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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2022

Or

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

For the transition period from _____ to _____

Commission File Number: 001-38993

HEALTH CATALYST, INC.
(Exact name of registrant as specified in its charter)

Delaware	**45-3337483**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

10897 South River Front Parkway #300
South Jordan UT 84095
(Address of principal executive offices, including zip code)

(801) 708-6800
(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 exchange on which registered
Common Stock, par value $0.001 per share	**HCAT**	**The Nasdaq Global Select Market**

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

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

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

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

As of July 28, 2022, the Registrant had 54,723,376 shares of common stock outstanding.

HEALTH CATALYST, INC.

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Special Note Regarding Forward-looking Statements

As used in this Quarterly Report on Form 10-Q, unless expressly indicated or the context otherwise requires, references to "Health Catalyst," "we," "us," "our," "the Company," and similar references refer to Health Catalyst, Inc. and its consolidated subsidiaries. This Quarterly Report on Form 10-Q, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), and the Securities Exchange Act of 1934, as amended (the Exchange Act). These forward-looking statements, which are subject to a number of risks, uncertainties, and assumptions, generally relate to future events or our future financial or operating performance. In some cases, you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "design," "intend," "expect," "could," "plan," "potential," "predict," "seek," "should," "would," "target," "project," "contemplate," or the negative version of these words and other comparable terminology that concern our expectations, strategy, plans, intentions, or projections. Forward-looking statements contained in this Quarterly Report on Form 10-Q include, but are not limited to, statements about our:

- ability to attract new customers and retain and expand our relationships with existing customers;
- ability to expand our service offerings and develop new platform features;
- future financial performance, including trends in revenue, costs of revenue, gross margin, and operating expenses;
- ability to compete successfully in competitive markets;

- ability to respond to rapid technological changes;
- expectations and management of future growth;
- ability to enter new markets and manage our expansion efforts, particularly internationally;
- ability to attract and retain key employees, whom we refer to as team members;
- ability to effectively and efficiently protect our brand;
- ability to timely scale and adapt our infrastructure;
- ability to maintain, protect, and enhance our intellectual property and not infringe upon others' intellectual property;
- ability to successfully identify, acquire, and integrate companies and assets; and
- expectations regarding the impact of any natural disasters, macroeconomic challenges (including inflation) or public health emergencies, such as the COVID-19 pandemic, on our business and results of operations.

These forward-looking statements are subject to a number of risks, uncertainties, and assumptions, including those described in the section titled "Risk Factors" in this Quarterly Report on Form 10-Q and as well as other documents that may be filed by us from time to time with the Securities and Exchange Commission (the SEC). Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties, and assumptions, the forward-looking events and circumstances discussed in this Quarterly Report on Form 10-Q may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements and you should not place undue reliance on our forward-looking statements.

The forward-looking statements made in this Quarterly Report on Form 10-Q relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Quarterly Report on Form 10-Q to reflect events or circumstances after the date of this Quarterly Report on Form 10-Q or to reflect new information or the occurrence of unanticipated events, except as required by law.

You should read this Quarterly Report on Form 10-Q in conjunction with the audited consolidated financial statements and the related notes thereto as of and for the year ended December 31, 2021, included in our Annual Report on Form 10-K.

Summary of Risk Factors

- We operate in a highly competitive industry, and if we are not able to compete effectively, our business and results of operations will be harmed.
- We may be unable to successfully execute on our growth initiatives, business strategies, or operating plans.
- If we fail to effectively manage our growth and organizational change, our business and results of operations could be harmed.
- The ongoing global coronavirus (COVID-19) pandemic and recently high inflationary environment could harm our business, results of operations, and financial condition.
- If we do not continue to innovate and provide services that are useful to customers and users, we may not remain competitive, and our revenue and results of operations could suffer.
- Our business could be adversely affected if our customers are not satisfied with our Solution.
- If our existing customers do not continue or renew their contracts with us, renew at lower fee levels or decline to purchase additional technology and services from us, it could have a material adverse effect on our business, financial condition, and results of operations.

- Our Solution is dependent on our ability to source data from third parties, and such third parties could take steps to block our access to data, which could impair our ability to provide our Solution or limit the effectiveness of our Solution.
- Failure by our customers to obtain proper permissions and waivers may result in claims against us or may limit or prevent our use of data, which could harm our business.
- If our security measures are breached or unauthorized access to customer data is otherwise obtained or we cannot comply with evolving federal and state healthcare regulatory and data privacy laws and regulations, our Solution may be perceived as not being secure, customers may reduce the use of or stop using our Solution, and/or we may incur significant liabilities.
- Our results of operations have in the past fluctuated and may continue to fluctuate significantly, and if we fail to meet the expectations of analysts or investors, our stock price and the value of an investment in our common stock could decline substantially.
- Our pricing may change over time and our ability to efficiently price our Solution will affect our results of operations and our ability to attract or retain customers.
- If our Solution fails to provide accurate and timely information, or if our content or any other element of our Solution is associated with faulty clinical decisions or treatment, we could have liability to customers, members, clinicians, or patients, which could adversely affect our results of operations.
- We rely on third-party providers, including Microsoft Azure, for computing infrastructure, network connectivity, and other technology-related services needed to deliver our Solution. Any disruption in the services provided by such third-party providers could adversely affect our business and subject us to liability.
- We rely on Internet infrastructure, bandwidth providers, data center providers, other third parties, and our own systems for providing services to our users, and any failure or interruption in the services provided by these third parties or our own systems could expose us to litigation, potentially require us to issue credits to our customers, and negatively impact our relationships with users or customers, adversely affecting our brand and our business.

Part I. Financial Information

Item 1. Financial Statements

HEALTH CATALYST, INC.

Condensed Consolidated Balance Sheets

(in thousands, except share and per share data)

	As of June 30, 2022	As of December 31, 2021
	(unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	$ 176,983	$ 193,227
Short-term investments	226,365	251,754
Accounts receivable, net	47,752	48,801
Prepaid expenses and other assets	14,270	14,609
Total current assets	465,370	508,391
Property and equipment, net	26,527	23,316
Intangible assets, net	109,508	104,788
Operating lease right-of-use assets	20,228	21,133
Goodwill	185,982	169,972
Other assets	3,724	4,496
Total assets	$ 811,339	$ 832,096
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 5,691	$ 4,693
Accrued liabilities	18,612	23,725
Deferred revenue	60,883	56,632
Operating lease liabilities	3,498	3,425
Contingent consideration liabilities	1,625	4,576
Total current liabilities	90,309	93,051
Convertible senior notes	225,772	180,942
Deferred revenue, net of current portion	553	929
Operating lease liabilities, net of current portion	19,142	20,244
Contingent consideration liabilities, net of current portion	6,390	14,719
Other liabilities	118	113
Total liabilities	342,284	309,998
Commitments and contingencies (Note 14)		

	June 30, 2022	December 31, 2021
Stockholders' equity:		
Preferred stock, $0.001 par value per share; 25,000,000 shares authorized as of June 30, 2022 and December 31, 2021; no shares issued and outstanding as of June 30, 2022 and December 31, 2021	—	—
Common stock, $0.001 par value per share; 500,000,000 shares authorized as of June 30, 2022 and December 31, 2021; 54,053,379 and 52,622,080 shares issued and outstanding as of June 30, 2022 and December 31, 2021, respectively	54	53
Additional paid-in capital	1,386,946	1,400,972
Accumulated deficit	(917,506)	(878,860)
Accumulated other comprehensive loss	(439)	(67)
Total stockholders' equity	469,055	522,098
Total liabilities and stockholders' equity	$ 811,339	$ 832,096

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

HEALTH CATALYST, INC.

Condensed Consolidated Statements of Operations

(in thousands, except per share data)

(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Revenue[1]:				
Technology	$ 45,397	$ 35,529	$ 87,627	$ 69,368
Professional services	25,236	24,098	51,093	46,105
Total revenue	70,633	59,627	138,720	115,473
Cost of revenue, excluding depreciation and amortization:				
Technology	13,996	11,847	27,323	22,672
Professional services	20,611	18,206	41,280	34,719
Total cost of revenue, excluding depreciation and amortization	34,607	30,053	68,603	57,391
Operating expenses:				
Sales and marketing	20,922	16,705	41,740	32,356
Research and development	18,148	14,524	35,296	28,869
General and administrative	17,536	22,525	26,359	37,540
Depreciation and amortization	12,612	8,139	24,261	15,953
Total operating expenses	69,218	61,893	127,656	114,718
Loss from operations	(33,192)	(32,319)	(57,539)	(56,636)
Interest and other expense, net	(1,180)	(3,707)	(2,842)	(7,659)
Loss before income taxes	(34,372)	(36,026)	(60,381)	(64,295)
Income tax benefit	(944)	(192)	(4,495)	(91)
Net loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)
Net loss per share, basic	$ (0.62)	$ (0.80)	$ (1.05)	$ (1.45)
Net loss per share, diluted	$ (0.62)	$ (0.80)	$ (1.15)	$ (1.45)
Weighted-average shares outstanding used in calculating net loss per share, basic	53,675	44,886	53,343	44,381
Weighted-average shares outstanding used in calculating net loss per share, diluted	53,675	44,886	53,804	44,381

(1) Includes amounts attributable to related party transactions. See Note 16 for further details.

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

HEALTH CATALYST, INC.

Condensed Consolidated Statements of Comprehensive Loss
(in thousands)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Net Loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)
Other comprehensive income (loss):				
Change in net unrealized gains (losses) on available for sale investments	(147)	4	(265)	15
Change in foreign currency translation adjustment	(29)	(3)	(107)	(44)
Comprehensive loss	$ (33,604)	$ (35,833)	$ (56,258)	$ (64,233)

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

HEALTH CATALYST, INC.

Condensed Consolidated Statements of Stockholders' Equity

(in thousands, except share data)
(unaudited)

	Three Months Ended June 30, 2022					
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance as of March 31, 2022	53,493,683	$ 53	$ 1,365,197	$ (884,078)	$ (263)	$ 480,909
Vesting of restricted stock units	254,088	1	—	—	—	1
Issuance of common stock under employee stock purchase plan	124,151	—	1,531	—	—	1,531
Exercise of stock options	174,168	—	1,879	—	—	1,879
Stock-based compensation	—	—	18,218	—	—	18,218
Issuance of common stock related to acquisitions	7,289	—	121	—	—	121
Net loss	—	—	—	(33,428)	—	(33,428)
Other comprehensive loss	—	—	—	—	(176)	(176)
Balance as of June 30, 2022	54,053,379	$ 54	$ 1,386,946	$ (917,506)	$ (439)	$ 469,055

	Three Months Ended June 30, 2021					
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount				
Balance as of March 31, 2021	44,340,036	$ 44	$ 1,022,781	$ (754,020)	$ 31	$ 268,836
Vesting of restricted stock units	216,787	1	—	—	—	1
Issuance of common stock under employee stock purchase plan	70,239	—	2,609	—	—	2,609
Exercise of stock options	674,705	1	7,587	—	—	7,588
Stock-based compensation	—	—	17,831	—	—	17,831
Issuance of common stock for settlement of contingent consideration	309,458	—	14,872	—	—	14,872
Net loss	—	—	—	(35,834)	—	(35,834)
Other comprehensive income	—	—	—	—	1	1
Balance as of June 30, 2021	45,611,225	$ 46	$ 1,065,680	$ (789,854)	$ 32	$ 275,904

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

HEALTH CATALYST, INC.

Condensed Consolidated Statements of Stockholders' Equity

(in thousands, except share data)
(unaudited)

	Six Months Ended June 30, 2022					
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance as of December 31, 2021	52,622,080	$ 53	$ 1,400,972	$ (878,860)	$ (67)	$ 522,098
Cumulative effect of adoption of ASU 2020-06	–	–	(61,213)	17,240	–	(43,973)
Vesting of restricted stock units	788,125	1	–	–	–	1
Issuance of common stock under employee stock purchase plan	124,151	–	1,531	–	–	1,531
Exercise of stock options	327,389	–	3,688	–	–	3,688
Stock-based compensation	–	–	36,656	–	–	36,656
Issuance of common stock for settlement of contingent consideration	78,248	–	2,306	–	–	2,306
Issuance of common stock related to acquisitions	113,386	–	3,006	–	–	3,006
Net loss	–	–	–	(55,886)	–	(55,886)
Other comprehensive loss	–	–	–	–	(372)	(372)
Balance as of June 30, 2022	54,053,379	$ 54	$ 1,386,946	$ (917,506)	$ (439)	$ 469,055

	Six Months Ended June 30, 2021					
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount				
Balance as of December 31, 2020	43,376,848	$ 43	$ 1,001,645	$ (725,650)	$ 61	$ 276,099
Vesting of restricted stock units and restricted shares	620,758	1	–	–	–	1
Issuance of common stock under employee stock purchase plan	70,239	–	2,609	–	–	2,609
Exercise of stock options	1,212,594	2	14,074	–	–	14,076
Stock-based compensation	–	–	31,471	–	–	31,471
Issuance of common stock for settlement of contingent consideration	330,786	–	15,881	–	–	15,881
Net loss	–	–	–	(64,204)	–	(64,204)
Other comprehensive loss	–	–	–	–	(29)	(29)
Balance as of June 30, 2021	45,611,225	$ 46	$ 1,065,680	$ (789,854)	$ 32	$ 275,904

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

HEALTH CATALYST, INC.

Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2022	2021
Cash flows from operating activities		
Net loss	$ (55,886)	$ (64,204)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	36,052	31,237
Depreciation and amortization	24,261	15,953
Non-cash operating lease expense	1,660	1,926
Amortization of debt discount and issuance costs	749	5,817
Amortization of investment discount and premium	403	569
Provision for expected credit losses	400	398
Deferred tax provision (benefit)	(4,529)	4
Change in fair value of contingent consideration liabilities	(7,303)	9,064
Other	(78)	(25)
Change in operating assets and liabilities:		
Accounts receivable, net	1,294	927
Prepaid expenses and other assets	1,584	(1,548)
Accounts payable, accrued liabilities, and other liabilities	(4,886)	(2,439)
Deferred revenue	374	7,465
Contingent consideration liabilities	(741)	(11,025)
Operating lease liabilities	(1,772)	(2,107)
Net cash used in operating activities	(8,418)	(7,988)
Cash flows from investing activities		
Proceeds from the sale and maturity of short-term investments	185,171	174,293
Purchase of short-term investments	(160,548)	(53,686)
Acquisition of business, net of cash acquired	(27,846)	—
Capitalization of internal-use software	(7,026)	(1,912)
Purchase of intangible assets	(1,298)	(770)
Purchases of property and equipment	(558)	(8,138)
Proceeds from the sale of property and equipment	10	12
Net cash (used in) provided by investing activities	(12,095)	109,799

Cash flows from financing activities		
Proceeds from exercise of stock options	3,688	14,076
Proceeds from employee stock purchase plan	1,531	2,619
Payments of acquisition-related consideration	(930)	(5,360)
Net cash provided by financing activities	4,289	11,335
Effect of exchange rate changes on cash and cash equivalents	(20)	(5)
Net (decrease) increase in cash and cash equivalents	(16,244)	113,141
Cash and cash equivalents at beginning of period	193,227	91,954
Cash and cash equivalents at end of period	$ 176,983	$ 205,095
Supplemental disclosures of non-cash investing and financing information		
Common stock issued in connection with acquisitions	$ 3,006	$ —
Common stock issued for settlement of contingent consideration	2,306	15,881
Purchase of intangible assets included in accounts payable and accrued liabilities	905	1,075
Stock-based compensation capitalized as internal-use software	604	234
Purchase of property and equipment included in accounts payable and accrued liabilities	459	1,149
Operating lease right-of-use assets obtained in exchange for operating lease obligations	169	—
Capitalized internal-use software included in accounts payable and accrued liabilities	97	—

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

1. Description of Business and Summary of Significant Accounting Policies

Nature of operations

Health Catalyst, Inc. (Health Catalyst) was incorporated under the laws of Delaware in September 2011. We are a leading provider of data and analytics technology and services to healthcare organizations. Our Solution comprises a cloud-based data platform, analytics software, and professional services expertise. Our customers, which are primarily healthcare providers, use our Solution to manage their data, derive analytical insights to operate their organization, and produce measurable clinical, financial, and operational improvements.

Basis of presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and the applicable regulations of the U.S. Securities and Exchange Commission (SEC) regarding interim financial reporting. Certain information and note disclosures normally included in annual financial statements prepared in accordance with GAAP have been condensed or omitted. Therefore, these unaudited condensed consolidated financial statements should be read in conjunction with our audited consolidated financial statements and the related notes thereto as of and for the year ended December 31, 2021 included in our Annual Report on Form 10-K.

Interim unaudited condensed consolidated financial statements

The accompanying interim condensed consolidated balance sheet as of June 30, 2022, the interim condensed consolidated statements of operations for the three and six months ended June 30, 2022 and 2021, our interim condensed consolidated statements of stockholders' equity for the three and six months ended June 30, 2022 and 2021, and our interim condensed consolidated statements of cash flows for the six months ended June 30, 2022 and 2021 are unaudited. Our condensed consolidated balance sheet as of December 31, 2021 was derived from audited financial statements, but does not include all disclosures required by GAAP. Our interim unaudited condensed consolidated financial statements have been prepared on a basis consistent with our annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to state fairly the Company's financial position, its operations and cash flows for the periods presented. The historical results are not necessarily indicative of future results, and the results of operations for the three and six months ended June 30, 2022 are not necessarily indicative of the results to be expected for the full year or any other period.

Principles of consolidation

The condensed consolidated financial statements include the accounts of Health Catalyst and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated.

Use of estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires us 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 financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, we evaluate our estimates, including those related to revenue recognition, provisions for expected credit losses, useful lives of property and equipment, capitalization and estimated useful life of internal-use software and other intangible assets, fair value of financial instruments, deferred tax assets, stock-based compensation, contingent consideration, the period of benefit for deferred contract acquisition costs, the incremental borrowing rate used for operating leases, and tax uncertainties. Actual results could significantly differ from those estimates.

Segment reporting

Operating segments are identified as components of an enterprise about which separate discrete financial information is evaluated by the chief operating decision maker (the CODM) in assessing performance and making decisions regarding resource allocation. We operate our business in two operating segments that also represent our reportable segments. Our segments are (1) technology and (2) professional services. The CODM uses Adjusted Gross Profit (defined as revenue less cost of revenue that excludes depreciation, amortization, stock-based compensation expense, and certain other operating expenses) as the measure of our profit.

Net loss per share

Basic net loss per share is calculated by dividing net loss by the weighted average number of shares of common stock outstanding. Diluted net loss per share is calculated by giving effect to all potentially dilutive common stock equivalents outstanding for the period, including shares issuable as acquisition-related contingent consideration when dilutive. For purposes of this calculation, stock options, restricted stock units (RSUs), performance-based restricted stock units (PRSUs), convertible senior notes, restricted shares, and purchase rights committed under the employee stock purchase plan are considered to be common stock equivalents but have been excluded from the calculation of diluted net loss per share attributable to common stockholders as the effect is antidilutive.

Revenue recognition

We recognize revenue in accordance with Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers (Topic 606)*. We derive our revenues primarily from technology subscriptions and professional services. We determine revenue recognition by applying 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 the performance obligation.

We recognize revenue net of any taxes collected from customers and subsequently remitted to governmental authorities.

Technology revenue

Technology revenue primarily consists of subscription fees charged to customers for access to use our technology. We provide customers access to our technology through either an all-access or limited-access, modular subscription.

The majority of our subscription arrangements are cloud-based and do not provide customers the right to take possession of the technology or contain a significant penalty if the customer were to take possession of the technology. Revenue from cloud-based subscriptions is recognized ratably over the contract term beginning on the date that the service is made available to the customer. Our subscription contracts generally have a three or five-year term, of which many are terminable after one year upon 90 days’ notice.

Subscriptions that allow the customer to take software on-premise without significant penalty are treated as time-based licenses. These arrangements generally include access to technology, access to unspecified future products, and maintenance and support. Revenue for upfront access to our technology library is recognized at a point in time when the technology is made available to the customer. Revenue for access to unspecified future products included in time-based license subscriptions is recognized ratably over the contract term beginning on the date that the access is made available to the customer.

We also have certain perpetual license arrangements. Revenue from these arrangements is recognized at a point in time upon delivery of the software. Technology revenue also includes maintenance and support revenue which generally includes bug fixes, updates, and support services. Revenue related to maintenance and support is recognized over the contract term beginning on the date that the service is made available to the customer.

Professional services revenue

Professional services revenue primarily includes data and analytics services, domain expertise services, outsourcing services, and implementation services. Professional services arrangements typically include a fee for making full-time equivalent (FTE) services available to our customers on a monthly basis. FTE services generally consist of a blend of analytic engineers, analysts, and data scientists based on the domain expertise needed to best serve our customers. Professional services are typically considered distinct from the technology offerings and revenue is generally recognized as the service is provided using the “right to invoice” practical expedient.

Contracts with multiple performance obligations

Many of our contracts include multiple performance obligations. We account for performance obligations separately if they are capable of being distinct within the context of the contract. In these circumstances, the transaction price is allocated to separate performance obligations on a relative standalone selling price basis. We determine standalone selling prices based on the observable price a good or service is sold for separately when available. In cases where standalone selling prices are not directly observable, based on information available, we utilize the expected cost plus a margin, adjusted market assessment, or residual estimation method. We consider all information available including our overall pricing objectives, market conditions, and other factors, which may include customer demographics and the types of users.

Standalone selling prices are not directly observable for our all-access and limited-access technology arrangements, which are composed of cloud-based subscriptions, time-based licenses, and perpetual licenses. For these technology arrangements, we generally use the residual estimation method due to a limited number of standalone transactions and/or prices that are highly variable.

Variable consideration

We have also entered into at-risk and shared savings arrangements with certain customers whereby we receive variable consideration based on the achievement of measurable improvements which may include cost savings or performance against metrics. For these arrangements, we estimate revenue using the most likely amount that we will receive. Estimates are based on our historical experience and best judgment at the time to the extent it is probable that a significant reversal of revenue recognized will not occur. Due to the nature of our arrangements, certain estimates may be constrained until the uncertainty is further resolved.

Contract balances

Contract assets resulting from services performed prior to invoicing customers are recorded as unbilled accounts receivable and are presented on our condensed consolidated balance sheets in aggregate with accounts receivable. Unbilled accounts receivable generally become billable at contractually specified dates or upon the attainment of contractually defined milestones. As of June 30, 2022 and December 31, 2021, the unbilled accounts receivable included in accounts receivable on our condensed consolidated balance sheets was $0.5 million and $0.8 million, respectively.

We record contract liabilities as deferred revenue when cash payments are received or due in advance of performance. Deferred revenue primarily relates to the advance consideration received from the customer. As of June 30, 2022 and December 31, 2021, the total of current and non-current deferred revenue on our condensed consolidated balance sheets was $61.4 million and $57.6 million, respectively.

Deferred costs

We capitalize sales commissions and associated fringe costs, such as benefits and payroll taxes, paid to direct sales personnel and other incremental costs of obtaining contracts with customers, provided we expect to recover those costs. We determine that costs should be deferred based on our sales compensation plans when the commissions are incremental and would not have occurred absent the customer contract. As of June 30, 2022 and December 31, 2021, $1.2 million and $1.4 million, respectively, of deferred contract acquisition costs are expected to be amortized within the next 12 months and are included in prepaid expenses and other assets on the consolidated balance sheets. As of June 30, 2022 and December 31, 2021, the remaining $2.2 million and $3.0 million, respectively, of deferred contract acquisition costs are included in non-current other assets.

Commissions paid upon the initial acquisition of a contract are amortized on a straight-line basis over an estimated period of benefit of four years. Amortization is recognized on a straight-line basis commensurate with the pattern of revenue recognition. The period of benefit was estimated by considering factors such as estimated average customer life, the rate of technological change in our subscription service, and the impact of competition in our industry. As our average customer life significantly exceeded the rate of change in our technology, we concluded that the rate of change in the technology underlying our subscription service was the most significant factor in determining the period of benefit for which the asset relates. In evaluating the rate of change in our technology, we considered the competition in our industry, our commitment to continuous innovation, and the frequency of product, platform, and technology updates. We determined that the impact of competition in our industry is reflected in the period of benefit through the rate of technological change. Amortization of deferred contract acquisition costs is included within sales and marketing expense in the condensed consolidated statements of operations.

We defer certain costs to fulfill a contract when the costs are expected to be recovered, are directly related to in-process contracts, and enhance resources that will be used in satisfying performance obligations in the future. These deferred fulfillment costs primarily consist of employee compensation incurred as part of the implementation of new contracts.

We periodically review these deferred costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit. There were no impairment losses recorded during the periods presented.

Cost of revenue, excluding depreciation and amortization

Cost of technology revenue primarily consists of costs associated with hosting and supporting our technology, including third-party cloud computing and hosting costs, contractor costs, and salary and related personnel costs for our cloud services and support teams. Cost of professional services revenue primarily consists of salary and related personnel costs, travel-related costs, and independent contractor costs. Cost of revenue excludes costs related to depreciation and amortization.

Cash and cash equivalents

We consider all highly liquid investments purchased with a remaining maturity of three months or less at the time of acquisition to be cash equivalents.

Short-term investments

Our investment policy limits investments to highly-rated instruments. We classify and account for our short-term investments as available for sale securities as we may sell these securities at any time for use in our current operations or for other purposes, even prior to maturity. As a result, we classify our short-term investments, including securities with contractual maturities beyond twelve months, within current assets in the condensed consolidated balance sheets.

Accounts receivable

Accounts receivable are non-interest bearing and are recorded at the original invoiced amount less an allowance for credit losses based on the probability of future collections. Our allowance is based on our estimate of expected credit losses for outstanding trade accounts receivables and unbilled receivables. We determine expected credit losses based on historical write-off experience, an analysis of the aging of outstanding receivables, customer payment patterns, the establishment of specific reserves for customers in an adverse financial condition, and our expectations of changes in macro-economic conditions, including the ongoing COVID-19 pandemic and recently high inflationary environment, that may impact the collectability of outstanding receivables. We reassess the adequacy of the allowance for credit losses each reporting period. The following table presents a rollforward of the allowance for credit losses (in thousands):

	Allowance for Credit Losses on Accounts Receivable
	(unaudited)
Balance at January 1, 2022	$ 1,600
Current period provision for expected credit losses	400
Balance at June 30, 2022	$ 2,000

Property and equipment

Property and equipment are stated at historical cost less accumulated depreciation. Repairs and maintenance costs that do not extend the useful life or improve the related assets are expensed as incurred. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. The estimated useful life of each asset category is as follows:

Computer equipment	2-3 years
Furniture and fixtures	3-5 years
Leasehold improvements	Lesser of lease term or estimated useful life
Computer software	2-5 years
Capitalized internal-use software costs	2-3 years

When there are indicators of potential impairment, we evaluate the recoverability of the carrying values by comparing the carrying amount of the applicable asset group to the estimated undiscounted future cash flows expected to be generated by the asset group over the remaining useful life of the primary asset in the asset group. If the carrying amount of the asset group exceeds its estimated undiscounted future net cash flows, an impairment charge is recognized based on the amount by which the carrying value of the long-lived assets exceeds the fair value of the assets. We did not incur any long-lived impairment charges for the three and six months ended June 30, 2022 and 2021.

Intangible assets

Intangible assets include developed technologies, customer relationships, customer contracts, and trademarks that were acquired in business combinations and asset acquisitions. Intangible assets also include the purchase of third-party computer software. The intangible assets are amortized using the straight-line method over the assets' estimated useful lives. The estimated useful life of each asset category is as follows:

Developed technologies	3-10 years
Customer relationships and contract backlog	2-7 years
Computer software licenses	1-5 years
Trademarks	1-5 years

Goodwill

We record goodwill as the difference between the aggregate consideration paid for a business combination and the fair value of the identifiable net tangible and intangible assets acquired. Goodwill includes the know-how of the assembled workforce, the ability of the workforce to further improve technology and product offerings, customer relationships, and the expected cash flows resulting from these efforts. Goodwill may also include expected synergies resulting from the complementary strategic fit these businesses bring to existing operations. Goodwill is assessed for impairment annually or more frequently if indicators of impairment are present or circumstances suggest that impairment may exist.

Our first step in the goodwill impairment test is a qualitative analysis of factors that could be indicators of potential impairment. Next, if a quantitative analysis is necessary, we compare the fair value of the reporting unit with its carrying amount, including goodwill. If the fair value of the reporting unit exceeds its carrying amount, the goodwill of the reporting unit is not considered impaired. If the carrying amount of the reporting unit exceeds its fair value, we would recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. There was no impairment of goodwill for the three and six months ended June 30, 2022 and 2021.

Business combinations

The results of businesses acquired in a business combination are included in our condensed consolidated financial statements from the date of the acquisition. Purchase accounting results in assets and liabilities of an acquired business generally being recorded at their estimated fair value on the acquisition date. Any excess consideration over the fair value of the identifiable assets acquired and liabilities assumed is recognized as goodwill.

