salaries, employee benefits, and stock-based compensation for employees engaged in sales and marketing, and amortization of acquired user-related intangible assets, marketing programs, travel, customer service costs, and allocated facilities and information technology costs.

We plan to continue to invest in sales and marketing to grow our Software Platform customer base and increase brand awareness. We also plan to continue to invest in new App launches to the extent we see opportunities for cost-effective growth. As a result, we expect sales and marketing expenses to increase in absolute dollars over the long-term, though they may fluctuate period-over-period in the near term as we reduce our user acquisition spend for our portfolio of Apps. We also expect our sales and marketing expenses as a percentage of revenue to fluctuate period- over-period in the near term as we invest to grow our customer base and increase brand awareness, and to decrease over the long term as we benefit from greater scale.

Research and development. Research and development expenses consist primarily of product development costs, including personnel-related expenses for salaries, employee benefits, and stock- based compensation for employees engaged in research and development, professional services costs related to development of new apps by third parties, consulting costs, regulatory compliance costs, and allocated facilities and information technology costs.

We plan to continue to invest in research and development to continue to enhance our Core Technologies and Software Platform, and to improve existing games and develop new games. As a result, we expect research and development expenses to increase in absolute dollars over the long-term, though they may fluctuate period-over-period in the near term as we reassess in which areas to focus our investment. We also expect our research and development expenses as a percentage of revenue to fluctuate period-over-period in the near term as we invest to enhance our Core Technologies and Software Platform and improve our existing Apps and develop new Apps, and to decrease over the long term as we benefit from greater scale.

General and administrative. General and administrative expenses consist primarily of costs incurred to support our business, including personnel-related expenses for salaries, employee benefits, and stock-based compensation for employees engaged in finance, accounting, legal, human resources and administration, professional services fees for legal, accounting, recruiting, and administrative services (including acquisition-related expenses), insurance, travel, and allocated facilities and information technology costs.

We plan to continue to invest in our general and administrative function to support the growth of our business. In addition, we expect to incur additional general and administrative expenses as a result of operating as a public company, including expenses related to compliance and reporting obligations of a public company, increased insurance and investor relations expenses, and increased professional services fees (including acquisition-related expenses). As a result, we expect general and administrative expenses to increase in absolute dollars. We also expect our general and administrative expenses as a percentage of revenue to fluctuate period-over-period in the near term as we invest to support the growth of our business, and to decrease over the long term as we benefit from greater scale.

Other Income and Expenses

Interest expense and loss on settlement of debt. Interest expense and loss on settlement of debt consists primarily of loss related to debt extinguishment, interest expense associated with our outstanding debt, including accretion of debt discount, and changes in fair value of interest rate swap related to the stream of variable interest payments associated with a portion of our outstanding debt.

Other income (expense), net. Other income (expense), net, includes interest earned on our cash and cash equivalents, gains and losses related to embedded derivatives and other financial instruments accounted for at fair value, and foreign currency exchange gains (losses), which consist primarily of remeasurement of transactions and monetary assets and liabilities denominated in currencies other than the functional currency at the end of the period.

Provision for (benefit from) income taxes. We are subject to income taxes in the United States and foreign jurisdictions in which we do business. These foreign jurisdictions have different statutory tax rates than those in the United States. Additionally, certain of our foreign earnings may also be taxable in the United States. Accordingly, our effective tax rate will vary depending on the relative proportion of foreign to domestic income, impacts from acquisition restructuring, deduction benefits related to foreign-derived intangible income, future changes in the valuation of our deferred tax assets and liabilities, and changes in tax laws. Additionally, our effective tax rate can vary based on the amount of pre-tax income or loss.

Results of Operations

In this section, we discuss the results of our operations for the year ended December 31, 2022 compared to the year ended December 31, 2021. For a discussion of the year ended December 31, 2021 compared to the year ended December 31, 2020, please refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2021.

The following tables summarize our consolidated statement of operations.

	Years Ended December 31,		
	2022	2021	2020
		(in thousands)	
Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086
Costs and expenses			
Cost of revenue(1)(2)	1,256,065	988,095	555,578
Sales and marketing(1)(2)	919,550	1,129,892	627,796
Research and development(1)	507,607	366,402	180,652
General and administrative(1)	181,627	158,699	66,431
Extinguishments of acquisition-related contingent consideration	—	—	74,820
Lease modification and abandonment of leasehold improvements	—	—	7,851
Total costs and expenses	2,864,849	2,643,088	1,513,128
Income (loss) from operations	(47,791)	150,016	(62,042)
Other income (expense):			
Interest expense and loss on settlement of debt	(171,863)	(103,170)	(77,873)
Other income (expense), net	14,477	(535)	4,209
Total other expense	(157,386)	(103,705)	(73,664)
Income (loss) before income taxes	(205,177)	46,311	(135,706)
Provision for (benefit from) income taxes	(12,230)	10,973	(9,772)
Net income (loss)	$ (192,947)	$ 35,338	$ (125,934)

(1) Includes stock-based compensation expense as follows:

	Years Ended December 31,		
	2022	2021	2020
		(in thousands)	
Cost of revenue	$ 6,307	$ 2,335	$ 982
Sales and marketing	41,533	15,224	10,668
Research and development	94,319	63,344	36,852
General and administrative	49,453	52,274	13,885
Total stock-based compensation	$ 191,612	$ 133,177	$ 62,387

(2) Includes amortization expense related to acquired intangibles as follows:

	Years Ended December 31,		
	2022	2021	2020
		(in thousands)	
Cost of revenue	$ 448,462	$ 373,726	$ 228,339
Sales and marketing	66,173	22,661	11,587
Total amortization expense related to acquired intangibles	$ 514,635	$ 396,387	$ 239,926

The following table sets forth the components of our consolidated statements of operations for each of the periods presented as a percentage of revenue[1]:

	Years Ended December 31,		
	2022	2021	2020
		(in thousands)	
Revenue	100 %	100 %	100 %
Costs and expenses:			
Cost of revenue	45 %	35 %	38 %
Sales and marketing	33 %	40 %	43 %
Research and development	18 %	13 %	12 %
General and administrative	6 %	6 %	5 %
Extinguishments of acquisition-related contingent consideration	— %	— %	5 %
Lease modification and abandonment of leasehold improvements	— %	— %	1 %
Total costs and expenses	102 %	95 %	104 %
Income (loss) from operations	(2)%	5 %	(4)%
Other income (expense):			
Interest expense and loss on settlement of debt	(6)%	(4)%	(5)%
Other income (expense), net	1 %	— %	0 %
Total other expense	(6)%	(4)%	(5)%
Income (loss) before income taxes	(7)%	2 %	(9)%
Provision for (benefit from) income taxes	— %	— %	(1)%
Net income (loss)	(7)%	1 %	(9)%

(1) Totals of percentages of revenue may not foot due to rounding.

Comparison of Our Results of Operations for the Twelve Months Ended December 31, 2022, 2021 and 2020

Revenue

	Years Ended December 31,			2021 to 2022	2020 to 2021
	2022	2021	2020	% change	% change
	(in thousands, except percentages)				
Software Platform Revenue	$ 1,049,167	$ 673,952	$ 207,285	56 %	225 %
In-App Purchases Revenue	1,179,133	1,458,595	739,934	(19)%	97 %
In-App Advertising Revenue	588,758	660,557	503,867	(11)%	31 %
Apps Revenue	1,767,891	2,119,152	1,243,801	(17)%	70 %
Total Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086	1 %	92 %

For the twelve months ended December 31, 2022, our Software Platform Revenue increased by $375.2 million, or 56%, from the prior year period primarily due to AppDiscovery where installations increased 24% and revenue per installation increased 46% compared to the prior year period, as well as our addition of Wurl during the year which contributed 9% of the Software Platform revenue increase, and continued growth in MAX and Adjust. We do not recognize Software Platform Revenue from transactions with our Owned Studios and Partner Studios.

For the twelve months ended December 31, 2022, our Apps Revenue decreased by $351.3 million, or 17%, from the prior year period. For the twelve months ended December 31, 2022, our IAP Revenue from Apps decreased by $279.5 million, or 19%, from the prior year period, primarily due to a 21% decrease in the volume of in-app purchases, partially offset by a 2% increase in price per in-app purchase. Our IAA Revenue from Apps decreased $71.8 million, or 11%, compared to the prior year period, due to a 16% decrease in price per advertising impression, partially offset by a 7% increase in the volume of advertising impressions. We do not recognize IAA Revenue from transactions with our Owned Studios and Partner Studios.

For the twelve months ended December 31, 2021, our Software Platform Revenue increased by $466.7 million, or 225%, from the prior year period primarily due to AppDiscovery where installations increased 62% and revenue per installation increased 81% compared to the prior year period, as well as our addition of Adjust during the year which contributed 17% of the Software Platform revenue increase. We do not recognize Software Platform Revenue from transactions with our Owned Studios and Partner Studios.

For the twelve months ended December 31, 2021, our Apps Revenue increased by $875.4 million, or 70%, from the prior year period. For the twelve months ended December 31, 2021, our IAP Revenue from Apps increased by $718.7 million, or 97%, from the prior year period, primarily due to a 88% increase in the volume of in-app purchases, as well as a 5% increase in price per in-app purchase. Our IAA Revenue from Apps increased $156.7 million, or 31%, due to a 44% increase in the volume of advertising impressions partially offset by a 9% decrease in price per advertising impression compared to the prior year period. We do not recognize IAA Revenue from transactions with our Owned Studios and Partner Studios.

Cost of revenue

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
Cost of revenue	$1,256,065	$ 988,095	$ 555,578	27 %	78 %
Percentage of revenue	45 %	35 %	38 %		

Cost of revenue in 2022 increased by $268.0 million, or 27%, compared to 2021. The increase in 2022 was primarily due to an increase of $127.9 million in impairment and loss in connection with the sale of certain assets resulting from our strategic review of the Apps portfolio, an increase in expenses associated with operating our network infrastructure driven by the growth in our Software Platform operations of $126.1 million, and an increase of $82.1 million in depreciation and amortization driven primarily by current-year acquisition activities and the recognition of a full year amortization of intangible assets acquired in 2021, offset by an $88.4 million decrease in third-party payment processing fees as a result of the decline in IAP Revenue.

Cost of revenue in 2021 increased by $432.5 million, or 78%, compared to 2020. The increase in 2021 was primarily due to an increase of $199.8 million in third-party payment processing fees as a result of the growth in IAP Revenue, an increase of $153.9 million in depreciation and amortization of technology-related intangible assets driven by an increase in acquisition activity, and an increase in expenses associated with operating our network infrastructure driven by the growth in our operations of $49.7 million.

Sales and marketing

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
Sales and marketing	$ 919,550	$1,129,892	$ 627,796	(19)%	80 %
Percentage of revenue	33 %	40 %	43 %		

Sales and marketing expenses in 2022 decreased by $210.3 million, or 19%, compared to 2021 primarily due to a $317.8 million decrease in user acquisition costs, offset by a $57.1 million increase in personnel-related expense primarily due to an increase in stock-based compensation and an increase in headcount from acquisitions, and a $43.1 million increase in depreciation and amortization of user-related intangible assets.

Sales and marketing expenses in 2021 increased by $502.1 million, or 80%, compared to 2020 primarily due to a $432.8 million increase in user acquisition costs, a $23.2 million increase in personnel-related expenses primarily due to an increase in stock-based compensation as a result of higher fair value in our common stock and increase in headcount, and a $28.0 million increase in professional service fees.

Research and development

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
Research and development	$ 507,607	$ 366,402	$ 180,652	39 %	103 %
Percentage of revenue	18 %	13 %	12 %		

Research and development expenses in 2022 increased by $141.2 million, or 39%, compared to 2021. The increase was primarily due to an increase of $70.5 million in professional services costs related to development of new games by third parties and an increase of $62.5 million in personnel-related expenses related to an increase in stock-based compensation expense as a result of an increase in headcount.

Research and development expenses in 2021 increased by $185.8 million, or 103%, compared to 2020. The increase was primarily due to an increase of $109.9 million in professional services costs related to development of new games by third parties and an increase of $66.1 million in personnel-related expenses related to an increase in stock-based compensation as a result of higher fair value in our common stock and an increase in headcount.

General and administrative

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
General and administrative	$ 181,627	$ 158,699	$ 66,431	14 %	139 %
Percentage of revenue	6 %	6 %	5 %		

General and administrative expenses in 2022 increased by $22.9 million, or 14% compared to 2021. The increase was primarily due to an increase of $12.7 million in acquisition-related costs, an increase of $3.1 million in professional services costs primarily associated with audit, tax, and legal support, and an increase of $3.0 million in bad debt expense.

General and administrative expenses in 2021 increased by $92.3 million, or 139% compared to 2020. The increase was primarily due to an increase of $65.4 million in personnel-related expenses related to an increase in stock-based compensation expense as a result of higher fair value in our common stock and an increase in headcount to support our growth and an increase of $12.4 million in professional services costs primarily associated with audit, tax, and legal support.

Interest expense and loss on settlement of debt

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
Interest expense and loss on settlement of debt	$ (171,863)	$ (103,170)	$ (77,873)	67 %	32 %
Percentage of revenue	(6)%	(4)%	(5)%		

In 2022, interest expense and loss on settlement of debt increased by $68.7 million, or 67%, compared to 2021. This increase was primary due to an increase of $86.9 million in interest expense related to an increase in the term loan balance and increase in LIBOR during the period, partially offset by a loss on the settlement of term loans of $16.9 million during the prior year period.

In 2021, interest expense and loss on settlement of debt increased by $25.3 million, or 32%, compared to 2020. The increase was primarily due to a loss on the settlement of term loans of $16.9 million during the period.

Other income (expense), net

	Years Ended December 31,			2021 to 2022 % change	2020 to 2021 % change
	2022	2021	2020		
	(in thousands, except percentages)				
Other income (expense), net	$ 14,477	$ (535)	$ 4,209	**	(113)%
Percentage of revenue	1 %	— %	— %		

** Not meaningful

In 2022, other income (expense), net increased by $15.0 million compared to 2021. The increase was primarily due to an increase in interest income of $14.0 million.

In 2021, other income (expense), net decreased by $4.7 million, or 113% compared to 2020. The decrease was primarily due to the write-off of an investment in non-marketable securities of $10.0 million, third-party cost incurred for the amendment of term loans of $3.7 million, and a fair value remeasurement loss of $2.0 million, which were partially offset by an unrealized gain of $4.7 million related to marketable equity securities, $3.9 million in net foreign exchange gains, and a fair value remeasurement gain related to term loan embedded derivative of $2.0 million.

Provision for (benefit from) Income Taxes

	Years Ended December 31, 2022	2021	2020	2021 to 2022 % change	2020 to 2021 % change
	(in thousands, except percentages)				
Provision for (benefit from) income taxes	$ (12,230)	$ 10,973	$ (9,772)	(211)%	(212)%
Percentage of revenue	— %	— %	(1)%		

In 2022, benefit for income taxes increased by $23.2 million or 211% compared to 2021.

The increase in tax benefit was driven by an increase of $52.7 million due to the tax impact on the pre-tax loss of $205.2 million in 2022 as compared to $46.3 million of pre-tax income in 2021, an increase of $14.7 million related to capital loss, an increase of $7.2 million due to higher foreign-derived intangible income deduction, and an increase of $5.1 million due to higher research and development credit, offset by a decrease of $30.1 million related to decrease in stock option deduction, a decrease of $15.7 million due to higher US-foreign rate differential, a decrease of $5.6 million due to higher foreign income inclusion and a decrease of $5.2 million due to higher valuation allowance.

In 2021, we recognized tax provision of $11.0 million as compared to the tax benefit of $9.8 million, a change of $20.7 million, or 212% compared to 2020. The increase in tax provision was driven by an increase of $38.0 million due to higher pre-tax income in 2021, an increase of $15.9 million due to higher valuation allowance, an increase of $6.0 million due to change in foreign deferred tax rate in 2020, a decrease of $2.6 million due to foreign loss inclusion, a decrease of $19.2 million due to excess tax benefit for stock-based compensation, a decrease of $6.9 million due to higher foreign-derived intangible income deduction, and a decrease of $12.2 million due to a disallowed deduction for extinguishments of acquisition-related contingent considerations in 2020.

Comparison of our Segment Results of Operations

The following table presents the results for our Software Platform and Apps segment adjusted EBITDA for the periods indicated:

	Years Ended December 31, 2022	2021	2020	2021 to 2022 % change	2020 to 2021 % change
	(in thousands, except percentages)				
Software Platform Adjusted EBITDA	$ 808,415	$ 457,302	$ 121,114	77 %	278 %
Apps Adjusted EBITDA	$ 254,795	$ 269,512	$ 224,381	(5)%	20 %

Twelve Months Ended December 31, 2022 Compared to Twelve Months Ended December 31, 2021

The $351.1 million, or 77%, increase in Software Platform Adjusted EBITDA for 2022 was primarily driven by an increase in Software Platform revenue of $375.2 million, partially offset by an increase of $123.9 million in expenses associated with our network infrastructure and an increase of $74.3 million in personnel-related expenses related to an increase in headcount primarily due to the acquisitions of Adjust and Wurl. In addition, Software Platform Adjusted EBITDA for 2022 has been adjusted to exclude one-time publisher bonuses of $209.6 million for the year ended December 31, 2022.

The $14.7 million, or 5%, decrease in Apps Adjusted EBITDA for 2022 was primarily driven by a decrease in Apps Revenue of $351.3 million and a $73.0 million increase in professional services costs related to development of new apps by third parties, partially offset by a $317.6 million decrease in user acquisition costs, and a $88.4 million decrease in third-party payment processing fees paid associated with in-app purchases.

Twelve Months Ended December 31, 2021 Compared to Twelve Months Ended December 31, 2020

The $336.2 million, or 278%, increase in Software Platform Adjusted EBITDA for the twelve months ended December 31, 2021 was primarily driven by an increase in Software Platform revenue of $466.7 million, partially offset by an increase of $43.7 million in expenses associated with operating our network infrastructure and an increase of $52.3 million in personnel-related expenses related to an increase in headcount primarily due to the acquisition of Adjust.

The $45.1 million, or 20%, increase in Apps Adjusted EBITDA for the twelve months ended December 31, 2021 was primarily driven by an increase in Apps Revenue of $875.4 million, partially offset by a $432.6 million increase in user acquisition costs, a $199.8 million increase in third-party payment processing fees paid associated with in-app purchases, a $151.6 million increase in costs primarily related to the development of new games by third parties, and a $31.8 million increase in personnel-related expenses related to an increase in stock-based compensation expense as a result of higher fair value in our common stock and an increase in headcount.

Liquidity and Capital Resources

Since inception, we have financed our operations primarily through payments received from clients using our Software Platform and advertising on our Apps, and from user IAPs from our Apps, and through net proceeds we received from the sales of our convertible preferred stock and of our Class A common stock in our initial public offering and debt borrowings, including borrowings made under our credit agreement. As of December 31, 2022, we had cash and cash equivalents of $1.1 billion.

We believe that our existing cash and cash equivalents would be sufficient to satisfy our anticipated working capital and capital expenditures needs for at least the next 12 months. Our future capital requirements, however, will depend on many factors, including our growth rate; sales and marketing activities; timing and extent of spending to support our research and development efforts; capital expenditures to purchase hardware and software; and our continued need to invest in our IT infrastructure to support our growth. In addition, we may enter into additional strategic partnerships as well as agreements to acquire or invest in teams and technologies, including intellectual property rights, which could increase our cash requirements. For example, in 2022, we acquired MoPub and Wurl, which reduced our year-end 2022 cash balance by $1.3 billion. As a result of these and other factors, we may be required to seek additional equity or debt financing sooner than we currently anticipate. If additional financing from outside sources is required, we may not be able to raise it on terms acceptable to us, or at all. If we are unable to raise additional capital when required, or if we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, financial condition, and results of operations could be adversely affected.

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

	Years Ended December 31,		
	2022	2021	2020
		(in thousands)	
Net cash provided by operating activities	$ 412,773	$ 361,851	$ 222,883
Net cash used in investing activities	$ (1,371,468)	$ (1,214,930)	$ (679,891)
Net cash (used in) provided by financing activities	$ (526,848)	$ 3,109,546	$ 377,855

Operating Activities

Net cash provided by operating activities was $412.8 million for 2022, primarily consisting of $192.9 million of net loss, adjusted for certain non-cash items, which included $547.1 million of amortization, depreciation and write-offs, $191.6 million of stock-based compensation expense, $127.9 million of impairment charges and losses on disposal of assets, $17.1 million of change in operating right of use asset, and $12.7 million of amortization of debt issuance costs and discount partially offset by a net increase in the operating assets and liabilities of $292.4 million. The net increase in the operating assets and liabilities was primarily driven by an increase in accounts receivable and other assets, and a decrease in operating lease liabilities, deferred revenue and accrued and other liabilities, partially offset by higher accounts payable.

