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

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES

EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2020

or

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

For the transition period from ____________________ to ____________________

Commission file number: 000-30141

LIVEPERSON, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	13-3861628
(State or Other Jurisdiction of Incorporation or Organization)	(IRS Employer Identification No.)
475 Tenth Avenue, 5th Floor New York, New York	10018
(Address of Principal Executive Offices)	(Zip Code)

(212) 609-4200
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	LPSN	The Nasdaq Stock Market LLC

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

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

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

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-accelerated Filer	☐	Smaller Reporting Company	☐
		Emerging Growth Company	☐

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

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

On April 25, 2020, 66,198,311 shares of the registrant's common stock were outstanding.

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FORWARD-LOOKING STATEMENTS

STATEMENTS IN THIS QUARTERLY REPORT ON FORM 10-Q ABOUT LIVEPERSON, INC. ("LIVEPERSON") THAT ARE NOT HISTORICAL FACTS ARE FORWARD-LOOKING STATEMENTS BASED ON OUR CURRENT EXPECTATIONS, ASSUMPTIONS, ESTIMATES AND PROJECTIONS ABOUT LIVEPERSON AND OUR INDUSTRY. THESE FORWARD-LOOKING STATEMENTS ARE SUBJECT TO RISKS AND UNCERTAINTIES THAT COULD CAUSE ACTUAL FUTURE EVENTS OR RESULTS TO DIFFER MATERIALLY FROM SUCH STATEMENTS. ANY SUCH FORWARD-LOOKING STATEMENTS ARE MADE PURSUANT TO THE SAFE HARBOR PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995. IT IS ROUTINE FOR OUR INTERNAL PROJECTIONS AND EXPECTATIONS TO CHANGE AS THE YEAR OR EACH QUARTER IN THE YEAR PROGRESSES, AND THEREFORE IT SHOULD BE CLEARLY UNDERSTOOD THAT THE INTERNAL PROJECTIONS AND BELIEFS UPON WHICH WE BASE OUR EXPECTATIONS MAY CHANGE PRIOR TO THE END OF EACH QUARTER OR THE YEAR. ALTHOUGH THESE EXPECTATIONS MAY CHANGE, WE ARE UNDER NO OBLIGATION TO INFORM YOU IF THEY DO. OUR POLICY IS GENERALLY TO PROVIDE OUR EXPECTATIONS ONLY ONCE PER QUARTER, AND NOT TO UPDATE THAT INFORMATION UNTIL THE NEXT QUARTER. ACTUAL EVENTS OR RESULTS MAY DIFFER MATERIALLY FROM THOSE CONTAINED IN THE PROJECTIONS OR FORWARD-LOOKING STATEMENTS. FACTORS THAT COULD CAUSE OR CONTRIBUTE TO SUCH DIFFERENCES INCLUDE THOSE DISCUSSED IN PART II, ITEM 1A, "RISK FACTORS."

Item 1. Financial Statements

LIVEPERSON, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE AMOUNTS)
(UNAUDITED)

	March 31, 2020	December 31, 2019
		(Note 1)
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 171,479	$ 176,523
Accounts receivable, net of allowances of $6,742 and $4,226 as of March 31, 2020 and December 31, 2019, respectively	61,082	87,620
Prepaid expenses and other current assets	15,722	13,964
Total current assets	248,283	278,107
Operating lease right of use asset	14,800	15,680
Property and equipment, net	82,816	76,236
Contract acquisition costs	33,607	31,965
Intangibles, net	11,339	11,812
Goodwill	94,945	94,987
Deferred tax assets	1,934	2,179
Other assets	1,735	1,744
Total assets	$ 489,459	$ 512,710
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 10,652	$ 12,302
Accrued expenses and other current liabilities	44,629	62,778
Deferred revenue	85,874	88,751
Operating lease liability	6,561	6,602
Total current liabilities	147,716	170,433
Deferred revenue, net of current portion	29	438
Convertible senior notes, net	181,678	179,012
Other liabilities	77	72
Operating lease liability, net of current portion	12,251	12,865
Deferred tax liability	1,322	1,355
Total liabilities	343,073	364,175
Commitments and contingencies (Note 11)		
STOCKHOLDERS' EQUITY:		
Preferred stock, $0.001 par value - 5,000,000 shares authorized, none issued	—	—
Common stock, $0.001 par value - 200,000,000 shares authorized, 68,000,209 and 66,543,073 shares issued, 65,290,379 and 63,833,243 shares outstanding as of March 31, 2020 and December 31, 2019, respectively	68	67
Additional paid-in capital	474,606	436,557
Treasury stock	(3)	(3)
Accumulated deficit	(321,292)	(283,562)
Accumulated other comprehensive loss	(6,993)	(4,524)
Total stockholders' equity	146,386	148,535
Total liabilities and stockholders' equity	$ 489,459	$ 512,710

See Notes to Condensed Consolidated Financial Statements (unaudited).

LIVEPERSON, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)
(UNAUDITED)

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Revenue	$ 78,088	$ 66,402
Costs and expenses [1] [2]		
Cost of revenue [3]	22,820	18,649
Sales and marketing	42,680	33,036
General and administrative	16,469	14,167
Product development	25,716	18,173
Restructuring costs	3,190	279
Amortization of purchased intangibles	405	461
Total costs and expenses	111,280	84,765
Loss from operations	(33,192)	(18,363)
Other (expense) income, net		
Interest expense, net	(2,791)	(667)
Other (expense) income, net	(667)	733
Total other (expense) income, net	(3,458)	66
Loss before provision for income taxes	(36,649)	(18,297)
Provision for income taxes	352	593
Net loss	$ (37,001)	$ (18,890)
Net loss per share of common stock:		
Basic	$ (0.57)	$ (0.31)
Diluted	$ (0.57)	$ (0.31)
Weighted-average shares used to compute net loss per share:		
Basic	64,388,850	61,422,227
Diluted	64,388,850	61,422,227

	2020	2019
[1] Amounts include stock-based compensation expense, as follows:		
Cost of revenue	$ 1,249	$ 620
Sales and marketing	5,138	1,599
General and administrative	2,727	2,566
Product development	5,581	2,381
[2] Amounts include depreciation expense, as follows:		
Cost of revenue	$ 2,373	$ 2,027
Sales and marketing	667	357
General and administrative	105	231
Product development	2,392	1,266
[3] Amounts include amortization of purchased intangibles, as follows:		
Cost of revenue	$ 284	$ 285

See Notes to Condensed Consolidated Financial Statements (unaudited).

LIVEPERSON, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(IN THOUSANDS)
(UNAUDITED)

	Three Months Ended March 31,	
	2020	**2019**
Net loss	$ (37,001)	$ (18,890)
Foreign currency translation adjustment	2,469	207
Comprehensive loss	$ (34,532)	$ (18,683)

See Notes to Condensed Consolidated Financial Statements (unaudited).

LIVEPERSON, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(IN THOUSANDS)

Three Months Ended March 31, 2020

	Common Stock		Treasury Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total
	Shares	Amount	Shares	Amount				
Balance at December 31, 2019	66,543,073	67	(2,709,830)	(3)	436,557	(283,562)	(4,524)	148,535
Common stock issued upon exercise of stock options	199,215	—	—	—	1,955	—	—	1,955
Common stock issued upon vesting of restricted stock units	203,690	—	—	—	—	—	—	—
Common stock as earnout payment in connection with AdvantageTec Inc.	11,508	1	—	—	293	—	—	294
Stock-based compensation	—	—	—	—	9,519	—	—	9,519
Bonus cash payment settled in shares of the Company's common stock	991,905	—	—	—	24,656	—	—	24,656
ASU 2016-13 (Topic 326) Adjustment (See note 1)	—	—	—	—	—	(729)	—	(729)
Common stock issued under Employee Stock Purchase Plan	50,818	—	—	—	1,626	—	—	1,626
Net loss	—	—	—	—	—	(37,001)	—	(37,001)
Other comprehensive loss		—	—	—	—	—	(2,469)	(2,469)
Balance at March 31, 2020	68,000,209	$ 68	(2,709,830)	$ (3)	$ 474,606	$ (321,292)	$ (6,993)	$ 146,386

Three Months Ended March 31, 2019

	Common Stock		Treasury Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total
	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	63,676,229	64	(2,681,285)	(3)	362,590	(187,491)	(4,431)	170,729
Common stock issued upon exercise of stock options	626,478	1	—	—	6,476	—	—	6,477
Common stock issued upon vesting of restricted stock units	414,742	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	5,188	—	—	5,188
Common stock issued under Employee Stock Purchase Plan	30,349	—	—	—	721	—	—	721
Common stock repurchase	—	—	(23,421)	—	(709)	—	—	(709)
Equity component of convertible senior notes	—	—	—	—	52,900	—	—	52,900
Equity component of convertible senior notes issuance costs	—	—	—	—	(1,986)	—	—	(1,986)
Purchase of capped call option	—	—	—	—	(23,184)	—	—	(23,184)
Net loss	—	—	—	—	—	(18,890)	—	(18,890)
Other comprehensive loss	—	—	—	—	—	—	(207)	(207)
Balance at March 31, 2019	64,747,798	$ 65	(2,704,706)	$ (3)	$ 401,996	$ (206,381)	$ (4,638)	$ 191,039

See Notes to Condensed Consolidated Financial Statements (unaudited).

LIVEPERSON, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)
(UNAUDITED)

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
OPERATING ACTIVITIES:		
Net loss	$ (37,001)	$ (18,890)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Stock-based compensation expense	14,695	7,166
Depreciation and amortization	5,538	3,881
Amortization of tenant allowance	(129)	(129)
Amortization of purchased intangibles	689	746
Amortization of debt issuance costs	298	116
Accretion of debt discount on convertible senior notes	2,368	727
Changes in fair value of contingent consideration	(263)	—
Provision for doubtful accounts	615	502
Deferred income taxes	212	52
Changes in operating assets and liabilities:		
Accounts receivable	24,112	(5,763)
Prepaid expenses and other current assets	(1,878)	(3,852)
Contract acquisition costs noncurrent	(2,445)	(2,825)
Security deposits	(8)	—
Other assets	1	(115)
Accounts payable	(3,412)	(744)
Accrued expenses and other current liabilities	2,987	(17,932)
Deferred revenue	(2,473)	11,150
Increase in operating lease liabilities	390	81
Other liabilities	(3)	138
Net cash provided by (used in) operating activities	4,293	(25,691)
INVESTING ACTIVITIES:		
Purchases of property and equipment, including capitalized software	(10,805)	(8,335)
Payments for intangible assets	(225)	(2)
Net cash used in investing activities	(11,030)	(8,337)
FINANCING ACTIVITIES:		
Repurchase of common stock	—	(709)
Proceeds from issuance of common stock in connection with the exercise of options and ESPP	3,098	7,198
Proceeds from issuance of convertible senior notes	—	230,000
Payment of issuance costs in connection with convertible senior notes	—	(7,329)
Payments related to contingent consideration	—	(487)
Purchase of capped call option	—	(23,184)
Net cash provided by financing activities	3,098	205,489
EFFECT OF FOREIGN EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	(1,405)	(123)
CHANGE IN CASH AND CASH EQUIVALENTS	(5,044)	171,338
CASH AND CASH EQUIVALENTS - Beginning of the period	176,523	66,449
CASH AND CASH EQUIVALENTS - End of the period	$ 171,479	$ 237,787
SUPPLEMENTAL DISCLOSURE OF OTHER CASH FLOW INFORMATION:		
Cash paid for income taxes	$ 1,337	$ 338

LIVEPERSON, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)
(UNAUDITED)

SUPPLEMENTAL DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:				
Purchase of property and equipment recorded in accounts payable	$	1,408	$	198
Issuance of 11,508 shares of common stock as earnout payment in connection with AdvantageTec Inc.	$	294	$	—
Issuance of 991,905 shares of common stock to settle cash awards	$	24,656	$	—
Operating lease right of use asset (1)	$	1,119	$	12,807
Operating lease liabilities- short-term and long term	$	669	$	(16,782)
Debt offering costs, accrued but not paid	$	—	$	1,306

(1) Includes leases that commenced during the year ended December 31, 2019, as well as balances related to leases in existence as of the date of the adoption of Topic 842.

1. Description of Business and Basis of Presentation

LivePerson (the "Company" or "LivePerson") was incorporated in the State of Delaware in November 1995 and the LivePerson service was introduced in November 1998. In April 2000, the Company completed an initial public offering and is currently traded on the NASDAQ Global Select Market and the Tel Aviv Stock Exchange. LivePerson is headquartered in New York City with U.S. offices in Alpharetta (Georgia), San Francisco (California), MountainView (California), Tampa (Florida) and Seattle (Washington), and international offices in Amsterdam (Netherlands), Berlin (Germany), Delhi (India), London (United Kingdom), Mannheim (Germany), Melbourne (Australia), Sydney (Australia), Milan (Italy), Paris (France), Ra'anana (Israel), Reading (United Kingdom), Singapore (Singapore), Tel Aviv (Israel), and Tokyo (Japan).

LivePerson, Inc. makes life easier for people and brands everywhere through messaging powered by AI and humans. During the past decade, the consumer has made the mobile device the center of their digital lives, and they have made mobile messaging the center of communication with friends, family and peers. The Company's technology enables consumers to connect with businesses through these same preferred conversational interfaces, including Facebook Messenger, SMS, WhatsApp, Apple Business Chat, Google Rich Business Messenger and Alexa. These messaging conversations harness human agents, bots and Artificial Intelligence (AI) to power convenient, personalized and content-rich journeys across the entire consumer lifecycle, from discovery and research, to sales, service and support, and even marketing, social and brick and mortar engagements. For example, consumers can look up product info like ratings, images and pricing, search for stores, see product inventory, schedule appointments, apply for credit, approve repairs, make purchases or payments - all without ever leaving the messaging channel. These AI and human-assisted conversational experiences constitute the Conversational Space.

LiveEngage, the Company's enterprise-class cloud-based platform, enables businesses to become conversational by securely deploying messaging, coupled with bots and AI, at scale for brands with tens of millions of customers and many thousands of customer care agents. LiveEngage powers conversations across each of a brand's primary digital channels, including mobile apps, mobile and desktop web browsers, short message service (SMS), social media and third-party consumer messaging platforms. Brands can also use LiveEngage to message consumers when they dial a 1-800 number instead of forcing them to navigate interactive voice response systems (IVRs) and wait on hold. Similarly, LiveEngage can receive traditional emails and convert them into messaging conversations, or embed messaging conversations directly into web advertisements, rather than redirect consumers to static website landing pages.

LivePerson's robust, cloud-based suite of rich messaging, real-time chat, AI and automation offerings features consumer and agent facing bots, intelligent routing and capacity mapping, real-time intent detection and analysis, queue prioritization, customer sentiment, analytics and reporting, content delivery, Payment Card Industry (PCI) compliance, cobrowsing and a sophisticated proactive targeting engine. With LiveEngage, agents can manage all conversations with consumers through a single console interface, regardless of which disparate messaging endpoints the consumers originate from -- i.e., WhatsApp, Line, Apple Business Chat, IVR, social, email, Alexa, or WeChat. An extensible application programming interface (API) stack facilitates a lower cost of ownership by facilitating robust integration into back-end systems, as well as enabling developers to build their own programs and services on top of the platform. More than 40 APIs and software development kits are available on LiveEngage.

LivePerson's Conversational AI offerings put the power of bot development, training, management and analysis into the hands of the contact center and its agents, the teams most familiar with how to structure sales and service conversations to drive successful outcomes. The platform enables what we call "the tango" of humans, AI and bots, whereby human agents act as bot managers, overseeing AI-powered conversations and seamlessly stepping into the flow when a personal touch is needed. Agents become ultra-efficient, leveraging the AI engine to serve up relevant content, define next-best actions and take over repetitive transactional work, so that the agent can focus on relationship building. By seamlessly integrating messaging with the Company's proprietary Conversational AI, as well as third-party bots, LiveEngage offers brands a comprehensive approach to scaling automations across their millions of customer conversations.

Complementing the Company's proprietary messaging and Conversational AI offerings are teams of technical, solutions and consulting professionals that have developed deep domain expertise in the implementation and optimization of conversational services across industries and messaging endpoints. LivePerson is a leading authority in the Conversational Space. LivePerson's products, coupled with the Company’s domain knowledge, industry expertise and professional services, have been proven to maximize the effectiveness of the Conversational Space and deliver measurable return on investment. Certain of the Company’s customers have achieved the following advantages from the Company’s offerings:

- the ability for each agent to manage as many as 40 messaging conversations at a time, as compared to one at a time for a voice agent and two to four at a time for a good chat agent. Adding AI and bots provides even greater scale to the number of conversations managed;
- labor efficiency gains of at least two times that of a voice agents, effectively cutting labor costs by at least 50%;
- improving the overall customer experience, thereby fueling customer satisfaction increases of up to 20 percentage points, and enhancing retention and loyalty;
- more convenient, personalized and content-rich conversations that increase sales conversion by up to 20%, increase average order value and reduce abandonment;
- more satisfied contact center agents, thereby reducing agent churn by up to 50%
- maintain a valued connection with consumers via mobile devices, either through native applications, websites, text messages, or third-party messaging platforms;
- leverage spending that drives visitor traffic by increasing visitor conversions;
- refine and improve performance by understanding which initiatives deliver the highest rate of return; and
- increase lead generation by providing a single platform that engages consumers through advertisements and listings on branded and third-party websites.

