

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

FORM 10-K

(Mark One)

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the fiscal year ended **December 31, 2022**.

or

Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the transition period from to

Q2 Holdings, Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

001-36350
(Commission File Number)

20-2706637
(IRS Employer
Identification No.)

**10355 Pecan Park Boulevard
Austin, Texas 78729
(833) 444-3469**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.0001 par value	QTWO	New York Stock Exchange

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

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

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

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

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

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

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

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

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

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

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

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

Based on the closing price of the registrant's common stock on the last business day of the registrant's most recently completed second fiscal quarter, which was June 30, 2022, the aggregate market value of its shares held by non-affiliates on that date was approximately \$2,207,185,144. Shares of common stock held by each officer and director and by each person who owns 5% or more of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status was based on publicly filed documents and is not necessarily a conclusive determination for other purposes.

There were 57,739,195 shares of the registrant's common stock outstanding as of January 31, 2023.

Part III of this Annual Report on Form 10-K incorporates certain information by reference from the definitive proxy statement for the registrant's 2023 Annual Meeting of Stockholders to be filed within 120 days of the registrant's fiscal year ended December 31, 2022, or the Proxy Statement. Except with respect to information specifically incorporated by reference in this Annual Report on Form 10-K, the Proxy Statement is not deemed to be filed as part of this Annual Report on Form 10-K.

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PART I

Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements that are based on our management's beliefs and assumptions and on information currently available to our management. The statements and information contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. You can identify these statements by words such as "anticipates," "believes," "can," "continue," "could," "estimates," "expects," "intends," "may," "plans," "seeks," "potential," "predicts," "projects," "should," "will," "strategy," "future," "likely," or "would" or the negative of these terms or similar expressions. These statements are not guarantees of future performance or development and involve known and unknown risks, uncertainties and other factors that are in some cases beyond our control. All of our forward-looking statements are subject to risks and uncertainties that may cause our actual results to differ materially from our expectations. Factors that could cause or contribute to such differences include, but are not limited to, the following:

- the risk of increased or new competition in our existing markets and as we enter new markets or new sections of existing markets, or as we offer new solutions;
- the risks associated with the development of our solutions and changes to the market for our solutions compared to our expectations;
- quarterly fluctuations in our operating results relative to our expectations and guidance and the accuracy of our forecasts;
- the risks associated with anticipated higher operating expenses in 2023 and beyond;
- the impact that inflation, rising interest rates or a slowdown in the economy, financial markets and credit markets have or could have an impact on account holder or end user, or End User; usage of our Helix and payment solutions, and on our customers' prospects and our business sales cycles, our prospects' and customers' spending decisions, including professional services which are more discretionary in nature, and the timing of customer implementation and purchasing decisions;
- the risks and increased costs associated with managing growth and the challenges associated with improving operations and hiring, retaining and motivating employees to support such growth, particularly in light of the macroeconomic impacts of the novel coronavirus disease, or COVID-19, including increased employee turnover, labor shortages, wage inflation and extreme competition for talent;
- the risk that the residual impacts of the COVID-19 pandemic and the associated efforts to limit its spread continue to negatively impact or disrupt the markets for our solutions and that the markets for our solutions do not return to normal or grow as anticipated;
- the risks associated with our transactional business which are typically driven by end-user behavior which can be influenced by external drivers outside of our control;
- the risks associated with effectively managing our cost structure in light of the challenging macroeconomic environment and from the effects of seasonal or other unexpected trends;
- the risks associated with the general economic and geopolitical uncertainties, including the heightened risk of state-sponsored cyberattacks on financial services and other critical infrastructure, and continued or increased inflation partially driven by increased energy costs or other unpredictable economic impacts that have and may continue to negatively affect demand for our solutions;
- the risks associated with managing our business in response to continued challenging macroeconomic conditions and any anticipated or resulting recession;
- the risks associated with accurately forecasting and managing the impacts of any macroeconomic downturn on our customers and their end users, including in particular the impacts of any downturn on financial technology companies, or FinTechs, and our arrangements with them, which represent a newer market opportunity for us, a more complex revenue model for us and which may be more vulnerable to an economic downturn than our financial institution customers;

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- *the challenges and costs associated with selling, implementing and supporting our solutions, particularly for larger customers with more complex requirements and longer implementation processes, including risks related to the timing and predictability of sales of our solutions and the impact that the timing of bookings may have on our revenue and financial performance in a period;*
- *the risk that errors, interruptions or delays in our solutions or Web hosting negatively impacts our business and sales;*
- *the risks associated with cyberattacks, data and privacy breaches and breaches of security measures within our products, systems and infrastructure or the products, systems and infrastructure of third parties upon which we rely and the resultant costs and liabilities and harm to our business and reputation and our ability to sell our solutions;*
- *the difficulties and risks associated with developing and selling complex new solutions and enhancements with the technical and regulatory specifications and functionality required by our customers and relevant governmental authorities;*
- *regulatory risks, including risks related to evolving regulation of artificial intelligence, or AI, machine learning and the receipt, collection, storage, processing and transfer of data;*
- *the risks associated with our sales and marketing capabilities, including partner relationships and the length, cost and unpredictability of our sales cycle;*
- *the risks inherent in third-party technology and implementation partnerships that could cause harm to our business;*
- *the risk that we will not be able to maintain historical contract terms such as pricing and duration;*
- *the general risks associated with the complexity of our customer arrangements and our solutions;*
- *the risks associated with integrating acquired companies and successfully selling and maintaining their solutions;*
- *litigation related to intellectual property and other matters and any related claims, negotiations and settlements;*
- *the risks associated with further consolidation in the financial services industry;*
- *the risks associated with selling our solutions internationally and with expanding our international operations;*
- *the risk that our debt repayment obligations may adversely affect our financial condition and cash flows from operations in the future and that we may not be able to obtain capital when desired or needed on favorable terms; and*
- *such other risks and uncertainties described more fully in documents filed with or furnished to the Securities and Exchange Commission, or the SEC, including the risk factors discussed below and elsewhere in this Annual Report on Form 10-K, particularly in the sections titled "Risk Factors."*

Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management's beliefs and assumptions only as of the date of this Annual Report on Form 10-K is filed with the SEC. You should read this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Item 1. Business.

Overview

Q2 is a leading provider of secure, cloud-based digital solutions that transform the ways in which financial institutions and other financial services providers engage with account holders and end users, or End Users. We offer our solutions to financial institutions, financial technology companies, or FinTechs, alternative finance companies, or Alt-FIs, and other innovative companies, or Brands, wishing to incorporate banking into their customer engagement and servicing strategies. Our solutions include a broad and deep portfolio of digital banking solutions; lending solutions; an open technology platform, the Q2 Innovation Studio, which is a portfolio of technologies and programs which can be leveraged to design, develop, and distribute innovative products, services, features, and integrations by enabling a partnership ecosystem on Q2's digital banking platform; and Helix, a comprehensive banking as a service, or BaaS, solution, which enables innovative companies to integrate banking products and services into their offerings. We purpose-build our platforms and solutions to enable success for our customers and technology partners by allowing them to digitize their operations and offerings, differentiate their digital brands, integrate traditional and emerging financial services, and ultimately, enhance their End-User acquisition, engagement and retention and improve their operational efficiencies and profitability.

We have deep domain expertise in developing and delivering secure, advanced digital solutions designed to help our customers and technology partners compete in the complex and heavily regulated financial services industry. Over 18 years ago, Q2 began by providing digital banking solutions to regional and community financial institutions. We have rapidly grown since then through a combination of broad market acceptance of our award-winning solutions and relentless innovation, investment and acquisitions. Our portfolio of solutions now spans digital banking, lending, profitability, onboarding, security, and we now serve account holders and borrowers across retail, small business and commercial segments, in addition to our open technology platform and BaaS offerings. As of December 31, 2022, we had more than 1,200 financial institution customers using one or more of our solutions, including more than 40% of the top 100 U.S. Banks and more than 40% of the top 100 U.S. Credit Unions, based on total assets. As of December 31, 2022, we had 444 installed digital banking platform customers, and those customers had approximately 21.1 million account holders registered on our digital banking platform. During 2022, End Users logged into our digital banking platform over 4 billion times and executed over \$2.4 trillion in financial transactions. While we remain focused on our founding mission of building stronger and more diverse communities by strengthening their financial institutions and continue to generate a substantial majority of our revenue from sales of our digital banking platform, we intend to draw on our broad solution portfolio, deep domain expertise and robust customer base to lead the transformation into a new frontier of financial services.

The financial services industry is undergoing tremendous change, influenced by three major factors. First, financial institutions demand now, more than ever, to digitize their operations and offerings. Second, FinTechs and the innovation they bring to the market are increasing End-User demand and expectations for new, more engaging and meaningful digital financial experiences. And third, major innovative Brands recognize that incorporating banking into their strategy is an opportunity to leverage the trust that their End Users place in them, driving deeper engagement with those End Users. These three forces continue to converge, creating what we believe is a new frontier in financial services in which financial institutions, FinTechs and Brands will have new roles and interdependencies, and which will require new technology, new partners, and new business models. We believe that lasting value creation in financial services will be achieved by those companies that can support and enhance the convergence of these forces. In addition, we have built a broad set of solutions that we believe equips us to accelerate and optimize this convergence – from digitizing the entire bank, to facilitating partnerships among financial institutions and FinTechs, to enabling Brands to incorporate banking into their products and customer relationships.

We believe this new frontier creates an expanded market opportunity for our business, which we have been thoughtfully evolving for several years. We have continuously invested in expanding and improving our digital banking platform since its introduction in 2005. Additionally, over the past several years we have acquired or developed new solutions and additional functionality that serve a broader range of needs of financial institutions as well as the needs of FinTechs, Alt-FIs and Brands. Our integrated, end-to-end collection of solutions includes retail, small business and commercial banking, regulatory and compliance, digital lending, relationship pricing, open platform solutions, BaaS, digital account opening, account switching and data-driven sales enablement, spending insights and portfolio management solutions among others. We believe our expanded solution offerings and the continued growth of our customer base and market opportunity have increased the addressable market for our solutions to greater than \$15.0 billion.

Our solutions utilize a software-as-a-service, or SaaS, delivery model, designed to scale with our customers as they grow their business, add End Users on our solutions and expand the breadth of digital services and solutions they offer. On average, Q2 digital banking platform customers have historically grown contracted revenue by approximately 38% within 36 months of implementation. Our SaaS delivery model is also designed to reduce the cost and complexity of implementing, maintaining and enhancing the digital services and solutions our customers provide to their End Users.

The effective delivery and management of secure and advanced digital solutions in the complex and heavily regulated financial services industry requires significant resources, personnel and expertise. We provide digital solutions that are designed to be highly configurable, scalable and adaptable to the specific needs of our customers. We design and develop our solutions with an open platform approach intended to provide comprehensive integration among our solution offerings and our customers' internal and third-party systems. This integrated approach allows our customers to deliver unified and robust financial experiences across digital channels. Our solutions provide our customers the flexibility to configure their digital services in a manner that is consistent with each customer's specific offerings, workflows, processes and controls. Our solutions also allow our customers to personalize the digital experiences they deliver to their End Users by extending their individual services and brand requirements across digital channels. Our solutions and our data center infrastructure and resources are designed to comply with the stringent security and technical regulations applicable to financial institutions and financial services providers and to safeguard our customers' data and that of their End Users.

