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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 6, 2022

TAKE-TWO INTERACTIVE SOFTWARE, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-34003**	**51-0350842**
(State or other jurisdiction of incorporation or organization)	(Commission File Number)	(I.R.S. Employer Identification No.)

110 West 44th Street, New York, New York	**10036**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (646) 536-2842

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $.01 par value	**TTWO**	**NASDAQ Global Select Market**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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. ☐

Item 8.01. Other Events

Agreement and Plan of Merger

As previously announced, on January 9, 2022, Take-Two Interactive Software, Inc. (the "Company" or "Take-Two") entered into an Agreement and Plan of Merger (as amended from time to time, the "Merger Agreement") with Zebra MS I, Inc., a Delaware corporation and a direct wholly-owned subsidiary of the Company ("Merger Sub 1"), Zebra MS II, Inc., a Delaware corporation and a direct wholly-owned subsidiary of the Company ("Merger Sub 2"), and Zynga Inc. ("Zynga"), a Delaware corporation. Pursuant to the Merger Agreement, and subject to the satisfaction or waiver of the conditions set forth therein, Merger Sub 1 will be merged with and into Zynga (the "Merger") with Zynga continuing as the surviving corporation and our wholly-owned subsidiary, and immediately following the Merger, the surviving corporation in the Merger will merge with and into Merger Sub 2, with Merger Sub 2 continuing as the surviving corporation (together with the Merger, the "Combination"). Take-Two currently expects the Combination to close in the first quarter of its fiscal year 2023, ending June 30, 2022. However, it is possible that factors outside the control of the parties to the Merger Agreement could result in the Combination being completed at a different time, or not at all.

Take-Two is filing (i) as Exhibit 99.1 to this Current Report on Form 8-K, Zynga's consolidated financial statements as of December 31, 2021 and 2020 and for each of the three years in the period ended December 31, 2021 and (ii) as Exhibit 99.2, the risk factors relating to Zynga's business (as previously reported by Zynga in the "Risk Factors" section of Zynga's Annual Report on Form 10-K for the fiscal year ended December 31, 2021).

Forward-Looking Statements

Statements contained herein which are not historical facts may be considered forward-looking statements under federal securities laws and may be identified by words such as "anticipates," "believes," "estimates," "expects," "intends," "plans," "potential," "predicts," "projects," "seeks," "should," "will," or words of similar meaning and include, but are not limited to, statements regarding the proposed business combination of Take-Two and Zynga and the outlook for Take-Two's or Zynga's future business and financial performance. Such forward-looking statements are based on the current beliefs of Take-Two's and Zynga's respective management as well as assumptions made by and information currently available to them, which are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Actual outcomes and results may vary materially from these forward-looking statements based on a variety of risks and uncertainties including: the occurrence of any event, change or other circumstances that could give rise to the termination of the merger agreement; the inability to obtain Take-Two's or Zynga's respective stockholder approval or the failure to satisfy other conditions to completion of the proposed combination, including receipt of regulatory approvals, on a timely basis or at all; risks that the proposed combination disrupts each company's current plans and operations; the diversion of the attention of the respective management teams of Take-Two and Zynga from their respective ongoing business operations; the ability of either Take-Two, Zynga or the combined company to retain key personnel; the ability to realize the benefits of the proposed combination, including net bookings opportunities and cost synergies; the ability to successfully integrate Zynga's business with Take-Two's business or to integrate the businesses within the anticipated timeframe; the outcome of any legal proceedings that may be instituted against Take-Two, Zynga or others following announcement of the proposed combination; the amount of the costs, fees, expenses and charges related to the proposed combination; the uncertainty of the impact of the COVID-19 pandemic and measures taken in response thereto; the effect of economic, market or business conditions, including competition, consumer demand and the discretionary spending patterns of customers, or changes in such conditions, have on Take-Two's, Zynga's and the combined company's operations, revenue, cash flow, operating expenses, employee hiring and retention, relationships with business partners, the development, launch or monetization of games and other products, and customer engagement, retention and growth; the risks of conducting Take-Two's and Zynga's business internationally; the impact of changes in interest rates by the Federal Reserve and other central banks; the impact of potential inflation, volatility in foreign currency exchange rates and supply chain disruptions; the ability to maintain acceptable pricing levels and monetization rates for Take-Two's and Zynga's games; and risks relating to the market value of Take-Two's common stock to be issued in the proposed combination.

Other important factors and information are contained in Take-Two's and Zynga's most recent Annual Reports on Form 10-K, including the risks summarized in the section entitled "Risk Factors," Take-Two's and Zynga's most recent Quarterly Reports on Form 10-Q, and each company's other periodic filings with the SEC, which can be accessed at www.take2games.com in the case of Take-Two, http://investor.zynga.com in the case of Zynga, or www.sec.gov. All forward-looking statements are qualified by these cautionary statements and apply only as of the date they are made. Neither Take-Two nor Zynga undertakes any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

EXHIBIT NO.	DESCRIPTION
99.1	Consolidated financial statements of Zynga, Inc. for the fiscal years ended December 31, 2021 and 2020 and for each of the years in the three-year period ended December 31, 2021
99.2	Risk factors relating to Zynga's business
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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

TAKE-TWO INTERACTIVE SOFTWARE, INC.

By: /s/ Matthew Breitman
Name: Matthew Breitman
Title: Senior Vice President, General Counsel Americas & Corporate Secretary

Date: April 6, 2022

Exhibit 99.1

Zynga Inc.
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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Zynga Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Zynga Inc. (the Company) as of December 31, 2021 and 2020, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes and financial statement schedule listed in the Index at Item l5(a)2 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have 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, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 25, 2022 expressed an unqualified opinion thereon.

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 Matters

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

	Auditing revenue for newly launched or acquired games
Description of the Matter	The Company's current deferred revenue is $748.1 million at December 31, 2021 and the Company recognized $2,249.2 million of revenue relating to online games during the year. A portion of the deferred online game revenue balance and revenue recognized was related to newly launched or acquired games. As described in *Note 1- Revenue Recognition* of the consolidated financial statements, for standalone mobile games, the Company recognizes mobile revenue ratably over the estimated average playing period of payers. When a new game is launched, or acquired, and only a limited period of payer data is available for the analysis of average playing periods of payers, the Company considers a number of subjective and objective factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other active games with similar

characteristics. Determining the estimated average playing period of payers requires management judgement in estimating how long paying players benefit from their purchases over the game playing experience as well as determining which games are similar for comparison purposes.

Auditing the initial estimated average playing period of payers for newly launched or acquired online games was especially challenging as there was a limited period of game-specific paying player data available, and relevant, comparable data from external sources was not readily available. Management determined the initial estimated average playing period of payers based on subjective and objective assumptions about each newly launched or acquired game's paying player characteristics, and their similarity or dissimilarity to the Company's other games.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls specifically related to the Company's process to determine the initial estimated average playing period of payers. To test the initial estimated average playing period of payers, our audit procedures included, among others, evaluating the significant assumptions used by management to determine the initial estimate. We evaluated the relevance of management's selection of comparable games as well as management's comparison of the paying player period for the newly launched or acquired game to comparable games.
	Initial accounting of acquired intangibles
Description of the Matter	As disclosed in Note 7 to the consolidated financial statements, the Company acquired Chartboost on August 4, 2021 for total purchase consideration of $234.6 million and StarLark on October 5, 2021 for a total purchase price consideration of $461.7 million. For Chartboost, of the total purchase consideration, $115.3 million was allocated to the fair value of identified intangible assets. For StarLark, of the total purchase consideration, $159.0 million was allocated to the fair value of identified intangible assets. Auditing the fair values of acquired intangible assets was especially challenging due to the significant estimation uncertainty in determining the fair value of identified intangible assets. The significant assumptions used to estimate the fair values of the intangible assets included discount rates, as well as the amount and timing of cash flow projections. Each of these assumptions were highly subjective and involved significant judgment as they were based on estimates of future financial performance that could be affected by domestic and international consumer preferences, third party competition and technological innovation, among other factors.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over management's review of forecasts and the assessment of the discount rate. To test the fair value of the Company's acquired intangible assets, we read the purchase agreement and we identified and tested the significant assumptions used in the valuation models including assessing the historical accuracy of management's forecasts of its own performance, its historical accuracy in forecasting for other acquisitions, and evaluating the reasonableness of resulting forecasts for Chartboost and StarLark, compared with the historical performance of those companies, Zynga and guideline companies within the same industry. We involved our valuation specialists to assess the adequacy and relevance of the inputs and information used, the nature and basis for valuation adjustments and calculations, the appropriateness of the valuation methods and models used, and accuracy and appropriateness of the calculated outputs from such models. Additionally, our valuation specialists performed corroborative calculations of the acquired intangible asset values, which we compared to management's estimates.

Impairment of operating lease right-of-use and related assets

Description of the Matter	As disclosed in Notes 5 and 6 to the consolidated financial statements, the Company recorded a loss of $66.8 million in the third quarter of the year ended December 31, 2021, as a result of the Company's transition to a hybrid in-office and remote employee work model and subsequent reassessment of the asset group related to its leased San Francisco Headquarters. In accordance with ASC 360, the Company performed a recoverability test of its identified asset group, comprised of operating lease right-of-use and other related assets, and determined that the carrying value of this asset group was not fully recoverable. As a result, the Company measured and recognized an impairment loss related to these assets representing the amount by which the carrying value exceeded the estimated fair value of these asset group. Auditing the Company's impairment was especially challenging due to the significant estimation required by management to determine the fair value of the asset group. The Company utilized an income approach to value the asset group, which required the development of a discounted cash flow model utilizing certain key assumptions, including the projected sublease income over the remaining lease term, expected downtime prior to the commencement of future subleases, expected rent concessions offered to future tenants and discount rates that reflected the level of risk associated with these future cash flows. These assumptions have a significant effect on the estimated fair value of the asset group, and the resulting impairment loss.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of internal controls over the Company's processes to determine the fair value of the asset group and measure the right-of-use and other related assets impairment loss. For example, we tested the controls over the determination of the fair value of the asset group subject to impairment, including the selection of the valuation model and the determination and review of the underlying assumptions used to develop the fair value estimates. Our testing of the Company's impairment measurement included, among other procedures, evaluating the significant assumptions used to estimate fair value. For example, we compared the sublease market rent rate, vacancy period, and tenant lease incentive assumptions used to estimate market participant cash flows to current industry and economic trends, assessed the reasonableness of the discount rates used as part of the discounted cash flow model, and recalculated management's estimate. We also involved our valuation specialists to assist in our evaluation of the significant assumptions used in the fair value estimate.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2009.

San Jose, California
February 25, 2022

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Zynga Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Zynga Inc.'s internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Zynga Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include certain internal controls of Chartboost and StarLark, which are included in the 2021 consolidated financial statements of the Company and constituted 1% of consolidated revenue, operating expenses and total assets, respectively, as of and for the year ended December 31, 2021. Our audit of internal control over financial reporting of the Company also did not include an evaluation of certain internal controls over financial reporting of Chartboost and StarLark.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and 2020, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes and financial statement schedule listed in the Index at Item 15(a)2 and our report dated February 25, 2022 expressed an unqualified opinion thereon.

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/ Ernst & Young LLP

San Jose, California
February 25, 2022

Zynga Inc.

Consolidated Balance Sheets
(In millions, except par value)

	December 31, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 984.0	$ 1,364.4
Short-term investments	169.0	208.4
Accounts receivable, net of allowance of $0.9 at December 31, 2021 and $0.5 at December 31, 2020	242.5	217.5
Restricted cash	161.0	—
Prepaid expenses	56.7	40.0
Other current assets	35.4	29.5
Total current assets	1,648.6	1,859.8
Long-term investments	—	2.0
Goodwill	3,601.1	3,160.8
Intangible assets, net	900.5	838.1
Property and equipment, net	30.3	39.3
Right-of-use assets	86.4	131.9
Restricted cash	40.2	136.0
Prepaid expenses	25.0	21.6
Other non-current assets	26.8	17.0
Total assets	$ 6,358.9	$ 6,206.5
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 95.6	$ 57.2
Income tax payable	52.2	39.6
Deferred revenue	748.1	747.7
Operating lease liabilities	17.1	18.5
Other current liabilities	650.4	462.4
Total current liabilities	1,563.4	1,325.4
Convertible senior notes, net	1,343.8	1,289.9
Deferred revenue	0.3	0.3
Deferred tax liabilities, net	93.8	126.3
Non-current operating lease liabilities	133.4	122.0
Other non-current liabilities	112.3	401.1
Total liabilities	3,247.0	3,265.0
Stockholders' equity:		
Common stock, $0.00000625 par value, and additional paid-in capital - authorized shares: 2,020.5; shares outstanding: 1,130.5 shares as of December 31, 2021 and 1,081.6 as of December 31, 2020	5,625.0	5,276.5
Accumulated other comprehensive income (loss)	(107.1)	(50.7)
Accumulated deficit	(2,406.0)	(2,284.3)
Total stockholders' equity	3,111.9	2,941.5
Total liabilities and stockholders' equity	$ 6,358.9	$ 6,206.5

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Operations
(In millions, except per share data)

	Year Ended December 31,		
	2021	**2020**	**2019**
Revenue:			
Online game	$2,249.2	$1,667.2	$1,047.3
Advertising and other	551.3	307.6	274.4
Total revenue	2,800.5	1,974.8	1,321.7
Costs and expenses:			
Cost of revenue	1,014.9	811.8	524.1
Research and development	545.9	713.7	505.9
Sales and marketing	955.1	683.5	464.1
General and administrative	162.0	136.0	99.8
Impairment related to real estate assets	66.8	—	—
Total costs and expenses	2,744.7	2,345.0	1,593.9
Income (loss) from operations	55.8	(370.2)	(272.2)
Interest income	6.4	11.6	14.0
Interest expense	(59.2)	(30.3)	(17.0)
Other income (expense), net	(11.2)	(16.5)	322.5
Income (loss) before income taxes	(8.2)	(405.4)	47.3
Provision for (benefit from) income taxes	96.0	24.0	5.4
Net income (loss)	$ (104.2)	$ (429.4)	$ 41.9
Net income (loss) per share attributable to common stockholders:			
Basic	$ (0.09)	$ (0.42)	$ 0.04
Diluted	$ (0.09)	$ (0.42)	$ 0.04
Weighted average common shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	1,099.1	1,016.8	938.7
Diluted	1,099.1	1,016.8	974.0

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Comprehensive Income (Loss)
(In millions)

	Year Ended December 31,		
	2021	2020	2019
Net income (loss)	$(104.2)	$(429.4)	$41.9
Other comprehensive income (loss), net of tax:			
Change in foreign currency translation adjustment	(56.3)	75.3	(7.7)
Net change in unrealized gains (losses) on available-for-sale marketable debt securities	(0.1)	(0.1)	0.2
Other comprehensive income (loss), net of tax	(56.4)	75.2	(7.5)
Comprehensive income (loss)	$(160.6)	$(354.2)	$34.4

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Stockholders' Equity
(In millions)

	Class A Common Stock		Additional Paid-In Capital	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount					
Balances at December 31, 2018	861.1	$ —	$ 3,504.7	$ —	$ (118.4)	$ (1,789.7)	$ 1,596.6
Exercise of stock options and ESPP	12.0	—	17.4	—	—	—	17.4
Vesting of RSUs, net of tax withholdings	13.1	—	—	(49.5)	—	—	(49.5)
Acquisition-related common stock issuance	63.8	—	253.9	—	—	—	253.9
Stock-based compensation expense	—	—	81.5	—	—	—	81.5
Retirements of treasury stock	—	—	—	49.5	—	(49.5)	—
Equity component of convertible senior notes due 2024	—	—	114.9	—	—	—	114.9
Purchase of capped calls related to issuance of convertible senior notes due 2024	—	—	(73.8)	—	—	—	(73.8)
Net income (loss)	—	—	—	—	—	41.9	41.9
Other comprehensive income (loss)	—	—	—	—	(7.5)	—	(7.5)
Balances at December 31, 2019	950.0	$ —	$ 3,898.6	$ —	$ (125.9)	$ (1,797.3)	$ 1,975.4
Exercise of stock options and ESPP	4.5	—	16.9	—	—	—	16.9
Vesting of RSUs, net of tax withholdings	10.5	—	—	(57.2)	—	—	(57.2)
Acquisition-related common stock issuance	116.6	—	1,137.7	—	—	—	1,137.7
Stock-based compensation expense	—	—	122.6	—	—	—	122.6
Retirements of treasury stock	—	—	—	57.2	—	(57.2)	—
Equity component of convertible senior notes due 2026	—	—	163.7	—	—	—	163.7
Purchase of capped calls related to issuance of convertible senior notes due 2026	—	—	(63.0)	—	—	—	(63.0)
Adoption of ASU 2016-13	—	—	—	—	—	(0.4)	(0.4)
Net income (loss)	—	—	—	—	—	(429.4)	(429.4)
Other comprehensive income (loss)	—	—	—	—	75.2	—	75.2
Balances at December 31, 2020	1,081.6	$ —	$ 5,276.5	$ —	$ (50.7)	$ (2,284.3)	$ 2,941.5
Exercise of stock options and ESPP	9.4	—	33.4	—	—	—	33.4
Vesting of RSUs, net of tax withholdings	19.5	—	—	(17.5)	—	—	(17.5)
Acquisition-related common stock issuance	20.0	—	145.7	—	—	—	145.7
Acquisition-related stock option issuance	—	—	2.2	—	—	—	2.2
Stock-based compensation expense	—	—	167.2	—	—	—	167.2
Retirements of treasury stock	—	—	—	17.5	—	(17.5)	—
Net income (loss)	—	—	—	—	—	(104.2)	(104.2)
Other comprehensive income (loss)	—	—	—	—	(56.4)	—	(56.4)
Balances at December 31, 2021	1,130.5	$ —	$ 5,625.0	$ —	$ (107.1)	$ (2,406.0)	$ 3,111.9

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Cash Flows
(In millions)

	Year Ended December 31,		
	2021	2020	2019
Cash flows from operating activities:			
Net income (loss)	$ (104.2)	$ (429.4)	$ 41.9
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	238.9	142.1	79.4
Stock-based compensation expense	167.2	122.6	81.5
(Gain) loss from sale of building, derivatives, sale of investments and other assets and foreign currency, net	13.4	16.0	(314.5)
(Accretion) amortization on marketable debt securities, net	—	(2.2)	(4.9)
Noncash lease expense	16.9	15.9	11.2
Noncash interest expense	53.9	26.4	13.2
Change in deferred income taxes and other	(49.9)	(32.9)	(16.8)
Impairment related to real estate assets	66.8	—	—
Changes in operating assets and liabilities:			
Accounts receivable, net	(9.2)	4.8	(22.5)
Prepaid expenses and other assets	(25.0)	9.1	(15.1)
Accounts payable	37.6	5.5	(1.0)
Deferred revenue	17.9	291.5	234.7
Income tax payable	4.7	36.7	(10.2)
Operating lease and other liabilities	(175.2)	223.1	185.9
Net cash provided by (used in) operating activities	253.8	429.2	262.8
Cash flows from investing activities:			
Purchases of investments	(614.2)	(677.1)	(1,568.2)
Maturities of investments	652.3	1,038.5	451.5
Sales of investments	—	549.9	44.9
Acquisition of property and equipment	(12.5)	(18.8)	(23.6)
Proceeds from sale of building and other property and equipment, net of transaction costs	—	0.1	580.6
Business combinations, net of cash acquired and restricted cash held in escrow	(508.3)	(942.5)	(301.8)
Asset acquisitions of intangible assets	(4.3)	(6.0)	—
Release of business combination restricted cash held in escrow	—	(30.0)	(35.0)
Other investing activities, net	(13.9)	(1.8)	(0.3)
Net cash provided by (used in) investing activities	(500.9)	(87.7)	(851.9)
Cash flows from financing activities:			
Proceeds from issuance of debt, net of issuance costs	(1.2)	856.7	672.2
Purchase of capped calls	—	(63.0)	(73.8)
Repayment of debt	—	—	(101.4)
Taxes paid related to net share settlement of stockholders' equity awards	(17.5)	(57.2)	(49.6)
Proceeds from issuance of common stock	33.4	16.9	17.4
Acquisition-related contingent consideration payments	(56.1)	(63.6)	(12.9)
Other financing activities, net	—	—	(0.3)
Net cash provided by (used in) financing activities	(41.4)	689.8	451.6
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(26.7)	15.8	10.8
Net change in cash, cash equivalents and restricted cash	(315.2)	1,047.1	(126.7)
Cash, cash equivalents and restricted cash, beginning of period	1,500.4	453.3	580.0
Cash, cash equivalents and restricted cash, end of period	$1,185.2	$1,500.4	$ 453.3
Supplemental cash flow information:			
Income taxes paid	$ 126.2	$ 13.2	$ 22.4
Interest paid	3.6	1.7	2.8
Noncash investing activities:			
Acquisition-related common stock issuance	$ 145.7	$1,137.7	$ 253.9
Acquisition-related stock option stock issuance	2.2	—	—
Acquisition-related deferred purchase consideration	4.6	23.8	—

See accompanying notes to consolidated financial statements.

1. Overview and Summary of Significant Accounting Policies

Organization and Description of Business

Zynga Inc. ("Zynga," "we" or the "Company") is a global leader in interactive entertainment. We develop, market and operate social games as live services played on mobile platforms (such as Apple's iOS and Google's Android), social networking platforms (such as Facebook and Snapchat), Personal Computers (PCs), consoles (such as Nintendo's Switch) and other platforms. Generally, all of our games are free to play, and we generate substantially all of our revenue through the sale of in-game virtual items and advertising services. We also operate a mobile programmatic advertising and monetization platform. Our operations are headquartered in San Francisco, California, and we have several operating locations in the U.S. as well as various international office locations in North America, Asia and Europe.

We completed our initial public offering in December 2011 and our Class A common stock is listed on the Nasdaq Global Select Market under the symbol "ZNGA."

Proposed Merger with Take-Two

On January 9, 2022, the Company entered into an Agreement and Plan of Merger with Take-Two. Refer to Note 16 - "Subsequent Events" for further background on the combination.

Basis of Presentation and Consolidation

The accompanying consolidated financial statements are prepared and presented in accordance with United States generally accepted accounting principles ("U.S. GAAP"). The consolidated financial statements include the operations of the Company and its owned subsidiaries. All intercompany balances and transactions have been eliminated in the consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and notes thereto. Significant estimates and assumptions reflected in the financial statements include, but are not limited to, the estimated average playing period of payers that we use for revenue recognition, useful lives of property and equipment and intangible assets, accrued liabilities, income taxes, the fair value of assets and liabilities acquired through business combinations, contingent consideration obligations, the discount rate used in measuring our operating lease liabilities, the interest rate used in calculating the present value of the initial liability component of our convertible senior notes, stock-based compensation expense and evaluation of recoverability of goodwill, intangible assets and long-lived assets and as necessary, estimates of fair value to measure impairment losses. Actual results could differ materially from those estimates.

Segments

We have one operating and reportable segment, which is at the consolidated entity level. The Chief Operating Decision Maker ("CODM"), our Chief Executive Officer, manages our operations on a consolidated basis for purposes of assessing performance and allocating resources.

Revenue Recognition

We derive substantially all of our revenue from the sale of virtual items and advertising associated with our online games.

Online Game. We operate our games as live services that allow players to play for free. Within these games, however, players can purchase virtual currency to obtain virtual goods or virtual goods directly (together, defined as “virtual items” or a “virtual item”) to enhance their game-playing experience. Our identified performance obligation is to display the virtual items within the game over the estimated playing period of the paying player or until they are consumed in game play based upon the nature of the virtual item. Payment is required at time of purchase and the purchase price is a fixed amount.

Players can purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts, Google Play accounts and Facebook local currency payments. Payments from players for virtual items are non-refundable and relate to non-cancellable contracts that specify our obligations. Such payments are initially recorded to deferred revenue.

For revenue earned through mobile platforms, the transaction price is equal to the gross amount we request to be charged to our player because we are the principal in the transaction. The related platform and payment processing fees are recorded as cost of revenue in the period incurred.

For revenue earned on our web based games through Facebook, our players utilize Facebook’s local currency-based payments program to purchase virtual items in our games. For all payment transactions on the Facebook platform, Facebook remits to us 70% of the price we request to be charged to the player for each transaction, which represents the transaction price. Despite being the principal in the transaction, we recognize revenue net of the amounts retained by Facebook for platform and payment processing fees because Facebook may choose to alter our requested price, for example by offering a discount or other incentives to players playing on their platform, and we do not receive information from Facebook indicating the amount of such discounts or incentives or the actual amount paid by our players. Accordingly, we are unable to determine the gross amount paid by our players on the Facebook platform.

The satisfaction of our performance obligation is dependent on the nature of the virtual item purchased and as a result, we categorize our virtual items as follows:

- *Consumable:* Consumable virtual items represent items that can be consumed by a specific player action. Common characteristics of consumable virtual items may include items that are no longer displayed on the player’s game board after a short period of time, do not provide the player any continuing benefit following consumption, or often times enable a player to perform an in-game action immediately (e.g. chips in *Zynga Poker*). For the sale of consumable virtual items, we recognize revenue as the items are consumed (i.e., over time), which approximates one month.
- *Durable:* Durable virtual items represent items that are accessible to the player over an extended period of time (e.g. animals in *FarmVille* franchise). We recognize revenue from the sale of durable virtual items ratably over the estimated average playing period of payers for the applicable game (i.e., over time), which represents our best estimate of the average life of the durable virtual item.

If we do not have the ability to differentiate between revenue attributable to consumable virtual items or durable virtual items in a specific game, we recognize revenue ratably over the estimated average playing period of payers for the applicable game. Historically, we have had sufficient data to separately account for consumable and durable virtual items for substantially all of our web games. However, for our standalone mobile games, we do not have the requisite data to separately account for consumable and durable virtual items and therefore recognize mobile online game revenue ratably over the estimated average playing period of payers.