As a “cloud computing” or software-as-a-service (SaaS) provider, LivePerson provides solutions on a hosted basis. This model offers significant benefits over premise-based software, including lower up-front costs, faster implementation, lower total cost of ownership, scalability, cost predictability, and simplified upgrades. Organizations that adopt a fully-hosted, multi-tenant architecture that is maintained by LivePerson eliminate the majority of the time, server infrastructure costs, and IT resources required to implement, maintain, and support traditional on-premise software.

More than 18,000 businesses, including HSBC, Orange, The Home Depot, and GM Financial use our conversational solutions to orchestrate humans and AI, at scale, and create a convenient, deeply personal relationship with their customers.

LivePerson's consumer services offering is an online marketplace that connects independent service providers (Experts) who provide information and knowledge for a fee via mobile and online messaging with individual consumers (Users). Users seek assistance and advice in various categories including personal counseling and coaching, computers and programming, education and tutoring, spirituality and religion, and other topics.

Basis of Presentation

The accompanying condensed consolidated financial statements as of March 31, 2020 and for the three months ended March 31, 2020 and 2019 are unaudited. In the opinion of management, the unaudited condensed consolidated financial statements have been prepared on the same basis as the annual financial statements and reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly the consolidated financial position of LivePerson as of March 31, 2020, and the consolidated results of operations, comprehensive loss and cash flows for the interim periods ended March 31, 2020 and 2019. The financial data and other information disclosed in these notes to the condensed consolidated financial statements related to these periods are unaudited. The results of operations for any interim period are not necessarily indicative of the results of operations for any other future interim period or for a full fiscal year. The condensed consolidated balance sheet at December 31, 2019 has been derived from audited consolidated financial statements at that date.

Certain information and note disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission (the “SEC”). These unaudited interim condensed consolidated financial statements should be read in conjunction with the Company’s audited consolidated financial statements and notes thereto for the year ended December 31, 2019 included in the Company’s Annual Report on Form 10-K filed with the SEC on March 2, 2020.

Principles of Consolidation

The condensed consolidated financial statements include the Company and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of the Company's condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of income and expenses during the reporting period. These estimates are based on information available as of the date of the condensed consolidated financial statements; therefore, actual results could differ from management's estimates.

Many of our estimates require increased judgment due to the significant volatility, uncertainty and economic disruption of the recent global COVID-19 pandemic. We will continue to monitor the effects of the COVID-19 pandemic, and our estimates and judgments may change materially as new events occur or additional information becomes available to us.

Recently Issued Accounting Standards

In December 2019, the Financial Accounting Standards Board ("FASB") issued ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The new guidance is intended to simplify the accounting for income taxes by removing certain exceptions and by updating accounting requirements around franchise taxes, goodwill recognized for tax purposes, the allocation of current and deferred tax expense among legal entities, among other minor changes. The ASU is effective for fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. Early adoption is permitted. The Company is assessing what impact ASU 2019-12 will have on its condensed consolidated financial statements.

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update ASU 2016-13, "Financial Instruments-Credit Losses (Topic 326)", in order to improve financial reporting of expected credit losses on financial instruments and other commitments to extend credit. ASU 2016-13 requires that an entity measure and recognize expected credit losses for financial assets held at amortized cost and replaces the incurred loss impairment methodology in prior GAAP with a methodology that requires consideration of a broader range of information to estimate credit losses. Such required disclosures include, but are not limited to, the Company's methodology for estimating its allowance for credit losses. The Company adopted ASU 2016-13 effective January 1, 2020 and applied the guidance using a modified retrospective approach requiring that the Company recognize the cumulative effect of initially applying the impairment standard as an adjustment to opening accumulated deficit for the incremental increase in its allowance for credit losses as of January 1, 2020 over its allowance for bad debts as of December, 31, 2019, which amounted to $0.7 million. The Company will continue to actively monitor the impact of the recent coronavirus (COVID-19) pandemic on expected credit losses.

In January 2017, the FASB issued Accounting Standards Update ASU 2017-04, Simplifying the Test for Goodwill Impairment, which eliminates the computation of the implied fair value of goodwill to measure a goodwill impairment charge. Instead, entities will record a goodwill impairment charge based on the excess of a reporting unit's carrying amount over its fair value. The guidance is effective for interim and annual reporting periods beginning after December 15, 2019, with early adoption permitted. The Company adopted ASU 2017-04 in the first quarter of 2020 which reduced the complexity surrounding the evaluation of goodwill for impairment. The adoption of this guidance did not have a material impact on the Company's condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, "Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract," which clarifies the accounting for implementation costs in cloud computing arrangements. The new standard aligns the treatment of implementation costs incurred by customers in cloud computing arrangements that are service contracts with the treatment of similar costs incurred to develop or obtain internal-use software. Under the new standard, implementation costs are deferred and presented in the same financial statement caption on the condensed consolidated balance sheet as a prepayment of related arrangement fees. The deferred costs are recognized over the term of the arrangement in the same financial statement caption in the condensed consolidated income statement as the related fees of the arrangement. The Company adopted ASU 2018-15 in the first quarter of 2020 and the impact of the adoption was not material to the Company's condensed consolidated financial statements.

2. Revenue Recognition

The majority of the Company's revenue is generated from monthly service revenues and related professional services from the sale of the LivePerson services. Revenues are recognized when control of these services is transferred to the Company's customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those services.

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, the Company satisfies a performance obligation.

Total revenue of $78.1 million and $66.4 million was recognized during the three months ended March 31, 2020 and 2019, respectively.

Hosted Services- Business Revenue

Hosted Services Business revenue is reported at the amount that reflects the ultimate consideration expected to be received and primarily consist of fees that provide customers access to LiveEngage, the Company's enterprise-class, cloud-based platform. The Company has determined such access represents a stand-ready service provided continually throughout the contract term. As such, control and satisfaction of this stand-ready performance obligation is deemed to occur over time. The Company recognizes this revenue over time on a ratable basis over the contract term, beginning on the date that access to the LiveEngage platform is made available to the customer. The passage of time is deemed to be the most faithful depiction of the transfer of control of the services as the customer simultaneously receives and consumes the benefit provided by the Company's performance. Subscription contracts are generally one year or longer in length, billed, monthly, quarterly or annually in advance. There is no significant variable consideration related to these arrangements. Additionally, for certain of the Company's larger customers, the Company may provide call center labor through an arrangement with one or more of several qualified vendors. For most of these customers, the Company passes the fee it incurs with the labor provider and its fee for the hosted services through to its customers in the form of a fixed fee for each order placed via the Company's online engagement solutions. For these Gainshare (formerly Pay for Performance) arrangements in accordance with ASC-606, "Principal Agent Considerations," the Company acts as a principal in a transaction if it controls the specified goods or services before they are transferred to the customer.

Professional Services Revenues

Professional services revenue primarily consists of fees for deployment and optimization services, as well as training delivered on an on-demand basis which is deemed to represent a distinct stand-ready performance obligation. Professional Services Revenues are reported at the amount that reflects the ultimate consideration the Company expects to receive in exchange for such services. Control for the majority of the Company's Professional Services contracts passes over time to the customer and is recognized ratably over the contracted period, as the passage of time is deemed to be the most faithful depiction of the transfer of control. For certain deployment services, which are not deemed to represent a distinct performance obligation, revenue will be recognized in the same manner as the fee for access to the LiveEngage platform, and as such will be recognized on a straight-line basis over the contract term. For services billed on a fixed price basis, revenue is recognized over time based on the proportion performed using inputs as the measure of progress toward complete satisfaction of the performance obligation. Professional service contracts are generally one year or longer in length, billed, monthly, quarterly or annually in advance. There is no significant variable consideration related to these arrangements.

Remaining Performance Obligation

As of March 31, 2020, the aggregate amount of the total transaction price allocated in contracts with original duration of greater than one year to the remaining performance obligations was $214 million. Approximately 90% of the Company's remaining performance obligations is expected to be recognized during the next 24 months, with the balance recognized thereafter. The aggregate balance of unsatisfied performance obligations represents contracted revenue that has not yet been recognized, and does not include contract amounts that are cancelable by the customer, amounts associated with optional renewal periods, and any amounts related to performance obligations, which are billed and recognized as they are delivered. The Company has elected the optional exemption, which allows for the exclusion of the amounts for remaining performance obligations that are part of contracts with an original expected duration of one year or less. Such remaining performance obligations represent unsatisfied or partially unsatisfied performance obligation pursuant to ASC 606.

Contracts with Multiple Performance Obligations

Some of the Company's contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The Company determines the standalone selling prices based on its overall pricing objectives, taking into consideration market conditions and other factors, including the value of its contracts, the cloud applications sold, and the number and types of users within its contracts.

Hosted Services- Consumer Revenue

For revenue from the Company's Consumer segment generated from online transactions between Experts and Users, revenue is recognized at an amount net of Expert fees in accordance with ASC 606, “Principal Agent Considerations,” due primarily to the fact that the Expert is the primary obligor. Additionally, the Company performs as an agent without any risk of loss for collection, and is not involved in selecting the Expert or establishing the Expert’s fee. The Company collects a fee from the consumer and retains a portion of the fee, and then remits the balance to the Expert. Revenue from these transactions is recognized at the point in time when the transaction is complete and no significant performance obligations remain.

Deferred Revenues

The Company records deferred revenues when cash payments are received or due in advance of the Company’s performance. The increase in the deferred revenue balance as of March 31, 2020 is primarily driven by cash payments received or due in advance of satisfying the Company’s performance obligations, partially offset by $34.0 million of revenues recognized that were included in the deferred revenue balance as of December 31, 2019.

The following table presents deferred revenue by revenue source (amounts in thousands):

	Deferred Revenue	
	As of March 31, 2020	As of December 31, 2019
Hosted services – Business	$ 77,135	$ 82,892
Hosted services – Consumer	713	687
Professional services – Business	8,026	5,172
Total deferred revenue - short term	$ 85,874	$ 88,751
Professional services – Business	29	438
Total deferred revenue - long term	$ 29	$ 438

Disaggregated Revenue

The following table presents the Company's revenues disaggregated by revenue source (amounts in thousands):

	Three Months Ended March 31,	
	2020	2019
Revenue:		
Hosted services – Business	$ 61,051	$ 51,537
Hosted services – Consumer	6,240	5,407
Professional services	10,797	9,458
Total revenue	$ 78,088	$ 66,402

Revenue by Geographic Location

The following table presents the Company's revenues attributable to domestic and foreign operations for the periods presented (amounts in thousands):

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
United States	$ 48,549	$ 38,589
Other Americas [1]	2,020	2,769
Total Americas	50,569	41,358
EMEA [2] [4]	19,491	18,113
APAC [3]	8,028	6,931
Total revenue	$ 78,088	$ 66,402

[1] Canada, Latin America and South America
[2] Europe, the Middle East and Africa ("EMEA")
[3] Asia-Pacific ("APAC")
[4] Includes revenues from the United Kingdom of $12.6 million and $11.7 million for the three months ended March 31, 2020 and 2019, respectively, and from the Netherlands of $1.3 million and $2.5 million for the three months ended March 31, 2020 and 2019, respectively.

Information about Contract Balances

Amounts collected in advance of services being provided are accounted for as deferred revenue. Nearly all of the Company's deferred revenue balance is related to *Hosted Services - Business Revenue.*

In some arrangements, the Company allows customers to pay for access to LiveEngage over the term of the software license. The Company refers to these as subscription transactions. Amounts recognized as revenue in excess of amounts billed are recorded as unbilled receivables. Unbilled receivables, anticipated to be invoiced in the next twelve months, are included in accounts receivable on the condensed consolidated balance sheet. The opening and closing balances of the Company's accounts receivable, unbilled receivables, and deferred revenues are as follows (amounts in thousands):

	Accounts Receivable [1]	Unbilled Receivable [1]	Contract Acquisition Costs noncurrent	Deferred Revenue (current)	Deferred Revenue (long term)
Opening Balance as of December 31, 2019	$ 70,318	$ 17,302	$ 31,965	$ 88,751	$ 438
(Decrease) Increase, net	(25,052)	(1,486)	1,642	(2,877)	(409)
Ending Balance as of March 31, 2020	$ 45,266	$ 15,816	$ 33,607	$ 85,874	$ 29

[1] These accounts include the $0.7 million adjustment in connection with the adoption of ASU 2016-13 (Topic 326).

Accounts Receivable, Net

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities, which are included in accrued liabilities and other long-term liabilities) on the condensed consolidated balance sheet. Under the typical payment terms of our over time contracts, the customer pays us either performance-based payments or progress payments. Amounts billed and due from our customers are classified as receivables on the condensed consolidated balance sheet. Accounts receivable is presented net of an allowance for doubtful accounts and sales reserve of $3.6 million and $3.1 million at March 31, 2020, respectively and $3.1 million and $1.1 million at December 31, 2019, respectively.

An allowance for doubtful accounts is established to recognize expected credit losses on accounts receivable balances. Judgment is required in the estimation of the allowance and the Company evaluates the collectability of its accounts receivable based on a combination of factors. If the Company becomes aware of a customer's inability to meet its financial obligations, a specific allowance is recorded to reduce the net receivable to the amount reasonably believed to be collectible from the customer. For all other customers, the Company uses an aging schedule and recognize allowances for doubtful accounts based on the creditworthiness of the debtor, the age and status of outstanding receivables, the current business environment and its historical collection experience adjusted for current expectations for the customers or industry. Accounts receivable are written off against the allowance for uncollectible accounts when the Company determines amounts are no longer collectible.

Allowance for doubtful accounts (in thousands):	**Three Months March 31, 2020**
Balance at beginning of year, as adjusted for the adoption of ASU 2016-13 (Topic 326)	$ 2,341
Accruals for credit loss charged to expense, net	1,247
Balance at end of period	$ 3,588

3. Net Loss Per Share

The Company calculates earnings per share ("EPS") in accordance with the provisions of ASC 260-10. Under the guidance, basic EPS excludes dilution for common stock equivalents and is computed by dividing net income or loss attributable to common shareholders by the weighted average number of common shares outstanding for the period. All options, warrants or other potentially dilutive instruments issued for nominal consideration are required to be included in the calculation of basic and diluted net income attributable to common stockholders. Diluted EPS is calculated using the treasury stock method and reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock and resulted in the issuance of common stock.

Diluted net loss per common share for the three months ended March 31, 2020 does not include the effect of 9,128,000 outstanding common stock awards, as the effect of their inclusion is anti-dilutive. Diluted net loss per common share for the three months ended March 31, 2019 does not include the effect of 8,330,741 outstanding common stock awards, as the effect of their inclusion is anti-dilutive.

A reconciliation of shares used in calculating basic and diluted net loss per share follows:

	Three Months Ended March 31,	
	2020	**2019**
Basic	64,388,850	61,422,227
Effect of assumed exercised options	—	—
Diluted	64,388,850	61,422,227

The Company expects to settle the principal amount of its outstanding Notes (as defined below) in cash and any excess in shares of the Company's common stock. The Company uses the treasury stock method for calculating any potential dilutive effect of the conversion spread on diluted net income per share, if applicable. The conversion spread will have a dilutive impact on diluted net income per share of common stock when the average market price of the Company's common stock for a given period exceeds the initial conversion price of $38.58 per share for the Notes. See Note 8 of the Notes to condensed consolidated financial statements for a full description of the Notes.

4. Segment Information

The Company accounts for its segment information in accordance with the provisions of ASC 280-10, “Segment Reporting.” ASC 280-10 establishes annual and interim reporting standards for operating segments of a company. ASC 280-10 requires disclosures of selected segment-related financial information about products, major customers, and geographic areas based on the Company’s internal accounting methods. The Company is organized into two operating segments for purposes of making operating decisions and assessing performance. The Business segment enables brands to leverage LiveEngage’s sophisticated intelligence engine to connect with consumers through an integrated suite of mobile and online business messaging technologies. The Consumer segment facilitates online transactions between independent service providers (“Experts”) and individual consumers (“Users”) seeking information and knowledge for a fee via mobile and online messaging. Both segments currently generate their revenue primarily in the United States. The chief operating decision maker, who is the chief executive officer, evaluates performance, makes operating decisions, and allocates resources based on the operating income of each segment. The reporting segments follow the same accounting polices used in the preparation of the Company’s condensed consolidated financial statements which are described in the summary of significant accounting policies. The Company allocates cost of revenue, sales and marketing and amortization of purchased intangibles to the segments, but it does not allocate product development expenses, general and administrative expenses, restructuring costs and income tax expense because management does not use this information to measure performance of the operating segments. There are currently no inter-segment sales.