We believe that financial services providers are best served by a broad integrated portfolio of digital solutions that provide rapid, flexible and comprehensive integration with internal and third-party solutions allowing them to provide modern, intuitive digital financial services in a secure, regulatory-compliant manner. We also believe that the breadth and depth of our solution offerings and customer base, our open and flexible platform approach, our position as a leading provider of digital banking solutions to a large network of financial institutions, and our expertise in delivering new, innovative, secure and regulatory-compliant digital solutions uniquely position us to capitalize on the new frontier in financial services.

We primarily sell our solutions through our direct sales organization and the related revenues are recognized over the terms of our customer agreements. The initial term of our digital banking platform agreements averages over five years. Our digital banking platform revenues generally increase as our customers buy more solutions from us and increase the number of End Users utilizing our solutions and as those users increase their number of transactions on our solutions. The structure and terms of our lending arrangements vary, but generally are also sold on a subscription basis through our direct sales organization, and the related revenues are recognized over the terms of the customer agreements. The structure and terms of our Helix arrangements with FinTechs and Brands vary, but typically involve relatively lower contracted minimum revenues and instead emphasize usage-based revenue, with such revenue recognized as it is incurred.

We have achieved significant growth since our inception, including the past three years. We had total revenues of \$565.7 million, \$498.7 million and \$402.8 million in 2022, 2021 and 2020, respectively. We have invested, and intend to continue to invest, to grow our business by expanding our sales and marketing activities, adding delivery and support resources aligned with our growth, developing and acquiring new solutions and enhancing our existing solutions and technical infrastructure. We incurred net losses of \$109.0 million, \$112.7 million and \$137.6 million in 2022, 2021 and 2020, respectively.

We were incorporated in March 2005 in the state of Delaware under the name CBG Holdings, Inc. We changed our name to Q2 Holdings, Inc. in March 2013. We are headquartered in Austin, Texas, and our principal executive offices are located at 10355 Pecan Park Boulevard, Austin, Texas 78729. Our telephone number is (833) 444-3469.

Industry Background

The financial services market is intensely competitive and rapidly changing, characterized by a new frontier in which financial institutions and other financial services providers will have new roles and interdependencies and require new technology, partnerships, and business models to create differentiation and lasting value.

The ubiquity of mobile and tablet devices and the proliferation and adoption of new, innovative financial experiences offered by FinTechs and other financial services providers are dramatically changing the financial services market.

The ubiquity of mobile and tablet devices and End Users' increasing expectations for innovative digital services have driven increases in the number of financial services providers, greater fragmentation of the financial services market and a broadening set of new and innovative digital financial services. End Users, spanning retail, small business and commercial, expect to transact and engage digitally with financial services providers anytime, anywhere and on any device, and seamlessly across devices. Financial services providers similarly must be able to digitally manage End Users' financial experiences anytime, anywhere and on any device, with a focus towards improving operating efficiency and enhancing End-User acquisition, engagement and retention. FinTechs and major innovative Brands recognize that incorporating banking into their strategy is an opportunity to leverage the trust that their customers place in them, drive deeper engagement with those customers and generate additional revenue. These changes in the financial services market and in End-User and customer expectations create challenges and opportunities for financial institutions as well as other financial services providers. Financial institutions and other financial services providers are seeking to address these challenges and opportunities by providing a broadening set of new and innovative digital financial services, solutions and experiences which better align with the expectations of End Users' experience through digital channels.

Substantial investment over the past several years in FinTechs and the innovation they bring to the market are increasing End-User demand and expectations for new, more engaging and meaningful digital financial experiences. FinTechs and other financial services providers are nimble, focused on innovation and are less constrained than financial institutions by legacy technology solutions, physical branch locations and regulation. By unbundling traditional banking services and delivering them through new, innovative and compelling experiences, FinTechs are making finance more accessible, engaging and easier for End Users. The innovative offerings of FinTechs are having an outsized impact on the financial services industry, creating substantial competitive pressure on financial institutions to offer similarly compelling financial experiences. Accordingly, financial institutions are increasingly seeking to incorporate best-in-class FinTech solutions into their offerings and operations.

FinTechs and other financial services providers, including Brands, face substantial regulatory hurdles and technology dependencies in incorporating banking into their solutions. The financial services offered by FinTechs and other financial services providers often leverage core banking functions, creating an interdependency between financial institutions and FinTechs and other financial services providers. Financial institutions of all sizes provide two fundamental banking functions among others - they hold NCUA-insured or FDIC-insured deposits and they transfer money. Providing these critical banking functions generally requires a federal or state banking charter, as well as specialized expertise and infrastructure, and subjects the provider to complex regulatory oversight by various authorities. As an example, electronic payment transactions in the United States, other than wire transfers, are conducted as automated clearinghouse, or ACH, transactions, which settle through the Federal Reserve System in most cases, and generally, only financial institutions can obtain the necessary master account with a Federal Reserve Bank to settle transactions. These laws and regulations have existed for decades, are extremely complex, constantly evolving, and require financial institutions to implement and maintain complex and costly operating policies, procedures and technical infrastructure to protect End Users, their deposits and their personal information. These regulatory constraints provide an incentive for FinTechs and other financial services providers, including Brands, to partner with financial institutions rather than making the significant investments in expertise and infrastructure necessary to obtain a banking charter and otherwise become regulatory-compliant.

The confluence of these challenges and opportunities faced by financial institutions and other financial services providers, including Brands, has created an environment in which cooperation, rather than competition, can be the optimal solution. To more deeply engage with their End Users, financial institutions are increasingly seeking to incorporate best-in-class FinTech experiences into their digital offerings, and other financial services providers are increasingly incorporating banking functionality into their offerings. This convergence of factors and interdependency between financial institutions and other financial service providers represents a new frontier in financial services in which financial institutions, FinTechs, and Brands will have new roles and interdependencies, and will require new technology, new partnerships and new business models.

Security is paramount for digital financial services

The risks of theft and fraud have always existed in banking and financial services. However, as the adoption, use, and breadth of digital financial services offerings has increased, the incidence of fraud and theft in digital channels has grown substantially. The methods by which criminals seek to commit fraud are constantly changing, requiring financial services providers and their technology providers to continually modify their security protocols. In addition, safeguarding the funds and information of financial service providers and their End Users becomes increasingly complex as digital financial services grow and extend across new channels, devices, and services not previously contemplated. Successfully securing the digital financial services of financial institutions, FinTechs and other financial services providers requires experience, constant vigilance, and continuous investment to stay informed and guard against these ever-changing threats.

Digital financial services are highly regulated

Financial services providers and their solutions are subject to extensive and complex regulations and oversight by federal, state and other regulatory authorities. These laws and regulations are constantly evolving and affect the conduct of financial service providers operations and, as a result, the business of their technology providers. The compliance of digital financial solutions with these regulatory requirements depends on a variety of factors, including functionality and design, the classification of the financial service provider and its services, and the manner in which the financial service provider and its End Users utilize the solutions. In order to ensure compliance with these laws, technology providers and financial service providers may be required to implement operating policies and procedures to protect the privacy and security of their, the financial service providers' and their End Users' information, and to undergo periodic audits and examinations. Maintaining such regulatory compliance becomes increasingly complex as digital financial services grow and extend across new channels, devices, and services not previously contemplated.

Digital financial services are complex and often have limitations

The ubiquity of mobile and tablet devices and continued proliferation of digital solutions offered through open development platforms makes it increasingly difficult to provide a consistent, intuitive and personalized End-User experience and requires digital solutions to support new and rapidly changing mobile operating systems and device types. The technical and operational complexities of delivering integrated digital solutions across multiple operating systems, devices, channels, and complex functionality increase the difficulty of providing a consistent, intuitive and personalized End-User experience. Aging or increasingly complex solutions can create the following challenges for financial services providers:

- integrating applications and systems from multiple vendors may increase costs and time-to-market;
- managing relationships with multiple vendors can be time consuming and require a greater investment in business development and support resources;
- building, maintaining and upgrading regulatory-compliant and secure solutions and infrastructure can be expensive and time-consuming and require special expertise that can be hard to find and retain;
- operating, supporting and upgrading systems from multiple vendors can be difficult, costly and less secure and limit the ability to provide a unified End-User experience or comprehensive view of End-User behavior;
- partnering between financial institutions and other financial services providers and innovating and delivering new solutions can be difficult and cost-prohibitive when integration with dated legacy infrastructure is required; and
- training End Users and internal personnel on the use of different point systems can be challenging, time-consuming and costly.

The use of multiple point solutions for digital financial services can require End Users to maintain different login credentials across digital channels and manage different systems. Additionally, the disjointed nature of the underlying workflows, data and terminology caused by the implementation of multiple solutions can lead to decreased End-User adoption, retention and satisfaction. End Users' adoption, retention and satisfaction can also be adversely impacted by the dated End User interfaces of older legacy systems.

The market for digital financial services is significant

We have continuously invested in expanding and improving our digital banking platform since its introduction in 2005. In addition, over the past several years we have acquired or developed new solutions and additional functionality that serve a broader range of needs of financial institutions as well as the needs of FinTechs, Alt-FIs and Brands. Our integrated, end-to-end collection of solutions and services includes retail, small business and commercial banking, regulatory and compliance, digital lending, relationship pricing, open platform solutions, BaaS, digital account opening, account switching, data-driven sales enablement, spending insights and portfolio management solutions.

As of December 31, 2022, we had more than 1,200 financial institution customers using one or more of our solutions, including more than 40% of the top 100 U.S. Banks and more than 40% of the top 100 U.S. Credit Unions, based on total assets. Our financial institution customers span from regional and community financial institutions, or RCFIs, to global enterprise banks, demonstrating that our portfolio of solutions gives us access to the full spectrum of financial institutions. We market our lending, fraud detection, risk assessment and compliance solutions to all federally-insured financial institutions on a standalone basis, or in combination with our digital banking platform. We market our digital banking platform primarily to RCFIs. To date, a substantial majority of our revenues continue to result from sales of our digital banking platform to U.S. based RCFIs. We define RCFIs as federally-insured banks and credit unions with less than \$100 billion in assets, which according to data compiled by BauerFinancial as of September 30, 2022, consisted of approximately 9,599 financial institutions with combined assets of \$8.9 trillion, representing approximately 35% of the aggregate assets held by the 9,635 total federally-insured financial institutions. RCFIs remain critical to our mission of building stronger and more diverse communities by strengthening their financial institutions. RCFIs have historically sought to differentiate themselves by providing local, personalized banking services that are responsive to the changing needs and circumstances of their communities. Many RCFIs are locally owned and obtain deposits and make lending decisions on a local basis. RCFIs account for a large portion of small business loans, helping local businesses create jobs and drive economic growth in the communities they serve. RCFIs seek to develop strong, lasting relationships with their End Users and can serve as centers of commerce and influence in their communities.

The FinTech, Alt-FI and Brand markets consist of thousands of financial services providers globally seeking to provide End Users with new and innovative financial services, experiences and solutions. FinTechs and Alt-FIs have received substantial investment, estimated to be greater than \$500 billion globally from 2008 through June 30, 2022, with \$50 billion invested in the first six months of 2022 alone, according to Deloitte's web-based Interactive Fintech Funding Report citing Venture Scanner source data. Our Q2 Innovation Studio offerings, which we market to financial institutions and FinTechs, allows our financial institution customers and other technology partners to integrate financial services to our digital banking platform, allowing financial institutions to quickly and efficiently incorporate the integrated solutions into their offerings and operations. We market Helix primarily to FinTechs and Brands wishing to incorporate banking into their innovative digital services. We also market our digital lending platform and discrete elements of our digital banking platform to FinTechs and Alt-FIs globally.