We perform valuations of assets acquired and liabilities assumed on each acquisition accounted for as a business combination in order to record the tangible and intangible assets acquired and liabilities assumed based on our best estimate of fair value. Determining the fair value of assets acquired and liabilities assumed requires management to use significant judgment and estimates including the selection of valuation methodologies, estimates of future revenue and cash flows, discount rates, and selection of comparable companies. Significant estimation is required in determining the fair value of the customer-related intangible assets and technology-related intangible assets. The significant estimation is primarily due to the judgmental nature of the inputs to the valuation models used to measure the fair value of these intangible assets, as well as the sensitivity of the respective fair values to the underlying significant assumptions. We typically use the income approach or cost approach to measure the fair value of intangible assets. The significant assumptions used to form the basis of the estimates included the number of engineer hours required to develop technology, expected revenue including revenue growth rates, rate and timing of obsolescence, royalty rates and earnings before interest, taxes, depreciation and amortization (EBITDA) margin used in the estimate for customer relationships, and backlog. Many of these significant assumptions were forward-looking and could be affected by future economic and market conditions. We engage the assistance of valuation specialists in concluding on fair value measurements in connection with determining fair values of material assets acquired and liabilities assumed in a business combination.

We expensed $1.2 million and $1.2 million of transaction costs associated with business combinations during the three months ended June 30, 2022 and 2021, respectively, and $2.9 million and $1.2 million for the six months ended June 30, 2022 and 2021, respectively. The costs were expensed as incurred and are included in general and administrative expense in our condensed consolidated statements of operations.

Contingent consideration liabilities

Our acquisition consideration in business combinations may include an estimate for contingent consideration that will be paid if certain earn-out performance targets are met. The resulting contingent consideration liabilities are categorized as a Level 3 fair value measurement because we estimate projections during the earn-out period utilizing unobservable inputs, including various potential pay-out scenarios based on billings and revenue-related earn-out targets. Changes to the unobservable inputs could have a material impact on our condensed consolidated financial statements.

We generally value the expected contingent consideration and the corresponding liabilities using a probability model such as the Monte Carlo method based on estimates of potential payment scenarios. Probabilities are applied to each potential scenario and the resulting values are discounted using a rate that considers weighted average cost of capital as well as a specific risk premium associated with the riskiness of the earn-out itself, the related projections, projected payment dates, and volatility in the fair value of our common stock. The fair value of the contingent consideration is remeasured each reporting period.

The portion of the contingent consideration liabilities that will be settled in shares of our common stock is classified as a component of non-current liabilities in our condensed consolidated balance sheets, while the portion to be paid in cash is classified as a component of current liabilities. Changes to the contingent consideration liabilities are reflected as part of general and administrative expense in our condensed consolidated statements of operations.

Advertising costs

All advertising costs are expensed as incurred. For the three months ended June 30, 2022 and 2021, we incurred $0.4 million and $0.4 million of advertising costs, respectively, and $1.3 million and $0.7 million for the six months ended June 30, 2022 and 2021, respectively.

Development costs and internal-use software

For technology products that are developed to be sold externally, we determined that technological feasibility is reached shortly before the products are ready for general release. Any costs associated with software development between the time technological feasibility is reached and general release are inconsequential.

We capitalize certain development costs incurred in connection with our internal-use software. These capitalized costs are primarily related to the software platforms that are hosted by us and accessed by our customers on a subscription basis. Costs incurred in the preliminary stages of development are expensed as incurred as research and development costs. Once an application has reached the development stage, internal and external costs, if direct and incremental, are capitalized until the software is substantially complete and ready for its intended use. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional functionality. Capitalized costs are recorded as part of property and equipment. Maintenance and training costs are expensed as incurred. Internal-use software is amortized on a straight-line basis over its estimated useful life with amortization included in depreciation and amortization expense in our condensed consolidated statements of operations.

Stock-based compensation

Stock-based awards, including stock options, restricted stock units, performance-based restricted stock units, and restricted shares are measured and recognized in our condensed consolidated financial statements based on the fair value of the award on the grant date. The grant date fair value of our stock-based awards is typically determined using the market closing price of our common stock on the date of grant; however, we also consider whether any adjustments are required when the market closing price does not reflect certain material non-public information that we know but is unavailable to marketplace participants on the date of grant.

We record forfeitures of stock-based awards as the actual forfeitures occur. For awards subject to performance conditions, we record expense when the performance condition becomes probable. Each reporting period, we evaluate the probability of achieving the performance criteria, estimate the number of shares that are expected to vest, and adjust the related compensation expense accordingly.

Stock-based compensation expense related to purchase rights issued under the 2019 Health Catalyst Employee Stock Purchase Plan (ESPP) is based on the Black-Scholes option-pricing model fair value of the estimated number of awards as of the beginning of the offering period. Stock-based compensation expense is recognized using the straight-line method over the offering period.

The measurement date for non-employee awards is the date of grant. The compensation expense for non-employees is recognized, without changes in the fair value of the award, in the same period and in the same manner as though we had paid cash for the services, which is typically the vesting period of the respective award.

Income taxes

Deferred income tax balances are accounted for using the asset and liability method and reflect the effects of temporary differences between the financial reporting and tax bases of our assets and liabilities using enacted tax rates expected to apply when taxes are actually paid or recovered. In addition, deferred tax assets and liabilities are recorded for net operating loss (NOL) and tax credit carryforwards. A valuation allowance is provided against deferred tax assets unless it is more likely than not that they will be realized based on all available positive and negative evidence. Such evidence includes, but is not limited to, recent cumulative earnings or losses, expectations of future taxable income by taxing jurisdiction, and the carry-forward periods available for the utilization of deferred tax assets.

We use a two-step approach to recognize and measure uncertain income tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates it is more likely than not that the position will be sustained upon audit. The second step is to measure the tax benefit as the largest amount, which is more than 50% likely of being realized upon ultimate settlement. We do not currently accrue interest and penalties related to unrecognized tax benefits within the provision for income taxes because the impact would be immaterial due to our net operating losses and tax credit carryforwards. Significant judgment is required to evaluate uncertain tax positions.

Although we believe that we have adequately reserved for our uncertain tax positions, we can provide no assurance that the final tax outcome of these matters will not be materially different. We evaluate our uncertain tax positions on a regular basis and evaluations are based on a number of factors, including changes in facts and circumstances, changes in tax law, correspondence with tax authorities during the course of an audit, and effective settlement of audit issues. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made and could have a material impact on our financial condition and results of operations.

Fair value of financial instruments

The carrying amounts reported in our condensed consolidated balance sheets for cash, receivables, accounts payable, and current accrued expenses approximate fair values because of the immediate or short-term maturity of these financial instruments. The carrying value of contingent consideration liabilities, operating lease liabilities, and convertible senior notes approximate fair value based on interest rates available for debt with similar terms at June 30, 2022 and December 31, 2021. Money market funds and short-term investments are measured at fair value on a recurring basis. Our contingent consideration liabilities are measured at fair value on a recurring basis based primarily on significant inputs not observable in the market.

Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- Level 1- Quoted prices in active markets for identical assets or liabilities.

- Level 2- Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

- Level 3- Inputs that are generally unobservable and typically reflect management’s estimate of assumptions that market participants would use in pricing the asset or liability.

All of our financial instruments are valued using quoted prices in active markets or based on other observable inputs. For Level 2 securities, we use a third-party pricing service which provides documentation on an ongoing basis that includes, among other things, pricing information with respect to reference data, methodology, inputs summarized by asset class, pricing application, and corroborative information. Our contingent consideration liabilities are categorized as a Level 3 fair value measurement because we estimate projections during the earn out period utilizing various potential pay-out scenarios.

Leases

We determine if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use (ROU) assets, operating lease liabilities, and operating lease liabilities, net of current portion in our condensed consolidated balance sheets. We have adopted the short-term lease recognition exemption policy. All of our leasing commitments are classified either as operating leases or otherwise qualify as short-term leases with lease terms of 12 months or less.

ROU assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at their commencement date based on the present value of lease payments over the lease term. As our lease contracts do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date to determine the present value of lease payments. The operating lease ROU asset also includes any lease payments made and excludes lease executory costs. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise the applicable option. Lease expense for lease payments is recognized on a straight-line basis over the lease term. We do not have lease agreements that contain non-lease components.

Foreign currency

The functional currency of our international subsidiaries is generally their local currency. We translate these subsidiaries' financial statements into U.S. dollars using month-end exchange rates for assets and liabilities and average exchange rates for revenue and expenses. We record translation gains and losses in accumulated other comprehensive loss in stockholders' equity. We record foreign exchange gains and losses in interest and other expense, net. Our net foreign exchange gains and losses were not material for the periods presented.

Accounting pronouncements adopted

Accounting for convertible instruments

In August 2020, the FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40)—Accounting For Convertible Instruments and Contracts in an Entity's Own Equity*. The new standard simplifies accounting for convertible instruments by removing major separation models required under current GAAP. Consequently, more convertible debt instruments are reported as a single liability instrument with no separate accounting for embedded conversion features. The new standard also simplifies the diluted net income per share calculation, including a requirement to apply the if-converted method when calculating the potentially dilutive impact of convertible instruments. ASU 2020-06 is effective for annual and interim periods beginning after December 15, 2021 and we adopted this standard using the modified retrospective approach as of January 1, 2022.

Adoption of the new standard resulted in significant classification changes to our condensed consolidated balance sheet as of January 1, 2022, including a decrease to Accumulated deficit of $17.2 million and a decrease to Additional paid-in capital of $61.2 million related to amounts attributable to the conversion premium that had previously been recorded in equity. We also recorded a net increase to the convertible senior notes balance of $44.0 million due to the reclassification of the conversion premium from equity to debt.

The adoption of this standard reduced our reported non-cash interest expense as we no longer record amortization of the debt discount. As we expect continued net losses in the near term, we do not expect significant changes to our diluted net loss per share calculation presented in our condensed consolidated statements of operations. However, applying the if-converted method instead of the net share settlement or treasury stock method, which was being applied prior to January 1, 2022, resulted in a significant increase in the potentially dilutive securities related to convertible senior notes disclosed in the notes to the condensed consolidated financial statements after adopting the new standard. There was no other significant impact to our condensed consolidated financial statements and related disclosures as a result of the adoption of this standard.

Accounting for business combinations

In October 2021, the FASB issued ASU 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customer*s. ASU 2021-08 requires that an entity (acquirer) recognize and measure contract assets and contract liabilities (i.e., deferred revenue) acquired in a business combination in accordance with Topic 606. ASU 2021-08 is effective for fiscal years beginning after December 15, 2022, with early adoption permitted. We early adopted ASU 2021-08 and have applied that ASU prospectively to business combinations occurring on or after January 1, 2022.

Prior to the adoption of the new standard, we recognized assets acquired and liabilities assumed in a business combination, including contract assets and contract liabilities arising from revenue contracts with customers, at fair value on the acquisition date.

Recent accounting pronouncements not yet adopted

There have been no recent accounting pronouncements issued which are expected to have a material effect on our condensed consolidated financial statements. Management continues to monitor and review recently issued accounting guidance upon issuance.

2. Business Combinations

The business acquisitions discussed below are included in our results of operations from their respective dates of acquisition.

2022 acquisitions

ARMUS Corporation

On April 29, 2022, we acquired ARMUS Corporation (ARMUS), a clinical registry development and data management technology company based in Foster City, California. We accounted for the acquisition of ARMUS as a business combination. ARMUS provides data abstraction, data validation, data management, data submission, and data reporting services to support participation in clinical quality registries for healthcare institutions around the world, including health systems, payers, medical device companies, and premier medical societies. The acquisition consideration transferred was $9.4 million and was comprised of net cash consideration of $9.3 million and Health Catalyst common shares with a fair value of $0.1 million. The purchase resulted in Health Catalyst acquiring 100% ownership in ARMUS.

An additional 235,330 shares of our common stock subject to a restriction agreement (restricted shares) were issued pursuant to the terms of the acquisition agreement. The value of these restricted shares is recognized as post-combination stock-based compensation expense on a straight-line basis over the vesting term. Refer to Note 12 for additional details related to our stock-based compensation.

The following table summarizes the preliminary acquisition-date fair value of consideration transferred and the identifiable assets purchased and liabilities assumed as part of our acquisition of ARMUS (in thousands):

Assets acquired:		
Accounts receivable	$	601
Prepaid expenses and other assets		104
ROU lease asset		169
Developed technologies		4,600
Customer relationships		2,200
Trademarks		200
Total assets acquired		7,874
Less liabilities assumed:		
Accounts payable		119
Accrued and other current liabilities		196
Deferred revenue		2,740
Lease liability		157
Net deferred tax liabilities		933
Total liabilities assumed		4,145
Total assets acquired, net		3,729
Goodwill		5,645
Total consideration transferred, net of cash acquired	$	9,374

The acquired intangible assets were valued utilizing either an income approach or a cost approach as deemed most applicable, and include developed technology, customer relationships, and trademarks that will be amortized on a straight-line basis over their estimated useful lives of four years, six years, and three years, respectively. The resulting goodwill from the ARMUS acquisition was fully allocated to the technology reporting unit and is not deductible for income tax purposes.

The preliminary allocation of the consideration transferred is subject to potential adjustments. Balances subject to adjustment are primarily tax-related matters, including the tax basis of acquired assets and liabilities, and the settlement of net working capital. During the measurement period, we may record adjustments to the provisional amounts recognized in our initial accounting for the acquisition. We expect the allocation of the consideration transferred to be final within the measurement period (up to one year from the acquisition date). There were no measurement period adjustments recorded during the three months ended June 30, 2022.

Pro forma financial information has not been presented for the ARMUS acquisition as the impact to our condensed consolidated financial statements was not material. The amount of revenue attributable to the acquired business of ARMUS was not material to our condensed consolidated statement of operations for the three and six months ended June 30, 2022. Income (loss) information for ARMUS after the acquisition date through June 30, 2022 is not presented as the ARMUS business was integrated into our operations immediately following the acquisition and is impracticable to quantify.

In addition to the purchase price, we agreed to make cash retention payments in an aggregate amount of $5.0 million to continuing ARMUS team members. The retention payments are generally subject to vesting based upon continued employment over a required service period of three years. Any forfeited retention payments are reallocated to remaining ARMUS team members until the aggregate amount of $5.0 million is fully paid. Such amounts are recorded as post-combination compensation expense and recognized on a straight-line basis over the relevant vesting terms. During the three months ended June 30, 2022, we recognized compensation expense of $1.2 million related to these retention payments. As of June 30, 2022, there is an additional $3.8 million of unrecognized compensation expense related to these retention payments expected to be recognized over a weighted-average period of 2.8 years.

KPI Ninja, Inc.

On February 24, 2022, we acquired KPI Ninja, Inc. (KPI Ninja), a leading provider of interoperability, enterprise analytics, and value-based care solutions based in Lincoln, Nebraska. We accounted for the acquisition of KPI Ninja as a business combination. KPI Ninja is known for its powerful capabilities, flexible configurations, and comprehensive applications designed to fulfill the promise of data-driven health care. The acquisition consideration transferred was $21.4 million and was comprised of net cash consideration of $18.5 million and Health Catalyst common shares with a fair value of $2.9 million. The purchase resulted in Health Catalyst acquiring 100% ownership in KPI Ninja.

An additional 356,919 shares of our common stock subject to a restriction agreement (restricted shares) were issued pursuant to the terms of the acquisition agreement. The value of these restricted shares is recognized as post-combination stock-based compensation expense on a straight-line basis over the vesting term. Refer to Note 12 for additional details related to our stock-based compensation.

The following table summarizes the preliminary acquisition-date fair value of consideration transferred and the identifiable assets purchased and liabilities assumed as part of our acquisition of KPI Ninja (in thousands):

Assets acquired:		
Accounts receivable	$	45
Prepaid expenses and other assets		198
Property and equipment, net		15
Developed technologies		13,500
Customer relationships		1,100
Trademarks		800
Total assets acquired		15,658
Less liabilities assumed:		
Accounts payable and other current liabilities		266
Deferred revenue		763
Net deferred tax liabilities		3,600
Total liabilities assumed		4,629
Total assets acquired, net		11,029
Goodwill		10,364
Total consideration transferred, net of cash acquired	$	21,393

The acquired intangible assets were valued utilizing either an income approach or a cost approach as deemed most applicable, and include developed technology, customer relationships, and trademarks that will be amortized on a straight-line basis over their estimated useful lives of four years, six years, and five years, respectively. The resulting goodwill from the KPI Ninja acquisition was fully allocated to the technology reporting unit and is not deductible for income tax purposes.

The preliminary allocation of the consideration transferred is subject to potential adjustments. Balances subject to adjustment are primarily tax-related matters, including the tax basis of acquired assets and liabilities. During the measurement period, we may record adjustments to the provisional amounts recognized in our initial accounting for the acquisition. We expect the allocation of the consideration transferred to be final within the measurement period (up to one year from the acquisition date). There were no measurement period adjustments recorded during the three and six months ended June 30, 2022.

The amount of revenue attributable to the acquired business of KPI Ninja was not material to our condensed consolidated statement of operations for the three and six months ended June 30, 2022. Income (loss) information for KPI Ninja after the acquisition date through June 30, 2022 is not presented as the KPI Ninja business was integrated into our operations immediately following the acquisition and is impracticable to quantify.

Pro forma financial information has not been presented for the KPI Ninja acquisition as the impact to our condensed consolidated financial statements was not material.

In addition to the purchase price, we agreed to make cash retention payments in an aggregate amount of $3.0 million to continuing KPI Ninja team members. The retention payments are subject to vesting based upon continued employment over a required service period of four years. Any forfeited retention payments are reallocated to remaining KPI Ninja team members until the aggregate amount of $3.0 million is fully paid. Such amounts are recorded as post-combination compensation expense and recognized on a straight-line basis over the relevant vesting terms. During the three and six months ended June 30, 2022, we recognized compensation expense of $0.2 million and $0.6 million, respectively, related to these retention payments. As of June 30, 2022, there was an additional $2.4 million of unrecognized compensation expense related to these retention payments expected to be recognized over a weighted-average period of 3.7 years.

2021 acquisition

Twistle, Inc.

On July 1, 2021, we acquired Twistle, Inc. (Twistle), a healthcare patient engagement SaaS technology company that, among other things, helps automate patient-centered, personalized, multi-channel communication between care teams and patients that aims to transform the patient experience, drive better care outcomes, and reduce healthcare costs. We accounted for the acquisition of Twistle as a business combination. The acquisition consideration transferred was $91.9 million and was comprised of net cash consideration of $46.7 million, Health Catalyst common shares with a fair value of $43.1 million, and contingent consideration based on certain earn-out performance targets for Twistle during an earn-out period that ends on June 30, 2022, with an initial fair value of $2.1 million. The purchase resulted in Health Catalyst acquiring 100% ownership in Twistle.

An additional 67,939 restricted shares were issued pursuant to the terms of the acquisition agreement. The value of these restricted shares is recognized as post-combination stock-based compensation expense on a straight-line basis over the vesting term. Refer to Note 12 for additional details related to our stock-based compensation.

The following table summarizes the acquisition-date fair value of consideration transferred and the identifiable assets purchased and liabilities assumed as part of our acquisition of Twistle (in thousands):

Assets acquired:		
Accounts receivable	$	1,106
Prepaid expenses and other assets		98
Property and equipment, net		57
Developed technologies		13,000
Customer relationships		23,700
Trademarks		20
Total assets acquired		37,981
Less liabilities assumed:		
Accounts payable and other current liabilities		161
Deferred revenue		900
Net deferred tax liabilities		7,142
Total liabilities assumed		8,203
Total assets acquired, net		29,778
Goodwill		62,150
Total consideration transferred, net of cash acquired	$	91,928

The acquired intangible assets were valued utilizing either an income approach or a cost approach as deemed most applicable, and include customer relationships, developed technology, and trademarks that will be amortized on a straight-line basis over their estimated useful lives of seven years, three years, and one year, respectively. The resulting goodwill from the Twistle acquisition was fully allocated to the technology reporting unit and is not deductible for income tax purposes.

In connection with the acquisition, we also agreed to make deferred cash retention payments to continuing Twistle team members related to their unvested options previously granted or promised to be granted. The retention payments are subject to quarterly or cliff vesting based on continued employment over a required service period of between 12 and 18 months post-closing. Such amounts are recorded as post-combination compensation expense on a straight-line basis over the relevant vesting terms. During the three and six months ended June 30, 2022, we recognized compensation expense of $1.7 million and $3.3 million, respectively, related to these retention payments. As of June 30, 2022, there was an additional $2.8 million of unrecognized compensation expense related to these retention payments expected to be recognized over a weighted-average period of 0.5 years.

3. Revenue

The following table represents Health Catalyst's revenue disaggregated by type of arrangement (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		*(unaudited)*	
Recurring technology	$ 45,397	$ 35,529	$ 87,147	$ 69,096
One-time technology (i.e., perpetual license)	—	—	480	272
Professional services	25,236	24,098	51,093	46,105
Total revenue	$ 70,633	$ 59,627	$ 138,720	$ 115,473

Revenue related to contracts with customers located in the United States was 96.0% and 99.1%, respectively, for the three months ended June 30, 2022 and 2021 and 97.5% and 99.5% for the six months ended June 30, 2022 and 2021, respectively.

4. Goodwill and Intangible Assets

We operate our business in two operating segments that also represent our reporting units. Our reporting units are organized based on our technology and professional services. We have not incurred any goodwill impairment charges.

Goodwill by reporting unit is as follows (in thousands):

	As of June 30, 2022	As of December 31, 2021
	(unaudited)	
Technology	$ 185,200	$ 169,190
Professional services	782	782
Total goodwill	$ 185,982	$ 169,972

As of June 30, 2022, intangible assets consisted of the following (in thousands):

	Gross	Accumulated Amortization	Net
		(unaudited)	
Developed technologies	$ 100,829	$ (51,144)	$ 49,685
Customer relationships and contracts	84,764	(28,756)	56,008
Computer software licenses	10,036	(7,703)	2,333
Trademarks	2,720	(1,238)	1,482
Total intangible assets	$ 198,349	$ (88,841)	$ 109,508

Amortization expense of acquired intangible assets was $10.0 million and $7.0 million for the three months ended June 30, 2022 and 2021, respectively, and $19.3 million and $14.1 million for the six months ended June 30, 2022 and 2021, respectively. Amortization expense for intangible assets is included in depreciation and amortization in our condensed consolidated statements of operations.

As of December 31, 2021, intangible assets consisted of the following (in thousands):

	Gross	Accumulated Amortization	Net
Developed technologies	$ 82,729	$ (40,988)	$ 41,741
Customer relationships and contracts	81,464	(21,078)	60,386
Computer software licenses	8,392	(6,590)	1,802
Trademarks	1,720	(861)	859
Total intangible assets	$ 174,305	$ (69,517)	$ 104,788

5. Property and Equipment

Property and equipment consisted of the following (in thousands):

	As of June 30, 2022	As of December 31, 2021
	(unaudited)	
Computer equipment	$ 9,455	$ 9,235
Leasehold improvements	10,832	10,832
Furniture and fixtures	3,731	3,715
Capitalized internal-use software costs	18,136	10,769
Computer software	198	198
Total property and equipment	42,352	34,749
Less: accumulated depreciation	(15,825)	(11,433)
Property and equipment, net	$ 26,527	$ 23,316

Our long-lived assets are located in the United States. Depreciation expense totaled $2.6 million and $1.1 million for the three months ended June 30, 2022 and 2021, respectively, and $4.9 million and $1.8 million for the six months ended June 30, 2022 and 2021, respectively. Depreciation expense includes amortization of assets recorded under a capital lease and the amortization of capitalized internal-use software costs.

We capitalized $3.6 million and $1.1 million of internal-use software costs for the three months ended June 30, 2022 and 2021, respectively, and $7.4 million and $2.1 million for the six months ended June 30, 2022 and 2021, respectively. We incurred $1.6 million and $0.5 million of capitalized internal-use software cost amortization expense for the three months ended June 30, 2022 and 2021, respectively, and $2.8 million and $0.8 million for the six months ended June 30, 2022 and 2021, respectively.

6. Short-term Investments

We classify our short-term investments as available for sale. Available-for-sale securities are recorded on our condensed consolidated balance sheets at fair market value and any unrealized gains or losses are reported as part of other comprehensive loss on our condensed consolidated statements of comprehensive loss. We determine realized gains or losses on the sales of investments through the specific identification method and record such gains or losses as part of interest and other expense, net on our condensed consolidated statements of operations. We did not have any material realized gains or losses on investments during the three and six months ended June 30, 2022 and 2021. We measure the fair value of investments on a recurring basis.

The following table summarizes, by major security type, our cash equivalents and short-term investments that are measured at fair value on a recurring basis (in thousands) as of June 30, 2022:

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash equivalents	Short-term Investments
			(unaudited)			
Money market funds	$ 161,634	$ —	$ —	$ 161,634	$ 161,634	$ —
U.S. Treasury notes	44,877	—	(222)	44,655	—	44,655
Commercial paper	138,244	—	—	138,244	—	138,244
Corporate bonds	23,571	—	(106)	23,465	—	23,465
Asset-backed securities	20,026	—	(25)	20,001	—	20,001
Total	$ 388,352	$ —	$ (353)	$ 387,999	$ 161,634	$ 226,365

The following table summarizes, by major security type, our cash equivalents and short-term investments that are measured at fair value on a recurring basis (in thousands) as of December 31, 2021:

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash equivalents	Short-term Investments
Money market funds	$ 173,475	$ —	$ —	$ 173,475	$ 173,475	$ —
Commercial paper	153,498	—	—	153,498	—	153,498
Corporate bonds	71,259	—	(45)	71,214	4,424	66,790
Asset-backed securities	31,509	—	(43)	31,466	—	31,466
Total	$ 429,741	$ —	$ (88)	$ 429,653	$ 177,899	$ 251,754

The following table presents the contractual maturities of our short-term investments as of June 30, 2022 and December 31, 2021 (in thousands):

	As of June 30, 2022		As of December 31, 2021	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
	(unaudited)			
Due within one year	$ 226,718	$ 226,365	$ 230,429	$ 230,372
Due between one and five years	—	—	21,411	21,382
Total	$ 226,718	$ 226,365	$ 251,840	$ 251,754

Accrued interest receivables related to our available-for-sale securities of $0.4 million and $0.8 million as of June 30, 2022 and December 31, 2021 were included within prepaid expenses and other assets on our condensed consolidated balance sheets.

On a quarterly basis we evaluate unrealized losses on our available-for-sale debt securities and the related accrued interest receivables to determine whether a decline in the fair value below the amortized cost basis is due to credit-related factors or noncredit-related factors. We do not intend to sell investments that are in an unrealized loss position and it is not likely that we will be required to sell any investments before recovery of their amortized cost basis. As of June 30, 2022 and December 31, 2021, there were no material unrealized losses due to expected credit loss-related factors.

7. Fair Value of Financial Instruments

Assets and liabilities measured at fair value on a recurring basis as of June 30, 2022 were as follows (in thousands):

	June 30, 2022			
	Level 1	Level 2	Level 3	Total
		(unaudited)		
Money market funds	$ 161,634	$ —	$ —	$ 161,634
U.S. Treasury notes	44,655	—	—	44,655
Commercial paper	—	138,244	—	138,244
Corporate bonds	—	23,465	—	23,465
Asset-backed securities	—	20,001	—	20,001
Contingent consideration liabilities	—	—	(8,015)	(8,015)
Total	$ 206,289	$ 181,710	$ (8,015)	$ 379,984

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2021 were as follows (in thousands):

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 173,475	$ —	$ —	$ 173,475
U.S. Treasury notes	—	—	—	—
Commercial paper	—	153,498	—	153,498
Corporate bonds	—	71,214	—	71,214
Asset-backed securities	—	31,466	—	31,466
Contingent consideration liabilities	—	—	(19,295)	(19,295)
Total	$ 173,475	$ 256,178	$ (19,295)	$ 410,358

There were no transfers between Level 1 and Level 2 of the fair value hierarchy during the three and six months ended June 30, 2022 and 2021.

Convertible senior notes

As of June 30, 2022, the estimated fair value of our convertible senior notes, with aggregate principal totaling $230.0 million, was $206.6 million. We estimate the fair value based on quoted market prices in an inactive market on the last trading day of the reporting period (Level 2). These convertible senior notes are recorded at face value less unamortized debt discount and transaction costs on our consolidated balance sheets. Refer to Note 9 — Convertible Senior Notes for further information.

Level 3 fair value measurements

The Healthfinch acquisition consideration included an initial estimate for contingent consideration based on certain revenue-based earn-out performance targets for Healthfinch during an earn-out period that ended on July 31, 2021. The first half of the Healthfinch earn-out contingent consideration liability was settled during 2021 for cash consideration of $1.7 million and the issuance of 78,243 shares of our common stock. The remaining Healthfinch contingent consideration liability was fully settled during the three months ended March 31, 2022 for cash consideration of $1.7 million and the issuance of 78,248 shares of our common stock.

The Twistle acquisition consideration included an initial estimate for contingent consideration based on certain revenue-based earn-out performance targets for Twistle during an earn-out period that ended on June 30, 2022. The Twistle contingent consideration is capped at $65.0 million and will be paid in a combination of approximately 20% cash and 80% in shares of our common stock. We expect to finalize and settle this contingent consideration liability during the third quarter of 2022.

The outstanding contingent consideration liabilities are categorized as Level 3 fair value measurements and are remeasured as of each reporting period. As of June 30, 2022, the estimated fair value of the Twistle revenue-based earn-out contingent consideration liability is approximately $8.0 million based on a point estimate of the ultimate earn-out that will be agreed upon and settled and the closing price per share of our common stock.