We expect that in future periods, there will be changes in the mix of consumable and durable virtual items offered and sold, reduced virtual item sales in some existing games, changes in estimates of the average playing period of payers and/or changes in our ability to make such estimates. When such changes occur, and in particular if more of our revenue in any period is derived from durable virtual items or the estimated average playing period of payers increases on average, the amount of revenue that we recognize in a current or future period may be reduced, perhaps significantly. Conversely, if the estimated average playing period of payers decreases on average, the amount of revenue that we recognize in a current or future period may be accelerated, perhaps significantly.

On a quarterly basis, we determine the estimated average playing period of payers by game beginning at the time of a payer's first purchase in the respective game and ending on a date when that paying player is deemed to be no longer playing. To determine when paying players are no longer playing a given game, we analyze monthly cohorts of payers who made their first in-game payment between six and 18 months prior to the beginning of each quarter and determine whether each payer within the cohort is an active or inactive player as of the date of our analysis. To determine which payers are inactive, we analyze the dates that each payer last logged into that game. We determine a payer to be inactive once they have reached a period of inactivity for which it is probable that they will not return to a specific game. For the payers deemed inactive as of our analysis date, we analyze the dates they last logged into that game to determine the rate at which inactive payers stopped playing. Based on these dates, we then project a date at which all payers for each monthly cohort are expected to cease playing our games. We then average the time periods from first purchase date and the date the last payer is expected to cease playing the game for each of the monthly cohorts to determine the total playing period of payers for that game. To determine the estimated average playing period of payers, we then divide this total period by two. The use of this "average" approach is supported by our observations that payers typically become inactive at a relatively consistent rate for our games. If future data indicates payers do not become inactive at a relatively consistent rate, we will modify our calculations accordingly. When a new game is launched and only a limited period of payer data is available for our analysis, then we also consider other factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other recently launched games with similar characteristics.

Advertising. We have contractual relationships with advertising networks, agencies, advertising brokers and directly with advertisers to display advertisements in our games. For all of our in-game advertising arrangements, we are the principal and our performance obligation is to provide the inventory for advertisements to be displayed in our games. For contracts made directly with advertisers, we are also obligated to serve the advertisements in our games. However, for those direct advertising arrangements, providing the advertising inventory and serving the advertisement is considered a single performance obligation, as the advertiser cannot benefit from the advertising space without its advertisements being displayed.

The pricing and terms for all our in-game advertising arrangements are governed by either a master contract or insertion order and generally stipulate payment terms as a specific number of days subsequent to the end of the month, generally ranging from 30 to 60 days. The transaction price is generally the product of the number of advertising units delivered (e.g., impressions, offers completed, videos viewed, etc.) and the contractually agreed upon price per advertising unit. Further, for advertising transactions not placed directly with the advertiser, the contractually agreed upon price per advertising unit is generally based on our fixed revenue rate stated in the contract. The number of advertising units delivered is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period. For a limited number of advertising network arrangements, the transaction price is determined based on a volume-tiered pricing structure, whereby the price per advertising unit in a given month is determined by the number of impressions delivered in that month. However, the uncertainty concerning the number of impressions delivered is resolved at the end of each month, therefore, eliminating any uncertainty with respect to the price per advertising unit for each reporting period.

For in-game display advertisements, in-game offers, engagement advertisements and other advertisements, our performance obligation is satisfied over the life of contract (i.e., over time), with revenue being recognized as advertising units are delivered.

For in-game sponsorships with branded virtual items, revenue is initially recorded to deferred revenue and then recognized ratably over the estimated life of the branded virtual item, which approximates the estimated average playing period of payers, or over the term of the advertising arrangement, depending on the nature of the agreement.

We also operate a software platform that facilitates transactions between advertisers and owners of digital advertising inventory ("publishers") via programmatic auctions. The Company has contracts with both advertisers ("demand side") and publishers ("supply side"), with the advertiser representing the Company's customer in a demand side transaction and the publisher representing the Company's customer in a supply side transaction. The pricing and terms for all demand side and supply side arrangements are contractually governed and generally stipulate payment terms as a specific number of days subsequent to the end of the month, generally ranging from 30 to 60 days.

For both demand side and supply side revenue arrangements, the Company's performance obligation is to provide the advertiser or publisher with access to the Company's software platform, which facilitates the placement of the advertising inventory. The Company does not control the advertising inventory, because the Company does not have the substantive ability to direct the use of, nor obtain substantially all of the remaining benefits from the advertising inventory. Further, the Company is not primarily responsible for fulfillment and does not have any inventory risk. Accordingly, the Company is an agent in both demand side and supply side transactions and presents revenue on a net basis. The transaction price is the product of the number of advertising units delivered to the end user via the software platform and the contractually agreed upon price per advertising unit, less the consideration paid or payable to publishers. The number of advertising units delivered to the end user is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period. Our performance obligation is satisfied over the life of contract (i.e., over time), with revenue being recognized as advertising units are delivered to the end user.

Taxes Collected from Customers. We present taxes collected from customers and remitted to governmental authorities on a net basis within our consolidated statement of operations.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand, money market funds, corporate debt and foreign certificates of deposit and time deposits with maturities of 90 days or less from the date of purchase.

Restricted Cash

Restricted cash consists of funds held in escrow in accordance with the terms of our business acquisition agreements.

Short and Long-Term Investments

Realized gains and losses for all investments are determined using the specific-identification method and are reflected as a component of other income (expense), net in the consolidated statements of operations.

Debt Securities

Short and long-term debt investments consist of corporate debt securities and foreign certificates of deposit and time deposits. Based on our intentions, all debt investments are classified as available-for-sale and are reported at fair value with unrealized gains and losses recorded as a separate component of other comprehensive income, net of income taxes.

For debt securities in an unrealized loss position, we first consider whether we intend to or it is more likely than not that we will be required to sell the individual security prior to recovery of its amortized cost basis and if so, we adjust the carrying value of security down to its fair value, with the amount of the write-down recorded as a realized loss within other income (expense), net.

Otherwise, we determine whether a decline in fair value is attributable to a partial or full credit loss by reviewing factors such as the extent to which the fair value is less than the amortized cost basis, changes in interest rates since the purchase of the security, the financial condition of the issuer, including changes in credit ratings, the remaining payment terms of the security, as well as any adverse conditions specifically related to the security, the issuer's industry or its geographic area. If a credit loss exists, we adjust the carrying value by recording expense within other income (expense), net equal to the amount of the credit loss, with such amount limited to the amount of the unrealized loss. Subsequent recoveries of fair value originally attributed to a credit loss are subsequently recognized as income within other income (expense), net. Finally, any unrealized loss not deemed to be attributable to a credit loss is recognized as component of other comprehensive income, net of income taxes.

No credit losses related to our debt investments were recognized as a component of other income (expense), net in any of the periods presented.

Equity Securities with Readily Determinable Fair Value

Short-term equity investments consist of privately held mutual funds. All equity investments are reported at fair value, with unrealized gains and losses recorded within other income (expense), net in our consolidated statement of operations.

Derivatives

Designated Hedging Derivatives - Net Investment Hedge

Certain foreign currency forward contracts are designated as net investment hedges to mitigate foreign currency risks related to the Company's investment in certain foreign subsidiaries. Changes in the fair value of the net investment hedge amounts that are included in the assessment of hedge effectiveness are recorded in other comprehensive income (loss) ("OCI") with the foreign currency translation adjustment and the excluded components (e.g. forward points) from the assessment of hedge effectiveness are recognized in other income (expense) on a straight-line basis over the term of the derivative contract.

Non-Designated Hedging Derivatives - Other Derivatives

Other derivatives not designated as hedging instruments consist of foreign currency forward contracts that are used as an economic offset to foreign currency risks associated with the remeasurement of certain intercompany loans. Gains and losses on these contracts are recognized in other income (expense), net in our consolidated statement of operations.

Fair Value of Financial Instruments

Our financial assets consist of cash, cash equivalents, short-term and long-term investments, derivative instruments and accounts receivable, net. Cash equivalents, short-term and long-term investments and derivative instruments are reported at fair value while accounts receivable, net are stated at the net realizable amount, which approximates fair value.

Our financial liabilities consist of accounts payable and accrued liabilities, contingent consideration obligations, deferred acquisition consideration and debt. Accounts payable and accrued liabilities are stated at the invoiced or estimated payout amount, respectively, and approximate fair value. Contingent consideration obligations and deferred acquisition consideration, which are the result of business acquisitions, are reported at the estimated fair value. Our debt is recorded at the net carrying amount, which does not approximate fair value. However, the fair value of the debt is disclosed at each reporting period - refer to Note 10 - "Debt" for further discussion.

We estimate fair value as the exit price, which represents the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between knowledgeable and willing market participants.

The valuation techniques used to measure the fair value of the Company's financial instruments were valued based on quoted market prices, model driven valuations using significant inputs derived from or corroborated by observable market data or other directly and indirectly inputs observable in the marketplace. We use a three-tier value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

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

Level 2 - Includes inputs, other than Level 1 inputs, that are directly or indirectly observable in the marketplace.

Level 3 - Unobservable inputs that are supported by little or no market activity.

Accounts Receivable and Allowance for Credit Losses

Accounts receivable are recorded at the original invoiced amount less an allowance for credit losses. In evaluating our ability to collect outstanding receivable balances and related allowance for credit losses, we consider many factors, including the age of the balance, the customer's payment history and current creditworthiness, as well as and current and forecasted economic conditions that may affect our customers' ability to pay. Bad debts are written off after all collection efforts have been exhausted. We do not require collateral from our customers.

Property and Equipment, Net

Property and equipment are recorded at historical cost less accumulated depreciation. Depreciation is recorded using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful lives of the improvements or the lease term.

The estimated useful lives of our property and equipment are as follows:

Property and Equipment	Useful Life
Computer equipment	3 years
Software	2 to 3 years
Furniture and fixtures	2 years
Leasehold improvements	Shorter of useful life (generally up to 7 years) or remaining lease term

Business Combinations

In accounting for acquisitions through which a set of assets and activities are transferred to the Company, 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 the initial test does not result in substantially all of the fair value concentrated in a single or group of similar assets, 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 indicates that the acquired assets and activities constitute a business, we account for the transaction as a business combination.

For our business combinations, we allocate the purchase consideration of the acquisition, which includes the estimated acquisition date fair value of contingent consideration (if applicable) and deferred purchase consideration (if applicable), to the tangible assets, liabilities and identifiable intangible assets acquired based on each of the estimated fair values at the acquisition date. The excess of the purchase consideration over the fair values is recorded as goodwill. Determining the fair value of such items requires judgment, including estimating future cash flows or the cost to recreate an acquired asset. If actual results are lower than initial estimates, we could be required to record impairment losses in the future. Acquired intangible assets with definite lives are amortized over their estimated useful lives generally on a straight-line basis, unless evidence indicates a more appropriate method. Intangible assets with indefinite lives are not amortized but rather tested for impairment annually, or more frequently if circumstances indicate an impairment may exist.

During the one-year period beginning with the acquisition date, we may record certain purchase accounting adjustments related to the fair value of assets acquired and liabilities assumed against goodwill. After the final determination of the fair value of assets acquired or liabilities assumed, any subsequent adjustments are recorded to our consolidated statements of operations. The fair value of contingent consideration liabilities assumed from an acquisition are remeasured each reporting period after the acquisition date and the changes in the estimated fair value, if any, is recorded within operating expenses in our consolidated statement of operations each reporting period. Acquisition-related expenses are expensed as incurred.

Game Software Development Costs

We review internal use software development costs associated with new games or updates to existing games on a quarterly basis to determine if the costs qualify for capitalization. Our studio teams follow an agile development process, whereas the preliminary project stage remains ongoing until just prior to worldwide launch, at which time final feature selection occurs. As such, the development costs are expensed as incurred to research and development in our consolidated statement of operations. We did not capitalize any software development costs during any of the years presented.

Goodwill and Indefinite-Lived Intangible Assets

Goodwill and indefinite-lived intangible assets are evaluated annually for impairment, or more frequently if circumstances exist that indicate that impairment may exist. When conducting our annual goodwill impairment assessment, we perform a quantitative evaluation by comparing the estimated fair value of our single reporting unit, determined using the Company’s market capitalization as of the testing date, to its carrying value. For our annual goodwill impairment analysis performed in the fourth quarter of 2021, the result indicated that the estimated fair value of the reporting unit exceeded its carrying value. Accordingly, we concluded goodwill was not impaired.

At least annually, we test recoverability of indefinite-lived intangible assets using a qualitative approach that considers whether it is more likely than not that the fair value of the intangible asset exceeds its carrying value. If qualitative factors indicate that it is more likely than not that the indefinite-lived intangible asset is impaired, a quantitative analysis is performed and the amount of any impairment loss recorded, if any, is measured as the difference between the carrying value and the fair value of the impaired intangible asset. We concluded that indefinite-lived intangible assets were not impaired as of December 31, 2021.

Definite-Lived Intangible Assets

Definite-lived intangible assets consist of assets acquired from a prior business combination and are carried at historical cost less accumulated amortization. Amortization is generally recorded on a straight-lined basis, unless another method is deemed more appropriate, over the estimated useful lives of the assets, generally 12 to 96 months.

Impairment of Long-Lived Assets, Including Impairment Related to Real Estate Assets

Long-lived assets, including definite-lived intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate an asset’s carrying value may not be recoverable. When the projected undiscounted cash flows estimated to be generated by those assets are less than their carrying amounts, the assets are adjusted to their estimated fair value and an impairment loss is recorded as a component of operating income.

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.

Impairment losses could materially decrease our future net income and result in lower asset values on our balance sheet. During the year ended December 31, 2021, we recognized an impairment loss of $66.8 million related to our San Francisco Office Building right-of-use lease asset and related to property and equipment. There were no impairment losses recorded during the years ended December 31, 2020 or 2019.

Licenses and Royalties

We obtain licenses from third parties for use of their brands, properties and other licensed content in our games (e.g., *Hit It Rich! Slots* or *Game of Thrones Slots Casino*). Our licensing agreements typically include minimum guarantee royalty payments, which are due over the term of the agreement and are recoupable against future royalty obligations that would otherwise become payable. These advance payments are capitalized as prepaid royalties when paid and amortized once the licensed product is launched in our game. Amortization is recorded as cost of revenue and is calculated as (i) the contractual royalty rate based on actual net product sales as defined in the licensing agreement or (ii) the straight-line method over the remaining estimated useful life of the licensed product, whichever is greater.

Each quarter, we evaluate the recoverability of our prepaid royalties as well as any contractual commitments not yet paid to determine amounts that we deem unlikely to be recovered through product sales. To evaluate the future recoverability of prepaid royalties and guarantees, we consider the terms of the agreement, game development plans, forecasted and actual financial performance of the game as well as other qualitative factors, such as the success of similar games and similar genres published by the Company. To the extent that this evaluation indicates that the remaining prepaid and guaranteed royalty payments are not recoverable, the Company records an impairment loss in the period that impairment is indicated. Any impairment losses determined before the launch of a product are recorded as research and development, while any impairment losses determined post-launch are recorded as cost of revenue in our consolidated statement of operations.

Leases

Lessee Arrangements

We determine if an arrangement is a lease at contract inception. If there is an identified asset in the contract (either explicitly or implicitly) and we have control over its use, the contract is (or contains) a lease. In determining if there is an identified asset, we apply judgment in assessing whether the supplier has a substantive substitution right based on the supplier's practical ability to substitute the asset and the economic benefit to do so. If it is determined that a substantive substitution right exists, the contract is not accounted for as a lease. With the respect to the servers utilized in certain of our hosting and data storage arrangements, the Company determined that a substantive substitution right existed given the location of the servers at the supplier's premises, a lack of contractual restrictions preventing the supplier from substituting the servers throughout the period of use and the economic incentive for the supplier to substitute the servers as needed in order to efficiently handle varying levels of demand from its customers.

Our operating leases are primarily for office facilities. Certain leases include options to extend the lease for a set number of years or early terminate the lease prior to the contractually defined expiration date. We include such extension periods in the lease term only when it is reasonably certain that they will be exercised and include such periods beyond the early termination date when it is reasonably certain the early terminations will not be exercised. As of December 31, 2021 and 2020, the weighted-average remaining lease term for all of our operating leases was 8.7 years and 8.9 years, respectively.

We record right-of-use assets and current and non-current operating lease liabilities in our consolidated balance sheet for operating leases with lease terms greater than 12 months and do not to apply the balance sheet recognition requirements to leases with lease terms of 12 months or less ("short-term leases"). Additionally, we do not separate lease components from non-lease components and therefore allocate the entire consideration to the lease component(s).

Right-of-use assets represent our right to use an underlying asset during the lease term and operating lease liabilities represent our obligation to make lease payments. Right-of-use assets and operating lease liabilities are recognized at the lease commencement date based on the present value of the total required fixed payments over the lease term, with the right-of-use assets further adjusted for any payments made prior to lease commencement, lease incentives received and/or initial direct costs incurred. Certain lease arrangements also include variable payments for costs such as common-area maintenance, utilities, taxes or other operating costs, which are generally based on a percentage of actual expenses incurred or a fluctuating rate which is unknown at the inception of the contract. These variable lease payments are excluded from the measurement of the right-of-use assets and lease liabilities.

In determining the present value of lease payments, we discount future lease payments using our incremental borrowing rate since the implicit rate in our various leases is unknown. The incremental borrowing rate is determined at lease commencement for each individual lease and is based on a number of factors, including relevant observable debt transactions, the current economic environment, lease term and currency in which the lease is denominated. As of December 31, 2021 and 2020, the weighted-average incremental borrowing rate for our operating leases was 4.2%.

We recognize lease expense for operating leases and short-term leases on a straight-line basis over the lease term. Variable lease payments are recognized when the underlying uncertainty is resolved, which is generally when the obligation for those costs are incurred. Operating and variable leases expenses are presented as operating expenses in the consolidated statement of operations.

Lessor Arrangements

We do not separate lease components from non-lease components and therefore allocate the entire consideration in our contracts to the lease components. All of the lease and non-lease components qualify for accounting under ASC Topic 842 *Leases*.

Stock-Based Compensation Expense

We recognize stock-based compensation expense for restricted stock units ("RSUs") based on grant date fair value on a straight-line basis over the requisite service period for the entire award.

We recognize stock-based compensation expense for performance-based RSUs ("Performance RSUs") based upon the grant date fair value on an accelerated attribution method over the requisite service period of the award. At each reporting period, the amount of stock-based compensation is determined based on the probability of achievement of pre-established thresholds or milestones for each award and if necessary, a cumulative catch-up adjustment is recorded to reflect any revised estimates regarding the probability of achievement.

We recognize stock-based compensation expense for market-based RSUs ("Market RSUs") based upon the grand date fair value on an accelerated attribution method over the requisite service period. The estimated grant date fair value is estimated using a Monte Carlo simulation that considers the probability of achievement of pre-established thresholds for each award. The significant assumptions generally used in estimating the grant date fair value of each award include expected volatility, a risk-free interest rate ranging and an expected dividend yield. The estimated grant date fair value is not subsequently revised to consider anticipated or actual achievement of the pre-established thresholds.

We estimate the fair value of stock options using the Black-Scholes option-pricing model. This model requires the use of the following assumptions: expected volatility of our Class A common stock, which is based on our own calculated historical rate; expected life of the option award, which we elected to calculate using the simplified method; expected dividend yield, which is 0%, as we have not paid and do not have any plans to pay dividends on our common stock; and the risk-free interest rate, which is based on the U.S. Treasury rate in effect at the time of grant with maturities commensurate to the stock option award's expected life. If any of the assumptions used in the Black-Scholes model changes significantly, stock-based compensation expense for future awards may differ materially compared to awards granted previously. We record stock-based compensation expense for stock options based on the grant date fair value on a straight-line basis over the requisite service period of the award.

Stock-based compensation expense is recorded net of forfeitures as they are occur.

Income Taxes

We account for income taxes using an asset and liability approach, which requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our financial statements or tax returns. The measurement of current and deferred tax assets and liabilities is based on provisions of enacted tax laws at the end of the reporting period; the effect of future changes in tax laws or rates are not anticipated. If necessary, the measurement of deferred tax assets is reduced by the amount of any tax benefits that are not expected to be realized based on all available positive and negative evidence including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies and results of recent operations. In evaluating the objective evidence that the results of recent operations provide, we generally consider the trailing three years of cumulative operating income (loss). The assumptions about future taxable income require the use of significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses.

The Company accounts for Global Intangible Low-Taxed Income provisions as a component of tax expense in the period in which it is subject to the rules.

We account for uncertain tax positions by reporting a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. We recognize interest and penalties, if any, related to unrecognized tax benefits in the provision for income tax.

Foreign Currency Transactions

Generally, the functional currency of our international subsidiaries is the local currency that the international subsidiary operates in or the U.S. dollar. We translate the financial statements of these non-U.S. dollar functional subsidiaries to U.S. dollars using the prevailing balance sheet date exchange rate for assets and liabilities and average exchange rates during the period for revenue and costs and expenses. We record translation gains and losses in accumulated other comprehensive income (loss) as a component of stockholders' equity.

We reflect foreign exchange transaction gains and losses resulting from the conversion of the transaction currency to the functional currency, which includes gains and losses from the remeasurement of assets and liabilities, as a component of other income (expense), net. Foreign exchange transactions gains (losses) recorded as a component of other income (expense), net - excluding gains (losses) from non-designated hedging derivatives - totaled $(0.3) million, $(16.7) million and $0.8 million for the years ended December 31, 2021, 2020 and 2019.

Concentration of Credit Risk and Significant Customers

Financial instruments, which potentially expose us to concentrations of credit risk, consist primarily of cash, cash equivalents, short and long-term investments and accounts receivable. The Company holds cash and cash equivalents at reputable financial institutions with what it considers to be high credit quality, and such amounts may at times exceed the federally insured limits. The Company's investment policy limits the amount of credit exposure in its portfolio by imposing credit rating minimums and limiting purchases by security type and sector.

Accounts receivable are unsecured and represent amounts due to us based on contractual obligations where an executed contract or click-through agreement exists. Apple, Google and Facebook are significant distribution, marketing, promotion and payment platforms for our games. A significant portion of our 2021, 2020 and 2019 revenue was generated from players who accessed our games through these platforms or were served advertisements in our games on behalf of advertisers. As of December 31, 2021 and December 31, 2020, of our accounts receivable, net 31% and 35%, respectively, were amounts owed to us by Apple, 29% and 34%, respectively, were amounts owed to us by Google and 5% and 8%, respectively, were amounts owed to us by Facebook.

Advertising Expense

Costs for marketing and advertising our games are primarily expensed as incurred and are included in sales and marketing expense in our consolidated statement of operations. Such costs, primarily consisting of player acquisition costs, totaled $831.7 million, $583.1 million and $377.2 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Recent Accounting Pronouncements

Issued But Not Yet Adopted

In August 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2020-06, *"Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)"*, which simplifies the accounting for convertible instruments by reducing the number of accounting models and generally requiring that a convertible instrument be accounted for as a single liability measured at amortized cost, with no conversion feature separately recorded in equity. Similarly, no portion of issuance costs will be allocated to equity under the ASU. Further, the ASU amends the earnings per share guidance by requiring the diluted earnings per share calculation for convertible instruments to follow the if-converted method, with use of the treasury stock method no longer permitted. The ASU is effective for fiscal years beginning after December 15, 2021. The ASU allows either a modified retrospective method of transition or a fully retrospective method of transition, with any adjustments recognized as an adjustment to the opening balance of retained earnings.

The Company will adopt the ASU on January 1, 2022 using the modified retrospective method. As a result of the adoption, the Company expects to recognize a net increase to convertible senior notes, net of $196.7 million, primarily from the derecognition of the debt discount associated with the bifurcated equity component. The adoption adjustment represents a decrease to additional paid-in capital of $278.7 million from the derecognition of the bifurcated equity components and a net decrease to accumulated deficit of $82.0 million, primarily representing the cumulative interest expense previously recognized related to the accretion of the bifurcated conversion options. Further, in future periods of net income, the Company expects a dilutive impact to its reported diluted net income per share as a result of adoption, as the if-converted method requires the assumption the debt converts into equity at the beginning of the reporting period.

In October 2021, the FASB issued ASU 2021-08, *"Business Combinations (Topic 805) - Accounting for Contract Assets and Contract Liabilities from Contracts with Customers"*, which requires that an acquirer recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606, as if it had originated the contracts. Prior to this ASU, an acquirer generally recognizes contract assets acquired and contract liabilities assumed that arose from contracts with customers at fair value on the acquisition date. The ASU is effective for fiscal years beginning after December 15, 2022, with early adoption permitted. The ASU is to be applied prospectively to business combinations occurring on or after the effective date of the amendment (or if adopted early as of an interim period, as of the beginning of the fiscal year that includes the interim period of early application). The Company is currently assessing this standard's impact on its consolidated financial statements.

2. Revenue from Contracts with Customers

Disaggregation of Revenue

The following table presents our revenue disaggregated by platform (in millions):

	Year Ended December 31,		
	2021	**2020**	**2019**
Online game:			
Mobile	$2,175.8	$1,596.6	$ 981.2
Other(1)	73.4	70.6	66.1
Online game total	$2,249.2	$1,667.2	$1,047.3
Advertising and other:			
Mobile	$ 543.1	$ 302.5	$ 266.5
Other(1)	8.2	5.1	7.9
Advertising and other total	$ 551.3	$ 307.6	$ 274.4
Total revenue	$2,800.5	$1,974.8	$1,321.7

(1) Includes web revenue for online game and web advertising revenue and other revenue for advertising and other.

The following table presents our revenue disaggregated based on the geographic location of our payers (in millions):

	Year Ended December 31,		
	2021	**2020**	**2019**
United States	$1,700.6	$1,211.7	$ 826.6
All other countries(1)	1,099.9	763.1	495.1
Total revenue	$2,800.5	$1,974.8	$1,321.7

(1) No foreign country exceeded 10% of our total revenue for any periods presented.

The estimated weighted average playing period of payers was ten months for the years ended December 31, 2021 and 2020 and nine months for the year ended December 31, 2019.

During the year ended December 31, 2021, we deferred $5.9 million of online game revenue until the first quarter of 2022, due to changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated. This change did not impact our reported earnings per share.