Net cash provided by operating activities was $361.9 million for 2021, primarily consisting of $35.3 million of net income, adjusted for certain non-cash items, which included $431.1 million of amortization, depreciation and write-offs, $133.2 million of stock-based compensation expense, $26.3 million of change in operating right of use asset, $18.2 million of loss on settlement of debt, $8.8 million of net unrealized gains on fair value remeasurement of financial instruments, and $12.8 million of amortization of debt issuance costs and discount, partially offset by a net increase in the operating assets and liabilities of $284.3 million. The net increase in the operating assets and liabilities was primarily driven by an increase in accounts receivable, prepaid expenses and other current assets and decrease in operating lease liabilities partially offset by higher accounts payable and accrued and other liabilities.

Investing Activities

Net cash used in investing activities was $1.4 billion for 2022, primarily consisting of $1.3 billion related to acquisitions, $66.3 million in purchases of non-marketable investments and other, partially offset by $37.0 million in proceeds from sale of long-lived assets.

Net cash used in investing activities was $1.2 billion for 2021, primarily consisting of $1.2 billion related to acquisitions, $15.0 million in purchases of non-marketable investments and other and $12.0 million in proceeds from other investing activity.

Financing Activities

Net cash used in financing activities was $526.8 million for 2022, primarily consisting of $338.9 million of common stock repurchases, deferred acquisition costs of $124.2 million, payments for withholding taxes related to net share settlement of restricted stock units of $27.5 million, payments for the principal repayment of debt of $25.8 million, and payments for finance leases of $24.1 million, partially offset by $25.5 million in proceeds from exercise of stock awards.

Net cash provided by financing activities was $3.1 billion for 2021, primarily consisting of $1.7 billion of proceeds from issuance of common stock in our initial public offering, net of issuance costs as adjusted for cost reimbursement, $2.3 billion of proceeds from debt issuance and $31.2 million proceeds from exercise of stock awards partially offset by payments for the principal repayment of debt of $719.8 million, deferred acquisition costs of $234.1 million and finance leases of $15.3 million.

Credit Agreement

As of December 31, 2022, our total outstanding indebtedness under the Amended Credit Agreement with the lenders party thereto and Bank of America, N.A. serving as the administrative agent consisted of $3.25 billion of outstanding term loans with $33.3 million due within twelve months. This amount is exclusive of interest payments which vary based on the fluctuations in the interest rate index. Additionally, the Amended Credit Agreement provides a Revolving Credit Facility with a borrowing capacity of $600.0 million. There were no borrowings drawn from the Revolving Credit Facility as of December 31, 2022. For additional information on the Credit Agreement, see Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Contractual Obligations

Our material cash requirements include the following contractual obligations.

Deferred Acquisition Costs

As of December 31, 2022, we had accrued certain deferred acquisition costs of $31.0 million, with the entire amount payable within twelve months. These costs represent part of the consideration related to games acquired in asset acquisition transactions. Refer to "Contingent Consideration" below for additional information.

Operating Leases

As of December 31, 2022, we have non-cancellable commitments for real estate leases and leases of certain networking equipment colocation space with fixed lease payment obligations of $77.0 million, with $17.3 million payable within twelve months. For additional information, see Note 8 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Finance Leases

As of December 31, 2022, we have non-cancelable payments related to finance leases of certain networking equipment of $72.8 million, with $25.0 million payable within twelve months. For additional information, see Note 8 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

License Asset Obligation

As of December 31, 2022, we have an obligation related to certain intellectual property that we licensed from a third party of $45.8 million, with $15.3 million payable within twelve months.

Non-cancelable purchase obligations

As of December 31, 2022, we have non-cancellable purchase obligations, which primarily consist of a certain arrangement related to cloud platform services, of $480.6 million, with $210.7 million payable within twelve months.

Wurl Acquisition Obligations

In April 2022, we completed our acquisition of Wurl, a software platform company in the connected TV market for $378.2 million, which includes a deferred payment of $22.7 million to be paid in October 2023, less any eligible claims against the deferred payment.

Investment Commitments

During the years ended December 31, 2022 and 2021, we invested or committed to invest in certain private equity funds. As of December 31, 2022 these unfunded commitments were $50.1 million, which may be called from time to time by the funds.

Contingent Consideration

Several of the definitive agreements governing our acquisitions of our Owned Studios and arrangements with Partner Studios provide for payment contingent upon future performance metrics. These contingent consideration arrangements include payouts based on a percentage of revenue or profitability metrics, payouts of fixed amounts based on the achievement of certain operating targets, and revenue share arrangements for specific apps, and some of these arrangements do not have a maximum limit of contingent consideration achievable. Because these contingent consideration arrangements are based on the success of relevant Apps and are not guaranteed, we do not expect our results of operations would be materially and adversely effected by the payment of amounts under any such arrangement. The table below presents a summary of the significant contingent consideration arrangements:

Relevant Transaction	**Contingent Consideration Summary**
Recoded asset acquisition (January 2019)	Future one-time earn-out payments, based on a service agreement, of either $60.0 million or $30.0 million per game depending on the nature of the new game App developed, subject to the achievement of a certain monthly revenue milestone in the initial thirty-six months following the launch of a new game App. The term of the service agreement is initially three years, after which time the agreement is terminable by either party upon thirty days' written notice. We are also required to make future one-time earn-out payments, based on a development agreement during the term of six years, of $10.0 million to each of two additional new game Apps developed, subject to the achievement of the same monthly revenue milestone in the initial thirty-six months following the launch of such game Apps.
Samfinaco Games asset acquisition (August 2019)	Future earn-out payments for each of the four years from the date of the transaction based on the greater of (i) a predetermined percentage of revenue or (ii) a predetermined percentage of earnings before interest, taxes, depreciation and amortization generated by the acquired game Apps over each such year. We are also required to make future earn-out payments based on performance metrics of the newly developed game Apps which are similar to the performance metrics of the initially acquired mobile game Apps during the four years from the date of the transaction.
Zenlife asset acquisition (June 2020)	Future earn-out payments for each of the four years from the date of the transaction based on the excess, if any, of revenue generated by the initially acquired game App for such year above the sum of (i) an annual fixed baseline revenue and (ii) the aggregate earn-out payments made in prior years. We are also required to make future earn-out payments for newly developed game Apps determined under the similar approach as for the initially acquired mobile game Apps.
Athena acquisition (November 2020)	Future earn-out payments for each of the four years from the date of the transaction based on (i)(a) the revenue generated by the initially acquired game Apps in each such year in excess of (b) a certain revenue threshold, multiplied by (ii) a predetermined revenue multiple.
Asset acquisition (April 2021)	Future earn-out payments are contingent on the revenue generated by the acquired mobile Apps exceeding a certain revenue threshold, which will be measured and payable (if applicable) each year for four years from the date of the transaction.
Asset acquisition (April 2021)	As amended in 2022, future earn-out payments are contingent on the earnings before interest, taxes, depreciation and amortization ("EBITDA") generated by the acquired mobile Apps.

For acquisitions of Owned Studios that are accounted for as business combinations, contingent consideration is initially recognized at fair value. For our other transactions, we generally recognize contingent consideration only on the date when the related performance metrics are achieved. For additional information, see Notes 2 and 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

As of December 31, 2022, we had recorded liabilities of $19.1 million related to uncertain tax positions. Due to uncertainties in the timing of potential tax audits, the timing of the resolution of these positions is uncertain and we are unable to make a reasonable estimate of the timing of payments in individual years particularly beyond 12 months. As a result, this amount is not included in the table above.

In April 2020, we entered into a share purchase agreement with Redemption Games, Inc. (Redemption Games). We purchased a majority of the outstanding common stock of Redemption Games and entered into agreements with the equity holders of Redemption Games that, among other things, provide for call/put rights whereby such holders can elect to require us to purchase all or a portion of their vested securities on a specified date in February of each year from 2022 to 2025 and we can require such holders to sell to us all of their remaining securities on or after February 19, 2025, each for a purchase price per share of the then current fair market value per share of common stock of Redemption Games. In 2022, we disposed all of the common stock shares of Redemption Games and such call/put rights were terminated without having been exercised.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated and expenses incurred during the reporting periods. We base our estimates on assumptions, both historical and forward-looking, that are believed to be reasonable. On an ongoing basis, we evaluate our estimates and assumptions. These estimates are inherently subject to judgment and actual results could differ materially from those estimates.

We believe that the following critical accounting policies reflect the more significant judgments, estimates and assumptions used in the preparation of our consolidated financial statements. For additional information, see Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Revenue from Contracts with Customers

We generate Software Platform and Apps revenue. Software Platform revenue is generated primarily from fees collected from advertisers and advertising networks who use our Software Platform. We generate Apps revenue from In-App Purchases ("IAP") generated from in-app purchases (“IAPs”) made by users within our apps (“Apps”) and In-App Advertising ("IAA") generated from advertisers that purchase ad inventory from Apps.

Software Platform Revenue

The vast majority of the Software Platform Revenue is generated through AppDiscovery and MAX, which provides the technology to match advertisers and owners of digital advertising inventory (“Publishers”) via auctions at large scale and microsecond-level speeds. The terms for all mobile advertising arrangements are governed by our terms and conditions and generally stipulate payment terms of up to 60 days subsequent to the end of the month. Substantially all of our contracts with customers are fully cancellable at any time or upon a short notice.

Software Platform Revenue is generated by placing ads on mobile applications owned by Publishers. Our performance obligation is to provide customers with access to the Software Platform, which facilitates the advertiser’s purchase of ad inventory from Publishers. We do not control the ad inventory prior to its transfer to the advertiser, because we do not have the substantive ability to direct the use of nor obtain substantially all of the remaining benefits from the ad inventory. We are not primarily responsible for fulfillment and does not have any inventory risk. We are an agent as it relates to the sale of third-party advertising inventory and presents revenue on a net basis. The transaction price is the product of either the number of completions of agreed upon actions or advertisements displayed and the contractually agreed upon price per advertising unit with the advertiser less consideration paid or payable to Publishers. We recognize Software Platform Revenue when the agreed upon action is completed or when the ad is displayed to users. The number of advertisements delivered and completions of agreed upon actions is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period.

Software Platform Revenue also includes revenue generated by our mobile application tracking and attribution solutions that is recognized ratably over the subscription period generally up to twelve months.

Apps Revenue

IAP Revenue

IAP Revenue includes fees collected from users to purchase virtual goods to enhance their gameplay experience. The identified performance obligation is to provide users with the ability to acquire, use, and hold virtual items over the estimated period of time the virtual items are available to the user or until the virtual item is consumed. Payment is required at the time of purchase, and the purchase price is a fixed amount.

Users make IAPs through our distribution partners. The transaction price is equal to the gross amount charged to users because we are the principal in the transaction. IAPs fees are non-refundable. Such payments are initially recorded as deferred revenue. We categorize virtual goods as either consumable or durable. Consumable virtual goods represent goods that can be consumed by a specific player action in gameplay; accordingly, we recognize revenue from the sale of consumable virtual goods as the goods are consumed. Durable virtual goods represent goods that are accessible to the user over an extended period of time; accordingly, we recognize revenue from the sale of durable virtual goods ratably over the period of time the goods are available to the user, which is generally the estimated average user life (“EAUL”).

The EAUL represents our best estimate of the expected life of paying users for the applicable game. The EAUL begins when a user makes the first purchase of durable virtual goods and ends when a user is determined to be inactive. We determine the EAUL on a game-by-game basis. For a newly launched game with limited playing data, we determine the EAUL based on the EAUL of a game with sufficiently similar characteristics.

We determine the EAUL on a quarterly basis and applies such calculated EAUL to all bookings in the respective quarter. Determining the EAUL is subjective and requires management's judgment. Future playing patterns may differ from historical playing patterns, and therefore the EAUL may change in the future. The EAULs are generally between six and nine months.

IAA Revenue

IAA Revenue is generated by selling ad inventory on our Apps to third-party advertisers. Advertisers purchase ad inventory either through the Software Platform or through third-party advertising networks ("Ad Networks"). Revenue from the sale of ad inventory through Ad Networks is recognized net of the amounts retained by Ad Networks as we are unable to determine the gross amount paid by the advertisers to Ad Networks. We recognize revenue when the ad is displayed to users.

Asset Acquisitions and Business Combinations

We perform an initial test to determine whether substantially all of the fair value of the gross assets transferred are concentrated in a single identifiable asset or a group of similar identifiable assets, such that the acquisition would not represent a business. If that test suggests that the set of assets and activities is a business, we then perform a second test to evaluate whether the assets and activities transferred include inputs and substantive processes that together, significantly contribute to the ability to create outputs, which would constitute a business. If the result of the second test suggests that the acquired assets and activities constitute a business, we account for the transaction as a business combination.

For transactions accounted for as business combinations, we allocate the fair value of acquisition consideration to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair values. Acquisition consideration includes the fair value of any promised contingent consideration. The excess of the fair value of acquisition consideration over the fair values of acquired identifiable assets and liabilities is recorded as goodwill. Contingent consideration is remeasured to its fair value each reporting period with changes in the fair value of contingent consideration recorded in general and administrative expenses. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates and assumptions in valuing certain identifiable intangible assets include, but are not limited to, forecasted revenue and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. In certain circumstances, the allocations of the excess purchase price are based upon preliminary estimates and assumptions and subject to revision when we receive final information, including appraisals and other analyses. During the measurement period, which is one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings. Acquisition-related costs are expensed as incurred.

For transactions accounted for as asset acquisitions, the cost, including certain transaction costs, is allocated to the assets acquired on the basis of relative fair values. We generally include contingent consideration in the cost of the assets acquired only when the uncertainty is resolved. We recognize contingent consideration adjustments to the cost of the acquired assets prospectively using the straight-line method over the remaining useful life of the assets. No goodwill is recognized in asset acquisitions.

Services and Development Agreements

We enter into strategic agreements with Partner Studios. We have historically allowed these Partner Studios to continue their operations with a significant degree of autonomy. In some cases, we bought Apps from Partner Studios and entered into service and development agreements whereby Partner Studios provide support in improving existing Apps and developing new Apps. The substantial majority of payments associated with service agreements for existing Apps are expensed to research and development when the services are rendered as the payments primarily relate to developing enhancements for the Apps. Payments for new Apps associated with development agreements are generally made in connection with the development of a particular App, and therefore, we are subject to development risk prior to the release of the App. Accordingly, payments that are due prior to completion of an App are generally expensed to research and development over the development period as the services are incurred. Payments due after completion of an App are generally capitalized and expensed as cost of revenue. For additional information, see Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Software Development Costs

We incur development costs related to internal-use software and the development of Apps. We review software development costs on a quarterly basis to determine if the costs qualify for capitalization. As a result of an agile and iterative development process, the preliminary project stage remains ongoing until just prior to launch, at which time final feature selection occurs. As such, software development costs do not meet the criteria for capitalization and are expensed as incurred to research and development expenses. The software development costs we capitalized during the years ended December 31, 2022 and 2021 were insignificant. We did not capitalize any software development costs during the year ended December 31, 2020

Goodwill

Goodwill is allocated to reporting units and tested for impairment on an annual basis during the fourth quarter or more frequently if we believe indicators of impairment exist. Triggering events that may indicate impairment include, but are not limited to, a significant adverse change in customer demand or business climate that could affect the value of goodwill or a significant decrease in expected cash flows. When conducting quantitative annual goodwill impairment assessments, we compare the fair value of its reporting units to their carrying value. If the carrying value of a reporting unit exceeds its fair value, then we record a goodwill impairment. Commencing January 1, 2019, the lesser of (i) the entire amount by which the carrying value of a reporting unit exceeds its fair value or (ii) the carrying value of goodwill allocated to such reporting unit is recorded as an impairment to goodwill. As of December 31, 2022, 2021 and 2020, no impairment of goodwill has been identified.

Intangible Assets

This consists of identifiable intangible assets, primarily Apps, user base, developed technology, customer relationships and intellectual property licenses resulting from acquisitions. Acquired intangible assets are recorded at cost, net of accumulated amortization. Our estimates of useful lives of intangible assets are based on cash flow forecasts which incorporate various assumptions, including forecasted user acquisition costs, user attrition rates and level of user engagement.

Intangible assets also include costs of intellectual property that we license from third parties for use of their content in our game. The licensing agreements include license payments, which are due over the terms of the agreements. We recognize these license payments as a license asset and a license obligation at the fair value on the contract date, based on a discounted cash flow model. The amortization of the licensed asset commences when the game with licensed content is launched and when licensed agreement is executed; and is recorded in cost of revenue on a straight-line method over the remaining license terms or estimated useful life of the game with licensed content, whichever is shorter. The classification of the license obligations between current and long-term is based on the expected timing of the payments to the licensor.

Impairment of Long-Lived Assets

We review long-lived assets for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable. If such circumstances are present, we assess the recoverability of the long-lived assets by comparing the carrying value to the undiscounted future cash flows associated with the related assets. If the future net undiscounted cash flows are less than the carrying value of the assets, the assets are considered impaired and an expense equal to the amount required to reduce the carrying value of the assets to the estimated fair value is recorded as an impairment of intangible assets in the consolidated statements of operations. Significant judgment is required to estimate the amount and timing of future cash flows and the relative risk of achieving those cash flows. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy and our internal forecasts. For example, if future operating results do not meet current forecasts, we may be required to record future impairment charges for acquired intangible assets. Additional factors which significantly affect future cash flows related to long-lived assets include, but are not limited to, forecasted user acquisition costs, user attrition rates, and level of user engagement. Significant changes in these factors may require us to reassess recoverability of long-lived assets and record impairment. Impairment charges could materially decrease future net income and result in lower asset values on our consolidated balance sheet. There were no material impairment charges related to long-lived assets that are held and used for the years ended December 31, 2022, 2021 and 2020.

We classify an asset as held for sale when we commit to a formal plan to sell the asset and the sale is expected to be completed within one year. Upon classification as held for sale, we recognize the asset at the lower of its carrying value or its estimated fair value, less costs to sell. In addition, we cease to record depreciation or amortization for assets that are classified as held for sale. During the year ended December 31, 2022, we classified certain assets within our Apps reportable segment as held for sale and recognized a total impairment charge of $53.0 million in cost of revenue in our consolidated statements of operations. During the same period, we also recorded a total net loss of $74.9 million as a result of the sale of certain assets within our Apps reportable segment in cost of revenue in our consolidated statements of operations. No assets were classified as held for sale or sold in 2021 or 2020.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, we determine deferred tax assets and liabilities on the basis of the differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize deferred tax assets to the extent that these assets are more likely than not to be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If we determine that we would be able to realize deferred tax assets in the future in excess of their net recorded amount, an adjustment to the deferred tax asset valuation allowance would be made to reduce the provision for income taxes.

We record uncertain tax positions on the basis of a two-step process in which determinations are made (i) whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (ii) for those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with a tax authority.

We recognize interest and penalties related to unrecognized tax benefits on the income tax expense line in our consolidated statement of operations. Accrued interest and penalties are included on the related tax liability line in the consolidated balance sheet.

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for recently adopted accounting pronouncements and recently issued accounting pronouncements not yet adopted as of the dates of the statement of financial position included in this Annual Report on 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risks in the ordinary course of our business, which primarily relate to fluctuations in interest rates and foreign exchange.

Interest Rate Fluctuation Risk

As of December 31, 2022, we had unrestricted cash and cash equivalents of $1.08 billion. A hypothetical 100 basis point increase in interest rates would not have a material impact on our financial condition or results of operations due to the short-term nature of our cash equivalents.

As of December 31, 2022, we had a debt balance of $3.25 billion. We have entered, and in the future may enter, into interest rate swaps to manage interest rate risk on a whole, or a portion, of our outstanding debt. In 2022, we entered into a receive-variable and pay-fixed interest rate swap that allows us to effectively mitigate the impact of an increase in interest rates on a notional amount of $1.8 billion of the outstanding debt balance as of December 31, 2022. With respect to our outstanding borrowings subject to variable interest rates at December 31, 2022, a hypothetical 100 basis point increase in interest rate would have increased the Company's annual interest expense by approximately $15.1 million.