The following table sets forth a summary of the changes in the estimated fair value of the contingent consideration liabilities, which are measured at fair value on a recurring basis using significant unobservable inputs (Level 3) (in thousands):

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	
	(unaudited)	
Balance as of December 31, 2021	$	19,295
Settlement of contingent consideration		(3,977)
Change in fair value of contingent consideration liabilities		(7,303)
Balance as of June 30, 2022	$	8,015

8. Accrued Liabilities

As of June 30, 2022 and December 31, 2021, accrued liabilities consisted of the following (in thousands):

	As of June 30, 2022 (unaudited)	As of December 31, 2021
Accrued compensation and benefit expenses	$ 10,915	$ 17,430
Other accrued liabilities	7,697	6,295
Total accrued liabilities	$ 18,612	$ 23,725

9. Convertible Senior Notes

Convertible senior notes

On April 14, 2020, we issued $230.0 million in aggregate principal amount of 2.50% Convertible Senior Notes due 2025 (the Notes), in a private placement to qualified institutional buyers exempt from registration under the Securities Act (the Note Offering). The net proceeds from the issuance of the Notes were approximately $222.5 million, after deducting the initial purchasers' discounts and offering expenses payable by us.

The Notes are governed by an indenture (the Indenture) between us, as the issuer, and U.S. Bank National Association, as trustee. The Notes are our senior, unsecured obligations and accrue interest payable semiannually in arrears on April 15 and October 15 of each year, beginning on October 15, 2020, at a rate of 2.50% per year. The Notes will mature on April 15, 2025, unless earlier converted, redeemed, or repurchased. The Indenture does not contain any financial or operating covenants or restrictions on the payments of dividends, the incurrence of indebtedness, or the issuance or repurchase of securities by us or any of our subsidiaries.

We may not redeem the Notes prior to April 20, 2023. On or after April 20, 2023, we may redeem, for cash, all or a portion of the Notes, at our option, if the last reported sale price of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including the trading day immediately preceding the date on which we provide notice of redemption, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. No sinking fund is provided for the Notes.

The Notes have an initial conversion rate of 32.6797 shares of our common stock per $1,000 principal amount of Notes (which is equivalent to an initial conversion price of approximately $30.60 per share of our common stock). Following certain corporate events that occur prior to the maturity date, we will increase the conversion rate for a holder who elects to convert its Notes in connection with such corporate event. Additionally, upon the occurrence of a corporate event that constitutes a "fundamental change" per the Indenture, holders of the Notes may require the Company to repurchase for cash all or a portion of their Notes at a purchase price equal to 100% of the principal amount of the Notes plus accrued and unpaid interest.

Holders of the Notes may convert all or any portion of their Notes at any time prior to the close of business on October 14, 2024, in integral multiples of $1,000 principal amount, only under the following circumstances:

- During any calendar quarter commencing after the calendar quarter ended on June 30, 2020 (and only during such calendar quarter), if the last reported sale price of our 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 on each applicable trading day;

- 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 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 our common stock and the conversion rate on each such trading day;
- If we call such Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or
- Upon the occurrence of specified corporate events described in the Indenture.

On or after October 15, 2024, until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert all or any portion of their Notes at the conversion rate at any time irrespective of the foregoing circumstances. Upon conversion, holders will receive cash, shares of our common stock or a combination of cash and shares of common stock, at our election.

As of June 30, 2022, the conditions allowing holders of the Notes to convert were not met. The Notes are therefore not currently convertible and are classified as non-current.

The interest expense recognized related to the Notes was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		*(unaudited)*	
Contractual interest expense	$ 1,434	$ 1,438	$ 2,865	$ 2,875
Amortization of debt issuance costs and discount[1]	375	2,947	749	5,817
Total	$ 1,809	$ 4,385	$ 3,614	$ 8,692

(1) Amortization of debt issuance costs and discount for the three and six months ended June 30, 2022 no longer includes amortization of the debt discount due to the adoption of ASU 2020-06 using a modified retrospective approach. Refer to Note 1 for more information.

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

	June 30, 2022
	(unaudited)
Principal	$ 230,000
Less: Unamortized issuance costs	(4,228)
Net carrying amount	$ 225,772

Based on the closing price of our common stock of $14.49 on June 30, 2022, the if-converted value of the Notes was less than their respective principal amounts.

Capped calls

On April 8, 2020, concurrently with the pricing of the Notes, we entered into privately negotiated capped call transactions (Base Capped Calls) with certain option counterparties. In addition, in connection with the initial purchasers’ exercise in full of their option to purchase additional Notes, on April 9, 2020, we entered into additional capped call transactions (together with the Base Capped Calls, the Capped Calls) with each of the option counterparties. We used approximately $21.7 million of the net proceeds from the Note Offering to pay the cost of the Capped Calls and allocated issuance costs. The Capped Calls have initial cap prices of $42.00 per share, subject to certain adjustments. The Capped Calls are expected generally to reduce the potential dilution to our common stock upon any conversion of Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be, with such reduction and/or offset subject to the cap price.

The Capped Calls are separate transactions that we entered into with the option counterparties, and are not part of the terms of the Notes. As the Capped Call transactions are considered indexed to our own stock and are considered equity classified, they were recorded in stockholders' equity and are not accounted for as derivatives. The cost incurred in connection with the Capped Calls was recorded as a reduction to additional paid-in capital on our condensed consolidated balance sheets.

10. Stockholders' Equity

Preferred stock

Our board of directors has the authority, without further action by our stockholders, to issue up to 25,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, and privileges thereof, including voting rights. As of June 30, 2022 and December 31, 2021, no shares of this preferred stock were issued and outstanding.

Common stock

We had 500,000,000 shares of $0.001 par value common stock authorized, of which 54,713,567 and 52,690,019 shares were legally issued and outstanding as of June 30, 2022 and December 31, 2021, respectively. The shares legally issued and outstanding as of June 30, 2022 and December 31, 2021 included 660,188 shares and 67,939 shares, respectively, issued pursuant acquisition agreements, which are subject to a restriction agreement and were unvested, and as such, for accounting purposes they were not considered to be outstanding common stock shares. Each share of common stock has the right to one vote on all matters submitted to a vote of stockholders. The holders of common stock are also entitled to receive dividends whenever funds are legally available and when declared by the board of directors, subject to prior rights of holders of all classes of stock outstanding having priority rights as to dividends. No dividends have been declared or paid on our common stock through June 30, 2022.

11. Net Loss Per Share

The following table presents the calculation of basic and diluted net loss per share (in thousands, except share and per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		*(unaudited)*	
Net less per share, basic				
Numerator:				
Net loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)
Denominator:				
Weighted-average number of shares used in calculating net loss per share, basic	53,675,377	44,886,489	53,342,887	44,381,196
Net loss per share, basic	$ (0.62)	$ (0.80)	$ (1.05)	$ (1.45)
Net less per share, basic				
Numerator:				
Net loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)
Dilutive change in fair value of shares issuable as contingent consideration	—	—	(6,023)	—
Net loss for diluted calculation	$ (33,428)	$ (35,834)	$ (61,909)	$ (64,204)
Denominator:				
Weighted-average number of shares used in calculating net loss per share, basic	53,675,377	44,886,489	53,342,887	44,381,196
Dilutive effect of shares issuable as acquisition-related contingent consideration	—	—	461,554	—
Weighted-average number of shares used in calculating net loss per share, diluted	53,675,377	44,886,489	53,804,441	44,381,196
Net loss per share, diluted	$ (0.62)	$ (0.80)	$ (1.15)	$ (1.45)

During the three and six months ended June 30, 2022 and 2021, we incurred net losses and, therefore, the effect of our stock options, restricted stock units, performance-based restricted stock units, convertible senior notes, and restricted shares were not included in the calculation of diluted net loss per share as the effect would be anti-dilutive.

The calculation of diluted net loss per share does not include the effect of the following potentially outstanding shares of common stock. The effects of these potentially outstanding shares were not included in the calculation of diluted net loss per share because the effect would have been anti-dilutive:

	As of June 30,	
	2022	2021
	(unaudited)	
Common stock options	1,781,952	2,660,759
Restricted stock units	4,018,450	2,813,051
Performance-based restricted stock units	581,597	318,737
Shares related to convertible senior notes	7,516,331	3,198,928
Shares issuable as acquisition-related contingent consideration[(1)]	440,966	93,100
Restricted shares	660,188	76,497
Total potentially dilutive securities	14,999,484	9,161,072

(1) The effect of shares issuable as acquisition-related contingent consideration were dilutive during the six months ended June 30, 2022, but anti-dilutive during the three months ended June 30, 2022 and the three and six months ended June 30, 2021. The anti-dilutive shares issuable as acquisition-related contingent consideration in the table above are calculated based on the earn-out achieved and the estimated number of shares that would be issuable if the outstanding acquisition-related contingent consideration liabilities were to be settled as of the respective dates.

On January 1, 2022, we adopted ASU 2020-06 using the modified retrospective method. Following this adoption, we utilize the if-converted method for our calculation of potentially dilutive shares related to our convertible senior notes. Prior to the adoption, we applied the treasury stock method as we have the intent and ability to settle the principal amount of the convertible senior notes in cash. As such, the adoption of ASU 2020-06 resulted in a significant increase in the potentially dilutive securities disclosed in the table above as of June 30, 2022 compared to June 30, 2021. Refer to Note 1 for further details.

In connection with the offering of our convertible senior notes, we entered into Capped Calls with initial caps on the conversion price of $42.00 per share, which are excluded from the calculation of diluted earnings per share, as they would be antidilutive.

12. Stock-Based Compensation

In 2011, our board of directors adopted the Health Catalyst, Inc. 2011 Stock Incentive Plan (2011 Plan), which provided for the direct award, sale of shares, and granting of RSUs and options for our common stock to our directors, team members, or consultants. In connection with our initial public offering (IPO), our board of directors adopted the 2019 Stock Option and Incentive Plan (2019 Plan). The 2019 Plan provides flexibility to our compensation committee to use various equity-based incentive awards as compensation tools to motivate our workforce, including the grant of incentive and non-statutory stock options, restricted and unrestricted stock, RSUs, and stock appreciation rights to our directors, team members, or consultants.

We initially reserved 2,500,000 shares under the 2019 Plan and 256,607 shares under the 2011 Plan that were available immediately prior to the IPO registration date. The 2019 Plan provides that the number of shares reserved available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2020, by 5% of the outstanding number of shares of our common stock on the immediately preceding December 31, or such lesser number of shares as determined by our compensation committee. As of January 1, 2022, there were an additional 2,634,500 shares reserved for issuance under the 2019 Plan.

As of June 30, 2022 and December 31, 2021, there were 17,929,420 and 15,294,920 shares authorized for grant, respectively, and 2,814,905 and 2,969,638 shares available for grant, respectively, under the 2019 Plan and 2011 Plan.

The following two tables summarize our total stock-based compensation expense by award type and where the stock-based compensation expense was recorded in our consolidated statements of operations (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		(unaudited)	
Options	$ 752	$ 1,721	$ 1,656	$ 3,115
Restricted stock units	13,836	10,460	25,884	18,462
Performance-based restricted stock units	340	3,519	3,636	4,848
Employee stock purchase plan	395	393	842	810
Restricted shares	2,609	1,634	4,034	4,002
Total stock-based compensation	$ 17,932	$ 17,727	$ 36,052	$ 31,237

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		(unaudited)	
Cost of revenue	$ 2,404	$ 2,856	$ 5,160	$ 4,665
Sales and marketing	6,875	5,932	13,888	10,750
Research and development	3,163	2,676	6,253	4,933
General and administrative	5,490	6,263	10,751	10,889
Total stock-based compensation	$ 17,932	$ 17,727	$ 36,052	$ 31,237

Stock options

There were no stock options granted during the six months ended June 30, 2022 or 2021. A summary of the share option activity under the 2019 Plan for the six months ended June 30, 2022, is as follows:

	Time-Based Option Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life in Years	Aggregate Intrinsic Value
		(unaudited)		
Outstanding at January 1, 2022	2,115,484	$ 11.45		
Options exercised	(327,389)	11.20		
Options cancelled/forfeited	(6,143)	12.07		
Outstanding at June 30, 2022	1,781,952	$ 11.49	5.4	$ 5,920,221
Vested and expected to vest as of June 30, 2022	1,781,952	$ 11.49	5.4	$ 5,920,221
Vested and exercisable as of June 30, 2022	1,447,146	$ 10.98	5.2	$ 5,380,840

The aggregate intrinsic value of stock options exercised was $3.8 million for the six months ended June 30, 2022. The total grant-date fair value of stock options vested during the six months ended June 30, 2022 was $3.1 million. As of June 30, 2022, approximately $1.0 million of unrecognized compensation expense related to our stock options is expected to be recognized over a remaining weighted-average period of 0.5 years.

Restricted stock units (RSUs)

The service-based condition for restricted stock units (RSUs) is generally satisfied over four years with a cliff vesting period of one year and quarterly vesting thereafter. The following table sets forth the outstanding RSUs and related activity for the six months ended June 30, 2022:

	Restricted Stock Units	Weighted Average Grant Date Fair Value
	(unaudited)	
Unvested and outstanding at January 1, 2022	2,273,354	$ 43.84
RSUs granted	2,378,404	26.41
RSUs vested	(534,003)	41.61
RSUs forfeited	(99,305)	36.25
Unvested and outstanding at June 30, 2022	4,018,450	$ 34.00

As of June 30, 2022, we had $124.9 million of unrecognized stock-based compensation expense related to outstanding RSUs expected to be recognized over a weighted-average period of 2.7 years.

Performance-based restricted stock units (PRSUs)

During the six months ended June 30, 2022, we granted PRSUs to all employees that included both service conditions and performance conditions related to company-wide goals. These PRSUs will vest to the extent the applicable performance conditions are achieved for the year ended December 31, 2022, and if the individual employee continues to provide services to us through the vesting date of March 1, 2023. The number of PRSUs that will ultimately vest from the 2022 PRSU grants can range from 0% to 100% of the original amount granted depending on our performance during 2022 against the pre-established targets. We also granted additional executive PRSUs based on the same performance conditions described above, but with an extended four-year service condition whereby one quarter of such shares will vest on March 1, 2023, and the remainder in quarterly installments thereafter.

The following table sets forth the outstanding PRSUs, including executive PRSUs, and related activity for the six months ended June 30, 2022:

	Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value
	(unaudited)	
Unvested and outstanding at January 1, 2022	319,442	$ 50.28
PRSUs granted	589,994	26.45
PRSUs vested	(254,122)	50.18
PRSUs forfeited	(73,717)	44.17
Unvested and outstanding at June 30, 2022	581,597	$ 26.90

As of June 30, 2022, we had $3.5 million of unrecognized stock-based compensation expense related to outstanding PRSUs expected to be recognized over a remaining weighted-average period of 1 year.

Employee stock purchase plan

In connection with our IPO in July 2019, our board of directors adopted the ESPP and a total of 750,000 shares of common stock were initially reserved for issuance under the ESPP. The number of shares of common stock available for issuance under the ESPP will be increased on the first day of each calendar year beginning January 1, 2020 and each year thereafter until the ESPP terminates.

The number of shares of common stock reserved and available for issuance under the ESPP shall be cumulatively increased by the least of (i) 750,000 shares, (ii) one percent of the number of shares of common stock issued and outstanding on the immediately preceding December 31, and (iii) such lesser number of shares of common stock as determined by the ESPP Administrator. As of January 1, 2022, the number of shares of common stock available for issuance under the ESPP increased by 526,900 shares.

The ESPP generally provides for six-month offering periods. The offering periods generally start on the first trading day after June 30 and December 31 of each year. The ESPP permits participants to elect to purchase shares of common stock through fixed percentage contributions from eligible compensation during each offering period, not to exceed 15% of the eligible compensation a participant receives during an offering period or accrue at a rate which exceeds $25,000 of the fair value of the stock (determined on the option grant date(s)) for each calendar year. A participant may purchase the lowest of (i) a number of shares of common stock determined by dividing such participant's accumulated payroll deductions on the exercise date by the option price, (ii) 2,500 shares; or (iii) such other lesser maximum number of shares as shall have been established by the ESPP Administrator in advance of the offering period. Amounts deducted and accumulated by the participant will be used to purchase shares of common stock at the end of each offering period.

The purchase price of the shares will be 85% of the lower of the fair value of common stock on the first trading day of each offering period or on the purchase date. Participants may end their participation at any time during an offering period and will be paid their accumulated contributions that have not been used to purchase shares of common stock. Participation ends automatically upon termination of employment.

The fair value of the purchase right for the ESPP option component is estimated on the date of grant using the Black-Scholes model with the following assumptions for the six months ended June 30, 2022 and 2021:

	Six Months Ended June 30,	
	2022	2021
	(unaudited)	
Expected volatility	37.5%	40.4%
Expected term (in months)	6	6
Risk-free interest rate	0.22%	0.09%
Expected dividends	—	—

During the six months ended June 30, 2022, we issued 124,151 shares under the ESPP, with a weighted-average purchase price per share of $12.32. Total cash proceeds from the purchase of shares under the ESPP during the six months ended June 30, 2022 were $1.5 million. As of June 30, 2022, 1,511,723 shares were available for future issuance under the ESPP.

Restricted shares

As part of the Twistle acquisition that closed on July 1, 2021, 67,939 shares of our common stock were issued pursuant to the terms of the acquisition agreement and are considered a stock-based compensation arrangement subject to a restriction agreement. The vesting of those shares is subject to one year of continuous service and shall be released on the eighteen-month anniversary of the acquisition closing date.

As part of the KPI Ninja acquisition that closed on February 24, 2022, 356,919 shares of our common stock were issued pursuant to the terms of the acquisition agreement and are considered a stock-based compensation arrangement subject to a restriction agreement. The vesting of those shares is subject to continuous service with 25% vesting upon each six-month anniversary of the acquisition close date.

As part of the ARMUS acquisition that closed on April 29, 2022, 235,330 shares of our common stock were issued pursuant to the terms of the acquisition agreement and are considered a stock-based compensation arrangement subject to a restriction agreement. The vesting of those shares is subject to eighteen months of continuous service with cliff vesting upon the eighteen-month anniversary of the acquisition close date.

As of June 30, 2022, we had $11.5 million of unrecognized stock-based compensation expense related to outstanding restricted shares expected to be recognized over a weighted-average period of 1.6 years.

13. Income Taxes

The tax provision for interim periods is determined using an estimate of our annual effective tax rate, adjusted for discrete items, if any, that arise during the period. Each quarter, we update our estimate of the annual effective tax rate, and if the estimated annual effective tax rate changes, we make a cumulative adjustment in such period. The quarterly tax provision and the estimate of our annual effective tax rate are subject to variation due to several factors, including variability in our loss before income taxes, the mix of jurisdictions to which such income or loss relates, changes in how we conduct business, and tax law developments.

Our estimated effective tax rate was 2.8% and 0.5% for the three months ended June 30, 2022 and 2021, respectively, and 7.4% and 0.1% for the six months ended June 30, 2022 and 2021, respectively. The variations between our estimated effective tax rate and the U.S. statutory rate are primarily due to our full valuation allowance.

We consider all available evidence to evaluate the recovery of deferred tax assets, including historical levels of income, legislative developments, and risks associated with estimates of future taxable income. We have provided a full valuation allowance for our net deferred tax assets as of June 30, 2022 and December 31, 2021, due to the uncertainty surrounding the future realization of such assets and the cumulative losses we have generated.

The income tax benefit of $4.5 million recorded for the six months ended June 30, 2022 is primarily related to the discrete deferred tax benefit attributable to the release of a portion of the valuation allowance during the period. The release of valuation allowance is attributable to the acquisitions of KPI Ninja and ARMUS, which resulted in deferred tax liabilities that, upon acquisition, allowed us to recognize certain deferred tax assets of $4.5 million that had previously been offset by a valuation allowance. As we have a full valuation allowance on net deferred tax assets, our income tax provision for the six months ended June 30, 2021 consisted primarily of minimal state and foreign income taxes.

We recognize tax benefits from uncertain tax positions when it is more likely than not, based on the technical merits, that the position will be sustained upon examination. We believe that we have provided adequate reserves for income tax uncertainties in all open tax years. We do not anticipate material changes in the total amount of our unrecognized tax benefits within 12 months of the reporting date.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security (CARES) Act was enacted and signed into U.S. law to provide economic relief to individuals and businesses facing economic hardship as a result of the COVID-19 pandemic. On March 11, 2021, the American Rescue Plan Act of 2021 (ARPA) was enacted and signed into U.S. law to provide additional economic stimulus and tax credits. Changes in tax laws or rates are accounted for in the period of enactment. We are continuing to analyze these legislative developments and believe that the income tax provisions of the CARES Act and ARPA do not have a significant impact on our current taxes, deferred taxes, or uncertain tax positions.

14. Commitments and Contingencies

Litigation

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties, and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

We are involved in legal proceedings from time to time that arise in the normal course of business. As of June 30, 2022 and December 31, 2021, there were no significant outstanding claims against us.

15. Deferred Revenue and Performance Obligations

Deferred revenue includes advance customer payments and billings in excess of revenue recognized. For the three months ended June 30, 2022 and 2021, 47% and 45%, respectively, of the revenue recognized was included in deferred revenue at the beginning of the period. For the six months ended June 30, 2022 and 2021, 34% and 29%, respectively, of the revenue recognized was included in deferred revenue at the beginning of the period.

Transaction price allocated to the remaining performance obligations

Most of our technology and professional services contracts have up to a three-year term, of which the vast majority are terminable after one year upon 90 days' notice. For arrangements that do not allow the customer to cancel within one year or less, we expect to recognize $106.0 million of revenue on unsatisfied performance obligations as of June 30, 2022. We expect to recognize approximately 70% of the remaining performance obligations over the next 24 months, with the balance recognized thereafter.

16. Related Parties

We did not have any material related party transactions during the six months ended June 30, 2022 and we did not have any receivables or deferred revenue from related parties as of June 30, 2022 and December 31, 2021.

We have revenue arrangements with customers that are also our investors. None of these customers hold a significant amount of ownership in our equity interests.

In the past, we entered into arrangements with a customer, Mass General Brigham (formerly Partners Healthcare), where, at that time, a member of the customer's management was a member of our board of directors. This former director served on our board from January 2018 to May 2021. He resigned from his executive position with our customer on March 31, 2021. As such, we no longer consider this customer to be a related party subsequent to March 31, 2021. We recognized $0.9 million of revenue from this customer prior to the related party relationship ending during the three months ended March 31, 2021.

17. Segments

We operate our business in two operating segments that also represent our reportable segments. Our business is organized based on our technology offerings and professional services. Accordingly, our segments are:

- Technology - Our technology segment (Technology) includes our data platform, analytics applications and support services and generates revenues primarily from contracts that are cloud-based subscription arrangements, time-based license arrangements, and maintenance and support fees; and

- Professional Services - Our professional services segment (Professional Services) is generally the combination of analytics, implementation, strategic advisory, outsource, and improvement services to deliver expertise to our customers to more fully configure and utilize the benefits of our Technology offerings.

Revenues and cost of revenues generally are directly attributed to our segments. All segment revenues are from our external customers. Asset and other balance sheet information at the segment level is not reported to our Chief Operating Decision Maker.

Segment revenue and Adjusted Gross Profit for the three and six months ended June 30, 2022 and 2021 were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		(unaudited)	
Revenue				
Technology	$ 45,397	$ 35,529	$ 87,627	$ 69,368
Professional Services	25,236	24,098	51,093	46,105
Total	$ 70,633	$ 59,627	$ 138,720	$ 115,473

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(unaudited)		(unaudited)	
Adjusted Gross Profit				
Technology	$ 31,968	$ 24,256	$ 61,566	$ 47,644
Professional Services	6,696	8,174	14,270	15,103
Total reportable segments Adjusted Gross Profit	38,664	32,430	75,836	62,747
Less Adjusted Gross Profit reconciling items:				
Stock-based compensation	(2,404)	(2,856)	(5,160)	(4,665)
Acquisition-related costs, net[1]	(234)	—	(559)	—
Less other reconciling items:				
Sales and marketing	(20,922)	(16,705)	(41,740)	(32,356)
Research and development	(18,148)	(14,524)	(35,296)	(28,869)
General and administrative	(17,536)	(22,525)	(26,359)	(37,540)
Depreciation and amortization	(12,612)	(8,139)	(24,261)	(15,953)
Interest and other expense, net	(1,180)	(3,707)	(2,842)	(7,659)
Loss before income taxes	$ (34,372)	$ (36,026)	$ (60,381)	$ (64,295)

(1) Acquisition-related costs, net include deferred retention expenses following the ARMUS, KPI Ninja, and Twistle acquisitions.

18. Subsequent Events

Share repurchase plan

On August 2, 2022, our Board of Directors authorized a share repurchase program to repurchase up to $40.0 million of our outstanding shares of common stock.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements, the accompanying notes, and other financial information included elsewhere in this Quarterly Report on Form 10-Q. This discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results could differ materially from those forward-looking statements below. Factors that could cause or contribute to those differences include, but are not limited to, those identified below and those discussed in the sections titled “Risk Factors” and “Special Note Regarding Forward-looking Statements.”

Overview

We are a leading provider of data and analytics technology and services to healthcare organizations. Our Solution comprises a cloud-based data platform, analytics software, and professional services expertise. Our customers, which are primarily healthcare providers, use our Solution to manage their data, derive analytical insights to operate their organization, and produce measurable clinical, financial, and operational improvements. We envision a future where all healthcare decisions are data informed.

Highlights from the three and six months ended June 30, 2022 included:

- We recognized total revenue of $70.6 million and $59.6 million for the three months ended June 30, 2022 and 2021, respectively, and $138.7 million and $115.5 million for the six months ended June 30, 2022 and 2021, respectively. The growth in revenue was primarily due to revenue from new customers, including customers of our recent acquired entities, and existing customers paying higher technology access fees from contractual, annual escalators.

- We incurred net losses of $(33.4) million and $(35.8) million for the three months ended June 30, 2022 and 2021, respectively, and $(55.9) million and $(64.2) million for the six months ended June 30, 2022 and 2021, respectively.

- Our Adjusted EBITDA was $2.0 million and $1.7 million for the three months ended June 30, 2022 and 2021, respectively, and $2.7 million and $0.8 million for the six months ended June 30, 2022 and 2021, respectively. See the section titled “Key Financial Metrics—Reconciliation of Non-GAAP Financial Measures” below for more information about this financial measure, including the limitations of such measure and a reconciliation to the most directly comparable measure calculated in accordance with GAAP.

See the section titled “Key Factors Affecting Our Performance” for more information about important opportunities and challenges related to our business.

Challenging Macroeconomic Environment

Recent high levels of inflation, the ongoing COVID-19 pandemic, the tight labor market, and other challenging macroeconomic factors continue to adversely affect workforces, organizations, governments, customers, economies, and financial markets globally. These factors have disrupted the normal operations of many businesses, including ours. These factors have also placed the national healthcare system under significant operational and budgetary strain, and will likely continue to do so in the near-term.

The health system end market, in particular, is experiencing meaningful financial strain, in which it has realized significant increases in labor and supply costs without a commensurate increase in revenue, leading to a deterioration in operating margins across many of our customers and prospective customers. Though we continue to have a robust pipeline and have not seen a material negative impact to our win-rates, many healthcare organizations are delaying near-term purchasing decisions as they reevaluate budgets given their financial situations. As a result, sales cycles have elongated which has negatively impacted our year-to-date bookings achievement and led to lower than anticipated new client additions and dollar-based retention metrics. Although there will likely continue to be some strain on our near-term conversion rates given the ongoing end-market financial pressure, we anticipate we will see an improvement in our pipeline conversion rates in the second half of 2022 relative to the first half of the year.

We benefit from a highly recurring revenue model in which greater than 90% of our revenue is recurring in nature and we have a high level of technology revenue predictability, especially within our DOS subscription customers whose contracts typically have built-in, contractual technology revenue escalators. However, in a few instances, we have experienced customers trimming back their near-term spend with us in an effort to meet short-term budget requirements. This included the loss of a large enterprise DOS subscription customer. Our historical gross customer retention has been extremely high, especially amongst our enterprise DOS customer base, and we believe the loss of this enterprise DOS customer was an isolated, customer-specific event. Within our professional services segment, a subset of customers have modestly reduced the number of FTEs engaged in their initiatives, while in the technology segment, a small subset of modular customers have lowered their application and analytics spend. As a result of the loss of a large enterprise DOS customer and other customers trimming back certain professional services and technology spend, we expect to have a sequential decline in our total revenue and Adjusted EBITDA in the third quarter compared to the second quarter of 2022.

We are proactively responding to the challenging macroeconomic environment with a strategic operating plan that we believe will enable us to move forward in a position of continued strength. In particular, we are focused on enabling continued operating leverage, including eliminating, pausing, or limiting investment in a subset of product areas that do not currently offer as clear a financial customer return on investment. Additionally, our operating focus includes initiatives that we believe will enable greater operating leverage in certain development and support functions, as well as professional services offerings, including through the use of offshore and nearshore labor and strategic partners.