During the year ended December 31, 2020, we recognized $2.0 million of online game revenue and income from operations from games that have been discontinued as there is no further performance obligation and we recognized $1.6 million of online game revenue and income from operations from changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods. These changes had a cumulative $0.01 per share benefit to our reported loss per share in the year ended December 31, 2020.

During the year ended December 31, 2019, there was no significant impact from discontinued games or changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods.

Contract Balances

We receive payments from our customers based on the payment terms established in our contracts. Payments for online game revenue are required at time of purchase, are non-refundable and relate to non-cancellable contracts that specify our performance obligations. Such payments are initially recorded to deferred revenue and are recognized into revenue as we satisfy our performance obligations. Further, payments made by our players are collected by payment processors and remitted to us generally within 45 days of invoicing. Our right to the payments collected on our behalf is unconditional and therefore recorded as accounts receivable, net of the associated payment processing fees.

Payments for advertising arrangements, including advertising transactions through our demand side and supply side software platform, are due based on the contractually stated payment terms. The contract terms generally require payment within 30 to 60 days subsequent to the end of the month. Our right to payment from the customer is unconditional and therefore recorded as accounts receivable. Payments due to publishers are recorded as other current liabilities.

During the year ended December 31, 2021, we recognized all of the revenue that was included in the $747.7 million current deferred revenue balance as of December 31, 2020.

The increase in accounts receivable, net during the year ended December 31, 2021 was primarily driven by sales on account during the period exceeding cash collections of current and previously due amounts, which includes contributions from Chartboost and StarLark, which were acquired in August 2021 and October 2021, respectively. The increase in deferred revenue during the year ended December 31, 2021 was primarily driven by the sale of virtual items during the period exceeding revenue recognized from the satisfaction of our performance obligations, which includes contribution from StarLark.

Unsatisfied Performance Obligations

Substantially all of our unsatisfied performance obligations relate to contracts with an original expected length of one year or less.

3. Financial Instruments

Debt Securities

The following tables summarize the amortized cost, gross unrealized gains and losses and fair value of our short-term and long-term debt securities as of December 31, 2021 and 2020 (in millions):

	December 31, 2021			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
Short-term debt securities:				
Corporate debt securities	$ 112.0	$ —	$ —	$ 112.0
Foreign certificates of deposit and time deposits	11.3	—	—	11.3
Total	$ 123.3	$ —	$ —	$ 123.3

	December 31, 2020			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
Short-term debt securities:				
Corporate debt securities	$ 152.7	$ 0.1	$ —	$ 152.8
Foreign certificates of deposit and time deposits	6.5	—	—	6.5
Total	$ 159.2	$ 0.1	$ —	$ 159.3
Long-term debt securities:				
Corporate debt securities	$ 2.0	$ —	$ —	$ 2.0
Total	$ 2.0	$ —	$ —	$ 2.0

Equity Securities

During the years ended December 31, 2021, 2020 and 2019, we recognized unrealized gains totaling $0.2 million, $0.3 million and $0.1 million, respectively, as a component of other income (expense), net in our consolidated statement of operations associated with our mutual fund equity investments.

Derivatives

Beginning in July 2021, we entered into derivative instruments to manage certain of our foreign exchange risks. We use foreign currency contracts to reduce the risk that our cash flows, earnings and investment in foreign subsidiaries will be adversely affected by foreign currency exchange rate fluctuations. The Company records all derivatives net, as either other current assets or liabilities, at fair value.

The following table summarizes the notional amounts of our outstanding derivative instruments (in millions):

	December 31, 2021
Designated Hedging Derivatives:	
Foreign exchange contracts	
Net investment hedge	$ 202.5
Non-Designated Hedging Derivatives:	
Foreign exchange contracts	$ 238.0

The following table shows the gains and losses on designated hedging derivatives recognized in OCI (in millions):

	Gains (Losses) Recognized in OCI
	Twelve Months Ended December 31, 2021
Net Investment Hedging Derivatives:	
Foreign exchange contracts	
Amount included in the assessment of effectiveness	$ 9.3

The following table shows the effect of derivative instruments recorded in other income (expense), net in our consolidated statements of operations (in millions):

	Gains (Losses) Recognized in Other Income (Expense)
	Twelve Months Ended December 31, 2021
Net Investment Hedging Derivatives:	
Foreign exchange contracts	
Amount excluded from the assessment of effectiveness	$ 0.5
Non-Designated Hedging Derivatives:	
Foreign exchange contracts	$ (14.4)

4. Fair Value Measurements

The composition of our financial assets and liabilities as of December 31, 2021 and 2020 among the three levels of the fair value hierarchy are as follows (in millions):

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$117.7	$ —	$ —	$117.7
Foreign certificates of deposit and time deposits	—	216.4	—	216.4
Short-term investments:				
Corporate debt securities	—	112.0	—	112.0
Foreign certificates of deposit and time deposits	—	11.3	—	11.3
Mutual funds	—	45.7	—	45.7
Derivative assets:				
Designated hedging derivatives - foreign exchange contracts(1)	—	9.3	—	9.3
Total financial assets	$117.7	$394.7	$ —	$512.4
Liabilities:				
Derivative liabilities:				
Non-designated hedging derivatives - foreign exchange contracts(1)	$ —	$ 2.3	$ —	$ 2.3
Contingent consideration	—	—	257.6	257.6
Total financial liabilities	$ —	$ 2.3	$257.6	$259.9

(1) Designated hedging derivatives are presented net of the non-designated hedging derivatives within other current assets in the Company’s consolidated balance sheet

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$611.1	$ —	$ —	$ 611.1
Corporate debt securities	—	313.0	—	313.0
Foreign certificates of deposit and time deposits	—	85.6	—	85.6
Short-term investments:				
Corporate debt securities	—	152.8	—	152.8
Foreign certificates of deposit and time deposits	—	6.5	—	6.5
Mutual funds	—	49.1	—	49.1
Long-term investments:				
Corporate debt securities	—	2.0	—	2.0
Total financial assets	$611.1	$609.0	$ —	$1,220.1
Liabilities:				
Contingent consideration	$ —	$ —	$463.1	$ 463.1
Total financial liabilities	$ —	$ —	$463.1	$ 463.1

The following table presents the activity for the year ended December 31, 2021 related to our Level 3 liabilities (in millions):

Level 3 Liabilities:	Total
Contingent consideration obligation - December 31, 2020	$ 463.1
Additions	14.9
Fair value adjustments	78.8
Payments	(239.6)
Rollic contingency resolution	(59.6)
Contingent consideration obligation - December 31, 2021	$ 257.6

In July 2021, the Company settled the final contingent consideration obligation for $75.0 million related to its acquisition of Gram Games in the second quarter of 2018. For the years ended December 31, 2021, 2020 and 2019, we recognized $0.9 million, $64.3 million and $57.6 million, respectively, of expense within research and development expenses in our consolidated statement of operations related to the Gram Games contingent consideration.

As of December 31, 2021, our contingent consideration obligations relate to the additional consideration payable in connection with our acquisitions of Small Giant in the first quarter of 2019 and Rollic in the fourth quarter of 2020, as well as Rollic's acquisitions of Creasaur Teknoloji Ticaret Anonim Şirketi ("Creasaur"), Zero Sum Teknoloji Yazılım ve Pazarlama Anonim Şirketi ("Zero Sum") and Forgerhero Yazilm Ticaret Limited Sirketi ("Forgerhero"; collectively, the "Rollic studio acquisitions"), in October 2021 (Creasaur and Zero Sum) and November 2021 (Forgerhero).

Under the original terms of the Small Giant acquisition, contingent consideration may be payable based on the achievement of certain future profitability metrics during each annual period following the acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable. Under the original terms of the Rollic acquisition, contingent consideration may be payable based on the achievement of certain future bookings and profitability metrics during each annual period following the respective acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable. For these acquisitions, we estimated the acquisition date fair value of the contingent consideration obligations using a Monte Carlo simulation.

The significant unobservable inputs used in estimating these acquisition date fair value measurements were each entity's projected performance, a risk-adjusted discount rate and performance volatility similar to industry peers. In the first quarter of 2021, the Company executed an amendment to the Share Purchase Agreement with the former owners of Small Giant to exclude the direct profitability (which includes marketing expenses) of *Puzzle Combat*, which launched globally in April 2021, from the remaining performance period.

The estimated fair value of the Small Giant contingent consideration obligation decreased from $409.3 million as of December 31, 2020 to $242.3 million as of December 31, 2021. The decrease was driven by a $239.6 million payment in the first quarter of 2021 to the former owners of Small Giant for its performance during the second contingent consideration period, partially offset by the increased probability of achievement and stronger than expected performance during the remaining performance period, which ended on December 31, 2021. For the years ended December 31, 2021, 2020 and 2019, we recognized $72.6 million, $288.9 million and $144.0 million, respectively, of expense within research and development expenses in our consolidated statements of operations. The Company expects to make the final contingent consideration payment to the former owners of Small Giant in the first quarter of 2022.

With respect to the remaining Rollic contingent consideration obligation, the Company executed an amendment to the Share Purchase Agreement with the former owners of Rollic in the second quarter of 2021 to accelerate the Company's acquisition of the remaining 20% ownership in Rollic and to set the total contingent consideration payment at $60.0 million (the "Rollic Amendment"). In July 2021, the Company acquired the remaining 20% ownership and paid $20.0 million to the former owners of Rollic, with the remaining $40.0 million to be paid in the first quarter 2022. At the date of the Rollic Amendment, the Company measured the remaining final obligation by calculating the present value of the final payments using a discount rate of 1.3%, commensurate with the remaining term. The Company accretes the obligation up to its final amount using the effective interest method.

The estimated value of the Rollic contingent consideration obligation decreased from $53.8 million as of December 31, 2020 to $39.9 million as of December 31, 2021. For each of the years ended December 31, 2021 and 2020, we recognized $6.1 million of expense within research and development expenses in our consolidated statement of operations related to the Rollic contingent consideration.

Under the terms of the Rollic studio acquisitions, contingent consideration may be payable based on the achievement of certain future bookings metrics during each annual period following each individual acquisition's respective acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable. For these acquisitions, we estimated the acquisition date fair value of the contingent consideration obligations using a discounted cash flow model. The significant unobservable inputs used in estimating these acquisition date fair value measurements were each entity's projected performance and a risk-adjusted discount rate.

We estimate the fair value of the Rollic studio acquisitions contingent consideration liabilities at each subsequent reporting period using a discounted cash flow model. The table below outlines the significant unobservable inputs used in estimating the fair value as of December 31, 2021, weighted by the relative fair value of each annual period's obligation to the total obligation (in millions, except percentages):

	December 31, 2021	
	Range	**Weighted Average**
Annual bookings	$33.8 - $54.1	$ 44.6
Discount rates	14.0% - 14.0%	14.0%

Changes in the projected performance of the acquired studios could result in a higher or lower contingent consideration obligation in the future.

The estimated fair value of the Rollic studio acquisitions contingent consideration obligations increased from $14.9 million as of their respective acquisition dates to $15.3 million as of December 31, 2021. The increases were driven by the increased probability of achievement during the remaining performance periods. For the year ended December 31, 2021, we recognized $0.4 million of expense within research and development expenses in our consolidated statements of operations related to the Rollic studio acquisitions.

5. Property and Equipment, Net

During the third quarter of 2021, the Company recognized an impairment loss related to its leasehold improvements, computer equipment and furniture and fixtures in the amounts of $7.5 million, $0.7 million and $0.7 million, respectively. Following the impairment, the adjusted carrying amount of the impacted assets represent their new cost basis. Refer to Note 6 - "Leases" for further background on the impairment loss.

Property and equipment, net consist of the following (in millions):

	December 31, 2021	December 31, 2020
Computer equipment	$ 34.1	$ 30.4
Software	36.4	35.1
Furniture and fixtures	8.0	10.6
Leasehold improvements	23.1	30.8
Total property and equipment, gross	$ 101.6	$ 106.9
Less: Accumulated depreciation	(71.3)	(67.6)
Total property and equipment, net	$ 30.3	$ 39.3

The following represents our property and equipment, net by location (in millions):

	December 31, 2021	December 31, 2020
United States	$ 12.2	$ 23.4
Turkey	8.7	7.7
India	3.8	4.3
United Kingdom	3.1	3.0
All other countries(1)	2.5	0.9
Total property and equipment, net	$ 30.3	$ 39.3

(1) No other foreign country exceeded 10% of our total property and equipment, net for any periods presented.

On July 1, 2019, the Company sold its owned office building located in San Francisco, California, including related land and all preexisting leases between the Company and third-party tenants of the building, to a third-party buyer for net proceeds of approximately $580.5 million (the "Building Sale"). In connection with the Building Sale, the Company de-recognized the related land, building and building improvements and all lessor related assets and liabilities, which resulted in a net gain of $314.2 million within other income (expense), net in our consolidated statement of operations during the year ended December 31, 2019.

6. Leases

In August 2021, in consideration of the changing nature of the Company's need for office space for its workforce, the Company's Board of Directors approved a plan to sublease the Company's current 185,000 square foot San Francisco, California office space (the "San Francisco Office Building"), as the Company transitions to a hybrid in-office and remote employee work environment. As a result of the Board of Directors' decision and the accumulation of other factors, the Company recognized a $66.8 million impairment loss during the third quarter of 2021. The impairment loss recorded included $57.9 million related to the San Francisco Office Building right-of-use lease asset and $8.9 million related to property and equipment, net associated with the San Francisco Office Building (collectively, the "San Francisco Office Asset Group").

The fair value of the San Francisco Office Asset Group was estimated using a risk-adjusted, discounted cash flow model with Level 3 inputs. The significant assumptions used in estimating the fair value included the projected sublease income over the remaining lease term, expected downtime prior to the commencement of future subleases, expected rent concessions offered to future tenants and discount rates that reflected the level of risk associated with these future cash flows.

In the second quarter of 2021, the Company executed a lease for office space of approximately 62,000 square feet in San Mateo, California (the "San Mateo Office Building") over an approximate 11-year lease term (the "Office Lease Agreement"), with annual lease expense of approximately $3.0 million beginning in June 2021. The Office Lease Agreement provides the Company two separate options to extend the lease for five years each (for a total of an additional 10 years). At lease inception, the Company determined it was not reasonably certain to exercise any of the options to extend.

The components of lease expense were as follows (in millions):

	Year Ended December 31,		
	2021	2020	2019
Operating lease expense	$23.0	$22.1	$15.1
Variable lease expense	8.2	7.9	4.6
Total lease expense(1)	$31.2	$30.0	$19.7

(1) The expense associated with short-term leases with a lease term greater than one month was not material for the years ended December 31, 2021, 2020 and 2019.

Supplemental cash and noncash information related to operating leases, excluding any transition adjustments, was as follows (in millions):

	Year Ended December 31,		
	2021	2020	2019
Fixed operating lease payments	$25.4	$22.9	$ 16.7
Right-of-use assets obtained in exchange for operating lease liabilities (noncash)	29.4	11.5	138.9

As of December 31, 2021, future lease payments related to our operating leases were as follows (in millions):

Year ending December 31:	Operating Leases
2022	$ 14.4
2023	23.3
2024	21.3
2025	17.4
2026	17.6
Thereafter	89.7
Total lease payments	183.7
Less: Imputed interest	(33.2)
Total lease liability balance	$ 150.5

We do not have any leases that have not yet commenced that create significant rights and obligations as of December 31, 2021.

7. Acquisitions

Acquisitions of Creasaur, Zero Sum and Forgerhero

On October 26, October 27 and November 4, 2021, the Company's subsidiary, Rollic executed a series of unrelated acquisitions to acquire 90% of all issued and outstanding share capital of Creasaur, Zero Sum and Forgerhero, respectively, in order to optimize its published game cost structure, for total combined purchase consideration of $12.5 million. All three acquired entities are Turkey-based and develop hyper-casual mobile games. The remaining

10% ownership in each acquired entity will be acquired ratably for potential additional consideration payable annually based upon the achievement of specified bookings metrics by each entity, during each of the three years following each respective acquisition date. The equity rights and privileges of the remaining shareholders lack the traditional rights and privileges associated with equity ownership and accordingly, each transaction was accounted for as if the Company acquired 100% of each entity on the acquisition date. Any future payments associated with our required acquisition of the remaining 10% of each entity represent a contingent consideration obligation. The Company records changes in the fair value of the contingent consideration obligations within our consolidated statement of operations in each subsequent reporting period after the acquisition dates as they occur (see Note 4 - "Fair Value Measurements" for further discussion on this estimate).

On the respective acquisition dates, Rollic paid a combined total of $12.5 million to the former owners of the acquired entities, of which $1.4 million settled pre-acquisition advanced profit share payments made to each entity under their pre-existing profit sharing arrangements with Rollic. Additionally, the total purchase consideration for the acquisition of Zero Sum included $0.6 million of deferred cash consideration (the "Zero Sum Deferred Cash Consideration").

The following table summarizes the combined acquisition date fair value of the assets, including intangible assets, liabilities assumed and related goodwill acquired from all three acquired entities (in millions):

	Combined Estimated Purchase Price Allocation
Cash	$ 0.7
Other current assets	0.2
Intangible assets:	
Developed technology, useful life of 1 year	3.8
Goodwill	23.7
Property and equipment	0.1
Total assets acquired	28.5
Other current liabilities	(0.2)
Deferred tax liabilities, net	(0.9)
Total liabilities	(1.1)
Total purchase consideration	$ 27.4
Contingent consideration payable	(14.9)
Total cash consideration(1)	$ 12.5

(1) The amount shown represents the total cash paid at closing for each respective acquisition, including the Zero Sum Deferred Cash Consideration.

Certain amounts noted above are preliminary and subject to change during the respective measurement period (up to one year from the acquisition date) as we obtain additional information for the preliminary fair value estimates of the assets acquired and liabilities assumed. The primary preliminary estimates that are not yet finalized relate to certain tangible assets and liabilities assumed, identifiable intangible assets, income and non-income based taxes, contingent consideration payable and residual goodwill.

Goodwill, which is deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

Acquisition of Beijing StarLark Technology Co., Ltd. ("StarLark") and Lvy Technology Limited ("Lvy")

On October 5, 2021 (the "StarLark Closing Date"), the Company acquired Lvy and StarLark, Chinese joint-stock companies, as well as the *Golf Rival* mobile game franchise and related other games as well as certain other specified assets and liabilities (collectively, the "StarLark Acquisition") in a series of related closings, to expand our live services portfolio and new game pipeline, in exchange for total consideration of $461.7 million. The total

purchase consideration included $276.0 million in cash, $40.0 million of cash that was deposited into an escrow account for a period of 15 months as security for certain indemnification obligations of the sellers and the issuance of 20,009,528 shares of Zynga's Class A Common Stock, valued at $145.7 million on the StarLark Closing Date. Pursuant to the StarLark Agreement, on the StarLark Closing Date, the Company acquired Lvy and StarLark, with StarLark becoming a direct, wholly-owned subsidiary of Lvy and Lvy becoming a direct, wholly-owned subsidiary of Zynga.

In connection with the transaction, the Company also executed noncompetition agreements with certain sellers and retained StarLark employees for terms ranging from one to three years following the acquisition date. However, the acquisition date estimated fair value of the noncompetition agreements was not material.

The following table summarizes the acquisition date fair value of the assets, including intangible assets, liabilities assumed and related goodwill acquired through the StarLark Acquisition (in millions):

	Estimated Purchase Price Allocation
Cash	$ 1.2
Intangible assets:	
Developed technology, useful life of 4 years	126.0
Trade names, useful life of 6 years	33.0
Goodwill	301.3
Right-of-use assets	0.5
Other non-current assets	0.1
Total assets acquired	462.1
Operating lease liabilities	(0.3)
Non-current operating lease liabilities	(0.1)
Total liabilities	(0.4)
Total purchase consideration	$ 461.7
Fair value of Class A Zynga Common Stock issued(1)	(145.7)
Total cash consideration, including cash held in escrow	$ 316.0

(1) The fair value of the Zynga's Class A Common Stock is estimated based on the total shares issued of 20,009,528 and the closing stock price of Zynga's Common A stock on October 5, 2021 of $7.28 per share.

Certain amounts noted above are preliminary and subject to change during the respective measurement period (up to one year from the acquisition date) as we obtain additional information for the preliminary fair value estimates of the assets acquired and liabilities assumed. The primary preliminary estimates that are not yet finalized relate to certain tangible assets and liabilities assumed, identifiable intangible assets, income and non-income based taxes and residual goodwill.

The fair value of the intangible assets was determined using a risk-adjusted, discounted cash flow model. The weighted-average amortization period of the acquired intangible assets was 4.4 years at acquisition.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

The results of operations from StarLark have been included in our consolidated statement of operations since the date of acquisition. Transaction costs incurred by the Company in connection with the StarLark Acquisition include professional fees and totaled $2.4 million during the year ended December 31, 2021 and were recorded within general and administrative expenses, in our consolidated statements of operations.

Acquisition of Chartboost, Inc. ("Chartboost")

On August 4, 2021, the Company acquired 100% of all issued and outstanding share capital of Chartboost, to acquire Chartboost's mobile programmatic advertising and monetization platform and enhance Zynga's user acquisition and advertising capabilities, for total consideration of $234.6 million. The total purchase consideration included $204.9 million in cash, $25.0 million of cash that was deposited into an escrow account for a period of 15 months as security for certain indemnification obligations of the former Chartboost securityholders (the "Chartboost Escrow Consideration") and Zynga's replacement of unvested Chartboost stock options (the "Zynga Replacement Stock Options"). The Zynga Replacement Stock Options allow the option holders to purchase up to 1,012,388 shares of Zynga's Class A common stock, of which $2.2 million of the total acquisition date fair value was allocated to the purchase consideration. Additionally, the total purchase consideration included $2.5 million of deferred cash consideration (the "Chartboost Deferred Cash Consideration").

In connection with the transaction, the Chartboost employees were awarded cash bonuses totaling $19.3 million, inclusive of payroll-related taxes. These employee bonuses were determined to primarily benefit the combined Zynga and Chartboost entity and were recognized by the Company separate from the business combination. One of the Chartboost employee bonuses included a two-year post-acquisition service period and is recognized as expense on a straight-line basis over the two-year period following the acquisition date. The remaining Chartboost employee bonuses were expensed immediately following the acquisition as there were no post-acquisition retention periods. The Chartboost employee bonuses are recognized as a component of research and development, sales and marketing or general and administrative expenses in our consolidated statements of operations based upon the respective employee's job responsibilities.

The following table summarizes the acquisition date fair value of the assets, including intangible assets, liabilities assumed and related goodwill acquired from Chartboost (in millions):

	Estimated Purchase Price Allocation
Cash	$ 12.2
Restricted cash	0.4
Accounts receivable	19.4
Prepaid expenses	0.6
Other current assets	2.6
Intangible assets:	
Developed technology, useful life of 5 years	99.8
Trade names, useful life of 8 years	12.8
Customer relationships, useful life of 4 years	2.7
Goodwill	131.2
Property and equipment	0.2
Right-of-use assets	0.5
Other non-current assets	0.1
Total assets acquired	282.5
Accounts payable	(1.4)
Income taxes payable	(0.1)
Operating lease liabilities	(0.4)
Other current liabilities	(31.0)
Deferred tax liabilities, net	(14.4)
Non-current operating lease liabilities	(0.1)
Other non-current liabilities	(0.5)
Total liabilities	(47.9)
Total purchase price consideration	$ 234.6
Fair value of Zynga Replacement Stock Options allocated to purchase consideration (1)	(2.2)
Total cash consideration (2)	$ 232.4

(1) The fair value of the Zynga Replacement Stock Options allocated to purchase consideration was determined by calculating the acquisition-date fair value of the replaced unvested Chartboost stock options, multiplied by the ratio of the pre-combination service period to the total service period for the Zynga Replacement Stock Option. The fair value of the unvested Chartboost stock options was estimated using the Black-Scholes option-pricing model. The fair value of the Zynga Replacement Stock Options, less the value allocated to the purchase consideration, represents post-combination stock-based compensation expense. Refer to Note 12 - "Stockholders' Equity" for further discussion.

(2) The amount shown represents the cash paid at closing (which includes the Chartboost Escrow Consideration), as well the Chartboost Deferred Cash Consideration.

Certain amounts noted above are preliminary and subject to change during the respective measurement period (up to one year from the acquisition date) as we obtain additional information for the preliminary fair value estimates of the assets acquired and liabilities assumed. The primary preliminary estimates that are not yet finalized relate to certain tangible assets and liabilities assumed, identifiable intangible assets, income and non-income based taxes and residual goodwill.

The fair value of the intangible assets was determined using a risk-adjusted, discounted cash flow model. The weighted-average amortization period of the acquired intangible assets was 5.3 years at acquisition.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

The results of operations from Chartboost have been included in our consolidated statement of operations since the date of acquisition. Transaction costs incurred by the Company in connection with the Chartboost acquisition include professional fees and Chartboost employee bonuses. Transaction costs incurred during the year ended December 31, 2021, were $15.8 million, of which $5.4 million, $2.8 million and $7.6 million were recorded within research and development, sales and marketing and general and administrative expenses, respectively, in our consolidated statements of operations.

Acquisition of Uncosoft Yazılım Anonim Şirketi ("Uncosoft")

On April 21, 2021, the Company's subsidiary, Rollic, acquired 100% of all issued and outstanding share capital of Uncosoft, a Turkey joint stock company, in order to optimize its published game cost structure, for total purchase consideration of $10.5 million. On the acquisition date, Rollic paid a total of $12.5 million to the former owners of Uncosoft, of which $2.0 million settled a pre-acquisition contractual obligation for amounts owed to Uncosoft under Rollic and Uncosoft's pre-existing profit sharing arrangement.

The following table summarizes the acquisition date fair value of the assets, including intangible assets, and related goodwill acquired from Uncosoft (in millions):

	Estimated Purchase Price Allocation
Cash	$ 0.1
Intangible assets:	
Developed technology, useful life of 1 year	1.8
Goodwill	9.0
Total assets acquired	10.9
Deferred tax liabilities	(0.4)
Total liabilities	(0.4)
Total cash consideration	$ 10.5

Goodwill, which is deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

Acquisition of Echtra Games, Inc.