Summarized financial information by segment for the three months ended March 31, 2020, based on the Company’s internal financial reporting system utilized by the Company’s chief operating decision maker, follows (amounts in thousands):

	Business	Consumer	Corporate	Consolidated
Revenue:				
Hosted services – Business	$ 61,051	$ —	$ —	$ 61,051
Hosted services – Consumer	—	6,240	—	6,240
Professional services	10,797	—	—	10,797
Total revenue	71,848	6,240	—	78,088
Cost of revenue	21,345	1,475	—	22,820
Sales and marketing	37,469	5,211	—	42,680
Amortization of purchased intangibles	405	—	—	405
Unallocated corporate expenses	—	—	45,375	45,375
Operating income (loss)	$ 12,629	$ (446)	$ (45,375)	$ (33,192)

Summarized financial information by segment for the three months ended March 31, 2019, based on the Company’s internal financial reporting system utilized by the Company’s chief operating decision maker, follows (amounts in thousands):

	Business	Consumer	Corporate	Consolidated
Revenue:				
Hosted services – Business	$ 51,537	$ —	$ —	$ 51,537
Hosted services – Consumer	—	5,407	—	5,407
Professional services	9,458	—	—	9,458
Total revenue	60,995	5,407	—	66,402
Cost of revenue	17,662	987	—	18,649
Sales and marketing	30,092	2,944	—	33,036
Amortization of purchased intangibles	461	—	—	461
Unallocated corporate expenses	—	—	32,619	32,619
Operating income (loss)	$ 12,780	$ 1,476	$ (32,619)	$ (18,363)

Geographic Information

The Company is domiciled in the United States and has international operations in Israel, the United Kingdom, Asia-Pacific and Australia, Latin America and Western Europe, particularly France, Germany and the Netherlands. The following table presents the Company's long-lived assets by geographic region as of the dates presented (amounts in thousands):

	March 31, 2020	December 31, 2019
United States	$ 183,931	$ 177,776
Israel	17,175	16,680
Australia	13,217	13,765
Netherlands	7,854	7,705
Other [1]	18,998	18,677
Total long-lived assets	$ 241,175	$ 234,603

[1] United Kingdom, Germany, Japan, France and Italy

5. Goodwill and Intangible Assets

Goodwill

The changes in the carrying amount of goodwill for the three months ended March 31, 2020 are as follows (amounts in thousands):

	Business	Consumer	Consolidated
Balance as of December 31, 2019	$ 86,963	$ 8,024	$ 94,987
Adjustments to goodwill:			
Foreign exchange adjustment	(42)	—	(42)
Balance as of March 31, 2020	$ 86,921	$ 8,024	$ 94,945

Intangible Assets

Intangible assets are summarized as follows (amounts in thousands):

	As of March 31, 2020			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Amortization Period
Amortizing intangible assets:				
Technology	$ 30,394	$ (25,569)	$ 4,825	5.3 years
Customer relationships	16,961	(13,207)	3,754	8.4 years
Patents	3,490	(757)	2,733	12.8 years
Other	262	(235)	27	2.7 years
Total	$ 51,107	$ (39,768)	$ 11,339	

	As of December 31, 2019			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Amortization Period
Amortizing intangible assets:				
Technology	$ 30,413	$ (25,187)	$ 5,226	5.3 years
Customer relationships	16,964	(12,958)	4,006	8.4 years
Patents	3,267	(714)	2,553	12.8 years
Other	262	(235)	27	2.7 years
Total	$ 50,906	$ (39,094)	$ 11,812	

Amortization expense is calculated over the estimated useful life of the asset. Aggregate amortization expense for intangible assets was $0.7 million for the three months ended March 31, 2020 and 2019, respectively. For the three months ended March 31, 2020 and 2019, respectively, a portion of this amortization is included in cost of revenue. Estimated amortization expense for the next five years is as follows (amounts in thousands):

	Estimated Amortization Expense
Remaining 2020	2,049
2021	2,521
2022	2,156
2023	905
2024	707
Thereafter	3,001
Total	$ 11,339

6. Property and Equipment

The following table presents the detail of property and equipment for the periods presented (amounts in thousands):

	March 31, 2020	December 31, 2019
Computer equipment and software	$ 95,152	$ 92,493
Furniture, equipment and building improvements	16,522	16,487
Internal-use software development costs	60,733	52,544
	172,407	161,524
Less: accumulated depreciation	(89,591)	(85,288)
Total	$ 82,816	$ 76,236

7. Accrued Expenses and Other Current Liabilities

The following table presents the detail of accrued expenses and other current liabilities for the periods presented (amounts in thousands):

	March 31, 2020	December 31, 2019
Payroll and other employee related costs	$ 12,560	$ 27,920
Professional services and consulting and other vendor fees	22,788	20,382
Unrecognized tax benefits	2,052	2,053
Sales commissions	3,787	9,654
Contingent earn-out (see Notes 9 and 10)	—	557
Restructuring (see Note 13)	276	314
Sales tax liabilities	2,500	—
Other	666	1,898
Total	$ 44,629	$ 62,778

8. Convertible Senior Notes and Capped Call Transactions

In March 2019, the Company issued $230.0 million aggregate principal amount of 0.750% Convertible Senior Notes due 2024 in a private placement, which amount includes $30.0 million aggregate principal amount of such Notes pursuant to the exercise in full of the over-allotment options of the initial purchasers (collectively, the "Notes"). The interest on the Notes is payable semi-annually in arrears on March 1 and September 1 of each year, beginning on September 1, 2019.

The Notes will mature on March 1, 2024, unless earlier repurchased or redeemed by the Company or converted pursuant to their terms. The total net proceeds from the debt offering, after deducting debt issuance costs, paid or payable by us, was approximately $221.0 million.

Each $1,000 principal amount of the Notes is initially convertible into 25.9182 shares of the Company's common stock par value $0.001, which is equivalent to an initial conversion price of approximately $38.58 per share. The conversion rate is subject to adjustment upon the occurrence of certain specified events but will not be adjusted for any accrued and unpaid interest. In addition, following certain corporate events that occur prior to the maturity date, the Company will increase the conversion rate for a holder who elects to convert its Notes in connection with such a corporate event. The Notes are not redeemable prior to the maturity date of the Notes and no sinking fund is provided for the Notes. If we undergo a fundamental change (as defined in the indenture governing the Notes) prior to the maturity date, holders may require us to repurchase for cash all or any portion of their Notes in principal amounts of $1,000 or a multiple thereof at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

Holders of the Notes may convert their Notes at their option at any time prior to the close of business on the business day immediately preceding November 1, 2023, in multiples of $1,000 principal amount, only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on June 30, 2019 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price for the Notes on each applicable trading day as determined by the Company; (2) during the five business day period after any five consecutive trading day period (the "measurement period") in which the "trading price" (as defined in the indenture governing the Notes) per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate for the Notes on each such trading day; or (3) upon the occurrence of specified corporate events. On or after November 1, 2023, holders may convert all or any portion of their Notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date, regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of its common stock or a combination of cash and shares of its common stock, at the Company's election.

It is the Company's current intent to settle the principal amount of its outstanding Notes in cash and any excess in shares of the Company's common stock.

During the three months ended March 31, 2020, the conditions allowing holders of the Notes to convert were not met.

The Notes are senior unsecured obligations and will rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment with the Company's existing and future liabilities that are not so subordinated; effectively subordinated to any of the Company's secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of current or future subsidiaries of the Company.

In accounting for the issuance of the Notes, the Company separated the Notes into liability and equity components. The carrying amount of the liability component was calculated by measuring the fair value of a similar debt instrument that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was $52.9 million and was determined by deducting the fair value of the liability component from the par value of the Notes. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The excess of the principal amount of the liability component over its carrying amount, or the debt discount, is amortized to interest expense at an effective interest rate over the contractual terms of the Notes.

In accounting for the transaction costs related to the Notes, the Company allocated the total amount incurred of approximately $8.6 million to the liability and equity components of the Notes based on the proportion of the proceeds allocated to the debt and equity components. Issuance costs attributable to the liability component were approximately $6.6 million, were recorded as an additional debt discount and are amortized to interest expense using the effective interest method over the contractual terms of the Notes. Issuance costs attributable to the equity component were approximately $2.0 million and recorded as a reduction of additional paid in capital in stockholders' equity.

The net carrying amount of the liability component of the Notes was as follows (in thousands):

	As of March 31, 2020	As of December 31, 2019
Principal	$ 230,000	$ 230,000
Unamortized discount	(42,926)	(45,295)
Unamortized issuance costs	(5,396)	(5,693)
Net carrying amount	$ 181,678	$ 179,012

The net carrying amount of the equity component of the Notes was as follows (in thousands):

	As of March 31, 2020
Proceeds allocated to the conversion options (debt discount)	$ 52,900
Issuance costs	(1,986)
Net carrying amount	$ 50,914

The following table sets forth the interest expense recognized related to the Notes (in thousands):

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Contractual interest expense	$ 417	$ 144
Amortization of issuance costs	298	116
Amortization of debt discount	2,368	727
Total interest expense	$ 3,083	$ 987

The remaining term over which the debt discount and debt issuance costs will be amortized is 3.9 years and 4.9 years as of March 31, 2020 and 2019, respectively. The effective interest rate on the debt was 5.57% and 6.97% for the period ended March 31, 2020 and 2019, respectively. Interest expense of $3.1 million and $0.1 million is reflected as a component of interest (expense) income, net in the accompanying condensed consolidated statements of operations for the three months ended March 31, 2020 and 2019, respectively.

In connection with the offering of the Notes, the Company entered into privately-negotiated capped call option transactions with certain counterparties (the "capped calls"). The capped calls each have an initial strike price of approximately $38.58 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The capped calls have initial cap prices of $57.16 per share, subject to certain adjustment events. The capped calls cover, subject to anti-dilution adjustments, approximately 5.96 million shares of common stock. The capped calls are generally intended to reduce or offset the potential dilution to the common stock upon any conversion of the Notes with such reduction or offset, as the case may be, subject to a cap based on the cap price. The capped calls expire on March 1, 2024, subject to earlier exercise. The capped calls are subject to either adjustment or termination upon the occurrence of specified extraordinary events affecting the Company, including a merger event, a tender offer, and a nationalization, insolvency or delisting involving the Company. In addition, the capped calls are subject to certain specified additional disruption events that may give rise to a termination of the capped calls, including changes in law, failure to deliver, and hedging disruptions. The capped calls are recorded in stockholders' equity and are not accounted for as derivatives. The net cost of $23.2 million incurred to purchase the capped calls was recorded as a reduction to additional paid-in capital in the accompanying condensed consolidated balance sheet.

9. Acquisitions

AdvantageTec Inc.

In October 2018, the Company entered into a stock purchase agreement to acquire the outstanding equity interest of AdvantageTec Inc. ("AdvantageTec"), a leading provider of texting solutions for service departments of automotive dealerships that helps enable Conversational Commerce across the entire dealership, including both front end/variable operations (new and used vehicle sales) and back end/fixed operations (parts and services). The purchase agreement was for total consideration of approximately $11.2 million, which includes approximately $6.0 million in cash, approximately $4.3 million in shares of common stock, and approximately $0.9 million of potential earn-out consideration in cash and shares of common stock. The earn-out is contingent upon achieving certain targeted financial, strategic and integration objectives and milestones and is included as part of the purchase price. During 2019, the Company recorded a $0.2 million fair value re-measurement adjustment and made payments of $0.5 million in earn-out consideration. During the three months ended March 31, 2020, the Company recorded a $0.3 million fair value re-measurement adjustment, which was recorded in loss from operations as a decrease in general and administrative expenses. The Company settled the remaining contingent earn-out of approximately $0.3 million in stock. As of March 31, 2020, there are no additional contingent earn-out payments.

The purchase price allocation resulted in approximately $9.1 million of goodwill and approximately $2.2 million of intangible assets. The goodwill will not be deductible for tax purposes. The intangible assets are being amortized over their expected period of benefit. A deferred tax liability for the identified intangibles has been recorded.

AdvantageTec Inc. enhances the Company's messaging platform available for the automotive industry and is included in the Company's business segment.

Conversable, Inc.

In September 2018, the Company acquired the employees and technology assets of Conversable, Inc. a SaaS based Artificial Intelligence powered conversational platform, headquartered in Austin, Texas, for an aggregate estimated purchase price of $5.7 million. The estimated purchase price consisted of $1.3 million in cash, approximately $2.9 million in shares of common stock of the Company, and a potential earn-out consideration of $1.5 million in cash, which is based on achieving certain targeted financial, strategic, and integration objectives and milestones and is included as part of the purchase price. During 2019, the Company recorded a $0.5 million fair value re-measurement adjustment and settled the remaining contingent earn-out in stock.

The purchase price allocation resulted in approximately $5.5 million of goodwill and approximately $0.5 million of intangible assets. The goodwill will be deductible for tax purposes. The intangible assets are being amortized over their expected period of benefit. The allocation of the purchase price to net book value of acquired assets and liabilities resulted in a net liability of $0.3 million, which includes accounts receivable, property and equipment, accrued expenses, and deferred revenue.

Conversable Inc.'s capabilities will accelerate the ongoing expansion of the Company's Conversational Commerce solutions and enhance the Company's ability to deliver proactive and personalized content and services when and where the customer needs it, helping consumers find immediate service through messaging. Conversable, Inc. is included in the Company's business segment.

BotCentral, Inc.

In January 2018, the Company acquired the employees and technology assets of BotCentral, Inc., a Silicon Valley based startup, for a purchase price of approximately $1.0 million in common stock of the Company. The Company incurred an additional $0.2 million related to acquisition costs. This transaction was accounted for as an asset purchase. The aggregate amount of approximately $1.2 million is included in intangibles on the Company's consolidated balance sheet. With the BotCentral team's expertise and knowledge of the LiveEngage platform, the team is bringing valuable insight for the Company's customers and partners, and enabling the company to more rapidly optimize its bot deployment capabilities, and grow the ecosystem. BotCentral, Inc. is included in the Company's business segment.

10. Fair Value Measurements

The Company measures its cash equivalents at fair value based on an expected exit price as defined by the authoritative guidance on fair value measurements, which represents the amount that would be received on the sale of an asset or paid to transfer a liability, as the case may be, in an orderly transaction between market participants. As such, fair value may be based on assumptions that market participants would use in pricing an asset or liability. The authoritative guidance on fair value measurements establishes a consistent framework for measuring fair value on either a recurring or nonrecurring basis whereby inputs, used in valuation techniques, are assigned a hierarchical level. The following are the hierarchical levels of inputs to measure fair value:

- Level 1: Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2: Inputs reflect: quoted prices for identical assets or liabilities in markets that are not active; quoted prices for similar assets or liabilities in active markets; inputs other than quoted prices that are observable for the assets or liabilities; or inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3: Unobservable inputs reflecting the Company’s assumptions incorporated in valuation techniques used to determine fair value. These assumptions are required to be consistent with market participant assumptions that are reasonably available.

Financial Assets and Liabilities

The carrying amount of cash, accounts receivable, and accounts payable approximate their fair value due to their short-term nature. The Company’s assets and liabilities that are measured at fair value on a recurring basis, by level, within the fair value hierarchy as of March 31, 2020 and December 31, 2019, are summarized as follows (amounts in thousands).

	March 31, 2020				December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Cash equivalents:								
Money market funds	$ 2,906	$ —	$ —	$ 2,906	$ 2,899	$ —	$ —	$ 2,899
Total assets	$ 2,906	$ —	$ —	$ 2,906	$ 2,899	$ —	$ —	$ 2,899
Liabilities:								
Contingent earn-out	$ —	$ —	$ —	$ —	$ —	$ —	$ 557	$ 557
Total liabilities	$ —	$ —	$ —	$ —	$ —	$ —	$ 557	$ 557

In determining fair value, the Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible as well as considers counterparty credit risk in its assessment of fair value. Observable or market inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company’s assumptions based on the best information available.

The Company's money market funds are measured at fair value on a recurring basis based on quoted market prices in active markets and are classified as level 1 within the fair value hierarchy. The Company's contingent earn-out liability is measured at fair value on a recurring basis and is classified as level 3 within the fair value hierarchy. On a nonrecurring basis, the Company uses fair value measures when analyzing asset impairment. Long-lived tangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If it is determined such indicators are present and the review indicates that the assets will not be fully recoverable, based on undiscounted estimated cash flows over the remaining amortization periods, their carrying values are reduced to estimated fair value. The Company uses an income approach and inputs that constitute level 3. During the third quarter of each year, the Company evaluates goodwill for impairment at the reporting unit level. The Company uses qualitative factors in accordance with ASU No. 2011-08 to determine whether it is “more likely than not” that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. This measurement is classified based on level 3 input.

As of March 31, 2020, the fair value of the Notes, as further described in Note 8 above, was approximately $179.6 million. Management determines the fair value by utilizing an independent valuation specialist using the antithetic variable technique and is considered a level 2 fair value measurement.