Based on our estimates of the number of target financial institutions for our digital banking solutions and our internal assumptions as to the number and types of digital accounts they serve, the prices for our solutions and the number of transactions processed, we believe that the market for our digital banking platform, including retail, small business and commercial banking, as well as digital account opening, account switching, risk management and Q2 Innovation Studio is greater than \$9.0 billion. Based on our estimate of the number of target providers of digital lending services and our internal assumptions as to the number of End Users they serve and the prices for our solutions, we believe that the market for our digital lending solutions, including the borrower portal, origination, underwriting, servicing, collections, actionable insights, coaching, negotiation, pricing and sales enablement modules, is greater than \$4.0 billion. Based on our estimates of the number of target financial institutions and Brands for our Helix solutions and our internal assumptions as to the number of End Users they serve, the prices for our solutions and the number of transactions processed, we believe the market for our Helix solutions is greater than \$2.0 billion. In the aggregate, we believe that the worldwide market for our solutions is greater than \$15.0 billion.

Our Solutions

We are a leading provider of secure, cloud-based digital solutions that transform the ways in which financial institutions and other financial services providers engage with account holders and End Users. We offer our solutions to financial institutions, FinTechs, Alt-FIs, and Brands wishing to incorporate banking into their customer engagement and servicing strategies. Our integrated, end-to-end portfolio of solutions and services are designed to enable End Users and customers to engage with and manage financial experiences anytime, anywhere, and from any device, across all devices. We purpose-build our platforms and solutions to enable success for our customers and technology partners by allowing them to digitize their operations and offerings, differentiate their digital brands, integrate traditional and emerging financial services, and ultimately, enhance their End-User acquisition, engagement and retention and improve their operational efficiencies and profitability.

Key Solution Offerings

Our portfolio of digital solutions includes the following key offerings:

- **Digital Banking Platform:** Our end-to-end digital banking platform supports our financial institution customers in their delivery of unified digital banking services across digital channels. Our open digital banking platform now spans onboarding, banking and a vast set of integrations to third-party financial services across the retail, small business and commercial segments, and provides our financial institution customers with the tools, knowledge, and access necessary to: monitor and optimize End-User acquisition, engagement and retention; customize and extend the platform; and, improve operational efficiencies. We offer some of the solutions included in our digital banking platform on a standalone basis to financial institutions as well as Alt-FIs and Fintechs.
- **Q2 Innovation Studio:** Our application program interface, or API, based and software development kit, or SDK, based open technology platform allows our financial institution customers and other technology partners to develop unique extensions of and integrations to our digital banking platform, allowing financial institutions to quickly and easily deploy customized experiences and the latest financial services expected by End Users.
- **Lending:** Our end-to-end digital lending portfolio allows our financial institution, FinTech and Alt-FI customers to simplify the End-User experiences of borrowers, accelerate loan decisioning, and reduce operational inefficiencies through digitization and automation of the traditional loan application and underwriting process. Our lending portfolio also provides commercial relationship managers with actionable data-driven insights into an individual commercial End User's entire portfolio, assessing the overall portfolio and individual relationships, highlighting potential concerns and identifying opportunities, and ultimately helping the relationship manager to more effectively price, negotiate and close commercial loans.

- **Helix:** Our cloud-based, real-time core processing BaaS platform combines the services and functionality necessary for FinTechs and innovative Brands to incorporate banking services into their digital offerings, allowing them to easily and efficiently incorporate highly personalized financial experiences within their digital offerings without having to independently meet the stringent regulatory and technical requirements applicable to financial institutions and their banking services.

Key Benefits

Our solutions provide the following key benefits to our customers and their End Users:

- **Enhanced and more frequent engagement with End Users:** Our solutions provide our customers with a comprehensive view of End-User engagement and activity across devices and channels. The insights made possible by a comprehensive view enable an enhanced, personalized End-User experience, real-time risk and fraud assessment and other analytic features that improve the function and security of our solutions. The breadth of our solutions and quality of the End-User experience they provide enable our customers to increase the frequency and effectiveness of their interactions with End Users. We believe the frequency and ease of these interactions can strengthen the relationships between End Users and our customers and help our customers better serve their End Users through a more comprehensive understanding of their behavior and activities. In particular, we believe that engaging with commercial End Users, involves unique challenges, and by enabling commercial relationship managers with actionable data-driven insights into commercial End-User relationships, they can better serve their commercial End Users, and increase overall performance.
- **Drive End-User loyalty:** We believe our customers are able to drive End-User loyalty by increasing their level and quality of End-User engagement. Our customers are able to tailor our solutions by offering individually relevant functionality as well as branded, localized End-User experiences. Our digital banking platform and lending solutions provide our financial institution customers with a comprehensive view of operational and End-User activity across channels and devices allowing them to look for opportunities to improve End-User engagement and grow their End-User relationships with targeted offerings based on specific behavior. We believe this further strengthens End-User loyalty by enabling our customers to engage End Users through customized and End-User-friendly digital experiences.
- **Vast and flexible integrations:** Our highly flexible set of integration tools enables the rapid integration of third-party applications and data sources with our digital banking platform. These integration tools connect with a wide variety of third-party applications, allowing us to seamlessly integrate with our customers' internal and third-party systems and services. We currently maintain over 1,000 integrations to a broad variety of financial services technology partners.
- **More effective marketing of products and services:** Our customers' marketing of their new and existing products and services through our solutions can be frequent, timely, targeted and data-driven. The ease and availability of communications within digital channels also make it easier for End Users to find information about products and services. Our solutions also enable a simplified End-User experience, which can help improve sales of products and services.
- **SaaS delivery model:** We developed our solutions to be cloud-based. Our customers generally subscribe and pay for their use of our solutions over time, and our solutions do not require our customers to install any significant technical infrastructure. While we host our digital banking platform for substantially all of our digital banking and Q2 Innovation Studio customers, our lending and Helix solutions are hosted with industry leading public cloud service providers. Our SaaS delivery model can reduce the total cost of ownership of our customers by providing the development, implementation, integration, maintenance, monitoring and support of our cloud-based solutions on a subscription basis. Our solutions are designed to support the rapid addition of new services as well as the introduction of new devices and digital channels. As a result, our customers can easily scale the use of our solutions with their needs as they add End Users and expand the digital services and solutions they offer.
- **Regulatory compliance:** Our solutions leverage our deep domain expertise and the significant investments we have made in the design and development of our data center architecture and other technical infrastructure, including public cloud services, to meet the stringent security and technical requirements on financial institutions and financial services providers. Customers who use our cloud-based solutions are able to satisfy security and technical compliance obligations by relying on the security programs and regulatory certification of our data centers and other technical infrastructure. By doing so, our customers avoid the significant cost and effort associated with building, maintaining and upgrading a regulatory-compliant and secure environment on their own.

- **Real-time security:** We employ multi-layered controls to help secure our customers' and End Users' information. Each layer addresses specific areas of possible fraud or data vulnerability. Our customers can use transactional-based controls to reduce fraudulent transactions by allowing them to adjust configurations such as transaction values, payment windows or account suspension. Our digital banking platform customers who leverage our Q2 Sentinel product are able to identify and block suspected fraudulent activity in real-time at the application layer, based on machine-learning and behavioral analytics, and notify operations staff and End Users of suspect transactions prior to consummation of a transaction. This approach mitigates and more effectively manages the security risks in financial services and helps protect our customers' reputations. We continue to invest in the resiliency and security of our platform and solutions. We believe our security posture, encompassing a private cloud consisting of active-active data centers combined with a state-of-the-art distributed cloud leveraging multiple public cloud vendors differentiates us in the markets we serve.
- **Intuitive design:** We design and test the features and End-User experience of our solutions to be optimized for touch-based devices and then extend that design to other digital channels. This design process and our broad feature offerings enable our solutions to deliver a modern, unified End-User experience across digital channels.
- **Delivery of robust digital financial services across multiple channels:** Our solutions enable our customers to deliver robust and integrated digital financial services to their End Users who increasingly expect and appreciate the ability to manage their financial experiences anytime, anywhere and on any device. Through a single log-in and consistent workflow, End Users are able to seamlessly conduct consumer and commercial transactions across digital channels and devices.

Our Business Strengths

Since our inception, our mission has been to help financial institutions strengthen the markets they serve. We are highly committed to this mission, and support it by focusing on designing, developing and acquiring new, innovative digital banking and other financial services solutions to meet changing End-User expectations. We believe we are well positioned to connect and serve financial institutions, FinTechs and other financial services providers, including Brands, as they transform the ways in which they engage, either independently or in partnership, with End Users globally:

- **Our purpose-built digital banking platform leads the RCFI digital banking market:** We built our digital banking platform to address unique challenges that financial institutions face in providing digital banking services. Our digital banking platform reduces the inefficiencies of traditional point-to-point integration strategies and replaces multiple management consoles with a single unified view of the rules, rights and security involved with operating seamlessly across digital channels. Our digital banking solutions enable our financial institution customers to provide a compelling, unified End-User experience to consumer and commercial End Users using a single login anywhere, anytime and on any device. We believe our deep domain experience as a leading provider of digital banking solutions positions us well to provide new, innovative digital banking and other financial services solutions to address the new frontier in financial services.
- **We have acquired and developed solutions to better serve our financial institution customers and a broader set of global financial service providers including FinTechs, Alt-FIs and Brands:** Over the past several years, we have expanded our portfolio to include offerings such as digital lending, Q2 Innovation Studio, Helix, digital account opening, account switching, risk management, data-driven sales enablement, spending insights and portfolio management solutions. As the financial services landscape has evolved to become more digitized and open, we have strived to ensure our customers can offer a broader range of digital services to their End Users.
- **Our open technology platform accelerates innovation and enables a new technology partnership ecosystem:** We are leveraging the strength of our digital banking platform and broad customer base to open our platform and create opportunities for mutually beneficial partnerships among financial institutions and other financial services providers. To accomplish this, we have opened our digital banking platform via the Q2 Innovation Studio, which makes it easy for financial institutions and other financial services providers to integrate additional functionality into our platform. Financial institutions can deploy their own development resources to supplement or customize their digital offerings and FinTechs and other digital solution providers can integrate their services with the Q2 digital banking platform. Financial institutions can then choose to incorporate these integrated services into their offerings, creating a new technology partnership ecosystem where financial institutions, FinTechs and other digital solution providers can cooperate, generating new revenue opportunities and enhancing End User engagement.