We cannot predict market fluctuations in interest rates and their impact on our debt, nor can there be any assurance that long-term fixed-rate debt will be available at favorable rates, if at all. Consequently, future results may differ materially from estimated results due to adverse changes in interest rates.

Foreign Currency Exchange Risk

Translation Exposure

We are exposed to foreign exchange rate fluctuations as we translate the financial statements of our foreign subsidiaries into U.S. dollars in consolidation. If there is a change in foreign currency exchange rates, the translating adjustments resulting from the conversion of our foreign subsidiaries' financial statements into U.S. dollars would result in a gain or loss recorded as a component of accumulated other comprehensive income (loss), which is part of stockholders' equity (deficit).

Item 8. Financial Statements and Supplementary Data

APPLOVIN CORPORATION
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of AppLovin Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of AppLovin Corporation and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive loss, redeemable noncontrolling interest and stockholders' equity (deficit), and cash flows, for each of the three years in the period ended December 31, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, 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, 2022, 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 February 28, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

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 critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Acquisitions and Dispositions—Acquisitions of MoPub and Wurl—Forecasted Revenue—Refer to Notes 2 and 6 to the financial statements

Critical Audit Matter Description

On January 1, 2022, the Company completed the acquisition from Twitter, Inc. of certain assets that comprised of the MoPub business ("MoPub") for a fair value consideration of $1.03 billion and on April 1, 2022, the Company completed the acquisition of Wurl, Inc. ("Wurl") for a fair value consideration of $378.2 million. The Company accounted for both acquisitions as business combinations. The Company allocated the fair value of acquisition consideration to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair value. For MoPub, total intangible assets of $397.9 million consisted of $336.0 million of advertiser and publisher relationships, $61.8 million of developed technology, and $0.1 million of tradename. For Wurl, total intangible assets of $116.2 million consisted of $41.0 million of customer relationships, $60.5 million of developed technology, and $14.7 million of tradename. Management estimated the fair value of the intangible assets using the income approach, which is a specific discounted cash flow valuation method.

We identified forecasted revenue used in the determination of fair value of the intangible assets as a critical audit matter because it requires management to make significant estimates and assumptions. This required a high degree of auditor judgment, and an increased extent of effort, when performing audit procedures to evaluate the reasonableness of management's estimates and assumptions related to forecasted revenue.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasted revenue included the following, among others:

- Evaluated the reasonableness of forecasted revenue, by comparing it to (1) historical revenue results of the acquired MoPub and Wurl businesses, (2) historical and forecasted revenue of peer companies in industry, and (3) communications with the Board of Directors.

/s/ DELOITTE & TOUCHE LLP

San Jose, California
February 28, 2023

We have served as the Company's auditor since 2014.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of AppLovin Corporation

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of AppLovin Corporation and subsidiaries (the "Company") as of December 31, 2022, 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, 2022, based on 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, 2022, of the Company and our report dated February 28, 2023, expressed an unqualified opinion on those financial statements.

As described in Management's Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at Wurl, Inc. which was acquired in April 2022, and whose financial statements constitute 7% of total assets and 1% of total revenue of the consolidated financial statement amounts as of and for the year ended December 31, 2022. Accordingly, our audit did not include the internal control over financial reporting at Wurl, Inc.

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 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 & TOUCHE LLP

San Jose, California
February 28, 2023

AppLovin Corporation
Consolidated Balance Sheets
(In thousands, except share and per share data)

	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 1,080,484	$ 1,520,504
Restricted cash equivalents	—	1,050,000
Accounts receivable, net	702,814	514,520
Prepaid expenses and other current assets	155,785	150,040
Total current assets	1,939,083	3,235,064
Property and equipment, net	78,543	63,608
Operating lease right-of-use assets	60,379	70,975
Goodwill	1,823,755	966,427
Intangible assets, net	1,677,660	1,709,347
Other assets	268,426	118,158
Total assets	$ 5,847,846	$ 6,163,579
Liabilities, redeemable noncontrolling interest, and stockholders' equity		
Current liabilities:		
Accounts payable	$ 273,196	$ 258,220
Accrued liabilities	147,801	133,770
Licensed asset obligation	15,254	17,374
Short-term debt	33,310	25,810
Deferred revenue	64,018	78,930
Operating lease liabilities	14,334	18,392
Deferred acquisition costs, current	31,045	107,601
Total current liabilities	578,958	640,097
Non-current liabilities:		
Long-term debt	3,178,412	3,201,834
Operating lease liabilities, non-current	54,153	62,498
Licensed asset obligation, non-current	26,970	8,039
Other non-current liabilities	106,676	112,820
Total liabilities	3,945,169	4,025,288
Commitments and contingencies (Note 5)		
Redeemable noncontrolling interest	—	201
Stockholders' equity:		
Preferred stock, $0.00003 par value—100,000,000 shares authorized, nil shares issued and outstanding as of December 31, 2022 and 2021	—	—
Class A, Class B and Class F common stock, $0.00003 par value—1,700,000,000 (Class A 1,500,000,000, Class B 200,000,000, Class F nil) and 1,700,000,000 (Class A 1,500,000,000, Class B 200,000,000, Class F nil) shares authorized, 373,873,683 (Class A 302,711,061, Class B 71,162,622, Class F nil) and 375,089,360 (Class A 296,426,738, Class B 78,662,622, Class F nil) shares issued and outstanding as of December 31, 2022 and 2021, respectively	11	11
Additional paid-in capital	3,155,748	3,160,487
Accumulated other comprehensive loss	(83,382)	(45,454)
Accumulated deficit	(1,169,700)	(976,954)
Total stockholders' equity	1,902,677	2,138,090
Total liabilities, redeemable noncontrolling interest, and stockholders' equity	$ 5,847,846	$ 6,163,579

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Operations
(In thousands, except share and per share data)

	Years ended December 31,		
	2022	**2021**	**2020**
Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086
Costs and expenses:			
Cost of revenue	1,256,065	988,095	555,578
Sales and marketing	919,550	1,129,892	627,796
Research and development	507,607	366,402	180,652
General and administrative	181,627	158,699	66,431
Lease modification and abandonment of leasehold improvements	—	—	7,851
Extinguishments of acquisition-related contingent consideration	—	—	74,820
Total costs and expenses	2,864,849	2,643,088	1,513,128
Income (loss) from operations	(47,791)	150,016	(62,042)
Other income (expense):			
Interest expense and loss on settlement of debt	(171,863)	(103,170)	(77,873)
Other income (expense), net	14,477	(535)	4,209
Total other expense	(157,386)	(103,705)	(73,664)
Income (loss) before income taxes	(205,177)	46,311	(135,706)
Provision for (benefit from) income taxes	(12,230)	10,973	(9,772)
Net income (loss)	(192,947)	35,338	(125,934)
Add: Net loss attributable to noncontrolling interest	201	108	747
Net income (loss) attributable to AppLovin	$ (192,746)	$ 35,446	$ (125,187)
Less: Net income attributable to participating securities	—	(3,743)	—
Net income (loss) attributable to common stock—Basic	$ (192,746)	$ 31,703	$ (125,187)
Net income (loss) attributable to common stock—Diluted	$ (192,746)	$ 31,879	$ (125,187)
Net income (loss) per share attributable to common stockholders:			
Basic	$ (0.52)	$ 0.10	$ (0.58)
Diluted	$ (0.52)	$ 0.09	$ (0.58)
Weighted average common shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	371,568,011	324,836,076	214,936,545
Diluted	371,568,011	342,763,632	214,936,545

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Comprehensive Loss
(In thousands)

	Years ended December 31,		
	2022	**2021**	**2020**
Net income (loss)	$ (192,947)	$ 35,338	$ (125,934)
Other comprehensive income (loss), net of tax:			
Foreign currency translation gain (loss)	(37,928)	(46,058)	579
Interest rate swap gain	—	—	4,165
Total other comprehensive income (loss), net of tax	(37,928)	(46,058)	4,744
Total comprehensive loss including noncontrolling interest	(230,875)	(10,720)	(121,190)
Add: Total comprehensive loss attributable to noncontrolling interest	201	108	747
Total comprehensive loss attributable to AppLovin	$ (230,674)	$ (10,612)	$ (120,443)

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Redeemable Noncontrolling Interest and Stockholders' Equity (Deficit)
(In thousands, except share data)

	Redeemable Noncontrolling Interest	Convertible Preferred Stock		Class A, Class B, and Class F Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
		Shares	Amount	Shares	Amount				
Balance as of December 31, 2021	$ 201	—	$ —	375,089,360	$ 11	$ 3,160,487	$ (45,454)	$ (976,954)	$ 2,138,090
Stock issued in connection with equity awards	—	—	—	6,513,432	—	25,017	—	—	25,017
Shares withheld related to net share settlement	—	—	—	(1,186,147)	—	(27,535)	—	—	(27,535)
Repurchase of Class A common stock	—	—	—	(9,389,682)	—	(338,880)	—	—	(338,880)
Issuance of Class A common stock in connection with acquisitions	—	—	—	2,579,692	—	137,422	—	—	137,422
Issuance of Class A common stock under employee stock purchase plan	—	—	—	267,028	—	5,530	—	—	5,530
Stock-based compensation	—	—	—	—	—	193,707	—	—	193,707
Other comprehensive loss, net of tax	—	—	—	—	—	—	(37,928)	—	(37,928)
Net loss	(201)	—	—	—	—	—	—	(192,746)	(192,746)
Balance as of December 31, 2022	**$ —**	**—**	**$ —**	**373,873,683**	**$ 11**	**$ 3,155,748**	**$ (83,382)**	**$ (1,169,700)**	**$ 1,902,677**

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Redeemable Noncontrolling Interest and Stockholders' Equity (Deficit)
(In thousands, except share data)

	Redeemable Noncontrolling Interest	Convertible Preferred Stock		Class A, Class B, and Class F Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
		Shares	Amount	Shares	Amount				
Balance as of December 31, 2020	$ 309	109,090,908	$ 399,589	226,364,401	$ 7	$ 453,655	$ 604	$ (1,012,400)	$ (158,545)
Stock issued in connection with equity awards	—	—	—	4,326,297	—	29,761	—	—	29,761
Repurchase of Class A Common Stock	—	—	—	(604,509)	—	—	—	—	—
Exercise of warrant, net of shares withheld	—	—	—	6,229,081	—	—	—	—	—
Conversion of convertible securities to Class A common stock	—	—	—	7,050,049	—	392,170	—	—	392,170
Issuance of Class A common stock	—	—	—	90,830	—	2,503	—	—	2,503
Issuance of Class A common stock in connection with initial public offering, net of offering costs, underwriting discounts and commissions	—	—	—	22,500,000	1	1,747,970	—	—	1,747,971
Conversion of preferred stock to common stock in connection with initial public offering	—	(109,090,908)	(399,589)	109,090,908	3	399,586	—	—	—
Issuance of Class A common stock under employee stock purchase plan	—	—	—	42,303	—	2,877	—	—	2,877
Stock-based compensation	—	—	—	—	—	131,965	—	—	131,965
Other comprehensive income, net of tax	—	—	—	—	—	—	(46,058)	—	(46,058)
Net income (loss)	(108)	—	—	—	—	—	—	35,446	35,446
Balance as of December 31, 2021	**$ 201**	**—**	**$ —**	**375,089,360**	**$ 11**	**$ 3,160,487**	**$ (45,454)**	**$ (976,954)**	**$ 2,138,090**

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Redeemable Noncontrolling Interest and Stockholders' Equity (Deficit)
(In thousands, except share data)

	Redeemable Noncontrolling Interest	Convertible Preferred Stock		Class A, Class B, and Class F Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Deficit
		Shares	Amount	Shares	Amount				
Balance as of December 31, 2019	$ —	109,090,908	$ 399,589	220,157,922	$ 7	$ 235,190	$ (4,140)	$ (887,213)	$ (256,567)
Stock issued in connection with equity awards	—	—	—	3,559,168	—	2,303	—	—	2,303
Repurchase of unvested Class A common stock related to early exercised stock options	—	—	—	(425,001)	—	—	—	—	—
Repurchase of Class A common stock	—	—	—	(249,000)	—	(1,766)	—	—	(1,766)
Issuance of common stock warrants and options in connection with acquisitions	—	—	—	—	—	39,040	—	—	39,040
Issuance of Class A common stock in connection with acquisitions	—	—	—	2,479,996	—	106,133	—	—	106,133
Issuance of common stock warrants in connection with lease modification		—	—	—	—	433	—	—	433
Proceeds from issuance of common stock	—	—	—	764,472	—	9,318	—	—	9,318
Issuance of Class A common stock in exchange for noncontrolling equity interest	(1,500)	—	—	76,844	—	1,500	—	—	1,500
Acquisition of noncontrolling interest	2,556	—	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	61,504	—	—	61,504
Other comprehensive income, net of tax	—	—	—	—	—	—	4,744	—	4,744
Net loss	(747)	—	—	—	—	—	—	(125,187)	(125,187)
Balance as of December 31, 2020	**$ 309**	**109,090,908**	**$ 399,589**	**226,364,401**	**$ 7**	**$ 453,655**	**$ 604**	**$ (1,012,400)**	**$ (158,545)**

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statements of Cash Flows
(In thousands)

	Years Ended December 31, 2022	2021	2020
Operating Activities			
Net income (loss)	$ (192,947)	$ 35,338	$ (125,934)
Adjustments to reconcile net income (loss) to operating activities:			
Amortization, depreciation and write-offs	547,084	431,063	254,951
Impairment and loss in connection with sale of long-lived assets	127,892	—	—
Amortization of debt issuance costs and discount	12,678	12,825	8,152
Stock-based compensation	191,612	133,177	62,387
Change in operating right-of-use asset	17,107	26,313	9,333
Lease modification and abandonment of leasehold improvements	—	—	7,851
Loss on extinguishments of acquisition related contingent consideration	—	—	74,820
Loss on settlement of debt	—	18,236	—
Other	1,786	(10,805)	(1,641)
Changes in operating assets and liabilities:			
Accounts receivable	(174,829)	(201,948)	(113,234)
Prepaid expenses and other current assets	(3,725)	(97,324)	(13,289)
Other assets	(77,343)	(45,938)	(19,092)
Accounts payable	3,479	98,612	49,120
Operating lease liabilities	(18,898)	(26,854)	(8,812)
Accrued and other liabilities	(6,412)	3,063	2,783
Deferred revenue	(14,711)	(13,907)	35,488
Net cash provided by operating activities	412,773	361,851	222,883
Investing Activities			
Purchase of property and equipment	(662)	(1,390)	(3,241)
Acquisitions, net of cash acquired	(1,339,827)	(1,206,482)	(674,650)
Purchase of non-marketable investments and other	(66,342)	(15,000)	(2,000)
Proceeds from other investing activities	4,312	12,009	—
Capitalized software development costs	(5,949)	(4,067)	—
Proceeds from sale of long-lived assets	37,000	—	—
Net cash used in investing activities	(1,371,468)	(1,214,930)	(679,891)
Financing Activities			
Proceeds from issuance of common stock in initial public offering, net of issuance costs as adjusted for cost reimbursement	—	1,745,228	—
Proceeds from debt issuance, net of issuance costs	—	2,329,059	481,273
Payments of debt principal	(25,810)	(719,810)	(64,295)
Principal payments of finance leases	(24,083)	(15,271)	(9,708)
Payment of withholding taxes related to net share settlement of restricted stock units	(27,535)	—	—
Proceeds from exercise of stock options	25,487	31,156	2,303
Proceeds from issuance of common stock	—	—	9,318
Proceeds from the issuance of Class A common stock under employee stock purchase plan	5,531	2,877	—
Payments of deferred acquisition costs	(124,184)	(234,068)	(17,586)
Payments of licensed asset obligation	(17,374)	(17,970)	(18,940)
Payments of related party notes	—	(11,655)	—
Repurchases of common stock	(338,880)	—	(1,766)
Payments of deferred IPO costs	—	—	(2,744)
Net cash provided by (used in) financing activities	(526,848)	3,109,546	377,855
Effect of foreign exchange rate on cash, cash equivalents and restricted cash equivalents	(4,477)	(3,198)	141
Net increase (decrease) in cash, cash equivalents and restricted cash equivalents	(1,490,020)	2,253,269	(79,012)
Cash, cash equivalents and restricted cash equivalents at beginning of the period	2,570,504	317,235	396,247
Cash, cash equivalents and restricted cash equivalents at end of the period	$ 1,080,484	$ 2,570,504	$ 317,235

See Accompanying Notes to Consolidated Financial Statements.

AppLovin Corporation
Consolidated Statement of Cash Flows
(In thousands)

	Years Ended December 31,		
	2022	2021	2020
Supplemental non-cash investing and financing activities disclosures:			
Conversion of convertible securities to Class A common stock	$ —	$ 392,170	$ —
Issuance of convertible securities related to acquisitions	$ —	$ 342,170	$ 45,000
Issuance of common stock and common stock warrants in connection with acquisitions	$ 137,422	$ —	$ 38,167
Acquisitions not yet paid	$ 31,045	$ 79,095	$ 94,758
Assets acquired not yet paid	$ 33,566	$ 25,640	$ —
Right-of-use assets acquired under finance leases	$ 46,108	$ 20,497	$ 7,475
Right-of-use assets acquired under operating leases	$ 7,105	$ 6,130	$ 10,758
Proceeds from sale of long-lived assets not yet received	$ 7,000	$ —	$ —
Settlement of bonus compensation through issuance of common stock	$ —	$ 2,503	$ —
Settlement of contingent consideration through issuance of common stock	$ —	$ —	$ 31,422
Deferred IPO costs not yet paid	$ —	$ —	$ 888
Accretion of interest on related party promissory notes	$ —	$ 595	$ 553
Common stock issued in exchange for redeemable noncontrolling interest	$ —	$ —	$ 1,500
Common stock warrant issued in connection with lease modification	$ —	$ —	$ 433
Supplemental disclosure of cash flow information:			
Cash paid for income taxes, net of refunds	$ 86,264	$ 90,616	$ 12,666
Cash paid for interest	$ 165,959	$ 76,695	$ 59,360

See Accompanying Notes to Consolidated Financial Statements.

APPLOVIN CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of Business

AppLovin Corporation (the “Company” or “AppLovin”) was incorporated in the state of Delaware on July 18, 2011. The Company is a leader in the mobile app industry with a focus on building a software-based platform for mobile app developers to improve the marketing and monetization of their apps. The Company also has a globally diversified portfolio of apps—free-to-play mobile games that it operates through its own or partner studios.

The Company is headquartered in Palo Alto, California, and has several operating locations in the U.S. as well as various international office locations in North America, South America, Asia, and Europe.

2. Summary of Significant Accounting Policies

Principles of Consolidation—The accompanying consolidated financial statements have been prepared in conformity with U.S generally accepted accounting principles ("GAAP"). Consolidated financial statements include accounts and operations of the Company and its subsidiaries in which the Company has a controlling financial interest. Consolidated financial statements include accounts and operations of the Company and its subsidiaries in which the Company has a controlling financial interest. In accordance with the provisions of Accounting Standards Codifications ("ASC") 810, the Company consolidates any variable interest entities ("VIE") where it is the primary beneficiary. The Company engages in business relationships with certain entities in the ordinary course of business to develop game Apps. The typical condition for a controlling financial interest ownership is holding a majority of the voting interests of an entity; however, a controlling financial interest may also exist in entities, such as VIEs, through arrangements that do not involve controlling voting interests. ASC 810 requires a variable interest holder to consolidate a VIE if that party has the power to direct the activities of the VIE that most significantly impact the VIE’s economic performance and has the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. The Company does not consolidate a VIE when the Company is not considered the primary beneficiary. The Company evaluates its relationships with all VIEs on an ongoing basis. All intercompany transactions and balances have been eliminated upon consolidation.

Use of Estimates—The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported and disclosed in the consolidated financial statements and accompanying notes. The Company bases its estimates on assumptions, both historical and forward-looking, that are believed to be reasonable. On an ongoing basis, the Company evaluates its estimates, including, but not limited to, those related to fair values of intangible assets and goodwill, useful lives of intangible assets and property and equipment, expected period of consumption of virtual goods, expected life of paying users, income and indirect taxes, contingent liabilities, evaluation of recoverability of intangible assets and long-lived assets, goodwill impairment, and fair value of derivatives and other financial instruments. These estimates are inherently subject to judgment and actual results could differ materially from those estimates.