The Company recorded a contingent earn-out of $2.4 million in December 2018 in connection with the acquisitions of Conversable, Inc. and AdvantageTec Inc. The contingent earn-out is based on achieving certain targeted financial, strategic, and integration objectives. The unobservable inputs considered are probability factors and the time value of money. During the year ended December 31, 2019, the contingent earn-out decreased by $1.8 million due to a decrease in re-measurement to fair value of Conversable, Inc. of $0.5 million and payments of $0.5 million in cash and $1.0 million in shares, offset in part by an increase of re-measurement to fair value of AdvantageTec Inc. of $0.2 million. During the three months ended March 31, 2020, the contingent earn-out decreased by $0.6 million due to a decrease in re-measurement in fair value of AdvantageTec Inc. of $0.3 million and payments of $0.3 million in shares.

As a result, there was no remaining contingent earn-out balance as of March 31, 2020. See Note 9 of the Notes to condensed consolidated financial statements for a full description of the acquisition.

The changes in fair value of the level 3 liabilities are as follows (amounts in thousands):

	Contingent Earn-Out	
	March 31, 2020	December 31, 2019
Balance, Beginning of period	$ 557	$ 2,372
Conversable, Inc. fair value adjustment (see Note 9)	—	(496)
AdvantageTec Inc. fair value adjustment (see Note 9)	(263)	168
Payments	(294)	(1,487)
Balance, End of period	$ —	$ 557

11. Commitments and Contingencies

Contractual Obligations

The Company leases facilities and certain car leases (the "leases") under agreements accounted for as operating leases. The leases have initial lease terms ranging from 1 years to 12 years. Payments due under the lease contracts include primarily fixed payments. The lease terms include periods under options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Currently, there are no operating leases where we believe it is reasonably certain that the Company will exercise any option to extend the initial term.

The Company has evaluated its facility leases and determined which leases met the definition of the new standard in accordance with Topic 842. The Company also performed an evaluation of their other contracts with suppliers in accordance with Topic 842 and have determined that, except for the facilities and car leases described above, none of its supply contracts contain a lease. Further, the Company has made an accounting policy election to keep leases with a term of twelve months or less off the balance sheet. This policy applies to all classes of the underlying assets. The Company will recognize those lease payments and associated interest expense in the consolidated statement of operations evenly over the lease term.

The Company elected the “package of practical expedients,” which permits the Company not to reassess under ASC 842 its prior conclusions about lease identification, lease classification and initial direct costs. The Company also made a policy election not to separate non-lease components from lease components. Furthermore, the Company elected to not capitalize leases with a term of 12 months or less and recognize the lease expense for such leases generally on a straight-line basis over the lease term.

In connection with the leases, the Company recognized operating lease right-of-use assets of $14.8 million and $15.7 million and an aggregate lease liability of $18.8 million and $19.5 million in its condensed consolidated balance sheet as of March 31, 2020 and December 31, 2019, respectively.

The determination of the discount rate used to calculate the present value of the right-of-use assets and lease liabilities depends on whether an interest rate is specified in the lease or not. If the lease specifies a rate, that rate is used when calculating the present value of lease payments. If the rate is not readily determinable, which is generally the case for the Company, the Company's incremental borrowing rate ("IBR") as of the date of inception of the lease is used (for initial measurement, the IBR was determined as of the adoption date of the standard). The IBR is the rate of interest that the Company would have to pay to borrow on a collateralized basis over a similar term and amount equal to the lease payments in a similar economic environment. The Company used a ratings benchmark report against its peers in the technology sector.

The Company has operating leases for its corporate offices and other service agreements. The Company's leases have remaining lease terms of 1 to 12 years, some of which include options to extend. The Company's lease expense for the three months ended March 31, 2020 and 2019, consisting entirely of operating leases, was approximately $3.4 million and $2.9 million, respectively. Operating lease payments, which reduced operating cash flows, amounted to $2.0 million and $1.5 million for the three months ended March 31, 2020 and March 31, 2019, respectively.

During the three months ended March 31, 2020, the Company decided to abandon the Berlin office. The cease use date was March 31, 2020. According to ASC 842, the Company elected to apply the "loss of straight-line lease cost", amortizing the remaining right-of-use asset of approximately $0.4 million from the decision date to the cease use date. This expense is included in restructuring costs in the condensed consolidated statements of operations.

Supplemental balance sheet information related to leases was as follows:

	As of March 31, 2020	As of December 31, 2019
Operating Leases	(in thousands, except lease term and discount rate)	
Right-of-use asset	$ 14,800	$ 15,680
Current operating lease liability	6,561	6,602
Long term operating lease liability	12,251	12,865
Total operating lease liability	$ 18,812	$ 19,467
Weighted Average Remaining Lease Term		
Operating leases	3.5 years	3.5 years
Weighted Average Discount Rate		
Operating leases	7%	7%

Future minimum lease payments under non-cancellable operating leases (with an initial or remaining lease terms in excess of one year) are as follows (amounts in thousands):

Year ending December 31:	As of March 31, 2020	As of December 31, 2019
2020 (remaining nine months for March 31, 2020)	$ 5,839	$ 7,787
2021	6,694	6,530
2022	3,961	3,746
2023	2,108	1,925
2024	1,334	1,148
Thereafter	1,189	864
Total undiscounted lease payments	21,125	22,000
Less: present value adjustment	(2,313)	(2,533)
Total operating lease liability	$ 18,812	$ 19,467

Employee Benefit Plans

In 2019, the Company's 401(k) policy was changed to a Safe Harbor Plan, whereby the Company matches 100% of the first 3% of eligible compensation and 50% of the next 2% of eligible compensation. Furthermore, the match is immediately vested. Salaries and related expenses include $0.9 million and $1.0 million of employer matching contributions for the three months ended March 31, 2020 and 2019, respectively.

Letters of Credit

As of March 31, 2020, the Company has a $1.8 million letter of credit outstanding substantially in favor of a certain landlord for office space. In addition, the Company has a letter of credit totaling $0.1 million as a security deposit for the due performance by the Company of the terms and conditions of a supply contract. There were no draws against these letters of credit during the three months ended March 31, 2020.

Non Income Tax Matters

The Company is in the process of finalizing its sales tax liability analysis for states in which it has economic nexus. It is probable that the Company will be subject to sales tax liabilities plus interest in these states and therefore the estimated tax liability ranges between $2.5 million to $6.3 million with no amount within that range a better estimate than any other amount; accordingly, $2.5 million was accrued as of March 31, 2020.

COVID-19 Pandemic

In December 2019, a novel coronavirus disease (“COVID-19”) was first reported. On March 11, 2020, due to worldwide spread of the virus, the World Health Organization characterized COVID-19 as a pandemic. The COVID-19 global pandemic has resulted in a widespread health crisis, and the resulting impact on governments, businesses and individuals and actions taken by them in response to the situation have resulted in widespread economic disruptions, significantly affecting broader economies, financial markets, and overall demand for the Company’s products. The COVID-19 outbreak also has caused increased uncertainty in estimates and assumptions affecting the reported amounts of assets and liabilities, and the disclosure of contingent assets and liabilities in the Company’s Condensed Consolidated Financial Statements as the extent and period of recovery from the COVID-19 outbreak and related economic disruption is difficult to forecast.

The extent to which COVID-19 impacts the Company's business and financial results will depend on numerous evolving factors including, but not limited to, the magnitude and duration of COVID-19, the extent to which it will impact worldwide macroeconomic conditions, the speed of the anticipated recovery, and governmental and business reactions to the pandemic. The Company assessed certain accounting matters that generally require consideration of forecasted financial information in context with the information reasonably available to the Company and the unknown future impacts of COVID-19. The accounting matters assessed included, but were not limited to, the Company's allowance for credit losses and the carrying value of the goodwill and other long-lived assets. While there was not any significant impact to the Company's consolidated financial statements as of and for the three months ended March 31, 2020, the Company's future assessment of the magnitude and duration of COVID-19, as well as other factors, could result in material impacts to the Company's consolidated financial statements in future reporting periods.

12. Stockholders' Equity

Common Stock

As of March 31, 2020, there were 200,000,000 shares of common stock authorized, 68,000,209 shares issued, and 65,290,379 shares outstanding. As of December 31, 2019, there were 200,000,000 shares of common stock authorized, 66,543,073 shares issued and 63,833,243 shares outstanding. The par value for common shares is $0.001 per share.

On June 6, 2019, the Company's stockholders approved an amendment to the Company's certificate of incorporation to increase the number of shares of our common stock that the Company is authorized to issue from 100,000,000 to 200,000,000 shares. On November 12, 2019, the Company filed a charter amendment with the State of Delaware to effectuate the increase in the number of shares of the Company's common stock that the Company is authorized to issue.

Preferred Stock

As of March 31, 2020 and December 31, 2019, there were 5,000,000 shares of preferred stock authorized, and zero shares issued and outstanding. The par value for preferred shares is $0.001 per share.

Stock Repurchase Program

From 2012 through 2018, the Company had a stock repurchase program in place pursuant to which the Company was authorized to repurchase shares of its common stock, in the open market or privately negotiated transactions, at times and prices considered appropriate by the Board of Directors depending upon prevailing market conditions and other corporate considerations. The timing and actual number of shares repurchased depended on a variety of factors including the timing of open trading windows, price, corporate and regulatory requirements and other market conditions. The program was discontinued at the end of 2018. The Company may or may not enter into a new stock repurchase program in the future.

Stock-Based Compensation

The Company follows FASB ASC 718-10, "Stock Compensation," which addresses the accounting for transactions in which an entity exchanges its equity instruments for goods or services, with a primary focus on transactions in which an entity obtains employee services in share-based payment transactions. ASC 718-10 requires measurement of the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award. Incremental compensation costs arising from subsequent modifications of awards after the grant date must be recognized.

Our forfeiture rate assumptions, which estimate the share-based awards that will ultimately vest, requires judgment, and to the extent actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period of change and could be materially different from share-based compensation expense recorded in prior periods. Effective January 1, 2020, the Company changed its forfeiture rate estimate which resulted in an increase in stock compensation expense of $2.3 million for the three months ended March 31, 2020.

The per share weighted average fair value of stock options granted was $8.18 and $9.84 during the three months ended March 31, 2020 and 2019, respectively. The fair value of each option grant is estimated on the date of grant, adjusted for estimated forfeitures, using the Black-Scholes option-pricing model with the following weighted average assumptions:

	Three Months Ended March 31,	
	2020	**2019**
Dividend yield	0.0%	0.0%
Risk-free interest rate	.66%	2.49% - 2.57%
Expected life (in years)	5	5
Historical volatility	46.5%	43.62% - 43.85%

A description of the methods used in the significant assumptions used to estimate the fair value of stock-based compensation awards follows:

Dividend yield – The Company uses 0% as it has never issued dividends and does not anticipate issuing dividends in the near term.

Risk-free interest rate – The Company uses the market yield on U.S. Treasury securities at five years with constant maturity, representing the current expected life of stock options in years.

Expected life – The Company uses historical data to estimate the expected life of a stock option.

Historical volatility – The Company uses a trailing five year from grant date to determine volatility.

Stock Option Plans

During 1998, the Company established the Stock Option and Restricted Stock Purchase Plan (the “1998 Plan”). Under the 1998 Plan, the Board of Directors could issue incentive stock options or nonqualified stock options or other equity-based awards in respect of up to 5,850,000 shares of common stock. The 2000 Stock Incentive Plan (the “2000 Plan”) succeeded the 1998 Plan. Under the 2000 Plan, the options which had been outstanding under the 1998 Plan were incorporated in the 2000 Plan increasing the number of shares available for issuance under the 2000 Plan by approximately 4,150,000, thereby reserving for issuance 10,000,000 shares of common stock in the aggregate.

The Company established the 2009 Stock Incentive Plan (the “2009 Plan”) as a successor to the 2000 Plan. Under the 2009 Plan, the options which had been outstanding under the 2000 Plan were incorporated into the 2009 Plan and the Company increased the number of shares available for issuance under the plan by 6,000,000. The Company amended the 2009 Plan (the “Amended 2009 Plan”) effective June 7, 2012. The Amended 2009 Plan increased the number of shares authorized for issuance under the plan by an additional 4,250,000. On June 2, 2017, the Company's Board of Directors amended and restated the Amended 2009 Plan effective April 30, 2017. The amended and restated plan increased the number of shares authorized for issuance under the plan by an additional 4,000,000.

On April 11, 2019, the Company's Board of Directors adopted, and on June 6, 2019, the Company's stockholders approved, the 2019 Stock Incentive Plan ("2019 Stock Incentive Plan") to replace the Amended 2009 Plan, which was set to expire under its terms on June 9, 2019. Under the 2019 Stock Incentive Plan, the number of shares underlying options and other equity awards which remain outstanding, as well as the number of shares that remained available for grant, under the Amended 2009 Plan and under the Amended 2000 Plan were incorporated, as of June 6, 2019, into the 2019 Stock Incentive Plan. In addition, under the 2019 Stock Incentive Plan, 4,250,000 new shares were authorized for issuance. The number of shares authorized for issuance under the 2019 Stock Incentive Plan, the Amended 2009 Plan, and the 2000 Plan is 32,067,744 shares in the aggregate. Options to acquire common stock granted thereunder have 10-year terms. As of March 31, 2020, approximately 1.3 million shares of common stock remained available for issuance under the 2019 Stock Incentive Plan (taking into account all option exercises and other equity award settlements through March 31, 2020).

Employee Stock Purchase Plan

In June 2010, the Company’s stockholders approved the 2010 Employee Stock Purchase Plan with 1,000,000 shares of common stock initially reserved for issuance. Subject to stockholder approval, which was obtained on June 2, 2017, the Company's Board of Directors amended and restated the 2010 Employee Stock Purchase Plan effective April 30, 2017. The amended and restated plan increased the number of shares authorized for issuance under the plan by an additional 1,000,000, thereby reserving for issuance 2,000,000 shares of common stock in the aggregate.

On April 11, 2019, the Company's Board of Directors adopted, and on June 6, 2019, the Company's stockholders approved, the 2019 Employee Stock Purchase Plan (the "2019 Employee Stock Purchase Plan") to replace the Amended and Restated 2010 Employee Stock Purchase Plan which was set to expire under its terms in June 2020. There are 1,000,000 shares authorized and reserved for issuance under the 2019 Employee Stock Purchase Plan. As of March 31, 2020, approximately 0.9 million shares of common stock remain available for issuance under the 2019 Employee Stock Purchase Plan (taking into account all share purchases through March 31, 2020).

Inducement Plan

During January 2018, the Company established the Inducement Plan (the “2018 Plan”). Under the 2018 Plan, the Board of Directors can issue nonqualified stock options or other equity-based awards in respect of up to 1,500,000 shares of common stock. On April 25, 2018, the Company's Board of Directors amended and restated the 2018 Plan (the "Amended 2018 Plan"). The Amended 2018 Plan increased the number of shares authorized for issuance under the plan by an additional 500,000 shares, and subsequently the Board of Directors has approved and ratified, effective as of July 31, 2018, October 29, 2018 and February 13, 2019, increases of the number of shares authorized for issuance under the Amended 2018 Plan by 500,000, 250,000 and 618,048 shares, respectively, constituting 3,368,048 shares of common stock in the aggregate being reserved for issuance pursuant to grants under the Amended 2018 Plan. As of March 31, 2020, approximately 1.0 million shares of common stock remained available for issuance under the Amended 2018 Plan (taking into account all option exercises and other equity award settlements through March 31, 2020).

Stock Option Activity

A summary of the Company’s stock option activity and weighted average exercise prices follows:

	Stock Option Activity		Weighted Average	Aggregate Intrinsic
	Options (in thousands)	Weighted Average Exercise Price	Remaining Contractual Term (in years)	Value (in thousands)
Balance outstanding at December 31, 2019	5,799	$ 16.57	6.79	$ 119,064
Granted	17	20.10		
Exercised	(199)	9.81		
Cancelled or expired	(125)	22.39		
Balance outstanding at March 31, 2020	5,492	$ 16.69	6.43	$ 41,492
Options vested and expected to vest	4,780	$ 16.13	8.38	$ 36,574
Options exercisable at March 31, 2020	2,939	$ 12.36	6.50	$ 29,258

The total fair value of stock options exercised during the three months ended March 31, 2020 was approximately $0.9 million. As of March 31, 2020, there was approximately $18.1 million of total unrecognized compensation cost related to nonvested share-based compensation arrangements. That cost is expected to be recognized over a weighted average period of approximately 2.7 years.

Restricted Stock Unit Activity

A summary of the Company’s restricted stock units (“RSUs”) activity and weighted average exercise prices follows:

	Restricted Stock Unit Activity		
	Number of Shares (in thousands)	Weighted Average Grant Date Fair Value (Per Share)	Aggregate Fair Value (in thousands)
Balance outstanding at December 31, 2019	3,049	$ 24.73	$ 112,848
Awarded	1,913		
Vested	(1,208)		
Forfeited	(118)		
Non-vested and outstanding at March 31, 2020	3,636	$ 24.72	$ 82,726
Expected to vest	1,855	$ 24.08	$ 42,211

RSUs granted to employees generally vest over a three to four-year period or upon achievement of certain performance conditions. In accordance with ASU 2017-09, as of March 31, 2020, total unrecognized compensation cost, adjusted for estimated forfeitures, related to nonvested RSUs was approximately $79.7 million and the weighted-average remaining vesting period was 3.2 years.