On March 2, 2021, the Company acquired 100% of all issued and outstanding share capital of Echtra Games, Inc. ("Echtra"), to expand our cross-platform game development tools, technologies and experience, for total purchase consideration of $21.1 million. The total purchase consideration included $19.6 million in cash and $1.5 million of unrestricted cash that was retained for a period of 12 months as security for general representations and warranties (the "Holdback Consideration").

The following table summarizes the acquisition date fair value of the assets, including intangible assets, and related goodwill acquired from Echtra (in millions):

	Estimated Purchase Price Allocation
Prepaid expenses	$ 0.1
Intangible assets:	
Developed technology, useful life of 10 years	10.7
Goodwill	10.3
Total assets acquired	21.1
Total cash consideration, including Holdback Consideration	$ 21.1

The fair value of the developed technology intangible asset was determined using a cost to recreate approach. Goodwill, which is deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

Rollic Acquisition

On October 1, 2020, the Company acquired 80% of all issued and outstanding share capital of Rollic, a Turkey joint stock company, to expand our live services portfolio and new game pipeline, for total purchase consideration of $228.2 million. At the acquisition date, the remaining 20% was to be acquired ratably for potential additional consideration payable annually based upon the achievement of specified bookings and profitability metrics by Rollic during each of the three years following the acquisition date. The equity rights and privileges of the remaining Rollic shareholders lacked the traditional rights and privileges associated with equity ownership and accordingly, the transaction was accounted for as if the Company acquired 100% of Rollic on the acquisition date. Any future payments associated with our required acquisition of the remaining 20% represent a contingent consideration obligation.

The total purchase consideration included $164.5 million in cash, $16.0 million of cash that was deposited into an escrow account for a period of 18 months as security for general representations and warranties and contingent consideration valued at of $47.7 million at the acquisition date. The Company records changes in the fair value of the contingent consideration within our consolidated statement of operations in each subsequent reporting period after the acquisition date as they occur (see Note 4 - "Fair Value Measurements" for further discussion on this estimate).

In connection with the transaction, the Company also executed noncompetition agreements with certain members of Rollic's management for terms ranging from two to four years following the acquisition date. However, the acquisition date estimated fair value of the noncompetition agreements was not material.

The following table summarizes the acquisition date fair value of the assets, including intangible assets, liabilities assumed and related goodwill acquired from Rollic (in millions):

	Estimated Purchase Price Allocation
Cash	$ 13.5
Accounts receivable	15.7
Prepaid expenses	2.5
Other current assets	1.9
Intangible assets:	
Developed technology, weighted average useful life of 6 years	38.5
Third-party developer relationships, useful life of 4 years	42.0
Trade name, useful life of 7 years	22.0
Goodwill	131.5
Property and equipment	0.3
Right-of-use assets	0.1
Total assets acquired	268.0
Accounts payable	(9.1)
Income taxes payable	(1.9)
Operating lease liabilities	(0.1)
Other current liabilities	(7.9)
Deferred tax liabilities, net	(20.8)
Total liabilities	(39.8)
Total purchase price consideration	$ 228.2
Non-current contingent consideration payable	(47.7)
Total cash consideration, including cash held in escrow	$ 180.5

The fair value of the acquired intangible assets were determined using risk-adjusted, discounted cash flow models. The weighted-average amortization period of the acquired intangible assets was 5.6 years at acquisition.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

The results of operations from Rollic have been included in our consolidated statement of operations since the date of acquisition.

Peak Acquisition

On July 1, 2020 (the “Peak Closing Date”), we acquired 100% of all issued and outstanding share capital of Peak, a Turkey joint stock company, to expand our live services portfolio and new game pipeline, for total purchase consideration of $2.1 billion. The total purchase consideration included $802.3 million in cash, $120.0 million of cash that was deposited into an escrow account for a period of 18 months as security for general representations and warranties (the “Peak Escrow Consideration”) and 116,564,861 shares of Zynga’s Class A Common Stock valued at $1.1 billion at the acquisition date. Additionally, the total purchase consideration included the acquisition date fair value of $30.9 million of cash that was retained by the Company for a period of 66 months following the Peak Closing Date as security for tax-related indemnification obligations from the prior owners of Peak (the “Peak Deferred Consideration”). The present value of the Peak Deferred Consideration was estimated at $23.8 million on the acquisition date.

In connection with the transaction, the Company also executed noncompetition agreements with certain members of Peak’s management for a term of five years following the acquisition date. However, the acquisition date estimated fair value of the noncompetition agreements was not material.

The following table summarizes the acquisition date fair value of the assets, including intangible assets, liabilities assumed and related goodwill acquired from Peak (in millions):

	Estimated Purchase Price Allocation
Cash	$ 10.8
Accounts receivable	64.3
Prepaid expenses	1.7
Other current assets	12.6
Intangible assets:	
Developed technology, useful life of 5 years	495.0
Trade names, useful life of 7 years	115.0
Domain names, weighted average useful life of 14 years	4.6
Goodwill	1,513.7
Property and equipment	6.8
Right-of-use assets	9.7
Other non-current assets	0.5
Total assets acquired	2,234.7
Accounts payable	(14.2)
Operating lease liabilities	(2.2)
Other current liabilities	(16.7)
Deferred tax liabilities, net	(108.4)
Non-current operating lease liabilities	(7.5)
Other non-current liabilities	(1.9)
Total liabilities	(150.9)
Total purchase price consideration	$ 2,083.8
Fair value of Zynga common stock issued(1)	(1,137.7)
Total cash consideration, including cash held in escrow(2)	$ 946.1

(1) The fair value of the Class A Zynga Common Stock is estimated based on the total shares issued of 116,564,861 and the closing stock price of Class A Zynga Common Stock on July 1, 2020 of $9.76 per share.

(2) The amount shown represents the cash paid at closing (which includes the Peak Escrow Consideration) as well as present value of the Peak Deferred Consideration, which was estimated as $23.8 million at the acquisition date using a discount rate commensurate with the term of the Deferred Consideration of 4.9%.

The fair value of the acquired intangible assets were determined using risk-adjusted, discounted cash flow models. The weighted-average amortization period of the acquired intangible assets was 5.4 years at acquisition.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition.

The results of operations from Peak have been included in our consolidated statement of operations since the date of acquisition.

8. Goodwill and Intangible Assets, Net

The following table presents the changes to goodwill from December 31, 2019 to December 31, 2021 (in millions):

	Goodwill
Balance as of December 31, 2019(1)	$1,460.9
Additions	1,645.2
Foreign currency translation adjustments(2)	54.7
Balance as of December 31, 2020(1)	$3,160.8
Additions	475.5
Foreign currency translation adjustments(2)	(35.2)
Balance as of December 31, 2021(1)	$3,601.1

(1) There are no accumulated impairment losses at the beginning or end of any period presented.

(2) The change is primarily related to translation adjustments on goodwill associated with the acquisitions of Small Giant and NaturalMotion, which have functional currencies denominated in the Euro and British Pound, respectively.

The details of our acquisition-related intangible assets as of December 31, 2021 and 2020 are as follows (in millions):

	December 31, 2021		
	Gross Carrying Value	Accumulated Amortization	Net Book Value
Developed technology	$1,206.2	$ (525.3)	$ 680.9
Trademarks, branding and domain names	251.8	(63.5)	188.3
Developer and customer relationships	44.7	(13.4)	31.3
Total	$1,502.7	$ (602.2)	$ 900.5

	December 31, 2020		
	Gross Carrying Value	Accumulated Amortization	Net Book Value
Developed technology	$ 972.2	$ (346.5)	$ 625.7
Trademarks, branding and domain names	208.5	(35.5)	173.0
Third-party developer relationships	42.0	(2.6)	39.4
Noncompetition agreements	8.4	(8.4)	—
Total	$1,231.1	$ (393.0)	$ 838.1

Our trademarks, branding and domain names intangible assets include $6.1 million of indefinite-lived intangible assets as of December 31, 2021 and December 31, 2020. The remaining assets were, and continue to be, amortized on a straight-line basis. Amortization expense related to intangible assets for the year ended December 31, 2021, 2020 and 2019 was $225.2 million, $130.0 million and $67.0 million, respectively.

As of December 31, 2021, the weighted-average remaining useful lives of our acquired intangible assets are 3.6 years for developed technology, 5.6 years for trademarks, branding, and domain names, 2.8 years for developer and customer relationships and 4.0 years in total, for all acquired intangible assets.

As of December 31, 2021, future amortization expense related to our intangible assets is expected to be recognized as follows (in millions):

Year ending December 31:	
2022	$253.9
2023	235.7
2024	198.8
2025	131.8
2026	44.6
Thereafter	29.6
Total	$894.4

9. Income Taxes

Income (loss) before income taxes consists of the following for the periods shown below (in millions):

	Year Ended December 31,		
	2021	2020	2019
United States	$(267.7)	$(443.5)	$ 155.9
International	259.5	38.1	(108.6)
Total	$ (8.2)	$(405.4)	$ 47.3

The provision for (benefit from) income taxes consists of the following for the periods shown below (in millions):

	Year Ended December 31,		
	2021	2020	2019
Current tax expense (benefit):			
Federal	$ 11.6	$ 9.0	$ 11.6
State	0.4	2.5	5.4
Foreign	131.9	52.2	7.7
Total current tax expense (benefit)	$143.9	$ 63.7	$ 24.7
Deferred tax expense (benefit):			
Federal	$ (6.4)	$ 4.5	$ 0.1
State	2.1	2.3	0.5
Foreign	(43.6)	(46.5)	(19.9)
Total deferred tax expense (benefit)	$ (47.9)	$(39.7)	$(19.3)
Provision for (benefit from) income taxes	$ 96.0	$ 24.0	$ 5.4

On June 7, 2019, the U.S. Court of Appeals for the Ninth Circuit ("Ninth Circuit") issued an opinion in *Altera Corp v. Commissioner* (the "Altera matter"), reversing a prior 2015 U.S. Tax Court decision. Specifically, the Ninth Circuit ruled in favor of the Commissioner, validating U.S. Treasury regulations that require parties to a qualified cost-sharing arrangement to include stock-based compensation in the cost pool. On June 22, 2020, the U.S. Supreme Court denied hearing a petition to review the Ninth Circuit's ruling. The Company is not a named party in the Altera matter, but as a result of the ruling, Zynga's prior tax position of not including stock-based compensation expenses in its cost share with its affiliates was revised. This resulted in the recognition of a one-time current federal and state tax expense totaling $9.4 million, which was recognized as a provision for income taxes during the year ended December 31, 2020. The full tax liability associated with the Altera matter was partially offset by the use of deferred tax credit carryforward assets, which equally reduced the Company's valuation allowance against its deferred tax assets.

The reconciliation of federal statutory income tax provision (benefit) to our effective income tax provision is as follows (in millions):

	Year Ended December 31,		
	2021	2020	2019
Expected provision for (benefit from) income taxes at U.S. federal statutory rate(1)	$ (1.7)	$(85.1)	$ 9.9
Income (loss) taxed at foreign rates	37.7	(0.6)	10.3
Change in valuation allowance	32.3	20.7	(56.2)
Contingent consideration	16.7	75.4	42.3
Base Erosion and Anti-Abuse Tax ("BEAT") obligation	10.0	1.8	—
Officer's compensation limitation	8.9	8.5	5.2
State income taxes, net of federal benefit	2.5	4.7	4.7
Acquisition costs	2.1	2.1	1.2
Tax reserve for uncertain tax positions	—	8.7	3.2
Stock-based compensation	(14.0)	(11.0)	(15.7)
Other	1.5	(1.2)	0.5
Actual provision for (benefit from) income taxes	$ 96.0	$ 24.0	$ 5.4

(1) For the purpose of the reconciliation above, the U.S. federal statutory rate was 21% for all years presented.

We have not provided U.S. income taxes or foreign withholding taxes on the undistributed earnings of our profitable foreign subsidiaries as of December 31, 2021 because we intend to permanently reinvest such earnings in foreign operations. If these foreign earnings were to be repatriated in the future, the related U.S. tax liability may be reduced

by any foreign income taxes previously paid on these earnings. As of December 31, 2021 and 2020, the cumulative amount of earnings upon which income taxes have not been provided is approximately $386.3 million and $139.1 million, respectively.

Deferred tax assets and liabilities are recognized for the future tax consequences of differences between the carrying amounts of assets and liabilities and their respective tax basis using enacted tax rates in effect for the year in which the differences are expected to be reversed. Our deferred tax assets and liabilities are as follows (in millions):

	December 31, 2021	December 31, 2020
Deferred tax assets:		
Tax credit carryforwards	$ 103.1	$ 92.8
Net operating loss carryforwards	76.0	46.2
Deferred revenue	57.1	42.9
Acquired intangible assets	42.3	40.7
Operating lease liabilities	38.0	33.9
Accrued expenses	16.9	20.3
Stock-based compensation	14.1	14.6
Interest expense limitation	11.3	—
Other accrued compensation	7.5	7.8
State taxes	2.1	1.6
Charitable contributions	1.3	0.8
Other	4.1	4.4
Total deferred tax assets	$ 373.8	$ 306.0
Less: Valuation allowance	(235.8)	(187.8)
Deferred tax assets, net of valuation allowance	$ 138.0	$ 118.2
Deferred tax liabilities:		
Acquired intangible assets	$ (150.5)	$ (160.2)
Convertible debt	(27.6)	(33.4)
Goodwill	(24.0)	(13.9)
Right-of-use assets	(21.9)	(32.9)
Other	(5.2)	(2.7)
Total deferred tax liabilities	$ (229.2)	$ (243.1)
Net deferred taxes	$ (91.2)	$ (124.9)

In the third quarter of 2020, we completed an intra-entity transfer of certain intellectual property rights back to the U.S. in order to better align their ownership with how our business currently and is expected to operate. The transaction did not result in additional income tax expense or benefit during the year ended December 31, 2020. However, as a result of the transaction, we recognized a deferred tax asset of $26.1 million, that was equally offset by a valuation allowance.

Due to our history of net operating losses, we believe it is more likely than not that certain federal, state and foreign deferred tax assets will not be realized in future periods as of December 31, 2021. The increase in the valuation allowance during the year ended December 31, 2021 is primarily related to U.S. federal and state net operating losses generated.

Net operating loss and tax credit carryforwards as of December 31, 2021 are as follows (in millions):

	Amount	Expiration Years
Net operating losses, federal	$232.3	2027 - indefinite
Net operating losses, state	32.6	2025 - 2042
Tax credits, federal	91.6	2031 - 2041
Tax credits, state	104.0	2026 - indefinite

The federal and state net operating loss carryforwards and tax credits are subject to various annual limitations under Section 382 and 383, respectively, of the Internal Revenue Code and similar state provisions.

The following table reflects changes in the gross unrecognized tax benefits (in millions):

	Gross Unrecognized Tax Benefits
Gross balance as of December 31, 2018	$ 164.0
Additions based on tax positions related to 2019	5.8
Additions for tax positions of prior years	1.9
Decreases related to expiration of prior year tax positions	(0.3)
Gross balance as of December 31, 2019	$ 171.4
Additions based on tax positions related to 2020	4.8
Additions for tax positions of prior years	(28.0)
Decreases related to expiration of prior year tax positions	(1.8)
Gross balance as of December 31, 2020	$ 146.4
Additions based on tax positions related to 2021	4.0
Decreases related to expiration of prior year tax positions	(3.7)
Gross balance as of December 31, 2021	$ 146.7

We classify uncertain tax positions as non-current unrecognized tax liabilities unless expected to be paid within one year or otherwise directly related to an existing deferred tax asset, in which case the uncertain tax position is recorded as an offset to the asset on the consolidated balance sheet. As of December 31, 2021, $126.6 million of our gross unrecognized tax benefits were recorded as a reduction of the related deferred tax assets and the remaining $20.1 million of our gross unrecognized tax benefits were recorded as non-current liabilities in our consolidated balance sheets.

If the balance of gross unrecognized tax benefits of $146.7 million as of December 31, 2021 was realized, this would have resulted in a tax benefit of $20.1 million within our provision for income taxes at such time. If the balance of gross unrecognized tax benefits of $146.4 million as of December 31, 2020 was realized, this would have resulted in a tax benefit of $23.4 million within our provision of income taxes at such time.

During all years presented, we recognized interest and penalties related to unrecognized tax benefits within the provision for income taxes on the consolidated statements of operations. The amount of interest and penalties recorded to the consolidated statements of operations during 2021, 2020 and 2019, was $0.6 million, $0.3 million and $0.2 million, respectively, and the amount of interest and penalties accrued as of December 31, 2021 and 2020 was $1.9 million and $1.4 million, respectively.

We file income tax returns in the U.S. federal jurisdiction, many U.S. state jurisdictions and certain foreign jurisdictions. The material jurisdictions in which we are subject to potential examination include the U.S., United Kingdom, Ireland, Finland and Turkey. We are subject to examination in these jurisdictions for all years since our inception in 2007. Fiscal years outside the normal statute of limitation remain open to audit by tax authorities due to tax attributes generated in those early years which have been carried forward and may be audited in subsequent years when utilized. The timing of the resolution, settlement and closure of any income tax audits is highly uncertain, and we are unable to estimate the full range of possible adjustments to the balance of gross unrecognized tax benefits. It is possible that the balance of gross unrecognized tax benefits could significantly change in the next 12 months.

10. Debt

Convertible Senior Notes

On December 17, 2020, we issued $874.5 million aggregate principal amount of 0% Convertible Senior Notes due 2026 (the "2026 Notes") including the initial purchasers' full exercise of their option to purchase an additional $112.5 million principal amount of the 2026 Notes, in a private placement to qualified institutional buyers in an offering exempt from registration under the Securities Act of 1933. The net proceeds from the issuance of the 2026 Notes was $856.8 million after deducting transaction costs.

On June 14, 2019, we issued $690.0 million aggregate principal amount of 0.25% Convertible Senior Notes due 2024 (the "2024 Notes"), including the initial purchasers' full exercise of their option to purchase an additional $90.0 million principal amount of the 2024 Notes, in a private placement to qualified institutional buyers in an offering exempt from registration under the Securities Act of 1933. The net proceeds from the issuance of the 2024 Notes was $672.2 million after deducting transaction costs.

The 2026 Notes and 2024 Notes are each governed by an indenture between us, as the issuer, and Wells Fargo Bank, National Association, as trustee. The 2026 Notes and 2024 Notes are senior unsecured obligations and rank senior in right of payment to all of our indebtedness that is expressly subordinated in right of payment to such notes; equal in right of payment to all of our existing and future liabilities that are not so subordinated; effectively junior to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities of our current or future subsidiaries (including trade payables). The indentures governing the 2026 Notes and 2024 Notes, as applicable, do not contain any financial covenants.

The 2026 Notes and 2024 Notes mature on December 15, 2026 and June 1, 2024, respectively, unless earlier converted, redeemed or repurchased in accordance with their terms respectively prior to the maturity date. The 2026 Notes do not bear regular interest, and the principal amount does not accrete, while interest is payable semiannually on the 2024 Notes in arrears on June 1 and December 1 of each year.

The 2026 Notes have an initial conversion rate of 76.5404 shares of our Class A common stock per $1,000 principal amount of 2026 Notes, which is equal to an initial conversion price of approximately $13.07 per share of our Class A common stock, subject to adjustment if certain events occur. The 2024 Notes have an initial conversion rate of 120.3695 shares of our Class A common stock per $1,000 principal amount of 2024 Notes, which is equal to an initial conversion price of approximately $8.31 per share of our Class A common stock, subject to adjustment if certain events occur. Following certain corporate events that occur prior to the maturity date or following our issuance of a notice of redemption, we will increase the conversion rate for a holder who elects to convert its 2026 Notes or 2024 Notes in connection with such corporate event or during the related redemption period in certain circumstances. Additionally, upon the occurrence of a corporate event that constitutes a "fundamental change" per the indentures, holders of the 2026 Notes and 2024 Notes may require us to repurchase for cash all or a portion of their respective 2026 Notes or 2024 Notes at a purchase price equal to 100% of the principal amount of the 2026 Notes and 2024 Notes plus accrued and unpaid interest.

Prior to the close of business on the business day immediately preceding September 15, 2026 with respect to the 2026 Notes and March 1, 2024 with respect to the 2024 Notes, the 2026 Notes and 2024 Notes will be convertible only under the following circumstances:

- during any calendar quarter, if the last reported sale price of our Class A common stock for at least 20 trading days in a period of 30 consecutive trading days ending on the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price of the applicable series of the 2026 Notes or 2024 Notes on each applicable trading day;
- during the five business-day period after any five consecutive trading-day period in which the trading price per $1,000 principal amount of each applicable series of the 2026 Notes or 2024 Notes for such trading day was less than 98% of the product of the last reported sale price of our Class A common stock and the conversion rate of each applicable series of the 2026 Notes or 2024 Notes on each such trading day;
- if we call the 2026 Notes or 2024 Notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or

- upon the occurrence of specified corporate events described in the respective indentures.

On or after the dates specified above, holders of the 2026 Notes and 2024 Notes may convert all or any portion of their 2026 Notes and 2024 Notes regardless of the foregoing conditions. Upon any conversion, holders will receive cash, shares of our Class A common stock or a combination of cash and shares of our Class A common stock, at our election.

The Company may not redeem the 2026 Notes or 2024 Notes prior to December 20, 2023 and June 5, 2022, respectively. On or after those respective dates, the Company may redeem for cash all or any portion of the applicable series of the 2026 Notes or 2024 Notes, at its option, if the last reported sale price of our Class A common stock has been at least 130% of the conversion price of the applicable series of the 2026 Notes or 2024 Notes for at least 20 trading days during any 30 consecutive trading-day period ending on and including the trading day immediately preceding the date when the Company provides a notice of redemption at a redemption price equal to 100% of the principal amount of the applicable series of the 2026 Notes or 2024 Notes to be redeemed, plus any accrued and unpaid interest or special interest, as applicable.

As of December 31, 2021, the conditions allowing holders of the 2026 Notes or 2024 Notes to convert their respective series of the 2026 Notes and 2024 Notes have not been met and therefore both the 2026 Notes and 2024 Notes are not yet convertible.

We separately accounted for the liability and equity components of the 2026 Notes and 2024 Notes. We determined the initial carrying amount of the $707.4 million liability component of the 2026 Notes by calculating the present value of the cash flows using an effective interest rate of 3.5%. We determined the initial carrying amount of the $572.0 million liability component of the 2024 Notes by calculating the present value of the cash flows using an effective interest rate of 4.1%. The effective interest rates were determined based on non-convertible debt offerings, of similar sizes and terms, by companies with similar credit ratings and other observable market data (Level 2 inputs).

The amount of the equity component, representing the conversion option, was $167.1 million for the 2026 Notes and $118.0 million for the 2024 Notes and was calculated by deducting the initial carrying value of the liability component from the principal amount of the 2026 Notes and 2024 Notes, respectively. This difference represents a debt discount that is amortized to interest expense over the 6-year and 5-year contractual periods of the 2026 Notes and 2024 Notes, respectively, using the effective interest rate method. The equity components are not subsequently remeasured as long as they continue to meet the conditions for equity classification.

We allocated transaction costs related to the issuance of the respective series of the 2026 Notes and 2024 Notes to the liability and equity components using the same proportions as the initial carrying value of the respective series of the 2026 Notes and 2024 Notes. The respective transaction costs are then amortized to interest expense using the effective interest method over the terms of the respective series of 2026 Notes and 2024 Notes. Transaction costs initially attributable to the liability component of the 2026 Notes and 2024 Notes were $14.3 million and $14.8 million, respectively, while transaction costs attributable to the equity component of the 2026 Notes and 2024 Notes were $3.4 million and $3.1 million, respectively. The transaction costs attributable to the equity component are accounted for consistently with the equity component of the 2026 Notes and 2024 Notes.

The net carrying amount of the liability and equity components of the 2026 Notes and 2024 Notes as of December 31, 2021 were as follows (in millions):

	2024 Notes	2026 Notes	Total
Liability component:			
Principal	$ 690.0	$ 874.5	$1,564.5
Unamortized debt discount	(60.5)	(140.6)	(201.1)
Unamortized transaction costs	(7.6)	(12.0)	(19.6)
Net carrying amount	$ 621.9	$ 721.9	$1,343.8
Equity component, net of transaction costs	$ 114.9	$ 163.7	$ 278.6

The net carrying amount of the liability and equity components of the 2026 Notes and 2024 Notes as of December 31, 2020 were as follows (in millions):

	2024 Notes	2026 Notes	Total
Liability component:			
Principal	$ 690.0	$ 874.5	$1,564.5
Unamortized debt discount	(83.8)	(166.1)	(249.9)
Unamortized transaction costs	(10.5)	(14.2)	(24.7)
Net carrying amount	$ 595.7	$ 694.2	$1,289.9
Equity component, net of transaction costs	$ 114.9	$ 163.7	$ 278.6

Interest expense recognized related to the 2026 Notes and 2024 Notes was as follows (in millions):

	Year Ended December 31,		
	2021	2020	2019
Contractual interest expense	$ 1.7	$ 1.7	$ 0.9
Amortization of debt discount	48.7	23.5	11.8
Amortization of transaction costs	5.2	2.9	1.5
Total	$55.6	$28.1	$14.2

As of December 31, 2021, the estimated fair value of the 2026 Notes and 2024 Notes was $807.3 million and $745.6 million, respectively. We estimated the fair value based on the quoted market prices in an inactive market on the last trading day of the reporting period, which are considered Level 2 inputs.

Capped Call Transactions

In connection with the offering of the 2026 Notes and 2024 Notes, the Company entered into privately negotiated capped call options with certain counterparties (the “2026 Capped Calls” and “2024 Capped Calls”, respectively). The 2026 Capped Calls have an initial strike price of approximately $13.07 per share, subject to certain adjustments, which corresponds to the initial conversion price of the 2026 Notes and an initial cap price of $17.42 per share, subject to certain adjustments. The 2026 Capped Calls are intended to reduce the potential economic dilution of approximately 66.9 million shares to our Class A common stock upon any conversion of the 2026 Notes and/or offset any cash payments we make in excess of the principal amount of converted notes with such reduction and/or offset, as the case may be, subject to a maximum based on the cap price. The cost of $63.0 million incurred in connection with the 2026 Capped Calls was recorded as a reduction to additional paid-in capital.