Key Financial Metrics

We regularly review a number of metrics, including the following key financial metrics, to manage our business and evaluate our operating performance compared to that of other companies in our industry:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(in thousands, except percentages)		(in thousands, except percentages)	
Total revenue	$ 70,633	$ 59,627	$ 138,720	$ 115,473
Adjusted Technology Gross Profit	$ 31,968	$ 24,256	$ 61,566	$ 47,644
Adjusted Technology Gross Margin	70 %	68 %	70 %	69 %
Adjusted Professional Services Gross Profit	$ 6,696	$ 8,174	$ 14,270	$ 15,103
Adjusted Professional Services Gross Margin	27 %	34 %	28 %	33 %
Total Adjusted Gross Profit	$ 38,664	$ 32,430	$ 75,836	$ 62,747
Total Adjusted Gross Margin	55 %	54 %	55 %	54 %
Adjusted EBITDA	$ 1,999	$ 1,661	$ 2,670	$ 824

We monitor the key metrics set forth in the preceding table to help us evaluate trends, establish budgets, measure the effectiveness and efficiency of our operations, and determine team member incentives. We discuss Adjusted Gross Profit, Adjusted Gross Margin, and Adjusted EBITDA in more detail below.

Reconciliation of non-GAAP financial measures

In addition to our results determined in accordance with GAAP, we believe certain non-GAAP measures, including Adjusted Gross Profit measures, Adjusted Gross Margin measures, and Adjusted EBITDA, are useful in evaluating our operating performance. For example, we exclude stock-based compensation expense because it is non-cash in nature and excluding this expense provides meaningful supplemental information regarding our operational performance and allows investors the ability to make more meaningful comparisons between our operating results and those of other companies. We use this non-GAAP financial information to evaluate our ongoing operations, as a component in determining employee bonus compensation, and for internal planning and forecasting purposes.

We believe that non-GAAP financial information, when taken collectively, may be helpful to investors because it provides consistency and comparability with past financial performance. However, non-GAAP financial information is presented for supplemental informational purposes only, has limitations as an analytical tool and should not be considered in isolation or as a substitute for financial information presented in accordance with GAAP. In addition, other companies, including companies in our industry, may calculate similarly-titled non-GAAP measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison. A reconciliation is provided below for each non-GAAP financial measure to the most directly comparable financial measure stated in accordance with GAAP. Investors are encouraged to review the related GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable GAAP financial measures, and not to rely on any single financial measure to evaluate our business.

Adjusted gross profit and adjusted gross margin

Adjusted Gross Profit is a non-GAAP financial measure that we define as revenue less cost of revenue, excluding depreciation and amortization, stock-based compensation, and acquisition-related costs, net, as applicable. We define Adjusted Gross Margin as our Adjusted Gross Profit divided by our revenue. We believe Adjusted Gross Profit and Adjusted Gross Margin are useful to investors as they eliminate the impact of certain non-cash expenses and allow a direct comparison of these measures between periods without the impact of non-cash expenses and certain other non-recurring operating expenses. We present both of these measures for our technology and professional services business. We believe these non-GAAP measures are useful in evaluating our operating performance compared to that of other companies in our industry, as these metrics generally eliminate the effects of certain items that may vary from company to company for reasons unrelated to overall profitability.

The following is a reconciliation of our Adjusted Gross Profit to revenue, the most directly comparable financial measure calculated in accordance with GAAP, for the three months ended June 30, 2022 and 2021.

	Three Months Ended June 30, 2022 (in thousands, except percentages)		
	Technology	Professional Services	Total
Revenue	$ 45,397	$ 25,236	$ 70,633
Cost of revenue, excluding depreciation and amortization	(13,996)	(20,611)	(34,607)
Gross profit, excluding depreciation and amortization	31,401	4,625	36,026
Add:			
Stock-based compensation	480	1,924	2,404
Acquisition-related costs, net[1]	87	147	234
Adjusted Gross Profit	$ 31,968	$ 6,696	$ 38,664
Gross margin, excluding depreciation and amortization	69 %	18 %	51 %
Adjusted Gross Margin	70 %	27 %	55 %

(1) Acquisition-related costs, net include deferred retention expenses following the ARMUS, KPI Ninja, and Twistle acquisitions.

	Three Months Ended June 30, 2021 (in thousands, except percentages)		
	Technology	Professional Services	Total
Revenue	$ 35,529	$ 24,098	$ 59,627
Cost of revenue, excluding depreciation and amortization	(11,847)	(18,206)	(30,053)
Gross profit, excluding depreciation and amortization	23,682	5,892	29,574
Add:			
Stock-based compensation	574	2,282	2,856
Adjusted Gross Profit	$ 24,256	$ 8,174	$ 32,430
Gross margin, excluding depreciation and amortization	67 %	24 %	50 %
Adjusted Gross Margin	68 %	34 %	54 %

Adjusted Technology Gross Margin increased from 68% for the three months ended June 30, 2021 to 70% for the three months ended June 30, 2022. This year-over-year performance was mainly driven by existing customers paying higher technology access fees from contractual, built-in escalators without a commensurate increase in hosting costs, offset partially by headwinds due to the continued costs associated with transitioning a portion of our customer base to Azure hosted environments.

Adjusted Professional Services Gross Margin decreased from 34% for the three months ended June 30, 2021 to 27% for the three months ended June 30, 2022, due primarily to a change in the mix of professional services we provided and lower utilization rates. Our professional services are comprised of data and analytics services, domain expertise services, outsourcing services, and implementation services. The majority of our professional services revenue is generated from data and analytic services and domain expertise services, which are the highest gross margin professional services we provide. The delivery mix among all of our services in a given period can lead to fluctuations in our Adjusted Professional Services Gross Margin.

The following is a reconciliation of our Adjusted Gross Profit to revenue, the most directly comparable financial measure calculated in accordance with GAAP, for the six months ended June 30, 2022 and 2021.

	Six Months Ended June 30, 2022 (in thousands, except percentages)		
	Technology	Professional Services	Total
Revenue	$ 87,627	$ 51,093	$ 138,720
Cost of revenue, excluding depreciation and amortization	(27,323)	(41,280)	(68,603)
Gross profit, excluding depreciation and amortization	60,304	9,813	70,117
Add:			
Stock-based compensation	$ 1,069	$ 4,091	$ 5,160
Acquisition-related costs, net[1]	193	366	559
Adjusted Gross Profit	$ 61,566	$ 14,270	$ 75,836
Gross margin, excluding depreciation and amortization	69 %	19 %	51 %
Adjusted Gross Margin	70 %	28 %	55 %

(1) Acquisition-related costs, net include deferred retention expenses following the ARMUS, KPI Ninja, and Twistle acquisitions.

	Six Months Ended June 30, 2021 (in thousands, except percentages)		
	Technology	Professional Services	Total
Revenue	$ 69,368	$ 46,105	$ 115,473
Cost of revenue, excluding depreciation and amortization	(22,672)	(34,719)	(57,391)
Gross profit, excluding depreciation and amortization	46,696	11,386	58,082
Add:			
Stock-based compensation	948	3,717	4,665
Adjusted Gross Profit	$ 47,644	$ 15,103	$ 62,747
Gross margin, excluding depreciation and amortization	67 %	25 %	50 %
Adjusted Gross Margin	69 %	33 %	54 %

Adjusted Technology Gross Margin increased slightly from 69% for the six months ended June 30, 2021 to 70% for the six months ended June 30, 2022. This year-over-year performance was mainly driven by existing customers paying higher technology access fees from contractual, built-in escalators, without a commensurate increase in hosting costs, offset partially by headwinds due to the continued costs associated with transitioning a portion of our customer base to Azure hosted environments.

We expect Adjusted Technology Gross Margin to fluctuate and potentially decline in the near term, primarily due to additional costs associated with the ongoing transition of a small number of customers from on-premise and our managed data centers to third-party hosted data centers with Microsoft Azure as well as a small subset of modular customers trimming their application spend.

Adjusted Professional Services Gross Margin decreased from 33% for the six months ended June 30, 2021 to 28% for the six months ended June 30, 2022, due primarily to a change in the mix of professional services we provided and lower utilization rates. Our professional services are comprised of data and analytics services, domain expertise services, outsourcing services, and implementation services. The majority of our professional services revenue is generated from data and analytic services and domain expertise services, which are the highest gross margin professional services we provide. The delivery mix among all of our services in a given period can lead to fluctuations in our Adjusted Professional Services Gross Margin.

We expect Adjusted Professional Services Gross Margin to fluctuate on a quarterly basis and potentially decline in the near term due to changes in the mix of services we provide, the amount of operational overhead required to deliver our services, and customers delaying or reducing services due to the uncertain and challenging macroeconomic environment.

Adjusted EBITDA

Adjusted EBITDA is a non-GAAP financial measure that we define as net loss adjusted for interest and other expense, net, income tax benefit, depreciation and amortization, stock-based compensation, and acquisition-related costs, net. We believe Adjusted EBITDA is useful in evaluating our operating performance compared to that of other companies in our industry, as this metric generally eliminates the effects of certain items that may vary from company to company for reasons unrelated to overall operating performance.

The following is a reconciliation of our Adjusted EBITDA to net loss, the most directly comparable financial measure calculated in accordance with GAAP, for the three and six months ended June 30, 2022 and 2021.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(in thousands)		(in thousands)	
Net loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)
Add:				
Interest and other expense, net	1,180	3,707	2,842	7,659
Income tax benefit	(944)	(192)	(4,495)	(91)
Depreciation and amortization	12,612	8,139	24,261	15,953
Stock-based compensation	17,932	17,727	36,052	31,237
Acquisition-related costs, net[1]	4,647	8,114	(104)	10,270
Adjusted EBITDA	$ 1,999	$ 1,661	$ 2,670	$ 824

(1) Acquisition-related costs, net includes third party fees associated with due diligence, deferred retention expenses, post-acquisition restructuring costs incurred as part of business combinations, and changes in fair value of contingent consideration liabilities for potential earn-out payments. For additional details refer to Note 2 in our condensed consolidated financial statements.

Key Factors Affecting Our Performance

We believe that our future growth, success, and performance are dependent on many factors, including those set forth below. While these factors present significant opportunities for us, they also represent the challenges that we must successfully address in order to grow our business and improve our results of operations.

- ***Impact of challenging macroeconomic environment, including high inflation and COVID-19.*** The current high inflation environment and the COVID-19 pandemic have adversely affected workforces, organizations, governments, customers, economies, and financial markets globally, leading to an economic downturn and increased market volatility. It has also disrupted the normal operations of many businesses, including ours. Our health system end market is currently experiencing meaningful financial strain from significant inflation with increases in labor and supply costs without a commensurate increase in revenue, leading to severe margin pressure. This margin pressure along with the ongoing waves of COVID-19 could continue to decrease healthcare industry spending, adversely affect demand for our technology and services, cause one or more of our customers to file for bankruptcy protection or go out of business, cause one or more of our customers to fail to renew, terminate, or renegotiate their contracts, affect the ability of our sales team to travel to potential customers and the ability of our professional services teams to conduct in-person services and trainings, impact expected spending from new customers, negatively impact collections of accounts receivable, and harm our business, results of operations, and financial condition. It is not possible for us to predict the duration or magnitude of the adverse results of the challenging macroeconomic environment and its effects on our business, results of operations, or financial condition at this time.

- ***Add new customers.*** We believe our ability to increase our customer base will enable us to drive growth. Our potential customer base is generally in the early stages of data and analytics adoption and maturity. We expect to further penetrate the market over time as potential customers invest in commercial data and analytics solutions. As one of the first data platform and analytics vendors focused specifically on healthcare organizations, we have an early-mover advantage and strong brand awareness. Our customers are large, complex organizations who typically have long procurement cycles which may lead to declines in the pace of our new customer additions.

- ***Leverage recent product and services offerings to drive expansion.*** We believe that our ability to expand within our customer base will enable us to drive growth. Over the last three years, we have developed and deployed several new analytics applications including PowerCosting (formerly known as CORUS), Touchstone, Patient Safety Monitor, Pop Analyzer (formerly known as Population Builder), and others. Because we are in the early stages of certain of our applications' lifecycles and maturity, we do not have enough information to know the impact on revenue growth by upselling these applications and associated services to current and new customers.

- ***Impact of acquisitions.*** We have acquired multiple companies over the last few years, including Medicity in June 2018, Able Health in February 2020, Healthfinch in July 2020, Vitalware in September 2020, Twistle in July 2021, KPI Ninja in February 2022, and ARMUS in April 2022. The historical and go-forward revenue growth profiles of these businesses may vary from our core DOS Subscription Customers, thus impacting our overall growth rate. Specifically, Medicity customers have generated a lower Dollar-based Retention Rate than DOS Subscription Customers and we expect declining revenue from Medicity customers in the foreseeable future. If our cross-sell efforts and technology integration strategies are successful related to the recent acquisitions, this could offset revenue declines from Medicity customers. As we integrate the teams acquired via our recent acquisitions, we have also incurred integration-related costs and duplicative costs that could impact our operating cost profile in the near-term.

- ***Changing revenue mix***. Our technology and professional services offerings have materially different gross margin profiles. While our professional services offerings help our customers achieve measurable improvements and make them stickier, they have lower gross margins than our technology revenue. For the six months ended June 30, 2022, our technology revenue and professional services revenue represented 63% and 37% of total revenue, respectively.

Changes in our revenue mix between the two offerings would impact future Total Adjusted Gross Margin. Furthermore, changes within the types of professional services we offer over time can have a material impact on our Adjusted Professional Services Gross Margin, impacting our future Total Adjusted Gross Margin. See the section titled “Key Financial Metrics—Reconciliation of Non-GAAP Financial Measures” above for more information.

- ***Transitions to Microsoft Azure as DOS hosting provider.*** We incur hosting fees related to providing DOS through a cloud-based environment hosted by Microsoft Azure. We maintain a small number of customers that have deployed DOS on-premise. We are in the process of migrating customers who deployed DOS on-premise to Azure-hosted environments. The Azure cloud provides customers with more advanced DOS product functionality and a more seamless customer experience; however, hosting customers in Azure is more costly than on-premise deployments on a per-customer basis. This transition has resulted in higher cost of technology revenue and a reduced Adjusted Technology Gross Margin.

Recent acquisitions

ARMUS Corporation.

On April 29, 2022, we acquired ARMUS, a clinical registry development and data management technology company based in Foster City, California. ARMUS provides data abstraction, data validation, data management, data submission, and data reporting services to support participation in clinical quality registries for healthcare institutions around the world, including health systems, payers, medical device companies, and premier medical societies. The acquisition consideration transferred was $9.4 million and was comprised of net cash consideration of $9.3 million and Health Catalyst common shares with a fair value of $0.1 million, net of shares subject to revesting that are accounted for as post-acquisition stock-based compensation.

KPI Ninja, Inc.

On February 24, 2022, we acquired KPI Ninja, a leading provider of interoperability, enterprise analytics, and value-based care solutions based in Lincoln, Nebraska. KPI Ninja is known for its powerful capabilities, flexible configurations, and comprehensive applications designed to fulfill the promise of data-driven health care. The acquisition consideration transferred was $21.4 million and was comprised of net cash consideration of $18.5 million and Health Catalyst common shares with a fair value of $2.9 million, net of shares subject to revesting that are accounted for as post-acquisition stock-based compensation.

Twistle, Inc.

On July 1, 2021, we acquired Twistle, a healthcare patient engagement SaaS technology company that automates patient-centered communication between care teams and patients to transform the patient experience, drive better care outcomes, and reduce healthcare costs. We anticipate that Twistle’s leading clinical workflow and patient engagement platform, paired with the Health Catalyst population health offering, will enable a comprehensive go-to-market solution to address the population health needs of healthcare organizations. The acquisition consideration transferred was $91.9 million, consisting of net cash consideration of $46.7 million, Health Catalyst common shares with a fair value of $43.1 million, net of shares subject to revesting that are accounted for as post-acquisition stock-based compensation, and contingent consideration based on certain earn-out performance targets for Twistle during an earn-out period that ends on June 30, 2022, which had an initial estimated fair value of $2.1 million.

Components of Our Results of Operations

Revenue

We derive our revenue from sales of technology and professional services. For the three months ended June 30, 2022 and 2021, technology represented 64% and 60% of total revenue, respectively, and professional services represented 36% and 40%, of total revenue, respectively. For the six months ended June 30, 2022 and 2021, technology represented 63% and 60% of total revenue, respectively, and professional services represented 37% and 40%, of total revenue, respectively.

Technology revenue. Technology revenue primarily consists of subscription fees charged to customers for access to use our data platform and analytics applications. We provide customers access to our technology through either an all-access or limited-access, modular subscription. Our subscription contracts are cloud-based and generally have a three or five-year term, of which many are terminable after one year upon 90 days' notice. The vast majority of our DOS subscription contracts have built-in annual escalators for technology access fees. Also included in technology revenue is the maintenance and support we provide, which generally includes updates and support services.

Professional services revenue. Professional services revenue primarily includes analytics services, domain expertise services, outsourcing services, and implementation services. Professional services arrangements typically include a fee for making FTE services available to our customers on a monthly basis. FTE services generally consist of a blend of analytic engineers, analysts, and data scientists based on the domain expertise needed to best serve our customers.

Deferred revenue

Deferred revenue consists of customer billings in advance of revenue being recognized from our technology and professional services arrangements. We primarily invoice our customers for technology arrangements annually or quarterly in advance. Amounts anticipated to be recognized within one year of the balance sheet date are recorded as deferred revenue and the remaining portion is recorded as deferred revenue, net of current portion on our condensed consolidated balance sheets.

Cost of revenue, excluding depreciation and amortization

Cost of technology revenue. Cost of technology revenue primarily consists of costs associated with hosting and supporting our technology, including third-party cloud computing and hosting costs, contractor costs, and salary and related personnel costs for our cloud services and support teams.

Although we expect cost of technology revenue to increase in absolute dollars as we increase headcount, cloud computing, and hosting costs to accommodate growth, and as we continue to transition customers to third-party hosted data centers with Microsoft Azure, we anticipate cost of technology revenue as a percentage of technology revenue will generally decrease over the long term. We expect cost of technology revenue as a percentage of technology revenue to fluctuate and potentially increase in the near term, primarily due to additional costs associated with transitioning a small number of customers from on-premise and our managed data centers to Microsoft Azure.

Cost of professional services revenue. Cost of professional services revenue consists primarily of costs related to delivering our team's expertise in analytics, strategic advisory, improvement, and implementation services. These costs primarily include salary and related personnel costs, travel-related costs, and outside contractor costs. We expect cost of professional services revenue to increase in absolute dollars as we increase headcount to accommodate growth.

Operating expense

Sales and marketing. Sales and marketing expenses primarily include salary and related personnel costs for our sales, marketing, and account management teams, lead generation, marketing events, including our Healthcare Analytics Summit (HAS), marketing programs, and outside contractor costs associated with the sale and marketing of our offerings.

We plan to continue to invest in sales and marketing to grow our customer base, expand in new markets, and increase our brand awareness. The trend and timing of sales and marketing expenses will depend in part on the timing of our expansion into new markets and marketing campaigns. We expect that sales and marketing expenses will increase in absolute dollars in future periods, but decrease as a percentage of our revenue over the long term. Our sales and marketing expenses may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Research and development. Research and development expenses primarily include salary and related personnel costs for our data platform and analytics applications teams, subscriptions, and outside contractor costs associated with the development of products. We have developed an open, flexible, and scalable data platform. We plan to continue to invest in research and development to develop new solutions and enhance our applications library.

We expect that research and development expenses will increase in absolute dollars in future periods, but decrease as a percentage of our revenue over the long term. Our research and development expenses may fluctuate as a percentage of our revenue from period to period due to the nature, timing, and extent of these expenses.

General and administrative. General and administrative expenses primarily include salary and related personnel costs for our legal, finance, people operations, IT, and other administrative teams, including certain executives. General and administrative expenses also include facilities, subscriptions, corporate insurance, outside legal, accounting, directors' fees, and the change in fair value of contingent consideration liabilities.

We expect our general and administrative expenses to increase in absolute dollars for the foreseeable future, but decrease as a percentage of our revenue over the long term. Our general and administrative expenses may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Depreciation and amortization. Depreciation and amortization expenses are primarily attributable to our capital investment and consist of fixed asset depreciation, amortization of intangibles considered to have definite lives, and amortization of capitalized internal-use software costs.

Interest and other expense, net

Interest and other expense, net primarily consists of interest expense partially offset by income from our investment holdings. Interest expense in the current year is primarily attributable to the Notes and in prior years was primarily attributable to our now extinguished term loan and imputed interest on acquisition-related consideration payable. It also includes the amortization of discounts on debt and amortization of deferred financing costs related to our various debt arrangements. The adoption of ASU 2020-06 during the first quarter of 2022 reduced our reported interest expense as it relates to our convertible senior notes.

Income tax provision (benefit)

Income tax provision (benefit) consists of U.S. federal, state, and foreign income taxes. Because of the uncertainty of the realization of the deferred tax assets, we have a full valuation allowance for our net deferred tax assets, including net operating loss carryforwards (NOLs) and tax credits related primarily to research and development.

As of December 31, 2021, we had federal and state NOLs of $580.0 million and $465.7 million, respectively, which will begin to expire for federal and state tax purposes in 2032 and 2023, respectively. Our existing NOLs may be subject to limitations arising from ownership changes and, if we undergo an ownership change in the future, our ability to utilize our NOLs and tax credits could be further limited by Sections 382 and 383 of the Code. Future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Sections 382 and 383 of the Code. Our NOLs and tax credits may also be limited under similar provisions of state law.

On March 27, 2020, the CARES Act was enacted and signed into U.S. law to provide economic relief to individuals and businesses facing economic hardship as a result of the COVID-19 pandemic. On March 11, 2021, ARPA was enacted and signed into U.S. law to provide additional economic stimulus and tax credits. Changes in tax laws or rates are accounted for in the period of enactment. The income tax provisions of the CARES Act and ARPA do not have a significant impact on our current taxes, deferred taxes, or uncertain tax positions. The CARES Act also provided for the deferral of an employer's portion of social security payroll taxes for the remainder of 2020. We deferred the social security payroll tax match beginning in April 2020 and fully paid all related deferred payroll taxes in December 2021.

Results of Operations

The following tables set forth our consolidated results of operations data and such data as a percentage of total revenue for each of the periods indicated:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
	(in thousands)		(in thousands)	
Revenue:				
Technology	$ 45,397	$ 35,529	$ 87,627	$ 69,368
Professional services	25,236	24,098	51,093	46,105
Total revenue	70,633	59,627	138,720	115,473
Cost of revenue, excluding depreciation and amortization shown below:				
Technology[(1)(2)]	13,996	11,847	27,323	22,672
Professional services[(1)(2)]	20,611	18,206	41,280	34,719
Total cost of revenue, excluding depreciation and amortization	34,607	30,053	68,603	57,391
Operating expenses:				
Sales and marketing[(1)(2)]	20,922	16,705	41,740	32,356
Research and development[(1)(2)]	18,148	14,524	35,296	28,869
General and administrative[(1)(2)]	17,536	22,525	26,359	37,540
Depreciation and amortization	12,612	8,139	24,261	15,953
Total operating expenses	69,218	61,893	127,656	114,718
Loss from operations	(33,192)	(32,319)	(57,539)	(56,636)
Interest and other expense, net	(1,180)	(3,707)	(2,842)	(7,659)
Loss before income taxes	(34,372)	(36,026)	(60,381)	(64,295)
Income tax benefit	(944)	(192)	(4,495)	(91)
Net loss	$ (33,428)	$ (35,834)	$ (55,886)	$ (64,204)

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Stock-Based Compensation Expense:	(in thousands)		(in thousands)	
Cost of revenue, excluding depreciation and amortization:				
Technology	$ 480	$ 574	$ 1,069	$ 948
Professional services	1,924	2,282	4,091	3,717
Sales and marketing	6,875	5,932	13,888	10,750
Research and development	3,163	2,676	6,253	4,933
General and administrative	5,490	6,263	10,751	10,889
Total	$ 17,932	$ 17,727	$ 36,052	$ 31,237

(2) Includes acquisition-related costs, net, as follows:

Acquisition-related costs, net:	Three Months Ended June 30, 2022	Three Months Ended June 30, 2021	Six Months Ended June 30, 2022	Six Months Ended June 30, 2021
	(in thousands)		(in thousands)	
Cost of revenue, excluding depreciation and amortization:				
Technology	$ 87	$ —	$ 193	$ —
Professional services	147	—	366	—
Sales and marketing	793	—	1,190	—
Research and development	1,107	—	1,665	—
General and administrative	$ 2,513	$ 8,114	$ (3,518)	$ 10,270
Total	$ 4,647	$ 8,114	$ (104)	$ 10,270

	Three Months Ended June 30, 2022	Three Months Ended June 30, 2021	Six Months Ended June 30, 2022	Six Months Ended June 30, 2021
Revenue:				
Technology	64 %	60 %	63 %	60 %
Professional services	36	40	37	40
Total revenue	100	100	100	100
Cost of revenue, excluding depreciation and amortization shown below:				
Technology	20	20	20	20
Professional service	29	30	30	30
Total cost of revenue, excluding depreciation and amortization	49	50	50	50
Operating expenses				
Sales and marketing	30	28	30	28
Research and development	26	24	25	25
General and administrative	25	38	19	32
Depreciation and amortization	18	14	17	14
Total operating expenses	99	104	91	99
Loss from operations	(48)	(54)	(41)	(49)
Interest and other expense, net	(2)	(6)	(2)	(7)
Loss before income taxes	(50)	(60)	(43)	(56)
Income tax benefit	(1)	—	(3)	—
Net loss	(49)%	(60)%	(40)%	(56)%

Discussion of the Three Months Ended June 30, 2022 and 2021

Revenue

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Revenue:				
Technology	$ 45,397	$ 35,529	$ 9,868	28 %
Professional services	25,236	24,098	1,138	5 %
Total revenue	$ 70,633	$ 59,627	$ 11,006	18 %
Percentage of revenue:				
Technology	64 %	60 %		
Professional services	36	40		
Total	100 %	100 %		

Total revenue was $70.6 million for the three months ended June 30, 2022, compared to $59.6 million for the three months ended June 30, 2021, an increase of $11.0 million, or 18%.

Technology revenue was $45.4 million, or 64% of total revenue, for the three months ended June 30, 2022, compared to $35.5 million, or 60% of total revenue, for the three months ended June 30, 2021. The technology revenue growth was primarily from new DOS Subscription Customers, acquired technology customers, revenue from existing customers paying higher technology access fees from contractual, annual escalators, and new offerings of expanded support services.

Professional services revenue was $25.2 million, or 36% of total revenue, for the three months ended June 30, 2022, compared to $24.1 million, or 40% of total revenue, for the three months ended June 30, 2021. The professional services revenue growth is primarily due to implementation, analytics, outsourcing, and other improvement services being provided to new DOS Subscription Customers, as well as greater non-recurring and project-based services.

Cost of revenue, excluding depreciation and amortization

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Cost of revenue, excluding depreciation and amortization:				
Technology	$ 13,996	$ 11,847	$ 2,149	18 %
Professional services	20,611	18,206	2,405	13 %
Total cost of revenue, excluding depreciation and amortization	$ 34,607	$ 30,053	$ 4,554	15 %
Percentage of total revenue	49 %	50 %		

Cost of technology revenue, excluding depreciation and amortization, was $14.0 million for the three months ended June 30, 2022, compared to $11.8 million for the three months ended June 30, 2021, an increase of $2.1 million, or 18%. The increase in cost of technology revenue was primarily due to $1.1 million in increased cloud computing and hosting costs largely from the expanded use of Microsoft Azure to serve existing and new customers, a $0.8 million increase in dues and subscriptions, and $0.4 million in salary and related personnel costs from an increase in cloud services and support headcount.

Cost of professional services revenue was $20.6 million for the three months ended June 30, 2022, compared to $18.2 million for the three months ended June 30, 2021, an increase of $2.4 million, or 13%. This increase was primarily due to a $2.1 million increase in salary and related personnel costs from additional professional services headcount and a $0.6 million increase in contractor and outside service fees.

Operating expenses

Sales and marketing

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Sales and marketing	$ 20,922	$ 16,705	$ 4,217	25 %
Percentage of total revenue	30 %	28 %		

Sales and marketing expenses were $20.9 million for the three months ended June 30, 2022, compared to $16.7 million for the three months ended June 30, 2021, an increase of $4.2 million, or 25%. The increase was primarily due to a $2.4 million increase in salary and related personnel costs from additional headcount, a $0.9 million increase in stock-based compensation, and a $0.4 million increase in contractor and outside service fees.

Sales and marketing expense as a percentage of total revenue increased from 28% in the three months ended June 30, 2021 to 30% in the three months ended June 30, 2022.

Research and development

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Research and development	$ 18,148	$ 14,524	$ 3,624	25 %
Percentage of total revenue	26 %	24 %		

Research and development expenses were $18.1 million for the three months ended June 30, 2022, compared to $14.5 million for the three months ended June 30, 2021, an increase of $3.6 million, or 25%. The increase was primarily due to a $2.3 million increase in salary and related personnel costs from additional development team headcount, a $1.0 million increase in contractor and outside service fees, and a $0.5 million increase in stock-based compensation.

Research and development expense as a percentage of revenue increased from 24% in the three months ended June 30, 2021 to 26% in the three months ended June 30, 2022.