Risk and Uncertainties—The Company is subject to risks and uncertainties, including, but not limited to, as a result of the warfare in Ukraine and related sanctions against Russia, as well as, the COVID-19 pandemic. As of the issuance date of these consolidated financial statements, the Company’s results of operations have not been materially impacted. However, the future impact of these events remains uncertain as the response to and information related to these events is rapidly evolving. Economies worldwide have been negatively impacted by the COVID-19 pandemic and the events in Ukraine and Russia are expected to have a further impact on the global economy. A weakened global economy may negatively impact in-app purchasing decisions and consumer buying decisions across the globe generally, which could adversely affect advertiser activity. The full impact of these events on the global economy and the extent to which these events may impact the Company’s business, financial condition, and results of operations in the future remains uncertain. The severity of the impact of the war in Ukraine, Russian sanctions and the COVID-19 pandemic on the Company’s business will depend on a number of factors, including, but not limited to, the duration and severity of these events and the extent and severity of the impact on the Company’s customers, all of which are uncertain and cannot be predicted. The Company’s future results of operations and liquidity could be adversely impacted by delays in payments of outstanding receivable amounts beyond normal payment terms and uncertain demand.

Revenue from Contracts with Customers—The Company generates Software Platform and Apps revenue. Software Platform revenue is generated primarily from fees collected from advertisers and advertising networks who use the Software Platform. The Company generates Apps revenue from both consumers and business clients. IAP revenue is generated from in-app purchases (“IAPs”) made by users within the Company’s apps (“Apps”). IAA revenue is generated from advertisers that purchase ad inventory from Apps.

Software Platform Revenue

The vast majority of the Software Platform Revenue is generated through AppDiscovery and MAX, which provides the technology to match advertisers and owners of digital advertising inventory (“Publishers”) via auctions at large scale and microsecond-level speeds. The terms for all mobile advertising arrangements are governed by the Company’s terms and conditions and generally stipulate payment terms of up to 60 days subsequent to the end of the month. Substantially all of the Company's contracts with customers are fully cancellable at any time or upon a short notice.

Software Platform Revenue is generated by placing ads on mobile applications owned by Publishers. The Company's performance obligation is to provide customers with access to the Software Platform, which facilitates the advertiser's purchase of ad inventory from Publishers. The Company does not control the ad inventory prior to its transfer to the advertiser, because the Company does not have the substantive ability to direct the use of nor obtain substantially all of the remaining benefits from the ad inventory. The Company is not primarily responsible for fulfillment and does not have any inventory risk. The Company is an agent as it relates to the sale of third-party advertising inventory and presents revenue on a net basis. The transaction price is the product of either the number of completions of agreed upon actions or advertisements displayed and the contractually agreed upon price per advertising unit with the advertiser less consideration paid or payable to Publishers. The Company recognizes Software Platform Revenue when the agreed upon action is completed or when the ad is displayed to users. The number of advertisements delivered and completions of agreed upon actions is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period.

Software Platform Revenue also includes revenue generated by the Company's mobile application tracking and attribution solutions that is recognized ratably over the subscription period generally up to twelve months.

Apps Revenue

IAP Revenue

IAP Revenue includes fees collected from users to purchase virtual goods to enhance their gameplay experience. The identified performance obligation is to provide users with the ability to acquire, use, and hold virtual items over the estimated period of time the virtual items are available to the user or until the virtual item is consumed. Payment is required at the time of purchase, and the purchase price is a fixed amount.

Users make IAPs through the Company's distribution partners. The transaction price is equal to the gross amount charged to users because the Company is the principal in the transaction. IAPs fees are non-refundable. Such payments are initially recorded as deferred revenue. The Company categorizes its virtual goods as either consumable or durable. Consumable virtual goods represent goods that can be consumed by a specific player action in gameplay; accordingly, the Company recognizes revenue from the sale of consumable virtual goods as the goods are consumed. Durable virtual goods represent goods that are accessible to the user over an extended period of time; accordingly, the Company recognizes revenue from the sale of durable virtual goods ratably over the period of time the goods are available to the user, which is generally the estimated average user life ("EAUL").

The EAUL represents the Company's best estimate of the expected life of paying users for the applicable game. The EAUL begins when a user makes the first purchase of durable virtual goods and ends when a user is determined to be inactive. The Company determines the EAUL on a game-by-game basis. For a newly launched game with limited playing data, the Company determines its EAUL based on the EAUL of a game with sufficiently similar characteristics.

The Company determines the EAUL on a quarterly basis and applies such calculated EAUL to all bookings in the respective quarter. Determining the EAUL is subjective and requires management's judgment. Future playing patterns may differ from historical playing patterns, and therefore the EAUL may change in the future. The EAULs are generally between 6 and 9 months.

IAA Revenue

IAA Revenue is generated by selling ad inventory on the Company's Apps to third-party advertisers. Advertisers purchase ad inventory either through the Software Platform or through third-party advertising networks ("Ad Networks"). Revenue from the sale of ad inventory through Ad Networks is recognized net of the amounts retained by Ad Networks as the Company is unable to determine the gross amount paid by the advertisers to Ad Networks. The Company recognizes revenue when the ad is displayed to users.

The Company presents taxes collected from customers and remitted to governmental authorities on a net basis.

Disaggregation of Revenue

The following table presents revenue disaggregated by segment and type (in thousands):

	Year Ended December 31,		
	2022	**2021**	**2020**
Software Platform Revenue	$ 1,049,167	$ 673,952	$ 207,285
In-App Purchases Revenue	1,179,133	1,458,595	739,934
In-App Advertising Revenue	588,758	660,557	503,867
Total Apps Revenue	1,767,891	2,119,152	1,243,801
Total Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086

Revenue disaggregated by geography, based on user location, consists of the following (in thousands):

	Year Ended December 31,		
	2022	2021	2020
United States	$ 1,728,958	$ 1,687,080	$ 895,987
Rest of the World	1,088,100	1,106,024	555,099
Total Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086

Contract Balances

Contract liabilities consist of deferred revenue and include payments received in advance of the satisfaction of performance obligations. During the years ended December 31, 2022 and 2021, the Company recognized $78.6 million and $86.9 million of revenue that was included in deferred revenue as of December 31, 2021 and 2020, respectively.

Unsatisfied Performance Obligations

Substantially all of the Company's unsatisfied performance obligations relate to contracts with an original expected length of one year or less.

Publisher Bonuses

In the first quarter of 2022, the Company paid or promised to pay a total of $209.6 million in bonuses to publishers consisting primarily of non-recurring bonuses to migrate publishers to MAX, the Company's own in-app mediation platform. The Company accounted for such publisher bonuses as a reduction to revenue since the publishers receiving such bonuses are also customers of the Company.

Cash and Cash Equivalents—Cash and cash equivalents primarily consist of cash on deposit with banks and investments in money market funds with maturities of 90 days or less from the date of purchase.

Restricted Cash Equivalents—The Company classifies cash equivalents that are legally or contractually restricted for withdrawal or usage as restricted cash equivalents. Restricted cash equivalents as of December 31, 2021 consisted of investments in certain money market fund of funds held in an escrow account related to the MoPub acquisition, which was closed in January 2022.

Non-Marketable Equity Investments—Non-marketable equity securities are investments without readily determinable fair values that are recorded using a measurement alternative measured at cost less any impairment, plus or minus changes resulting from qualifying observable price changes. An impairment loss is recorded when an event or circumstance indicates a decline in value has occurred. For certain of these securities, the Company has elected to apply the net asset value (NAV) practical expedient. The NAV is the estimated fair value of these investments. See Note 3, Fair Value Measurements for additional information.

Accounts Receivable, net—The Company records accounts receivable at the invoiced amount, maintains an allowance for doubtful accounts to reserve for potentially uncollectible receivables, and reviews accounts receivable periodically to identify specific customers with known disputes or collectability issues. As of December 31, 2022 and 2021, the allowance for doubtful accounts was not material.

Derivatives—The Company accounts for derivative instruments at fair value within its consolidated balance sheets, and the accounting treatment for each derivative is based on its hedge designation. The Company does not enter into derivative instruments for trading or speculative purposes. Changes in the fair value of derivatives that are designated as cash flow hedges are recorded within accumulated other comprehensive income (loss) until earnings are affected by the variability of cash flows. Changes in the fair value of non-designated derivatives are recorded immediately through earnings. The Company's policy for classifying cash flows from derivatives is to report the cash flows consistent with the underlying hedged item. For each of the three years ended December 31, 2022, 2021, and 2020, the derivative instruments, including their impact to the Company's consolidated statements of operations were not material. See Note 3, Fair Value Measurements for additional information.

Fair Value of Financial Instruments—The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires the Company to use observable inputs when available, and to minimize the use of unobservable inputs when determining fair value. The three tiers are defined as follows:

Level 1—Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2—Inputs other than quoted prices included in Level 1 that are observable either directly or indirectly.

Level 3—Unobservable inputs of which there is little or no market data, which require the Company to develop its own assumptions.

Concentration of Credit Risk and Uncertainties—The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash, cash equivalents, restricted cash equivalents and accounts receivable. The Company places its cash deposits with large, reputable financial institutions. As of December 31, 2022 and 2021, the Company maintained cash balances in excess of the Federal Deposit Insurance Corporation ("FDIC") insured limits. Cash equivalents consist of money market funds that are composed of U.S. Treasury and U.S. Government securities.

The Company's accounts receivable balance is derived from both domestic and international sales. The Company reviews its exposure to accounts receivable credit risk and generally requires no collateral for its accounts receivable.

The Company uses various distribution partners to collect and remit payments from users of Apps for virtual goods. As of December 31, 2022, no distribution partners accounted for 10% of the accounts receivable, net. As of December 31, 2021, two distribution partners accounted for 10% and 10% of the accounts receivable, net.

The Company had one customer which accounted for 12% of the Company's accounts receivable, net as of December 31, 2022. The balance was collected in full during the first quarter of 2023. No individual customer accounted for 10% or more of the Company's accounts receivable, net as of December 31, 2021.

No individual customer accounted for 10% or more of the Company's revenue during the years ended December 31, 2022, 2021 and 2020.

Property and Equipment, net—Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, which is as follows:

	Useful Life
Computer equipment	3-5 years
Software and licenses	3 years
Furniture and fixtures	3-5 years
Leasehold improvements	Over the shorter of useful life (up to 10 years) or lease term

When assets are retired or otherwise disposed of, the cost and accumulated depreciation and amortization are removed from the accounts and any resulting gain or loss is reflected in operations in the period realized. Maintenance and repairs are charged to operations as incurred.

Leases—Leases consist of real estate property, network and other equipment. The Company determines if an arrangement is or contains a lease at inception. Operating and finance lease right-of-use assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. Lease payments consist primarily of the fixed payments under the arrangement, less any lease incentives. The Company generally uses an incremental borrowing rate estimated based on the information available at the lease commencement date to determine the present value of lease payments unless the implicit rate is readily determinable. Operating lease costs are recognized on a straight-line basis over the lease terms. Finance lease assets are amortized on a straight-line basis over the shorter of the estimated useful lives of the assets or the lease terms.

The Company accounts for lease and non-lease components as a single lease component of contracts for real estate property leases and does not recognize right-of-use assets and lease liabilities for leases with a term of 12 months or less. Generally, the lease term is based on non-cancelable lease term when determining the lease assets and liabilities. The lease terms may include periods under options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Payments under our lease arrangements are primarily fixed, however, certain lease agreements contain variable payments, which are expensed as incurred and not included in the lease right-of-use assets and liabilities. Variable lease payments are primarily comprised of real estate taxes, common area maintenance, and insurance.

Deferred Offering Costs—Deferred offering costs, which consist primarily of accounting, legal and other fees directly attributable to the Company's initial public offering ("IPO"), were initially capitalized in other assets on the Company's consolidated balance sheets. After the completion of the IPO, the Company presented deferred offering costs in stockholders' equity as a reduction of the IPO proceeds.

Segment Reporting—The Company's chief operating decision maker ("CODM") is the Chief Executive Officer who manages the business, allocates resources and assesses operating performance based on financial information presented for each of the two operating segments: Software Platform and Apps. Both operating segments are also individual reportable segments. For information regarding reportable segments, see Note 14 - Segments and Geographic Information.

Asset Acquisitions and Business Combinations—The Company performs an initial test to determine whether substantially all of the fair value of the gross assets transferred are concentrated in a single identifiable asset or a group of similar identifiable assets, such that the acquisition would not represent a business. If that test suggests that the set of assets and activities is a business, the Company then performs a second test to evaluate whether the assets and activities transferred include inputs and substantive processes that together, significantly contribute to the ability to create outputs, which would constitute a business. If the result of the second test suggests that the acquired assets and activities constitute a business, the Company accounts for the transaction as a business combination.

For transactions accounted for as business combinations, the Company allocates the fair value of acquisition consideration to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair value. Acquisition consideration includes the fair value of any promised contingent consideration. The excess of the fair value of acquisition consideration over the fair value of identifiable assets acquired and liabilities assumed is recorded as goodwill. Contingent consideration is remeasured to its fair value each reporting period with changes in the fair value of contingent consideration recorded in general and administrative expenses. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates and assumptions in valuing certain identifiable intangible assets include, but are not limited to, forecasted revenue and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable, and as a result, actual results may differ from estimates. In certain circumstances, the allocations of the excess purchase price are based upon preliminary estimates and assumptions and subject to revision when the Company receives final information, including appraisals and other analyses. During the measurement period, which is one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings. Acquisition-related costs are expensed as incurred.

For transactions accounted for as asset acquisitions, the cost, including certain transaction costs, is allocated to the assets acquired on the basis of relative fair values. The Company generally includes contingent consideration in the cost of the assets acquired only when the uncertainty is resolved. The Company recognizes contingent consideration adjustments to the cost of the acquired assets prospectively using the straight-line method over the remaining useful life of the assets. No goodwill is recognized in asset acquisitions.

Services and Development Agreements—The Company enters into strategic agreements with mobile gaming studios ("Partner Studios"). The Company has historically allowed these Partner Studios to continue their operations with a significant degree of autonomy. In some cases, the Company bought Apps from Partner Studios and entered into service and development agreements whereby Partner Studios provide support in improving existing Apps and developing new Apps. The substantial majority of payments associated with service agreements for existing Apps are expensed to research and development when the services are rendered as the payments primarily relate to developing enhancements for the Apps. Payments for new Apps associated with development agreements are generally made in connection with the development of a particular App, and therefore, the Company is subject to development risk prior to the release of the App. Accordingly, payments that are due prior to completion of an App are generally expensed to research and development over the development period as the services are incurred. Payments due after completion of an App are generally capitalized and expensed as cost of revenue. For additional information, see Note 6 - Acquisitions and Dispositions.

Software Development Costs—The Company incurs development costs related to internal-use software and the development of Apps. The Company reviews software development costs on a quarterly basis to determine if the costs qualify for capitalization. The Company typically follows an agile and iterative development process. As a result, the preliminary project stage remains ongoing until just prior to launch, at which time final feature selection occurs. As such, software development costs do not meet the criteria for capitalization and are expensed as incurred to research and development expenses. The software development costs the Company capitalized during the years ended December 31, 2022 and 2021 were insignificant. The Company did not capitalize any software development costs during the year ended December 31, 2020.

Goodwill—Goodwill is allocated to reporting units and tested for impairment on an annual basis during the fourth quarter, or more frequently if the Company believes indicators of impairment exist. Triggering events that may indicate impairment include, but are not limited to, a significant adverse change in customer demand or business climate that could affect the value of goodwill or a significant decrease in expected cash flows. When conducting quantitative annual goodwill impairment assessments, the Company compares the fair value of its reporting units to their carrying value. If the carrying value of a reporting unit exceeds its fair value, then the Company records a goodwill impairment. The lesser of (i) the entire amount by which the carrying value of a reporting unit exceeds its fair value or (ii) the carrying value of goodwill allocated to such reporting unit is recorded as an impairment to goodwill. As of December 31, 2022, 2021 and 2020, no impairment of goodwill has been identified.

Intangible Assets—This consists of identifiable intangible assets, primarily Apps, user base, developed technology, customer relationships and intellectual property licenses resulting from acquisitions. Acquired intangible assets are recorded at cost, net of accumulated amortization. The Company's estimates of useful lives of intangible assets are based on cash flow forecasts which incorporate various assumptions, including forecasted user acquisition costs, user attrition rates and level of user engagement.

Intangible assets also include costs of intellectual property that the Company licenses from third parties for use of their content in the Company's game. The licensing agreements include license payments, which are due over the terms of the agreements. The Company recognizes these license payments as a license asset and a license obligation at the fair value on the contract date, based on a discounted cash flow model. The amortization of the licensed asset is recorded in cost of revenue on a straight-line basis over the remaining license terms. The classification of the license obligations between current and long-term is based on the expected timing of the payments to the licensor.

Impairment of Long-Lived Assets—The Company reviews long-lived assets that are held and used for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable. If such circumstances are present, the Company assesses the recoverability of the long-lived assets by comparing the carrying value to the undiscounted future cash flows associated with the related assets. If the future net undiscounted cash flows are less than the carrying value of the assets, the assets are considered impaired and an expense equal to the amount required to reduce the carrying value of the assets to the estimated fair value is recorded as an impairment of intangible assets in the consolidated statements of operations. Significant judgment is required to estimate the amount and timing of future cash flows and the relative risk of achieving those cash flows. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in the Company's business strategy and internal forecasts. For example, if future operating results do not meet current forecasts, the Company may be required to record future impairment charges for acquired intangible assets. Additional factors which significantly affect future cash flows related to long-lived assets include, but are not limited to, forecasted user acquisition costs, user attrition rates and level of user engagement. Significant changes in these factors may require the Company to reassess recoverability of long-lived assets and record impairment. Impairment charges could materially decrease future net income and result in lower asset values on the Company's consolidated balance sheet. There were no material impairment charges related to long-lived assets that are held and used for the years ended December 31, 2022, 2021 and 2020.

The Company classifies an asset as held for sale when management commits to a formal plan to actively market the asset for sale at a price reasonable in relation to fair value, the asset is available for immediate sale in its present condition, an active program to locate a buyer and other actions required to complete the sale have been initiated, the sale of the asset and the transfer is expected to be completed within one year and it is unlikely that significant changes will be made to the plan. Upon classification as held for sale, the Company recognizes the asset at the lower of its carrying value or its estimated fair value, less costs to sell. In addition, the Company ceases to record depreciation or amortization for assets that are classified as held for sale. During the year ended December 31, 2022, the Company classified certain assets within the Apps reportable segment as held for sale and recognized a total impairment charge of $53.0 million, representing the excess of the assets' carrying value over their estimated fair value, less cost to sell, in cost of revenue in the Company's consolidated statements of operations. As of December 31, 2022, the carrying value of assets held for sale was not material. No assets were classified as held for sale in 2021 or 2020.

Cost of Revenue—Cost of revenue consists primarily of third-party payment processing fees related to IAP Revenue and paid to the Company's distribution partners, amortization of intangible assets related to acquired technology and Apps, and expenses associated with operating network infrastructure which include bandwidth, energy, and other equipment costs related to the co-located data centers and costs for third-party cloud service providers.

Sales and Marketing—Sales and marketing expenses consist primarily of user acquisition costs, other advertising expenses, sales incentives, and amortization of acquired separately-identifiable user-related intangible assets. Related costs associated with these functions such as, marketing programs, travel, customer service costs as well as allocated facilities and information technology costs are also included in sales and marketing expenses. Costs for advertising are expensed as incurred. Advertising costs, which consist primarily of user acquisition costs, totaled $665.9 million, $983.7 million, and $550.9 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Research and Development—Research and development expenses include new product development costs such as salaries and employee benefits, consulting costs, stock-based compensation, regulatory compliance costs as well as allocated facilities and information technology costs.

General and Administrative—General and administrative expenses include costs associated with the Company's finance, accounting, legal, human resources, and administrative personnel. Related costs associated with these functions, such as attorney and accounting fees, recruiting services, administrative services, insurance, travel, as well as allocated facilities and information technology costs are also included in general and administrative expenses.

Stock-Based Compensation—The Company accounts for stock-based compensation based on the fair value of awards as of the grant date. The Company recognizes stock-based compensation expense on the straight-line basis over the requisite service period and accounts for forfeitures as they occur.