The 2024 Capped Calls have an initial strike price of approximately $8.31 per share, subject to certain adjustments, which corresponds to the initial conversion price of the 2024 Notes and an initial cap price of $12.54 per share, subject to certain adjustments. The 2024 Capped Calls are intended to reduce the potential economic dilution of approximately 83.1 million shares to our Class A common stock upon any conversion of the 2024 Notes and/or offset any cash payments we make in excess of the principal amount of converted notes with such reduction and/or offset, as the case may be, subject to a maximum based on the cap price. The cost of $73.8 million incurred in connection with the 2024 Capped Calls was recorded as a reduction to additional paid-in capital.

As both the 2026 Capped Calls and 2024 Capped Calls are considered indexed to our own stock and are equity classified, therefore they are recorded in stockholders' equity and are not accounted for as derivatives.

Convertible Senior Notes and Capped Call Transactions - Impact on Earnings per Share

The Company computes the potentially dilutive impact of the shares of Class A common stock related to the 2026 Notes and 2024 Notes using the treasury stock method, as we intend and have the ability to settle the principal amount of the 2026 Notes and 2024 Notes in cash upon conversion. However, the 66.9 million shares initially underlying the conversion option of the 2026 Notes and the 83.1 million shares initially underlying the conversion option of the 2024 Notes do not have an impact on our diluted earnings per share unless the average market price of our Class A common stock exceeds the respective conversion price of the 2026 Notes and 2024 Notes during a period of net income.

The 2026 Capped Calls and 2024 Capped Calls are excluded from the calculation of diluted earnings per share, as they would be antidilutive under the treasury stock method.

Credit Facility

In December 2020, the Company entered into a credit agreement (the "2020 Credit Agreement") with certain financial institutions that provides for a three-year revolving credit facility in an aggregate principal amount of up to $425.0 million and is secured by a blanket lien on the Company's assets. The Company may borrow, repay and re-borrow funds under the 2020 Credit Agreement until December 31, 2023, at which time the 2020 Credit Agreement will terminate, and all outstanding revolving loans, together with all accrued and unpaid interest, must be repaid. The Company may use the proceeds of future borrowings under the 2020 Credit Agreement for general corporate purposes.

Under the 2020 Credit Agreement, at the Company's option, revolving loans accrue interest at a per annum rate based on either (i) the base rate plus a margin ranging from 0.50% to 1.00%, determined based on the Company's consolidated leverage ratio for the four most recent fiscal quarters (the "Consolidated Leverage Ratio") or (ii) the LIBOR rate (for interest periods of one, two, three or six months) plus a margin ranging from 1.50% to 2.00%, determined based on the Company's Consolidated Leverage Ratio. The base rate is defined as the highest of (i) the federal funds rate, plus 0.50%, (ii) Bank of America, N.A.'s prime rate and (iii) the LIBOR rate for a one-month interest period plus 1.00%. The Company is also obligated to pay an ongoing commitment fee on undrawn amounts at a rate ranging from 0.25% to 0.35%, determined based on the Company's Consolidated Leverage Ratio.

As of December 31, 2021, we had no amounts outstanding under the 2020 Credit Agreement.

Upon execution of the 2020 Credit Agreement, debt issuance costs of $1.4 million were capitalized and are amortized on a straight-line basis over the three-year term of the Credit Agreement, with the expense recorded to interest expense in our consolidated statement of operations.

11. Other Current and Non-Current Liabilities

Other current liabilities consist of the following (in millions):

	December 31, 2021	December 31, 2020
Contingent consideration obligation	$ 286.7	$ 323.6
Accrued payable from acquisitions	161.0	—
Accrued accounts payable	81.1	58.1
Accrued compensation liability	61.9	61.7
Value-added taxes payable	7.3	6.4
Other current liabilities	52.4	12.6
Total other current liabilities	$ 650.4	$ 462.4

Our accrued compensation liability represents employee bonus and other payroll withholding expenses, while other current liabilities include various expenses that we accrue for sales and other taxes, customer deposits, accrued vendor expenses and deferred consideration payable from acquisitions.

Other non-current liabilities consist of the following (in millions):

	December 31, 2021	December 31, 2020
Accrued payable from acquisitions	$ 40.0	$ 136.0
Deferred consideration payable	26.0	24.4
Uncertain tax positions, including interest and penalties	22.0	24.8
Contingent consideration obligation	10.8	213.6
Other non-current liabilities	13.5	2.3
Total other non-current liabilities	$ 112.3	$ 401.1

12. Stockholders' Equity and Other Employee Benefits

Common Stock

Our three classes of common stock are Class A, Class B and Class C common stock. On May 2, 2018, our founder, Mark Pincus, elected to convert certain outstanding shares of Class B common stock and all outstanding shares of Class C common stock controlled by Mr. Pincus and an affiliated investment entity into an equivalent number of shares of Class A common stock. As a result of Mr. Pincus' conversion, the remaining shares of Class B common stock represented less than 10% of the total voting power of all Zynga stockholders and, accordingly, each remaining outstanding share of Class B common stock automatically converted into one share of Class A common stock. Each Zynga stockholder now has one vote per share on all matters subject to stockholder vote. Following the conversion, no shares of Class B or Class C common stock are outstanding.

The following are the rights and privileges of our classes of common stock:

Dividends. The holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available at the times and in the amounts which our Board of Directors may determine.

Voting Rights. Holders of our Class A common stock are entitled to one vote per share.

Liquidation. Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our Class A common stock.

Preemptive or Similar Rights. None of our common stock is entitled to preemptive rights or subject to redemption.

Conversion. Our Class A common stock is not convertible into any other shares of our capital stock. The Class B and Class C common stock converted into Class A common stock may not be reissued.

Stock Repurchases

In April 2018, a share repurchase program was authorized for up to $200.0 million of our outstanding Class A common stock (the "2018 Share Repurchase Program"). The timing and amount of any stock repurchase will be determined based on market conditions, share price and other factors. The program does not require us to repurchase any specific number of shares of our Class A common stock and may be modified, suspended or terminated at any time without notice. The 2018 Share Repurchase Program is authorized to remain in effect until April 2022 and will be funded from existing cash on hand or other sources of funding as the Company may determine to be appropriate.

Share repurchases under these authorizations may be made through a variety of methods, which may include open market purchases, privately negotiated transactions, block trades, accelerated share repurchase transactions, purchases through 10b5-1 plans or by any combination of such methods.

As of December 31, 2021, we had $173.8 million remaining under the 2018 Share Repurchase Program. The 2018 Share Repurchase Program is authorized to remain in effect until April 2022.

All of our previous stock repurchases were made through open market purchases under Rule 10b5-1 plans and subsequently retired.

Equity Incentive Plans and Stock-Based Compensation Expense

In 2007, we adopted the 2007 Equity Incentive Plan (the "2007 Plan") for the purpose of granting stock options and RSUs to employees, directors and non-employees. Concurrent with the effectiveness of our initial public offering on December 15, 2011, we adopted the 2011 Equity Incentive Plan (the "2011 Plan"), and all remaining common shares reserved for future grant or issuance under the 2007 Plan were added to the 2011 Plan. The 2011 Plan was adopted for purposes of granting stock options and RSUs to employees, directors and non-employees. The number of shares of our Class A common stock reserved for future issuance under our 2011 Plan automatically increased on January 1 of each year, beginning on January 1, 2012, and continued through January 1, 2021, by 4% of the total number of shares of our capital stock outstanding as of December 31 of the preceding calendar year or such lesser number of shares that may be determined by the Company's Board of Directors.

We recorded stock-based compensation expense related to grants of employee stock options, RSUs and performance and market-based awards in our consolidated statements of operations as follows (in millions):

	Year Ended December 31,		
	2021	2020	2019
Cost of revenue	$ 2.8	$ 2.0	$ 1.5
Research and development	110.7	73.4	47.0
Sales and marketing	17.8	14.7	11.3
General and administrative	35.9	32.5	21.7
Total stock-based compensation expense	$167.2	$122.6	$81.5

Stock Option Activity

All stock options granted under the 2011 Plan generally vest over four to five years, with 25% to 20% vesting after one year and the remainder vesting monthly thereafter over 36 to 48 months, respectively. The stock options have a contract term of 10 years and the related expense is determined using the Black-Scholes option pricing model on the date of grant.

The following table shows stock option activity for the year ended December 31, 2021 (in millions, except weighted-average exercise price and weighted-average contractual term):

	Outstanding Options			
	Stock Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value of Stock Options Outstanding	Weighted-Average Contractual Term (in years)
Balance as of December 31, 2020	30.1	$ 3.46	$ 193.1	6.43
Granted	1.0	2.93		
Forfeited, expired and cancelled	(0.4)	5.27		
Exercised	(8.0)	3.01		
Balance as of December 31, 2021	22.7	$ 3.56	$ 64.9	5.71
As of December 31, 2021				
Exercisable options	18.9	$ 3.30	$ 58.5	5.23
Vested and expected to vest	22.7	$ 3.56	$ 64.9	5.71

The following table presents the weighted-average grant date fair value and related assumptions used to estimate the fair value of our stock options:

	Year Ended December 31,		
	2021	2020	2019
Expected term, in years	6	6	6
Risk-free interest rates	0.7%	0.8%	2.5%
Expected volatility	34%	36%	43%
Dividend yield	—	—	—
Weighted-average estimated fair value of stock options granted(1)	$7.21	$2.35	$2.41

(1) Of the total the weighted-average estimated fair value of the Zynga Replacement Stock options, $5.10 was allocated to the post-combination value.

The aggregate intrinsic value of stock options exercised during the year ended December 31, 2021, 2020 and 2019 was $65.3 million, $12.4 million and $44.9 million, respectively. The total grant date fair value of options that vested during the year ended December 31, 2021, 2020 and 2019 was $11.9 million, $13.1 million and $9.5 million, respectively.

As of December 31, 2021, total unrecognized stock-based compensation expense of $8.9 million related to unvested stock options is expected to be recognized over a weighted-average recognition period of approximately 1.6 years.

RSU Activity

RSUs are granted to eligible employees under the 2011 Plan. In general, RSU awards vest in annual or quarterly installments over a period of four years, are subject to the employee's continuing service to us and do not have an expiration date. The cost of RSUs is determined using the fair value of our common stock on the date of grant.

The following table shows a summary of RSU activity for the year ended December 31, 2021, which includes performance and market-based awards (in millions, except weighted-average grant date fair value):

	Outstanding RSUs		
	Shares	Weighted-Average Grant Date Fair Value (per share)	Aggregate Intrinsic Value of Unvested RSUs
Unvested as of December 31, 2020	64.5	$ 7.43	$ 636.0
Granted	27.7	9.51	
Vested	(21.8)	6.51	
Forfeited	(8.0)	7.36	
Unvested as of December 31, 2021	62.4	$ 8.68	$ 399.4

As of December 31, 2021, total unamortized stock-based compensation expense relating to RSUs amounted to $491.6 million over a weighted-average recognition period of approximately 3.3 years.

Performance RSUs

On March 15, 2021, the Company granted performance-based awards to certain executives (the “2021 Performance RSUs”). The number of shares earned ranged from 0% to 150% of the 1.2 million target number of shares granted, depending on an adjusted operating cash flow metric for the year ended December 31, 2021 relative to pre-established thresholds. Based on actual performance for the year ended December 31, 2021, shares were earned at 100% achievement, with 25% vesting on the one year anniversary of the March 15, 2021 grant date and the remaining quarterly thereafter, subject to continued service by the employees.

Outside of the 2021 Performance RSUs, certain employees are eligible to receive Performance RSUs, which are subject to performance and time-based vesting requirements. The target number of shares of the Performance RSUs are adjusted based on our business performance measured against the performance goals approved by the Compensation Committee at the date of employment with the Company. Generally, if the performance criteria are satisfied, 25% of the award will vest immediately or soon after with the remaining vesting ratably for each quarter or six month periods thereafter.

During the years ended December 31, 2021, 2020 and 2019, we recorded $6.2 million, $2.8 million and $1.2 million, respectively, of stock-based compensation expense related to Performance RSUs.

Market RSUs

On March 15, 2020, the Company granted Market RSUs to certain executive officers, with two separate prescribed measurement periods. Both prescribed measurement periods began on the grant date, with the first prescribed measurement period ending on December 31, 2021 (the “Two-Year Market RSUs”) and the second period ending on December 31, 2022 (the “Three-Year Market RSUs”). The number of RSUs earned (if any) will range from 0% to 150% of the target number of shares, depending on actual achievement of specific tiers for Zynga’s total shareholder return (“TSR”) relative to the TSR of companies comprising the S&P MidCap 400 Index over the prescribed measurement periods. If Zynga’s TSR is negative during any measurement period, the number of RSUs earned is capped at 100% of the target number of shares for that prescribed measurement period. Based on actual performance, no shares were earned related to the Two-Year Market RSUs.

Any shares earned related to the Three-Year Market RSUs will vest in three equal annual increments, beginning on March 15 of the year following the conclusion of each prescribed measurement period, subject to continued service by the executives. The target number of shares totaled 2.2 million each for the Two-Year Market RSUs and the Three-Year Market RSUs, for a total of 4.4 million target shares.

The estimated per share grant date fair value of the Two-Year Market RSUs and Three-Year Market RSUs was $7.37 and $7.41, respectively. The significant assumptions used in estimating the grant date fair value of each award included an expected volatility of 27%, a risk-free interest rate ranging from 0.5% to 0.6% and an expected dividend yield of zero. During the years ended December 31, 2021 and 2020, we recorded $6.6 million and $8.0 million of stock-based compensation expense related to the Market RSUs, respectively.

2011 Employee Stock Purchase Plan

Our 2011 Employee Stock Purchase Plan (“2011 ESPP”), was approved by our Board of Directors in September 2011 and by our stockholders in November 2011 and amended in August 2012. The number of shares of our Class A common stock reserved for future issuance under our 2011 ESPP automatically increased on January 1 of each year, beginning on January 1, 2012, and continuing through January 1, 2021, by the lesser of 2% of the total number of shares of our capital stock outstanding as of December 31 of the preceding calendar year, 25,000,000 shares or the number of shares that may be determined by the Company’s Board of Directors.

Our 2011 ESPP permits participants to purchase shares of our Class A common stock through payroll deductions up to 15% of their earnings, subject to a maximum of 5,000 shares available for purchase on any purchase date. Unless otherwise determined by the administrator, the purchase price of the shares will be 85% of the lower of the fair market value of our Class A common stock on the first day of an offering or on the date of purchase. The ESPP offers two purchase dates within each annual period, resulting in a six-month and twelve-month look-back. Additionally, the ESPP contains an automatic reset feature after the first six months of each annual period, such that if the fair market value of our Class A common stock has decreased from the original offering date, the offering will

automatically terminate and all participants will be re-enrolled in the new, lower-priced offering. Participants may end their participation at any time during an offering and will be refunded their accrued contributions that have not yet been used to purchase shares. Participation ends automatically upon termination of employment.

As of December 31, 2021, there were $5.2 million of employee contributions withheld by the Company. During the year ended December 31, 2021, 2020 and 2019, the Company recognized $6.1 million, $3.6 million and $3.4 million of stock-based compensation expense related to the 2011 ESPP.

Employee Savings Plan

We have a defined contribution plan, which is qualified under Section 401(k) of the Internal Revenue Code. Participating employees may contribute up to 70% of their eligible compensation, or the statutory limit, whichever is lower. In 2021, 2020 and 2019, we contributed one dollar for each dollar a participant contributed, with a maximum contribution of 3% of each employee's eligible compensation, subject to a maximum total contribution mandated by the IRS. The total expense for this savings plan was $8.2 million, $6.5 million and $5.8 million in the year ended December 31, 2021, 2020 and 2019, respectively.

Common Stock Reserved for Future Issuance

As of December 31, 2021, we had reserved shares of common stock for future issuance as follows (in millions):

	December 31, 2021
Stock options outstanding	22.7
RSUs outstanding	62.4
2011 Equity Incentive Plan	166.0
2011 Employee Stock Purchase Plan	159.8
Total	410.9

13. Accumulated Other Comprehensive Income (Loss)

The following table shows a summary of changes in accumulated other comprehensive income (loss) by component from December 31, 2019 to December 31, 2021 (in millions):

	Foreign Currency Translation	Unrealized Gains (Losses) on Available-For-Sale Marketable Debt Securities	Total
Balance as of December 31, 2019	$ (126.1)	$ 0.2	$(125.9)
Other comprehensive income (loss) before reclassifications	75.3	(0.1)	75.2
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—
Net other comprehensive income (loss), net of tax	75.3	(0.1)	75.2
Balance as of December 31, 2020	$ (50.8)	$ 0.1	$ (50.7)
Other comprehensive income (loss) before reclassifications	(56.3)	(0.1)	(56.4)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—
Net other comprehensive income (loss), net of tax	(56.3)	(0.1)	(56.4)
Balance as of December 31, 2021	$ (107.1)	$ —	$(107.1)

14. Net Income (Loss) Per Share of Common Stock

Basic net income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding, including potential dilutive securities. In computing diluted net income (loss) per share, net income (loss) attributable to common shareholders is re-allocated to reflect the potential impact of dilutive securities, including stock options, unvested RSUs, unvested performance and market-based RSUs, ESPP withholdings and convertible debt instruments. For periods in which we have generated a net loss or there is no income attributable to common stockholders, we do not include dilutive securities in our calculation of diluted net income (loss) per share, as the impact of these awards is anti-dilutive.

The following tables set forth the computation of basic and diluted net income (loss) per share of common stock (in millions, except per share data):

	Year Ended December 31,		
	2021 Class A	2020 Class A	2019 Class A
Basic			
Net income (loss) attributable to common stockholders	$ (104.2)	$ (429.4)	$ 41.9
Weighted-average common shares outstanding	1,099.1	1,016.8	938.7
Net income (loss) per share attributable to common stockholders	$ (0.09)	$ (0.42)	$ 0.04
Diluted			
Net income (loss) attributable to common stockholders - basic	$ (104.2)	$ (429.4)	$ 41.9
Weighted-average common shares outstanding - basic	1,099.1	1,016.8	938.7
Weighted-average effect of dilutive securities:			
Stock options and employee stock purchase plan	—	—	13.0
RSUs	—	—	22.3
Weighted-average common shares outstanding - diluted	1,099.1	1,016.8	974.0
Net income (loss) per share attributable to common stockholders - diluted	$ (0.09)	$ (0.42)	$ 0.04

The following weighted-average employee equity awards and convertible debt instruments were excluded from the calculation of diluted net income (loss) per share because their effect would have been anti-dilutive for the periods presented (in millions):

	Year Ended December 31,		
	2021	2020	2019
Stock options and employee stock purchase plan	28.8	31.3	3.7
RSUs (including performance and market-based awards)	64.9	56.6	0.6
Convertible senior notes	8.2	—	—
Total	101.9	87.9	4.3

15. Commitments and Contingencies

The amounts represented in the tables below reflect our minimum cash obligations for the respective calendar years based on contractual terms, but not necessarily the periods in which these costs will be expensed in the Company's consolidated statement of operations.

Licensor and Marketing Commitments

We have entered into several contracts with licensors that contain minimum contractual royalty and marketing commitments that may not be dependent on any deliverables. As of December 31, 2021, future minimum contractual royalty payments due to licensors and associated marketing commitments for the licensed products are as follows (in millions):

Year ending December 31:	
2022	$12.7
2023	10.4
2024	10.0
2025	10.0
Thereafter	—
Total	$43.1

Other Purchase Commitments

We have entered into several contracts primarily for hosting of data systems and other services. As of December 31, 2021, future minimum purchase commitments that have initial or remaining non-cancelable terms are as follows (in millions):

Year ending December 31:	
2022	$ 74.5
2023	56.6
2024	36.9
Thereafter	—
Total	$168.0

Excluded from tables above is our uncertain income tax position liability of $22.0 million, which includes interest and penalties, as the Company cannot make a reasonably reliable estimate of the period of cash settlement.

Legal Matters

The Company is involved in legal and regulatory proceedings on an ongoing basis. Some of these proceedings are in early stages and may seek an indeterminate amount of damages. If the Company believes that a loss arising from such matters is probable and can be reasonably estimated, the Company accrues the estimated liability in its financial statements. If only a range of estimated losses can be determined, the Company accrues an amount within the range that, in its judgment, reflects the most likely outcome; if none of the estimates within that range is a better estimate than any other amount, the Company accrues the low end of the range. For proceedings in which an unfavorable outcome is reasonably possible but not probable and an estimate of the loss or range of losses arising from the proceeding can be made, the Company discloses such an estimate, if material. If such a loss or range of losses is not reasonably estimable, the Company discloses that fact. In assessing the materiality of a proceeding, the Company evaluates, among other factors, the amount of monetary damages claimed, as well as the potential impact of non-monetary remedies sought by plaintiffs that may require changes to business practices in a manner that could have a material adverse impact on the Company's business. Legal expenses are recognized as incurred.

On September 12, 2019, the Company announced that an incident had occurred that may have involved player data (the “Data Incident”). Upon our discovery of the Data Incident, an investigation immediately commenced and advisors and third-party forensics firms were retained to assist. The investigation revealed that, during the third quarter of 2019, outside hackers illegally accessed certain player account information and other Zynga information, and that no financial information was accessed. The Company has provided notifications to players, investors, regulators and other third parties, where we believe notice was required or appropriate. The Company has exchanged correspondence with certain regulators as a result of the incident. The Company has also received and has responded to data subject access requests from certain European Union players of Zynga’s games.

Since March 3, 2020, five consumer class action complaints have been filed in connection with the Data Incident in federal court. On March 3, 2020, two plaintiffs - minor “I.C.” (acting through his parent Nasim Chaudhri) and Amy Gitre - filed a class action complaint arising out of the Data Incident (the “*Chaudhri* complaint”), generally alleging that Zynga failed to reasonably safeguard certain player information, including names, email addresses, and passwords (among other items); failed to provide them with timely notification of the breach; and made misleading representations concerning the safety and security of plaintiffs’ personal information. Plaintiffs allege claims against Zynga under several state law theories, including negligence, intrusion upon seclusion, failure to comply with data breach notification statutes, and unjust enrichment, and they seek injunctive relief and damages. Zynga filed a motion to compel arbitration and arbitration-related discovery on May 8, 2020.

On March 23, 2020, plaintiffs Carol Johnson and Lisa Thomas filed a second class action complaint in the Northern District of California federal court (the “*Johnson* complaint”). Similar to the *Chaudhri* complaint, the *Johnson* plaintiffs - residents of Missouri and Wisconsin - assert Zynga failed to adequately protect certain player information, including names, email addresses, and passwords (among other items). Plaintiffs contend that, despite Zynga’s representations in its privacy policy that sensitive player information would be adequately protected, plaintiffs’ passwords were stored using inadequate hashing methods or in plain text. Plaintiffs allege that the lack of adequate security measures caused them harm as a result of the Data Incident, and they assert numerous various claims against Zynga, including claims for negligence, negligence per se, unjust enrichment, declaratory relief, breach of confidence, breach of contract and implied contract, violations of California’s Unfair Competition Law (“UCL”, CGL 17200, et seq.), and state-specific violations of Missouri’s Merchandising Practices Act and Wisconsin’s Deceptive Trade Practices Act. Plaintiffs seek damages, as well as declaratory and injunctive relief. On May 26, 2020, Zynga filed a motion to compel arbitration and arbitration-related discovery.

On April 15, 2020, plaintiffs Joseph Martinez IV and Daniel Petro, residents of Colorado and Iowa, filed a third class action complaint in the Northern District of California (the “*Martinez* complaint”). Plaintiffs allege they are longtime Zynga players who were affected by the Data Incident. Similar to the *Chaudhri* and *Johnson* plaintiffs, the *Martinez* plaintiffs generally allege that Zynga failed to adequately store and protect or otherwise secure certain player information, including names, email addresses, and passwords (among other items); that Zynga used outdated and improper password encryption methods; that Zynga failed to adequately provide notice of the Data Incident; and that they have been harmed as a result of the Data Incident. Like the *Johnson* and *Chaudhri* plaintiffs, the *Martinez* plaintiffs assert claims for negligence, negligence per se, and unjust enrichment, as well as contractual claims, and claims for relief under multiple state consumer protection statutes. Additionally, the *Martinez* plaintiffs also assert misrepresentation and omission claims under California’s false advertising law and the California Consumer Legal Remedies Act. Plaintiffs seek injunctive and monetary relief on behalf of a nationwide class. Zynga responded to the *Martinez* complaint by filing a motion to compel arbitration on June 19, 2020.

On June 9, 2020 plaintiffs James Oeste and Marissa Oeste, both residents of Maryland, filed a fourth class action complaint in the Northern District of Maryland (the “*Oeste* complaint”). Plaintiffs allege they were Zynga players who were affected by the Data Incident. Similar to all the foregoing plaintiffs, the *Oeste* plaintiffs seek to represent a nationwide class and generally allege that Zynga failed to adequately or reasonably protect certain player information, including names, email addresses, and passwords (among other items); that Zynga used outdated or improper password hashing methods; that Zynga failed to adequately provide notice of the Data Incident; and that they have been harmed as a result of the Data Incident. The *Oeste* plaintiffs assert claims for contractual breach, negligence, negligence per se, invasion of privacy, and claims for relief under California consumer protection and unfair competition statutes. Zynga responded to the complaint on August 31, 2020, with a motion to transfer the action to the Northern District of California. On May 5, 2021, the court granted Zynga’s motion to transfer, and the case was transferred to the Northern District of California. The California district court has consolidated *Oeste* proceedings in connection with the other already pending cases before the court.

On August 13, 2020, plaintiff Christopher Rosiak filed a fifth class action in the Northern District of California (the "*Rosiak* complaint"). Plaintiff alleges similar and analogous claims to those in the *Martinez* (and others) actions pending in the Northern District, alleging that he suffered harm as a result of Zynga's data breach. Plaintiff Rosiak alleges multiple state law claims, including contract-based claims, negligence, and violation of California's unfair competition, false advertising, and consumer protection statutes.