For the three months ended March 31, 2020 and the comparable period of 2019, the Company accrued approximately $3.7 million and $1.9 million in cash awards, respectively, to be settled in shares of the Company's stock and recorded a corresponding expense, which is included as a component of stock-based compensation expense in the accompanying condensed consolidated statement of operations for the three months ended March 31, 2020 and 2019, respectively.

Stock-based compensation expense recognized in the Company’s condensed consolidated statements of operations and cash flows was $14.7 million and $7.2 million for the three months ended March 31, 2020 and 2019, respectively.

13. Restructuring

The Company’s restructuring related to costs associated with re-prioritizing and reallocating resources to focus on areas showing high growth potential. The expense associated with this restructuring was approximately $3.2 million and $0.3 million during the three months ended March 31, 2020 and 2019, respectively. The Company expects to incur additional restructuring costs through December 31, 2020. The restructuring liability was approximately $0.3 million as of March 31, 2020 and December 31, 2019. It is classified as accrued expenses and other current liabilities on the condensed consolidated balance sheets.

The following table presents the detail of the liability for the Company's restructuring charges for the periods presented (amounts in thousands):

	As of March 31, 2020	December 31, 2019
Balance, Beginning of the year	$ 314	$ 977
Severance and other associated costs	3,190	2,043
Cash payments	(3,228)	(2,706)
Balance, End of period	$ 276	$ 314

The following table presents the detail of expenses for the Company's restructuring charges for the three months ended March 31, 2020 (amounts in thousands):

	Three Months Ended March 31,	
	2020	2019
Severance and other associated costs	$ 3,190	$ 279
Total restructuring costs	$ 3,190	$ 279

14. Legal Matters

The Company previously filed an intellectual property suit against [24]7 Customer, Inc. (‘‘[24]7’’) in the Southern District of New York on March 6, 2014 seeking damages on the grounds that [24]7 reverse engineered and misappropriated the Company’s technology to develop competing products and misused the Company’s business information. On June 22, 2015, [24]7 Customer, Inc. filed suit against the Company in the Northern District of California alleging patent infringement. On December 7, 2015, [24]7 Customer Inc. filed a second patent infringement suit against the Company, also in the Northern District of California. On March 16, 2017, the New York case was voluntarily transferred and consolidated with the two California cases in the Northern District of California for all pre-trial purposes. Rulings by both the Court and the United States Patent Office in the Company’s favor have invalidated the majority of [24]7 patents that were asserted in the patent cases. Trial for the Company’s intellectual property and other claims asserted against [24]7 in the original litigation was set for April 27, 2020, but that date was vacated due to court restrictions related to Covid-19 and will be reset once those restrictions are lifted. Trial for [24]7’s patent infringement claims has been vacated, to be reset after the trial on LivePerson’s claims. The Company believes the claims filed by [24]7 are entirely without merit and intends to defend them vigorously.

The Company routinely assesses all of its litigation and threatened litigation as to the probability of ultimately incurring a liability, and records its best estimate of the ultimate loss in situations where the Company assesses the likelihood of loss as probable.

From time to time, the Company is involved in or subject to legal, administrative and regulatory proceedings, claims, demands and investigations arising in the ordinary course of business, including direct claims brought by or against the Company with respect to intellectual property, contracts, employment and other matters, as well as claims brought against the Company’s customers for whom the Company has a contractual indemnification obligation. The Company accrues for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. In addition, in the event the Company determines that a loss is not probable, but is reasonably possible, and it becomes possible to develop what the Company believes to be a reasonable range of possible loss, then the Company will include disclosure related to such matter as appropriate and in compliance with ASC 450. The accruals or estimates, if any, resulting from the foregoing analysis, are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. To the extent there is a reasonable possibility that the losses could exceed the amounts already accrued, the Company will, as applicable, adjust the accrual in the period the determination is made, disclose an estimate of the additional loss or range of loss, indicate that the estimate is immaterial with respect to its financial statements as a whole or, if the amount of such adjustment cannot be reasonably estimated, disclose that an estimate cannot be made.

From time to time, third parties assert claims against the Company regarding intellectual property rights, privacy issues and other matters arising in the ordinary course of business. Although the Company cannot be certain of the outcome of any litigation or the disposition of any claims, nor the amount of damages and exposure, if any, that the Company could incur, the Company currently believes that the final disposition of all existing matters will not have a material adverse effect on our business, results of operations, financial condition or cash flows. In addition, in the ordinary course of business, the Company is also subject to periodic threats of lawsuits, investigations and claims. Regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

15. Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences are expected to become deductible. In evaluating our ability to recover our deferred tax assets in the jurisdiction from which they arise, we consider 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. We include interest accrued on the underpayment of income taxes in interest expense and penalties, if any, related to unrecognized tax benefits in general and administrative expenses. We recorded a valuation allowance as we considered our cumulative loss in recent years as a significant piece of negative evidence. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law making several changes to the Internal Revenue Code. The changes include, but are not limited to: increasing the limitation on the amount of deductible interest expense; allowing companies to carryback certain net operating losses; and increasing the amount of net operating loss carryforwards that corporations can use to offset taxable income. Under the CARES Act, the Company is able to recognize the benefit of the tax year 2018 loss by carrying back the loss to prior periods. The total tax benefit recognized in the Company’s condensed consolidated statement of operations for the three months ended March 31, 2020 as a result of the CARES Act is approximately $0.5 million.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

General

Our discussion and analysis of our financial condition and results of operations is based upon our condensed consolidated financial statements, which are prepared in conformity with accounting principles generally accepted in the United States of America. As such, we are required to make certain estimates, judgments and assumptions that management believes are reasonable based upon the information available. We base these estimates on our historical experience, future expectations and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for our judgments that may not be readily apparent from other sources. These estimates and assumptions affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the dates of the condensed consolidated financial statements and the reported amounts of revenue and expenses during the reporting periods. These estimates and assumptions relate to estimates of the carrying amount of goodwill, intangibles, depreciation, stock based-compensation, valuation allowances for deferred income taxes, accounts receivable, the expected term of a customer relationship, accruals and other factors. We evaluate these estimates on an ongoing basis. Actual results could differ from those estimates under different assumptions or conditions, and any differences could be material. In addition, our actual results could differ from our estimates and assumptions based upon impacts on our business and general economic conditions due to the current COVID-19 pandemic.

Overview

LivePerson, Inc. ("LivePerson", the "Company", "we" or "our") makes life easier for people and brands everywhere through messaging powered by AI and humans. During the past decade, the consumer has made the mobile device the center of their digital lives, and they have made mobile messaging the center of communication with friends, family and peers. Our technology enables consumers to connect with businesses through these same preferred conversational interfaces, including Facebook Messenger, SMS, WhatsApp, Apple Business Chat, Google Rich Business Messenger and Alexa. These messaging conversations harness human agents, bots and Artificial Intelligence (AI) to power convenient, personalized and content-rich journeys across the entire consumer lifecycle, from discovery and research, to sales, service and support, and even marketing, social and brick and mortar engagements. For example, consumers can look up product info like ratings, images and pricing, search for stores, see product inventory, schedule appointments, apply for credit, approve repairs, make purchases or payments - all without ever leaving the messaging channel. We refer to these AI and human-assisted conversational experiences as the Conversational Space.

LiveEngage, our enterprise-class cloud-based platform, enables businesses to become conversational by securely deploying messaging, coupled with bots and AI, at scale for brands with tens of millions of customers and many thousands of customer care agents. LiveEngage powers conversations across each of a brand's primary digital channels, including mobile apps, mobile and desktop web browsers, short message service (SMS), social media and third-party consumer messaging platforms. Brands can also use LiveEngage to message consumers when they dial a 1-800 number instead of forcing them to navigate interactive voice response systems (IVRs) and wait on hold. Similarly, LiveEngage can receive traditional emails and convert them into messaging conversations, or embed messaging conversations directly into web advertisements, rather than redirect consumers to static website landing pages.

Our robust, cloud-based suite of rich messaging, real-time chat, AI and automation offerings features consumer and agent facing bots, intelligent routing and capacity mapping, real-time intent detection and analysis, queue prioritization, customer sentiment, analytics and reporting, content delivery, Payment Card Industry (PCI) compliance, cobrowsing and a sophisticated proactive targeting engine. With LiveEngage, agents can manage all conversations with consumers through a single console interface, regardless of which disparate messaging endpoints the consumers originate from; i.e., WhatsApp, Line, Apple Business Chat, IVR, social, email, Alexa, or WeChat. An extensible application programming interface (API) stack facilitates a lower cost of ownership by facilitating robust integration into back-end systems, as well as enabling developers to build their own programs and services on top of the platform. More than 40 APIs and software development kits are available on LiveEngage.

LivePerson's Conversational AI offerings put the power of bot development, training, management and analysis into the hands of the contact center and its agents, the teams most familiar with how to structure sales and service conversations to drive successful outcomes. The platform enables what we call "the tango" of humans, AI and bots, whereby human agents act as bot managers, overseeing AI-powered conversations and seamlessly stepping into the flow when a personal touch is needed. Agents become ultra-efficient, leveraging the AI engine to serve up relevant content, define next-best actions and take over repetitive transactional work, so that the agent can focus on relationship building. By seamlessly integrating messaging with our proprietary Conversational AI, as well as third-party bots, LiveEngage offers brands a comprehensive approach to scaling automations across their millions of customer conversations.

Complementing our proprietary messaging and Conversational AI offerings are teams of technical, solutions and consulting professionals that have developed deep domain expertise in the implementation and optimization of conversational services across industries and messaging endpoints. We are a leading authority in the Conversational Space. LivePerson's products, coupled with our domain knowledge, industry expertise and professional services, have been proven to maximize the effectiveness of the Conversational Space and deliver measurable return on investment. Certain of our customers have achieved the following advantages from our offerings:

- the ability for each agent to manage as many as 40 messaging conversations at a time, as compared to one at a time for a voice agent and two to four at a time for a good chat agent. Adding AI and bots provides even greater scale to the number of conversations managed;
- labor efficiency gains of at least two times that of voice agents, effectively cutting labor costs by at least 50%;
- improving the overall customer experience, thereby fueling customer satisfaction increases of up to 20 percentage points, and enhancing retention and loyalty;
- more convenient, personalized and content-rich conversations that increase sales conversion by up to 20%, increase average order value and reduce abandonment;
- more satisfied contact center agents, thereby reducing agent churn by up to 50%;
- maintain a valued connection with consumers via mobile devices, either through native applications, websites, text messages, or third-party messaging platforms;
- leverage spending that drives visitor traffic by increasing visitor conversions;
- refine and improve performance by understanding which initiatives deliver the highest rate of return; and
- increase lead generation by providing a single platform that engages consumers through advertisements and listings on branded and third-party websites.

As a "cloud computing" or software-as-a-service (SaaS) provider, LivePerson provides solutions on a hosted basis. This model offers significant benefits over premise-based software, including lower up-front costs, faster implementation, lower total cost of ownership, scalability, cost predictability, and simplified upgrades. Organizations that adopt a fully-hosted, multi-tenant architecture that is maintained by LivePerson eliminate the majority of the time, server infrastructure costs, and IT resources required to implement, maintain, and support traditional on-premise software.

More than 18,000 businesses, including HSBC, Orange, The Home Depot, and GM Financial use our conversational solutions to orchestrate humans and AI, at scale, and create a convenient, deeply personal relationship with their customers.

The key elements of LivePerson's business solutions strategy include:

Build awareness and drive adoption of the Conversational Space. LivePerson brought our first customer live on messaging in June 2016. Since that time, we have been focused on building awareness for conversational experiences and driving adoption. We have educated businesses on the financial and operational transformation that occurs when a contact center shifts to an asynchronous messaging environment, where the consumer controls the pace of the conversation, which can last minutes, hours or days, from a synchronous call or chat center, where conversations occur in real-time and have a distinct start and end.

A key component of our industry awareness marketing strategy has been to hold multiple global customer summits each year that target executives from enterprise customers and prospects, and feature a key theme within the Conversational Space, such as Apple Business Chat, Google Rich Business Messenger, IVR deflection or AI. LivePerson customers are the centerpoint of these summits, presenting why they chose LivePerson for conversational experiences, how they achieved success, and what type of ROI they have realized. Each attendee then receives a blueprint for how they can achieve similar outcomes. We have found this strategy to drive strong results for LivePerson, as we have seen a greater than 40% conversion rate on opportunities that were created or advanced as part of the customer summits. By year end 2019, we had brought approximately 300 customers live on messaging and increased adoption within our enterprise customers to nearly 55%. In addition, nearly 60% of messaging conversations had automation attached.

In light of the Coronavirus pandemic and recent shelter-in-place mandates, we have adapted our marketing strategy to include targeted digital experiences that emphasize the unique positioning of our messaging and AI offerings to help brands succeed in this new environment. Our marketing message has shifted from business improvement to business continuity and virtualization of the contact center.

Increase messaging volumes by developing a broad ecosystem, expanding customer use cases, and focusing on AI and automation. Our strategy is to drive higher messaging volumes by going both wide across messaging endpoints, deep across consumer use cases, and focusing on AI and automation as the means to deliver powerful scale. LivePerson offers a platform usage pricing model, where customers are offered access to our entire suite of messaging technologies across their entire agent pool for a pre-negotiated cost per interaction. We believe that over time this model will drive higher revenue for LivePerson by reducing barriers to adoption of new messaging endpoints and use cases.

In order to drive broad messaging adoption, it is imperative that LiveEngage integrates to all of the messaging apps that consumers prefer to use for communication and addresses all key use cases. For example, if a consumer is an avid WhatsApp user, and a brand only offers SMS as a messaging option, that consumer may be reluctant to try messaging the brand. Therefore, a key strategy of ours has been to build one of the industry’s broadest ecosystems of messaging endpoints and use cases. In June 2016, we launched with In-App messaging. In 2017, we introduced Facebook Messenger, SMS, Web messaging and IVR deflection integrations. In 2018, we added Apple Business Chat, Google Rich Business Messenger, Line, WhatsApp, Alexa, Google Home, Google Ad Lingo and Twitter. In 2019, we added email, allowing brands to manage emails through the same console they use for messaging, and to convert legacy emails into messaging conversations. We also added social monitoring and conversational tools for Twitter and Facebook, and introduced proactive messaging, allowing brands to transform traditional one-way notifications such as flight cancellations or plan overage alerts into two-way conversations. Finally, we connected to Facebook and WhatsApp digital advertisements, enabling consumers to initiate messaging conversations for marketing and customer care directly within the advertisement.

Each channel and use case added opens the door to hundreds of millions of new consumers, providing brands a greater opportunity to shift share away from their legacy contact center channels into messaging. For example, in 2019, leading airlines launched on WhatsApp and Apple Business Chat with the ability to make secure payments; a baseball stadium launched an automated conversational concierge providing answers to a wide range of questions from restroom locations to player stats; and a multinational telecommunications company used proactive two-way messaging for outbound campaigns.

LivePerson makes the management of all these disparate channels seamless to the brand. AI-based intelligent routing, queuing and prioritization software orchestrates these conversations at scale, regardless of which messaging endpoint they originated from, so that human and bot agents can engage with all customers through just one console.

We believe that this strategy has influenced LivePerson’s enterprise and mid-market revenue retention rate, (the trailing-twelve-month change in total revenue from existing customers after upsells, downsells and attrition) which was within our target range of 105% to 115% for 2019. The benefit can also be seen in LivePerson’s average revenue per user (ARPU) for our enterprise and mid-market customers, which increased approximately 20% in 2019 to $345,000 from approximately $285,000 in 2018. In fact, in 2019, the ARPU for Enterprise customers on messaging was more than 5 times higher than those on just chat. We believe these ARPU trends are a clear indication of how LivePerson’s strategy to drive messaging adoption has successfully influenced our revenue growth by taking share from legacy communication channels. We plan to continue adding new messaging endpoints and use cases, and to drive higher adoption of existing ones within our customer base.

Attract the industry’s best AI, machine learning and conversational talent. We believe that AI and machine learning are critical to successfully scaling in the Conversational Space, and that in order to develop the industry’s leading technology, we need to attract the industry's best talent. In 2018, LivePerson recruited Alex Spinelli, key architect of the Alexa Operating System at Amazon.com, as our Global CTO. Under Mr. Spinelli’s leadership, LivePerson opened an Advanced Technology Center in Seattle, Washington, where the Company now has more than 125 of the industry’s brightest data scientists, machine learning engineers and automation engineers, many from firms such as Nike, Amazon.com, Microsoft and Target, who are working exclusively on applying AI to the Conversational Space. LivePerson also expanded its Mannheim, Germany development center, and added key development talent through the acquisitions of BotCentral in Mountain View, California and Conversable in Austin, Texas.