- ***We believe Helix has an early mover advantage in serving the rapidly growing market of Brands incorporating banking into their digital offerings:*** We have been investing in our Helix offerings for several years, and today our Helix platform supports many FinTechs and innovative Brands, serving more than 13 million End Users. FinTechs and major innovative Brands recognize that incorporating banking into their strategy is an opportunity to leverage the trust that their customers place in them, driving deeper engagement with those customers all while generating additional revenue. We believe this opportunity to be in its early stages and given the maturity and adoption of our Helix solution to date and that our Helix solutions were one of the earliest of their type on the market, we believe we have a significant competitive advantage in capitalizing on this opportunity.
- ***We have a proven track record of providing digital solutions to financial services providers:*** Our founders and team have a track record of successfully delivering technology for financial services providers. We have deep domain expertise in financial services and community banking, which we utilize to develop and deliver our solutions and services to our customers. We have significant experience and the technical infrastructure to deliver solutions that are designed to comply with the stringent security and technical regulations applicable to financial institutions and financial services providers and to safeguard our customers' and their End Users' data.
- ***Our sales model is tailored to our different markets:*** The financial institution market is well defined and allows us to effectively focus our go-to-market strategy for our sales and marketing efforts. Utilizing the deep industry experience of our management and sales teams, we are able to leverage our relationships with leaders and influencers at many of our financial institution customers as valuable sources of reference and promotion. We have also developed actionable insights into our sales and marketing performance, enabling us to be efficient with our go-to-market investments. The markets for emerging financial services providers are relatively new, broad and continually evolving. As a result, we leverage our network of technology partners and insights from our experience with financial institution customers to effectively pursue these markets.
- ***We grow our customer relationships over time:*** Throughout customer relationships, we employ a structured strategy designed to inform, educate and enhance customer confidence and help our customers identify and implement additional solutions to acquire, engage and retain additional End Users.
- ***Our revenues are highly predictable:*** To date, a substantial majority of our revenues continue to result from sales of our digital banking platform to RCFIs. We generally recognize our revenues over the terms of our customer agreements. The initial term of our digital banking platform customer agreements averages over five years. Our long-term agreements and our high customer retention, as well as the growth over time in the number of End Users using our solutions, drive the recurring nature of our revenues and provide us with significant visibility into future revenues.
- ***Established financial stability:*** We generated cash flow from operations for our most recent full-year and expect to show continued improvement in cash flows from operations in the normal course of business over the long term. Given that some vendors we may compete with have not generated cash flow from operations, we believe our relative financial maturity is viewed as a strength by potential customers as they make their vendor selections. In addition, we feel that our position to generate cash flow from operations affords us with opportunities to invest and pursue our growth strategy, which may not be as easy for companies who are not generating cash flows from operations.
- ***Our award-winning culture drives innovation and customer success:*** We believe our award-winning, innovation-focused culture and the location of our operations facilitate recruiting and retaining top development, integration and design talent. We are headquartered in Austin, Texas, which is a vibrant city that continues to attract an increasing number of young professionals and has close ties to leading research institutions. In each of the past 12 years, the Austin American Statesman recognized us as one of Austin's "Top Places to Work." We believe our mission, combined with our focus on delivering leading-edge digital solutions, enables us to attract and retain top talent.

Our Growth Strategy

We believe we are well positioned to connect and serve financial institutions, FinTechs and other financial services providers as they transform the ways in which they engage, either independently or in partnership, with End Users globally and to capitalize on the new frontier in financial services. To accomplish this goal, we are pursuing the following growth strategies:

- **Further penetrate our large market opportunity:** We believe financial institutions are increasingly adopting cloud-based digital banking solutions. With the ubiquity of mobile and tablet devices and resulting proliferation of mobile digital solutions provided through their open developer platforms, End Users are increasingly engaging with financial experiences across a variety of digital channels. Over the past several years, in response to the increasing demand for innovative digital banking and other financial services, we have taken steps to expand our addressable market by acquiring and developing solutions that serve the needs of a broader, global set of financial services providers and their End Users. Through Q2 Innovation Studio, we have opened our digital banking platform, making it easy for financial institutions and other digital solution providers to integrate additional functionality to our platform. We believe that our expanded portfolio of solutions addresses a broader set of customer needs, and over the last six years we have seen the average number of products in new digital banking contracts increase by 32%. We intend to further penetrate our large market opportunity and increase our number of financial institution and other financial services provider customers using our broad range of digital solutions through acquiring and developing additional solutions, investments in our sales and marketing organization and related activities.
- **Grow revenues by expanding our relationships with existing customers:** We believe there is significant opportunity to expand our relationships with existing customers by selling them additional solutions. Our broad portfolio of solutions gives us access to decision makers across our customers' organizations. Specifically, we sell distinct solutions targeted for purchase by roles such as head of risk, lending, finance, operations, branding and technology. Additionally, the initial term of our digital banking platform customer agreements averages over five years. The breadth of our portfolio of solutions and the duration of our typical initial digital banking platform arrangement provides us with the ability to better understand our customers' businesses, build trust with them and offer them new ways to acquire, engage and retain End Users. In addition, our revenues from existing customers continue to grow as these customers increase the number of End Users on our solutions and as the number of transactions these End Users perform on our solutions increases. We believe our recent investments in digital lending, BaaS, digital account opening, account switching, open platform solutions, data-driven sales enablement, spending insights and portfolio management, and other innovative solutions will help our customers expand their relationships with us by allowing them to more efficiently sell and market additional services and solutions to their End Users. Our financial institution customers grow their End User bases organically and through acquisitions of other financial institutions.
- **Relentlessly innovate to expand our solutions offerings and enhance our platform:** We believe our history of innovation distinguishes us in the market, and we intend to continue to invest in our software development efforts and introduce new solutions that are largely informed by and aligned with the business objectives of our existing and new customers. We have rapidly grown through a combination of broad market acceptance of our award-winning solutions and relentless innovation, investment and acquisitions. Our portfolio of solutions now spans onboarding, banking and lending across the retail, small business and commercial segments. Our integrated, end-to-end collection of services and experiences now includes retail, small business and commercial banking, regulatory and compliance, digital lending, relationship pricing, open platform solutions, BaaS, digital account opening, account switching and data-driven sales enablement, spending insights and portfolio management solutions.
- **Selectively pursue acquisitions and strategic investments:** In addition to continuing to develop our solutions organically, we regularly evaluate strategic opportunities, such as our acquisitions of Centrix, Social Money, Unbill, Cloud Lending, Gro, PrecisionLender, ClickSWITCH and Sensibill. We anticipate that we will continue to selectively pursue acquisitions of and strategic investments in technologies that will strengthen and expand the features and functionality of our solutions and provide access to new customers and new markets.

The Q2 Solutions

We design and develop our solutions with a platform approach intended to provide comprehensive integration between our solution offerings and our customers' internal and third-party systems. This integrated approach allows our customers to deliver a unified and robust financial experience across digital channels. We leverage the benefits of our open platform to provide our customers the following solutions:

Digital Banking Platform

Our digital banking platform allows financial institutions to offer a comprehensive and unified suite of digital banking services to their End Users. Our open platform architecture, deep integration with other systems and the multi-tenant aspects of our infrastructure, enable us to develop digital banking solutions that allow our customers to harness the power of the information within their other systems to gain greater insights and to improve the overall security of their End Users and themselves. To date, a substantial majority of our revenues continue to result from sales of our digital banking platform to RCFIs.

Our digital banking platform provides our customers with the following benefits:

- single-login and multi-layered security across channels and devices;
- deep integration with numerous other internal and third-party systems;
- single interface to an FI's core transaction processing and other systems of record;
- unified End-User experience and consistent workflows, languages and data;
- rapid configurability, development and deployment of new features and functionality;
- comprehensive view of End-User activity across channels and devices;
- platform wide operational, administrative and customer experience/success reporting; and
- flexible, predictive branding and personalization.

We provide the following digital banking platform solutions:

Solution	Features
<i>Q2 Consumer Banking</i>	<ul style="list-style-type: none">• Browser-based digital banking solution• Unified and robust financial experience across digital channels• Comprehensive financial institution-branded digital banking capabilities such as account access, check balancing, funds transfers, bill pay, recurring payments processing, statement viewing and new products and service applications• Management functionality such as End-User enrollment, password management, permissions, rights management, reports, integrated security as well as feature assignment for digital banking
<i>Q2 Small Business and Commercial</i>	<ul style="list-style-type: none">• Business account opening, onboarding workflow solution supporting small businesses through corporate customers with new and existing commercial customer sales• Full suite of commercial digital banking services to support small business through corporate customers inclusive of reporting, payment and data security services• Digital banking support for single and batch ACH processing, payroll, state and federal tax payments and domestic and international wires• Advanced digital banking solutions to deliver a flexible, efficient, and positive experience for all types of business users, from sole proprietors to enterprise-level account holders• Allows business End Users to more efficiently manage and execute higher volume and more complex transactions by restricting transactions based on accounts, subsidiaries, approval levels, End-User roles, date and time as well as geographic location• Allows advanced reporting designed to help financial institutions deliver key business information to commercial End Users
<i>Q2 mobile Remote Deposit Capture</i>	<ul style="list-style-type: none">• Partnered solution that allows remote check deposit capture utilizing End Users' camera-ready mobile and tablet devices
<i>Q2 Sentinel</i>	<ul style="list-style-type: none">• Real-time security analytics solution designed to help financial institutions detect and block suspect transactions• Behavioral analytics and policy-based decision prompts for financial institution administrators• Continuous learning of End-User behaviors while providing an analysis of transaction activity via easy-to-use case management tools supporting either the authorization or interruption of transactions
<i>Q2 Patrol</i>	<ul style="list-style-type: none">• Event-driven validation product designed to mitigate certain high-risk, non-transactional fraudulent activity• Behavioral machine learning designed to identify fraudulent digital banking sessions• Analyzes past login behavior and device details, including IP addresses, geolocation, device type, time stamps and more to create a digital footprint for each End User• Enhances security by requiring End Users to further authenticate a digital banking session if that session is deemed suspect based on abnormal behavioral login and device detail• Supplies session details in the End-User interface to better involve End Users in their own account safety• Reporting for regulatory compliance and risk reduction
<i>Q2 SMART</i>	<ul style="list-style-type: none">• Targeting and messaging platform that allows financial institutions to analyze End-User data utilizing machine learning and statistical analysis designed to identify opportunities to grow their End-User relationships with targeted offerings based on specific End-User behavior• Multi-channel approach to identify traits across a broad range of End-User behavioral patterns to help financial institutions create new End-User campaigns, conversations and offers based on specific End-User behaviors• Recommendation engine to determine which products an End User is most likely to adopt• Summarizes End User behavioral data using clear and easily understood metrics, graphs and charts that are updated daily and presented through an intuitive End-User interface