On January 6, 2021, the Northern California district court issued an order in three of the above actions-*Chaudhri*, *Johnson*, and *Martinez*-denying Zynga's motions to compel arbitration without prejudice, and granting an alternative request for preliminary arbitration-related discovery that Zynga had made in connection with its motions. Plaintiffs were ordered to provide Zynga with plaintiffs' identifying information. Following a status hearing before the court as to all actions pending before it, plaintiffs filed an amended and consolidated complaint in connection with the *Chaudhri*, *Johnson*, and *Martinez* complaints, as well as in connection with the *Rosiak* complaint. The amended and consolidated complaint was filed in the Northern District of California on March 12, 2021.

In response to the amended and consolidated complaint, on April 21, 2021, the Company filed renewed motions to compel arbitration in connection with the claims alleged by three of the individual named plaintiffs in the *Chaudhri*, *Johnson*, and *Martinez* actions. On the same date, the Company also filed a motion to dismiss claims alleged by all remaining plaintiffs in those actions, and in the *Rosiak* action. Following oral argument held by the court on July 27, 2021, the court granted Zynga's motion to compel arbitration and granted the motion to dismiss with leave to amend. Plaintiffs filed their second amended consolidated complaint on August 27, 2021. Zynga filed a responsive motion to dismiss the amended complaint on September 20, 2021. A hearing on the motion scheduled for October 26, 2021 was vacated, to be reset as necessary. Zynga is awaiting either a rescheduled hearing or the court's decision on the motion.

On March 2, 2021, a class-action lawsuit (the "*Bourgeois* complaint") was filed in the Superior Court of Quebec, in the province of Montreal, Canada. The lawsuit, which was subsequently amended via an amended application on October 15, 2021, was filed by named plaintiff Gabriel Bourgeois, who purchased loot box items in connection with his use of the Marvel Strike Force and Pokemon Go! electronic and online games (plaintiff does not allege that he purchased a loot box in connection with any Zynga games). Plaintiff alleges that Zynga and multiple other gaming defendants have unlawfully developed, own, and operate an unlicensed gaming system, through the use of loot boxes in connection with their games. Plaintiff asserts that defendants have unlawfully offered loot boxes to the public in connection with their games; failed to properly disclose the odds of winning in connection with loot boxes; and failed to employ appropriate safeguards surrounding minors' ability to purchase loot boxes. The specific Zynga games at issue-which plaintiff does not claim to have played-include *CSR Racing 2*, *Empires & Puzzles*, *FarmVille: Country Escape* and *Dawn of Titans*. Plaintiff collectively asserts that by offering loot boxes, all defendants have violated the Criminal Code of Canada provisions that regulate gaming; the Competition Act of Canada; and various individual consumer protection laws of the individual Canadian provinces. Plaintiff seeks monetary damages in the form of compensatory and punitive damages, on his own behalf and that of a nationwide Canadian class.

On April 12, 2021, IGT and IGT Canada Solutions ULC ("IGT") served Zynga with a lawsuit in the Western District of Texas federal court (the "IGT complaint"), accusing the Company of infringing United States Patent Nos. 8,708,791; 9,159,189; 7,168,089; 7,303,473; 8,795,064; and 8,266,212. The complaint alleges that the following games and certain features contained within them infringe on the IGT patents: *Zynga Poker*, *Words With Friends*, *FarmVille* and Zynga social slots games, including specifically, *Hit It Rich! Slots*. On June 16, 2021, Zynga filed a partial motion to dismiss or strike plaintiff's claims; and in the alternative, for a more definitive statement. IGT filed its opposition brief on June 30, 2021, and Zynga filed its reply on July 7, 2021. The parties are awaiting a hearing on the motion. On September 28, 2021, the court adopted discovery and scheduling deadlines that include a dispositive motion deadline of October 26, 2022, and an anticipated trial date of February 6, 2023.

On February 24, 2022, a putative class action complaint was filed in the U.S. District Court for the Western District of Washington by plaintiffs Tonda Ferrando and Dex Marzano, both of whom purport to be Washington residents, on behalf of a Washington class of individuals who made purchases in the Company's online social casino games, including *Hit it Rich!*, *Black Diamond Casino*, *Wizard of Oz Slots*, *Willy Wonka Slots*, and *Game of Thrones™ Slots Casino*. The complaint alleges that those games violate Washington state laws. Zynga and plaintiffs have agreed to formal mediation.

The Company intends to defend itself vigorously against all claims asserted. At this time, the Company is unable to reasonably estimate the loss or range of loss, if any, arising from any of the above-referenced matters.

The Company is, at various times, also party to various other legal proceedings, claims and/or regulatory inquiries not previously discussed which arise in the ordinary course of business. In addition, the Company may receive notifications alleging infringement of patent or other intellectual property rights. Adverse results in any such litigation, legal proceedings or claims may include awards of substantial monetary damages, expensive legal fees, costly royalty or licensing agreements, or orders preventing us from offering certain games, features, or services, and may also result in changes in the Company's business practices, which could result in additional costs or a loss of revenue and could otherwise harm the Company's business. Although the results of such litigation cannot be predicted with certainty, the Company believes that the amount or range of reasonably possible losses related to such pending or threatened litigation will not have a material adverse effect on its business, operating results, cash flows, or financial condition should such litigation be resolved unfavorably.

16. Subsequent Events

Proposed Merger with Take-Two

On January 9, 2022, the Company entered into an Agreement and Plan of Merger (the "Merger Agreement") with Take-Two Interactive Software, Inc. and two of its wholly-owned subsidiaries ("Take-Two"), pursuant to which, and subject to the satisfaction or waiver of the conditions set forth therein, Zynga would become a wholly-owned subsidiary of Take-Two (the "Combination"). The Combination is intended to qualify as a tax-free reorganization for U.S. federal income tax purposes.

As a result of the Combination, each issued and outstanding share of Zynga's Class A Common Stock, other than dissenting shares and treasury shares, will be converted into a number of shares of Take-Two's common stock (the "Stock Consideration"), equal to the Exchange Ratio (as defined below), and the right to receive $3.50 in cash.

The "Exchange Ratio" will be the following: (i) if the Take-Two Common Stock Price (as defined below) is an amount greater than $181.88, then the Exchange Ratio is 0.0350; (ii) if the Take-Two Common Stock Price is an amount greater than or equal to $156.50 but less than or equal to $181.88, then the Exchange Ratio is an amount equal to the quotient (rounded to five decimal places) obtained by dividing (a) $6.36 by (b) the Take-Two Common Stock Price; and (iii) if the Take-Two Common Stock Price is less than $156.50, then the Exchange Ratio is 0.0406. "Take-Two Common Stock Price" will be the volume-weighted average sales price per share of Take-Two Common Stock on the Nasdaq Global Select Market for the consecutive period beginning at 9:30 a.m. New York time on the twenty-third trading day immediately preceding the closing date of the Combination and concluding at 4:00 p.m. New York time on the third trading day immediately preceding such closing date.

The Merger Agreement also provides that at the effective time of the Combination (the "Effective Time"), (i) issued and outstanding options to purchase Zynga Common Stock will be assumed by Take-Two and automatically converted into options exercisable for shares of Take-Two Common Stock (the "Converted Options"), (ii) each issued and outstanding restricted stock unit award covering Zynga Common Stock will be assumed by Take-Two and automatically converted into a Take-Two restricted share unit award covering shares of Take-Two Common Stock (the "Converted RSUs"), and (iii) each issued and outstanding performance stock unit award covering Zynga Common Stock will be assumed by Take-Two and automatically converted into a Take-Two restricted share unit award covering a number of shares of Take-Two Common Stock determined based on the number of shares of Zynga Common Stock subject to the award immediately prior to the Effective Time as determined in accordance with the requirements of the applicable Zynga award agreement (the "Converted PSUs" and, together with the Converted Options, and the Converted RSUs, the "Converted Awards"), in each case with the number of shares (and exercise price, with respect to Converted Options) adjusted based on an exchange ratio that is intended to maintain the intrinsic value of the award immediately prior to the Effective Time. Following the Effective Time, the Converted Awards will vest based on continued service and will continue to be governed by substantially the same terms and conditions as were applicable to the corresponding Zynga equity awards immediately prior to the Effective Time.

Pursuant to the terms of a "go-shop" provision in the Merger Agreement, during the period beginning on the date of the Merger Agreement and ending on February 24, 2022 (such period, the "Go-Shop Period"), Zynga may (i) solicit, propose or facilitate the making of alternative acquisition proposals from third parties; (ii) provide non-public information to third parties in connection with alternative acquisition proposals; and (iii) participate in discussions and negotiations with third parties regarding alternative acquisition proposals. The Go-Shop Period concluded on February 24, 2022. Zynga and Take-Two have agreed that, commencing at 12:01 a.m. (New York time) on February 25, 2022 (in the case of Zynga), and commencing upon the execution of the Merger Agreement (in the case of Take-Two), Zynga and Take-Two will be subject to "no-shop" restrictions and will not, subject to certain exceptions set forth in the Merger Agreement, (i) solicit or knowingly encourage inquiries or proposals relating to alternative acquisition transactions or (ii) engage in discussions or negotiations regarding, or provide any non-public information to third parties in connection with, alternative acquisition proposals. In addition, each of Zynga and Take-Two have agreed that, subject to certain exceptions, its board of directors will not withdraw its respective recommendations to their respective stockholders in favor of the approval and adoption of Merger Agreement and the Combination (in the case of Zynga), or the approval of the issuance of the Stock Consideration and the adoption of the Take-Two Charter Amendment (as defined below) (in the case of Take-Two).

The closing of the Combination is subject to certain conditions, including (i) the approval and adoption of the Merger Agreement and the Combination by Zynga's stockholders, (ii) the approval of the issuance of the Stock Consideration and the adoption of an amendment to Take-Two's Amended and Restated Certificate of Incorporation increasing the number of authorized shares of Take-Two Common Stock (the "Take-Two Charter Amendment") by Take-Two's stockholders, (iii) the expiration or termination of applicable waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 and clearance under the antitrust laws of certain non-United States jurisdictions, (iv) there having not occurred a material adverse effect on the other party, (v) the effectiveness of a registration statement on Form S-4 with respect to shares of Take-Two Common Stock to be issued in the Merger and (vi) other customary conditions.

Either Zynga or Take-Two may terminate the Merger Agreement if, among certain other circumstances, (i) the Combination has not become effective on or before January 9, 2023 or (ii) Zynga's stockholders fail to approve and adopt the Merger Agreement and the Combination, or Take-Two's stockholders fail to approve the issuance of the Stock Consideration and/or the adoption of the Take-Two Charter Amendment. Zynga may terminate the Merger Agreement in certain additional circumstances, including: (a) to allow Zynga to enter into a definitive agreement for an alternative business combination proposal that constitutes a "superior proposal," or (b) if Take-Two's board of directors withdraws or adversely changes its recommendation to Take-Two's stockholders in favor of the approval of the issuance of the Stock Consideration or the adoption of the Take-Two Charter Amendment. Take-Two may terminate the Merger Agreement in certain additional circumstances, including if Zynga's board of directors withdraws or adversely changes its recommendation to Zynga's stockholders in favor of the approval and adoption of the Merger Agreement and the Combination.

The Merger Agreement provides for the payment of a "termination fee" upon the termination of the Merger Agreement in specified circumstances, including if the Merger Agreement is terminated by either Take-Two or Zynga as a result of an adverse change in the recommendation of the other party's board of directors. In the event that Zynga terminates the Merger Agreement following an adverse change in the recommendation of Take-Two's board of directors, Take-Two would be required to pay to Zynga a termination fee of $550.0 million. In the event that Take-Two terminates the Merger Agreement following an adverse change in the recommendation of Zynga's board of directors, Zynga would be required to pay to Take-Two a termination fee of $550.0 million. In addition, Zynga is required to pay to Take-Two a termination fee of $550 million if Zynga terminates the Merger Agreement to enter into a definitive agreement for an alternative acquisition proposal for Zynga that constitutes a "superior proposal," as defined in the Merger Agreement. If the Merger Agreement is terminated because Zynga's stockholders fail to approve the adoption of the Merger Agreement and the Combination, and Take-Two's stockholders approve the issuance of the Stock Consideration and the adoption of the Take-Two Charter Amendment, Zynga will be required to pay Take-Two an expense reimbursement of $50.0 million. If the Merger Agreement is terminated because Take-Two's stockholders fail to approve the issuance of the Stock Consideration and the adoption of the Take-Two Charter Amendment, and Zynga's stockholders approve the adoption of the Merger Agreement and the Combination, Take-Two will be required to pay to Zynga an expense reimbursement of $50.0 million.

For purposes of this Exhibit 99.2, (i) all references to "Zynga," "we," "our" and "us" refer to Zynga Inc. and its subsidiaries and (ii) all terms used and not otherwise defined have the meanings ascribed to them in Zynga's Annual Report on Form 10-K for the year ended December 31, 2021 (the "Zynga 10-K"). For the avoidance of doubt, the Zynga 10-K is not incorporated by reference into this Current Report on Form 8-K.

Risks Related to Our Business and Industry

The COVID-19 pandemic and containment efforts across the globe have materially altered how individuals interact with each other and have materially affected how we and our business partners are operating, and the extent to which this situation will impact our future results of operations and overall financial performance remains uncertain.

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

As a result of the COVID-19 pandemic, we have temporarily closed Zynga offices around the world (including our corporate headquarters in San Francisco, California) and implemented travel restrictions. Towards the end of the first quarter of 2020, we implemented a remote working program across our global studios and supporting locations, and we engaged with significant vendors (such as Amazon), platform providers (such as Apple and Google), advertising partners (such as Facebook and Google) and other business partners to understand their operating conditions and continue to evaluate our business continuity plans. The full extent to which the COVID-19 pandemic and the various responses to it impact our business, operations and financial results will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the COVID-19 pandemic, including any potential future waves of the COVID-19 pandemic; governmental, business and individuals' actions that have been and continue to be taken in response to the COVID-19 pandemic; the availability and cost to access the capital markets; the effect on our players and their willingness and ability to pay for our games and services; disruptions or restrictions on our employees' ability to work and travel; and interruptions related to our cloud networking and gaming infrastructure and partners, including impacts on Amazon Web Services, mobile application platform providers, advertising partners and customer service and support providers. During the COVID-19 pandemic, we may not be able to provide the same level of product features and customer support that our players expect from us, which could negatively impact our business and operations. While substantially all of our business operations can be performed remotely, many of our employees are juggling additional work-related and personal challenges, including dealing with the prolonged duration of remote working environments, adjusting communication and work practices to collaborate remotely with work colleagues and business partners, managing technical and communication challenges of working from home on a daily basis, looking after children as a result of remote-learning and school closures, making plans for childcare, and caring for themselves, family members or other dependents who are or may become ill. If we seek to access the capital markets or increase our borrowing, there can be no assurance that financing and credit may be available on attractive terms, if at all. We will continue to actively monitor the issues raised by the COVID-19 pandemic and may take further actions that alter our business operations, including as may be required by federal, state, local or foreign authorities or that we determine are in the best interests of our employees, players, partners and stockholders.

The COVID-19 pandemic and resulting social distancing, shelter-in-place and similar restrictions led to increased player engagement from current, lapsed and new players in our games relative to our quarterly forecast and historic trends. These increases in player activity may not be indicative of our financial and operating results in future periods. The effects of the COVID-19 pandemic on society and player behavior are highly uncertain. For example, primarily during the second quarter of 2020, we saw increased player engagement from current, lapsed and new players in our games relative to our quarterly forecast and historic trends. Since then, audience levels have started to return to levels more consistent with prior periods, while player engagement and monetization remain strong. These changes in player activity may not be indicative of our financial and operating results in future periods. Furthermore, there is no assurance that player behavior will not further decrease, including below historic levels, as the full impacts of the pandemic on society and the global economy become more clear. In 2021, we saw the return of shelter-in-place and curfew mandates in certain geographies and other efforts to combat the ongoing pandemic, and there is no certainty how these developments may affect our operations and player behavior.

In addition to the potential direct impacts to our business, the global economy has experienced significant volatility as a result of the actions taken in response to COVID-19, and future government intervention remains uncertain. An uncertain or weakened global economy may impact our players and their purchasing decisions within our games, consumers' buying decisions across the globe and their impact on the allocation of advertising investments and the ability of our business partners to navigate this complex social health and economic environment, any of which could result in disruption to our business and results of our operations. We have experienced heightened levels of variability in the pricing of advertising both in terms of user acquisition and as it relates to our advertising revenues. If additional volatility or unexpected trends resulting in decreased pricing of advertising emerge, the revenue we make from advertisers paying to display ads in our games may be negatively impacted, particularly if the levels of player engagement in our games are not sufficient to offset these declines, and we may experience increased pressure on our overall margins, as our revenue may consist of higher contributions of sales of in-game virtual items.

The duration and extent of the impact from the COVID-19 pandemic depends on future developments that cannot be accurately predicted at this time, such as the severity and transmission rate of the virus and its variants, the existence of any additional waves of the COVID-19 pandemic, the extent and effectiveness of containment actions, continued progress towards widespread rapid testing and effective treatment alternatives and vaccinations, and the impact of these and other factors on our employees, players and business partners. If we are not able to respond to and manage the impact of such events effectively, our business may be harmed.

Our business will suffer if we are unable to entertain our players, develop new games, improve the experience of our existing games and successfully monetize our games.

Our business depends on developing, publishing and continuing to service "free-to-play" games that consumers will download and spend time and money playing. We are primarily focused on mobile gaming, offering our games on mobile devices, including smartphones and tablets on Apple's iOS and Google's Android operating systems, and on social networking platforms such as Facebook and Snapchat. We have devoted and we expect to continue to devote substantial resources to the research, development, analytics and marketing of our games. Our development and marketing efforts are focused on improving the experience of our existing games (frequently through new content and feature releases for our live services), developing new games and successfully monetizing our games. We generate revenue primarily through the sale of in-game virtual items and advertising. For games distributed through third-party platforms, we are required to share a portion of the proceeds from in-game sales with the platform providers. Due to our focus on mobile gaming, these costs are expected to remain a significant operating expense. In order to be profitable, we need to generate sufficient revenue and bookings from our existing and new game offerings to offset our ongoing development, marketing and operating costs.

Successfully monetizing "free-to-play" games is difficult and requires that we deliver valuable and entertaining player experiences that a sufficient number of players will pay for or that we are able to otherwise sufficiently monetize our games (for example, by serving in-game advertising). The success of our games depends, in part, on unpredictable and volatile factors beyond our control including consumer preferences, competing games, new mobile platforms and the availability of other entertainment experiences. If our games do not meet consumer expectations, or if they are not brought to market in a timely and effective manner, our revenue and financial performance will be negatively affected.

In addition to the market factors noted above, our ability to successfully develop games for mobile platforms and their ability to achieve commercial success will depend on our ability to:

- effectively market our games to existing and new players;
- achieve benefits from our player acquisition costs;
- achieve viral organic growth and gain customer interest in our games through free or more efficient channels;
- adapt to changing player preferences;
- adapt to new technologies and feature sets for mobile and other devices;
- expand and enhance games after their initial release;
- attract, retain and motivate talented and experienced game designers, product managers and engineers;
- partner with mobile platforms and obtain featuring opportunities;
- continue to adapt game 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;

- minimize launch delays and cost overruns on the development of new games and features;
- achieve and maintain successful customer engagement and effectively monetize our games;
- maintain a quality social game experience and retain our players;
- develop games that can build upon or become franchise games;
- compete successfully against a large and growing number of existing market participants;
- accurately forecast the timing and expense of our operations, including game and feature development, marketing and customer acquisition, customer adoption and success of bookings growth;
- minimize and quickly resolve bugs or outages; and
- acquire and successfully integrate high quality mobile game assets, personnel or companies.

These and other uncertainties make it difficult to know whether we will succeed in continuing to develop successful live service games and launch new games and features in accordance with our operating plan. If we do not succeed in doing so, our business, financial condition, results of operations and reputation will suffer.

Our industry is intensely competitive and subject to rapid changes. If consumers prefer our competitors' products or services over our own, our operating results could suffer.

Competition in the entertainment industry, especially the mobile gaming segment, is intense and subject to rapid changes, including changes from evolving consumer preferences and emerging technologies. Many new games are introduced in each major industry segment (mobile, PC and console), but only a relatively small number of titles account for a significant portion of total revenue in each segment. Our competitors that develop mobile games vary in size and include companies such as Activision Blizzard, AppLovin, Aristocrat, DoubleU, Electronic Arts, Epic Games, ironSource, Moon Active, NetEase, Netmarble, Niantic, Nintendo, Playrix, Playtika, SciPlay, Scopely, Take-Two Interactive Software, Tencent, Ubisoft, Voodoo SAS and others. As we expand our global operations and gaming offerings, we increasingly face competition from online game developers and distributors who have primarily focused on specific international markets, such as NetEase, Netmarble and Tencent in Asia, and high-profile companies with significant online presences with new and expanded gaming offerings, such as Apple, Google, Microsoft and Snap. In addition, other large companies that to date have not actively focused on mobile and social games, such as Amazon and Facebook, may decide to develop mobile and social games or partner with other developers. Some of these current and potential competitors have significant resources for developing or acquiring additional games, may be able to incorporate their own strong brands and assets into their games, have a more diversified set of revenue sources than we do and may be less severely affected by changes in consumer preferences, regulations or other developments that may impact our industry. Furthermore, with our acquisition of Chartboost, our competitors also include mobile monetization and advertising platforms.

As there are relatively low barriers to entry to develop a mobile or online game, we expect new game competitors to enter the market and existing competitors to allocate more resources to develop and market competing games and applications. We also compete or will compete with a vast number of small companies and individuals who are able to create and launch games and other content for devices and platforms using relatively limited resources and with relatively limited start-up time or expertise. The proliferation of titles in these open developer channels makes it difficult for us to differentiate ourselves from other developers and to compete for players without substantially increasing our marketing expenses and development costs. As an entertainment company, we also face competition for the leisure time, attention and discretionary spending of our players from other non-gaming activities, such as social media and messaging applications, PC and console games, video streaming services, television, movies, sports, reading, audiobooks and the Internet. Increasing competition could result in loss of players, increasing player acquisition and retention costs, and loss of talent, all of which could harm our business, financial condition or results of operations.

Our operating results are volatile and difficult to predict, and our stock price may decline if we fail to meet the expectations of securities analysts or investors.

Our bookings, revenue, player metrics and operating results have fluctuated in the past and could vary significantly from quarter-to-quarter and year-to-year and may fail to match our past performance or the expectations of securities analysts or investors because of a variety of factors, some of which are outside of our control. Factors that may contribute to the variability of our operating results include the risk factors listed in these "Risk Factors" and the factors discussed in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations - Factors Affecting Our Performance."

In particular, it is difficult to predict if, when or how quickly bookings from one of our games may begin to decline. This difficulty may be exacerbated in the short- to intermediate-term by increased uncertainty about player behavior related to the COVID-19 pandemic. These levels of player activity may not sustain over the short-term or longer-term, and there is no assurance that player behavior will not decrease, including below historic levels, as the full impacts of the COVID-19 pandemic on society and the global economy become clearer. In general, the success of our business depends on our ability to consistently and timely launch new games and features that achieve significant popularity and have the potential to become franchise games as bookings from our older games decline. It is difficult for us to predict with certainty when we will launch a new game as games may require longer development schedules or soft launch periods to meet our quality standards and our players' expectations. If declines are higher than expected in a particular quarterly period, we experience delays in the launch of new games or features and/or new games do not monetize well, we may not meet our expectations or the expectations of securities analysts or investors.

In addition, we recognize revenue from the sale of our virtual items in accordance with U.S. GAAP, which is complex and based on our assumptions and historical data with respect to the sale and use of various types of virtual items. In the event of changes in our assumptions or new trends in the mix of virtual items sold, the amount of revenue that we recognize in any particular period may fluctuate significantly. In addition, changes in the policies of Apple, Google or other third party platforms or accounting policies promulgated by the SEC and national accounting standards bodies affecting software and virtual items revenue recognition could further significantly affect the way we report revenue related to our products. Such changes could have an adverse effect on our reported revenue, net income and earnings per share under U.S. GAAP. For example, recurring activity such as new game launches, our acquisition of games from a third party or periods of significant increased bookings can also result in increases in deferred revenue while we initially defer bookings over the estimated average playing period of payers. For further information regarding our revenue recognition policy, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations-Critical Accounting Policies-Revenue Recognition".

Given the rapidly evolving social game industry in which we operate, our historical operating results may not be useful in predicting our future operating results. In addition, metrics we have developed or those available from third parties regarding our industry and the performance of our games, including Mobile DAUs, Mobile MAUs, Mobile MUUs, Mobile MUPs and Mobile ABPU, may not be indicative of our future financial performance.

Our business will suffer if we are unable to successfully acquire or integrate acquired companies into our business or otherwise manage the growth associated with multiple acquisitions.

We have acquired games, businesses, personnel and technologies in the past, and we intend to continue to evaluate and pursue acquisitions and strategic investments. For example, in the second quarter of 2018, we acquired Gram Games Teknoloji A.S. ("Gram Games"), in early 2019, we acquired Small Giant Games Oy ("Small Giant"), in July 2020, we acquired Peak Oyun Yazılım ve Pazarlama Anonim Şirketi ("Peak") after having purchased its casual card game division in the fourth quarter of 2017, in October 2020 we acquired Rollic Games Oyun Yazılım ve Pazarlama Anonim Şirketi ("Rollic"), in August 2021 we acquired Chartboost, Inc. and in October 2021 we acquired the game studio Beijing StarLark Technology Co., Ltd. ("StarLark") along with the *Golf Rival* franchise. Each of these acquisitions requires unique approaches to integration due to, among other reasons, the structure of the acquisitions, their locations and cultural differences among their teams and ours, and has required, and will continue to require, attention from our management team. If we are unable to obtain the anticipated benefits from these acquisitions and strategic investments, or we encounter difficulties in integrating their operations with ours, our financial condition and results of operations could be materially harmed.