Bring to market best-in-class AI and machine learning technologies designed for the Conversational Space. We believe that in the last decade many vendors introduced AI and bot offerings that created frustrating experiences for consumers and businesses alike, which in turn has eroded trust in automation. Many of these solutions have proven difficult to build and scale, and have been limited by stand alone implementations that lacked the measurement, reporting and human oversight of conversational platforms such as LiveEngage. In December 2018, LivePerson announced its patent pending AI engine that is designed to overcome these shortcomings and help brands rapidly bring to market conversational AI that can scale to millions of interactions, while increasing customer satisfaction and conversion rates.

Unlike alternative solutions designed solely for IT departments, LivePerson’s Conversational AI was built to be used by developers *and* contact center agents. By putting the power of conversational design and bot management in the hands of contact center agents, LivePerson’s Conversational AI gives brands the ability to leverage the employees closest to the customer, those who are most versed in the voice of the brand, and with the most expertise in how to craft successful outcomes for customer service and sales journeys.

Some of the key innovations behind LivePerson’s Conversational AI include:

- a holistic approach to scaling AI by combining consumer facing bots, agent facing bots, intelligent routing and real-time intent understanding, with an analytics dashboard that helps users focus on the intents that are impacting their business and prioritize which intents to automate next
- bot building software that is based on dialogue instead of workflow or code, so non-technical employees like contact center agents can design automations

- leverage a data moat of hundreds of millions of conversations to feed the machine learning that rapidly and accurately detects consumer sentiment and intents in real-time. Use intent understanding for advanced routing, next-best actions, and to fully contain conversations with automation
- the establishing of contact center agents as bot managers, ensuring that every conversation is safeguarded by a human and that agents are continuously training the AI to be smarter and drive more successful outcomes
- powerful Assist technology that multiplies the efficiency of agents by analyzing intents in real time and then suggesting next best actions, predefined content, and bots that can take over transactional work
- pre-built templates for target verticals that provide out of the box support for the top intents and back-end integrations
- the ability to bootstrap conversations with existing transcripts, reducing design effort and speeding time to market
- third-party AI natural language understanding (NLU) integration, so customers aren't boxed into one vendor
- AI analytics and reporting tailored to the Conversational Space, providing brands with immediate, actionable insights about their businesses and contact center operations

Our strategy is to continue to enhance the Conversational AI engine and related products, leveraging our global R&D footprint and substantial library of mobile and online conversational data, with the aim of increasing agent efficiency, decreasing customer care costs, improving the customer experience and increasing customer lifetime value.

Sustain our leadership position by aligning brands to a vision that transforms how they communicate with consumers and delivers a superior return on investment. We believe that most contact center technology vendors incorrectly view messaging as a feature. They are content with building integrations to a messaging endpoint and offering messaging as just another product in their suite. LivePerson holds the perspective that messaging and AI are the foundation for transforming conversational experiences, disrupting how agents operate and how brands engage with consumers across service, sales, marketing, social and brick and mortar. Brands must adapt their contact centers to an asynchronous messaging environment and leverage a combination of human agents, bots and AI to achieve scale and efficiencies. When done correctly, the entire consumer lifecycle with a brand will be maintained within the Conversational Space, and traffic will steadily shift away from lower returning voice calls, websites, emails and apps to higher returning messaging endpoints.

We believe that LivePerson is uniquely positioned to deliver this transformation due to our technology and expertise:

- The LiveEngage enterprise-class, automation-first, cloud-based platform, was designed for AI-assisted and human-powered messaging in mobile and online channels. The platform offers best-in-class security and scalability, offers the broadest ecosystem of messaging endpoints, is designed for ease of use, and features an AI engine custom built for the Conversational Space, intent recognition, robust real-time reporting, role-based real-time analytics, predictive intelligence, and innovations in customer satisfaction and connection measurement. Additionally, LiveEngage is an open platform with pre-built, enterprise-grade integrations into back-end systems as well as the ability to work across natural language understanding (NLU) providers.
- The Company has a data moat built on hundreds of millions of conversations across industries, geographies and use cases that is feeding the machine learning engines that power intent understanding.
- The platform has expanded to power conversations across a broad spectrum of channels and use cases, from traditional sales and customer service, to marketing, social, email, advertising and brick and mortar.
- LivePerson has deep domain expertise across verticals and messaging endpoints, a global footprint, referenceable enterprise brands and a team of technical, solutions and consulting professionals to assist customers along their transformational journeys. We are positioned as an authority in the Conversational Space,. We have developed a Transformation Model that is introduced to existing and prospective customers to help guide them on their journeys from legacy and oftentimes inefficient legacy voice, email and chat solutions to modern conversational ones powered by messaging and AI.

We believe that LivePerson's differentiated approach to the Conversational Space, combined with our unique technology and expertise has established us as a market leader, with an ability to deliver superior returns on investment. LivePerson customers manage as many as 40 messaging conversations at a time, as compared to one at a time for a voice agent and two to four at a time for a good chat agent. Adding AI and bots provides even greater scale to the number of conversations managed. Our customers often see labor efficiency gains of at least two times that of voice agents, effectively cutting labor costs by at least 50%. Furthermore, our ability to deliver more convenient, personalized and content-rich conversations often drives increases in customer satisfaction of up to 20 percentage points and increases in sales conversions of up to 20%, while enhancing average order value, customer retention and loyalty.

Strengthen our position in both existing and new industries. We plan to continue to develop our market position by increasing our customer base, and expanding within our installed base. We will continue to focus primarily on key target markets: consumer/retail, telecommunications, financial services, travel/hospitality, technology and automotive within both our enterprise and mid-market sectors, as well as the small business (SMB) sector. In 2019, we made strong inroads into new verticals with key wins in the airline, foodservice and healthcare industries. We are increasingly structuring our field organization to emphasize our domain expertise and strengthen customer relationships across target industries.

Continue to build our international presence. We are focused on expanding our international revenue contribution, which increased to 41% of total revenue in 2019 and 2018, up from 37% in 2017. We are generating positive results from our recent investments in the Asia Pacific region, and recently opened an office in Latin America.

Leverage our open architecture to support partners and developers. In addition to developing our own applications, we continue to cultivate a partner eco-system capable of offering additional applications and services to our customers. We integrate into approximately a dozen third-party messaging endpoints including SMS, Facebook Messenger, Apple Business Chat, Google Rich Business Messenger, Line, WhatsApp, Alexa, Google Home, WeChat, Google Ad Lingo and Twitter, multiple IVR vendors and dozens of branded apps. LiveEngage integrates our proprietary messaging and Conversational AI with third-party bot offerings, empowering our customers to manage a mix of different bots, human agents and technologies from one control panel, thereby optimizing contact center efficiency. LivePerson's proprietary and third-party AI/bots enable brands to partially or fully automate communications with their customers.

In addition, we have opened up access to our platform and our products with more than 40 APIs and software development kits that allow customers and third parties to develop on top of our platform. Customers and partners can utilize these APIs to build our capabilities into their own applications and to enhance our applications with their services. In 2019, we launched LivePerson Functions, a serverless integration capability that allows brands to more easily and rapidly customize conversations flows within LiveEngage through functions-as-a-service technology.

Expand sales partnerships to broaden our presence and accelerate sales cycles. We are focused on broadening our market reach and accelerating sales cycles by partnering with systems integrators, technology providers, business process outsourcers, value added resellers and other sales partners. We formalized a relationship with IBM Global Business Services in 2017 and Accenture in 2018. In 2019, we announced strategic partnerships with TTEC, a leading BPO focused on customer experience, and DMI, a digital transformation company, to redefine the customer experience with digital engagement, messaging, and AI-driven automation. LivePerson increased the number of partners focused on SMBs to more than 300 at year-end 2019, from over 150 at year-end 2018, and approximately 40 at the end of 2017. Approximately one quarter of all opportunities were influenced by partners in 2019, and we are focused on driving that contribution toward 40% longer term.

Maintain Market Leadership in Technology and Security Expertise. As described above, we are devoting significant resources to creating new products and enabling technologies designed to accelerate innovation. We evaluate emerging technologies and industry standards and continually update our technology in order to retain our leadership position in each market we serve. We monitor legal and technological developments in the area of information security and confidentiality to ensure our policies and procedures meet or exceed the demands of the world's largest and most demanding corporations. We believe that these efforts will allow us to effectively anticipate changing customer and consumer requirements in our rapidly evolving industry.

Evaluate Strategic Alliances and Acquisitions When Appropriate. We have successfully integrated several acquisitions over the past decade. While we have in the past, and may from time to time in the future, engage in discussions regarding acquisitions or strategic transactions or to acquire other companies that can accelerate our growth or broaden our product offerings, we currently have no binding commitments with respect to any future acquisitions or strategic transactions.

Key Metrics

Financial overview of the three months ended March 31, 2020 compared to the three months ended March 31, 2019:

- Total revenue increased 18% to $78.1 million from $66.4 million.
- Revenue from our Business segment increased 18% to $71.8 million from $61.0 million.
- Gross profit margin decreased to 71% from 72%.
- Cost and expenses increased 31% to $111.3 million from $84.8 million.
- Net loss increased to $37.0 million from $18.9 million.
- Average annual revenue per enterprise and mid-market customer increased greater than 20% to approximately $365,000 for the trailing-twelve-months ended March 31, 2020, as compared to $300,000 for the trailing-twelve-months ended March 31, 2019.
- Our target for enterprise and mid-market revenue retention in 2020 matches 2019, and is a range of 105% to 115%. Revenue retention was within that range for both the first quarter of 2020 and the first quarter of 2019. Revenue retention rate measures the percentage of revenue retained at quarter end, from full service customers that were on LiveEngage at the same period a year ago.

Adjusted EBITDA and Adjusted Operating Income

To provide investors with additional information regarding our financial results, we have disclosed adjusted EBITDA and adjusted operating income which are non-GAAP financial measures. The tables below present a reconciliation of adjusted EBITDA and adjusted operating income to net (loss) income, the most directly comparable GAAP financial measures.

We have included adjusted EBITDA and adjusted operating income in this Quarterly Report on Form 10-Q because these are key measures used by our management and board of directors to understand and evaluate our core operating performance and trends, to prepare and approve our annual budget and to develop short and long-term operational plans. In particular, the exclusion of certain expenses in calculating adjusted EBITDA and adjusted operating income can provide a useful measure for period-to-period comparisons of our core business. Additionally, adjusted EBITDA is a key financial measure used by the compensation committee of our board of directors in connection with the payment of bonuses to our executive officers. Accordingly, we believe that adjusted EBITDA and adjusted operating income provide useful information to investors and others in understanding and evaluating our operating results in the same manner as our management and board of directors.

Our use of adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our results as reported under GAAP. Some of these limitations are:

- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements;
- adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- adjusted EBITDA does not consider the impact of acquisition costs;
- adjusted EBITDA does not consider the impact of restructuring costs;
- adjusted EBITDA does not consider the impact of other costs;
- adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us; and
- other companies, including companies in our industry, may calculate adjusted EBITDA differently, which reduces its usefulness as a comparative measure.

	Three Months Ended March 31,	
	2020	**2019**
Reconciliation of Adjusted EBITDA		
GAAP net loss	$ (37,001)	$ (18,890)
Amortization of purchased intangibles	689	746
Stock-based compensation	14,695	7,166
Contingent earn-out adjustments	(263)	—
Restructuring costs	3,190 (1)	279 (1)
Depreciation	5,537	3,881
Other litigation and consulting costs	4,708 (2)	2,417 (3)
Provision for income taxes	352	593
Acquisition costs	—	648
Interest income (expense)	2,791	667
Other expense (income), net	667	(733)
Adjusted EBITDA (loss)	$ (4,635)	$ (3,226)

(1) Includes severance costs and other compensation related costs of $3.2 million and $0.3 million for the three months ended March 31, 2020 and 2019, respectively.

(2) Includes sales tax liability of $2.3 million, litigation costs of $1.2 million, employee benefit cost of $0.8 million, and consulting costs of $0.4 million for the three months ended March 31, 2020.

(3) Includes litigation costs of $1.1 million, consulting costs of $1.3 million for the three months ended March 31, 2019.

Our use of adjusted operating income has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our results as reported under GAAP. Some of these limitations are:

- although amortization is a non-cash charge, the assets being amortized may have to be replaced in the future, and adjusted operating income does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements;
- adjusted operating income does not consider the impact of acquisition costs;
- adjusted operating income does not consider the impact of restructuring costs;

- adjusted operating income does not consider the impact of other costs;
- other companies, including companies in our industry, may calculate adjusted operating income differently, which reduces its usefulness as a comparative measure.

Because of these limitations, you should consider adjusted operating income alongside other financial performance measures, including various pre-tax GAAP loss and our other GAAP results. The following table presents a reconciliation of adjusted operating income for each of the periods indicated (amounts in thousands):

	Three Months Ended March 31,					
	2020			2019		
Reconciliation of Adjusted Operating Loss						
Loss before provision for income taxes	$	(36,649)		$	(18,297)	
Amortization of purchased intangibles		689			746	
Stock-based compensation		14,695			7,166	
Restructuring costs		3,190	(1)		279	(1)
Other litigation and consulting costs		4,708	(2)		2,417	(3)
Contingent earn-out adjustments		(263)			—	
Acquisition costs		—			648	
Interest income (expense)		2,791			667	
Other expense (income), net		667			(733)	
Adjusted operating loss	$	(10,172)		$	(7,107)	

(1) Includes severance costs and other compensation related costs of $3.2 million and $0.3 million for the three months ended March 31, 2020 and 2019, respectively.

(2) Includes sales tax liability of $2.3 million, litigation costs of $1.2 million, employee benefit cost of $0.8 million, and consulting costs of $0.4 million for the three months ended March 31, 2020.

(3) Includes litigation costs of $1.1 million, consulting costs of $1.3 million for the three months ended March 31, 2019.

Critical Accounting Policies and Estimates

Our condensed consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States of America. As such, we are required to make certain estimates, judgments and assumptions that management believes are reasonable based upon the information available. We base these estimates on our historical experience, future expectations and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for our judgments that may not be readily apparent from other sources. These estimates and assumptions affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the dates of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting periods.

We believe that the assumptions and estimates associated with revenue recognition, depreciation, stock-based compensation, accounts receivable, the valuation of goodwill and intangible assets, income taxes and legal contingencies have the greatest potential impact on our consolidated financial statements. We evaluate these estimates on an ongoing basis. Actual results could differ from those estimates under different assumptions or conditions, and any differences could be material. The significant accounting policies which we believe are the most critical to aid in fully understanding and evaluating the reported consolidated financial results include the following:

Revenue Recognition

The majority of our revenue is generated from monthly service revenues and related professional services from the sale of our services. Revenues are recognized when control of these services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services.

We determine revenue recognition through the following steps:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;

- determination of the transaction price;
- allocation of the transaction price to the performance obligations in the contract; and
- recognition of revenue when, or as, we satisfy a performance obligation.

Total revenue of $78.1 million and $66.4 million was recognized for the three months ended March 31, 2020 and 2019, respectively.

Hosted Services- Business Revenue

Hosted Services Business revenue is reported at the amount that reflects the ultimate consideration expected to be received and primarily consist of fees that provide customers access to LiveEngage, our enterprise-class, cloud-based platform. We have determined such access represents a stand-ready service provided continually throughout the contract term. As such, control and satisfaction of this stand-ready performance obligation is deemed to occur over time. We recognize this revenue over time on a ratable basis over the contract term, beginning on the date that access to the LiveEngage platform is made available to the customer. The passage of time is deemed to be the most faithful depiction of the transfer of control of the services as the customer simultaneously receives and consumes the benefit provided by our performance. Subscription contracts are generally one year or longer in length, billed, monthly, quarterly or annually in advance. There is no significant variable consideration related to these arrangements. Additionally, for certain of our larger customers, we may provide call center labor through an arrangement with one or more of several qualified vendors. For most of these customers, we pass the fee we incur with the labor provider and its fee for the hosted services through to our customers in the form of a fixed fee for each order placed via our online engagement solutions. For these Gainshare arrangements in accordance with ASC-606, ‘‘Principal Agent Considerations,’’ we act as a principal in a transaction if we control the specified goods or services before they are transferred to the customer.

Professional Services Revenues

Professional services revenue primarily consists of fees for deployment and optimization services, as well as training delivered on an on-demand basis which is deemed to represent a distinct stand-ready performance obligation. Professional Services Revenues are reported at the amount that reflects the ultimate consideration we expect to receive in exchange for such services. Control for the majority of our Professional Services contracts passes over time to the customer and is recognized ratably over the contracted period, as the passage of time is deemed to be the most faithful depiction of the transfer of control. For certain deployment services, which are not deemed to represent a distinct performance obligation, revenue will be recognized in the same manner as the fee for access to the LiveEngage platform, and as such will be recognized on a straight-line basis over the contract term. For services billed on a fixed price basis, revenue is recognized over time based on the proportion performed using inputs as the measure of progress toward complete satisfaction of the performance obligation. Professional service contracts are generally one year or longer in length, billed, monthly, quarterly or annually in advance. There is no significant variable consideration related to these arrangements.