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<i>Q2 Contextual Personal Financial Management (PFM)</i>	<ul style="list-style-type: none">• Allows End Users to easily add external accounts and view them together with internal accounts on their digital banking home page• Allows financial institutions the ability to offer End Users simplified transaction descriptions and automatic categorization across their internally and externally held accounts• Enables financial institutions to better understand End Users' consumer financial data, analytics, and behaviors• Allow End Users to view their personal data in a variety of ways, such as budgets, spending, net worth, debt, and trends
<i>Q2 Goals</i>	<ul style="list-style-type: none">• Enables End Users to establish and save towards specific savings goals• Allows End Users to easily track their progress and activity towards achieving their savings goals• Provides financial institutions visibility into End Users' savings goals enabling them to assess additional opportunities to offer additional financial services to assist such End Users
<i>Q2 CardSwap</i>	<ul style="list-style-type: none">• Allows financial institutions who issue debit or credit cards to enable End Users receiving newly issued cards to automatically change their payment information with existing subscription and digital point-of-sale services, which have previously been set up for payment with a different card• Assists End Users with compromised card replacement
<i>Q2 Gro</i>	<ul style="list-style-type: none">• Digital account opening and digital sales and marketing platform that drives customer acquisition growth across digital channels• Enables financial institutions to make personalized recommendations and cross-sell banking products, such as deposit accounts and loans, to both retail and business End Users• Combines advanced, multichannel account opening with targeted marketing capabilities as well as a shopping cart experience
<i>Q2 Innovation Studio</i>	<ul style="list-style-type: none">• Consists of a portfolio of technologies that financial institutions can use to design, develop and distribute innovative products, services and features through our digital banking platform, including the: Customer Program; Partner Developer Program; Partner Accelerator; and, Q2 Partner Marketplace• Customer Program: Utilizing Q2 Caliper SDK, financial institutions are provided with the tools, knowledge and access necessary to extend our digital banking platform by developing custom features and integrations through open APIs• Partner Developer Program: Allows the same custom development as the Customer Program, but allowing financial institutions to partner with Q2-certified development partners introduced by Q2• Partner Accelerator: Leveraging a growing ecosystem of third-party integrations of Fintech and other digital solutions to the Q2 digital banking platform, financial institutions can choose to partner with such providers by purchasing access to and rapidly deploying their integrated solutions• Q2 Partner Marketplace: Online marketplace of pre-integrated third-party applications financial institutions can offer to their End Users and for which they can receive a revenue share from the End-User fees
<i>Q2 Biller Direct</i>	<ul style="list-style-type: none">• Bill payment solution that aggregates End Users' bills and payments into a single view, enabling bill presentment, aggregation and bill pay functionality
<i>ClickSWITCH</i>	<ul style="list-style-type: none">• Allows financial institutions, upon the direction of an End User, to switch the End User's direct deposits to the End User's account with the financial institution
<i>Sensibill</i>	<ul style="list-style-type: none">• Spend management solution that allows End Users to capture business and personal expenses, enabling them to better manage their financial activity• Allows financial institutions to collect and analyze product-level End User purchase data, enabling the creation of highly differentiated user profiles utilizing AI and machine learning• Allows financial institutions to present highly targeted behavioral purchase insights to the End User
<i>Centrix Dispute Tracking System</i>	<ul style="list-style-type: none">• Electronic transaction dispute management solution• Assists in the administration of disputed electronic transactions (debit card, ATM, ACH and remittance transfers) for the purpose of compliance with Regulation E of the Electronic Fund Transfer Act• Includes an optional Fraud Alerts module which allows customers to quickly and accurately measure the financial impact of data breaches involving card payments
<i>Centrix Payments I.Q. System</i>	<ul style="list-style-type: none">• ACH file monitoring and risk reporting solution• Simple and intuitive analytical reporting of both originated and inbound ACH activity, while also safeguarding against ACH fraud with calendaring and real-time validation of originated files
<i>Centrix Exact/Transaction Management System</i>	<ul style="list-style-type: none">• Fraud prevention tool focused on the transaction management needs of commercial End Users• Encompasses check positive pay with payee match, ACH positive pay and full account reconciliation

Lending Solutions

PrecisionLender Solutions

Our PrecisionLender platform is a cloud-based, data-driven sales enablement, relationship pricing and portfolio management solution that allows financial institutions globally to structure and negotiate commercial lending, deposits and fee-based business transactions more effectively. During the negotiation process, the PrecisionLender platform analyzes a financial institution's entire commercial portfolio, and individual relationships, in addition to other external market information, to assess the performance of the portfolio and relationships. Based on such analysis, PrecisionLender provides commercial bankers with actionable insights by highlighting potential concerns and identifying potential opportunities, ultimately allowing them to more efficiently and effectively price, negotiate and close commercial loans, secure deposits and process treasury services. The PrecisionLender platform user experience is enhanced by Andi®, a digital enterprise coach powered by machine learning and one of the industry's largest commercial banking data sets. The PrecisionLender platform includes the following distinct solutions:

Solution	Features
<i>PrecisionLender Platform</i>	<ul style="list-style-type: none"> Cloud-based loan pricing and negotiation functionality that provides commercial and small business relationship managers with actionable insights based on analysis of their commercial and small business account holder portfolios to efficiently and effectively price and structure commercial loans, deposits and other fee-based banking services
<i>Premium Treasury Pricing</i>	<ul style="list-style-type: none"> Optional advanced module to the PrecisionLender Platform that enables commercial and small business relationship managers and treasury management officers to collaborate on pricing and structuring fee-based banking services, including the modeling of pro forma revenue and expenses
<i>Data Studio</i>	<ul style="list-style-type: none"> Managed and configured data environment that provides in depth analysis and reporting of a financial institution's commercial and small business account portfolios Enables commercial and small business managers to assess performance trends as well as identify cross-sales and other opportunities for improvement
<i>Andi®</i>	<ul style="list-style-type: none"> Configurable digital enterprise coach powered by machine learning which accompanies the relationship manager throughout the commercial and small business loan structuring, negotiating and pricing process Provides recommendations along the way leveraging the real-time analysis being performed by the PrecisionLender Platform and one of the industry's largest commercial banking data sets

Cloud Lending Solutions

Our Q2 Cloud Lending, or CL, digital lending platform is a cloud-based, end-to-end lending solution that allows financial institutions, FinTechs and Alt-FIs to automate and digitize their lending activities, supporting digital lending applications, scoring, underwriting, servicing and collections for multiple assets classes. The CL digital lending platform allows financial institutions, FinTechs and Alt-FIs to originate and service a wide range of loan types including consumer, commercial, small business and marketplace, or peer-to-peer. The CL digital lending platform utilizes the Force.com platform and includes the following distinct solutions, which financial institutions, FinTechs and Alt-FIs can use as a complete package or individually to supplement existing operations:

Solution	Features
<i>Q2 CL Portal</i>	<ul style="list-style-type: none"> Configurable front-end portal that provides a differentiated borrowing experience for consumer, commercial and small business loans for borrowers, investors and stakeholders
<i>Q2 CL Originate</i>	<ul style="list-style-type: none"> Customer-centric, agile loan origination and underwriting solution Designed to meet the needs of consumer, commercial, small business, marketplace, or peer-to-peer, and lending Manages the entire origination and underwriting process including loan file management, workflows, auto-decisioning, parties management, credit memo, credit analysis, approvals and covenants
<i>Q2 CL Loan</i>	<ul style="list-style-type: none"> Loan servicing application that automates loan billing, payments, collections, and accounting within one robust, flexible, and secure platform Manages portfolios, increases transaction volume, and rapidly brings new products to market
<i>Q2 CL Marketplace</i>	<ul style="list-style-type: none"> Cloud-based marketplace application designed to handle the complexities of managing the entire online marketplace, or peer-to-peer, loan cycle, including online origination, loan fractionalization, servicing and managing multiple investor portfolios
<i>Q2 CL Collections</i>	<ul style="list-style-type: none"> Customer-centric collections application that enables lenders to define and automate collection strategies, optimize customer interaction across channels, lower risk, and reduce technical and operational costs Allows lenders to track customer interactions, set priorities and optimize workloads

Q2 Innovation Studio

The Q2 Innovation Studio is a portfolio of technologies and solutions that financial institution customers, FinTechs and other digital solutions providers can leverage to design, develop, and distribute innovative products, services, features, and integrations through Q2's digital banking platform. Q2 Innovation Studio includes an API-based and SDK-based open technology platform that allows our financial institution customers, FinTechs and other digital solution providers to develop unique extensions of and integrations to our digital banking platform. Financial institution customers wishing to customize or supplement our digital banking platform solutions may subscribe to the Q2 Innovation Studio and deploy their own development resources, or utilize certified partners, to develop customized services or unique integrations, allowing them to innovate more quickly and to differentiate their brands leveraging our secure digital banking platform. Additionally, FinTechs and other digital solution providers can use the Q2 Innovation Studio to develop integrations of their financial services offerings to our digital banking platform, allowing our broad set of digital banking platform customers to select from a substantial and growing catalogue of pre-integrated technology partners to quickly and easily deploy the latest financial and other services solutions expected by End Users. Q2 Innovation Studio can significantly reduce the time and cost it takes to bring new offerings to market and create new opportunities for customer and End User engagement and retention. We believe Q2 Innovation Studio facilitates a mutually beneficial ecosystem of financial institutions, FinTechs and other digital solution providers, allowing them to partner, generate new revenue opportunities, and enhance End User engagement in the new frontier of financial services.

Helix

Helix allows FinTechs and innovative Brands to incorporate banking services into their digital offerings, allowing them to easily and efficiently incorporate highly personalized financial experiences within their digital offerings and meet the stringent regulatory and technical requirements applicable to financial institutions and their banking services. Helix combines a cloud-based, real-time core processing platform with the services necessary to support it, including integrated issuer processing, identity verification technologies and the banking services of one of Q2's financial institution partners. These financial institution partners provide the highly-regulated banking services which FinTechs and Brands cannot offer on their own without a bank charter, including issuing accounts and cards, holding and insuring deposits and moving money on the FinTech's or Brand's behalf.

Implementation Services, Professional Services and Customer Support

We seek to deepen and grow our customer relationships by providing consistent, high-quality implementation services, professional services, advisory services and customer support, which we believe drive higher customer retention and incremental sales opportunities within our existing customer base. We structure our implementation teams to effectively collaborate with the management and technology teams of our customers ensuring the rapid deployment and effective utilization of our solutions. We offer customized professional services to assist our customers with their efforts to extend our offerings and differentiate their brands. In certain cases, we engage with customers for more tailored, premium professional services, or Premier Services, with select established customers resulting in a deeper and ongoing level of engagement with them. Under certain circumstances for our digital lending solutions, we also partner with third-party professional system integrators to support our customers in the installation and configuration process. These implementation teams develop and execute a coordinated implementation plan for our customers centered around five standard phases of IT transformation projects: initiation, configuration, application testing, limited production and production.

Our customer support personnel serve the comprehensive support-related needs of our customers. Due to the highly-regulated and complex nature of the financial services industry, our implementation and customer support teams, including any third-party professional system integrators with which we partner, must be knowledgeable about our solutions and the regulatory environment in which our customers are required to operate.

Partner Offerings

In addition to our Q2 Innovation Studio offerings, our customers are reliant on an ever-growing ecosystem of third-party digital solutions to complement their financial services offerings, and we provide a broad range of tools to help our customers efficiently bring them to market. The flexible nature of our solutions, along with our proprietary, highly flexible set of integration tools, allows us to build rapid integrations with our customers' internal and third-party systems to support End-User activities and customer processes. These integration tools connect with a wide variety of third-party applications, allowing us to seamlessly integrate with our customers' internal and third-party systems such as account services, payments and imaging. Our ability to integrate with these systems enables our customers to offer a comprehensive set of consumer and commercial functionality to their End Users.

Sales and Marketing

Our sales and marketing organization is responsible for growing our customer base and maintaining and expanding relationships with our existing customers. We sell our solutions primarily through our direct sales organization but also through partnerships for select solutions and global regions. Our direct sales organization consists of experienced sales professionals who are organized by geography, account size, type of market and whether a prospect is a new or existing customer. Customers are assigned a dedicated representative to provide ongoing assistance in the execution of the customer's digital strategy to meet the needs of its End Users. Our sales representatives are supported by our solutions consulting and sales operations teams.

Our marketing team complements our sales organization through integrated programs for demand creation, pipeline acceleration, customer expansion and brand advocacy. While the financial institution market is well-defined due to the regulatory classification of financial institutions, the markets for FinTechs and other financial services providers are broader and more difficult to define due to the changing number of providers in each market. We focus our marketing efforts on sponsorships, highly-targeted tradeshows, publications, digital newsletters, digital advertising, account-based marketing, as well as referral agreements with strategic industry partners. Our marketing team also conducts primary research to support our industry thought leadership and to identify emerging trends in End-User behavior and digital activities. Our marketing programs primarily target digital transformation, technology, finance, operations and marketing executives as well as senior business leaders.