Challenges and risks from such investments and acquisitions include:

- negative effects on products and product pipeline from the changes and potential disruption that may follow the acquisition;
- diversion of our management's attention;
- declining employee morale and retention issues resulting from changes in compensation, or changes in management, reporting relationships, or future prospects;

- 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;
- the difficulty in determining the appropriate purchase price of acquired companies may lead to the overpayment of certain acquisitions and the potential impairment of intangible assets and goodwill acquired in the acquisitions;
- the difficulty in successfully evaluating and utilizing the acquired products, technology or personnel, including performing adequate due diligence while pandemic-related travel restrictions and social distancing requirements prevent in-office and in-person meetings and collaboration;
- the potential incurrence of debt, contingent liabilities, amortization expenses or restructuring charges in connection with any acquisition;
- the need to implement 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, particularly, with respect to the effectiveness of cyber and information security practices and incident response plans, compliance with data privacy and protection and other laws and regulations protecting the rights of players and customers, 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 and integrating and reporting results for acquired companies that have not historically followed U.S. GAAP;
- 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;
- under purchase accounting, we may be required to write off deferred revenue which may impair our ability to recognize revenue that would have otherwise been recognizable which may impact our financial performance or that of the acquired company;
- risks associated with our expansion into new international markets and doing business internationally, including those described under the risk factor caption "Our international operations are subject to increased challenges and risks";
- 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;
- the need to transition operations and players onto our existing or new platforms and the potential loss of, or harm to, our relationships with employees, players and other suppliers as a result of integration of new businesses;
- the implications of our management team balancing levels of oversight over acquired businesses which continue their operations under contingent consideration provisions in acquisition agreements;
- our dependence on the accuracy and completeness of statements and disclosures made or actions taken by the companies we acquire or their representatives, when conducting due diligence and evaluating the results of such due diligence; and
- liability for activities of the acquired company before the acquisition, including intellectual property and other litigation claims or disputes, cyber and information security vulnerabilities, violations of laws, rules and regulations, commercial disputes, tax liabilities and other known and unknown liabilities.

The benefits of an acquisition or investment may also take considerable time to develop, and we cannot be certain that any particular acquisition or investment will produce the intended benefits, which could adversely affect our business, financial condition or results of operations. Our ability to grow through future acquisitions will depend on the availability of suitable acquisition and investment candidates at an acceptable cost, our ability to compete effectively to attract these candidates and the availability of financing to complete larger acquisitions. In addition, depending upon the duration and extent of shelter-in-place, travel and other business restrictions adopted by us and imposed by various governments in response to the COVID-19 pandemic, we have and will continue to encounter new challenges in evaluating future acquisitions and integrating personnel, business practices and company cultures. Acquisitions could result in potential dilutive issuances of equity securities, use of significant cash balances or incurrence of debt (and increased interest

expense), contingent liabilities or amortization expenses related to intangible assets or write-offs of goodwill and/or intangible assets, which could adversely affect our results of operations and dilute the economic and voting rights of our stockholders. For more information, see Note 8 - “Goodwill and Intangible Assets, Net” in the notes to the consolidated financial statements included in the Zynga Form 10-K.

A small number of games have generated a majority of our revenue, and we must continue to launch, innovate and enhance games that players like and attract and retain a significant number of players in order to grow our revenue and sustain our competitive position.

Historically, we have depended on a small number of games for a majority of our revenue and we expect that this dependency will continue for the foreseeable future. Revenue and bookings from many of our games may decline over time after reaching a peak of popularity and player usage. As a result, our business depends on our ability to engage with players by consistently and timely launching new games and enhancing existing games with new content, features and events. We believe that certain games have the potential to become franchises that we plan to invest in and support with new games releases and introduction of new features to existing games. Constant game enhancement requires the investment of significant resources, particularly with older games, and such costs on average have increased.

It is difficult to consistently anticipate player demand on a large scale, particularly in relation to evolving player behavior and preferences in response to the COVID-19 pandemic and as we develop games in new categories or new markets, including international markets. If we do not successfully launch games that attract and retain a significant number of players and extend the life of our existing games, our market share, brand and financial results will be harmed.

We rely on a small portion of our total players for a substantial amount of our revenue and if we fail to grow our player base, or if player engagement declines, revenue, bookings and operating results will be harmed.

Compared to all players who play our games in any period, only a small portion are paying players. In 2021, we had approximately 1.3 million average Mobile MUPs (excluding players of our mobile messenger games (prior to the third quarter of 2021), our hyper-casual games which includes the games acquired from Rollic, *Puzzle Combat*, *Merge Magic!*, and games acquired from Gram Games, Small Giant, Peak and StarLark), who represented approximately 3.8% of our average Mobile MUUs. In order to sustain and grow our revenue levels, we must attract, retain and increase the number of paying players or more effectively monetize our players through advertising and other strategies. To retain players, we must devote significant resources so that the games they play retain their interest and attract them to our other games. We might not succeed in our efforts to increase the monetization rates of our users, particularly if we are unable to retain our paying players. If we fail to grow or sustain the number of our paying players, if the rates at which we attract and retain paying players declines, (whether due to financial hardship as a result of an economic downturn, such as the disruption caused by the COVID-19 pandemic, or for any other reason), or if the average amount our players pay declines, our business may not grow and our financial results will suffer.

The value of our virtual items is highly dependent on how we manage the economies in our games. If we fail to manage our game economies properly, our business may suffer.

Paying players make purchases in our games because of the perceived value of these virtual items, which is dependent on the relative ease of obtaining an equivalent good by playing our game. The perceived value of these virtual items can be impacted by various actions that we take in the games including offering discounts for virtual items, giving away virtual items in promotions or providing easier non-paid means to secure these goods. Managing game economies is difficult, and relies on our assumptions and judgement. If we fail to manage our virtual economies properly or fail to promptly and successfully respond to any such disruption, our reputation may suffer and our players may be less likely to play our games and to purchase virtual items from us in the future, which would cause our business, financial condition and results of operations to suffer.

Our revenue may be harmed by the proliferation of “cheating” programs and scam offers that seek to exploit our games and players, which may negatively affect game-playing experience and our ability to reliably validate our audience metric reporting and may lead players to stop playing our games.

Unrelated third parties have developed, and may continue to develop, “cheating” programs that enable players to exploit vulnerabilities in our games, play them in an automated way, collude to alter the intended game play or obtain unfair advantages over other players who do play fairly. These programs harm the experience of players who play fairly, may disrupt the virtual economies of our games and reduce the demand for virtual items, disrupting our in-game economy. In

addition, unrelated third parties have attempted to scam our players with fake offers for virtual items or other game benefits. We devote significant resources to discover, discourage and disable these cheating and scam programs and activities. If we are unable to do so quickly, our operations may be disrupted, our reputation may be damaged, players may stop playing our games and our ability to reliably validate our audience metrics may be negatively affected. These cheating programs and scam offers result in lost revenue from paying players, disrupt our in-game economies, divert time from our personnel, increase costs of developing technological measures to combat these programs and activities, increase our customer service costs needed to respond to dissatisfied players, and may lead to legal claims.

Some of our players may make sales or purchases of virtual items used in our games through unauthorized or fraudulent third-party websites, which may reduce our revenue.

Virtual items in our games have no monetary value outside of our games. Nonetheless, some of our players may make sales and/or purchases of our virtual items, such as virtual coins for our Social Slots games or *Zynga Poker* virtual poker chips, through unauthorized third-party sellers in exchange for real currency. These unauthorized or fraudulent transactions are usually arranged on third-party websites and the virtual items offered may have been obtained through unauthorized means such as exploiting vulnerabilities in our games, from scamming our players with fake offers for virtual items or other game benefits, or from credit card fraud. 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 by, among other things:

- decreasing revenue from authorized transactions;
- creating downward pressure on the prices we charge players for our virtual items;
- increasing chargebacks from unauthorized credit card transactions;
- causing us to lose revenue from dissatisfied players who stop playing a particular game;
- causing us to lose revenue from players who we take disciplinary action against, including banning certain players who may have previously made purchases within our games;
- increasing costs we incur to develop technological measures to curtail unauthorized transactions;
- resulting in negative publicity or harm our reputation with players and partners; and
- increasing customer support costs to respond to dissatisfied players.

To discourage unauthorized purchases and sales of our virtual items, we state in our terms of service that the buying or selling of virtual items from unauthorized third party sellers may result in bans from our games or legal action. With a community of players in the millions, we periodically encounter such issues and expect to continue to do so. We have banned players as a result of such activities. We have also filed lawsuits against third parties attempting to “sell” virtual items from our games, particularly poker chips from *Zynga Poker*, outside of our games. We have also employed technological measures to help detect unauthorized transactions and continue to develop additional methods and processes by which we can identify unauthorized transactions and block such transactions. However, there can be no assurance that our efforts to detect, prevent or minimize these unauthorized or fraudulent transactions will be successful and that these actions will not increase over time.

If we do not successfully invest in, establish and maintain awareness of our brand and games, if we incur excessive expenses promoting and maintaining our brand or our games, or if our games contain defects or objectionable content, our business, financial condition, results of operations or reputation could be harmed.

We believe that establishing and maintaining our brand is critical to maintaining and creating favorable relationships with players, platform providers, advertisers and content licensors, as well as competing for key talent. Increasing awareness of our brand and recognition of our games is particularly important in connection with our strategic focus on developing games based on our own intellectual property and successfully cross-promoting our games. In addition, globalizing and extending our brand and recognition of our games requires significant investment and extensive management time to execute successfully. Although we make significant sales and marketing expenditures in connection with the launch of our games, these efforts may not succeed in increasing awareness of our brand or the new games. If we fail to increase and maintain brand awareness and consumer recognition of our games, our potential revenues could be limited, our costs could increase and our business, financial condition, results of operations or reputation could suffer.

In addition, if a game contains objectionable content or the messaging functionality of our games is abused, we could experience damage to our reputation and brand. Despite reasonable precautions, some consumers may be offended by certain game content, the third-party advertisements displayed in our games, or by treatment of other users. If consumers believe that a game we published or third-party advertisement displayed in a game contains objectionable content, it could harm our brand and consumers could refuse to play it and could pressure the platform providers to remove the game from their platforms. For example, we rely on third-party advertising partners to display advertisements within our games, we have experienced (and may experience in the future) instances where offensive or objectionable content has been displayed in our games through our advertising partners. While this may violate the terms of our agreements with these advertising partners, our reputation and player experience may suffer. Furthermore, steps that we may take in response to such instances, such as temporarily or permanently shutting off access of such advertising partner to our network, may negatively impact our revenue in such period.

Similarly, our games may contain errors, bugs, flaws, corrupted data, defects and other vulnerabilities, some of which may only become apparent after their launch, particularly as we launch new games and rapidly release new features to existing games. Any such errors, flaws, defects and vulnerabilities may be exploited by cheating programs and other forms of misappropriation, disrupt our operations, adversely affect the game experience of our players, harm our reputation, cause our players to stop playing our games, divert our resources and delay market acceptance of our games, any of which could result in legal liability to us or harm our business, financial condition or results of operations.

If we are able to develop new games and features that achieve success, it is possible that these games and features could divert players of our other games without growing our overall user base, which could harm operating results.

Although it is important to our future success that we develop new games and features that are popular with players, it is possible that new games and features may reduce the amount of time players spend with our other games. In particular, we plan to continue leveraging our existing games to cross-promote new games and features, which may encourage players of existing games to divert some of their playing time and discretionary spending away from our existing games. If new games and game features do not grow our player base, increase the overall amount of time our players spend with our games, or generate sufficient new bookings to offset any declines from our other games, our revenue and bookings could be adversely affected.

We have a history of net losses and our revenue, bookings and operating margins may decline. We also may incur substantial net losses in the future and may not sustain profitability.

The industry in which we operate is highly competitive and rapidly changing, and relies heavily on successful new product launches and continually introducing compelling content, products and services. As such, if we fail to deliver such content, products and services, do not execute our strategy successfully or if our new content launches are delayed, our revenue, bookings and audience numbers may decline, and our operating results will suffer. As of December 31, 2021, we had an accumulated deficit of $2.4 billion.

In addition, our operating margin may experience downward pressure as a result of increasing competition and the other risks discussed in this report. We expect to continue to expend substantial financial and other resources on game development, our technology stack, game engines, game technology and tools, the expansion of our network, international expansion and marketing. Our operating costs will increase and our operating margins may decline if we do not effectively manage costs, launch new products on schedule that monetize successfully and enhance our franchise games so that these games continue to monetize successfully. In addition, weak economic conditions or other factors could cause our business to further contract, requiring us to implement significant additional cost cutting measures, including a decrease in research and development and sales and marketing, which could harm our long-term prospects.

If our revenues do not increase to offset any additional expenses, if we fail to manage or experience unexpected increases in operating expenses or if we are required to take additional charges related to impairments or restructurings, our financial results and results of operations may suffer.

We rely on assumptions and estimates to calculate certain of our key metrics, and real or perceived inaccuracies in such metrics may harm our reputation and negatively affect our business.

Certain of our key metrics, including Mobile DAUs, Mobile MAUs, Mobile MUUs, Mobile MUPs, and Mobile ABPU are calculated using data tracked by our internal analytics systems based on tracking activity of user accounts. The analytics systems and the resulting data have not been independently verified. While these numbers are based on what we believe to

be reasonable calculations for the applicable period of measurement, there are inherent challenges in measuring usage and user engagement across our user base and our recently acquired operations, and factors relating to user activity and systems may impact these numbers. The calculation of our key metrics and examples of how user activity and our systems may impact the calculation of these metrics is described in detail under the heading titled "Management's Discussion and Analysis of Financial Condition and Results of Operations-Key Measures and Metrics."

Our accuracy in calculating these metrics is further challenged by our focus on mobile gaming. As described under the heading titled "Management's Discussion and Analysis of Financial Condition and Results of Operations-Key Measures and Metrics," we rely on the accuracy and transparency of data provided by individuals and reported by third parties to calculate our metrics and eliminate duplication of data. For purposes of calculating Mobile MUUs and Mobile MUPs, for certain periods, we are unable to distinguish whether players of certain games are also players of our other games. As a result, we exclude players of these games from our calculation of Mobile MUUs and Mobile MUPs for those periods to avoid potential double counting.

Our advertisers and investors rely on our key metrics as a representation of our performance. We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy. If we determine that we can no longer calculate any of our key metrics with a sufficient degree of accuracy, and we cannot find an adequate replacement for the metric, our business, financial condition or results of operations may be harmed. In addition, if advertisers, platform partners or investors do not perceive our user metrics to be accurate representations of our user base or user engagement, or if we discover material inaccuracies in our user metrics, our reputation may be harmed and advertisers and platform partners may be less willing to allocate their budgets or resources to our products and services, which could negatively affect our business, financial condition or results of operations.

Our business and growth may suffer if we fail to attract, retain and motivate key personnel.

Our ability to compete and grow depends in large part on the efforts and talents of our employees and executives. Our success depends in a large part upon the continued service of our senior management team, who are critical to our vision, strategic direction, culture, products and technology, and the continued retention of our entire senior management team is important to the success of our operating plan. We do not have employment agreements, other than offer letters, with our senior management team, and we do not maintain key-man insurance for members of our senior management team. The loss of any member of our senior management team could cause disruption and harm our business, financial condition, results of operations or reputation.

In addition, our ability to execute our strategy depends on our continued ability to identify, hire, develop, motivate and retain highly skilled employees, particularly in the competitive fields of game design, product management, engineering and data science. These employees are in high demand, and we devote significant resources to identifying, recruiting, hiring, training, successfully integrating and retaining them. Interviewing, hiring and integrating new employees while working remotely presents our teams with new challenges. We have continued to experience significant turnover in our headcount, which has placed and will continue to place significant demands on our management and our operational, financial and technological infrastructure. As of December 31, 2021, approximately 34% of our employees had been with us for less than one year and approximately 51% for less than two years. As part of our global remote working plans, throughout the duration of the COVID-19 pandemic, we have devoted, and will continue to devote, increased efforts to maintaining the collaborative culture of Zynga, including through the use of videoconferencing and other online communication and sharing tools, and each of our global studios and to monitoring the health, safety, morale and productivity of our employees, including new employees, as we evaluate the impacts of this changing situation on our business and employees. As we evaluate options for the post-pandemic re-opening of our offices, we face uncertainty as to what our future workplace will look like and our ability to hire, motivate and retain our employees, as we strive to balance the health and safety of our employees with our employees' preferences for collaboration and flexible work arrangements, while also maintaining efficient work streams, employee morale, and company culture.

We believe that two critical components of our success and our ability to retain our best people are our culture and our competitive compensation practices. Any volatility in our operating results and the trading price of our Class A common stock may cause our employee base to be more vulnerable to be targeted for recruitment by competitors. 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. If we are unable to identify, hire and retain our senior management team and our key employees, our business, financial condition or results of operations could be harmed. Moreover, if our team fails to work together effectively to execute our plans and strategies on a timely basis, our business, financial condition or results of operations could be harmed.

We have historically hired a number of key personnel through acquisitions, and as competition with other game companies 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.

Our core values of focusing on our players and acting for the long-term may conflict with the short-term expectations of analysts.

We believe surprising and delighting our players is essential to our success and serves the best, long-term interests of Zynga and our stockholders. Therefore, we have made in the past and we may make in the future, significant investments or changes in strategy that we think will benefit us in the long-term, even if our decision has the potential to negatively impact our operating results in the short term. In addition, our decisions may not result in the long-term benefits that we expect, in which case the success of our games, business, financial condition or results of operations could be harmed.

If the use of mobile devices as game platforms and the proliferation of mobile devices generally do not increase, our business could be adversely affected.

The number of people using mobile Internet-enabled devices has increased dramatically over time and we expect that this trend will continue. However, the mobile market, particularly the market for mobile games, may not grow in the way we anticipate. Our future success is substantially dependent upon the continued growth of the market for mobile games. In addition, we do not currently offer our games on all mobile devices. If the mobile devices on which our games are available decline in popularity or become obsolete faster than anticipated, we could experience a decline in revenue and bookings and may not achieve the anticipated return on our development efforts. Any such declines in the growth of the mobile market or in the use of mobile devices for games could harm our business, financial condition or results of operations.

Our international operations are subject to increased challenges and risks.

Continuing to expand our business to attract players in countries other than the U.S. is a critical element of our business strategy. An important part of targeting international markets is developing offerings that are localized and customized for the players in those markets. We expect to continue to expand our international operations in the future by opening new international studio locations and expanding our offerings in additional countries and languages. Our ability to expand our business and to attract talented employees and players in an increasing number of international markets will require considerable management attention and resources and is subject to the particular challenges of supporting a rapidly growing business in an environment of multiple languages, cultures, customs, legal systems, alternative dispute systems, regulatory systems and commercial infrastructures. We have experienced difficulties in the past and have not been successful in all the countries we have entered. Expanding our international focus may subject us to risks that we have not faced before or increase risks that we currently face, including risks associated with:

- inability to offer certain games in certain foreign countries;
- recruiting and retaining talented and capable management and employees in foreign countries;
- challenges caused by distance, language and cultural differences;
- developing and customizing games and other offerings that appeal to the tastes and preferences of players in international markets;
- competition from local game makers with intellectual property rights and significant market share in those markets and with a better understanding of player preferences;
- compliance with applicable foreign laws and regulations, including privacy laws (for example, the European Union's General Data Protection Regulation and the California Consumer Privacy Act of 2018) and laws relating to content and consumer protection (for example, the United Kingdom's Office of Fair Trading's 2014 principles relating to in-app purchases in free-to-play games that are directed toward children 16 and under);
- 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 virtual items in a manner that complies with local laws and practices and protects us from fraud;
- compliance with anti-bribery laws, including the Foreign Corrupt Practices Act;
- credit risk and higher levels of payment fraud;
- currency exchange rate fluctuations;
- protectionist laws and business practices that favor local businesses in some countries;
- double taxation of our international earnings and potentially adverse tax consequences due to changes in the tax laws of the U.S. or the foreign jurisdictions in which we operate;
- political, economic and social instability;
- public health crises, such as the COVID-19 pandemic, which can result in varying impacts to our employees, players, vendors and commercial partners internationally;
- higher costs associated with doing business internationally;
- export or import regulations; and
- trade and tariff restrictions.

If we are unable to manage the complexity of our global operations successfully, our business, financial condition and operating results could be adversely affected. Additionally, our ability to successfully gain market acceptance in any particular market is uncertain, and the distraction of our senior management team could harm our business, financial condition or results of operations.

Any restructuring actions and cost reduction initiatives that we undertake may not deliver the expected results and these actions may adversely affect our business.

We have implemented a number of restructurings in the past in which we implemented certain restructuring actions and cost reduction initiatives to streamline operations and improve cost efficiencies to better align our operating expenses with our revenue, including reducing our headcount, rationalizing our product pipeline, reducing marketing and technology expenditures and consolidating and closing certain facilities. We plan to continue to manage costs to better and more efficiently manage our business. Our restructuring plans and other such efforts could result in disruptions to our operations and adversely affect our business, financial condition or results of operations.

We actively monitor our costs, however, if we do not fully realize or maintain the anticipated benefits of any restructuring actions and cost reduction initiatives, our business, financial condition or results of operations could be adversely affected, and additional restructuring initiatives may be necessary. In addition, we cannot be sure that the cost reduction initiatives will be as successful in reducing our overall expenses as expected or that additional costs will not offset any such reductions. If our operating costs are higher than we expect or if we do not maintain adequate control of our costs and expenses, our operating results will suffer.

In addition, our cost-cutting measures could negatively impact our business, financial condition or results of operations including but not limited to, delaying the introduction of new games, features or events, interrupting live services, impairing our control environment, delaying introduction of new technology, impacting our ability to react nimbly to game or technology issues, or impacting employee retention and morale.

Our investment portfolio may become impaired by deterioration of the financial markets.

Our cash equivalent and investment portfolio is invested with a goal of preserving our access to capital, and generally consists money market funds, corporate debt securities, U.S. government and government agency debt securities, mutual funds, certificates of deposit and time deposits. We follow an established investment policy and set of guidelines to monitor and help mitigate our exposure to interest rate and credit risk. The policy sets forth credit quality standards, permissible allocations of certain sectors and limits our exposure to specific investment types. Volatility in the global financial markets can negatively impact the value of our investments. If financial markets experience volatility,

investments in some financial instruments may pose risks arising from market liquidity and credit concerns. In addition, any disruption of the capital markets could cause our other income and expense to vary from expectations. Although we believe our current investment portfolio has a low risk of material impairment, we cannot predict future market conditions, market liquidity or credit availability, and can provide no assurance that our investment portfolio will remain materially unimpaired.

The occurrence of an earthquake, other natural disaster or other significant business interruption at or near any of our facilities could cause damage to our facilities and equipment and interfere with our operations.

Our principal offices are located in the San Francisco Bay Area, an area known for earthquakes, and are thus vulnerable to damage. All of our facilities are also vulnerable to damage from natural or manmade disasters, including power loss, fire, 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.

Risks Related to Our Dependence on Third Parties

We rely on third-party platforms such as the Apple App Store and the Google Play Store to distribute our games and collect revenue. If we are unable to maintain a good relationship with such platform providers, if their terms and conditions or pricing changed to our detriment, if we violate, or if a platform provider believes that we have violated, the terms and conditions of its platform, or if any of these platforms loses market share or falls out of favor or is unavailable for a prolonged period of time, our business will suffer.

We derive a significant portion of our bookings from distribution of our games on the Apple App Store and the Google Play Store, and the virtual items we sell in our games are purchased using the payment processing systems of these platform providers. In 2021, we derived 50% of our revenue and bookings on Apple platforms and 46% of our revenue and 45% of our bookings on Google platforms. In response to the ongoing COVID-19 pandemic, we have engaged with our partners at Apple, Google and other platform providers to understand their operations and have evaluated our business disruption plans. While we do not anticipate any interruption in their distribution platforms or ability to accept customer payments, any such disruptions, even temporary, may have material impacts on our business and operations.

We are subject to the standard policies and terms of service of third-party platforms, which govern the promotion, distribution, content and operation generally of games on the platform. Each platform provider has broad discretion to change and interpret its terms of service and other policies with respect to us and other developers, 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 we are able to advertise on the platform, change how the personal information of its users is made available to application developers on the platform, limit the use of personal information for advertising purposes, or restrict how players can share information with their friends on the platform or across platforms. For example, in December 2017, Apple revised its App Store Guidelines to require the disclosure of the odds of receiving certain types of virtual items from “loot boxes” (or similar mechanisms that offer a paid license to randomized virtual items) before customers purchase a license for the virtual items, and in May 2019 Google revised its Play Store policies to require similar disclosures. As another example, in April 2021, Apple released iOS version 14.5 which requires its users (and presumably users of future iOS versions), on an app-by-app basis, to explicitly opt-in to the use of identifier-for-advertising, a device identifier assigned by Apple to each of its devices and used by advertisers to attribute app installs to advertising campaigns, target users through user acquisition, and deliver targeted ads. Additionally, in February 2022, Google announced plans to make privacy-focused changes to its Android advertising identifiers after a two-year process, taking into account feedback from developers, regulators and other interested parties. We are continuing to evaluate how these rules or changes may affect our business, operations and financial results.

Furthermore, our social casino games have been noted in purported class-action complaints against our third-party platform providers where we are not the named defendants. For example, in February 2021, plaintiffs filed a purported class-action lawsuit in a California federal court against Apple alleging that Apple violated several states’ gambling laws by allowing the plaintiffs to download and play our social casino games. Similar allegations have been made in suits filed by plaintiffs in several U.S. states against Apple and/or Google in connection with their distribution of social casino games, some of which include a reference to Zynga or its social casino games. These lawsuits, or similar suits in the future, could cause Google, Apple, or other third-party platform providers to deny our social casino games access to their platforms, or the platforms could seek to pass on liability, including defense costs, for these suits to us under the indemnity provisions in our agreements with such platforms, which could have a material adverse effect on our results of operations, cash flows, or financial condition.

In addition, third-party platforms also impose certain file size limitations, which may limit the ability of players to download some of our larger games in over-the-air updates. Aside from these over-the-air file size limitations, a larger game file size could cause players to delete our games once the file size grows beyond the capacity of their devices' storage limitations or could reduce the number of downloads of these games.