Contracts with Multiple Performance Obligations

Some of our contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. We determine the standalone selling prices based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, the cloud applications sold, and the number and types of users within our contracts.

Hosted Services- Consumer Revenue

For revenue from our Consumer segment generated from online transactions between Experts and Users, revenue is recognized at an amount net of Expert fees in accordance with ASC 606, “Principal Agent Considerations,” due primarily to the fact that we do not act as a principal in a transaction since we do not control the specified goods or services before they are transferred to the customer. Additionally, we perform as an agent without any risk of loss for collection, and we are not involved in selecting the Expert or establishing the Expert’s fee. We collect a fee from the consumer and retain a portion of the fee, and then remit the balance to the Expert. Revenue from these transactions is recognized at the point in time when the transaction is complete and no significant performance obligations remain.

Stock-Based Compensation

We follow ASC 718-10, "Stock Compensation," which addresses the accounting for transactions in which an entity exchanges its equity instruments for goods or services, with a primary focus on transactions in which an entity obtains employee services in share-based payment transactions. ASC 718-10 requires measurement of the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award (with limited exceptions). Incremental compensation costs arising from subsequent modifications of awards after the grant date must be recognized.

Our forfeiture rate assumptions, which estimate the share-based awards that will ultimately vest, requires judgment, and to the extent actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period of change and could be materially different from share-based compensation expense recorded in prior periods. Effective January 1, 2020, the Company changed its forfeiture rate estimate which resulted in an increase in stock compensation expense of $2.3 million for the period ended March 31, 2020.

For the three months ended March 31, 2020 and in the comparable period in 2019, we accrued approximately $3.7 million and $1.9 million in cash awards, respectively, to be settled in shares of our stock and recorded a corresponding expense, which is included as a component of stock-based compensation expense in the accompanying condensed consolidated financial statements for the three months ended March 31, 2020 and 2019, respectively.

For the three months ended March 31, 2020 and in the comparable period in 2019, there was approximately $18.1 million and $14 million, respectively, of total unrecognized compensation cost related to nonvested share-based compensation arrangements. That cost is expected to be recognized over a weighted average period of approximately 2.7 years. As of March 31, 2020 and as of March 31, 2019, there was approximately $79.7 million and $42.2 million, respectively, of total unrecognized compensation cost related to nonvested restricted stock units. That cost is expected to be recognized over the remaining weighted average period of approximately 3.2 years and 2.8 years, respectively.

Accounts Receivable

We perform ongoing credit evaluations of our customers' financial condition (except for customers who purchase the LivePerson services by credit card via Internet download) and have established an allowance for doubtful accounts based upon factors surrounding the credit risk of customers, historical trends and other information that we believe to be reasonable, although they may change in the future. If there is a deterioration of a customer's credit worthiness or actual write-offs are higher than our historical experience, our estimates of recoverability for these receivables could be adversely affected. Although our large number of customers limits our concentration of credit risk, if we experience a significant write-off from one of our large customers, it could have a material adverse impact on our consolidated financial statements. No single customer accounted for or exceeded 10% of our total revenue in the three months ended March 31, 2020 and in the comparable period of 2019. No single customer accounted for or exceeded 10% of our total accounts receivable as of March 31, 2020. Two customers exceeded 10% of our total accounts receivable as of December 31, 2019. During the three months ended March 31, 2020, we increased our allowance for doubtful accounts from $3.1 million as of December 31, 2019 to approximately $3.6 million. A large proportion of receivables are due from larger corporate customers that typically have longer payment cycles. Accounts receivable is presented net of an allowance for doubtful accounts and sales reserve of $3.6 million and $3.5 million at March 31, 2020, respectively, and $3.1 million and $1.2 million at December 31, 2019, respectively.

An allowance for doubtful accounts is established for losses expected to be incurred on accounts receivable balances. Judgment is required in the estimation of the allowance and we evaluate the collectability of our accounts receivable based on a combination of factors. If we become aware of a customer's inability to meet its financial obligations, a specific allowance is recorded to reduce the net receivable to the amount reasonably believed to be collectible from the customer. For all other customers, we use an aging schedule and recognize allowances for doubtful accounts based on the creditworthiness of the debtor, the age and status of outstanding receivables, the current business environment and our historical collection experience adjusted for current expectations for the customers or industry. Accounts receivable are written off against the allowance for uncollectible accounts when we determine amounts are no longer collectible.

Goodwill

We account for goodwill and intangible assets in accordance with ASC 350, "Intangibles - Goodwill and Other." A purchase price paid that is in excess of net assets arising from a business combination is recorded as an asset (''goodwill'') and is not amortized. Intangible assets with an indefinite useful life are not amortized. Goodwill and intangible assets are tested for impairment on an annual basis or more frequently if changes in circumstances indicate that the carrying amount may not be recoverable. If the goodwill or intangible asset is impaired, it is written down to its realizable value with a corresponding expense reflected in the consolidated statements of income.

Intangible assets that have finite lives, including but not limited to, agent and customer relationships and trademarks, are amortized over the estimated useful life of the asset. For intangible assets with finite lives, impairment is recognized if the carrying amount is not recoverable and exceeds the fair value of the intangible asset. Generally intangible assets with finite lives are only tested for impairment if there are indicators of impairment ("triggers") identified. Triggers include, but are not limited to, a significant adverse change in the extent, manner or length of time in which the intangible asset is being used or a significant adverse change in legal factors or in the business climate that could affect the value of the other intangible asset.

Impairment of Long-Lived Assets

The carrying amounts of our long-lived assets, including property and equipment, lease right-of-use assets, capitalized internal-use software, costs to obtain customer contracts, and acquired intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable or that the useful lives are shorter than originally estimated. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset to future undiscounted net cash flows the asset is expected to generate over its remaining life. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. If the useful life is shorter than originally estimated, we amortize the remaining carrying value over the new shorter useful life.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences are expected to become deductible. In evaluating our ability to recover our deferred tax assets in the jurisdiction from which they arise, we consider 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. We include interest accrued on the underpayment of income taxes in interest expense and penalties, if any, related to unrecognized tax benefits in general and administrative expenses. We recorded a valuation allowance as we considered our cumulative loss in recent years as a significant piece of negative evidence. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law making several changes to the Internal Revenue Code. The changes include, but are not limited to: increasing the limitation on the amount of deductible interest expense; allowing companies to carryback certain net operating losses; and increasing the amount of net operating loss carryforwards that corporations can use to offset taxable income. Under the CARES Act, the Company is able to recognize the benefit of the tax year 2018 loss by carrying back the loss to prior periods. The total tax benefit recognized as a result of the CARES Act for the three months ended March 31, 2020 is approximately $0.5 million.

Legal Contingencies

We are subject to legal proceedings and litigation arising in the ordinary course of business. Periodically, we evaluate the status of each legal matter and assess our potential financial exposure. If the potential loss from any legal proceeding or litigation is considered probable and the amount can be reasonably estimated, we accrue a liability for the estimated loss. Significant judgment is required to determine the probability of a loss and whether the amount of the loss is reasonably estimable. The outcome of any proceeding is not determinable in advance. As a result, the assessment of a potential liability and the amount of accruals recorded are based only on the information available at the time. As additional information becomes available, we reassess the potential liability related to the legal proceeding or litigation, and may revise our estimates. Any revisions could have a material effect on our results of operations. See Note 14, Legal Matters, of the Notes to the Condensed Consolidated Financial Statements under Item 8 of this Quarterly Report on Form 10-Q for additional information on our legal proceedings and litigation.

Recently Issued Accounting Standards

See Note 1 to Condensed Consolidated Financial Statements for a full description of recently issued accounting standards.

Recently Adopted Accounting Pronouncements

See Note 1 to Condensed Consolidated Financial Statements for a full description of recently adopted accounting pronouncements.

Revenue

The majority of our revenue is generated from monthly service revenues and related professional services from the sale of the LivePerson services. We charge a monthly fee, which varies by service and customer usage. The majority of our larger customers also pay a professional services fee related to implementation and ongoing optimization services. A large proportion of our revenue from new customers comes from large corporations. These companies typically have more significant implementation requirements and more stringent data security standards. Such customers also have more sophisticated data analysis and performance reporting requirements, and are likely to engage our professional services organization to provide such analysis and reporting on a recurring basis.

We determine revenue recognition through the following steps:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;
- determination of the transaction price;
- allocation of the transaction price to the performance obligations in the contract; and
- recognition of revenue when, or as, the Company satisfies a performance obligation.

Hosted Services- Business Revenue

Revenue attributable to our monthly hosted Business services accounted for 78% of total revenue for the three months ended March 31, 2020 and 2019.

Professional Services Revenue

Revenue attributable to professional services accounted for 14% of total revenue for the three months ended March 31, 2020 and 2019.

Contracts with Multiple Performance Obligations

Some of our contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. We determine the standalone selling prices based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, the cloud applications sold, and the number and types of users within our contracts.

Hosted Services- Consumer Revenue

Revenue from our Consumer segment accounted for approximately 8% of total revenue for the three months ended March 31, 2020 and March 31, 2019, respectively.

Deferred Revenues

We record deferred revenues when cash payments are received or due in advance of our performance. The decrease of $85.9 million in deferred revenue balance for the quarter ended March 31, 2020 from the deferred revenue balance of $89.2 million for the year ended December 31, 2019, is primarily driven by $34.0 million revenues recognized that were included in the deferred revenue balance as of December 31, 2019. This was offset by cash payments received or due in advance of satisfying our performance obligations.

Costs and Expenses

Our cost of revenue consists of:

- compensation costs relating to employees who provide customer support and implementation services to our customers;
- outside labor provider costs;

- compensation costs relating to our network support staff;
- depreciation of certain hardware and software;
- allocated occupancy costs and related overhead;
- the cost of supporting our infrastructure, including expenses related to server leases, infrastructure support costs and Internet connectivity;
- the credit card fees and related payment processing costs associated with consumer and self-service customers; and
- amortization of certain intangibles.

Our sales and marketing expenses consist of compensation and related expenses for sales personnel and marketing personnel, online marketing, allocated occupancy costs and related overhead, advertising, marketing events, sales commissions, public relations, promotional materials, travel expenses and trade show exhibit expenses.

Our general and administrative expenses consist primarily of compensation and related expenses for executive, accounting, legal, information technology and human resources personnel, allocated occupancy costs and related overhead, professional fees, provision for doubtful accounts and other general corporate expenses.

Our product development expenses consist primarily of compensation and related expenses for product development personnel, allocated occupancy costs and related overhead, outsourced labor and expenses for testing new versions of our software. Product development expenses are charged to operations as incurred.

Non-Cash Compensation Expense

The net non-cash compensation amounts are as follows:

	Three Months Ended March 31	
	2020	2019
	(in thousands)	
Stock-based compensation expense	$ 14,695	$ 7,166

Results of Operations

We are organized into two operating segments for purposes of making operating decisions and assessing performance. The Business segment enables brands to leverage LiveEngage's sophisticated intelligence engine to connect with consumers through an integrated suite of mobile and online business messaging technologies. The Consumer segment facilitates online transactions between Experts and Users seeking information and knowledge for a fee via mobile and online messaging.

The following tables set forth our results of operations for the periods presented and as a percentage of our revenues for those periods. The period-to-period comparison of financial results is not necessarily indicative of future results.

Comparison of the Three Months Ended March 31, 2020 and 2019

Revenue

	Three Months Ended March 31,		
	2020	2019	% Change
	(in thousands)		
Revenue by Segment:			
Business	$ 71,848	$ 60,995	18%
Consumer	6,240	5,407	15%
Total	$ 78,088	$ 66,402	18%

Business revenue increased by 18% to $71.9 million in the three months ended March 31, 2020 from $60.1 million in the comparable period in 2019. The increase in B2B revenue during the three months ended March 31, 2020 is driven mainly by year-over-year increases in hosted services of $10.5 million and in professional services of $1.3 million. Included in hosted services, is an increase in revenue that is variable based on interactions and usage of approximately $4.5 million during the three months ended March 31, 2020.

The increase in revenue is primarily attributed to increased contract signings with new customers and greater adoption of conversational commerce solutions by existing customers. LivePerson has developed a large ecosystem of conversational messaging endpoints that integrates to our platform, and is driving adoption of these endpoints along with bots and AI across care, sales, marketing, and brick and mortar use cases. As adoption increases, we are seeing higher revenue per customer. Our average annual revenue per enterprise and midmarket customer increased approximately 20% year over year to $365,000 in the trailing twelve months ended March 31, 2020, from $300,000 in the prior year period. Similarly, we are seeing strong revenue retention rates. Revenue retention for our enterprise and midmarket customers was within our target range of 105% to 115% for the period ended March 31, 2020, which marked the 11th consecutive quarter of a greater than 100% revenue retention rate.

Consumer revenue increased by 15% to $6.2 million in the three months ended March 31, 2020, from $5.4 million in the comparable period in 2019. This variance is driven by an increase in price per minute and in volume of chat minutes.

Cost of Revenue - Business

Cost of revenue consists of compensation costs relating to employees who provide customer service to our customers, compensation costs relating to our network support staff, outside labor provider costs, the cost of supporting our server and network infrastructure, and allocated occupancy costs and related overhead.

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Cost of revenue - business	$ 21,345	$ 17,662	21%
Percentage of total revenue	27%	27%	
Headcount (at period end):	250	198	26%

Cost of revenue - business increased by 21% to $21.3 million in the three months ended March 31, 2020, from $17.7 million in the comparable period in 2019. This increase in expense is primarily attributable to salary and related employee expenses of approximately $2.1 million, an increase in business services and outsourced subcontracted labor of approximately $1.6 million, and in depreciation of approximately $0.2 million.

Cost of Revenue - Consumer

Cost of revenue consists of compensation costs relating to employees who provide customer service to Experts and Users, compensation costs relating to our network support staff, the cost of supporting our server and network infrastructure, credit card and transaction processing fees and related costs, and allocated occupancy costs and related overhead.

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Cost of revenue - consumer	$ 1,475	$ 987	49 %
Percentage of total revenue	2%	1%	
Headcount (at period end)	15	17	(12)%

Cost of revenue - consumer increased by 49% to $1.5 million in the three months ended March 31, 2020 from $1.0 million in the comparable period in 2019. This variance was primarily attributable to increases in business services and outsourced subcontracted labor of approximately $0.2 million, backup server facilities of $0.1 million, depreciation of approximately $0.1 million and credit card processing fees of approximately $0.1 million.

Sales and Marketing - Business

Our sales and marketing expenses consist of compensation and related expenses for sales and marketing personnel, as well as advertising, marketing events, public relations, trade show exhibit expenses and allocated occupancy costs and related overhead.

	Three Months Ended March 31,		
	2020	**2019**	**% Change**
	($ in thousands)		
Sales and marketing - business	$ 37,469	$ 30,092	25 %
Percentage of total revenue	48%	45%	
Headcount (at period end):	357	403	(11)%

Sales and marketing - business expenses increased by 25% to $37.5 million in the three months ended March 31, 2020 from $30.1 million in the comparable period in 2019. This variance was primarily attributable to an increase in salary, recruitment, and related employee expenses of approximately $4.0 million, an increase in business services and outsourced labor of approximately $1.5 million, an increase in other costs of $1.0 million, consisting of increases in facilities and allocated overhead, and an increase in depreciation expense of $0.3 million. This was partially offset by a decrease in marketing events, advertising, public relations, and trade show exhibit expenses of approximately $0.5 million.

Sales and Marketing - Consumer

Our sales and marketing expenses consist of compensation and related expenses for marketing personnel, as well as online promotion, public relations and allocated occupancy costs and related overhead.

	Three Months Ended March 31,		
	2020	**2019**	**% Change**
	($ in thousands)		
Sales and marketing - consumer	$ 5,211	$ 2,944	77%
Percentage of total revenue	7%	4%	
Headcount (at period end):	18	13	38%

Sales and marketing - consumer expenses increased by 77% to $5.2 million in the three months ended March 31, 2020 from $2.9 million in the comparable period in 2019. This variance was primarily attributable to increases in advertising and online expenses of $2.2 million.

General and Administrative

Our general and administrative expenses consist of compensation and related expenses for executive, accounting, legal, human resources and administrative personnel, professional fees and other general corporate expenses.

	Three Months Ended March 31,		
	2020	**2019**	**% Change**
	($ in thousands)		
General and administrative	$ 16,469	$ 14,167	16%
Percentage of total revenue	21%	21%	
Headcount (at period end):	146	128	14%

General and administrative expenses increased by 16% to $16.5 million in the three months ended March 31, 2020 from $14.2 million in the comparable period in 2019. This was primarily related to an increase in salaries and employee related expenses of approximately $1.1 million and an increase in allocated occupancy costs, related overhead, information technology, and other general corporate expenses of approximately $0.9 million.

Product Development

Our product development expenses consist of compensation and related expenses for product development personnel as well as allocated occupancy costs and related overhead and outsourced labor and expenses for testing new versions of our software.