General and administrative

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
General and administrative	$ 17,536	$ 22,525	$ (4,989)	(22) %
Percentage of total revenue	25 %	38 %		

General and administrative expenses were $17.5 million for the three months ended June 30, 2022, compared to $22.5 million for the three months ended June 30, 2021, a decrease of $5.0 million, or 22%. The decrease was primarily due to a $4.8 million decrease in change in fair value of contingent consideration liabilities, a $0.8 million decrease in stock-based compensation, partially offset by an increase of $1.4 million in salary and related personnel costs from additional headcount.

General and administrative expense as a percentage of revenue decreased from 38% in the three months ended June 30, 2021 to 25% in the three months ended June 30, 2022.

Depreciation and amortization

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Depreciation and amortization	$ 12,612	$ 8,139	$ 4,473	55 %
Percentage of total revenue	18 %	14 %		

Depreciation and amortization expenses were $12.6 million for the three months ended June 30, 2022, compared to $8.1 million for the three months ended June 30, 2021, an increase of $4.5 million, or 55%. This increase was primarily due to the amortization of acquired intangible assets resulting from our recent business combinations.

Depreciation and amortization expense as a percentage of revenue increased from 14% in the three months ended June 30, 2021 to 18% in the three months ended June 30, 2022.

Interest and other expense, net

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Interest income	$ 676	460	$ 216	47 %
Interest expense	(1,809)	(4,168)	2,359	(57) %
Other (expense) income	(47)	1	(48)	n/m[1]
Total interest and other expense, net	$ (1,180)	$ (3,707)	$ 2,527	(68) %

(1) Not meaningful

Interest and other expense, net decreased $2.5 million, or 68%, for the three months ended June 30, 2022, compared to the three months ended June 30, 2021. This change is primarily due to a decrease in non-cash interest expense of $2.4 million related to the modified retrospective adoption of ASU 2020-06. Refer to Note 1 and Note 9 of the condensed consolidated financial statements for further information.

Income tax provision (benefit)

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Income tax benefit	$ (944)	$ (192)	$ (752)	n/m[1]

(1) Not meaningful

Our income tax provision consists of current and deferred taxes for U.S. federal, state, and foreign income taxes. As we have a full valuation allowance on deferred tax assets, our income tax provision typically consists primarily of minimal state and foreign income taxes.

The income tax benefit of $0.9 million recorded for the three months ended June 30, 2022 is primarily related to the discrete deferred tax benefit attributable to the release of a portion of the valuation allowance during the quarter. The release of the valuation allowance is attributable to the acquisition of ARMUS, which resulted in deferred tax liabilities that, upon acquisition, allowed us to recognize certain deferred tax assets that had previously been offset by a valuation allowance.

Discussion of the Six Months Ended June 30, 2022 and 2021

Revenue

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Revenue:				
Technology	$ 87,627	$ 69,368	$ 18,259	26 %
Professional services	51,093	46,105	4,988	11 %
Total revenue	$ 138,720	$ 115,473	$ 23,247	20 %
Percentage of revenue:				
Technology	63 %	60 %		
Professional services	37	40		
Total	100 %	100 %		

Total revenue was $138.7 million for the six months ended June 30, 2022, compared to $115.5 million for the six months ended June 30, 2021, an increase of $23.2 million, or 20%.

Technology revenue was $87.6 million, or 63% of total revenue, for the six months ended June 30, 2022, compared to $69.4 million, or 60% of total revenue, for the six months ended June 30, 2021. The technology revenue growth was primarily from new DOS Subscription Customers, acquired technology customers, revenue from existing customers paying higher technology access fees from contractual, annual escalators, and new offerings of expanded support services.

Professional services revenue was $51.1 million, or 37% of total revenue, for the six months ended June 30, 2022, compared to $46.1 million, or 40% of total revenue, for the six months ended June 30, 2021. The professional services revenue growth is primarily due to implementation, analytics, outsourcing, and other improvement services being provided to new DOS Subscription Customers, as well as greater non-recurring and project-based services.

Cost of revenue, excluding depreciation and amortization

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Cost of revenue, excluding depreciation and amortization:				
Technology	$ 27,323	$ 22,672	$ 4,651	21 %
Professional services	41,280	34,719	6,561	19 %
Total cost of revenue, excluding depreciation and amortization	$ 68,603	$ 57,391	$ 11,212	20 %
Percentage of total revenue	50 %	50 %		

Cost of technology revenue, excluding depreciation and amortization, was $27.3 million for the six months ended June 30, 2022, compared to $22.7 million for the six months ended June 30, 2021, an increase of $4.7 million, or 21%. The increase was primarily due to a $2.0 million increase in cloud computing and hosting costs largely from the expanded use of Microsoft Azure to serve existing and new customers, a $1.3 million increase in dues and subscriptions, and $1.0 million in salary and related personnel costs from an increase in cloud services and support headcount.

Cost of professional services revenue was $41.3 million for the six months ended June 30, 2022, compared to $34.7 million for the six months ended June 30, 2021, an increase of $6.6 million, or 19%. This increase was primarily due to a $4.6 million increase in salary and related personnel costs from additional professional services headcount, a $1.4 million increase in contractor and outside service fees, and a $0.4 million increase in stock-based compensation.

Operating expenses

Sales and marketing

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Sales and marketing	$ 41,740	$ 32,356	$ 9,384	29 %
Percentage of total revenue	30 %	28 %		

Sales and marketing expenses were $41.7 million for the six months ended June 30, 2022, compared to $32.4 million for the six months ended June 30, 2021, an increase of $9.4 million, or 29%. The increase was primarily due to a $4.6 million increase in salary and related personnel costs from additional headcount, a $3.1 million increase in stock-based compensation, and a $0.5 million increase in travel-related expenses.

Sales and marketing expense as a percentage of total revenue increased from 28% in the six months ended June 30, 2021 to 30% in the six months ended June 30, 2022.

Research and development

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Research and development	$ 35,296	$ 28,869	$ 6,427	22 %
Percentage of total revenue	25 %	25 %		

Research and development expenses were $35.3 million for the six months ended June 30, 2022, compared to $28.9 million for the six months ended June 30, 2021, an increase of $6.4 million, or 22%. The increase was primarily due to a $3.7 million increase in salary and related personnel costs from additional development team members, a $1.6 million increase in contractor and outside service fees, and a $1.3 million increase in stock-based compensation.

Research and development expense as a percentage of revenue was consistent at 25% for the six months ended June 30, 2022 and 2021.

General and administrative

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
General and administrative	$ 26,359	$ 37,540	$ (11,181)	(30) %
Percentage of total revenue	19 %	32 %		

General and administrative expenses were $26.4 million for the six months ended June 30, 2022, compared to $37.5 million for the six months ended June 30, 2021, a decrease of $11.2 million, or 30%. The decrease was primarily due to a $15.4 million decrease in change in fair value of contingent consideration liabilities, partially offset by an increase of $3.2 million in salary and related personnel costs from additional headcount, a $1.7 million increase in acquisition-related costs, and a $0.6 million increase in dues and subscriptions.

General and administrative expense as a percentage of revenue decreased from 32% in the six months ended June 30, 2021 to 19% in the six months ended June 30, 2022.

Depreciation and amortization

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Depreciation and amortization	$ 24,261	$ 15,953	$ 8,308	52 %
Percentage of total revenue	17 %	14 %		

Depreciation and amortization expenses were $24.3 million for the six months ended June 30, 2022, compared to $16.0 million for the six months ended June 30, 2021, an increase of $8.3 million, or 52%. This increase was primarily due to the amortization of acquired intangible assets resulting from our recent business combinations.

Depreciation and amortization expense as a percentage of revenue increased from 14% in the six months ended June 30, 2021 to 17% in the six months ended June 30, 2022.

Interest and other expense, net

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Interest income	$ 850	614	$ 236	38 %
Interest expense	(3,614)	(8,298)	4,684	(56) %
Other (expense) income	(78)	25	(103)	(412) %
Total interest and other expense, net	$ (2,842)	$ (7,659)	$ 4,817	(63) %

Interest and other expense, net decreased $4.8 million, or 63%, for the six months ended June 30, 2022, compared to the six months ended June 30, 2021. This change is primarily due to a decrease in non-cash interest expense of $4.7 million related to the modified retrospective adoption of ASU 2020-06. Refer to Note 1 and Note 9 of the condensed consolidated financial statements for further information.

Income tax provision (benefit)

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(in thousands, except percentages)			
Income tax benefit	$ (4,495)	(91)	$ (4,404)	n/m[(1)]

(1) Not meaningful

Our income tax provision consists of current and deferred taxes for U.S. federal, state, and foreign income taxes. The income tax benefit of $4.5 million recorded for the six months ended June 30, 2022, is primarily related to the discrete deferred tax benefits attributable to the release of a portion of the valuation allowance during the period. The release of our valuation allowance is attributable to the acquisitions of ARMUS and KPI Ninja, which resulted in deferred tax liabilities that, upon acquisition, allowed us to recognize certain deferred tax assets that had previously been offset by a valuation allowance.

Liquidity and Capital Resources

As of June 30, 2022, we had cash, cash equivalents, and short-term investments of $403.3 million, which were held for working capital and other general corporate purposes, which may include acquisitions and strategic transactions. Our cash equivalents and short-term investments are comprised primarily of money market funds, U.S. treasury notes, commercial paper, corporate bonds, and asset-backed securities.

Since inception, we have financed our operations primarily from the proceeds we received through private sales of equity securities, payments received from customers under technology and professional services arrangements, borrowings under our loan and security agreements, our IPO, the Note Offering, and our Secondary Public Equity Offering. Our future capital requirements will depend on many factors, including our pace of new customer growth and expanded customer relationships, technology and professional services renewal activity, and the timing and extent of spend to support the expansion of sales, marketing, development, and acquisition-related activities. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us, or at all. If we are unable to raise additional capital when desired, our business, results of operations, and financial condition would be adversely affected.

We believe our existing cash, cash equivalents and marketable securities will be sufficient to meet our working capital and capital expenditure needs over at least the next 12 months, though we may require additional capital resources in the future.

Share repurchase plan

On August 2, 2022, our Board of Directors authorized a share repurchase program to repurchase up to $40.0 million of our outstanding shares of common stock.

Convertible senior notes

On April 14, 2020, we issued $230.0 million in aggregate principal amount of 2.50% Convertible Senior Notes due 2025, pursuant to an Indenture dated April 14, 2020, with U.S. Bank National Association, as trustee, in a private offering to qualified institutional buyers. We received net proceeds from the Notes of $222.5 million, after deducting the initial purchasers' discounts and offering expenses payable by us.

The Notes are senior, unsecured obligations and will accrue interest payable semiannually in arrears on April 15 and October 15 of each year, beginning on October 15, 2020, at a rate of 2.50% per year. The Notes will mature on April 15, 2025, unless earlier converted, redeemed, or repurchased. The Notes are convertible into cash, shares of our common stock, or a combination of cash and shares of our common stock, with the form of consideration determined at our election. The conversion rate is initially 32.6797 shares of our common stock per $1,000 principal amount of Notes (which is equivalent to an initial conversion price of approximately $30.60 per share of our common stock).

Capped calls

On April 8, 2020, concurrently with the pricing of the Notes, we entered into Base Capped Calls with certain financial institutions, or option counterparties. In addition, in connection with the initial purchasers' exercise in full of their option to purchase additional Notes, on April 9, 2020, we entered into the Additional Capped Calls with each of the option counterparties. We used approximately $21.6 million of the net proceeds from the Note Offering to pay the option premium cost of the Capped Calls. The Capped Calls have initial cap prices of $42.00 per share, subject to certain adjustments. The Capped Calls are expected generally to reduce the potential dilution to our common stock upon any conversion of Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be, with such reduction and/or offset subject to the cap price.

Refer to Note 9 of our condensed consolidated financial statements for additional details regarding the private offering of the Notes and the Capped Calls.

Cash flows

The following table summarizes our cash flows for the six months ended June 30, 2022 and 2021:

	Six Months Ended June 30,	
	2022	2021
	(in thousands)	
Net cash used in operating activities	$ (8,418)	$ (7,988)
Net cash provided by (used in) investing activities	(12,095)	109,799
Net cash provided by financing activities	4,289	11,335
Effect of exchange rate changes	(20)	(5)
Net increase (decrease) in cash and cash equivalents	$ (16,244)	$ 113,141

Operating activities

Our largest source of operating cash flows is cash collections from our customers for technology and professional services arrangements. Our primary uses of cash from operating activities are for employee-related expenses, marketing expenses, and technology costs.

For the six months ended June 30, 2022, net cash used in operating activities was $8.4 million, which included a net loss of $55.9 million. Non-cash adjustments primarily consisted of $24.3 million in depreciation and amortization of property, equipment, and intangible assets, $36.1 million in stock-based compensation, reduced by a $7.3 million change in fair value of contingent consideration liabilities, and a $4.5 million deferred tax benefit.

For the six months ended June 30, 2021, net cash used in operating activities was $8.0 million, which included a net loss of $64.2 million. Non-cash adjustments primarily consisted of $16.0 million in depreciation and amortization of property, equipment, and intangible assets, $31.2 million in stock-based compensation, $9.1 million in change in fair value of contingent consideration liabilities, $5.8 million in amortization of debt discount and issuance costs, partially offset by the $11.0 million payment in excess of the acquisition date fair value to settle the cash-based portion of the Vitalware contingent consideration liability.

Investing activities

Net cash used in investing activities for the six months ended June 30, 2022 of $12.1 million was primarily due to $185.2 million provided from the sale and maturity of short-term investments, reduced by $160.5 million in purchases of short-term investments, $27.8 million used to acquire KPI Ninja and ARMUS, and $7.0 million of capitalized internal-use software.

Net cash provided investing activities for the six months ended June 30, 2021 of $109.8 million was primarily due to $174.3 million provided from the sale and maturity of short-term investments, reduced by $53.7 million in purchases of short-term investments, $8.9 million in purchases of property, equipment, and intangible assets, and $1.9 million of capitalized internal-use software.

Financing activities

Net cash provided by financing activities for the six months ended June 30, 2022 of $4.3 million was primarily the result of $3.7 million in stock option exercise proceeds and $1.5 million in proceeds from our ESPP, reduced by $0.9 million in payments of acquisition-related obligations.

Net cash provided by financing activities for the six months ended June 30, 2021 of $11.3 million was primarily the result of $14.1 million in stock option exercise proceeds and $2.6 million in proceeds from our ESPP, reduced by $5.4 million in payments of acquisition-related obligations.

Contractual Obligations and Commitments

There have been no material changes to the contractual obligations as disclosed in our Annual Report on Form 10-K, filed with the SEC on March 1, 2022. Refer to "Note 9—Convertible Senior Notes" and "Note 14—Commitments and Contingencies" of our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for additional information regarding our commitments and contractual obligations.

Off-Balance Sheet Arrangements

As of June 30, 2022, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities that would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and related disclosures. To the extent that there are material differences between these estimates and actual results, our financial condition or results of operations would be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. Critical accounting policies and estimates are those that we consider critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Due to the COVID-19 pandemic, war in Ukraine, and high level of inflation, amongst other factors, there has been uncertainty and disruption in the global economy and financial markets. We are not aware of any specific event or circumstance that would require updates to our estimates or judgments or require us to revise the carrying value of our assets or liabilities as of the date of issuance of this Quarterly Report on Form 10-Q. These estimates may change as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions. We will continue to actively monitor the impact of the COVID-19 pandemic, Ukraine war, recent inflationary pressures, and other factors on our estimates, including our expected credit losses.

There have been no material changes to our critical accounting policies and estimates as previously disclosed in our Annual Report on Form 10-K, filed with the SEC on March 1, 2022. See "Note 1—Description of Business and Summary of Significant Accounting Policies" of our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information regarding the Company's significant accounting policies.

Recent Accounting Pronouncements

See "Note 1—Description of Business and Summary of Significant Accounting Policies" to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. There have been no recent accounting pronouncements issued which are expected to have a material effect on our condensed consolidated financial statements.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to certain market risks in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in interest rates but may include foreign currency exchange risk and inflation in the future.

Interest rate risk

We had cash, cash equivalents, and short-term investments of $403.3 million as of June 30, 2022, which are held for working capital purposes. We do not make investments for trading or speculative purposes.

Our cash equivalents and short-term investments are subject to market risk due to changes in interest rates. Fixed-rate securities may have their market value adversely affected due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fluctuate due to changes in interest rates or we may suffer losses in principal if we are forced to sell securities that decline in market value due to changes in interest rates. However, because we classify our investments as "available for sale," no gains or losses are recognized due to changes in interest rates unless such securities are sold prior to maturity or declines in fair value are determined to be other-than-temporary.

As of June 30, 2022, a hypothetical 100 basis point change in interest rates would not have had a material impact on the value of our cash equivalents or investment portfolio. Fluctuations in the value of our cash equivalents and investment portfolio caused by a change in interest rates (gains or losses on the carrying value) are recorded in other comprehensive income and are realized only if we sell the underlying securities prior to maturity.

Foreign currency exchange risk

Our reporting currency is the U.S. dollar, and the functional currency of our subsidiaries is typically their local currency. Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the Indian Rupee and Singapore Dollar. Due to the relatively small size of our international operations to date, our foreign currency exposure has been fairly limited and not material to our business. Accordingly, we have not instituted a hedging program. We are considering the costs and benefits of initiating such a program and may in the future hedge balances and transactions denominated in currencies other than the U.S. dollar as we expand international operations.

Today, our international sales contracts are generally denominated in U.S. dollars, while our international operating expenses are often denominated in local currencies. In the future, an increasing portion of our international sales contracts may be denominated in local currencies. Additionally, as we expand our international operations a larger portion of our operating expenses will be denominated in local currencies. Therefore, fluctuations in the value of the U.S. dollar and foreign currencies may affect our results of operations when translated into U.S. dollars.

Inflation risk

The current high inflation environment has adversely affected workforces, organizations, governments, customers, economies, and financial markets globally, leading to an economic downturn and increased market volatility. It has also disrupted the normal operations of many businesses, including ours. Our health system end market is currently experiencing meaningful financial strain from significant inflation with increases in labor and supply costs without a commensurate increase in revenue, leading to severe margin pressure. We continue to monitor and assess the impact of inflationary pressures on our business operations. If our costs were to become subject to significant inflationary pressures on an ongoing basis, we may not be able to fully offset such higher costs. Our inability or failure to do so could harm our business, results of operations, or financial condition.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures

We maintain "disclosure controls and procedures," as defined in Rule 13a–15(e) and Rule 15d–15(e) under the Exchange Act that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2022. Based on the evaluation of our disclosure controls and procedures as of June 30, 2022, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in internal control over financial reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this Quarterly Report on Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. We have not experienced any material impact to our internal controls over financial reporting despite the fact that most of our employees are currently working remotely due to the COVID-19 pandemic. We are continually monitoring and assessing the effects that the COVID-19 pandemic may have on our internal controls to minimize the impact on their design and operating effectiveness.

Inherent limitations on effectiveness of controls

Our management, including our Chief Executive Officer and Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Part II. Other Information

Item 1. Legal Proceedings

We are, from time to time, subject to legal proceedings and claims arising from the normal course of business activities, and an unfavorable resolution of any of these matters could materially affect our future business, results of operations, financial condition, and cash flows.

Future litigation may be necessary, among other things, to defend ourselves or our users by determining the scope, enforceability, and validity of third-party proprietary rights or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

Item 1A. Risk Factors

You should carefully consider the following risk factors, in addition to the other information contained in this Quarterly Report on Form 10-Q, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes. If any of the events described in the following risk factors and the risks described elsewhere in this report occurs, our business, operating results and financial condition could be seriously harmed. This Quarterly Report on Form 10-Q also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report.

Risks Related to Our Business and Industry

We operate in a highly competitive industry, and if we are not able to compete effectively, our business and results of operations will be harmed.

The market for healthcare solutions is intensely competitive. We compete across various segments within the healthcare market, including with respect to data analytics and technology platforms, healthcare consulting, care management and coordination, population health management, and health information exchange. Competition in our market involves rapidly changing technologies, evolving regulatory requirements and industry expectations, frequent new product introductions, and changes in customer requirements. If we are unable to keep pace with the evolving needs of our customers and continue to develop and introduce new applications and services in a timely and efficient manner, demand for our Solution may be reduced and our business and results of operations will be adversely affected.

We face competition from industry-agnostic analytics companies and EHR companies, such as Epic Systems and Cerner. We also compete with other large, well-financed, and technologically sophisticated entities. Some of our current large competitors, such as Optum Analytics and IBM, have greater name recognition, longer operating histories, significantly greater resources than we do, and/or more established distribution networks and relationships with healthcare providers. As a result, our current and potential competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards, or customer requirements. In addition, current and potential competitors have established, and may in the future establish, cooperative relationships with vendors of complementary products, or services to increase the availability of their products or services to the marketplace. Current or future competitors may consolidate to improve the breadth of their products, directly competing with our Solution. Accordingly, new competitors may emerge that have greater market share, larger customer bases, greater breadth and volume of data, more widely adopted proprietary technologies, broader offerings, greater marketing expertise, greater financial resources, and larger sales forces than we have, which could put us at a competitive disadvantage.

Further, in light of these advantages, even if our Solution is more effective than the product or service offerings of our competitors, current or potential customers might select competitive products and services in lieu of purchasing our Solution. We face competition from niche vendors, who offer stand-alone products and services, and from existing enterprise vendors, including those currently focused on software products, which have information systems in place with customers in our target markets. These existing enterprise vendors may now, or in the future, offer or promise products or services with less functionality than our Solution, but offer ease of integration with existing systems and that leverage existing vendor relationships. Increased competition is likely to result in pricing pressures, which could negatively impact our sales, profitability, or market share.

Our patient engagement, population health, and care coordination services face competition from a wide variety of market participants. For example, certain health systems have developed their own population health and care coordination systems. If we fail to distinguish our offerings from the other options available to healthcare providers, the demand for and market share of those offerings may decrease.

Changes in the healthcare industry could affect the demand for our Solution, cause our existing contracts to be terminated, and negatively impact the process of negotiating future contracts.

As the healthcare industry evolves, changes in our customer and vendor bases may reduce the demand for our Solution, result in the termination of existing contracts or certain services provided under existing contracts, and make it more difficult to negotiate new contracts on terms that are acceptable to us. For example, the increasing market share of EHR companies in data analytic services at hospital systems may cause our existing customers to terminate contracts with us in order to engage EHR companies to provide these services. Similarly, customer and vendor consolidation results in fewer, larger entities with increased bargaining power and the ability to demand terms that are unfavorable to us. If these trends continue, we cannot assure you that we will be able to continue to maintain or expand our customer base, negotiate contracts with acceptable terms, or maintain our current pricing structure, and our revenue may decrease.

General reductions in expenditures by healthcare organizations, or reductions in such expenditures within market segments that we serve, could have similar impacts with regard to our Solution. Such reductions may result from, among other things, reduced governmental funding for healthcare; a decrease in the number of, or the market exclusivity available to, new drugs coming to market; or adverse changes in business or economic conditions affecting healthcare payors or providers, the pharmaceutical industry, or other healthcare companies that purchase our services (e.g., changes in the design of health plans). In addition, changes in government regulation of the healthcare industry could potentially negatively impact our existing and future contracts. Any of these changes could reduce the purchase of our Solution by such customers, reducing our revenue and possibly requiring us to materially revise our offerings. In addition, our customers’ expectations regarding pending or potential industry developments may also affect their budgeting processes and spending plans with respect to our Solution.

The global coronavirus (COVID-19) pandemic and recently high inflationary environment could harm our business, results of operations, and financial condition.

In March 2020, the World Health Organization declared COVID-19 a global pandemic. This pandemic, which has continued to spread, and the related adverse public health developments, including orders to shelter-in-place, travel restrictions, and mandated business closures, have adversely affected workforces, organizations, governments, customers, economies, and financial markets globally, leading to an economic downturn and increased market volatility. It has also disrupted the normal operations of many businesses, including ours. The ongoing waves of COVID-19, especially in light of the Delta and Omicron variants, as well as intensified measures undertaken to contain the spread of COVID-19, could decrease healthcare industry spending, adversely affect demand for our technology and services, cause one or more of our customers to file for bankruptcy protection or go out of business, cause one or more of our customers to fail to renew, terminate, or renegotiate their contracts, affect the ability of our sales team to travel to potential customers and the ability of our professional services teams to conduct in-person services and trainings, impact expected spending from new customers, negatively impact collections of accounts receivable, and harm our business, results of operations, and financial condition.

Further, the sales cycle for a new DOS Subscription Customer, which we estimate to be approximately one year, could lengthen, resulting in a potentially longer delay between increasing operating expenses and the generation of corresponding revenue, if any. We cannot predict with any certainty whether and to what degree the disruption caused by the COVID-19 pandemic, the recently high inflationary environment and reactions thereto will continue and expect to face difficulty accurately predicting our internal financial forecasts. The pandemic also presents challenges as our entire workforce is currently working remotely and shifting to assisting new and existing customers who are also generally working remotely. It is not possible for us to predict the duration or magnitude of the adverse results of the pandemic and its effects on our business, results of operations, or financial condition at this time.

We may be unable to successfully execute on our growth initiatives, business strategies, or operating plans.

We are continually executing a number of growth initiatives, strategies, and operating plans designed to enhance our business. For example, we recently expanded our data analytics services into the payor and life sciences markets. We may not be able to successfully complete these growth initiatives, strategies, and operating plans and realize all of the benefits, including growth targets and cost savings, that we expect to achieve or it may be more costly to do so than we anticipate. A variety of factors could cause us not to realize some or all of the expected benefits. These factors include, among others, delays in the anticipated timing of activities related to such growth initiatives, strategies, and operating plans, increased difficulty and cost in implementing these efforts, including difficulties in complying with new regulatory requirements and the incurrence of other unexpected costs associated with operating the business. Moreover, our continued implementation of these programs may disrupt our operations and performance. As a result, we cannot assure you that we will realize these benefits. If, for any reason, the benefits we realize are less than our estimates or the implementation of these growth initiatives, strategies, and operating plans adversely affect our operations or cost more or take longer to effectuate than we expect, or if our assumptions prove inaccurate, our business, financial condition, and results of operations may be materially adversely affected.

If we fail to provide effective professional services and high-quality customer support, our business and reputation would suffer.

Our professional services and high-quality, ongoing customer support are important to the successful marketing and sale of our products and services and for the renewal of existing customer agreements. Providing these services and support requires that our professional services and support personnel have healthcare, technical, and other knowledge and expertise, making it difficult for us to hire qualified personnel and scale our professional services and support operations. The demand on our customer support organization will increase as we expand our business and pursue new customers, and such increased support could require us to devote significant development services and support personnel, which could strain our team and infrastructure and reduce our profit margins. If we do not help our customers quickly resolve any post-implementation issues and provide effective ongoing customer support, our ability to sell additional products and services to existing and future customers could suffer and our reputation would be harmed.

Our sales cycles can be long and unpredictable, and our sales efforts require a considerable investment of time and expense. If our sales cycle lengthens or we invest substantial resources pursuing unsuccessful sales opportunities, our results of operations and growth would be harmed.

Our sales process entails planning discussions with prospective customers, analyzing their existing solutions and identifying how these potential customers can use and benefit from our Solution. The sales cycle for a new DOS Subscription customer, from the time of prospect qualification to the completion of the first sale, we estimate to be approximately one year and in some cases has exceeded two years. We spend substantial time, effort and money in our sales efforts without any assurance that our efforts will result in the sale of our Solution.

In addition, our sales cycle and timing of sales can vary substantially from customer to customer because of various factors, including the discretionary nature of potential customers' purchasing and budget decisions, the announcement or planned introduction of new analytics applications or services by us or our competitors, and the purchasing approval processes of potential customers. If our sales cycle lengthens or we invest substantial resources pursuing unsuccessful sales opportunities, our results of operations and growth would be harmed.

Our DOS platform or our analytics applications may not operate properly, which could damage our reputation, give rise to claims against us, or divert application of our resources from other purposes, any of which could harm our business and results of operations.

Proprietary software development is time consuming, expensive, and complex. Unforeseen difficulties can arise. We may encounter technical obstacles, and it is possible that we will discover additional problems that prevent our applications from operating properly. If our systems do not function reliably or fail to meet user or customer expectations in terms of performance, customers could assert liability claims against us or attempt to cancel their contracts with us, and members could choose to terminate their use of our Solution. This could damage our reputation and impair our ability to attract or retain customers and members. Information services as complex as those we offer have, in the past, contained, and may in the future develop or contain, undetected defects, vulnerabilities, or errors. We cannot be assured that material performance problems or defects in our software will not arise in the future. Errors may result from sources beyond our control, including the receipt, entry, or interpretation of patient information; the interface of our software with legacy systems that we did not develop; or errors in data provided by third parties. Despite testing, defects or errors may arise in our existing or new software or service processes following introduction to the market.

Customers rely on our Solution to collect, manage, and report clinical, financial, and operational data, and to provide timely and accurate information regarding medical treatment and care delivery patterns. They may have a greater sensitivity to service errors and security vulnerabilities than customers of software products in general. Clinicians may also rely on our predictive models for care delivery prioritization, and to inform treatment protocols. Limitations of liability and disclaimers that purport to limit our liability for damages related to defects in our software or content which we may include in our subscription and services agreements may not be enforced by a court or other tribunal or otherwise effectively protect us from related claims. In most cases, we maintain liability insurance coverage, including coverage for errors and omissions. However, it is possible that claims could exceed the amount of our applicable insurance coverage or that this coverage may not continue to be available on acceptable terms or insufficient amounts.