Research and Development

Our focus on innovation has fueled our growth and enables us to provide our customers secure, cloud-based digital solutions that transform the ways in which financial institutions, FinTechs and other financial service providers engage with End Users. We allocate significant resources to developing and improving our solutions to meet our customers' evolving needs. We monitor and test our solutions regularly, and we maintain a disciplined release process to enhance our existing solutions and introduce new capabilities without interrupting service delivery. We follow state-of-the-art practices in software development and design, including using modern programming languages, data storage systems and other tools. Our multi-tiered architecture enables us to scale, add and modify features quickly in response to changing market dynamics, customer needs and regulatory requirements. Our platform approach supports rapid development and deployment of new features to address evolving market needs. We also enable customers to address their market-specific needs via our extension and integration frameworks, which is a key aspect of our technology strategy.

Technology and Operations

Due to the highly regulated nature of the financial services industry, our digital banking platform combines both multi-tenant and single instance aspects. This structure is designed to maximize End-User data security and minimize compliance cost and risks. Our solutions utilize a multi-tiered architecture that allows for scalability, operational simplicity, security and disaster recovery. We have also developed an internal operations and analytics platform that aggregates and leverages customer instance and End-User experience captured within our solutions to drive future innovation and scale.

We serve our digital banking platform customers from a distributed cloud which combines multiple public cloud vendors and a private cloud consisting of active-active American National Standards Institute Tier 4 datacenters managed by a leading co-location partner. Our digital lending and Helix solutions are hosted by cloud-based hosting services. All of our hosting environments are under a single security posture and compliance stance, allowing us to integrate the various solutions together into a seamless End-User experience, minimizing the impact and relevance of any one component on our combined distributed cloud hosting environment. This configuration provides us with a flexible foundation to support our innovation, allowing us to position services on a piecemeal basis to maximize their performance, scale, cost, resiliency and security.

We utilize prevailing industry configurations to minimize service interruptions, and regularly consider and implement improvements to enhance the resiliency of our services, including our recent improvements to actively distribute services across both data centers. As a result of these improvements, our network infrastructure is fully redundant within each of our data centers, including network teaming to provide network redundancy that includes multiple upstream Internet connections. We have also purchased a private block of IP address space to simplify and expedite our disaster recovery management operations for our digital banking platform customers.

Our digital banking platform has had average uptime in excess of 99.9% since January 2013. We actively monitor our infrastructure 24x7 for any sign of vulnerability, and we seek to take preemptive action to minimize and prevent downtime. Our hosting environments employ advanced measures to ensure integrity and security, from layers of zero-trust network access, design-to-fail architecture, anomaly behavior detection of technical assets, to privileged credential access control. We also use strong endpoint hardening and monitoring to mitigate risk posed by the devices used by our globally distributed workforce.

All End Users of our solutions are authenticated, authorized and validated before they can access our solutions. End Users must have, at a minimum, a valid user ID and associated password. Many of our customers also employ other authentication methods such as out-of-band, one-time password delivery to log on to our solutions and hardware cryptographic tokens to authorize transactions. Our layered security model allows different groups of End Users to have different levels of access to our solutions. Our code is security reviewed multiple times before being deployed into production, our solutions' vulnerability is tested using internal tools prior to release, and an independent third party performs penetration and vulnerability tests on our solutions periodically.

Intellectual Property

We rely on a combination of patent, trademark, trade secrets and copyright laws, as well as confidentiality procedures and contractual restrictions, to establish, maintain and protect our proprietary rights. As of December 31, 2022, we had seven U.S. patent applications pending and 11 issued U.S. patents, with expiration dates ranging from October 2027 to October 2040. Despite substantial investment in research and development activities, we have not focused on patents and patent applications historically. We license third-party technologies, such as bill pay technologies, that are incorporated into some of our solutions.

Our Competition

The market for digital solutions for financial services providers is highly competitive. We believe that the breadth of the comprehensive integration among our solution offerings and our customers' internal and third-party systems, combined with our deep industry expertise, reputation for consistent, high-quality customer support, pace at which we bring innovation to market, and our unified cloud-based digital banking, digital lending, Q2 Innovation Studio and Helix solutions distinguish us from the competition.

We currently compete with providers of technology and services in the financial services industry, including point system vendors, core processing vendors and systems internally developed by financial services providers. With respect to our digital banking platform, we have several point solution competitors, including NCR Corporation, or NCR, Alkami Technology, Inc. and Lumin Digital in the online, consumer and small business banking space and Finastra, ACI Worldwide, Inc. and Bottomline Technologies (de), Inc. in the commercial banking space. We also compete with core processing vendors that provide systems and services such as Fiserv, Inc., Jack Henry and Associates, Inc. and Fidelity National Information Services, Inc., or FIS. With respect to our lending platform, we compete against several point system competitors, including Abrigo, Baker Hill Solutions, LLC, Fair Isaac Corporation, nCino, Inc., Finastra, Moody's Analytics, Inc., Brilliance Financial Technology, Oracle Corporation, Temenos AG, and core processing vendors, including FIS and Fiserv. With respect to our Helix solution, we primarily compete with Galileo Financial Technologies, LLC, Marqeta, Inc. and Green Dot Corporation. Many of our competitors have significantly more financial, technical, marketing and other resources than we have, may devote greater resources to the promotion, sale and support of their systems than we can, have more extensive customer bases and broader customer relationships than we have and have longer operating histories and greater name recognition than we have. In addition, many of our competitors spend more funds on research and development in terms of absolute dollars.

Although we compete with point system vendors and core processing vendors, we also partner with some of these vendors for certain data and services utilized in our solutions and receive referrals from them. In addition, certain of our customers have or can obtain the ability to create their own in-house systems, and while many of these systems have difficulties scaling and providing an integrated platform, we still face challenges displacing in-house systems and retaining customers that choose to develop an in-house system.

We believe the principal competitive factors for why customers choose our solutions in the financial services markets we serve include the following:

- alignment with the missions of our customers;
- ability to provide a single platform for consumer and commercial End Users;
- ability to provide a comprehensive portfolio of products of integrated end-to-end solutions for both account holders and borrowers;
- breadth and depth of product portfolio addressing numerous mission critical applications for our customers;
- full-feature functionality across digital channels;
- ability to integrate targeted offers for End Users across digital channels;
- ability to support financial institutions in acquiring deposits with open API technologies;
- SaaS delivery and pricing model;

- ability to support both internal and external developers to quickly integrate with third-party applications and systems utilizing an SDK;
- design of the End-User experience, including modern, intuitive and touch-centric features;
- configurability and branding capabilities for customers;
- familiarity of workflows and terminology and feature-on-demand functionality;
- integrated multi-layered security and compliance of solutions with regulatory requirements;
- quality of implementation, integration and support services;
- domain expertise and innovation in financial services technology;
- ability to innovate and respond to customer needs rapidly;
- rate of development, deployment and enhancement of solutions; and
- ability to collect and utilize data generated by our solutions to deliver insights to our customers.

We believe that we compete favorably with respect to these factors within the financial institution and other financial services providers markets we serve, but we expect competition to continue and increase as existing competitors continue to evolve their offerings and as new companies enter our market. To remain competitive, we believe we must continue to invest in research and development, sales and marketing, customer support and our business operations generally.

People

As of December 31, 2022, we had 2,249 employees, of which 2,242 are full time employees, 1,842 of which were employed in the United States, and 400 were employed outside of the United States. We consider our current relationship with our employees to be good. None of our employees are represented by a labor union or are a party to a collective bargaining agreement.

At Q2, we view our people and culture as our greatest asset. For more than 18 years, Q2 has been recognized and defined by our mission-driven culture. Our mission is to build stronger and more diverse communities by strengthening their financial institutions. Our people are paramount to our success, and we have always operated with a set of principles to help guide us in how we treat one another, run our business and serve our customers, partners and communities. To ensure our continued success, we endeavor to nurture our mission-driven culture by how we grow our teams, define our goals and reward our employees. Our current programs focus on the following key human capital measures and objectives:

Diversity, Equity and Inclusion

As a global company, we embrace the diversity of our employees, partners, customers, other stakeholders and the communities we collectively serve. We believe that consideration of differing points of view, including unique backgrounds, experiences and talents, is critical to our success. We are building diversity, equity and inclusion, or DEI, into our culture with a focus on creating environments and practices that mitigate bias and allow our employees to be their best. Based on information provided by our employees who opted to self-identify, representing the vast majority of our employees, our employee population as of December 31, 2022 reflected the following:

	Women	Non-White ⁽¹⁾
Overall	35%	25%
Director-level employees and above	33%	17%

⁽¹⁾ Excludes the impact of our Bangalore, India operations.

Our DEI efforts highlight:

- partnerships with industry leaders to bring networking and learning opportunities for our Q2 team members;
- adding new Q2 employee resource groups, or ERGs, and expanding the impact of those groups;
- promoting an equal opportunity work environment that enables employees to feel safe to express their ideas and perspectives and where they feel they belong;

- offering multidisciplinary learning opportunities educating employees and leaders to recognize where bias exists and building practices to combat its impact;
- recruiting, developing and retaining diverse top talent;
- reinforcing our commitment by supporting external community-based DEI-focused causes and organizations; and
- publishing our second environmental, social and governance, or ESG, report, which included disclosures on our DEI progress and initiatives.

In fiscal 2022, our DEI initiatives included completing leadership training institute targeting our executive leadership team with enhanced DEI focus and enhancing communications to internal and external stakeholders of our DEI commitment, efforts and progress.

We continue to evolve our practices and operating procedures, looking for new ways to identify and eliminate bias and inequities within our organization, including enhanced employee feedback and data collection to supplement our understanding and support of our teams. In addition to our first three ERGs, Q2 Women, Black Q2 and Q2 Pride, we are in the early steps of launching two additional ERGs for our Asian Pacific Islanders (API) and Latino team members. Each ERG has executive leadership support, mission statements and volunteer leadership rosters. The DEI learning journey continues with multiple avenues for increasing individual understanding of DEI concepts and practices through a variety of channels. Our most senior leaders completed our inaugural DEI Leadership Institute investing six months of time to help shape our DEI priorities and begin actions to support. Antibias and microaggressions training was offered to all Q2 employees to help serve as foundational concepts.

We are also focusing our charitable efforts on new causes with DEI-focused philanthropies, providing opportunities for our team members to learn as well as give back. During 2022, we were fortunate to bring awareness to a variety of important community programs supporting a range of needs, including The Trevor Project which operates the world's largest suicide prevention and crisis intervention organization for LGBTQ youth, and Homes for our Troops, which builds homes for U.S. veterans in need. Our charitable efforts also focus on causes outside of the U.S., including India-based Akshaya Patra Foundation, which strives to eliminate classroom hunger.

Employee Engagement and Culture

Since our inception, our culture has been rooted in our mission to build stronger and more diverse communities by strengthening the financial institutions that serve them. We believe our passion, dedication and commitment towards this mission is a significant differentiator for us with our customers and employees. Our culture is demonstrated and shared through our employee traditions and customs and daily engagements among our employees and with our customers. We continue to refine our employee engagement programs to meet the continued and changing needs of our Q2 team members, including to accommodate a number of remote employees and hybrid working styles. We offer a range of learning and social opportunities, both virtually and remote, from hosted cooking lessons, exercise programs, book clubs, games and music concerts for frequent, varied ways to engage with our employees. The role of the campus has evolved to emphasize interaction, which can include formal meetings, informal conversations, brainstorming, social events, and other activities that make the most of being together face-to-face.