Prior to IPO, the fair value of employee stock options were estimated using the Black-Scholes option-pricing model, which requires use of various assumptions including the expected term, the expected stock price volatility, and the risk- free interest rate. The Company estimated the expected term using the simplified method which was based on the mid-point between the weighted-average time to vesting and the contractual maturity. The Company estimated the volatility of its common stock on the date of grant based on the weighted average historical stock price volatility of comparable publicly-traded companies. The risk-free interest rate assumption was based on the U.S. Treasury instruments whose term was consistent with the expected term of the Company's stock options.

Following the IPO, the Company has only granted RSUs for which the fair value is established based on the closing price of the Company's publicly traded Class A common stock on the date of grant.

The Company recognizes stock-based compensation expense related to shares issued pursuant to the Employee Stock Purchase Plan ("ESPP") on a straight-line basis over the offering period, which is generally 24 months. The Company estimates the fair value of shares to be issued under the ESPP using the Black-Scholes option-pricing model.

For the years ended 2021 and 2020, stock-based compensation expense also included liability classified options to employees that were subject to be settled in the stock of one of the Company's subsidiaries. The Company did not incur stock based compensation expense related to liability classified options during the year ended 2022.

Income Taxes—The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, the Company determines deferred tax assets and liabilities on the basis of the differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company recognizes deferred tax assets to the extent that these assets are more likely than not to be realized. In making such a determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If the Company determines that it would be able to realize deferred tax assets in the future in excess of their net recorded amount, an adjustment to the deferred tax asset valuation allowance would be made to reduce the provision for income taxes.

The Company records uncertain tax positions on the basis of a two-step process in which determinations are made (1) whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position; and (2) for those tax positions that meet the more- likely-than-not recognition threshold, the Company recognizes the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with a tax authority.

The Company recognizes interest and penalties related to unrecognized tax benefits on the income tax expense line in the accompanying consolidated statements of operations. Accrued interest and penalties are included on the related tax liability line in the consolidated balance sheets.

Foreign Currency Transactions—Generally, the functional currency of our international subsidiaries is the U.S. dollar. In cases where the functional currency is not the U.S. dollar, the Company translates the financial statements of these subsidiaries to U.S. dollars using the exchange rate at the prevailing consolidated balance sheet date for assets and liabilities, and average exchange rates during the period for revenue and costs and expenses. The Company records translation gains and losses in accumulated other comprehensive income (loss) as a component of stockholders' equity. The Company reflects foreign exchange transaction gains and losses resulting from the conversion of the transaction currency to functional currency, which includes gains and losses from the remeasurement of assets and liabilities, as a component of other income (expense), net.

Comprehensive Income (Loss)—Comprehensive income (loss) is composed of net income (loss) and other comprehensive income (loss). Other comprehensive income (loss) consists of gains and losses on cash flow hedges and foreign currency translation adjustments.

Net Income (Loss) Per Share Attributable to Common Stockholders—Basic and diluted net income (loss) per share attributable to common stockholders is presented under the two-class method required for participating securities. The Company considers convertible preferred stock, options exercised in exchange for nonrecourse promissory notes, early exercised unvested stock options and unvested restricted stock awards to be participating securities. Under the two-class method, the net loss attributable to common stockholders is not allocated to participating securities as the holders of these instruments do not have a contractual obligation to share in the Company's losses. Net income is attributed to common stockholders and participating securities based on the respective participation rights. Basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share attributable to common stockholders adjusts basic earnings per share for the effect of potentially dilutive impact of securities.

Noncontrolling Interests and Redeemable Noncontrolling Interests—For less-than-wholly-owned consolidated subsidiaries, noncontrolling interest is the portion of equity not attributable, directly or indirectly, to AppLovin. The Company evaluates whether noncontrolling interests possess any redemption features outside of our control. If such features exist, the noncontrolling interests are presented outside of permanent equity on the consolidated balance sheets within redeemable noncontrolling interest. The Company report revenues, expenses and net income (loss) from less-than-wholly-owned consolidated subsidiaries at the consolidated amounts, including both the amounts attributable to the Company and noncontrolling interests; the income or loss attributable to the noncontrolling interest holders is reflected in net income or loss attributable to noncontrolling interest on the consolidated statements of operation. Redeemable noncontrolling interests are adjusted to the greater of their fair value or carrying value as of each balance sheet date.

Recent Accounting Pronouncements (Issued and Not Yet Adopted)—In June 2022, the FASB issued ASU 2022-03, *Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*. The ASU clarifies that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. The ASU also clarifies that an entity cannot, as a separate unit of account, recognize and measure a contractual sale restriction and requires specific disclosures for equity securities subject to contractual sale restrictions. These changes will become effective for the Company on January 1, 2024. The Company is currently evaluating the potential impact of these changes.

Recent Accounting Pronouncements (Issued and Adopted)—In August 2020, the FASB issued ASU 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity,* to simplify the accounting for certain financial instruments with characteristics of liabilities and equity, including convertible instruments and contracts on an entity's own equity. The standard eliminates beneficial conversion feature and cash conversion models resulting in more convertible instruments being accounted for as a single unit; and simplifies classification of debt on the balance sheet and earnings per share calculation. The Company adopted this ASU on January 1, 2022 with no material impact on the consolidated financial statements.

In October 2021, the FASB issued ASU 2021-08, *Business Combinations—Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This ASU clarifies that an acquirer of a business should recognize and measure contract assets and contract liabilities in a business combination in accordance with Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers (Topic 606). The Company adopted this ASU on January 1, 2022 with no material impact on the consolidated financial statements.

3. Fair Value Measurements

The following table sets forth the Company's financial instruments that were measured at fair value by level within the fair value hierarchy on a recurring basis as of the dates indicated (in thousands):

			As of December 31, 2022		
	Balance Sheet Location	**Total**	**Level 1**	**Level 2**	**Level 3**
Financial Assets:					
Unrestricted Balances					
Money market funds[1]	Cash and cash equivalents	$ 604,399	$ 604,399	$ —	$ —
Interest rate swap	Prepaid expenses and other current assets	$ 7,319	$ —	$ 7,319	$ —
Total financial assets		$ 611,718	$ 604,399	$ 7,319	$ —

			As of December 31, 2021		
	Balance Sheet Location	**Total**	**Level 1**	**Level 2**	**Level 3**
Financial Asset:					
Unrestricted Balances					
Money market funds[1]	Cash and cash equivalents	$ 1,070,979	$ 1,070,979	$ —	$ —
Marketable equity securities	Prepaid expenses and other current assets	$ 2,532	$ 2,532	$ —	$ —
Restricted Balances					
Money market funds	Restricted cash equivalents	$ 1,050,000	$ 1,050,000	$ —	$ —
Total financial assets		$ 2,123,511	$ 2,123,511	$ —	$ —

(1) Includes balances in money market deposit accounts of $524 million and $921 million as of December 31, 2022 and December 31, 2021, respectively.

Interest Rate Swap

On October 3, 2022, the Company entered into an interest rate swap agreement as part of its interest rate risk management strategy in connection with the Initial Term Loans under the Amended Credit Agreement (see Note 9 - Credit Agreement). The swap was a receive-variable (one-month LIBOR) and pay-fixed (4.3923%) interest rate swap with settlement date commencing on the last calendar day of each month and reset date on first day of each month beginning November 30, 2022. The notional amount for the swap matches the amount of outstanding principal of the Initial Term Loans over the term of the swap. The Company did not designate the swap as a hedging instrument for accounting purposes and recorded unrealized gains and losses associated with the swap immediately through earnings in interest expense and loss on settlement of debt in the Company's statement of operations. The fair value of the interest rate swap is determined using widely accepted valuation techniques including discounted cash flow analysis based on the expected cash flows of the interest rate swap. The Company has determined that the significant inputs, such as interest yield curve and discount rate, used to value its interest rate swap fall within Level 2 of the fair value hierarchy. The Company recognized a $7.3 million unrealized gain on the swap during the year ended December 31, 2022.

Non-Marketable Equity Securities Measured at Net Asset Value

The Company held equity interests in certain private equity funds of $32.3 million and $3.2 million as of December 31, 2022 and December 31, 2021, respectively, which are measured using the net asset value practical expedient. Under the net asset value practical expedient, the Company records investments based on the proportionate share of the underlying funds' net asset value as of the Company's reporting date. These investments are included in other assets in the Company's consolidated balance sheets.

These funds vary in investment strategies and generally have an initial term of 7 to 10 years, which may be extended for 2 to 3 additional years with the applicable approval. These investments are subject to certain restrictions regarding transfers and withdrawals and generally cannot be redeemed with the funds. Distributions from the funds will be received as the underlying investments are liquidated. The Company's maximum exposure to loss is limited to the carrying value of these investments of $32.3 million and the unfunded commitments of $50.1 million as of December 31, 2022.

During the year ended December 31, 2022, the Company made total capital contributions of $28.4 million related to these investments. The Company recorded an immaterial unrealized gain related to these investments for each of years ended December 31, 2022 and December 31, 2021, respectively.

Non-Marketable Equity Securities Measured at Fair Value on a Non-Recurring Basis

During 2022, the Company purchased certain non-marketable equity securities for total proceeds of $38.0 million. Non-marketable equity securities are investments in privately held companies without readily determinable fair values. The Company elected the measurement alternative to account for these investments. Under the measurement alternative, the carrying value of the non-marketable equity securities are adjusted based on price changes from observable transactions of identical or similar securities of the same issuer or for impairment. Any changes in carrying value are recorded within other income (expense), net in the Company's consolidated statement of operations. There was no change in the carrying value of the non-marketable equity securities since their acquisitions. These investments are included in other assets in the Company's consolidated balance sheets. The Company had no such investments as of December 31, 2021.

4. Supplemental Financial Statement Information

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

	December 31,	
	2022	**2021**
Computer equipment	$ 106,215	$ 77,730
Leasehold improvements	17,380	18,640
Furniture and fixtures	3,650	3,686
Software and licenses	156	3,211
Total property and equipment	127,401	103,267
Less: accumulated depreciation	(48,858)	(39,659)
Total property and equipment, net	$ 78,543	$ 63,608

Depreciation expenses were $29.3 million, $25.6 million and $14.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Accrued liabilities consists of the following (in thousands):

	December 31,	
	2022	**2021**
Tax accruals and withholdings	$ 81,957	$ 67,159
Compensation and related liabilities	24,302	32,862
Finance lease liabilities	22,304	21,999
Accrued expenses and other	19,238	11,750
Total accrued liabilities	$ 147,801	$ 133,770

5. Commitments and Contingencies

Commitments—As of December 31, 2022, the Company's non-cancelable minimum purchase commitments totaled $480.6 million, which consisted primarily of a certain arrangement related to cloud platform services. In May 2022, the Company entered into a new order form under an existing master agreement that required the Company to purchase at least $550.0 million of cloud services through May 2025. The Company made payments of $79.4 million and $55.0 million under this arrangement for the year ended December 31, 2022 and 2021, respectively. Purchases made under this arrangement were not material for the year ended December 31, 2020.

Future minimum payments under these non-cancelable purchase commitments with a remaining term in excess of one year were as follows (in thousands):

2023	$ 210,687
2024	191,470
2025	78,253
2026	146
2027	—
Total non-cancelable purchase commitments	$ 480,556

In addition, the Company had total unfunded commitments of $50.1 million related to investments in certain private equity funds. For additional information, see Note 3 - Fair Value Measurements.

Contingencies—From time to time, the Company may have certain contingent liabilities that arise in the ordinary course of business activities. The Company accrues a liability for such matters when it is probable that future expenditures will be made, and such expenditures can be reasonably estimated.

Letters of Credit—As of December 31, 2022 and 2021, the Company had outstanding letters of credit in the aggregate amount of $11.1 million, which were issued as security for certain leased office facilities under the Credit Agreement. These letters of credit have never been drawn upon. For additional information, see Note 9 - Credit Agreement.

Legal Proceedings—The Company is involved from time to time in litigation, claims, and proceedings. The outcomes of the Company's legal proceedings are inherently unpredictable and subject to significant uncertainty.

The Company records a liability when it is probable that a loss has been incurred and the amount can be reasonably estimated. If it is determined that a loss is reasonably possible and the loss or range of loss can be estimated, the reasonably possible loss is disclosed. The Company evaluates developments in legal matters that could affect the amount of liability that has been previously accrued, and related reasonably possible losses disclosed, and makes adjustments as appropriate. Significant judgment is required to determine the likelihood of matters and the estimated amount of a loss related to such matters. To date, losses in connection with legal proceedings have not been material.

The Company expenses legal fees in the period in which they are incurred.

Indemnifications—The Company enters into indemnification provisions under agreements with other parties in the ordinary course of business, including certain customers, business partners, investors, contractors and the Company's officers, directors and certain employees. It is not possible to determine the maximum potential loss under these indemnification provisions due to the Company's limited history of prior indemnification claims and the unique facts and circumstances involved in each particular provision. To date, losses recorded in the Company's consolidated statements of operations in connection with the indemnification provisions have not been material. As of December 31, 2022, the Company did not have any material indemnification claims that were probable or reasonably possible.

Non-income Taxes—The Company may be subject to audit by various tax authorities with regard to non-income tax matters. The subject matter of non-income tax audits primarily arises from different interpretations on tax treatment and tax rates applied. The Company accrues liabilities for non-income taxes that may result from examinations by, or any negotiated agreements with, these tax authorities when a loss is probable and reasonably estimable. If a loss is reasonably possible and the loss or range of loss can be estimated, the Company discloses the reasonably possible loss.

6. Acquisitions and Dispositions

2022 Acquisitions

Business Combinations

Wurl—On April 1, 2022, the Company completed its acquisition of all of the equity interests of Wurl, Inc. ("Wurl"), a connected TV (CTV) software platform company, for a total purchase price of $378.2 million, consisting of $219.3 million in cash, 2,579,692 shares of the Company's Class A common stock valued at $137.4 million and a deferred payment of $22.7 million, with a present value of $21.5 million at the closing of the acquisition, relating to an indemnity holdback amount to be paid in 18 months following the transaction close date, less any eligible claims against Wurl paid by AppLovin. The transaction is expected to enable the Company to expand into the connected TV market. The Company accounted for the acquisition as a business combination. Transaction costs incurred by the Company in connection with the acquisition, including professional fees, were $1.9 million.

The following table summarizes the preliminary allocation of the purchase price to the fair value of the assets acquired and liabilities assumed (in thousands):

Cash and cash equivalents	$	400
Accounts receivable and other current assets		15,194
Intangible assets		
Customer Relationships—estimated useful life of 15 years		41,000
Developed Technology—estimated useful life of 6 years		60,500
Tradename—estimated useful life of 10 years		14,700
Goodwill		264,149
Property and equipment, net		363
Other assets		159
Accounts payable, accrued liabilities and other current liabilities		(12,854)
Deferred revenue		(209)
Deferred income tax liability		(5,235)
Total purchase consideration	$	378,167

The above allocation of the purchase price is still provisional and subject to change within the measurement period, including potential adjustments to deferred tax balances. The final allocation of the purchase price is expected to be completed as soon as practicable, but no later than one year from the date of the acquisition close. During the current year, the Company recognized an increase of $2.2 million of deferred tax liability related to measurement period adjustments, with a corresponding adjustment to goodwill. Such measurement period adjustments are reflected in the table above.

The income approach was used to determine the preliminary fair value of the customer relationships, developed technology, and tradename. Goodwill represents the excess of the purchase price over the preliminary fair value of identifiable assets acquired and liabilities assumed at the acquisition date and is primarily attributable to the assembled workforce and expected synergies at the time of the acquisition. For tax purposes, no tax deductible goodwill was generated as a result of this acquisition.

Contemporaneously with entering into the definitive agreement, the Company also adopted a multi-year performance-based incentive plan for certain key employees of Wurl, under which the key employees may earn up to a total of $600.0 million in additional shares of the Company's Class A common stock through 2025, contingent upon the achievement of certain revenue and other performance targets by the acquired business and the continued employment of such key employees between 2023 and 2025. Such plan became effective at the closing of the transaction.

The Company’s consolidated statement of operations as of December 31, 2022, includes Wurl's revenue of $35.0 million and pre-tax loss of $11.8 million for the period from the acquisition date of April 1, 2022 to December 31, 2022.

See Pro forma results of operations below under "Supplemental Pro Forma Information".

MoPub—On January 1, 2022, the Company completed its acquisition from Twitter, Inc. of certain assets that comprised of its MoPub business for a total purchase price of $1.03 billion in cash. The acquisition allows the Company to integrate certain product features of the MoPub platform into MAX, the Company's own in-app mediation platform, and migrate publishers and demand partners from the MoPub platform to MAX. The Company accounted for the acquisition as a business combination. Transaction costs incurred by the Company in connection with the acquisition, including professional fees, were $14.4 million.

The following table summarizes the allocation of the purchase consideration to the fair value of the assets acquired (in thousands):

Intangible assets		
Advertiser Relationships—estimated useful life of 9 years	$	212,700
Publisher Relationships—estimated useful life of 9 years		123,300
Developed Technology—estimated useful life of 5 years		61,800
Tradename—estimated useful life of 3 months		60
Goodwill		632,472
Total purchase consideration	$	1,030,332

The income approach was used to determine the fair value of the advertiser relationships, publisher relationships, developed technology and tradename. Goodwill represents the excess of the purchase price over the preliminary fair value of identifiable assets acquired at the acquisition date and is primarily attributable to the assembled workforce and expected synergies at the time of the acquisition. For tax purposes, an estimated tax deductible goodwill of $694.5 million was generated as a result of this acquisition. No liabilities were assumed in the transaction.

Contemporaneously with the signing of the asset purchase agreement, the Company entered into an agreement for Twitter, Inc. to provide certain transitional services to facilitate the migration of publishers and demand partners to MAX during a three-month transitional period following the closing of the transaction (the "TSA"). The Company accounted for the TSA as a transaction separate from the business combination since it was negotiated primarily for the benefit of the Company. In the first quarter of 2022, the Company recognized total expense of $ $7.0 million related to the transitional services, which was included primarily in cost of revenue in the Company's consolidated statement of operations.

Due to the significant integration of the MoPub business with MAX, it was impractical to determine the impact of the acquired business on revenue or earnings.

See Pro forma results of operations below under "Supplemental Pro Forma Information".

Asset Acquisitions

During the year ended December 31, 2022, the Company recognized total earn-out costs of $104.2 million, related to asset acquisitions closed in 2021 and prior. No other asset acquisition was completed during 2022.

2021 Acquisitions

Business Combinations

On April 20, 2021, the Company acquired adjust GmbH ("Adjust"), a mobile application tracking and analytics company. The Company purchased all of the outstanding shares of the capital stock of Adjust and settled all of Adjust's debt for the stated purchase consideration of $980.0 million, which was composed of $352.0 million stated value of convertible securities convertible into a variable number of shares of the Company's Class A common stock at a variable conversion price, $50.0 million of cash holdback, and remaining amount of $578.0 million in cash consideration. The fair value of the convertible securities and fair value of the cash holdback are estimated to be $342.2 million and $47.6 million, respectively. As such, the fair value of the acquisition consideration is determined to be $967.8 million. The transaction is expected to expand the Company's Software solutions and has been accounted for as a business combination. Transaction costs incurred by the Company in connection with the acquisition, including professional fees, were $3.1 million.

The following table summarizes the allocation of the purchase consideration to the acquisition-date fair value of the assets acquired and liabilities assumed (in thousands):

Cash and cash equivalents	$	12,155
Accounts receivable and other current assets		21,840
Intangible assets		
Customer Relationships—estimated useful life of 12 years		155,000
Developed Technology—estimated useful life of 6 years		77,000
Tradename—estimated useful life of 5 years		8,000
Goodwill		776,147
Operating lease right-of-use assets		8,130
Property and equipment, net		1,897
Finance lease right-of-use assets		43,156
Other assets		3,191
Accounts payable, accrued liabilities and other current liabilities		(15,540)
Deferred revenue		(5,600)
Operating lease liabilities		(8,130)
Finance lease liabilities		(43,156)
Deferred income tax liability		(66,273)
Total purchase consideration	$	967,817

The income approach was used to determine the fair value of the customer relationships, developed technology and tradename. Goodwill represents the excess of the purchase price over the fair value of identifiable assets acquired and liabilities assumed at the acquisition date and is primarily attributable to the assembled workforce and expected synergies at the time of the acquisition. For tax purposes, an estimated tax deductible goodwill of $692.5 million was generated as a result of this acquisition.

The Company's consolidated statement of operations for the year ended December 31, 2021 includes Adjust's revenue of $77.9 million and pre-tax loss of $37.1 million for the period from the acquisition date of April 20, 2021 to December 31, 2021.