Such terms of use changes may decrease the visibility or availability of our games, limit our distribution capabilities, prevent access to our existing games, reduce the amount of revenue and bookings we may recognize from in-game purchases, increase our costs to operate on these platforms or result in the exclusion or limitation of our games on such platforms. Any such changes could adversely affect our business, financial condition or results of operations.

If we violate, or a platform provider believes we have violated, its terms of service (or if there is any change or deterioration in our relationship with these platform providers), that platform provider could limit or discontinue our access to the platform. A platform provider could also limit or discontinue our access to the platform if it establishes more favorable relationships with one or more of our competitors or it determines that we are a competitor. Any limit or discontinuation of our access to any platform could adversely affect our business, financial condition or results of operations.

We also rely on the continued popularity, customer 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. If either of these events recurs on a prolonged, or even short-term, basis or other similar issues arise that impact players' ability to access our games, access social features or purchase a license to virtual items, our business, financial condition, results of operations or reputation may be harmed.

We rely on third-party hosting and cloud computing providers, like Amazon Web Services ("AWS"), to operate certain aspects of our business. A significant portion of our game traffic is hosted by a single vendor, and any failure, disruption or significant interruption in our network or hosting and cloud services could adversely impact our operations and harm our business.

Our technology infrastructure is critical to the performance of our games and to player satisfaction, as well as our corporate functions. Our games and company systems run on a complex distributed system, or what is commonly known as cloud computing. We own, operate and maintain elements of this system, but significant elements of this system are operated by third-parties that we do not control and which would require significant time and expense to replace. We expect this dependence on third-parties to continue. We have suffered interruptions in service in the past, including when releasing new software versions or bug fixes, and if any such interruption were significant and/or prolonged it could adversely affect our business, financial condition, results of operations or reputation.

In particular, a significant portion, if not almost all, of our game traffic, data storage, data processing and other computing services and systems is hosted by AWS. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. The agreement requires AWS to provide us their standard computing and storage capacity and related support in exchange for timely payment by us. We have experienced, and may in the future experience, disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, human or software errors and capacity constraints. If a particular game is unavailable when players attempt to access it or navigation through a game is slower than they expect, players may stop playing the game and may be less likely to return to the game as often, if at all.

Any failure, disruption or interference with our use of hosted cloud computing services and systems provided by third-parties, like AWS, could adversely impact our business, financial condition or results of operations. In response to the ongoing COVID-19 pandemic, we have engaged with our partners at AWS to understand their operations and have evaluated our business disruption plans. In addition, since many of the technical specialists responsible for managing disruptions to our technology infrastructure are working from home in accordance with shelter-in-place orders issued due to the COVID-19 pandemic, the time required to remedy any interruption may increase. To the extent we do not effectively respond to any such interruptions, upgrade our systems as needed and continually develop our technology and network architecture to accommodate traffic, our business, financial condition or results of operations could be adversely affected. In addition, we do not maintain insurance policies covering losses relating to our systems and we do not have business interruption insurance. Furthermore, our disaster recovery systems and those of third-parties with which we do

business may not function as intended or may fail to adequately protect our critical business information in the event of a significant business interruption, which may cause interruption in service of our games, security breaches or the loss of data or functionality, leading to a negative effect on our business, financial condition or results of operations.

We derive a significant portion of our revenues from advertisements and offers that are incorporated into our free-to-play games through relationships with third parties. If we are unable to continue to compete for these advertisements and offers, or if any events occur that negatively impact our relationships with advertisers, our advertising revenues and operating results would be negatively impacted.

We derive a significant portion of our revenues though advertisements and offers we serve to players. We need to maintain good relationships with advertisers to provide us with a sufficient inventory of advertisements and offers. Online advertising, including through mobile games and other mobile applications, is an intensely competitive industry. Many large companies, such as Amazon, Facebook and Google, invest significantly in data analytics to make their websites and platforms more attractive to advertisers. In order for our advertising business to continue to succeed, we need to continue to demonstrate the reach of our player network and success of our advertising partners. If our relationship with any advertising partners terminates for any reason, or if the commercial terms of our relationships are changed or do not continue to be renewed on favorable terms, we would need to qualify new advertising partners, which could negatively impact our revenues, at least in the short term. Furthermore, our Chartboost subsidiary derives its revenue from business clients, many of which are mobile game publishers, who use Chartboost's programmatic mobile advertising and monetization platform. Such clients often engage with several mobile advertising platforms and networks concurrently, thus Chartboost's business faces significant competition.

In addition, internet-connected devices and operating systems controlled by third parties increasingly contain features that allow device users to disable functionality that allows for the delivery of advertising on their devices. Device and browser manufacturers may include or expand these features as part of their standard device specifications. For example, when Apple announced that UDID, a standard device identifier used in some applications, was being superseded and would no longer be supported, application developers were required to update their apps to utilize alternative device identifiers such as universally unique identifier, or, more recently, identifier-for-advertising, which simplifies the process for Apple users to opt out of behavioral targeting. In June 2020, Apple announced further changes, requiring its users with iOS 14 (and presumably future iOS versions) to request a user's permission to track them or to access their mobile device's identifier for advertising. Those changes, known as Apple's AppTracking Transparency framework, went into effect in late April 2021, with the release of iOS 14.5. If users do not elect participate in functionality that supports the delivery of targeted advertising on their devices, our ability to deliver effective advertising campaigns on behalf of our advertisers could suffer, which could cause our business, financial condition, or results of operations to suffer.

Finally, the revenues that we derive from advertisements and offers is subject both to seasonality, as companies' advertising budgets are generally highest during the fourth quarter and decline significantly in the first quarter of the following year, which negatively impacts our revenues in the first quarter, and to the financial health of advertisers, who, as they experience downturns or uncertainty in their own business operations for various reasons, such as the economic effects resulting from the COVID-19 pandemic, may decrease their advertising spending.

Our ability to acquire and maintain licenses to intellectual property may affect our revenue and profitability. Competition for these licenses may make them more expensive and increase our costs.

While most of the intellectual property we use in our games is created by us, we also acquire rights to third-party intellectual property. For example, we use licensed intellectual property as creative assets in games such as *Game of Thrones™ Slots Casino*, *Harry Potter™: Puzzles & Spells*, *Hit It Rich! Slots*, *Wizard of Oz Slots* and *Wonka's World of Candy*, and we are developing new games using licensed intellectual property such as Star Wars™.

Proprietary licenses typically 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. We have and may continue to experience delays in working with licensors and their proprietary content as we partner with them to develop new games and features. While these delays have not been material to date, it is possible that the COVID-19 pandemic may divert executive attention and other resources from us or our licensing partners and presents other business challenges, such as dependence on the need for resources only available in physical office locations. Competition for these licenses is intense, and often results in increased advances, minimum payment guarantees and royalties that we must pay to the licensor. 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 revenue and profitability may be

adversely impacted. In addition, use of these intellectual properties generally requires that we pay a royalty to the licensor, which decreases our profitability. If the mix of player purchases shifts towards games in which we use licensed intellectual properties increases, our overall margins may be reduced.

In addition, many of our games are built on proprietary source code of third parties, such as Unity and Epic Games. If we are unable to renew licenses to proprietary source code underlying our games, or the terms and conditions of these licenses change at the time of renewal our business, financial condition or results of operations could be negatively impacted. We rely on third parties, including Unity and Epic Games, to maintain versions of their proprietary engines that allow us to ship our 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 or results of operations could be negatively impacted.

Companies and governmental agencies may restrict access to platforms, our website, mobile applications or the Internet generally, which could lead to the loss or slower growth of our player base.

Our players generally need to access the Internet and in particular platforms such as the Apple App Store, the Google Play Store, Facebook, Snapchat or our website to play our games. Companies and governmental agencies could block access to any platform, our website, mobile applications or the Internet generally for a number of reasons such as security or confidentiality concerns or regulatory reasons, or they may adopt policies that prohibit employees from accessing Apple, Google, Facebook and our website or any social platform. If companies or governmental entities block or limit such or otherwise adopt policies restricting players from playing our games, our business could be negatively impacted and could lead to the loss or slower growth of our player base.

We are subject to counterparty risk with respect to the capped call transactions.

The counterparties to the capped call transactions entered into in connection with the offering of the Notes (as defined below) are financial institutions, and we will be subject to the risk that one or more of the counterparties may default or otherwise fail to perform, or may exercise certain rights to terminate, their obligations under the capped call transactions. Our exposure to the credit risk of the counterparties will not be secured by any collateral. Global economic conditions have in the past resulted in the actual or perceived failure or financial difficulties of many financial institutions. If a counterparty to one or more capped call transactions becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at the time under such transactions. Our exposure will depend on many factors but, generally, our exposure will increase if the market price or the volatility of our Class A common stock increases. In addition, upon a default or other failure to perform, or a termination of obligations, by a counterparty, the counterparty may fail to deliver the shares of our Class A common stock required to be delivered to us under the capped call transactions and we may suffer adverse tax consequences or experience more dilution than we currently anticipate with respect to our Class A common stock. We can provide no assurances as to the financial stability or viability of the counterparties.

Risks Related to Legal or Regulatory Compliance

Cybersecurity attacks, including breaches, computer viruses and computer hacking attacks could harm our business, financial condition, results of operations or reputation.

Cybersecurity attacks, including breaches, computer malware, computer hacking and insider threats have become more prevalent in our industry, and experts have warned that the global disruption related to the COVID-19 pandemic and remote working conditions have resulted in increased threats and malicious activity. Any cybersecurity breach caused by hacking, which involves efforts to gain unauthorized access to information or systems, or to cause intentional malfunctions or loss or corruption of data, software, hardware or other computer equipment, or the inadvertent transmission of computer viruses could adversely affect our business, financial condition, results of operations or reputation. We have experienced and will continue to experience hacking attacks of varying degrees from time to time. Because of our prominence in the social game industry, we believe we are a particularly attractive target for hackers. Additionally, rapidly evolving technology and capabilities, evolving changes in the sources, capabilities and targets for cybersecurity attacks, as well as the increasing sophistication of cyber criminals increase the risk of material data compromise or business disruption. As cybersecurity threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities. The inability to implement, maintain and upgrade adequate safeguards could have a material adverse effect on our business.

In addition, we store sensitive information, including personal information about our employees, and our games involve the storage and transmission of players' personal information on equipment, networks and corporate systems run by us or managed by third-parties including Amazon, Apple, Facebook, Google and Microsoft. We are subject to global laws, rules and regulations requiring us to provide notification to players, investors, regulators and other affected parties in the event of a security breach of certain personal data, or requiring the adoption of minimum information security standards that are often vaguely defined and difficult to practically implement. These laws and regulations may change or be interpreted and applied differently over time and from jurisdiction to jurisdiction. The costs of compliance with these laws, including, among others, the European Union's General Data Protection Regulation ("GDPR") and the California Consumer Privacy Act of 2018 ("CCPA"), have increased and may increase in the future. Our corporate systems, third-party systems and security measures may be breached due to the actions of outside parties, employee error, malfeasance, a combination of these, or otherwise, and, as a result, an unauthorized party may obtain access to, or compromise the integrity of, our data, our employees' data, our players' data or any third-party data we may possess. Any such security breach could require us to comply with various breach notification laws, may affect our ability to operate and may expose us to litigation, remediation and investigation costs, increased costs for security measures, loss of revenue, damage to our reputation and potential liability, each of which could be material.

In September 2019, we announced that an incident had occurred that involved player data (the "Data Incident"). Upon our discovery of the Data Incident, an investigation was immediately commenced and leading advisors and third-party forensics firms were retained to assist. The investigation revealed that, during the third quarter of 2019, outside hackers illegally accessed certain player account information and other Zynga information, and that no financial information was accessed. We provided notifications to players, investors, regulators and other third parties, where we believed notice was required or appropriate. We may continue to experience increased costs related to our response to the Data Incident and our efforts to further enhance our security measures. In addition, it is possible that the Data Incident may result in loss of players and partners, harm to our reputation, increased costs to maintain insurance coverage, devotion of substantial management time, litigation or regulatory enforcement, claims for indemnification obligations, future cybersecurity attacks and other potential liabilities. We are currently subject to consumer class action complaints filed in connection with the Data Incident, as further described in the section titled "Legal Matters" included in Note 15 -"Commitments and Contingencies" in the notes to the consolidated financial statements included in the Zynga Form 10-K. While we intend to defend ourselves vigorously against the claims asserted, we cannot anticipate the potential outcomes, costs and expenses associated with these and any future lawsuits. Although we maintain insurance, the amount of our insurance may not cover the costs associated with such consumer class actions.

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 harm our business.

We receive, store and process personal information and other player data, and we enable our players to share their personal information with each other and with third parties, including on the Internet and mobile platforms. 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 player data on the Internet and mobile platforms, and with our acquisition of Chartboost, we are subject to additional laws and contractual obligations relating to its advertising operations. The scope of these laws 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. Global privacy laws and regulations are constantly emerging and evolving and may change or be interpreted and applied differently over time and from jurisdiction to jurisdiction, resulting in greater compliance burdens and costs associated with efforts to comply. 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 users, which has created a greater compliance burden for us and other companies with European users, and subjects violators to substantial monetary penalties. Another example is the State of California's passage of the CCPA, which went into effect on January 1, 2020 and created new privacy rights for consumers residing in the state. On November 3, 2020, California voters approved an initiative that will modify the CCPA significantly when it goes into effect in 2022, resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply.

There is also increased attention being given to the collection of data from minors. For instance, the Children's Online Privacy Protection Act requires companies to obtain parental consent before collecting personal information from children under the age of 13. Additionally, the UK Age Appropriate Design Code, which may require changes to the design of, and personal data processing by, online services "likely to be accessed" by UK users under the age of 18, went into enforcement in September 2021. Compliance with global privacy-related laws, regulations, and similar legal requirements has required us to devote significant operational resources and incur significant expenses.

All of our games are subject to our privacy policy and our terms of service located in application storefronts, within our games and on our corporate website. We generally comply with industry standards and are subject to the terms of our privacy-related obligations to players 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 obligations 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 citizens of a certain jurisdiction or may make it costlier or more difficult for us to do so. For example, in July 2020, Apple began removing games from its China App Store in order to comply with Chinese gaming regulations first introduced in 2016, requiring developers to obtain licenses from Chinese authorities prior to launching games that are paid for or have in-app purchases. Accordingly, the Zynga games which were previously available in the China App Store have been removed by Apple. While we are assessing options to bring Zynga games to China in the future, we note that Zynga's revenue and bookings from Apple's China App Store have not historically been significant.

We are also subject to evolving laws and regulations that dictate whether, how, and under what circumstances we can transfer, process and/or receive certain data that is critical to our operations, including data shared between countries or regions in which we operate. For example, in July 2020, the European Union-U.S. Privacy Shield, on which we historically relied for the transfer of certain data from the European Union to the U.S., was invalidated by the Court of Justice of the European Union (CJEU). In addition, other bases upon which Zynga relies to legitimize the transfer of such data, such as Standard Contractual Clauses (SCCs), have been subjected to regulatory and judicial scrutiny. The CJEU upheld the validity of SCCs in July 2020 subject to certain conditions, and the European Commission issued new SCCs on June 4, 2021, which has resulted in, and will continue to result in, changes to our use of SCCs. Further regulatory guidance could result in additional changes over time. If one or more of the legal bases for transferring data from Europe to the United States is invalidated or the transfer frameworks are amended, if we are unable to transfer data between and among countries and regions in which we operate, or if we are restricted from sharing data among our products and services, it could affect the manner in which we operate and require us to change our data processing policies and measures, which may be burdensome and difficult to undertake successfully, and could adversely affect our financial results. Any failure or perceived failure by us to comply with our privacy policy and terms of service, our privacy-related obligations to players or other third parties, or our privacy-related legal obligations, or any compromise of security that results in the unauthorized release or transfer of personally identifiable information or other data of players and other individuals, may result in governmental investigations and enforcement actions, litigation or public statements against us by consumer advocacy groups or others and could cause our players to lose trust in us and other harm to our reputation, which could have an adverse effect on our business, financial condition or results of operations. Additionally, if third parties we work with, such as players, vendors or developers violate applicable laws or our policies, such violations may also put our players' information at risk and could in turn have an adverse effect on our business, financial condition or results of operations.

We are involved in legal proceedings that may result in adverse outcomes.

We are involved in claims, suits, government investigations, 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, consumer protection claims, competition-related claims, commercial and indemnification claims, acquisition-related claims and other matters. Such claims, suits, government investigations, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of their outcomes, such legal proceedings can have an adverse impact on us because of legal costs, diversion of management and other personnel, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in 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 in the future materially and adversely affect our business, financial condition or results of operations. See the section titled "Legal Matters" included in Note 15 - "Commitments and Contingencies" in the notes to the consolidated financial statements included in the Zynga Form 10-K.

Our business is subject to a variety of U.S. and foreign laws, many of which are unsettled and still developing and which could subject us to claims or otherwise harm our business.

We are subject to a variety of laws in the U.S. 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, 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 U.S. There is a risk that existing or future laws may be interpreted in a manner that is not consistent with our current practices and could have an adverse effect on our business. It is also likely that as our business grows and evolves and our games are played in a greater number of countries, we will 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.

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 that which depicts violence, many of which are ambiguous, still evolving and could be interpreted in ways that could harm our business or expose us to liability. In addition, there are ongoing academic, political and regulatory discussions in the U.S., Europe, Australia, Brazil and other jurisdictions regarding whether certain game genres, such as social casino, or certain game mechanics, such as "loot boxes", should be subject to a higher level or different type of regulation than other game genres or mechanics to protect consumers, in particular minors and persons susceptible to addiction, and, if so, what such regulation should include. For example, in 2018 a court determined that a class-action plaintiff was able to state a claim that an online social casino game operated by Big Fish Games, Inc. violated a specific anti-gambling law in Washington State. Subsequent to this ruling, additional purported class-action suits were filed against other social casino gaming companies for alleged violations of Washington State's gambling and consumer protection laws, and some of the defendant companies have entered into settlement agreements to settle their respective lawsuits. In February 2022, a putative class action complaint was filed against Zynga generally alleging similar violations of Washington State's gambling and consumer protection laws. In late 2020 and throughout 2021, several class action suits have been filed in multiple states in the U.S. against platforms and publishers alleging online social casino games violate various anti-gambling laws, including a February 2021 federal class action suit filed against Zynga in California alleging that our social slots games violate certain state anti-gambling and consumer protection laws. In Australia, a member of federal parliament introduced a bill in June 2020 seeking to ban social casino games in the country because, in part, his belief that such games groom children and young adults for real-money gambling later in life. If new social casino regulations are imposed, or other regulations are interpreted to apply to our social casino games, certain, or all, of our casino-themed games may become subject to such rules and regulations and expose us to civil and criminal penalties if we do not comply. Additionally, loot box game mechanics have been the subject of increased public discussion - for example, Belgium and the Netherlands have recommended enforcement actions against certain companies, the U.S. Federal Trade Commission ("FTC") held a public workshop on loot boxes in August 2019, at least one bill has been introduced in the U.S. Senate that would regulate loot boxes in games marketed toward players under the age of 18, the United Kingdom's Department for Digital, Culture, Media and Sport in September 2020 launched a call for evidence into the impact of loot boxes on in-game spending and gambling-like behavior, several class action suits have been filed in Brazil and in Canada against various companies for offering loot boxes in their games or platforms based in part on claims connecting or equating loot boxes to gambling (with Zynga being one of numerous defendants in a Canadian class action suit), and politicians have cited loot boxes as an example of recent technology innovation where government regulation is needed. In some of our games, such as *CSR Racing 2*, *Empires & Puzzles*, *FarmVille 3*, *Golf Rival*, *Harry Potter: Puzzles & Spells*, *Merge Dragons!*, *Merge Magic!* and *Zynga Poker*, certain mechanics may be deemed as "loot boxes". New regulation by the FTC, U.S. states or other international jurisdictions, which may vary significantly across jurisdictions and which we may be required to comply with, could require that these game mechanics be modified or removed from games, increase the costs of operating our games, impact player engagement and monetization or otherwise harm our business performance. It is difficult to predict how existing or new laws may be applied to these or similar game mechanics. If we become liable under these laws or regulations, we could be directly harmed, and we may be forced to implement new measures to reduce our exposure to this liability. This may require us to expend substantial resources or to modify our games, which would harm our business, financial condition and results of operations. 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. Any costs incurred as a result of this potential liability could harm our business, financial condition or results of operations.

It is possible that a number of laws and regulations may be adopted or construed to apply to us in the U.S. and elsewhere that could restrict the online and mobile industries, including player privacy, advertising, taxation, content suitability, copyright, distribution and antitrust. Furthermore, the growth and development of electronic commerce and virtual items 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. 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 in-app purchases, labeling of free-to-play games, or regulation of currency, banking institutions, unclaimed property, or money transmission may be interpreted to cover our games and the virtual currency, goods or payments that we receive. If that were to occur 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 U.S. or elsewhere regarding these activities may lessen the growth of social game services and impair our business, financial condition or results of operations.

The exit by the United Kingdom from the European Union could harm our business, financial condition or results of operations.

The United Kingdom left the European Union in 2020 (commonly referred to as “Brexit”). The effects of Brexit will depend on agreements, if any, the United Kingdom makes to retain access to European Union. Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the United Kingdom determines which European Union laws to replace or replicate.

The announcement of Brexit caused (and the post-transition period relationship between the United Kingdom and the European Union is expected to cause future) significant volatility in global stock markets, which could cause our stock price to be subject to wide fluctuations, and significant fluctuations in foreign currency exchange rates, which will affect our financial results as we report in U.S. dollars and may affect our ability to attract and retain employees in the United Kingdom. The announcement of Brexit also created (and the post-transition period relationship between the United Kingdom and the European Union may create future) global economic uncertainty, which may cause our players to reduce the amount of money they spend on our games. The post-transition period relationship between the United Kingdom and the European Union could cause disruptions to and create uncertainty surrounding our business, including affecting our United Kingdom operations and relationships with existing and future players, suppliers and employees. Any of these effects of Brexit, and others we cannot anticipate, could harm our business, financial condition or results of operations.

Changes in tax laws or tax rulings could materially affect our effective tax rates, financial position, results of operations and cash flows.

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 and non-income based taxes (such as payroll, sales, use, value-added, digital tax, net worth, property, and goods and services taxes), which in turn could materially affect our financial position and results of operations. For example, in December 2017, the U.S. federal government enacted the 2017 Tax Act. The 2017 Tax Act significantly changed the existing U.S. corporate income tax laws by, among other things, lowering the corporate tax rate, implementing a partially territorial tax system, and imposing a one-time deemed repatriation toll tax on cumulative undistributed foreign earnings. Another example is the June 7, 2019 opinion issued in Altera Corp v. Commissioner by a three judge panel from the Ninth Circuit, reversing a 2015 U.S. Tax Court decision. The Ninth Circuit ruled in favor of the Commissioner, validating U.S. Treasury regulations that require parties to a qualified cost-sharing arrangement to include stock-based compensation in the cost pool. The taxpayer subsequently petitioned the Ninth Circuit for a rehearing en banc, and, on November 12, 2019, the Ninth Circuit denied such petition. On February 10, 2020, the taxpayer requested the U.S. Supreme Court to review the Ninth Circuit’s decision, and, on June 22, 2020, the U.S. Supreme Court denied request for review. As a result of the Ninth Circuit’s opinion being upheld, our ability to offset 2019 taxable income with net operating losses was reduced. For more information, see Note 9 - “Income Taxes” in the notes to the consolidated financial statements in the Zynga Form 10-K.

In addition, the United States and many countries in the European Union, as well as a number of other countries and organizations such as the Organization 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. These proposals include changes to the existing framework to calculate income tax as well as proposals to change or impose new types of non-income taxes, including taxes based on a percentage of gross receipts such as digital service taxes.

Any significant changes to the taxation of our activities discussed above could increase our future worldwide effective tax rate or non-income taxes that may result in a material adverse effect on our business, financial condition, results of operations, or cash flows. Such changes may also apply retroactively to our historical operations and result in taxes greater than the amounts estimated and recorded in our financial statements.

We may have exposure to greater than anticipated tax liabilities.

Our tax obligations, including income and non-income taxes, are based in part on our corporate operating structure and intercompany arrangements, including the manner in which we develop, value, manage, protect and use our intellectual property and the valuation of our intercompany transactions. The tax laws applicable to our business, including the laws of the U.S. 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. In the third quarter of 2020, we made changes to our international structure including migrating certain intellectual property back to the United States in order to align the global economic ownership of the intellectual property with our current and future business operations. Our current and historical 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 harm our financial position and results of operations. In addition, future changes to our corporate structure and intercompany agreements, including through acquisitions, could impact our worldwide effective tax rate and harm our financial position and results of operations.

Risks Related to Our Intellectual Property

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

We regard 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 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 pursue the registration of our copyrights, trademarks, service marks, domain names, and patents in the U.S. and in certain locations outside the U.S. 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.

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. For example, we have brought actions to protect our “Zynga Poker,” “Ville,” and “With Friends” franchises against third-party uses of those intellectual property assets and brands. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs, adverse publicity, and diversion of management and technical resources, any of which could adversely affect our business, financial condition or results of operations. If we fail to maintain, protect and enhance our intellectual property rights, our business, financial condition or results of operations may be harmed.

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 cancel the launch of a new game, stop offering a game or certain features of a game in a particular geographic region or worldwide, pay royalties or significant settlement costs, purchase licenses or modify our games and features, or develop substitutes.

In addition, we use open source software in our game development and expect to continue to use open source software in the future. From time to time, we may face claims from companies that incorporate open source software into their products, claiming ownership of, or demanding release of, the source code, the open source software and/or derivative works that were developed using such software, or otherwise seeking to enforce the terms of the applicable open source license. These claims could also result in litigation, require us to purchase a costly license or require us to devote additional research and development resources to change our games, any of which would have a negative effect on our business, financial condition or results of operations. See the section titled “Legal Matters” included in Note 15 - “Commitments and Contingencies” in the notes to the consolidated financial statements included in the Zynga Form 10-K.