We live our essential mission of supporting communities through active community support with volunteerism and financial support. We partner with local non-profits that align to our employees' passions with hands-on and virtual volunteering, providing care and impact to communities across the globe. Additionally, we use technology and online tools, such as Benevity, to help promote volunteer opportunities for individual employees and teams. We reward our employees for their service with donation dollars to share back with non-profits of their choice. As an example, in 2022 we launched the Q2 Philanthropy Fund, a grant application process dedicated to increasing the reach, scope, transparency, and access to funding dollars for the philanthropic organizations that matter to our team members. Q2 granted \$110,000 to nonprofit organizations to help serve their mission in Texas, Nebraska, North Carolina and India through that fund. In 2022, our team members reported more than 9,000 hours of community service to approximately 414 different causes, and our team members and Q2 combined efforts to give over \$1,000,000 to a variety of non-profit organizations across the globe.

Understanding how our team members are doing is more critical than ever. We are committed to our annual company-wide engagement surveys and thoroughly analyze the results from those, including through the use of third-party analytics, to ensure we hear our employees and understand their input and feedback. Additionally, we conduct pulse surveys quarterly to supplement our annual engagement surveys and obtain the latest information and feedback from employees, which helps us more promptly enhance employee programs and benefits. Our leadership team routinely considers the feedback from our employee engagement surveys, both positive and constructive, and focuses on making employee-suggested changes to become an even better place to work.

Q2 has been an honoree of Austin American-Statesman's "Top Places to Work" for 12 consecutive years and in 2022, Q2 was also awarded a place on the "Top Places to Work USA," based on our employee survey responses across the country.

Our culture is visible across our organization and highlighted through a host of initiatives, programs and committees including the following:

- our portfolio of company-wide events and forums that foster connections to the organization and one another;
- our employee volunteer committees focused on culture, wellness, and charitable causes that help create opportunities for employees to support causes to make a difference in the workplace and local communities;
- our workspaces and virtual workspace resources that reinforce our mission and guiding principles and promote a collaborative, high-energy work environment that helps facilitate team-based problem solving and cross-departmental learning; and
- our evolving new-hire employee orientations that help new employees learn about our business, culture, mission and values and be positioned for successful performance in their new roles.

To create a culture of teamwork and rewards, we support a range of recognition programs. One of our most utilized programs is a points-based rewards system that allows our employees to highlight successes and give thanks to individuals and teams across the organization. We encourage the engagement of peer-to-peer recognition and showcase our wins, while we utilize Q2's guiding principles as a framework to recognize the behaviors we expect our employees to model. We provide other meaningful opportunities for recognition that emphasize our commitments to each other and our customers, including our Circle of Awesomeness recognition program which recognizes outstanding team members across our organization, including both sales and non-sales team members. Employees are selected based on peer and customer nominations and are awarded with gifts to celebrate their accomplishments, including trips, personalized shopping experiences and professional development opportunities.

Through our sponsorship of Q2 Stadium and our partnership with Austin FC, Austin's major league soccer team, we are also able to extend Q2's philanthropic footprint, through volunteering and fundraising events, and offer meaningful team-building experiences, including:

- support of three central Texas nonprofits targeting underserved communities;
- entrepreneurial sponsorships providing funding to minority-owned startups;
- our 2022 Dodgeball tournament for the Juvenile Diabetes Research Foundation, held at Q2 Stadium, that raised more than \$120,000;
- sponsoring and volunteering for Austin's largest blood drive in 2022, hosted at Q2 Stadium; and
- providing Austin FC game day experiences for over 1,300 of our employees and a variety of customers and non-profit partners.

Learning and Development

We recognize the importance of employees developing and progressing in their careers, starting on their first day with our robust new-hire employee orientation and thoughtful onboarding plans, which are designed to give employees a successful beginning of their Q2 career. Once employees are onboarded, we then look at the ways in which their skills and careers can further develop at Q2. We provide a variety of resources to help our employees grow in their current roles and build new skills, including a wide variety of development resources and courses through on-demand as well as facilitated learning opportunities. We emphasize individual and team development planning as part of our annual goal-setting process. We believe leading our employees is one of the greatest acts of trust we can show to our managers, and accordingly all managers go through training to enable them to effectively perform as leaders. We offer leadership development resources and programs for all leaders at all experience levels, have created leadership competencies based on our guiding principles to help frame our leadership development programs and continue to build tools to continually advance leaders' capabilities to develop and scale their teams. Globally, we are invested in higher education through internship programs that target colleges and universities. In 2022, our U.S. college intern program hosted 38 students positioned across nearly all functions at Q2. Working both remotely and on Q2 campuses, interns benefit from a 10-week summer program that includes on-the-job learning, a targeted curriculum and community service opportunities.

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We offer learning experiences in a variety of formats, both facilitated classroom style and asynchronous on-demand learnings available to all Q2 team members. We offer role-specific training, ongoing professional skills development and we collaborate with other learning partners to create a wide portfolio of learning resources. We also have launched new online learning experiences to better target digital training resources for employees at any point in their Q2 career journey, from new hire through career development.

Talent Acquisition

We work diligently to attract the best talent from a diverse range of sources to meet the current and future demands of our business. We have established relationships with world-class universities, including historically black colleges and universities, or HBCUs, professional associations and industry groups to proactively attract talent. We have a strong employee value proposition that leverages our mission-driven culture, collaborative working environment, competitive pay structures and exciting growth opportunities to attract talent. We are proud that for fiscal 2022, over 25% of our requisitions were filled internally, utilizing our strong internal talent pipeline, in addition to building the external talent relationships needed to support our company strategy. We leverage multiple resources specifically targeting diverse candidates in our recruiting pipeline, and we are making investments to help us ensure the recruiting process is objective and fair in our assessment processes. We continue to focus on talent development to broaden and enable our recruiting and leadership teams to advise and deploy even more inclusive recruitment practices.

Compensation and Benefits

Our compensation programs are designed to provide a compensation package that will attract, retain, motivate and reward superior employees who must operate in a fast paced, highly-competitive, and technologically-challenging environment, commensurate with their roles and contributions. For our Director-level and above employees, as well as all of our sales personnel, we seek to do this by linking annual changes in compensation to overall Company performance, and where applicable, each individual's contribution to the results achieved. The emphasis on overall Company performance is intended to align such employees' financial interests with the interests of our stockholders, particularly as it relates to our long-term incentive plans. We are committed to providing comprehensive benefit options, and it is our intention to offer benefits that will allow our employees and their families to live healthier and more secure lives. Some examples of our wide-ranging global benefits offered are: 401(k) retirement plan, including employer contributions; medical insurance, prescription drug benefits, dental insurance, vision insurance, accident insurance, critical illness insurance, life insurance, disability insurance, health savings accounts with employer contributions, flexible spending accounts, legal insurance and pet insurance.

Employee Well-Being

We are committed to the health, safety and well-being of our employees. In addition to traditional employee benefits, we offer a number of innovative benefits to support the physical, mental and financial health of our employees. These include, among many other things: virtual wellness clinics and classes; global fertility benefits; our Q2 Compassion Fund, which is designed to help team members facing financial hardship immediately after natural disasters or unforeseen personal hardships; online tools that assist employees with their physical and mental health; and special events with outside vendors and participants focusing on employee well-being. We also provide global access to an Employee Assistance Program (EAP) providing our employees and anyone living in their household with access to a variety of resources, including mental health and counseling, work life balance and online legal resources.

Government Regulation

As a technology service provider to financial institutions, FinTechs and Alt-FIs in the United States, we are not required to be chartered by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the National Credit Union Administration or other federal or state agencies that regulate or supervise our customers and other providers of financial services in the United States.

Our customers and prospects are subject to extensive and complex regulations and oversight by federal, state and other regulatory authorities. These laws and regulations are constantly evolving and affect the conduct of our customers' operations and, as a result, our business. Our solutions must enable our customers to comply with applicable requirements such as the following:

- the Dodd-Frank Wall Street Reform and Consumer Protection Act, or Dodd-Frank Act;
- the Electronic Funds Transfer Act;
- Mobile Banking Guidance;
- the Electronic Signatures in Global and National Commerce Act;

- federal, state and other usury laws;
- the Gramm-Leach-Bliley Act, or GLBA;
- the Fair Credit Reporting Act;
- the EU General Data Protection Regulation, or GDPR;
- laws against unfair, deceptive, or abusive acts or practices;
- the Privacy of Consumer Financial Information regulations;
- the Bank Secrecy Act and the USA PATRIOT Act of 2001;
- the Guidance on Supervision of Technology Services Providers promulgated by the Federal Financial Institutions Examination Council, or FFIEC;
- third-party risk management regulations;
- the NCUA's Guidelines for Safekeeping of Member Information;
- the Guidance on Outsourcing Technology Services promulgated by the FFIEC; and
- other federal, state and international laws and regulations.

We are subject to periodic examination by regulators under the authority of the FFIEC under its Guidance on the Supervision of Technology Services Providers and the Gramm-Leach-Bliley Act of 1999, and federal, state and other laws that apply to technology service providers as a result of the services we provide to the institutions and entities they regulate. As a technology service provider, we are examined by federal financial regulators on a rotating basis. These examinations are based on guidance from the FFIEC, which is a formal interagency body empowered to prescribe uniform principles, standards and report forms for the examination of financial institutions and to make recommendations to promote uniformity in the supervision of financial institutions. The examinations cover a wide variety of subjects, including our management, acquisition and development activities, support and delivery, IT audits, cybersecurity, as well as our disaster preparedness and business recovery planning. The regulators that make up the FFIEC have broad supervisory authority to remedy any shortcomings identified in an examination. Following an examination, our financial institutions customers may request an executive summary of the examination through their lead examination agency.

The Dodd-Frank Act granted the Consumer Financial Protection Bureau, or CFPB, authority to promulgate rules and interpret certain federal consumer financial protection laws, some of which apply to the solutions we offer. In certain circumstances, the CFPB also has examination and supervision powers with respect to service providers who provide a material service to a financial institution offering consumer financial products and services.

The compliance of our solutions with these requirements depends on a variety of factors, including the functionality and design of our solutions, the classification of our customers, and the manner in which our customers and their End Users utilize our solutions. In order to comply with our obligations under these laws, we are required to implement operating policies, programs and procedures to protect the privacy and security of our customers' and their End Users' information and to undergo periodic audits and examinations.

Privacy and Information Safeguard Laws

In the ordinary course of our business, we and our customers using our solutions access and transmit certain types of data, which subjects us and our customers to certain privacy and information security laws in the United States and internationally, including, for example, GLBA, CCPA, CPRA and GDPR, and other federal, state, and other international data privacy, security, and protection laws and regulations designed to regulate consumer information and mitigate identity theft. We are also subject to privacy laws of various states. These laws impose obligations with respect to the collection, processing, storage, disposal, use and disclosure of personal information, and require that financial services providers have in place policies regarding information privacy and security. In addition, under certain of these laws, we must provide notice to consumers of our policies and practices for sharing nonpublic information with third parties, provide advance notice of any changes to our policies and, with limited exceptions, give consumers the right to prevent use of their nonpublic personal information and disclosure of it to unaffiliated third parties. Certain of these laws may, in some circumstances, require us to notify affected individuals of security and privacy breaches of computer databases that contain their personal information. These laws may also require us to notify relevant law enforcement, regulators or consumer reporting agencies in the event of a data breach, as well as businesses and governmental agencies that own data. In order to comply with the privacy and information safeguard laws, we have confidentiality and information security standards and procedures in place for our business activities and our third-party vendors and service providers. Privacy and information security laws and regulations evolve regularly, requiring us to adjust our compliance program on an ongoing basis.