In light of this, defects, vulnerabilities, and errors and any failure by us to identify and address them could result in loss of revenue or market share; liability to customers, members, their patients, or others; failure to achieve market acceptance or expansion; diversion of development and management resources; delays in the introduction of new services; injury to our reputation; and increased service and maintenance costs. Defects, vulnerabilities, or errors in our software and service processes might discourage existing or potential customers or members from purchasing services from us. Correction of defects, vulnerabilities, or errors could prove to be impossible or impractical. The costs incurred in correcting any defects, vulnerabilities, or errors or in responding to resulting claims or liability may be substantial and could adversely affect our results of operations.

If we are not able to maintain and enhance our reputation and brand recognition, our business and results of operations will be harmed.

We believe that maintaining and enhancing our reputation and brand recognition is critical to our relationships with existing customers and to our ability to attract new customers. The promotion of our brands may require us to make substantial investments and we anticipate that, as our market becomes increasingly competitive, these marketing initiatives may become increasingly difficult and expensive. Our marketing activities may not be successful or yield increased revenue, and to the extent that these activities yield increased revenue, the increased revenue may not offset the expenses we incur and our results of operations could be harmed.

In addition, any factor that diminishes our reputation or that of our management, including failing to meet the expectations of our customers, or any adverse publicity surrounding one of our investors or customers, could make it substantially more difficult for us to attract new customers. If we do not successfully maintain and enhance our reputation and brand recognition, our business may not grow and we could lose our relationships with customers, which would harm our business, results of operations, and financial condition.

If we do not continue to innovate and provide services that are useful to customers and users, we may not remain competitive, and our revenue and results of operations could suffer.

The market for healthcare in the United States is in the early stages of structural change and is rapidly evolving toward a more value-based care model. Our success depends on our ability to keep pace with technological developments, satisfy increasingly sophisticated customer and user requirements, and sustain market acceptance. Our future financial performance will depend in part on growth in this market and on our ability to adapt to emerging demands of this market, including adapting to the ways our customers or users access and use our Solution. Although we have built eight new software analytics applications in the last three years, we may not be able to sustain this rate of innovation. Our competitors are constantly developing products and services that may become more efficient or appealing to our customers or users. As a result, we must continue to invest significant resources in research and development in order to enhance our existing services and introduce new high-quality services and applications that customers will want, while offering our Solution at competitive prices. If we are unable to predict user preferences or industry changes, or if we are unable to modify our Solution on a timely or cost-effective basis, we may lose customers and users. Our results of operations would also suffer if our innovations are not responsive to the needs of our customers, are not appropriately timed with market opportunity, or are not effectively brought to market, including as the result of delayed releases or releases that are ineffective or have errors or defects. As technology continues to develop, our competitors may be able to offer results that are, or that are perceived to be, substantially similar to, or better than, those generated by our Solution. This may force us to compete on additional service attributes and to expend significant resources in order to remain competitive.

Our business could be adversely affected if our customers are not satisfied with our Solution.

We depend on customer satisfaction to succeed with respect to our cloud-based solutions. Our sales organization is dependent on the quality of our offerings, our business reputation, and the strong recommendations from existing customers. If our cloud-based software does not function reliably or fails to meet customer expectations in terms of performance and availability, customers could assert claims against us or terminate their contracts with us or publish negative feedback. This could damage our reputation and impair our ability to attract or retain customers. Furthermore, we provide professional services to customers to support their use of our applications and to achieve measurable clinical, financial, and operational improvements.

Any failure to maintain high-quality professional services, or a market perception that we do not maintain high-quality professional services, could harm our reputation, adversely affect our ability to sell our Solution to existing and prospective customers, and harm our business, results of operations and financial condition.

If our existing customers do not continue or renew their contracts with us, renew at lower fee levels or decline to purchase additional technology and services from us, it could have a material adverse effect on our business, financial condition, and results of operations.

We expect to derive a significant portion of our revenue from the renewal of existing customer contracts and sales of additional technology and services to existing customers. As part of our growth strategy, for instance, we have recently focused on expanding our Solution among current customers. As a result, selling additional technology and services is critical to our future business, revenue growth, and results of operations. Factors that may affect our ability to sell additional technology and services include, but are not limited to, the following:

- the price, performance, and functionality of our Solution;
- the availability, price, performance, and functionality of competing solutions;
- our ability to develop and sell complementary technology and services;
- the stability, performance, and security of our hosting infrastructure and hosting services;
- our ability to continuously deliver measurable improvements;

- health systems’ demand for professional services to augment their internal data analytics function;
- changes in healthcare laws, regulations, or trends;
- the business environment of our customers and, in particular, headcount reductions by our customers; and
- the impact of any natural disasters or public health emergencies, such as the COVID-19 pandemic and the impact of the recently high inflationary environment upon our customers.

We enter into subscription contracts with our customers for access to our Solution. Many of these contracts have initial terms of one to three years. Most of our customers have no obligation to renew their subscriptions for our Solution after the initial term expires. Although we have long-term contracts with many customers, these contracts may be terminated by the customer before their term expires for various reasons, such as changes in the regulatory landscape and poor performance by us, subject to certain conditions. For example, after a specified period, certain of these contracts are terminable for convenience by our customers, subject to providing us with prior notice. Certain of our contracts may be terminated by the customer immediately following repeated failures by us to provide specified levels of service over periods ranging from six months to more than a year. Certain of our contracts may be terminated immediately by the customer if we lose applicable third-party licenses, go bankrupt, or lose our liability insurance. If any of our contracts with our customers are terminated, we may not be able to recover all fees due under the terminated contract and we will lose future revenue from that customer, which may adversely affect our results of operations. We expect that future contracts will contain similar provisions.

In addition, our customers may negotiate terms less advantageous to us upon renewal, which may reduce our revenue from these customers. Our future results of operations also depend, in part, on our ability to upgrade and enhance our Solution. If our customers fail to renew their contracts, renew their contracts upon less favorable terms, or at lower fee levels or fail to purchase new technology and services from us, our revenue may decline or our future revenue growth may be constrained.

Our results of operations have in the past fluctuated and may continue to fluctuate significantly, and if we fail to meet the expectations of analysts or investors, our stock price and the value of an investment in our common stock could decline substantially.

Our results of operations are likely to fluctuate, and if we fail to meet or exceed the expectations of securities analysts or investors, the trading price of our common stock could decline. Moreover, our stock price may be based on expectations of our future performance that may be unrealistic or that may not be met. Some of the factors that could cause our revenue and results of operations to fluctuate from quarter to quarter include:

- the extent to which our Solution achieves or maintains market acceptance;
- our ability to introduce new applications, updates, and enhancements to our existing applications on a timely basis;
- new competitors and the introduction of enhanced products and services from new or existing competitors;
- the length of our contracting and implementation cycles and our fulfillment periods for our Solution;
- the mix of revenue generated from professional services as compared to technology subscriptions;
- customers reducing or eliminating their spend with us in response to macroeconomic factors or otherwise;
- the financial condition of our current and future customers;
- changes in customer budgets and procurement policies;

- changes in regulations or marketing strategies;
- the impact of COVID-19 and the recently high inflationary environment on our customers, partners and business;
- the amount and timing of our investment in research and development activities;
- the amount and timing of our investment in sales and marketing activities;
- technical difficulties or interruptions to our DOS platform or analytics applications;
- our ability to hire and retain qualified personnel;
- changes in the regulatory environment related to healthcare;
- regulatory compliance costs;
- the timing, size, and integration success of potential future acquisitions;
- unforeseen legal expenses, including litigation and settlement costs; and
- buying patterns of our customers and the related seasonality impacts on our business.

Many of these factors are not within our control, and the occurrence of one or more of them might cause our results of operations to vary widely. For example, we have experienced, and expect that we will continue to experience, seasonality in the number of new customers that subscribe to our Solution; specifically, new customers - DOS Subscription Customers in particular - tend to subscribe to our Solution at higher rates in the second and fourth quarters of the year. Seasonality in our business may cause period-to-period fluctuations in certain of our operating results and financial metrics, and thus limit our ability to predict our future results. As such, we believe that quarter-to-quarter comparisons of our revenue and results of operations may not be meaningful and should not be relied upon as an indication of future performance.

A significant portion of our operating expense is relatively fixed in nature in the short term, and planned expenditures are based in part on expectations regarding future revenue and profitability. Accordingly, unexpected revenue shortfalls, lower-than-expected revenue increases as a result of planned expenditures, and longer-than-expected impact on profitability and margins as a result of planned expenditures may decrease our gross margins and profitability and could cause significant changes in our results of operations from quarter to quarter. In addition, our future quarterly results of operations may fluctuate and may not meet the expectations of securities analysts or investors. If this occurs, the trading price of our common stock could fall substantially, either suddenly or over time.

Our pricing may change over time and our ability to efficiently price our Solution will affect our results of operations and our ability to attract or retain customers.

In the past, we have adjusted our prices as a result of offering new applications and services and customer demand. For example, in the fourth quarter of 2018, we began to introduce new pricing for our Solution to new customers and, in 2015, we introduced our subscription model, in each case, the full effect of which we expected would be realized in future years. While we determine these prices based on prior experience, feedback from customers and other factors and information, our assessments may not be accurate and we could be underpricing or overpricing our Solution, which may require us to continue to adjust our pricing model. Furthermore, as our applications and services change, then we may need to, or choose to, revise our pricing as our prior experience in those areas will be limited. Such changes to our pricing model or our inability to efficiently price our Solution could harm our business, results of operations, and financial condition and impact our ability to predict our future performance.

If our Solution fails to provide accurate and timely information, or if our content or any other element of our Solution is associated with faulty clinical decisions or treatment, we could have liability to customers, members, clinicians, or patients, which could adversely affect our results of operations.

Our applications, content, and services may be used by customers to support clinical decision-making by providers and interpret information about patient medical histories, treatment plans, medical conditions, and the use of particular medications. If our applications, content, or services are associated with faulty clinical decisions or treatment, then customers or their patients could assert claims against us that could result in substantial costs to us, harm our reputation in the industry, and cause demand for our Solution to decline.

Our analytics services may be used by our customers to inform clinical decision-making, provide access to patient medical histories, and assist in creating patient treatment plans. Therefore, if data analyses are presented incorrectly in our applications or they are incomplete, or if we make mistakes in the capture or input of these data, adverse consequences, including death, may occur and give rise to product liability, medical malpractice liability, and other claims against us by customers, clinicians, patients, or others. We often have little control over data accuracy, yet a court or government agency may take the position that our storage and display of health information exposes us to personal injury liability or other liability for wrongful delivery or handling of healthcare services or erroneous health information.

Our clinical guidelines, algorithms, and protocols may be viewed as providing healthcare professionals with guidance on care management, care coordination, or treatment decisions. If our content, or content we obtain from third parties, contains inaccuracies, or we introduce inaccuracies in the process of implementing third-party content, it is possible that patients, physicians, consumers, the providers of the third-party content, or others may sue us if they are harmed as a result of such inaccuracies. We cannot assure you that our software development, editorial, and other quality control procedures will be sufficient to ensure that there are no errors or omissions in any particular content or our software or algorithms.

The assertion of such claims and ensuing litigation, regardless of its outcome, could result in substantial cost to us, divert management's attention from operations, damage our reputation, and decrease market acceptance of our Solution. We attempt to limit by contract our liability for damages, have our customers assume responsibility for clinical treatment, diagnoses, medical oversight, and dosing decisions, and require that our customers assume responsibility for medical care and approve key algorithms, clinical guidelines, clinical protocols, and data. Despite these precautions, the allocations of responsibility and limitations of liability set forth in our contracts may not be enforceable, be binding upon patients, or otherwise protect us from liability for damages. Furthermore, general liability and errors and omissions insurance coverage and medical malpractice liability coverage may not continue to be available on acceptable terms or may not be available in sufficient amounts to cover one or more large claims against us. In addition, the insurer might disclaim coverage as to any future claim. One or more large claims could exceed our available insurance coverage.

If any of these events occur, they could materially adversely affect our business, financial condition, or results of operations.

Although we carry insurance covering medical malpractice claims in amounts that we believe are appropriate in light of the risks attendant to our business, successful medical liability claims could result in substantial damage awards that exceed the limits of our insurance coverage. In addition, professional liability insurance is expensive and insurance premiums may increase significantly in the future, particularly as we expand our Solution. As a result, adequate professional liability insurance may not be available to our providers or to us in the future at acceptable costs or at all.

Any claims made against us that are not fully covered by insurance could be costly to defend against, result in substantial damage awards against us and divert the attention of our management and our providers from our operations, which could have a material adverse effect on our business, financial condition, and results of operations. In addition, any claims may adversely affect our business or reputation.

We derive a significant portion of our revenue from our largest customers. The loss, termination, or renegotiation of any contract could negatively impact our results.

Historically, we have relied on a limited number of customers for a significant portion of our total revenue and accounts receivable. Our three largest customers during 2021 comprised 4.5%, 4.2%, and 3.5% of our revenue, or 12.2% in the aggregate. Our three largest customers during 2020 comprised 5.6%, 4.6%, and 3.9% of our revenue, or 14.1% in the aggregate. The sudden loss of any of our largest customers or the renegotiation of any of our largest customer contracts could adversely affect our results of operations. In the ordinary course of business, we engage in active discussions and renegotiations with our customers in respect of the solutions we provide and the terms of our customer agreements, including our fees. As our customers' businesses respond to market dynamics and financial pressures, and as our customers make strategic business decisions in respect of the lines of business they pursue and programs in which they participate, we expect that certain of our customers will, from time to time, seek to restructure their agreements with us. In the ordinary course, we renegotiate the terms of our agreements with our customers in connection with renewals or extensions of these agreements. These discussions and future discussions could result in reductions to the fees and changes to the scope of services contemplated by our original customer contracts and consequently could negatively impact our revenue, business, and prospects.

Because we rely on a limited number of customers for a significant portion of our revenue, we depend on the creditworthiness of these customers. Our customers are subject to a number of risks including reductions in payment rates from governmental payors, higher than expected healthcare costs, and lack of predictability of financial results when entering new lines of business. If the financial condition of our customers declines, our credit risk could increase. Should one or more of our significant customers declare bankruptcy, be declared insolvent, or otherwise be restricted by state or federal laws or regulation from continuing in some or all of their operations, this could adversely affect our ongoing revenue, the collectability of our accounts receivable, and affect our bad debt reserves and net income.

Because we generally recognize technology and professional services revenue ratably over the term of the contract for our services, a significant downturn in our business may not be reflected immediately in our results of operations, which increases the difficulty of evaluating our future financial performance.

We generally recognize technology and professional services revenue ratably over the term of a contract. As a result, a substantial portion of our revenue is generated from contracts entered into during prior periods. Consequently, a decline in new contracts in any quarter may not affect our results of operations in that quarter but could reduce our revenue in future quarters. Additionally, the timing of renewals or non-renewals of a contract during any quarter may only affect our financial performance in future quarters. For example, the non-renewal of a subscription agreement late in a quarter will have minimal impact on revenue for that quarter but will reduce our revenue in future quarters. Accordingly, the effect of significant declines in sales may not be reflected in our short-term results of operations, which would make these reported results less indicative of our future financial results. By contrast, a non-renewal occurring early in a quarter may have a significant negative impact on revenue for that quarter and we may not be able to offset a decline in revenue due to non-renewal with revenue from new contracts entered into in the same quarter. In addition, we may be unable to quickly adjust our costs in response to reduced revenue.

If we are unable to implement and maintain effective internal controls over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be adversely affected.

As a public company, we are required to maintain internal controls over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act requires that we evaluate and determine the effectiveness of our internal controls over financial reporting. As a public company, we are required to provide an annual management report on the effectiveness of our internal control over financial reporting. Many of the internal controls we have implemented pursuant to the Sarbanes-Oxley Act are process controls with respect to which a material weakness may be found whether or not any error has been identified in our reported financial statements. This may be confusing to investors and result in damage to our reputation, which may harm our business.

Additionally, the proper design and assessment of internal controls over financial reporting are subject to varying interpretations, and, as a result, application in practice may evolve over time as new guidance is provided by regulatory and governing bodies and as common practices evolve. This could result in continuing uncertainty regarding the proper design and assessment of internal controls over financial reporting and higher costs necessitated by ongoing revisions to internal controls. We must continue to monitor and assess our internal control over financial reporting. If in the future we have any material weaknesses, we may not detect errors on a timely basis and our financial statements may be materially misstated. Additionally, if we are unable to comply with the requirements of Section 404 of the Sarbanes-Oxley Act, are unable to assert that our internal controls over financial reporting are effective, identify material weaknesses in our internal controls over financial reporting, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal controls over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports, and the market price of our common stock could be adversely affected, and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, which could require additional financial and management resources.

Future litigation against us could be costly and time consuming to defend and could result in additional liabilities.

We may from time to time be subject to legal proceedings and claims that arise in the ordinary course of business, such as claims brought by our customers in connection with commercial disputes and employment claims made by our current or former employees. Claims may also be asserted by or on behalf of a variety of other parties, including government agencies, patients or vendors of our customers, or stockholders. Any litigation involving us may result in substantial costs, operationally restrict our business, and may divert management's attention and resources, which may seriously harm our business, overall financial condition, and results of operations. Insurance may not cover existing or future claims, be sufficient to fully compensate us for one or more of such claims, or continue to be available on terms acceptable to us. A claim brought against us that is uninsured or underinsured could result in unanticipated costs, thereby reducing our results of operations and resulting in a reduction in the trading price of our stock.

We may acquire other companies or technologies, which could divert our management's attention, result in dilution to our stockholders, and otherwise disrupt our operations and we may have difficulty integrating any such acquisitions successfully or realizing the anticipated benefits therefrom, any of which could have an adverse effect on our business, financial condition, and results of operations.

We may seek to acquire or invest in businesses, applications, and services, or technologies that we believe could complement or expand our Solution, enhance our technical capabilities, or otherwise offer growth opportunities. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various expenses in identifying, investigating, and pursuing suitable acquisitions, whether or not they are consummated. We have in the past and may in the future have difficulty integrating acquired businesses. For example, during 2020 we acquired Able Health, Healthfinch, and Vitalware, during 2021 we acquired Twistle, and during 2022 we acquired KPI Ninja and ARMUS. We are in the process of integrating KPI Ninja and ARMUS with our other services. We may have difficulty cross-selling our Solution to acquired customers, and we may have difficulty integrating, or incur integration-related costs associated with, newly acquired team members.

We have limited experience in acquiring other businesses. If we acquire additional businesses, we may not be able to integrate the acquired personnel, operations, and technologies successfully, or effectively manage the combined business following the acquisition. We also may not achieve the anticipated benefits from the acquired business due to a number of factors, including, but not limited to:

- inability to integrate or benefit from acquired technologies or services in a profitable manner;
- unanticipated costs or liabilities associated with the acquisition;
- difficulty integrating the accounting systems, operations, and personnel of the acquired business;

- difficulties and additional expenses associated with supporting legacy products and hosting infrastructure of the acquired business;
- difficulty converting the customers of the acquired business onto our platform and contract terms, including disparities in the revenue, licensing, support, or professional services model of the acquired business;
- diversion of management's attention from other business concerns;
- adverse effects on our existing business relationships with business partners and customers as a result of the acquisition;
- the potential loss of key employees;
- use of resources that are needed in other parts of our business; and
- use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least annually. In the future, if our acquisitions do not yield expected returns, we may be required to take charges to our results of operations based on this impairment assessment process, which could adversely affect our results of operations. Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our results of operations. In addition, if an acquired business fails to meet our expectations, our business, financial condition, and results of operations may suffer.

Also, the anticipated benefit of any acquisition may not materialize or may be prohibited by contractual obligations we may enter into in the future with lenders or other third parties. Additionally, future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, or amortization expenses or write-offs of goodwill, any of which could harm our financial condition. We cannot predict the number, timing or size of future acquisitions, or the effect that any such transactions might have on our results of operations.

Because competition for our target employees is intense, we may not be able to attract and retain the highly skilled employees we need to support our continued growth.

To continue to execute on our growth plan, we must attract and retain highly qualified personnel. Competition for such personnel is intense, especially for senior sales executives and software engineers with high levels of experience in designing and developing applications and consulting and analytics services. We may not be successful in attracting and retaining qualified personnel. We have from time to time in the past experienced, and we expect to continue to experience in the future, difficulty in hiring and retaining highly skilled employees with appropriate qualifications. In addition, our search for replacements for departed employees may cause uncertainty regarding the future of our business, impact employee hiring and retention, and adversely impact our revenue, results of operations, and financial condition. Many of the companies with which we compete for experienced personnel have greater resources than we have. In addition, in making employment decisions, particularly in the Internet and high-technology industries, job candidates often consider the value of the equity awards they may receive in connection with their employment. Volatility in the price of our stock or failure to obtain stockholder approval for increases in the number of shares available for grant under our equity plans may, therefore, adversely affect our ability to attract or retain key employees. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be severely harmed.

We depend on our senior management team, and the loss of one or more of our executive officers or key employees or an inability to attract and retain highly skilled employees could adversely affect our business.

Our success depends largely upon the continued services of our key executive officers and recruitment of additional highly skilled employees. From time to time, there may be changes in our senior management team resulting from the hiring or departure of executives, which could disrupt our business. Several of our senior leaders are active members of the Church of Jesus Christ of Latter-Day Saints. There is a risk that in the future, one or more of these individuals could receive a call to serve in a full-time capacity for the church, which has already occurred with one of the two co-founders of our company, Steven Barlow. In connection with this call to serve, Mr. Barlow took a leave-of-absence from his company responsibilities in March 2017 and returned from his leave of absence in August 2020. Hiring executives with needed skills or the replacement of one or more of our executive officers or other key employees would likely involve significant time and costs and may significantly delay or prevent the achievement of our business objectives.

In addition, competition for qualified management in our industry is intense. Many of the companies with which we compete for management personnel have greater financial and other resources than we do. We have not entered into term-based employment agreements with our executive officers. All of our employees are “at-will” employees, and their employment can be terminated by us or them at any time, for any reason. The departure of key personnel could adversely affect the conduct of our business. In such event, we would be required to hire other personnel to manage and operate our business, and there can be no assurance that we would be able to employ a suitable replacement for the departing individual, or that a replacement could be hired on terms that are favorable to us. In addition, volatility or lack of performance in our stock price may affect our ability to attract replacements should key personnel depart. If we are not able to retain any of our key management personnel, our business could be harmed.

Our corporate culture has contributed to our success, and if we cannot maintain this culture as we grow, we could lose the innovation, creativity, and teamwork fostered by our culture, which could harm our business.

We believe that our corporate culture has been an important contributor to our success, which we believe fosters innovation, teamwork, and passion for providing high levels of customer satisfaction. Most of our employees have been with us for fewer than three years as a result of our rapid growth. As we continue to grow, we must effectively integrate, develop, and motivate a growing number of new employees. As a result, we may find it difficult to maintain our corporate culture, which could limit our ability to innovate and operate effectively. Any failure to preserve our culture could also negatively affect our ability to retain and recruit personnel, maintain our performance, or execute on our business strategy.

If we fail to effectively manage our growth and organizational change, our business and results of operations could be harmed.

We have experienced, and may continue to experience, rapid growth and organizational change, which has placed, and may continue to place, significant demands on our management, operational, and financial resources. In addition, if we fail to successfully integrate new team members, it could harm our culture. We must continue to maintain, and may need to enhance, our information technology infrastructure and financial and accounting systems and controls, as well as manage expanded operations in geographically distributed locations, which will place additional demands on our resources and operations. We also must attract, train, and retain a significant number of qualified sales and marketing personnel, professional services personnel, software engineers, technical personnel, service offering personnel, and management personnel. This will require us to invest in and commit significant financial, operational, and management resources to grow and change in these areas without undermining the corporate culture that has been critical to our growth so far. If we do not achieve the benefits anticipated from these investments, or if the realization of these benefits is delayed, our results of operations may be adversely affected. If we fail to provide effective customer training on our Solution and high-quality customer support, our business and reputation could suffer.

Failure to manage our growth effectively could lead us to over-invest or under-invest in technology and operations; result in weaknesses in our infrastructure, systems, or controls; give rise to operational mistakes, losses, or loss of productivity or business opportunities; reduce customer or user satisfaction; limit our ability to respond to competitive pressures; and result in loss of team members and reduced productivity of remaining team members. Our growth could require significant capital expenditures and may divert financial resources and management attention from other projects, such as the development of new or enhanced services or the acquisition of suitable businesses or technologies. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our revenue could decline or may grow more slowly than expected, and we may be unable to implement our business strategy.

We may not grow at the rates we historically have achieved or at all, even if our key metrics may indicate growth.

We have experienced significant growth in the last five years. Future revenue may not grow at these same rates or may decline. Our future growth will depend, in part, on our ability to grow our revenue from existing customers, to complete sales to potential future customers, to expand our customer and member bases, to develop new solutions, and to expand internationally. We can provide no assurances that we will be successful in executing on these growth strategies or that we will continue to grow our revenue or to generate net income. Our historical results may not be indicative of future performance. Our ability to execute on our existing sales pipeline, create additional sales pipelines, and expand our customer base depends on, among other things, the attractiveness of our Solution relative to those offered by our competitors, our ability to demonstrate the value of our existing and future services, and our ability to attract and retain a sufficient number of qualified sales and marketing leadership and support personnel. In addition, our existing customers may be slower to adopt our Solution than we currently anticipate, which could adversely affect our results of operations and growth prospects.

Our estimates of market opportunity and forecasts of market growth may prove to be inaccurate, and even if the markets in which we compete achieve the forecasted growth, our business may not grow at similar rates, or at all.

Our market opportunity estimates and growth forecasts are subject to significant uncertainty and are based on assumptions and estimates which may not prove to be accurate. The estimates and forecasts relating to the size and expected growth of our target market may prove to be inaccurate. Even if the markets in which we compete meet the size estimates and growth forecasts, our business may not grow at similar rates, or at all. Our growth is subject to many factors, including our success in implementing our business strategy, which is subject to many risks and uncertainties.

Risks Related to Data and Intellectual Property

Our Solution is dependent on our ability to source data from third parties, and such third parties could take steps to block our access to data, which could impair our ability to provide our Solution or limit the effectiveness of our Solution.

Our data platform requires us to source data from multiple clinical, financial, and operational data sources, which sources are also typically third-party vendors of our customers. The functioning of our analytics applications and our ability to perform analytics services is predicated on our ability to establish interfaces that download the relevant data from these source systems on a repeated basis and in a reliable manner. We may encounter vendors that engage in information blocking practices that may inhibit our ability to access the relevant data on behalf of customers. ONC and CMS recently promulgated final rules to support access, exchange, and use of electronic health information (EHI), referred to as the Final Rule. The Final Rule is intended to clarify provisions of the 21st Century Cures Act regarding interoperability and information blocking, and, subject to the interpretations of the Final Rule, and exceptions to what constitutes information blocking, may create significant new requirements for healthcare industry participants. The Final Rule requires certain electronic health record technology to incorporate standardized application programming interfaces (APIs) to allow individuals to securely and easily access structured EHI using smartphone applications, provides patients with certain rights to electronic access to their EHI (structured and/or unstructured) at no cost and implements the information blocking provisions of the 21st Century Cures Act, subject to eight exceptions that will not be considered information blocking as long as specific conditions are met. The impact of the Final Rule on our business is unclear at this time, due to, among other things, uncertainty regarding the interpretation of safe harbors and exceptions to the Final Rule by industry participants and regulators.

The Final Rule focuses on health plans, payors, and healthcare providers and proposes measures to enable patients to move from health plan to health plan, provider to provider, and have both their clinical and administrative information travel with them. It is unclear whether the Final Rule may benefit us in that certain EHR vendors will no longer be permitted to interfere with our attempts at integration, but the rules may also make it easier for other similar companies to enter the market, creating increased competition, and reducing our market share. It is unclear at this time what the costs of compliance with the proposed rules, if adopted, would be, and what additional risks there may be to our business. If we face limitations on the development of data interfaces and other information blocking practices, our data access and ability to download relevant data may be limited, which could adversely affect our ability to provide our Solution as effectively as possible. Any steps we take to enforce the anti-information blocking provisions of the 21st Century Cures Act could be costly, could distract management attention from the business, and could have uncertain results.

Failure by our customers to obtain proper permissions and waivers may result in claims against us or may limit or prevent our use of data, which could harm our business.

We require our customers to provide necessary notices and to obtain necessary permissions and waivers for use and disclosure of the information that we receive, and we require contractual assurances from them that they have done so and will do so. If they do not obtain necessary permissions and waivers, then our use and disclosure of information that we receive from them or on their behalf may be restricted or prohibited by state, federal or international privacy or data protection laws, or other related privacy and data protection laws. This could impair our functions, processes, and databases that reflect, contain, or are based upon such data and may prevent the use of such data, including our ability to provide such data to third parties that are incorporated into our service offerings. Furthermore, this may cause us to breach obligations to third parties to whom we may provide such data, such as third-party service or technology providers that are incorporated into our service offerings. In addition, this could interfere with or prevent data sourcing, data analyses, or limit other data-driven activities that benefit us. Moreover, we may be subject to claims, civil and/or criminal liability or government or state attorneys general investigations for use or disclosure of information by reason of lack of valid notice, permission, or waiver. These claims, liabilities or government or state attorneys general investigations could subject us to unexpected costs and adversely affect our financial condition and results of operations.