See Pro forma results of operations below under "Supplemental Pro Forma Information".

In May 2021, the convertible securities were converted into 6,320,688 shares of the Company's Class A common stock with a fair value of $342.2 million. As a result, the fair value of the convertible securities was reclassified into the stockholders' equity.

Asset Acquisitions

In April 2021, the Company completed two separate transactions to acquire certain mobile Apps from two foreign-based independent mobile game developers in exchange for an aggregate upfront cash consideration of $300.0 million and potential future earn-out payments. The Company incurred a total transaction cost of $6.0 million related to these transactions. Both transactions were accounted for as asset acquisitions with $306.0 million allocated to the acquired mobile Apps, which will be amortized over approximately eight years. Concurrent with the closings of these transactions, the Company entered into a development services agreement with each of the independent mobile game developers to support the acquired mobile Apps, as well as to develop new mobile Apps during the four-year term of the agreement. With respect to the first transaction, the potential future earn-out payments are contingent on the revenue generated by the acquired mobile Apps exceeding a certain revenue threshold, which will be measured and payable (if applicable) each year for four years from the date of the transaction. With respect to the second transaction, the potential future earn-out payments will be determined in a manner similar to the first transaction, in addition to a potential one-time earn-out payment of $50.0 million contingent on the achievement of a certain monthly revenue milestone within the four years following the date of the transaction.

In June 2021, the Company acquired certain mobile Apps from a foreign-based independent mobile game developer in exchange for an upfront cash consideration of $130.0 million and future earn-out payments. The Company incurred a total transaction cost of $4.0 million related to the transaction. The transaction was accounted for as an asset acquisition with $134.0 million allocated to the acquired mobile Apps, which will be amortized over nine years. Concurrent with the closing of the transaction, the Company entered into a development services agreement with the independent mobile game developer to support the acquired mobile Apps, as well as to develop new mobile Apps during the four-year term of the agreement. With respect to all initially acquired mobile Apps, the potential future earn-out payments are contingent on the revenue and/or earnings before interest, taxes, depreciation and amortization ("EBITDA") generated by the acquired mobile Apps exceeding certain thresholds.

In August 2021, the Company acquired certain mobile Apps from a foreign-based independent mobile game developer in exchange for a total cash consideration of $150.0 million. The transaction was accounted for as an asset acquisition with $150.0 million allocated to the acquired mobile Apps, which will be amortized over six years.

During the year ended December 31, 2021, the Company also completed a number of other asset acquisitions for an aggregate cash consideration of $53.7 million, as well as potential future earn-out payments that are contingent on the revenue and/or profit generated by the acquired mobile Apps.

During the year ended December 31, 2021, the Company recognized total earn-out costs of $116.6 million, of which $77.1 million and $14.8 million related to asset acquisitions that were closed in 2020 and 2019, respectively. These earn-out costs increased the book value of the acquired mobile Apps, and are amortized over the remaining useful life of the originally acquired mobile Apps.

In January 2021, the Company paid $60.0 million to Recoded, an independent foreign-based mobile game developer, in relation to a new mobile App acquired in 2020. In February 2021, the Company paid an additional $90.0 million to Recoded related to deferred cash consideration for an asset acquisition closed in 2019.

Supplemental Pro Forma Information

The unaudited supplemental pro forma information below presents the combined historical results of operations of the Company, Adjust, the MoPub business, Wurl, and Machine Zone, an acquisition completed in May 2020, for each of the periods presented as if Wurl and the MoPub business had been acquired as of January 1, 2021, Adjust had been acquired as of January 1, 2020, and Machine Zone had been acquired on January 1, 2019 (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Revenue	$ 2,826,090	$ 3,036,661	$ 1,625,476
Net income (loss)	(184,317)	25,940	(179,415)

The unaudited supplemental pro forma information above includes the following adjustments to net income (loss) in the appropriate pro forma periods (in thousands):

	Year Ended December 31,		
	2022	2021	2020
An (increase) in amortization expense related to the fair value of acquired identifiable intangible assets, net of the amortization expense already reflected in actual historical results	$ (3,512)	$ (73,121)	$ (48,006)
A decrease (increase) in expenses related to the TSA	$ 7,000	$ (7,000)	$ —
A net increase in revenue related to fair value adjustment	$ —	$ 1,902	$ 54,126
A decrease (increase) in expenses related to transaction expenses	$ 16,899	$ (7,341)	$ (2,327)
A decrease in interest expense related to new debt financing, net of interest expense related to pre-existing debt settled as part of the acquisitions	$ —	$ —	$ 93,432
An (increase) in interest cost	$ —	$ (2,641)	$ —
A decrease in expenses related to transaction bonuses	$ 1,101	$ 8,899	$ —
An (increase) due to replacement stock awards	$ (1,221)	$ (10,145)	$ (1,730)
An (increase) decrease in income tax provision	$ (4,654)	$ 20,535	$ (21,906)

The unaudited supplemental pro forma information has been presented for illustrative purposes only and is not necessarily indicative of results of operations that would have been achieved had the acquisitions taken place on the date indicated, or of the Company's future consolidated results of operations. The supplemental pro forma information presented above has been derived from the Company's historical consolidated financial statements and from the historical accounting records of Wurl, the MoPub business, Adjust, and Machine Zone.

Asset Dispositions

During the fourth quarter of 2022, the Company completed the sale of certain non-strategic assets for $44.0 million as part of its operational optimization of the Apps reportable segment. As a result of the sale, the Company recorded a total net loss of $74.9 million in cost of revenue in the Company's consolidated statements of operations.

7. Goodwill and Intangible Assets, Net

During the second quarter of 2022, the Company revised the presentation of its segment information to reflect changes in the way the Company manages and evaluates the business. As a result, beginning in the second quarter of 2022, the Company reports operating results based on two reportable segments—Software Platform and Apps. This change also resulted in a change in reporting units to coincide with the new operating segments. Given the change in reporting units, the Company performed a relative fair value calculation to allocate historical goodwill of $1.8 billion between the two new reporting units, with $1.5 billion and $0.3 billion of goodwill allocated to Software Platform and Apps, respectively. The Company also performed a qualitative impairment test immediately before and after the change in reporting units and determined that it is not more likely than not that the fair value of the reporting units is less than their carrying amounts, including goodwill. Accordingly, the Company concluded that the goodwill relating to those reporting units was not impaired.

The following table presents goodwill activity (in thousands):

	Software Platform	Apps	Total
December 31, 2020			$ 249,773
Goodwill acquired			762,553
Foreign currency translation			(45,899)
December 31, 2021			$ 966,427
Goodwill acquired			891,387
Foreign currency translation			(38,710)
Segment allocation in the second quarter of 2022	1,473,474	345,630	1,819,104
Additions	5,281	—	5,281
Foreign currency translation	(519)	(111)	(630)
December 31, 2022	$ 1,478,014	$ 345,741	$ 1,823,755

Intangible assets, net consisted of the following (in thousands):

	Weighted-Average Remaining Useful Life (Years)	As of December 31, 2022			As of December 31, 2021		
		Gross Carrying Value	Accumulated Amortization	Net Book Value	Gross Carrying Value	Accumulated Amortization	Net Book Value
Long-lived intangible assets:							
Apps	4.2	$ 1,790,820	$ (836,375)	$ 954,445	$ 1,939,180	$ (529,012)	$ 1,410,168
Customer relationships	9.2	515,084	(58,881)	456,203	145,870	(8,442)	137,428
User base	4.3	68,817	(37,122)	31,695	68,817	(27,369)	41,448
License asset	3.0	59,207	(16,901)	42,306	25,640	—	25,640
Developed technology	4.6	206,060	(53,879)	152,181	87,851	(21,435)	66,416
Other	5.8	53,933	(13,103)	40,830	34,895	(6,648)	28,247
Total long-lived intangible assets		2,693,921	(1,016,261)	1,677,660	2,302,253	(592,906)	1,709,347
Short-lived intangible assets:							
Apps	0.2	45,791	(44,838)	953	40,348	(38,724)	1,624
Total intangible assets		$ 2,739,712	$ (1,061,099)	$ 1,678,613	$ 2,342,601	$ (631,630)	$ 1,710,971

As of December 31, 2022 and 2021, short-lived mobile Apps were included in prepaid expenses and other current assets.

The Company recorded amortization expenses related to acquired intangible assets as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of revenue	$ 448,462	$ 373,726	$ 228,339
Sales and marketing	66,173	22,661	11,587
Total	$ 514,635	$ 396,387	$ 239,926

As of December 31, 2022, the expected future amortization expense related to acquired intangible assets is estimated as follows (in thousands):

2023	$ 339,773
2024	338,820
2025	338,820
2026	324,718
2027	122,490
Thereafter	213,992
Total	$ 1,678,613

8. Leases

The Company leases real estate property under operating leases. The Company also leases networking equipment under arrangements with certain providers of IT infrastructure services which were accounted as finance leases or operating leases.

The Company's leases do not provide a readily determinable implicit rate. Therefore, the Company estimates its incremental borrowing rate to discount the lease payments based on information available at lease commencement. The Company determines its incremental borrowing rate based on the rate of interest it would have to pay to borrow on a collateralized basis with an equal lease payment amount, over a similar term, and in a similar economic environment.

Operating Leases—The Company has entered into various non-cancelable operating leases primarily for its office facilities. The most significant leases are related to the Company's corporate headquarters in Palo Alto, California. As of December 31, 2022, the remaining lease terms varied from 1 to 7.2 years. For certain leases, the Company has an option to extend the lease term for periods varying from 2 to 5 years. These renewal options are not considered in the remaining lease term unless it is reasonably certain that the Company will exercise such options. For leases with an initial term greater than 12 months, the Company has recorded a right-of-use asset and lease liability representing the fixed component of the lease payments.

Further, the Company leases certain networking equipment, colocation space and office space under lease arrangements with terms 12 months or less, which are classified as short-term leases.

The table below presents the operating lease-related assets and liabilities (in thousands):

Balance Sheet Classification	Year Ended December 31, 2022	2021
Operating lease right-of-use assets	$ 60,379	$ 70,975
Current operating lease liabilities	$ 14,334	$ 18,392
Non-current operating lease liabilities	$ 54,153	$ 62,498
Weighted-average remaining term (years)	4.9	5.3
Weighted-average discount rate	5.1 %	5.0 %

The table below presents certain information related to the lease costs for operating leases which are allocated to cost of revenue, sales and marketing, research and development, and general and administrative expenses (in thousands):

	Year Ended December 31, 2022	2021	2020
Operating lease cost	$ 20,783	$ 28,676	$ 17,372
Short-term lease cost	1,272	9,683	8,196
Variable lease cost	1,419	7,862	2,147
Total lease cost	$ 23,474	$ 46,221	$ 27,715

Cash paid for amounts included in the measurement of operating lease liabilities was $22.0 million, $25.5 million and $23.8 million for the years ended December 31, 2022, 2021 and 2020, respectively. Right-of-use assets acquired under operating leases was $7.1 million, $6.1 million and $10.8 million for the years ended December 31, 2022 , 2021 and 2020, respectively.

Finance Leases—The Company has entered into various non-cancelable finance leases primarily for networking equipment with weighted average remaining lease term of approximately 3.4 years. The Company has recorded a right-of-use asset and lease liability representing the fixed component of the lease payments.

The table below presents the finance lease-related assets and liabilities (in thousands):

	Year Ended December 31, 2022	2021	Balance Sheet Classification
Finance lease right-of-use assets	$ 65,187	$ 44,575	Property and equipment, net
Current finance lease liabilities	$ 22,304	$ 21,999	Accrued liabilities
Non-current finance lease liabilities	$ 44,736	$ 24,085	Other non-current liabilities
Weighted-average remaining term (years)	3.4	2.5	
Weighted-average discount rate	5.0 %	5.0 %	

The Company recognized depreciation expenses related to finance lease of networking equipment of $24.1 million, $17.8 million and $8.4 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company recognized interest expenses related to finance lease of networking equipment of $2.8 million, $1.5 million and $0.3 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Cash paid for amounts included in the measurement of finance lease liabilities was $24.1 million, $15.3 million and $9.7 million for the years ended December 31, 2022, 2021 and 2020, respectively.

One of the Company's 2020 acquired companies entered into a sublease agreement in 2017. This agreement is with an unrelated third party to occupy approximately 104,852 square feet of the Company's office space. The Company recorded rent expense on a straight-line basis for the lease, net of sublease income. For the years ended December 31, 2022 and 2021, the Company has the following operating sublease information (in thousands):

	Year Ended December 31,	
	2022	2021
Fixed sublease expense	$ 4,736	$ 9,524
Variable sublease expense	1,023	1,421
Sublease income	(5,334)	(9,421)
Variable sublease income	(1,023)	(1,407)
Net sublease (income) loss	$ (598)	$ 117

Undiscounted cash flow—The tables below reconcile the undiscounted cash flows for each of the first five years and total of the remaining years to the operating and finance lease liabilities recorded in the consolidated balance sheets (in thousands):

	As of December 31, 2022		
	Operating Leases	Finance Leases	Total
2023	17,289	25,019	42,308
2024	15,559	19,425	34,984
2025	14,535	15,868	30,403
2026	12,864	9,048	21,912
2027	11,247	3,471	14,718
Thereafter	5,495	—	5,495
Total lease payments	76,989	72,831	149,820
Less: amount representing interest	(8,502)	(5,791)	(14,293)
Present value of future lease payments	68,487	67,040	135,527
Less: current obligations under leases	14,334	22,304	36,638
Non-current lease obligations	$ 54,153	$ 44,736	$ 98,889

In addition, the Company will receive $0.6 million of sublease income from its real estate leases in 2023.

As of December 31, 2022, the Company did not have any additional significant lease that had not yet commenced.

9. Credit Agreement

On August 15, 2018, the Company entered into a credit agreement with the lenders party thereto and Bank of America, N.A., as administrative agent for the lenders, which has been amended multiple times (the "Credit Agreement"; as amended, the "Amended Credit Agreement"). The Amended Credit Agreement provides for senior secured credit facilities consisting of the Initial Term Loans, with an outstanding balance of $1.8 billion, the Sixth Amendment Term Loans, with an outstanding balance of $1.5 billion, (collectively, the "Term Loans"), and a Revolving Credit Facility, with a borrowing capacity of $600.0 million, as of December 31, 2022. There were no borrowings drawn from the Revolving Credit Facility as of December 31, 2022.

Under the Amended Credit Agreement, the Company is required to make equal quarterly repayments of (i) with respect to the Initial Term Loans, $4.6 million, and (ii) with respect to the Sixth Amendment Term Loans, 0.25% of the aggregate outstanding principal amount on the effective date of the Sixth Amendment or $3.8 million. The remaining principal amounts of the Initial Term Loans and the Sixth Amendment Term Loans are due on August 15, 2025 and October 25, 2028, respectively. The Revolving Credit Facility will mature on February 15, 2025.

Under the Amended Credit Agreement, the Initial Term Loans and the amounts outstanding under the Revolving Credit Facility bear interest due on a quarterly basis at a rate equal to an applicable margin plus, at the Company's option, either (a) a base rate equal to the highest of (i) the prime rate then in effect, (ii) the federal funds rate, plus 0.50% and (iii) the LIBOR rate, plus 1.0% (the "base rate"), or (b) an adjusted LIBOR rate (the "LIBOR rate"). The applicable margin with respect to the Initial Term Loans is equal to 3.25% in the case of LIBOR rate loans and 2.25% in the case of base rate loans. The applicable margin with respect to the amounts outstanding under the Revolving Credit Facility is equal to 2.25% in the case of LIBOR rate loans and 1.25% in the case of base rate loans. The applicable margins for the Initial Term Loans and the amounts outstanding under the Revolving Credit Facility are subject to a reduction of 0.25% based on the Company's consolidated first lien secured debt to consolidated EBITDA ratio. The Sixth Amendment Term Loans bear interest at a floating rate equal to, at the Company's option, either (i) an adjusted LIBOR rate for a specified interest period plus an applicable margin of 3.00% or (ii) a base rate plus an applicable margin of 2.00%. The LIBOR rate applicable to the Sixth Amendment Term Loans is subject to a "floor" of 0.50%. In addition, the Company is required to pay a commitment fee of 0.50% per annum of unused commitments under the Revolving Credit Facility. The commitment fee is subject to reductions to 0.375% per annum and 0.25% per annum based on the Company's consolidated first lien secured debt to consolidated EBITDA ratio.

At December 31, 2022, the interest rates on the Initial Term Loans and Sixth Amendment Term Loan were 7.32% and 6.67%, respectively. The fee for unused commitments under the Revolving Credit Facility was 0.25% per annum at December 31, 2022.

The Credit Agreement requires the Company to prepay, subject to certain exceptions, the term loan with:

- 100% of net cash proceeds above a threshold amount of certain asset sales, certain debt incurrences and casualty events, subject to, in the case of asset sales, casualty events, and sale leasebacks, (i) step-downs to (x) 50% if the Company's consolidated first lien secured debt to consolidated EBITDA ratio is less than or equal to 3.50 to 1.00, but greater than 2.50 to 1.00 and (y) 0% if the Company's consolidated first lien secured debt to consolidated EBITDA ratio is less than or equal to 2.50 to 1.00, and (ii) reinvestment rights and certain other exceptions;
- 50% of annual excess cash flow above a threshold amount, subject to (i) a step-down to 25% if the Company's consolidated first lien secured debt to consolidated EBITDA ratio is less than or equal to 4.00 to 1.00, but greater than 3.50 to 1.00, and (ii) a step-down to 0% if the Company's first lien net leverage ratio is less than or equal to 3.50 to 1.00; provided that such prepayment is required only in the amount (if any) by which such prepayment exceeds $10 million in such fiscal year. The amount of excess cash flow is subject to certain deductions and exceptions, including a dollar-for-dollar reduction based on the amount of voluntary prepayments of term loans and loans under the revolving credit facility (to the extent accompanied by a permanent commitment reduction); and
- 100% of the net cash proceeds of certain other debt incurrences.

The Company is permitted to voluntarily prepay or repay outstanding loans under the Revolving Credit Facility or Term Loans at any time, in whole or in part, subject to prior written notice, minimum amount requirements, and customary "breakage" costs with respect to LIBOR rate loans. Amounts prepaid under the Revolving Credit Facility may subsequently be reborrowed.

The Company's obligations under the Credit Agreement are secured by substantially all of the assets of the Company and its domestic subsidiary guarantors (other than customarily excluded assets).

The Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of AppLovin and its restricted subsidiaries to, among other things, incur debt, grant liens, undergo certain fundamental business changes, make investments, pay-out dividends to third parties, dispose of assets, and enter into transactions with affiliates, in each case, subject to limitations and exceptions set forth in the Credit Agreement. The Credit Agreement also contains customary events of default that include, among other things, certain payment defaults, cross defaults to other indebtedness, covenant defaults, change of control defaults, judgment defaults, and bankruptcy and insolvency defaults. If an event of default exists, the lenders may require the immediate payment of all obligations under the Credit Agreement and may exercise certain other rights and remedies provided for under the Credit Agreement, the other loan documents and applicable law. As of December 31, 2022, the Company was in compliance with all of the covenants.

During 2021, the Company entered into the fifth amendment to the Amended Credit Agreement to increase the Initial Term Loans by an aggregate principal amount of $597.8 million, on identical terms to the existing Initial Term Loans, and used a part of the proceeds to pay off an old term loan issued under the same Amended Credit Agreement, totaling $298.2 million. The Company accounted for the early repayment of the old term loan as a debt extinguishment. As a result, the Company recognized a loss on debt extinguishment of $16.9 million in 2021, which was recorded in interest expense and loss on extinguishment of debt on the Company's consolidated statements of operations. The loss on debt extinguishment consisted primarily of the unamortized original issue discount and debt issuance cost.