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Product development	$ 25,716	$ 18,173	42%
Percentage of total revenue	33%	27%	
Headcount (at period end):	445	409	9%

Product development costs increased by 42% to $25.7 million in the three months ended March 31, 2020 from $18.2 million in the comparable period in 2019. This variance was primarily attributable to increases in total compensation, recruiting expense and associated costs for product development personnel of approximately $3.7 million, in depreciation expense and backup server facilities and allocated overhead related to costs of supporting our server and network infrastructure of approximately $2.2 million, and in outsourcing and business services of approximately $0.8 million.

We continue to invest in new product development efforts to expand the capability of LiveEngage. In accordance with ASC 350-40 - "Internal-Use Software," as new projects are initiated that provide functionality to the LiveEngage platform, the associated development and employee costs will be capitalized. Upon completion, the project costs will be depreciated over five years. In the three months ended March 31, 2020, $7.6 million was capitalized, compared to $5.4 million in the comparable period in 2019.

Restructuring Costs

Restructuring costs consist of reprioritizing and reallocating resources to focus on areas showing high growth potential.

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Restructuring costs	$ 3,190	$ 279	1,043%
Percentage of total revenue	4%	—%	

Restructuring costs increased by $2.9 million in the three months ended March 31, 2020 as compared to the comparable period in 2019. This variance was primarily attributable to an increase of severance and other associated costs of $2.8 million. Severance costs are associated with re-prioritizing and reallocating resources to focus on areas showing high growth potential.

Amortization of Purchased Intangibles

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Amortization of purchased intangibles	$ 405	$ 461	(12)%
Percentage of total revenues	1%	1%	

Amortization expense for purchased intangibles decreased by 12% to $0.4 million in the three months ended March 31, 2020 from $0.5 million in the comparable period in 2019.

Additional amortization expense in the amount of $0.3 million in the three months ended March 31, 2020 and 2019 is included in cost of revenue.

Other Expense (Income), net

Other expense (income), net consists of interest income on cash and cash equivalents, investment income and financial (expense) income which is a result of currency rate fluctuations associated with exchange rate movement of the U.S. dollar against the New Israeli Shekel, British Pound, Euro, Australian Dollar and Japanese Yen.

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Interest (expense) income	(2,791)	(667)	318 %
Other income (expense)	(667)	733	(191)%
Other expense (income), net	$ (3,458)	$ 66	(5,339)%

Other expense (income), net decreased to $3.5 million in the three months ended March 31, 2020, from other expense (income), net of $0.1 million in the comparable period in 2019 due to interest expense attributable to the 0.750% Convertible Senior Notes due 2024 (the ‘‘Notes’’), partially offset by interest income on cash and cash equivalents and financial income which is attributable to currency rate fluctuations.

Provision For Income Taxes

	Three Months Ended March 31,		
	2020	2019	% Change
	($ in thousands)		
Provision for income taxes	$ 352	$ 593	(41)%

Provision for income taxes decreased to $0.4 million in the three months ended March 31, 2020, from $0.6 million in the comparable period in 2019. Our consolidated effective tax rate was impacted by the statutory income tax rates applicable to each of the jurisdictions in which we operate.

Net Loss

We had a net loss of $37.0 million in the three months ended March 31, 2020 compared to a net loss of $18.9 million for the three months ended March 31, 2019. During the three months ended March 31, 2020, there were increases in revenue of approximately $11.7 million, increases in operating expenses of approximately $26.5 million, decreases in other (expense) income, net of approximately $3.5 million, and decrease in provision for income taxes of approximately $0.2 million.

Liquidity and Capital Resources

	Three Months Ended March 31,	
	2020	2019
	(in thousands)	
Consolidated Statements of Cash Flows Data:		
Cash flows provided by (used in) operating activities	$ 4,293	$ (25,691)
Cash flows used in investing activities	(11,030)	(8,337)
Cash flows provided by financing activities	3,098	205,489

As of March 31, 2020, we had approximately $171.5 million in cash and cash equivalents, a decrease of approximately $5.0 million from December 31, 2019. The decrease is primarily attributable to cash flows used in investing relating to purchases of property and equipment, offset by an increase of accounts receivable from operating activities and proceeds from the issuance of common stock from financing activities.

Net cash provided by operating activities was $4.3 million for the three months ended March 31, 2020. Our net loss of $37.0 million was offset by non-cash expenses: stock-based compensation of $14.7 million; depreciation and amortization of $5.5 million; and a decrease in accounts receivable $24.1 million. Net cash used in operating activities was $25.7 million for the three months ended March 31, 2019 and consisted primarily of net loss, a decrease in accrued expenses and accounts payable and increases in prepaid expenses and accounts receivable. This was partially offset by increases in deferred revenue and non-cash expenses related to depreciation, stock compensation, and amortization of purchased intangibles. The increase in deferred revenue was primarily related to changes in our billing terms for some of our larger customers.

Net cash used in investing activities was $11.0 million in the three months ended March 31, 2020 and consisted primarily of the purchase of fixed assets for our co-location facilities and capitalization of internally developed software. Net cash used in investing activities was $8.3 million in the three months ended March 31, 2019 and consisted primarily of the purchase of fixed assets for our co-location facilities and capitalization of internally developed software.

Net cash provided by financing activities was $3.1 million in the three months ended March 31, 2020 and consisted primarily of proceeds from issuance of common stock in connection with the exercise of stock options by employees. Net cash provided by financing activities was $205.5 million in the three months ended March 31, 2019 and consisted primarily of proceeds from issuance of the Notes and proceeds from issuance of common stock in connection with the exercise of stock options by employees. This was partially offset by purchases of capped calls, debt issuance costs, and repurchase of our common stock. The net proceeds of the Notes was approximately $221.0 million, after deducting initial purchaser debt issuance costs paid or payable by us, from issuance of the Notes, as described in Note 8 to the Condensed Consolidated Financial Statements.

We have incurred significant expenses to develop our technology and services, to hire employees in our customer service, sales, marketing and administration departments, and for the amortization of purchased intangible assets, as well as non-cash compensation costs. Historically, we have incurred net losses and negative cash flows for various quarterly and annual periods since our inception, including during numerous quarters and annual periods in the past several years. As of March 31, 2020, we had an accumulated deficit of approximately $321.3 million.

Our principal sources of liquidity are the net proceeds from the issuance of our convertible senior notes, after deducting purchaser discounts and debt issuance costs paid by us, issuance of common stock in connection with the exercise of options, and payments received from customers using our products. We anticipate that our current cash and cash equivalents will be sufficient to satisfy our working capital and capital requirements for at least the next twelve (12) months. However, we cannot assure you that we will not require additional funds prior to such time, and we would then seek to sell additional equity or debt securities through public financings, or seek alternative sources of financing. We cannot assure you that additional funding will be available on favorable terms, when needed, if at all. If we are unable to obtain any necessary additional financing, we may be required to further reduce the scope of our planned sales and marketing and product development efforts, which could materially adversely affect our business, financial condition and operating results. In addition, we may require additional funds in order to fund more rapid expansion, to develop new or enhanced services or products or to invest in or acquire complementary businesses, technologies, services or products.

Off-Balance Sheet Arrangements

We do not engage in off-balance sheet financing arrangements.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Exchange Risks

Our Israeli operations have currency rate fluctuation risk associated with the exchange rate movement of the U.S. dollar against the New Israeli Shekel ("NIS"). During the three months ended March 31, 2020, the U.S. dollar depreciated by approximately 3% as compared to the NIS. During the three months ended March 31, 2020, expenses generated by our Israeli operations totaled approximately $18.3 million. We actively monitor the movement of the U.S. dollar against the NIS, Pound Sterling, Euro, AUS dollar and Japanese Yen and have considered the use of financial instruments, including but not limited to derivative financial instruments, which could mitigate such risk. If we determine that our risk of exposure materially exceeds the potential cost of derivative financial instruments, we may in the future enter in to these types of investments. The functional currency of our wholly-owned Israeli subsidiaries, LivePerson Ltd. (formerly HumanClick Ltd.) and Kasamba Ltd., is the U.S. dollar; the functional currency of our operations in the United Kingdom is the Pound Sterling; the functional currency of our operations in the Netherlands, Germany, France and Italy is the Euro; the functional currency of our operations in Australia is the Australian Dollar; and the functional currency of our operations in Japan is the Japanese Yen.

Collection Risks

Our accounts receivable are subject, in the normal course of business, to collection risks. We regularly assess these risks and have established policies and business practices to protect against the adverse effects of collection risks. During the three months ended March 31, 2020, our allowance for doubtful accounts increased by $0.5 million to approximately $3.6 million. During the three months ended March 31, 2019 our allowance for doubtful accounts increased by $0.5 million to approximately $2.7 million. A large proportion of our receivables are due from larger corporate customers that typically have longer payment cycles. We base our allowance for doubtful accounts on specifically identified credit risks of customers, historical trends and other information that we believe to be reasonable. Receivables are written-off and charged against its recorded allowance when we have exhausted collection efforts without success. We adjust our allowance for doubtful accounts when accounts previously reserved have been collected.

An allowance for doubtful accounts is established for losses expected to be incurred on accounts receivable balances. Judgment is required in the estimation of the allowance and we evaluate the collectability of our accounts receivable and contract assets based on a combination of factors. If we become aware of a customer's inability to meet its financial obligations, a specific allowance is recorded to reduce the net receivable to the amount reasonably believed to be collectible from the customer. For all other customers, we use an aging schedule and recognize allowances for doubtful accounts based on the creditworthiness of the debtor, the age and status of outstanding receivables, the current business environment and our historical collection experience adjusted for current expectations for the customers or industry. Accounts receivable are written off against the allowance for uncollectible accounts when we determine amounts are no longer collectible.

Interest Rate Risk

Our investments consist of cash and cash equivalents. Therefore, changes in the market's interest rates do not affect in any material respect the value of the investments as recorded by us.

In March 2019, we issued $230.0 million in aggregate principal amount of the Notes, as discussed in Note 8 to the Condensed Consolidated Financial Statements. As the Notes have a fixed annual interest rate, we have no financial and economic interest exposure associated with changes in interest rates. However, the fair value of the Notes changes when the market price of our stock fluctuates or interest rates change.

Inflation Risk

We do not believe that inflation has had a material effect on our business, financial conditions or results of operations. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, including the Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our "disclosure controls and procedures," as that term is defined in Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of March 31, 2020. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2020 to ensure that the information we are required to disclose in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms, and to ensure that such information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended March 31, 2020 identified in connection with the evaluation thereof by our management, including the Chief Executive Officer and Chief Financial Officer, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations of the Effectiveness of Internal Control

A control system, no matter how well conceived and operated, can only provide reasonable, not absolute, assurance that the objectives of the internal control system are met. Because of the inherent limitations of any internal control system, no evaluation of controls can provide absolute assurance that all control issues, if any, have been detected.

Part II. Other Information

Item 1. Legal Proceedings

We previously filed an intellectual property suit against [24]7 Customer, Inc. in the Southern District of New York on March 6, 2014 seeking damages on the grounds that [24]7 reverse engineered and misappropriated our technology to develop competing products and misused our business information. On June 22, 2015, [24]7 Customer, Inc. filed suit against us in the Northern District of California alleging patent infringement. On December 7, 2015, [24]7 Customer Inc. filed a second patent infringement suit against us, also in the Northern District of California. On March 16, 2017, the New York case was voluntarily transferred and consolidated with the two California cases in the Northern District of California for all pre-trial purposes. Rulings by both the Court and the United States Patent Office in our favor have invalidated the majority of [24]7 patents that were asserted in the patent cases. Trial for our intellectual property and other claims asserted against [24]7 in the original litigation was set for April 27, 2020, but that date was vacated due to court restrictions related to Covid-19 and will be reset once those restrictions are lifted. Trial for [24]7's patent infringement claims has been vacated, to be reset after the trial on LivePerson's claims. We believe the claims filed by [24]7 are entirely without merit and intend to defend them vigorously.

We routinely assess all of our litigation and threatened litigation as to the probability of ultimately incurring a liability, and record our best estimate of the ultimate loss in situations where we assess the likelihood of loss as probable.

From time to time, we are involved in or subject to legal, administrative and regulatory proceedings, claims, demands and investigations arising in the ordinary course of business, including direct claims brought by or against us with respect to intellectual property, contracts, employment and other matters, as well as claims brought against our customers for whom we have a contractual indemnification obligation. We accrue for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. In addition, in the event we determine that a loss is not probable, but is reasonably possible, and it becomes possible to develop what we believe to be a reasonable range of possible loss, then we will include disclosure related to such matter as appropriate and in compliance with ASC 450. The accruals or estimates, if any, resulting from the foregoing analysis, are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. To the extent there is a reasonable possibility that the losses could exceed the amounts already accrued, we will, as applicable, adjust the accrual in the period the determination is made, disclose an estimate of the additional loss or range of loss, indicate that the estimate is immaterial with respect to our financial statements as a whole or, if the amount of such adjustment cannot be reasonably estimated, disclose that an estimate cannot be made.

From time to time, third parties assert claims against us regarding intellectual property rights, privacy issues and other matters arising in the ordinary course of business. Although we cannot be certain of the outcome of any litigation or the disposition of any claims, nor the amount of damages and exposure, if any, that we could incur, we currently believe that the final disposition of all existing matters will not have a material adverse effect on our business, results of operations, financial condition or cash flows. In addition, in the ordinary course of our business, we are also subject to periodic threats of lawsuits, investigations and claims. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described in Part I, Item 1A. “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2019, filed on March 2, 2020, which could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. Other than as set forth below, there have been no material changes to the risk factors described in our most recent Annual Report on Form 10-K.

The ongoing coronavirus pandemic (COVID-19) and measures intended to prevent its spread could have a material adverse effect on our business, results of operations, cash flows, financial condition and/or stock price.

Our results of operations have been adversely affected and could in the future be materially adversely impacted by the coronavirus pandemic (COVID-19). The global spread of the coronavirus (COVID-19) has created significant volatility and uncertainty and economic disruption. The extent to which the coronavirus pandemic impacts 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 pandemic; governmental, business and individuals’ actions that have been and continue to be taken in response to the pandemic; the impact of the pandemic on economic activity and actions taken in response; the effect on our clients and client demand for our services and solutions, including the potential lengthening of the sales cycle; our ability to sell and provide our services and solutions, including as a result of travel restrictions and people working from home; the ability of our clients to pay for our services and solutions; and any closures of our and our clients’ offices and facilities. Clients may also slow down decision making, delay planned work, seek to terminate existing agreements and/or delay payment terms. Any of these events or other currently unforeseen consequences of the coronavirus pandemic could cause or contribute to the risks and uncertainties enumerated in our Annual Report on Form 10-K, and could materially adversely affect our business, results of operations, cash flows, financial condition and/or stock price.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Unregistered Sales of Equity Securities

There were no unregistered sales of equity securities by the issuer during the three months ended March 31, 2020.

Purchase of Equity Securities by the Issuer

There were no repurchases of equity securities by the issuer during the three months ended March 31, 2020.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

ITEM 6. EXHIBITS

31.1	*	Certification by Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	*	Certification by Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	**	Certification by Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	**	Certification by Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	*	Inline XBRL Instance Document -- The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	*	Inline XBRL Taxonomy Extension Schema Document
101.CAL	*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	*	Cover Page Interactive Data File (formatted as Inline XBRL)

* Filed herewith

** Furnished herewith

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 thereunto duly authorized.

LIVEPERSON, INC.
(Registrant)

Date:	May 11, 2020	By:	/s/ ROBERT P. LOCASCIO
		Name:	Robert P. LoCascio
		Title:	Chief Executive Officer (principal executive officer)
Date:	May 11, 2020	By:	/s/ JOHN COLLINS
		Name:	John Collins
		Title:	Chief Financial Officer (principal financial officer)

Exhibit 31.1

CERTIFICATIONS

I, Robert P. LoCascio, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of LivePerson, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date:	May 11, 2020	By:	/s/ ROBERT P. LOCASCIO
		Name:	Robert P. LoCascio
		Title:	Chief Executive Officer (principal executive officer)

Exhibit 31.2

CERTIFICATIONS

I, John Collins, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of LivePerson, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date:	May 11, 2020	By:	/s/ John Collins
		Name:	John Collins
		Title:	Chief Financial Officer (principal financial officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Robert P. LoCascio, Chief Executive Officer of LivePerson, Inc. (the “Company”), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Quarterly Report of the Company on Form 10-Q for the period ended March 31, 2020, as filed with the Securities and Exchange Commission (the “Report”), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	May 11, 2020	By:	/s/ ROBERT P. LOCASCIO
		Name:	Robert P. LoCascio
		Title:	Chief Executive Officer (principal executive officer)

This certification shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent the Company specifically incorporates it by reference.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, John Collins, Chief Financial Officer of LivePerson, Inc. (the “Company”), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Quarterly Report of the Company on Form 10-Q for the period ended March 31, 2020, as filed with the Securities and Exchange Commission (the “Report”), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	May 11, 2020	By:	/s/ John Collins
		Name:	John Collins
		Title:	Chief Financial Officer (principal financial officer)

This certification shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent the Company specifically incorporates it by reference.