If our security measures are breached or unauthorized access to customer data is otherwise obtained, our Solution may be perceived as not being secure, customers may reduce the use of or stop using our Solution, and we may incur significant liabilities.

Our Solution involves the storage and transmission of our customers' proprietary information, including personal or identifying information regarding patients and their protected health information (PHI). Despite the implementation of security measures, our internal computer systems and those of our customers, contractors, consultants and collaborators are vulnerable to damage from cyberattacks, "phishing" attacks, computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Attacks upon information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise.

As a result of the COVID-19 pandemic, we may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Further, due to the political uncertainty involving Russia and Ukraine, there is also an increased likelihood that the tensions could result in cyber-attacks or cybersecurity incidents that could either directly or indirectly impact our operations. Because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. We may also experience security breaches that may remain undetected for an extended period. Moreover, the detection, prevention, and remediation of known or unknown security vulnerabilities, including those arising from third-party hardware or software, may result in additional direct or indirect costs and management time. As a result, unauthorized access or security breaches as a result of third-party action, employee error, malfeasance, or otherwise could result in the loss or inappropriate use of information, litigation, indemnity obligations, damage to our reputation, and other liability such as government or state Attorney General investigations.

Any or all of these issues could adversely affect our ability to attract new customers, cause existing customers to elect to not renew their subscriptions, result in reputational damage, or subject us to third-party lawsuits, regulatory fines, mandatory disclosures, or other action or liability, which could adversely affect our results of operations. Our general liability insurance may not be adequate to cover all potential claims to which we are exposed and may not be adequate to indemnify us for liability that may be imposed or the losses associated with such events, and in any case, such insurance may not cover all of the specific costs, expenses, and losses we could incur in responding to and remediating a security breach. A security breach of another significant provider of cloud-based solutions may also negatively impact the demand for our Solution.

We rely on third-party providers, including Microsoft Azure, for computing infrastructure, network connectivity, and other technology-related services needed to deliver our Solution. Any disruption in the services provided by such third-party providers could adversely affect our business and subject us to liability.

Our DOS platform and analytics applications are hosted from and use computing infrastructure provided by third parties, including Microsoft Azure and other computing infrastructure service providers. We have migrated and expect to continue to migrate a significant portion of our computing infrastructure needs to Microsoft Azure. We have made and expect to continue to make substantial investments in transitioning customers from our own managed data center to Microsoft Azure. We anticipate that this transition will increase the cost of hosting our technology and negatively impact our technology gross margin. We currently expect our planned transitions to be substantially complete by the end of 2022. Such migrations are risky and may cause disruptions to our Solution, service outages, downtime, or other problems and may increase our costs. Despite precautions taken during such transitions, any unsuccessful transition of technology may impair customers' use of our technology which may cause greater costs or downtime and which may lead to, among other things, customer dissatisfaction and non-renewals.

Our computing infrastructure service providers have no obligation to renew their agreements with us on commercially reasonable terms or at all. If we are unable to renew these agreements on commercially reasonable terms, or if one of our computing infrastructure service providers is acquired, we may be required to transition to a new provider and we may incur significant costs and possible service interruption in connection with doing so.

Problems faced by our computing infrastructure service providers, including those operated by Microsoft, could adversely affect the experience of our customers. Microsoft Azure and other infrastructure vendors have had and may in the future experience significant service outages.

Additionally, if our computing infrastructure service providers are unable to keep up with our growing needs for capacity, this could have an adverse effect on our business. For example, a rapid expansion of our business could affect our service levels or cause our third-party hosted systems to fail. Our agreements with third-party computing infrastructure service providers may not entitle us to service level credits that correspond with those we offer to our customers.

Any changes in third-party service levels at our computing infrastructure service providers, or any related disruptions or performance problems with our Solution, could adversely affect our reputation and may damage our customers' stored files, result in lengthy interruptions in our services, or result in potential losses of customer data. Interruptions in our services might reduce our revenue, cause us to issue refunds to customers for prepaid and unused subscriptions, subject us to service level credit claims and potential liability, allow our customers to terminate their contracts with us, or adversely affect our renewal rates.

We rely on Internet infrastructure, bandwidth providers, data center providers, other third parties, and our own systems for providing services to our users, and any failure or interruption in the services provided by these third parties or our own systems could expose us to litigation, potentially require us to issue credits to our customers, and negatively impact our relationships with users or customers, adversely affecting our brand and our business.

In addition to the services we provide from our offices, we serve our customers primarily from third-party data-hosting facilities. These facilities are vulnerable to damage or interruption from earthquakes, floods, fires, power loss, telecommunications failures, and similar events. They are also subject to break-ins, sabotage, intentional acts of vandalism, and similar misconduct. Their systems and servers could also be subject to hacking, spamming, ransomware, computer viruses or other malicious software, denial of service attacks, service disruptions, including the inability to process certain transactions, phishing attacks and unauthorized access attempts, including third parties gaining access to users' accounts using stolen or inferred credentials or other means, and may use such access to prevent use of users' accounts. Despite precautions taken at these facilities, the occurrence of a natural disaster or an act of terrorism, a decision to close the facilities without adequate notice, or other unanticipated problems at two or more of the facilities could result in lengthy interruptions in our services. Even with our disaster recovery arrangements, our services could be interrupted.

Our ability to deliver our Internet- and telecommunications-based services is dependent on the development and maintenance of the infrastructure of the Internet and other telecommunications services by third parties. This includes maintenance of a reliable network backbone with the necessary speed, data capacity, and security for providing reliable Internet access and services and reliable mobile device, telephone, facsimile, and pager systems, all at a predictable and reasonable cost. We have experienced and expect that we will experience interruptions and delays in services and availability from time to time.

We rely on internal systems as well as third-party vendors, including data center, bandwidth, and telecommunications equipment or service providers, to provide our services. We do not maintain redundant systems or facilities for some of these services. In the event of a catastrophic event with respect to one or more of these systems or facilities, we may experience an extended period of system unavailability, which could negatively impact our relationship with users or customers. To operate without interruption, both we and our service providers must guard against:

- damage from fire, power loss, and other natural disasters;
- communications failures;
- software and hardware errors, failures, and crashes;
- security breaches, computer viruses, ransomware, and similar disruptive problems; and
- other potential interruptions.

Any disruption in the network access, telecommunications, or co-location services provided by these third-party providers or any failure of or by these third-party providers or our own systems to handle the current or higher volume of use could significantly harm our business. We exercise limited control over these third-party vendors, which increases our vulnerability to problems with the services they provide. Any errors, failures, interruptions, or delays experienced in connection with these third-party technologies and information services or our own systems could negatively impact our relationships with users and customers, adversely affect our brands and business, and expose us to third-party liabilities. The insurance coverage under our policies may not be adequate to compensate us for all losses that may occur. In addition, we cannot provide assurance that we will continue to be able to obtain adequate insurance coverage at an acceptable cost.

The reliability and performance of the Internet may be harmed by increased usage or by denial-of-service attacks. The Internet has experienced a variety of outages and other delays as a result of damages to portions of its infrastructure, and it could face outages and delays in the future. These outages and delays could reduce the level of Internet usage as well as the availability of the Internet to us for delivery of our Internet-based services. We typically provide service level commitments under our customer contracts. If we fail to meet these contractual commitments, we could be obligated to provide credits or refunds for prepaid amounts related to unused subscription services or face contract terminations, which could adversely affect our results of operations.

Finally, recent changes in law could impact the cost and availability of necessary Internet infrastructure. Increased costs and/or decreased availability would negatively affect our results of operations.

Our Solution utilizes open-source software, and any failure to comply with the terms of one or more of these open-source licenses could adversely affect our business.

We use software modules licensed to us by third-party authors under “open-source” licenses in our Solution. Some open-source licenses contain affirmative obligations or restrictive terms that could adversely impact our business, such as restrictions on commercialization or obligations to make available modified or derivative works of certain open-source code.

If we were to combine our proprietary software with certain open-source software subject to these licenses in a certain manner, we could, under certain open-source licenses, be required to release or otherwise make available the source code to our proprietary software to the public. This would allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of product sales for us.

Although we employ practices designed to manage our compliance with open-source licenses and protect our proprietary source code, we may inadvertently use open-source software in a manner we do not intend and that could expose us to claims for breach of contract and intellectual property infringement. If we are held to have breached the terms of an open-source software license, we could be required to, among other things, seek licenses from third parties to continue offering our products on terms that are not economically feasible, pay damages to third parties, to re-engineer our products, to discontinue the sale of our products if re-engineering cannot be accomplished on a timely basis, or to make generally available, in source code form, a portion of our proprietary code, any of which could adversely affect our business, results of operations, and financial condition. The terms of many open-source licenses have not been interpreted by U.S. courts, and, as a result, there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to commercialize our Solution.

We employ third-party licensed software and software components for use in or with our Solution, and the inability to maintain these licenses or the presence of errors in the software we license could limit the functionality of our Solution and result in increased costs or reduced service levels, which would adversely affect our business.

Our software applications might incorporate or interact with certain third-party software and software components (other than open-source software), such as data visualization software, obtained under licenses from other companies. We pay these third parties a license fee or royalty payment. We anticipate that we will continue to use such third-party software in the future. Although we believe that there are commercially reasonable alternatives to the third-party software we currently make available, this may not always be the case, or it may be difficult or costly to replace. Furthermore, these third parties may increase the price for licensing their software, which could negatively impact our results of operations. Our use of additional or alternative third-party software could require customers to enter into license agreements with third parties. In addition, if the third-party software we make available has errors or otherwise malfunctions, or if the third-party terminates its agreement with us, the functionality of our Solution may be negatively impacted and our business may suffer.

Because we rely on a limited number of customers for a significant portion of our revenue, we depend on the creditworthiness of these customers. Our customers are subject to a number of risks including reductions in payment rates from governmental payors, higher than expected healthcare costs, and lack of predictability of financial results when entering new lines of business. If the financial condition of our customers declines, our credit risk could increase. Should one or more of our significant customers declare bankruptcy, be declared insolvent, or otherwise be restricted by state or federal laws or regulation from continuing in some or all of their operations, this could adversely affect our ongoing revenue, the collectability of our accounts receivable, and affect our bad debt reserves and net income.

Any failure to protect our intellectual property rights could impair our ability to protect our proprietary technology and our brand.

Our success and ability to compete depend in part upon our intellectual property. As of December 31, 2021, we had filed applications for a number of patents, and we have twelve issued U.S. patents, three issued Canadian patents, one issued Great Britain patent, and one issued European patent, as well as two patent applications pending in the United States and one patent application pending in Canada. We also had thirty registered trademarks in the United States, Singapore, United Arab Emirates, and China. We also rely on copyright and trademark laws, trade secret protection, and confidentiality or license agreements with our employees, customers, partners, and others to protect our intellectual property rights. However, the steps we take to protect our intellectual property rights may be inadequate.

For example, other parties, including our competitors, may independently develop similar technology, duplicate our services, or design around our intellectual property and, in such cases, we may not be able to assert our intellectual property rights against such parties. Further, our contractual arrangements may not effectively prevent disclosure of our confidential information or provide an adequate remedy in the event of unauthorized disclosure of our confidential information, and we may be unable to detect the unauthorized use of, or take appropriate steps to enforce, our intellectual property rights.

We make business decisions about when to seek patent protection for a particular technology and when to rely upon trade secret protection, and the approach we select may ultimately prove to be inadequate. Even in cases where we seek patent protection, there is no assurance that the resulting patents will effectively protect every significant feature of our Solution, technology, or proprietary information, or provide us with any competitive advantages. Moreover, we cannot guarantee that any of our pending patent applications will issue or be approved. The United States Patent and Trademark Office and various foreign governmental patent agencies also require compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process and after a patent has issued. There are situations in which noncompliance can result in abandonment or lapse of the patent, or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If this occurs, our competitors might be able to enter the market, which would have a material adverse effect on our business. Effective trademark, copyright, patent, and trade secret protection may not be available in every country in which we conduct business. Further, intellectual property law, including statutory and case law, particularly in the United States, is constantly developing, and any changes in the law could make it harder for us to enforce our rights.

In order to protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation brought to protect and enforce our intellectual property rights could be costly, time consuming, and distracting to management and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims, and countersuits attacking the validity and enforceability of our intellectual property rights.

An adverse determination of any litigation proceedings could put our intellectual property at risk of being invalidated or interpreted narrowly and could put our related pending patent applications at risk of not issuing. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential or sensitive information could be compromised by disclosure in the event of litigation. In addition, during the course of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Negative publicity related to a decision by us to initiate such enforcement actions against a customer or former customer, regardless of its accuracy, may adversely impact our other customer relationships or prospective customer relationships, harm our brand and business, and could cause the market price of our common stock to decline. Our failure to secure, protect, and enforce our intellectual property rights could adversely affect our brand and our business.

We may be sued by third parties for alleged infringement of their proprietary rights or misappropriation of intellectual property.

There is considerable patent and other intellectual property development activity in our industry. Our future success depends in part on not infringing upon the intellectual property rights of others. Our competitors, as well as a number of other entities and individuals, including so-called non-practicing entities (NPEs), may own or claim to own intellectual property relating to our Solution. From time to time, third parties may claim that we are infringing upon their intellectual property rights or that we have misappropriated their intellectual property. For example, in some cases, very broad patents are granted that may be interpreted as covering a wide field of healthcare data storage and analytics solutions or machine learning and predictive modeling methods in healthcare. As competition in our market grows, the possibility of patent infringement, trademark infringement, and other intellectual property claims against us increases.

In the future, we expect others to claim that our Solution and underlying technology infringe or violate their intellectual property rights. In a patent infringement claim against us, we may assert, as a defense, that we do not infringe the relevant patent claims, that the patent is invalid or both. The strength of our defenses will depend on the patents asserted, the interpretation of these patents, and our ability to invalidate the asserted patents. However, we could be unsuccessful in advancing non-infringement and/or invalidity arguments in our defense. In the United States, issued patents enjoy a presumption of validity, and the party challenging the validity of a patent claim must present clear and convincing evidence of invalidity, which is a high burden of proof. Conversely, the patent owner need only prove infringement by a preponderance of the evidence, which is a lower burden of proof.

We may be unaware of the intellectual property rights that others may claim cover some or all of our technology or services. Because patent applications can take years to issue and are often afforded confidentiality for some period of time there may currently be pending applications, unknown to us, that later result in issued patents that could cover one or more aspects of our technology and services. Any claims or litigation could cause us to incur significant expenses and, whether or not successfully asserted against us, could require that we pay substantial damages, ongoing royalty or license payments, or settlement fees, prevent us from offering our Solution or using certain technologies, require us to re-engineer all or a portion of our platform, or require that we comply with other unfavorable terms. We may also be obligated to indemnify our customers or business partners or pay substantial settlement costs, including royalty payments, in connection with any such claim or litigation and to obtain licenses, modify applications, or refund fees, which could be costly. Even if we were to prevail in such a dispute, any litigation regarding our intellectual property could be costly and time consuming and divert the attention of our management and key personnel from our business operations.

Risks Related to Governmental Regulation

Risks Related to Healthcare and Data Privacy and Security Regulation

Actual or perceived failures to comply with applicable data protection, privacy and security laws, regulations, standards and other requirements could adversely affect our business, results of operations, and financial condition.

- *Health information privacy and security laws*. There are numerous federal and state laws and regulations that govern the privacy and security of health information. In particular, HIPAA imposes, among other things, certain standards relating to the privacy, security, transmission and breach reporting of protected health information (PHI). By processing and maintaining PHI on behalf of our covered entity customers, we are a HIPAA business associate and are required to enter into BAAs with our covered entity clients to safeguard PHI, as well as BAAs with our subcontractors that access or otherwise process PHI on our behalf.

  We may not be able to adequately address the business risks created by HIPAA implementation. Furthermore, we are unable to predict what changes to HIPAA or other laws or regulations might be made in the future or how those changes could affect our business or the costs of compliance. We are unable to predict what, if any, impact the changes in such standards will have on our compliance costs or our Solution. Penalties for failure to comply with a requirement of HIPAA vary significantly depending on the nature of violation and could include civil monetary or criminal penalties. HIPAA also authorizes state attorneys general to file suit under HIPAA on behalf of state residents. Courts can award damages, costs and attorneys’ fees related to violations of HIPAA in such cases. While HIPAA does not create a private right of action allowing individuals to sue us in civil court for HIPAA violations, its standards have been used as the basis for a duty of care claim in state civil suits such as those for negligence or recklessness in the misuse or breach of PHI. Certain states have also adopted privacy and security laws and regulations, some of which may be more stringent than HIPAA. Such laws and regulations will be subject to interpretation by various courts and other governmental authorities, thus creating potentially complex compliance issues for us and our future customers and strategic partners.

Some of our analytics applications, for example one of our benchmarking applications, require that we obtain permissions consistent with HIPAA to provide “data aggregation services” and the right to create de-identified information and to use and disclose such de-identified information. We will also require large sets of de-identified information to enable us to continue to develop machine learning algorithms that enhance our Solution. If we are unable to secure these rights in customer BAAs or as a result of any future changes to HIPAA or other applicable laws, we may face limitations on the use of PHI and our ability to use de-identified information that could negatively affect the scope of our Solution as well as impair our ability to provide upgrades and enhancements to our Solution.

We outsource important aspects of the storage and transmission of customer and member information, and thus rely on third parties to manage functions that have material cyber-security risks. We attempt to address these risks by requiring outsourcing subcontractors who handle customer information to sign BAAs contractually requiring those subcontractors to adequately safeguard PHI in a similar manner that applies to us and in some cases by requiring such outsourcing subcontractors to undergo third-party security examinations as well as to protect the confidentiality of other sensitive customer information. In addition, we periodically hire third-party security experts to assess and test our security measures. However, we cannot be assured that these contractual measures and other safeguards will adequately protect us from the risks associated with the storage and transmission of customer proprietary information and PHI.

- *Consumer protection regulation*. Federal and state government bodies and agencies have adopted or are considering adopting laws and regulations regarding the collection, use, and dissemination of data, and the presentation of website or other electronic content, which may require compliance with certain standards for notice, choice, security, and access. California adopted the CCPA, which went into effect on January 1, 2020. The CCPA establishes a new privacy framework for covered businesses by creating an expanded definition of personal information, establishing new data privacy rights for consumers in the state of California, imposing special rules on the collection of consumer data from minors, and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches. Additionally, the CPRA recently passed in California. The CPRA significantly amends the CCPA and will impose additional data protection obligations on companies doing business in California, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. If we fail to comply with any of these privacy laws that apply to us, and are subject to the aforementioned penalties, our business and financial results could be adversely affected.

- *GDPR and foreign data privacy protection laws*. In addition, many foreign governments have established or are in the process of establishing privacy and data security legal frameworks governing the collection, use and disclosure of personal information obtained from their residents. For example, in the European Union (EU), the GDPR went into effect on May 25, 2018. If we or our vendors fail to comply with the applicable EU privacy laws, we could be subject to government enforcement actions and significant penalties against us. GDPR imposes data protection requirements for processing the personal data of individuals within the European Economic Area (EEA) relating to the consent of the individuals to whom the personal data relates, the information provided to the individuals, the documentation we must retain, the security and confidentiality of the personal data, data breach notification and the use of third-party processors in connection with the processing of personal data. GDPR has increased our responsibility and potential liability in relation to personal data that we process, and we may be required to put in place mechanisms to ensure compliance with GDPR.

In addition, the GDPR increases the scrutiny of transfers of personal data from the EEA to the United States and other jurisdictions that the European Commission does not recognize as having "adequate" data protection laws; in July 2020, the Court of Justice of the European Union limited how organizations could lawfully transfer personal data from the EEA to the United States by invalidating the EU-US Privacy Shield and imposing further restrictions on use of the standard contractual clauses, which could increase our costs and our ability to efficiently process personal data from the EEA. Data protection authorities of the different EEA member states may also interpret GDPR differently, and guidance on implementation and compliance practices are often updated or otherwise revised, which adds to the complexity of processing personal data in the EEA. Any failure by us to comply with GDPR could result in proceedings or actions against us by governmental entities or others, which may subject us to significant penalties and negative publicity, require us to change our business practices, and increase our costs and severely disrupt our business. From January 1, 2021, we may be subject to the GDPR and also the UK GDPR, which, together with the amended UK Data Protection Act 2018, retains the GDPR in UK national law. The UK GDPR mirrors the fines under the GDPR, e.g. fines up to the greater of €20 million (£17.5 million) or 4% of global turnover.

The relationship between the United Kingdom and the European Union in relation to certain aspects of data protection law remains unclear, and it is unclear how UK data protection laws and regulations will develop in the medium to longer term, and how data transfers to and from the UK will be regulated in the long term. The European Commission has adopted an adequacy decision in favor of the United Kingdom, enabling data transfers from EU member states to the United Kingdom without additional safeguards. However, the UK adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews or extends that decision.

- *Canadian data privacy protection laws*. Similarly, Canada's Personal Information Protection and Electronic Documents Act provides Canadian residents with privacy protections in regard to transactions with businesses and organizations in the private sector and sets out ground rules for how private-sector organizations may collect, use, and disclose personal information in the course of commercial activities. Foreign governments may attempt to apply such laws extraterritorially or through treaties or other arrangements with U.S. governmental entities. Other jurisdictions besides the EU and Canada are similarly introducing or enhancing laws and regulations relating to privacy and data security, which enhances risks relating to compliance with such laws. Furthermore, as we enter into business arrangements in countries outside of the United States, we will need to be prepared to comply with applicable local privacy laws. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of personal data, such as health-related data or other sensitive information, could greatly increase our cost of providing our products and services or even prevent us from offering certain services in jurisdictions that we operate.

We cannot be certain that the privacy policies and other statements regarding our practices will be found sufficient to protect us from liability or adverse publicity relating to the privacy and security of personal information. There is ongoing concern from privacy advocates, regulators, and others regarding data protection and privacy issues, and the number of jurisdictions with data protection and privacy laws has been increasing. Also, there are ongoing public policy discussions regarding whether the standards for de-identified, anonymous, or pseudonymized health information are sufficient, and the risk of re-identification sufficiently small, to adequately protect patient privacy. We expect that there will continue to be new proposed laws, regulations, and industry standards concerning privacy, data protection, and information security in the United States, including the CCPA and CPRA, and we cannot yet determine the impact such laws, regulations, and standards may have on our business. Future laws, regulations, standards, and other obligations, and changes in the interpretation of existing laws, regulations, standards, and other obligations could impair our or our customers' ability to collect, use, or disclose information relating to consumers, which could decrease demand for our Solutions, increase our costs, and impair our ability to maintain and grow our customer base and increase our revenue.

Any failure or perceived failure by us to comply with international, federal or state laws or regulations, industry standards, or other legal obligations, or any actual or suspected security incident, whether or not resulting in unauthorized access to, or acquisition, release, or transfer of personally identifiable information or other data, may result in governmental enforcement actions and prosecutions, private litigation, fines, and penalties or adverse publicity and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business. We may be unable to make such changes and modifications in a commercially reasonable manner or at all, and our ability to develop new products and features could be limited. Any of these developments could harm our business, financial condition, and results of operations. Privacy and data security concerns, whether valid or not valid, may inhibit market adoption of our platform.

Government regulation of healthcare creates risks and challenges with respect to our compliance efforts and our business strategies.

Many healthcare laws are complex, and their application to specific services and relationships may not be clear. In particular, many existing healthcare laws and regulations, when enacted, did not anticipate the data analytics and improvement services that we provide, and these laws and regulations may be applied to our Solution in ways that we do not anticipate, particularly as we develop and release new and more sophisticated solutions. Our failure to accurately anticipate the application of these laws and regulations, or our other failure to comply with them, could create significant liability for us, result in adverse publicity, and negatively affect our business. Some of the risks we face or may face from healthcare regulation are described below.

The federal Anti-Kickback Statute prohibits, among other things, the offering, paying, soliciting, or receiving anything of value, directly or indirectly, for the referral of patients covered by Medicare, Medicaid, and other federal healthcare programs or the leasing, purchasing, ordering, or arranging for or recommending the lease, purchase, or order of any item, good, facility, or service covered by these programs. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Some enforcement activities focus on below or above market payments for federally reimbursable healthcare items or services as evidence of the intent to provide a kickback. Many states also have similar anti-kickback laws that are not necessarily limited to items or services for which payment is made by a federal healthcare program. Moreover, both federal and state laws prohibit bribery and similar behavior.

We do not believe we directly order or provide healthcare services that are reimbursable by Medicare, Medicaid or other third-party payors or submit claims or receive reimbursement from any such payor. However, nonetheless, in addition to direct enforcement action against us, if our advisory services or Solutions offered to customers are associated with action by customers that is determined or alleged to be in violation of these laws and regulations, it is possible that an enforcement agency would also try to hold us liable. There are also numerous federal and state laws that prohibit the submission of false information, or the failure to disclose information, in connection with submission and payment of claims for health care items and services by health care providers. For example, the federal civil False Claims Act prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, or knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim. The government has prosecuted RCM service providers for causing the submission of false or fraudulent claims in violation of the False Claims Act. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act.

HIPAA also created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud or to obtain, by means of false or fraudulent pretenses, representations or promises, any money or property owned by, or under the control or custody of, any healthcare benefit program, including private third-party payors, and knowingly and willfully falsifying, concealing or covering up by trick, scheme or device, a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

Any determination by a court or regulatory agency that we or any of our customers, vendors or partners have violated these laws could subject us to significant civil or criminal penalties, invalidate all or portions of some of our customer contracts, require us to change or terminate some portions of our business, require us to refund portions of our services fees, subject us to additional reporting requirements and oversight under a corporate integrity agreement or similar agreement to resolve allegations of noncompliance with these laws, cause us to be disqualified from serving customers doing business with government payors, and have an adverse effect on our business. Our customers' failure to comply with these laws and regulations in connection with our services could result in substantial liability (including, but not limited to, criminal liability), adversely affect demand for our Solution, and force us to expend significant capital, research and development, and other resources to address the failure. Even an unsuccessful challenge by regulatory authorities of our activities could result in adverse publicity and could require a costly response from us.

If our arrangements with physicians and other health care professionals are found to constitute the improper rendering of professional medical services or fee splitting under applicable state laws, our business, financial condition and our ability to operate in those states could be adversely impacted.

We employ and contract with physicians and other licensed health care professionals who assist our customers with the customers' care coordination, care management, population health management, and patient safety activities. Although we do not intend to provide medical care, treatment, or advice, our relationships with such health care professionals may implicate certain state laws in the United States in which we operate that generally prohibit non-professional entities from providing licensed medical services, exercising control over licensed physicians or other licensed health care professionals or engaging in certain practices such as fee-splitting with such licensed professionals. There can be no assurance that these laws will be interpreted in a manner consistent with our practices or that other laws or regulations will not be enacted in the future that could have a material and adverse effect on our business, financial condition and results of operations. Regulatory authorities, state boards of medicine, state attorneys general and other parties may assert that we are engaged in the provision of professional medical services, and/or that our arrangements with our affiliated physicians and other licensed health care professionals constitute unlawful fee-splitting. If a jurisdiction's prohibition on the corporate practice of medicine or fee-splitting is interpreted in a manner that is inconsistent with our practices, we may be required to restructure or terminate some portions of our business, require us to refund portions of our services fees, and have an adverse effect on our business. Even an unsuccessful challenge by regulatory authorities of our activities could result in adverse publicity and could require a costly response from us.

The FDA may modify its enforcement policies with respect to medical software products, and our products may become subject to extensive regulatory requirements, which may increase the cost of conducting, or otherwise harm, our business.

The FDA may regulate medical or health-related software, including machine learning functionality and predictive algorithms, if such software falls within the definition of a "medical device" under the Federal Food, Drug, and Cosmetic Act (FDCA). Medical devices are subject to extensive and rigorous regulation by the FDA and by other federal, state and local authorities. The FDCA and related regulations govern the conditions of safety, efficacy, clearance, approval, manufacturing, quality system requirements, labeling, packaging, distribution, storage, recordkeeping, reporting, marketing, advertising, and promotion of medical devices. However, historically, the FDA has exercised enforcement discretion for certain low-risk software functions, and has issued several guidance documents outlining its approach to the regulation of software as a medical device. In addition, the 21st Century Cures Act amended the FDCA to exclude from the definition of "medical device" certain medical-related software, including software used for administrative support functions at a healthcare facility, software intended for maintaining or encouraging a healthy lifestyle, software designed to store electronic health records, software for transferring, storing, or displaying medical device data or in vitro diagnostic data, and certain clinical decision support software. Accordingly, we believe our currently marketed products are not currently regulated by the FDA as medical devices, or that our products are otherwise subject to FDA's current enforcement discretion policies applicable to software products. However, there is a risk that the FDA could disagree with our determination, or that the FDA could alter its enforcement discretion policies, and in each case, subject our software to more stringent medical device regulations.

If the FDA determines that any of our current or future analytics applications are regulated as medical devices and not otherwise subject to enforcement discretion, we would become subject to various requirements under the FDCA and the FDA's implementing regulations. If this occurs, we may be required to cease marketing or to recall our product until we obtain the requisite clearances or approvals, which would entail significant cost and could harm our business.

Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA, or comparable state or foreign regulatory authorities, including: untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties, recalls, termination of distribution, administrative detentions, seizure of our products, operating restrictions, partial suspension or total shutdown of production, delays in or refusal to grant clearances or approvals, prohibitions on sales of our products, and criminal prosecution. Any of these sanctions could result in higher than anticipated costs or lower than anticipated sales and have a material adverse effect on our reputation, business, financial condition and results of operations

The healthcare regulatory and political framework is uncertain and evolving.

Existing and new laws and regulations affecting the healthcare industry, or changes to existing laws and regulations could create unexpected liabilities for us, cause us to incur additional costs, and/or restrict our operations. Reforming the healthcare industry has been a priority for U.S. politicians, and key members of the legislative and executive branches have proposed a wide variety of potential changes and policy goals. Certain changes to laws impacting our industry, or perceived intentions to do so, could affect our business and results of operations. By way of example, in March 2010, the Affordable Care Act (ACA) was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers and has significantly impacted our industry and, to some degree, our business. Since its enactment, there have been judicial, executive and Congressional challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. We anticipate that new cost containment measures or other healthcare reforms will continue to be implemented at both the federal and state level, any of which could harm our business, financial condition and results of operations.

Due to the particular nature of certain services we provide or the manner in which we provide them, we may be subject to additional government regulation and foreign government regulation.

While our Solution is primarily subject to government regulations pertaining to healthcare, certain aspects of our Solution may require us to comply with regulatory schema from other areas. Examples of such regulatory schema include:

- *Antitrust laws*. Our national cloud-based network allows us access to cost and pricing data for a large number of providers in most regional markets, as well as to the contracted rates for third-party payors. To the extent that our Solution enables providers to compare their cost and pricing data with those of their competitors, those providers could collude to increase the pricing for their services, to reduce the compensation they pay their employees, or to collectively negotiate agreements with third parties. Similarly, if payors are able to compare their contracted rates of payment to providers, those payors may seek to reduce the amounts they might otherwise pay. Such actions may be deemed to be anti-competitive and a violation of federal antitrust laws. To the extent that we are deemed to have enabled such activities, we could be subject to fines and penalties imposed by the U.S. Department of Justice or the FTC and be required to curtail or terminate the services that permitted such collusion.

- *Foreign Corrupt Practices Act (FCPA) and foreign anti-bribery laws*. The FCPA makes it illegal for U.S. persons, including U.S. companies, and their subsidiaries, directors, officers, employees, and agents, to promise, authorize or make any corrupt payment, or otherwise provide anything of value, directly or indirectly, to any foreign official, any foreign political party or party official, or candidate for foreign political office to obtain or retain business.

Violations of the FCPA can also result in violations of other U.S. laws, including anti-money laundering, mail and wire fraud, and conspiracy laws. There are severe penalties for violating the FCPA. In addition, the Company may also be subject to other non-U.S. anti-corruption or anti-bribery laws, such as the U.K. Bribery Act 2010. If our employees, contractors, vendors, or partners fail to comply with the FCPA and/or foreign anti-bribery laws, we may be subject to penalties or sanctions, and our ability to develop new prospects and retain existing customers could be adversely affected.

- *Economic sanctions and export controls*. Economic and trade sanctions programs that are administered by the U.S. Treasury Department's Office of Foreign Assets Control prohibit or restrict transactions to or from, and dealings with specified countries and territories, their governments, and in certain circumstances, with individuals and entities that are specially designated nationals of those countries, and other sanctioned persons, including narcotics traffickers and terrorists or terrorist organizations. As federal, state and foreign legislative regulatory scrutiny and enforcement actions in these areas increase, we expect our costs to comply with these requirements will increase as well. Failure to comply with any of these requirements could result in the limitation, suspension or termination of our services, imposition of significant civil and criminal penalties, including fines, and/or the seizure and/or forfeiture of our assets. Further, our Solution incorporates encryption technology. This encryption technology may be exported from the United States only with the required export authorizations, including by a license, a license exception or other appropriate government authorizations. Such solutions may also be subject to certain regulatory reporting requirements. Various countries also regulate the import of certain encryption technology, including through import permitting and licensing requirements, and have enacted laws that could limit our customers' ability to import our Solution into those countries. Governmental regulation of encryption technology and of exports and imports of encryption products, or our failure to obtain required approval for our Solution, when applicable, could harm our international sales and adversely affect our revenue. Compliance with applicable regulatory requirements regarding the provision of our Solution, including with respect to new applications, may delay the introduction of our Solution in various markets or, in some cases, prevent the provision of our Solution to some countries altogether.

- *Regulatory certification*. We must obtain certification from governmental agencies, such as the Agency for Healthcare Research and Quality (AHRQ) to sell certain of our analytics applications and services in the United States. We cannot be certain that our Solution will continue to meet these standards. The failure to comply with these certification requirements could result in the loss of certification, which could restrict our Solution offerings and cause us to lose customers.

Risks Related to Internet Regulation

Our business could be adversely impacted by changes in laws and regulations related to the Internet or changes in access to the Internet generally.

The future success of our business depends upon the continued use of the Internet as a primary medium for communication, business applications, and commerce. Federal or state government bodies or agencies have in the past adopted, and may in the future adopt, laws or regulations affecting the use of the Internet as a commercial medium. Legislators, regulators, or government bodies or agencies may also make legal or regulatory changes or interpret or apply existing laws or regulations that relate to the use of the Internet in new and materially different ways. Changes in these laws, regulations or interpretations could require us to modify our platform in order to comply with these changes, to incur substantial additional costs or divert resources that could otherwise be deployed to grow our business, or expose us to unanticipated civil or criminal liability, among other things.

In addition, government agencies and private organizations have imposed, and may in the future impose, additional taxes, fees or other charges for accessing the Internet or commerce conducted via the Internet. Internet access is frequently provided by companies that have significant market power and could take actions that degrade, disrupt or increase the cost of our customers' use of our platform, which could negatively impact our business.

Net neutrality rules, which were designed to ensure that all online content is treated the same by Internet service providers and other companies that provide broadband services were repealed by the Federal Communications Commission effective June 2018. The repeal of the net neutrality rules could force us to incur greater operating expenses or our customers' use of our platform could be adversely affected, either of which could harm our business and results of operations. These developments could limit the growth of Internet-related commerce or communications generally or result in reductions in the demand for Internet-based platforms and services such as ours, increased costs to us or the disruption of our business. In addition, as the Internet continues to experience growth in the numbers of users, frequency of use and amount of data transmitted, the use of the Internet as a business tool could be adversely affected due to delays in the development or adoption of new standards and protocols to handle increased demands of Internet activity, security, reliability, cost, ease-of-use, accessibility, and quality of service.

The performance of the Internet and its acceptance as a business tool has been adversely affected by "viruses," "worms," and similar malicious programs and the Internet has experienced a variety of outages and other delays as a result of damage to portions of its infrastructure. If the use of the Internet generally, or our platform specifically, is adversely affected by these or other issues, we could be forced to incur substantial costs, demand for our platform could decline, and our results of operations and financial condition could be harmed.

Risks Related to Tax Regulation

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value-added or similar transactional taxes, and we could be subject to liability with respect to past or future sales, which could adversely affect our results of operations.

We do not collect sales and use, value-added, and similar transactional taxes in all jurisdictions in which we have sales, based on our belief that such taxes are not applicable or that we are not required to collect such taxes with respect to the jurisdiction. Sales and use, value-added, and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties, and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties, interest or future requirements, increase in tax rates, or a combination of the foregoing may result in an increase in our sales and similar transactional taxes, increase administrative burdens or costs, or otherwise adversely affect our business, results of operations, or financial condition.

Unanticipated changes in our effective tax rate and additional tax liabilities, including as a result of our international operations or implementation of new tax rules, could harm our future results.

We are subject to income taxes in the United States and are expanding into various foreign jurisdictions that are subject to income tax. Our domestic and international tax liabilities are subject to the allocation of expenses in differing jurisdictions and complex transfer pricing regulations administered by taxing authorities in various jurisdictions. Tax rates in the jurisdictions in which we operate may change as a result of factors outside of our control or relevant taxing authorities may disagree with our determinations as to the income and expenses attributable to specific jurisdictions. In addition, changes in tax and trade laws, treaties or regulations, or their interpretation or enforcement, have become more unpredictable and may become more stringent, which could materially adversely affect our tax position.

Forecasting our estimated annual effective tax rate is complex and subject to uncertainty, and there may be material differences between our forecasted and actual effective tax rate. Our effective tax rate could be adversely affected by changes in the mix of earnings and losses in countries with differing statutory tax rates, certain non-deductible expenses, the valuation of deferred tax assets and liabilities, adjustments to income taxes upon finalization of tax returns, changes in available tax attributes, decision to repatriate non-U.S. earnings for which we have not previously provided for U.S. taxes, and changes in federal, state, or international tax laws and accounting principles. Finally, we may be subject to income tax audits throughout the world. An adverse resolution of one or more uncertain tax positions in any period could have a material impact on our results of operations or financial condition for that period.

Our ability to use our net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2021 and December 31, 2020, we had net operating loss (NOL) carryforwards for federal income tax purposes of approximately $580 million and $419.6 million, respectively, and state income tax purposes of approximately $465.7 million and $334.6 million, respectively, which may be available to offset taxable income in the future, and which expire in various years beginning in 2032 for federal purposes if not utilized. The state NOLs will expire depending upon the various rules in the states in which we operate. A lack of future taxable income would adversely affect our ability to utilize these NOLs before they expire. In general, under Section 382 of the Internal Revenue Code of 1986, as amended (the Code) a corporation that undergoes an “ownership change” (as defined under Section 382 of the Code and applicable Treasury Regulations) is subject to limitations on its ability to utilize its pre-change NOLs to offset its future taxable income.

We may experience a future ownership change under Section 382 of the Code that could affect our ability to utilize the NOLs to offset our income. Furthermore, our ability to utilize NOLs of companies that we have acquired or may acquire in the future may be subject to limitations. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to reduce future income tax liabilities, including for state income tax purposes. Certain provisions of the Tax Act (as defined below), as amended by the CARES Act, also limit the use of NOLs, as discussed further below. For these reasons, we may not be able to utilize a material portion of our NOLs, even if we attain profitability, which could potentially result in increased future tax liability to us and could adversely affect our results of operations and financial condition.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the Tax Act) was signed into law. The Tax Act contains, among other things, significant changes to corporate taxation, including (i) a reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, (ii) a limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses) (increased to 50% by the CARES Act for taxable years beginning in 2019 and 2020), (iii) a limitation of the deduction for NOLs in taxable years beginning after December 31, 2020 to 80% of current year taxable income in respect of NOLs generated during or after 2018 and elimination of net operating loss carrybacks for NOLs arising in tax years ending after December 31, 2020, (iv) a one-time tax on offshore earnings at reduced rates regardless of whether they are repatriated, (v) immediate deductions for certain new investments instead of deductions for depreciation expense over time, and (vi) a modification or repeal of many business deductions and credits. For federal NOLs arising in tax years beginning after December 31, 2017, the Tax Act (as modified by the CARES Act) limits a taxpayer’s ability to utilize federal NOL carryforwards in taxable years beginning after December 31, 2020 to 80% of taxable income. In addition, federal NOLs arising in tax years ending after December 31, 2017 can be carried forward indefinitely, but carryback of federal NOLs arising in tax years ending after December 31, 2020 is generally prohibited. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. We will continue to examine the impact the Tax Act and CARES Act may have on our results of operations and financial condition.

Risks Related to Our Outstanding Convertible Notes

Servicing our Notes may require a significant amount of cash, and we may not have sufficient cash or the ability to raise the funds necessary to settle conversions of the Notes in cash, repay the Notes at maturity, or repurchase the Notes as required.

On April 14, 2020, we issued $230.0 million in aggregate principal amount of 2.50% Convertible Senior Notes due 2025, pursuant to an Indenture dated April 14, 2020, with U.S. Bank National Association, as trustee, in a private offering to qualified institutional buyers. We received net proceeds from the Notes of $222.5 million, after deducting the initial purchasers’ discounts and offering expenses payable by us. The Notes are governed by an indenture (the Indenture) between us, as the issuer, and U.S. Bank National Association, as trustee. The Notes are our senior, unsecured obligations and accrue interest payable semiannually in arrears on April 15 and October 15 of each year, beginning on October 15, 2020, at a rate of 2.50% per year.

The Notes will mature on April 15, 2025, unless earlier converted, redeemed, or repurchased. The Indenture does not contain any financial covenants or restrictions on the payments of dividends, the incurrence of indebtedness, or the issuance or repurchase of securities by us or any of our subsidiaries. A holder may convert all or any portion of its Notes, at its option, subject to certain conditions and during certain periods, into cash, shares of our common stock or a combination of cash and shares of our common stock, with the form of consideration determined at our election. Noteholders will have the right to require us to repurchase all or a portion of their notes at 100% of the principal amount of Notes to be repurchased, plus accrued and unpaid interest to, but excluding, the repurchase date, upon the occurrence of certain events. The conversion rate is initially 32.6797 shares of our common stock per $1,000 principal amount of Notes (which is equivalent to an initial conversion price of approximately $30.60 per share of our common stock). If the Notes have not previously been converted, redeemed or repurchased, we will be required to repay the Notes in cash at maturity.

Our ability to make required cash payments in connection with redemptions or conversions of the Notes, repurchase the Notes upon the occurrence of certain events, or to repay or refinance the Notes at maturity will depend on market conditions and our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. We also may not use the cash proceeds we raised through the issuance of the Notes in an optimally productive and profitable manner. Since inception, our business has generated net losses, and we may continue to incur significant losses. As a result, we may not have enough available cash or be able to obtain financing at the time we are required to repurchase or repay the Notes or pay cash with respect to Notes being converted.

In addition, our ability to repurchase or to pay cash upon conversion or at maturity of the Notes may be limited by law or regulatory authority or by other agreements governing our future indebtedness. Our failure to repurchase Notes upon the occurrence of certain events or to pay cash upon conversion or at maturity of the Notes as required by the Indenture would constitute a default under the Indenture. A default under the Indenture or the occurrence of certain events that allow Noteholders to require repurchase could also lead to a default under agreements governing our future indebtedness and could have a material adverse effect on our business, results of operations, and financial condition. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes or to pay cash upon conversion or at maturity of the Notes.

We are subject to counterparty risk with respect to the Capped Calls.

In connection with the issuance of the Notes, we entered into the Capped Calls with certain option counterparties. We used approximately $21.6 million of the net proceeds from the Note Offering to pay the cost of the Capped Calls and allocated issuance costs. The Capped Calls have initial cap prices of $42.00 per share, subject to certain adjustments. The Capped Calls are expected generally to reduce the potential dilution to our common stock upon any conversion of Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be, with such reduction and/or offset subject to the cap price. The Capped Calls are separate transactions that we entered into with the option counterparties, and are not part of the terms of the Notes. The option counterparties are financial institutions or affiliates of financial institutions, and we will be subject to the risk that one or more of such option counterparties may default under the Capped Calls.

Our exposure to the credit risk of the option counterparties will not be secured by any collateral. If any option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under the Capped Calls. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in our common stock market price and in the volatility of the market price of our common stock. In addition, upon a default by any option counterparty, we may suffer adverse tax consequences and dilution with respect to our common stock. We can provide no assurance as to the financial stability or viability of any option counterparty.

The Capped Calls may affect the value of our common stock.

In connection with the issuance of the Notes, we entered into the Capped Calls with the option counterparties. The Capped Calls are expected generally to reduce the potential dilution to our common stock upon any conversion of the Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be.

From time to time, the option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivative transactions with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the Notes. This activity could cause or avoid an increase or a decrease in the market price of our common stock.

If we raise additional capital through debt financing, the terms of any new debt could further restrict our ability to operate our business.

If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility by subjecting us to customary affirmative and negative covenants, indemnification provisions, and events of default. Further, if we are liquidated, the lender's rights to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. Any declaration by a lender of an event of default could significantly harm our business and prospects and could cause the price of our common shares to decline.

Risks Related to Ownership of Our Common Stock

Risks Related to an Investment in Our Securities

We have a limited operating history in an evolving industry which makes it difficult to evaluate our current business future prospects and increases the risk of your investment.

We launched operations in 2008 and we acquired Able Health, Healthfinch, Vitalware, Twistle, KPI Ninja and ARMUS between February 2020 and April 2022. Our limited operating history, in particular with respect to the businesses we have recently acquired, makes it difficult to effectively assess or forecast our future prospects. You should consider our business and prospects in light of the risks and difficulties we encounter or may encounter. These risks and difficulties include our ability to cost-effectively acquire new customers and retain existing customers, maintain the quality of our technology infrastructure that can efficiently and reliably handle the requirements of our customers and the deployment of new features and solutions and successfully compete with other companies that are currently in, or may enter, the healthcare solution space. Additional risks include our ability to effectively manage growth, achieve synergies, responsibly use the data that customers share with us, process, store, protect, and use personal data in compliance with governmental regulation, contractual obligations, and other legal obligations related to privacy and security and avoid interruptions or disruptions in our service or slower than expected load times for our platform. If we fail to address the risks and difficulties that we face, including those associated with the challenges listed above, our business and our results of operations will be adversely affected.

We have experienced significant net losses since inception, we expect to incur losses in the future, and we may not be able to generate sufficient revenue to achieve and maintain profitability.

We have incurred significant net losses in the past, including net losses of $153.2 million and $115.0 million in the years ended December 31, 2021 and 2020, respectively. We had an accumulated deficit of $878.9 million as of December 31, 2021. We expect our costs will increase over time as we continue to invest to grow our business and build relationships with customers, develop our platform, develop new solutions, and operate as a public company. These efforts may prove to be more expensive than we currently anticipate, and we may not succeed in increasing our revenue sufficiently to offset these higher expenses.

As a result, we may need to raise additional capital through equity and debt financings in order to fund our operations. To date, we have financed our operations principally from the proceeds we received through private sales of equity securities, payments received from sales of our Solution, borrowings under our loan and security agreements, our IPO, the Note Offering, and our Secondary Public Equity Offering. We may also fail to improve the gross margins of our business. If we are unable to effectively manage these risks and difficulties as we encounter them, our business, financial condition, and results of operations would be adversely affected. Our failure to achieve or maintain profitability could negatively impact the value of our common stock.

The market price of our common stock may be volatile and may decline regardless of our operating performance, and you may lose all or part of your investments.

The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- overall performance of the equity markets and/or publicly-listed technology companies;
- actual or anticipated fluctuations in our net revenue or other operating metrics;
- changes in the financial projections we provide to the public or our failure to meet these projections;
- failure of securities analysts to initiate or maintain coverage of us, changes in financial estimates by any securities analysts who follow our company, or our failure to meet the estimates or the expectations of investors;
- the economy as a whole and market conditions in our industry;
- rumors and market speculation involving us or other companies in our industry;
- announcements by us or our competitors of significant innovations, acquisitions, strategic partnerships, joint ventures, or capital commitments;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- lawsuits threatened or filed against us;
- recruitment or departure of key personnel;
- other events or factors, including those resulting from war, incidents of terrorism, or responses to these events; and
- the expiration of contractual lock-up or market standoff agreements.

In addition, extreme price and volume fluctuations in the stock markets have affected and continue to affect many technology companies’ stock prices. Often, their stock prices have fluctuated in ways unrelated or disproportionate to the companies’ operating performance. In the past, stockholders have filed securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business, and harm our business.

Moreover, because of these fluctuations, comparing our results of operations on a period-to-period basis may not be meaningful. You should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period.

If our net revenue or results of operations fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated net revenue or earnings forecasts that we may provide.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, the price of our common stock and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts do not currently, and may never, publish research on our company. If few securities analysts commence coverage of us, or if industry analysts cease coverage of us, the trading price for our common stock could be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us on a regular basis, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

Our management has broad discretion in the use of proceeds from our IPO, the Note Offering, and the Secondary Public Equity Offering and our use may not produce a positive rate of return.

The principal purposes of our IPO were to increase our capitalization and financial flexibility, create a public market for our stock and thereby enable access to the public equity markets by our employees and stockholders, obtain additional capital, and strengthen our position in the healthcare data analytics applications and services market. We used a portion of the Note Offering proceeds to pay the cost of the capped call transactions related thereto and to prepay in full all outstanding indebtedness under our credit agreement with OrbiMed. We cannot specify with certainty our plans for the use of the net proceeds we received from these offerings. However, we intend to use the net proceeds we received from our IPO and the sale of 4,882,075 shares (inclusive of the underwriters' over-allotment option to purchase 636,792 shares) of our common stock at $53.00 per share in August 2021 (our Secondary Public Equity Offering) for working capital and other general corporate purposes. We may also use a portion of the net proceeds from these offerings for the acquisition of, or investment in, technologies, solutions or businesses that complement our business. Our management has broad discretion over the specific use of the net proceeds we received in these offerings and might not be able to obtain a significant return, if any, on investment of these net proceeds. Investors will need to rely upon the judgment of our management with respect to the use of proceeds. If we do not use the net proceeds that we received in our IPO, the Note Offering, and our Secondary Public Equity Offering effectively, our business, results of operations, and financial condition could be harmed.

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

We expect to issue additional capital stock in the future that will result in dilution to all other stockholders. We expect to grant equity awards to employees, directors, and consultants under our stock incentive plans. We may also raise capital through equity financings in the future, including through offerings similar to our Secondary Public Equity Offering during the third quarter of 2021. As part of our business strategy, we may acquire or make investments in complementary companies, products, or technologies and issue equity securities to pay for any such acquisition or investment, such as our issuance of equity securities in connection with our acquisitions. Any such issuances of additional capital stock may cause stockholders to experience significant dilution of their ownership interests and the per-share value of our common stock to decline.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain executive management and qualified board members.

As a public company, we are subject to the reporting requirements of the Exchange Act, the listing standards of Nasdaq and other applicable securities rules and regulations. We expect that the requirements of these rules and regulations will continue to increase our legal, accounting, and financial compliance costs, make some activities more difficult, time consuming, and costly, and place significant strain on our personnel, systems, and resources. For example, the Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and results of operations. As a result of the complexity involved in complying with the rules and regulations applicable to public companies, our management's attention may be diverted from other business concerns, which could harm our business, results of operations, and financial condition.

Although we have already hired additional employees to assist us in complying with these requirements, we may need to hire more employees in the future or engage outside consultants, which will increase our operating expenses. In addition, changing laws, regulations, and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs, and making some activities more time consuming. These laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

We intend to invest substantial resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from business operations to compliance activities. If our efforts to comply with new laws, regulations, and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed. We also expect that being a public company and these new rules and regulations will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

As a result of disclosure of information in filings required of a public company, our business and financial condition is more visible, which may result in an increased risk of threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business and results of operations could be harmed, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and harm our business, results of operations, and financial condition.

The individuals who now constitute our senior management team have limited experience managing a publicly-traded company and limited experience complying with the increasingly complex laws pertaining to public companies. Our senior management team may not successfully or efficiently manage our transition to a public company that is subject to significant regulatory oversight and reporting obligations.

We do not intend to pay dividends on our common stock and, consequently, the ability of common stockholders to achieve a return on investment will depend on appreciation, if any, in the price of our common stock.

You should not rely on an investment in our common stock to provide dividend income. We have never declared or paid any dividends on our capital stock. We intend to retain any earnings to finance the operation and expansion of our business, and we do not anticipate paying any cash dividends in the foreseeable future. In addition, the terms of any future credit facility or financing we obtain may contain, terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. As a result, common stockholders may only receive a return on investment if the market price of our common stock increases.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because technology and healthcare technology companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Risks Related to Our Charter and Bylaws

Provisions in our charter documents and under Delaware law could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current board of directors, and limit the market price of our common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws, include provisions that:

- provide that our board of directors is classified into three classes of directors with staggered three-year terms;
- permit the board of directors to establish the number of directors and fill any vacancies and newly-created directorships;
- require super-majority voting to amend some provisions in our amended and restated certificate of incorporation and amended and restated bylaws;
- authorize the issuance of “blank check” preferred stock that our board of directors could use to implement a stockholder rights plan;
- provide that only a majority of our board of directors will be authorized to call a special meeting of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- provide that the board of directors is expressly authorized to make, alter, or repeal our bylaws; and
- advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon by stockholders at annual stockholder meetings.

Moreover, Section 203 of the Delaware General Corporation Law may discourage, delay, or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations, and other transactions between us and holders of 15% or more of our common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit stockholders’ ability to obtain a favorable judicial forum for disputes with us.

Our amended and restated bylaws include an exclusive forum provision that provides that the Court of Chancery of the State of Delaware will be the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty owed to us or our stockholders by any of our current or former directors, officers or other employees;
- any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; or
- any action that is governed by the internal affairs doctrine and asserts a claim against us or any of our current or former directors, officers or other employees or stockholders.

This exclusive forum provision will not apply to any causes of action arising under the Securities Act. Further, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. Accordingly, both state and federal courts have jurisdiction to entertain such Securities Act claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws provide that, unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause or causes of action arising under the Securities Act; however, a court may not enforce such provision.

This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision which will be contained in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations, and financial condition.

General Risks

Changes in accounting principles may cause previously unanticipated fluctuations in our financial results, and the implementation of such changes may impact our ability to meet our financial reporting obligations.

We prepare our financial statements in accordance with U.S. GAAP which are subject to interpretation or changes by the Financial Accounting Standards Board (FASB), the SEC, and other various bodies formed to promulgate and interpret appropriate accounting principles. New accounting pronouncements and changes in accounting principles have occurred in the past and are expected to occur in the future which may have a significant effect on our financial results. Furthermore, any difficulties in implementation of changes in accounting principles, including the ability to modify our accounting systems, could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us.

Economic uncertainties or downturns in the general economy or the industries in which our customers operate could disproportionately affect the demand for our Solution and negatively impact our results of operations.

General worldwide economic conditions have experienced significant downturns during the last ten or more years, and market volatility and uncertainty remain widespread, making it potentially very difficult for our customers and us to accurately forecast and plan future business activities. During challenging economic times, our customers may have difficulty gaining timely access to sufficient credit or obtaining credit on reasonable terms, increased costs and/or other negative financial impacts, each of which could impair their ability to make timely payments to us and adversely affect our revenue.

If that were to occur, our financial results could be harmed. Further, challenging economic conditions may impair the ability of our customers to pay for the applications and services they already have purchased from us and, as a result, our write-offs of accounts receivable could increase. We cannot predict the timing, strength, or duration of any economic slowdown or recovery. If the condition of the general economy or markets in which we operate worsens, our business could be harmed.

Investors' expectations of our performance relating to environmental, social, and governance factors may impose additional costs and expose us to new risks.

There is an increasing focus from certain investors, employees, and other stakeholders concerning corporate responsibility, specifically related to environmental, social, and governance factors. Some investors may use these factors to guide their investment strategies and, in some cases, may choose not to invest in us if they believe our policies relating to corporate responsibility are inadequate. Third-party providers of corporate responsibility ratings and reports on companies have increased to meet growing investor demand for measurement of corporate responsibility performance.

The criteria by which companies' corporate responsibility practices are assessed may change, which could result in greater expectations of us and cause us to undertake costly initiatives to satisfy such new criteria. If we elect not to or are unable to satisfy such new criteria, investors may conclude that our policies with respect to corporate responsibility are inadequate. We may face reputational damage in the event that our corporate responsibility procedures or standards do not meet the standards set by various constituencies.

Furthermore, if our competitors' corporate responsibility performance is perceived to be greater than ours, potential or current investors may elect to invest with our competitors instead. In addition, in the event that we communicate certain initiatives and goals regarding environmental, social and governance matters, we could fail, or be perceived to fail, in our achievement of such initiatives or goals, or we could be criticized for the scope of such initiatives or goals. If we fail to satisfy the expectations of investors, employees, and other stakeholders, or, if our initiatives are not executed as planned, our reputation and business, operating results, and financial condition could be adversely impacted.

Item 6. Exhibits

Exhibit Number	Description of Document	Incorporated by Reference from Form	Incorporated by Reference from Exhibit Number	Date Filed
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith		
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith		
32.1^	Certifications of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished herewith		
101.SCH	Inline XBRL Taxonomy Extension Schema Document	Filed herewith		
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith		
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	Filed herewith		
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	Filed herewith		
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith		
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101)	Filed herewith		

^ The certifications attached as Exhibit 32.1 accompanying this Quarterly Report on Form 10-Q, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Health Catalyst, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1934, the Registrant has duly caused this Quarterly Report on Form 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

Signature	Title	Date
/s/ Bryan Hunt Bryan Hunt	Chief Financial Officer *(Principal Financial Officer)*	August 4, 2022

Exhibit 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Daniel Burton, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Health Catalyst, 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)) 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: August 4, 2022

/s/ Daniel Burton

Daniel Burton
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Bryan Hunt, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Health Catalyst, 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)) 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: August 4, 2022

/s/ Bryan Hunt

Bryan Hunt
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Daniel Burton, Chief Executive Officer of Health Catalyst, Inc. (the "Company"), and Bryan Hunt, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1 The Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2022, to which this Certification is attached as Exhibit 32.1 (the "Periodic Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

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

Date: August 4, 2022

/s/ Daniel Burton
Daniel Burton
Chief Executive Officer
(Principal Executive Officer)

/s/ Bryan Hunt
Bryan Hunt
Chief Financial Officer
(Principal Financial Officer)