The following table presents the amount of interest expense recognized relating to the contractual interest coupon, amortization of the debt discount and issuance costs, and loss on debt extinguishment with respect to the Company's Term Loans, for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Contractual interest coupon	$ 162,150	$ 70,882	$ 58,810
Amortization of debt discount and issuance costs	9,887	7,442	7,319
Loss on debt extinguishment	—	16,852	—
Total interest expense from Term Loans	$ 172,037	$ 95,176	$ 66,129

The aggregate future maturities of long-term debt as of December 31, 2022 are as follows (in thousands):

2023	$ 33,310
2024	33,310
2025	1,736,094
2026	15,000
2027	15,000
Thereafter	1,413,750
Total outstanding term loan principal	$ 3,246,464
Unaccreted discount and debt issuance costs	(34,742)
Total debt	$ 3,211,722
Less: short-term debt	33,310
Long-term debt	$ 3,178,412

10. Equity

Initial Public Offering and Capital Structure Change

The Company's registration statement on Form S-1 (the "IPO Registration Statement") related to its IPO was declared effective on April 14, 2021, and the Company's Class A common stock began trading on the Nasdaq Global Select Market on April 15, 2021. On April 19, 2021, the Company completed its IPO, in which the Company sold 22,500,000 shares of Class A common stock at price to the public of $80.00 per share. The Company received aggregate net proceeds of $1.75 billion after deducting underwriting discounts and commissions of $47.2 million and offering expenses of $7.9 million subject to certain cost reimbursements. KKR Capital Markets LLC ("KKR Capital Markets") was an underwriter for the IPO and is an affiliate of KKR Denali Holdings L.P. ("KKR Denali"), who is a principal stockholder of the Company. The Company used $400.0 million of the net proceeds from the IPO to repay the entire outstanding amount under the revolving credit facility. KKR Capital Markets is a lender under the revolving credit facility and an affiliate of KKR Denali, a principal stockholder of the Company. For additional information, see Note 9 - Credit Agreement.

Following the effectiveness of the IPO Registration Statement, the Company filed the IPO Certificate. The IPO Certificate authorized a total of 1,500,000,000 shares of Class A common stock, 200,000,000 shares of Class B common stock, 150,000,000 shares of Class C common stock, and 100,000,000 shares of preferred stock. Upon the filing and effectiveness of the IPO Certificate, all shares of Class F common stock and Series A convertible preferred stock then outstanding automatically converted into the equivalent number of shares of Class A common stock, respectively (the "Capital Stock Conversions"). Following the Capital Stock Conversions and immediately prior to the completion of the IPO, a total of 150,307,622 shares of Class A common stock held by Adam Foroughi, the Company's co-founder, CEO, and Chairperson; Herald Chen, the Company's President, Chief Financial Officer, and a member of the Company's board of directors; and KKR Denali (collectively with certain affiliates, the Class B Stockholders) were exchanged for an equivalent number of shares of Class B common stock pursuant to the terms of certain exchange agreements.

Preferred Stock

The preferred stock may be issued from time to time in one or more series. The Company's board of directors is authorized to determine the designation, powers, preferences, and rights of the shares of each such series and any qualifications, limitations or restrictions thereof.

Common Stock

The rights of the holders of all classes of common stock pursuant to the IPO Certificate are as follows:

The rights of the holders of Class A common stock, Class B common stock, and Class C common stock (referred to together as the "common stock") are identical, except with respect to voting and conversion.

Voting Rights

Holders of the Class A common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, holders of the Class B common stock are entitled to 20 votes for each share held on all matters submitted to a vote of stockholders, and holders of the Class C common stock are not entitled to vote on any matter that is submitted to a vote of stockholders, except as otherwise required by law. The holders of the Class A common stock and Class B common stock will vote together as a single class, unless otherwise required by law. Under the IPO Certificate, approval of the holders of at least a majority of the outstanding shares of the Class B common stock voting as a separate class will be required to increase the number of authorized shares of the Class B common stock. In addition, Delaware law could require either holders of the Class A common stock, the Class B common stock, or the Class C common stock to vote separately as a single class in the following circumstances:

- if the Company were to seek to amend the IPO Certificate to increase or decrease the par value of a class of stock, then that class would be required to vote separately to approve the proposed amendment; and
- if the Company were to seek to amend the IPO Certificate in a manner that alters or changes the powers, preferences or special rights of a class of stock in a manner that affected its holders adversely, then that class would be required to vote separately to approve the proposed amendment.

Until the date on which the final conversion of all outstanding shares of Class B common stock pursuant to the terms of the IPO Certificate occurs, approval of at least two-thirds of the outstanding shares of the Company's Class B common stock voting as a separate class will be required to amend or modify any provision of the IPO Certificate inconsistent with, or otherwise alter, any provision of the IPO Certificate to modify the voting, conversion, or other rights, powers, preferences, privileges, or restrictions of the Company's Class B common stock.

Upon the closing of the IPO, the Class B Stockholders held all of the issued and outstanding shares of the Company's Class B common stock. The Class B Stockholders have entered into a voting agreement (the "Voting Agreement") whereby all Class B common stock held by the Class B Stockholders and their respective permitted entities and permitted transferees will be voted as determined by two of Mr. Foroughi, Mr. Chen, and KKR Denali (one of which must be Mr. Foroughi).

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of the Company's common stock will be entitled to receive dividends out of funds legally available if the Company's Board, in its discretion, determines to issue dividends and then only at the times and in the amounts that the Company's Board may determine.

No Preemptive or Similar Rights

The Company's common stock will not be entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

If the Company becomes subject to a liquidation, dissolution or winding-up, the assets legally available for distribution to the Company's stockholders would be distributable ratably among the holders of the Company's common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Conversion of Class B Common Stock

Each share of Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. Following the closing of the IPO, shares of Class B common stock will automatically convert into shares of Class A common stock upon sale or transfer except for certain transfers described in the IPO Certificate, including transfers for estate planning, transfers among KKR Denali and its affiliates, or other transfers among the Class B Stockholders. Withdrawal from the Voting Agreement constitutes a transfer.

Each share of Class B common stock will convert automatically into one share of Class A common stock upon the date fixed by the Company's Board that is no less than 61 days and no more than 180 days following the date on which (i) the Voting Agreement is terminated or (ii) Adam Foroughi is no longer involved with the Company as a member of the Board or as an executive officer.

Conversion of Class C Common Stock

After the conversion or exchange of all outstanding shares of the Company's Class B common stock into shares of Class A common stock, all outstanding shares of Class C common stock will convert automatically into Class A common stock, on a share-for-share basis, on the date or time specified by the holders of a majority of the outstanding shares of Class A common stock, voting as a separate class.

Stock Repurchase Program

In February 2022, the Company's Board authorized the repurchase of up to $750 million of the Company's Class A common stock. Repurchases may be made from time to time through open market purchases or through privately negotiated transactions, subject to market conditions, applicable legal requirements and other relevant factors. Open market repurchases may be structured to occur in accordance with the requirements of Rule 10b-18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The Company may also, from time to time, enter into Rule 10b-5 trading plans to facilitate repurchases of shares. The repurchase program does not obligate the Company to acquire any particular amount of Class A common stock, has no expiration date and may be modified, suspended, or terminated at any time at the Company's discretion. As of December 31, 2022, the Company repurchased 9,042,407 shares of outstanding Class A common stock for an aggregate amount of $338.8 million.

As of December 31, 2022, the Company had two classes of outstanding common stock: 302,711,061 shares of Class A common stock and 71,162,622 shares of Class B common stock.

11. Stock-based Compensation

Following the effective date of the IPO Registration Statement, the Company maintains the 2021 Equity Incentive Plan, the 2021 Partner Studio Incentive Plan and the ESPP, all of which were adopted by the Board and approved by its stockholders.

2021 Equity Incentive Plan

The 2021 Equity Incentive Plan (the "2021 Plan") provides for the grant of restricted stock units ("RSUs"), incentive stock options ("ISOs"), nonqualified stock options ("NSOs"), restricted stock, stock appreciation rights ("SARs"), performance units, and performance shares to the Company's employees, directors, consultants and other service providers. The total number of shares of the Company's Class A common stock that were initially reserved for issuance under the 2021 Plan was 39,000,000, and provides for an annual increase of shares, equal to the least of (a) 39,000,000 shares, (b) five percent (5%) of the outstanding shares of all classes of the Company's common stock as of the last day of the immediately preceding fiscal year, or (c) such other amount as the Company's Board may determine. During the year ended December 31, 2022, an additional 18,754,468 shares were reserved for issuance pursuant to this annual increase, and following this annual increase, the Board decreased the number of shares of Class A common stock reserved for issuance under the 2021 Plan by 2,000,000 shares.

Immediately prior to the effectiveness of the 2021 Plan, the Company's 2011 Equity Incentive Plan (the "2011 Plan") was terminated. All outstanding awards under the 2011 Plan continue to be governed by their existing terms, and options cancelled under the 2011 Plan are added to the option pool available under the 2021 Plan.

2021 Partner Studio Incentive Plan

The 2021 Partner Studio Incentive Plan (the "2021 Partner Plan") provides for the grant of RSUs, ISOs, NSOs, SARs, performance units, and performance shares to individuals or entities engaged by the Company or a parent or subsidiary of the Company to render bona fide services to the party engaging such individual or entity. A total of 390,000 shares of the Company's Class A common stock are reserved for issuance pursuant to the 2021 Partner Plan. During the year ended December 31, 2022, the Board reserved an additional 2,000,000 shares of Class A common stock for issuance under the 2021 Partner Plan.

Following the IPO, the Company has only granted RSUs under the 2021 Plan and 2021 Partner Plan. RSU grants included service-based vesting condition that generally approximates 4 years. A summary of RSUs activity is as follows: (in thousands, except share and per share data):

	Number of Restricted Stock Units	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Balances at December 31, 2021	7,323,404	$ 60.15	$ 690,304
Granted	13,253,080	23.08	
Vested	(3,559,045)	56.59	
Cancelled	(1,400,696)	57.64	
Balances at December 31, 2022	15,616,743	$ 29.87	$ 164,444

As of December 31, 2022, there was $441.2 million of unrecognized compensation cost related to unvested employee RSUs. This amount is expected to be recognized over a weighted-average period of 2.5 years. The fair value as of the respective vesting dates of RSUs that vested during the year ended December 31, 2022 was $88.0 million.

Employee Stock Purchase Plan

The ESPP permits participants to purchase shares of the Company's Class A common stock through contributions of up to 15% of their eligible compensation. The ESPP provides for consecutive, overlapping 24-month offering periods, during which the contributed amount by the participant will be used to purchase shares of the Company's Class A common stock at the end of each 6-month purchase period with the purchase price of the shares being 85% of the lower of the fair market value of the Company's Class A common stock on the first day of an offering period or on the exercise date. A participant may purchase a maximum of 590 shares of the Company's Class A common stock during a purchase period. Participants may end their participation at any time during an offering and will be paid their accrued contributions that have not yet been used to purchase shares. Participation ends automatically upon termination of employment with the Company.

A total of 7,800,000 shares of the Company's Class A common stock are reserved for issuance under the ESPP. The number of shares of the Company's Class A common stock that will be available for sale under the ESPP, and provides for an annual increase of shares, equal to the least of: (a) 7,800,000 shares, (b) one percent (1%) of the outstanding shares of all classes of the Company's common stock as of the last day of the immediately preceding fiscal year, or (c) such other amount as the Company's board of directors may determine. The initial offering period is from April 15, 2021 through November 19, 2024. During the year ended December 31, 2022, an additional 3,750,894 shares were reserved for issuance pursuant to this annual increase. During the year ended December 31, 2022, 267,028 shares of Class A common stock have been purchased under the ESPP.

The weighted-average assumptions used to estimate the fair value of shares to be issued under the ESPP are as follows:

	Year Ended December 31,
	2022
Weighted-average expected term	1.25
Expected volatility	62 %
Risk-free interest rate	3.35 %
Dividend yield	0 %

As of December 31, 2022, total unrecognized compensation cost related to the ESPP was $6.4 million, which will be amortized over a weighted-average period of 0.9 years.

2011 Equity Incentive Plan

The Company's 2011 Plan provides for the grant of stock options to employees, directors, consultants, and service providers of the Company. Options under the 2011 Plan may be granted for periods of up to 10 years and generally vest over four years. As noted above, immediately prior to the effectiveness of the 2021 Plan, the 2011 Plan was terminated, and no further awards were granted thereunder. All outstanding awards under the 2011 Plan continue to be governed by their existing terms, and options cancelled under the 2011 Plan are added to the option pool available under the 2021 Plan.

Stock Options—During the years ended December 31, 2021 and 2020, the Company granted stock options to purchase 263,200 and 13,158,430 shares of common stock, with a weighted-average grant date stock fair value of $48.14 and $15.94 per share, respectively. The Company did not grant stock options during the year ended December 31, 2022.

The weighted-average assumptions used to estimate the fair value of stock options granted are as follows:

	Year Ended December 31,	
	2021	2020
Weighted-average expected term	5.21	5.94
Expected volatility	43 %	39 %
Risk-free interest rate	0.48 %	0.56 %
Dividend yield	0 %	0 %

The Company's stock options activity under the 2011 Plan was as follows:

	Number of Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (Years)
Balances at December 31, 2021	18,403,704	$ 6.39	7.9
Granted	—	—	
Exercised	(4,439,387)	6.17	
Forfeited	(1,248,513)	7.37	
Expired	—	—	
Balances at December 31, 2022	12,715,804	$ 6.38	6.8
Vested and exercisable at December 31, 2022	10,057,658	$ 5.99	6.7
Vested and expected to vest at December 31, 2022	11,459,032	$ 6.78	6.9

The aggregate intrinsic value of options outstanding as of December 31, 2022 and 2021, was $63.57 million and $1.62 billion, respectively. As of December 31, 2022 there was approximately $30.4 million of total unrecognized compensation costs related to unvested options granted, which is expected to be recognized over the weighted-average vesting period of 1.4 years. The total intrinsic value of share options exercised during the years ended December 31, 2022, 2021, and 2020 was $87.5 million, $622.1 million and $33.8 million, respectively.

Early Exercise of Stock Options—Subject to the Board's approval, the Plan allows for the early exercise of options granted. Under the terms of the Plan, option holders, upon early exercise, must sign a restricted stock purchase agreement that gives the Company the right to repurchase any unvested shares, at the original exercise price, in the event the optionees' employment terminates for any reason. The right to exercise options before they are vested does not change existing vesting schedules in any way and the early exercised options may not be sold or transferred before they are vested. The repurchase right lapses over time as the shares vest at the same rate as the original option vesting schedule. The cash amounts received in exchange for these early exercised shares are recorded as a liability on the accompanying balance sheets and reclassified into common stock and additional paid-in-capital as the shares vest. The Company's right to repurchase these shares lapses by 1/4th of the shares on the 1-year anniversary of the vesting start date and ratably each month over the next 36-months.

The Company had 99,372 shares and 486,999 shares of Class A common stock subject to repurchase as of December 31, 2022 and 2021, respectively. The liability for the repurchase as of December 31, 2022 and 2021 included in accrued liabilities was $0.2 million and $1.4 million, respectively.

During the years ended December 31, 2021 and 2020, the Company provided financing to certain employees in the form of promissory notes to early exercise stock options. These promissory notes are partially collateralized by shares and in-substance are nonrecourse. For accounting purposes, exercised options via nonrecourse promissory notes are not substantive and are continued to be treated as options. In February 2021, promissory notes issued to executive officers in the amount of $20.9 million were settled through either share repurchase, in the amount of $17.2 million, or cash payment, in the amount of $3.7 million. In connection with the repurchase of shares, the Company accelerated vesting of 60,968 shares of Class A common stock for one of the Company's officers. The acceleration of vesting was accounted as an option modification with an immaterial impact to the stock-based compensation expense. The Company did not provide this type of financing to employees during the year ended December 31, 2022.

As of December 31, 2022 and 2021, the Company had 1,399,999 and 2,884,999 shares of Class A common stock options, respectively, that were exercised via nonrecourse promissory notes of which 43,855 and 663,856 shares, respectively, were unvested and subject to repurchase. The principal balances of nonrecourse promissory notes outstanding amounted to $4.9 million and $15.1 million as of December 31, 2022 and 2021, respectively.

Restricted Stock—Restricted stock awards are classified as equity awards based on the requirements established by the applicable accounting rules for stock-based compensation. The fair value of the restricted stock awards was determined based on the price of the Company's valuation on the date of grant as approved by the Company's board of directors.

The Company has historically granted restricted stock awards to certain employees. Restricted stock award activity for the periods presented herein has not been material. As of December 31, 2022 all restricted stock awards have vested thus, there was no unrecognized compensation cost related to restricted stock awards expected to vest.

The Company recognized stock-based compensation expense for all equity awards for the periods indicated as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of revenue	$ 6,307	$ 2,335	$ 982
Sales and marketing	41,533	15,224	10,668
Research and development	94,319	63,344	36,852
General and administrative	49,453	52,274	13,885
Total stock-based compensation expense	$ 191,612	$ 133,177	$ 62,387

For the year ended December 31, 2022, total stock-based compensation expense included a credit of $2.1 million associated with awards that may be settled with one of the Company's subsidiaries. For the years ended December 31, 2021 and 2020 total stock-based compensation expense included $1.2 million and $0.9 million associated with such awards, respectively.

12. Net Income (Loss) Per Share

The following table sets forth the computation of basic and diluted net income (loss) per share attributable to common stockholders for the years ended December 31, 2022, 2021 and 2020 (in thousands, except share and per share data):

	Year Ended December 31,		
	2022	2021	2020
BASIC EPS			
Numerator:			
Net income (loss)	$ (192,746)	$ 35,446	$ (125,187)
Less:			
Income attributable to convertible preferred stock	—	(3,209)	—
Income attributable to options exercises by promissory notes	—	(387)	—
Income attributable to unvested early exercised options	—	(95)	—
Income attributable to unvested RSA's	—	(52)	—
Net income (loss) attributable to common stock	$ (192,746)	$ 31,703	$ (125,187)
Denominator:			
Weighted-average shares used in computing net income (loss) per share: Basic	371,568,011	324,836,076	214,936,545
Net income (loss) per share attributable to common stock: Basic	$ (0.52)	$ 0.10	$ (0.58)
DILUTED EPS			
Numerator:			
Net income (loss)	$ (192,746)	$ 35,446	$ (125,187)
Less:			
Income attributable to convertible preferred stock	—	(3,058)	—
Income attributable to options exercises by promissory notes	—	(369)	—
Income attributable to unvested early exercised options	—	(91)	—
Income attributable to unvested RSA's	—	(49)	—
Net income (loss) attributable to common stock	$ (192,746)	$ 31,879	$ (125,187)
Denominator:			
Weighted-average shares used in computing net income (loss) per share: Basic	371,568,011	324,836,076	214,936,545
Weighted-average dilutive stock options, RSUs, and convertible security	—	17,927,556	—
Weighted-average shares used in computing net income (loss) per share: Diluted	371,568,011	342,763,632	214,936,545
Net income (loss) per share attributable to common stock: Diluted	$ (0.52)	$ 0.09	$ (0.58)

The following table presents the forms of antidilutive potential common shares:

	Year Ended December 31,		
	2022	2021	2020
Convertible preferred stock	—	—	109,090,908
Stock options exercised for promissory notes	1,399,999	2,884,999	8,022,499
Early exercised stock options	99,372	487,000	19,800
Unvested RSAs	—	181,737	1,236,771
Stock options	11,315,805	—	20,754,985
Unvested RSU	15,616,743	291,093	—
ESPP	856,811	246,246	—
Total antidilutive potential common shares	29,288,730	4,091,075	139,124,963

The table above does not include the convertible security issued in 2020. The sellers converted the convertible security in 2021 following the completion of the Company's IPO.

13. Income Taxes

Net income (loss) before income taxes for the years ended December 31, 2022, 2021 and 2020, includes the following components (in thousands):

	Year Ended December 31,		
	2022	2021	2020
U.S.	$ 8,660	$ 193,161	$ (118,296)
Foreign	(213,837)	(146,850)	(17,410)
Net income (loss) before income taxes	$ (205,177)	$ 46,311	$ (135,706)

Provision for (benefit from) income taxes for the years ended December 31, 2022, 2021 and 2020 consist of the following (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current:			
Federal	$ 74,843	$ 64,585	$ 20,162
State	13,548	10,234	4,087
Foreign	1,548	1,914	4,027
	89,939	76,733	28,276
Deferred:			
Federal	(74,588)	(52,162)	(29,235)
State	(6,718)	(2,394)	(4,800)
Foreign	(20,863)	(11,204)	(4,013)
	(102,169)	(65,760)	(38,048)
Total provision for (benefit from) income taxes.	$ (12,230)	$ 10,973	$ (9,772)

The reconciliation of federal statutory income tax rate to the effective income tax rate is as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Tax provision (benefit) at U.S. federal statutory rate	$ (43,034)	$ 9,725	$ (28,498)
State income taxes, net of federal benefit	(1,356)	1,866	(1,137)
Foreign income taxed at different rates	27,114	10,563	8,710
Change in foreign deferred tax rate	—	—	(6,038)
Global intangible low-taxed income	2,917	—	—
Stock-based compensation	22,064	(8,807)	10,347
Capital loss	(14,687)	—	—
Foreign-derived intangible income	(17,667)	(10,477)	(3,518)
Research and development credits	(11,803)	(6,193)	(2,561)
Extinguishments of acquisition-related contingent consideration	—	—	12,237
Foreign income inclusion	357	(2,622)	—
Change in valuation allowance	21,061	15,905	—
Other	2,804	1,013	686
Total provision for (benefit from) income taxes	$ (12,230)	$ 10,973	$ (9,772)

The following summarizes the current and deferred tax assets and liabilities (in thousands):

	As of December 31,	
	2022	2021
Deferred tax assets:		
Accrued expenses and reserves	$ 7,139	$ 6,374
Stock-based compensation	7,439	14,651
Tax credit carryforwards	11,474	4,835
Net operating loss	30,144	12,042
Identified intangibles	2,820	—
Operating lease liability	13,884	16,622
Other comprehensive income	30,186	16,251
Foreign tax deduction	9,137	12,363
Capital loss	17,125	1,074
Other	—	1,173
Capitalized R&D expenses	78,315	—
Valuation allowance	(40,640)	(18,842)
Total deferred tax assets	167,023	66,543
Deferred tax liabilities:		
Depreciation and amortization	(1,976)	(5,433)
Identified intangibles	—	(6,049)
Operating lease right-of-use assets	(14,107)	(16,622)
Other	(693)	—
Total deferred tax liabilities	(16,776)	(28,104)
Net deferred tax assets	$ 150,247	$ 38,439

As of December 31, 2022 and 2021, the Company has federal net operating loss carryforwards of $47.9 million and $13.7 million, respectively, to reduce future taxable income. The post-TCJA net operating losses are not subject to expiration. As of December 31, 2022 and 2021, the Company has federal tax credit carryforwards of $1.7 million and $0.9 million, respectively, to offset future tax liability. The credit carryforwards will begin to expire in 2039. As of December 31, 2022 and 2021, the Company has federal capital loss carryforward of $74.0 million and $4.7 million, respectively to reduce future capital gains. The capital loss carryforward will begin to expire in 2026.

As of December 31, 2022 and 2021, the Company has California net operating loss carryforwards of $11.1 million and $8.8 million, respectively, to reduce future taxable income. The net operating losses will begin to expire in 2037. As of December 31, 2022 and 2021, the Company has California tax credit carryforwards of $17.6 million and $9.5 million, respectively, to offset future tax liability. The credit carryforwards are not subject to expiration.

As of December 31, 2022 and 2021, the Company has Cyprus net operating loss carryforwards of $19.8 million and nil, respectively, to reduce future taxable income, which will begin to expire in 2026.

As of December 31, 2022 and 2021, the Company has German net operating loss carryforwards of $80.8 million and $34.6 million, respectively, to reduce future taxable income. As of December 31, 2022 and 2021, the Company had Israeli net operating loss carryforwards of $18.8 million and $14.5 million, respectively, to reduce future taxable income.

The valuation allowance on the Company's net deferred tax assets increased by $21.8 million, $18.3 million and $0.5 million during the years ended December 31, 2022, 2021 and 2020, respectively.

In assessing the realizability of the Company's deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management's assessment is based on the weight of available evidence, including cumulative losses since inception and expected future losses and as such, management believes it is more likely than not that the deferred tax assets will be realized. As of December 31, 2022, 2021 and 2020, the Company maintained a valuation allowance with respect to certain of its deferred tax assets relating primarily to certain state tax credits, U.S. capital losses and operating losses in certain non-U.S. jurisdictions that we believe are not likely to be realized.

Internal Revenue Code (IRC) Section 382 places a limitation on the amount of taxable income that can be offset by net operating loss carryforwards and tax credits after a greater than 50% change in control in ownership; California has similar rules. The Company's capitalization described herein may have resulted in such a change. Utilization of the net operating loss carryforwards may be subject to annual limitations under IRC Section 382 and similar state provisions. The annual limitation may result in the expiration of the net operating loss carryforwards before utilization.

The Company has not provided U.S. income or foreign withholding taxes on the undistributed earnings of its foreign subsidiaries as of December 31, 2022 and 2021, because it intends to permanently reinvest such earnings outside of the U.S. If these foreign earnings were to be repatriated in the future, the related U.S. tax liability will be immaterial, due to the participation exemption put in place in the Tax Act.

Uncertain Tax Positions

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

	As of December 31,		
	2022	2021	2020
Balance at beginning of year	$ 18,456	$ 14,401	$ 6,646
Increases related to prior year positions	—	5,027	4,681
Decreases related to prior year positions	(2,837)	—	—
Increases related to current year positions	7,083	2,631	3,498
Decreases related to lapse of statutes	(758)	(172)	(424)
Decreases related to settlements	(2,892)	(3,431)	—
Balance at end of year	$ 19,052	$ 18,456	$ 14,401

Of the unrecognized tax benefits, $12.9 million and $13.6 million represents the amount that if recognized, would favorably affect the effective income tax rate in 2022 and 2021, respectively. The Company does not expect a significant change to its unrecognized tax benefits or recorded liabilities over the next twelve months. The unrecognized tax benefits may increase or change during the next year for items that arise in the ordinary course of business.

The Company records interest and penalties related to unrecognized tax benefits in income tax expense. As of December 31, 2022, 2021 and 2020, the Company had approximately $2.6 million, $3.6 million, and $2.3 million of interest and penalties, respectively.

The tax return for years 2017 through 2022 remain open to examination for federal and other major domestic taxing jurisdictions and for years 2017 through 2022 for other major foreign jurisdictions.

14. Segments and Geographic Information

During the second quarter of 2022, the Company revised the presentation of segment information to align with changes to how the Company's chief operating decision maker ("CODM") manages the business, allocates resources and assesses operating performance. The CODM is the Company's Chief Executive Officer. Prior to the second quarter of 2022, the Company had a single operating and reportable segment. Beginning in the second quarter of 2022, the Company reports operating results based on two reportable segments: Software Platform and Apps. As of December 31, 2022, the Company's operating segments are the same as the reportable segments, which are as follows:

- *Software Platform:* Software Platform generates revenue prim$arily from fees paid by advertisers for the placement of ads on mobile applications owned by Publishers.
- *Apps:* Apps generates revenue when a user of one of the Apps makes an in-app purchase ("IAP Revenue") and when clients purchase the digital advertising inventory of the Company's portfolio of Apps ("IAA Revenue").

The CODM evaluates the performance of each operating segment using revenue and segment adjusted EBITDA. The Company defines segment adjusted EBITDA as revenue less expenses, excluding depreciation and amortization and certain items that the Company does not believe are reflective of the operating segments' core operations. Expenses include indirect costs that are allocated to operating segments based on a reasonable allocation methodology, which are generally related to sales and marketing activities and general and administrative overhead. Revenue and expenses exclude transactions between the Company's operating segments. The CODM does not evaluate operating segments using asset information.

The following table provides information about the Company's reportable segments and a reconciliation of the total segment adjusted EBITDA to consolidated income (loss) before income taxes (in thousands). For comparative purposes, amounts in prior periods have been recast:

	As of December 31,		
	2022	2021	2020
Revenue:			
Software Platform	$ 1,049,167	$ 673,952	$ 207,285
Apps	1,767,891	2,119,152	1,243,801
Total Revenue	$ 2,817,058	$ 2,793,104	$ 1,451,086
Segment Adjusted EBITDA:			
Software Platform	$ 808,415	$ 457,302	$ 121,114
Apps	254,795	269,512	224,381
Total Segment Adjusted EBITDA	$ 1,063,210	$ 726,814	$ 345,495
Interest expense and loss on settlement of debt, net	$ (171,863)	$ (103,170)	$ (77,873)
Other income, net	18,647	7,545	6,183
Amortization, depreciation and write-offs	(547,084)	(431,063)	(254,951)
Impairment and loss on disposal of long-lived assets	(127,892)	—	—
Non-operating foreign exchange gain (loss)	164	1,537	(1,210)
Stock-based compensation	(191,612)	(135,468)	(62,387)
Acquisition-related expense and transaction bonus	(21,279)	(16,887)	(7,850)
Publisher bonuses	(209,635)	(3,227)	—
MoPub acquisition transition services	(6,999)	—	—
Restructuring costs	(10,834)	—	—
Extinguishments of acquisition-related contingent consideration	—	—	(74,820)
Loss from modification of leases	—	—	(7,851)
Change in fair value of contingent consideration	—	230	(442)
Income (loss) before provision for tax	$ (205,177)	$ 46,311	$ (135,706)

The following table presents long-lived assets by geographic area which consist of property and equipment, net (in thousands):

	As of December 31,	
	2022	2021
United States	$ 25,548	$ 25,681
Germany	32,044	22,872
Netherlands	20,629	14,265
All other countries	322	790
Total property and equipment, net	$ 78,543	$ 63,608

For information regarding revenue disaggregated by geography, see Note 2 - Summary of Significant Accounting Policies.

15. Restructuring

In 2022, the Company undertook certain workforce reduction measures and recorded a total restructuring charge of $10.8 million comprising primarily of one-time termination benefits. As of December 31, 2022, an immaterial amount of these restructuring costs remain unpaid and are included in accrued liabilities on the Company's consolidated balance sheet.

16. Related Party

KKR Capital Markets, an affiliate of KKR Denali, acted as a joint lead arranger and joint bookrunner for the Credit Agreement. KKR Denali is also one of the Company's principal stockholders. In 2022, 2021 and 2020, the Company paid KKR Capital Markets fees of nil, $2.3 million, and $1.5 million, respectively, for services rendered in connection with the Credit Agreement.

In November 2020 and March 2021, the Company borrowed $150.0 million and $250.0 million under the Revolving Credit Facility, respectively (together, the "Revolving Credit Loans"). A lender of the Revolving Credit Loans is an affiliate of KKR Denali, a principal stockholder of the Company. The Company repaid such Revolving Credit Loans in full with the net proceeds from the IPO in April 2021.

In December 2021, the Company completed a secondary offering of 7,500,000 shares of its Class A common stock, at a price of $83.00 per share, with all shares offered by certain of the Company's stockholders, including KKR Denali. The Company made a payment of $5.0 million to KKR Capital Markets in connection with the secondary offering.

In December 2019, the Company purchased 2,475,000 shares and 300,000 shares of the Company's Class A Common Stock from the Company's chief executive officer and from the Company's Board member, respectively. The chief executive officer is also the Company's principal stockholder. The fair value of the purchased shares was $14.0 million. The purchase of shares was paid through the issuance of two unsecured 5-year promissory notes with the principal amount of $10.0 million and $1.2 million, respectively. The promissory notes are redeemable upon the earlier of maturity, (ii) immediately prior to an acquisition of the Company as defined in the Company's 2011 Equity Incentive Plan, or (iii) immediately prior to the Company's filing an S-1 with the Securities and Exchange Commission. The promissory notes bear interest at a rate of 2% per annum paid annually. Both promissory notes were recorded in other non-current liabilities at the aggregated initial fair value of $9.1 million representing a discount of 19% to its principal amount and resulting in a purchase of the Company's common stock shares below its fair value. The discount is amortized over a period of five years under the effective interest method with amortization expense included in interest expense. The shares of the Company's Class A Common Stock purchased in exchange for the issuance of the promissory note were added to the pool of shares available for the grant under the Company's 2011 Equity Incentive Plan. The Company recorded the difference between fair value of the shares purchased and the fair value of promissory notes as an increase to additional paid-in capital. In December 2021, the Company repaid both promissory notes and recognized a loss on debt extinguishment of $1.4 million based on the difference between the $11.7 million repayment amount and the carrying value of such promissory notes on the settlement date. The interest expense recognized on this note was not material for the years ended December 31, 2021 and 2020.

The Company published a mobile game app developed by a mobile game developer owned by a member of the Company's Board under a game assignment and revenue share agreement entered into in October 2020. The Company made payments to the mobile game developer under this agreement of $0.7 million during the year ended December 31, 2021. Payments for the years ended December 31, 2020 and 2022 were not material.

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

Not applicable.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation and supervision of our principal executive officer and our principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our principal executive officer and principal financial officer have concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles.

Our management, under the supervision of our principal executive officer and our principal financial officer, evaluated the effectiveness of our internal control over financial reporting as of December 31, 2022 based on the framework in Internal Control-Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. On April 1, 2022, the Company completed the acquisition of Wurl, Inc. ("Wurl"), as further described in Note 6, Acquisitions, Business Combinations. Wurl's financial statements represent approximately 7% and 1%, respectively, of the Company's consolidated total assets and total revenue amounts as of and for the year ended December 31, 2022. As of December 31, 2022, we are in the process of evaluating the internal control over financial reporting of the acquired business and integrating it into our existing operations. As permitted by the SEC, management has elected to exclude Wurl from its assessment of the effectiveness of its internal control over financial reporting as of December 31, 2022. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2022.

The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a-15(d) and 15d-15(d) of the Exchange Act during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

Our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their desired objectives. Management does not expect, however, that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all error and fraud. Any control system, no matter how well designed and operated, is based upon certain assumptions, and can provide only reasonable, not absolute, assurance that its objectives will be met. Further, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our company have been detected.

Item 9B. Other Information

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to the definitive proxy statement for our 2023 Annual Meeting of Stockholders, which will be filed with the SEC, no later than 120 days after December 31, 2022 (the "Proxy Statement").

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the Proxy Statement.

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

The information required by this item is incorporated by reference to the Proxy Statement.

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

The information required by this item is incorporated by reference to the Proxy Statement.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated by reference to the Proxy Statement.

Part IV

Item 15. Exhibit and Financial Statement Schedules

Documents filed as part of this report are as follows:

(1) Consolidated Financial Statements: the Company's consolidated financial statements are listed in the “Index to Consolidated Financial Statements” under Part II, Item 8 of this report.

(2) Financial Statement Schedules: Financial statement schedules have been omitted because they are not applicable or the required information is shown in the Consolidated Financial Statements or Notes thereto.

(3) Exhibits: The documents listed below are incorporated by reference or are filed with this report, in each case as indicated therein.

EXHIBIT INDEX

		Information Incorporated by Reference			
Exhibit Number	Exhibit Title	Form	File No.	Exhibit	Filing Date
2.1	Agreement and Plan of Merger, by and among the registrant, Morocco, Inc., Morocco Acquisition Sub, Inc. and Machine Zone, Inc., dated as of May 19, 2020.	S-1	333-253800	2.1	March 2, 2021
2.2#	Amended and Restated Share Purchase Agreement, by and among the registrant, AppLovin Active Holdings, LLC, adjust GmbH, the shareholders of adjust GmbH, and Spree Eternity GmbH, dated as of March 12, 2021, as amended on March 30, 2021.	S-1/A	333-253800	2.2	April 7, 2021
3.1	Amended and Restated Certificate of Incorporation of the registrant.	S-1/A	333-253800	3.2	March 22, 2021
3.2	Certificate of Change of Location of Registered Agent and/or Registered office.	8-K	001-40325	3.1	June 15, 2021
3.3	Amended and Restated Bylaws of the registrant.	8-K	001-40325	3.1	February 6, 2023
4.1	Form of Class A common stock certificate of the registrant.	S-1	333-253800	4.1	March 2, 2021
4.2	Investors’ Rights Agreement among the registrant and certain holders of its capital stock, dated as of August 15, 2018, as amended.	S-1/A	333-253800	4.2	March 22, 2021
4.3	Form of Warrant to Purchase Class A Common Stock.	S-1	333-253800	4.3	March 2, 2021
4.4	Description of Capital Stock.				
10.1+	Form of Indemnification Agreement between the registrant and each of its directors and executive officers.	S-1	333-253800	10.1	March 2, 2021
10.2+	AppLovin Corporation 2011 Equity Incentive Plan and related form agreements.	S-1	333-253800	10.2	March 2, 2021

10.3+	AppLovin Corporation 2021 Equity Incentive Plan and related form agreements.	S-1/A	333-253800	10.3	March 22, 2021
10.4+	AppLovin Corporation 2021 Executive Incentive Compensation Plan.	S-1/A	333-253800	10.4	March 22, 2021
10.5+	AppLovin Corporation 2021 Employee Stock Purchase Plan and related form agreements.	S-1/A	333-253800	10.5	March 22, 2021
10.6	Amended and Restated AppLovin Corporation 2021 Partner Studio Incentive Plan and related form agreements.				
10.7+	AppLovin Corporation Outside Director Compensation Policy.	S-1	333-253800	10.6	March 2, 2021
10.8+	Executive Change in Control and Severance Plan and Summary Plan Description.	S-1/A	333-253800	10.8	March 22, 2021
10.9+	Form of Confirmatory Employment Letter between the registrant and each of its executive officers.	S-1	333-253800	10.7	March 2, 2021
10.10	Amended and Restated Sublease, by and between 1050 Page Mill Road Property, LLC and AppLovin Corporation, dated as of February 18, 2021.	S-1	333-253800	10.8	March 2, 2021
10.11	Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated August 15, 2018.	S-1	333-253800	10.9	March 2, 2021
10.12	Amendment No. 1 to Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated April 23, 2019.	S-1	333-253800	10.10	March 2, 2021
10.13	Amendment No. 2 to Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated April 27, 2020.	S-1	333-253800	10.11	March 2, 2021
10.14	Amendment No. 3 to Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated May 6, 2020.	S-1	333-253800	10.12	March 2, 2021
10.15	Amendment No. 4 to Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated October 27, 2020.	S-1	333-253800	10.13	March 2, 2021
10.16	Amendment No. 5 to Credit Agreement, by and between the registrant, the lenders from time to time thereto and Bank of America, N.A., as administrative agent and collateral agent, dated February 12, 2021.	S-1/A	333-253800	10.16	March 22, 2021

10.17	Amendment No. 6 to Credit Agreement, by and between the registrant, the lenders from time to time there to and Bank of America, N.A., as administrative agent and collateral agent, dated October 25, 2021.	8-K	001-40325	10.1	October 29, 2021
10.18+	Equity Exchange Agreement between the registrant and Herald Chen, dated March 16, 2021.	S-1/A	333-253800	10.18	March 22, 2021
10.19	Director Nominations Agreement between the registrant and KKR Denali Holdings L.P., dated March 16, 2021.	S-1/A	333-253800	10.19	March 22, 2021
21.1	List of subsidiaries of the registrant.				
23.1	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.				
24.1	Power of Attorney (included on signature page hereto).				
31.1	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2	Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1†	Certifications of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101	The following financial statements from the Company’s Annual Report on Form 10-K for the year ended December 31, 2022, formatted in Inline XBRL: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Loss, (iv) Consolidated Statements of Redeemable Noncontrolling Interest and Stockholders’ Equity (Deficit), (v) Consolidated Statements of Cash Flows, and (vi) Notes to Consolidated Financial Statements.				
104	Cover Page Interactive Data File (contained in Exhibit 101).				

\+ Indicates management contract or compensatory plan.

\# Certain exhibits and schedules to this exhibit have been omitted in accordance with Regulation S-K Item 601(b)(2). We agree to furnish supplementally a copy of all omitted exhibits and schedules to the Securities and Exchange Commission upon its request.

† The certifications attached as Exhibit 32.1 that accompany this Annual Report on Form 10-K are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of AppLovin Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

Item 16. Form 10-K Summary

None.

SIGNATURES

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

Date: February 28, 2023

APPLOVIN CORPORATION

By: /s/ Adam Foroughi
Adam Foroughi
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Adam Foroughi, Herald Chen and Victoria Valenzuela, and each one of them, as their true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for them and in their name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as they might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Adam Foroughi Adam Foroughi	Chief Executive Officer and Chairperson *(Principal Executive Officer)*	February 28, 2023
/s/ Herald Chen Herald Chen	Chief Financial Officer, President, and Director *(Principal Financial Officer and Principal Accounting Officer)*	February 28, 2023
/s/ Craig Billings Craig Billings	Director	February 28, 2023
/s/ Margaret Georgiadis Margaret Georgiadis	Director	February 28, 2023
/s/ Alyssa Harvey Dawson Alyssa Harvey Dawson	Director	February 28, 2023
/s/ Edward Oberwager Edward Oberwager	Director	February 28, 2023
/s/ Asha Sharma Asha Sharma	Director	February 28, 2023
/s/ Eduardo Vivas Eduardo Vivas	Director	February 28, 2023

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