Available Information

Our website address is <https://q2.com>. Our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are available through the investor relations page of our Internet website free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to the SEC. Our website and the information contained therein or connected thereto are not intended to be incorporated into this Annual Report on Form 10-K. In addition, the SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors.

Our business, prospects, financial condition, operating results and the trading price of our common stock could be materially adversely affected by a variety of risks and uncertainties, including those described below, as well as other risks not currently known to us or that are currently considered immaterial. In assessing these risks, you should also refer to the other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes. Our principal risks include risks associated with:

- *our ability to manage our rapid growth;*
- *the challenging macroeconomic environment, including its impact on our customers' purchasing decisions on products and services which are more discretionary in nature and the related demand for our solutions relative to our expectations;*
- *the length, cost and unpredictability of our sales cycle;*
- *the development of and changes to the market for our solutions compared to our expectations;*
- *our ability to attract new customers and expand and renew existing customer relationships;*
- *focusing on the financial services industry and any geographies where we have customer concentration;*
- *managing challenges and costs associated with the implementation of a higher volume of or more complex configurations of our solutions;*
- *customer acceptance of and satisfaction with our existing and new solutions;*
- *the strength of our brand and reputation;*
- *intense competition in the markets we serve and challenges we face as we enter new markets or new sections of existing markets;*
- *integration of our solutions with and reliance by our solutions on third-party systems or services;*
- *security and privacy breaches and defects or errors in our solutions;*

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- *defects or errors in our solutions, including failures associated with payment transactions;*
- *defects or failures in third-party services or solutions;*
- *customer training and customer support;*
- *evolving technological requirements and enhancements and additions to our solution offerings;*
- *our sales and marketing capabilities, including partner relationships;*
- *dependency on our management team and other key employees and recruiting and retaining talent;*
- *increased costs associated with managing growth and the challenges associated with labor shortages, turnover, labor cost increases and extreme competition for talent;*
- *the COVID-19 pandemic and its residual impact;*
- *international operations;*
- *mergers and acquisitions;*
- *our convertible debt obligations and our ability to secure sufficient additional financing when desired or needed on favorable terms;*
- *our revenue recognition method and the relative impacts of changes in subscription rates on implementation costs;*
- *quarterly fluctuations in our operating results relative to our expectations and guidance and the accuracy of our forecasts and the market data we use;*
- *our history of net operating losses and our ability to utilize our net operating loss carryforwards;*
- *the unpredictability of customer subscription renewals or adoption;*
- *our profit margins and the unpredictability of End-User adoption and usage, and customer implementation and support requirements;*
- *the reliability of our forecasting;*
- *our ability to utilize our net operating loss carry forwards;*
- *sales taxes on our solutions;*
- *changes in financial accounting standards or practices;*
- *maintaining proper and effective internal controls and producing accurate and timely financial statements;*
- *regulations applicable to us, our customers and our solutions, including evolving regulation of AI, machine learning and the receipt, collection, storage, processing and transfer of data, and the impacts of any violation of these regulations;*
- *litigation or threats of litigation;*
- *protecting our intellectual property;*
- *"open source" software in our solutions;*
- *risks associated with environmental, social and governance, or ESG, disclosures and evolving ESG disclosure requirements;*
- *expenses and administrative burdens as a public company;*
- *the dilutive effects of future sales, or anticipation of future sales, of our common stock;*
- *unfavorable or misleading research by industry analysts;*
- *our stock price volatility and historical policy of no dividends;*
- *anti-takeover provisions in our charter documents and Delaware law;*

- *our ability to obtain additional financing and dilution to our stockholders resulting from raising capital or using equity for acquisitions; and*
- *our convertible notes and related hedge, warrant and capped call transactions and the related accounting treatment*

Risks Related to our Operations, Industry and the Markets We Serve

We have experienced rapid growth in recent periods and if we fail to manage our growth effectively or experience a decline in our growth rate, we may be unable to execute our business plan, maintain high levels of service and customer satisfaction or adequately address competitive challenges, and our financial performance may be adversely affected.

Since our inception, our business has rapidly grown, which has resulted in large increases in our number of employees, expansion of the types of solutions we sell and the customers we sell them to, expansion to international locations and international customers, expansion of our infrastructure, enhancement of our internal systems and other significant changes and additional complexities. Our revenues increased from \$402.8 million for the twelve months ended December 31, 2020 to \$498.7 million for the twelve months ended December 31, 2021 and \$565.7 million for the twelve months ended December 31, 2022. While we intend to further expand our overall business, customer base, and number of employees, our recent growth rate is not necessarily indicative of the growth that we will achieve in the future. The growth in our business generally, our management of a growing workforce and international customer base and the stress of such growth on our internal controls and systems require substantial management effort, infrastructure and operational capabilities. To support our growth, we must continue to improve our management resources and our operational and financial controls and systems, and these improvements may increase our expenses more than anticipated and result in a more complex business, and our failure to timely and effectively implement these improvements could have an adverse effect on our operations and financial results. In addition, our increased focus on selling our solutions to larger customers and the increased breadth of our solution offerings and the types of customers we serve may result in greater uncertainty and variability in our business and sales results. We also will have to anticipate the necessary expansion of our relationship management, implementation, customer service and other personnel to support our growth and achieve high levels of customer service and satisfaction, particularly as we sell to larger customers that have heightened levels of complexity in their hardware, software and network infrastructure needs and as we sell a broader range of solutions to a broader set of customers. Our success will depend on our ability to plan for and manage this growth effectively and to address challenges to our growth model resulting from rapid changes in economic conditions. If we fail to anticipate and manage our growth or are unable to provide high levels of system performance and customer service, our reputation, as well as our business, results of operations and financial condition, could be harmed.

Unfavorable conditions in our industry or the global economy could limit our ability to grow our business and negatively affect our operating results.

Our operating results may vary based on the impact of changes in our industry or the global economy on us or our customers from industry and economic-driven changes. General macroeconomic conditions, such as a recession or economic slowdown in the United States or internationally, could adversely affect demand for our solutions and make it difficult to accurately forecast our results and plan our future business activities. For example, as a result of the impact of COVID-19, customers delayed and deferred purchasing decisions, and for a period of time, there was a deterioration in near-term demand for net new opportunities. The revenue growth and potential profitability of our business depend on demand for enterprise SaaS solutions and services generally and for financial services solutions in particular. Weak economic conditions affect the rate of financial services information technology spending and could adversely affect our current or prospective customers' ability or willingness to purchase our solutions, delay purchasing decisions, reduce the value or duration of their subscriptions, or affect subscription renewal rates, all of which could adversely affect our operating results. Prolonged economic uncertainties relating to the residual impacts of COVID-19 could limit our ability to grow our business and negatively affect our operating results. If economic conditions deteriorate, our customers and prospective customers may elect to decrease their information technology budgets, which would limit our ability to grow our business and negatively affect our operating results. Uncertain economic conditions may also adversely affect third parties with which we have entered into relationships and upon which we depend in order to grow our business, such as technology vendors and public cloud providers. As a result, we may be unable to continue to grow in the event of future and sustained economic slowdowns.

Our sales cycle can be unpredictable, time-consuming and costly, which could harm our business and operating results.

Our sales process involves educating prospective customers and existing customers about the use, technical capabilities and benefits of our solutions. Prospective customers, especially larger financial services providers, often undertake a prolonged evaluation process, which typically involves not only our solutions, but also those of our competitors and lasts from six to nine months or longer. We may spend substantial time, effort and money on our sales and marketing efforts without any assurance that our efforts will produce any sales. It is also difficult to predict the level and timing of sales opportunities that come from our referral partners.

Events affecting our customers' businesses have and may continue to occur during the sales cycle that could affect the size or timing of a purchase, contributing to more unpredictability in our business and operating results. Such events have and may continue to cause our customers or partners to delay, reduce, or even cancel planned digital financial services spending and impact our business and operations. During the second half of 2022, we observed a decline in customer demand relative to our expectations earlier in the year for certain discretionary aspects of our solutions, namely professional services, which we believe may be related to the challenging macroeconomic environment. During the second half of 2022, we also observed a decline in transactional revenue from our Helix and payment solutions, resulting from decreased usage. Additionally, we may experience challenges associated with accurately predicting the impacts of any macroeconomic downturn on our customers and their End Users, including in particular the impacts of any downturn on FinTechs and our arrangements with them, as our arrangements with FinTechs represent a more complex revenue model for us which may be more vulnerable to an economic downturn than our arrangements with financial institutions. If customers or partners significantly reduce their spending with us or significantly delay or fail to make payments to us, our business, results of operations, and financial condition would be materially adversely affected, and as a result of our sales cycle, subscription model and our revenue recognition policies, the effects of such reductions or delays on our results of operations may not be fully reflected for some time.

If the market for our solutions develops more slowly than we expect or changes in a way that we fail to anticipate, our sales would suffer and our operating results would be harmed.

The market for financial services has been dramatically changing, and we do not know whether financial institutions and other financial services providers will adopt or continue to adopt our existing and new solutions or whether the market will change in ways that we do not anticipate. Many financial service providers have invested substantial personnel and financial resources in legacy software, and these institutions may be reluctant or unwilling to convert from their existing systems to our solutions. For financial service providers, switching from one provider of solutions (or from an internally developed legacy system) to a new provider is a significant endeavor. Many potential customers believe switching providers involves too many potential disadvantages such as disruption of business operations, loss of accustomed functionality, and increased costs (including conversion and transition costs). Furthermore, some financial institutions may be reluctant or unwilling to use a cloud-based solution over concerns such as the security of their data and reliability of the delivery model. These concerns or other considerations may cause financial institutions to choose not to adopt cloud-based solutions such as ours or to adopt alternative solutions, either of which would harm our operating results. We attempt to overcome these concerns through value enhancing strategies such as a flexible integration process, continued investment in the enhanced functionality and features of our solutions, and investing in new innovative solutions. If financial service providers are unwilling to transition from their current systems, the demand for our solutions and related services could decline and adversely affect our business, operating results and financial condition.

Our future success also depends on our ability to sell new solutions and enhanced solutions to our current and new customers. As we create new solutions and enhance our existing solutions to support new customer types, technologies and devices, these solutions and related services may not be attractive to customers. If the market for our solutions does not continue to evolve in the manner in which we believe it will or if our new solutions, in particular our Q2 Innovation Studio and Helix offerings, are not adopted by our current and prospective customers, our future business prospects may be negatively impacted. In addition, promoting and selling these new and enhanced solutions may require increasingly costly sales and marketing efforts, and if customers choose not to adopt these solutions, our business could suffer.

If we are unable to attract new customers, continue to broaden our existing customers' use of our solutions or renew existing customer relationships, our business, financial condition and results of operations could be materially and adversely affected.

To increase our revenues, we will need to continue to attract new customers and succeed in having our current customers expand the use of our solutions. In addition, for us to maintain or improve our results of operations, it is important that our customers renew their subscriptions with us on similar or more favorable terms to us when their existing subscription term expires. Our revenue growth rates may decline or fluctuate as a result of a number of factors, including customer spending levels, customer dissatisfaction with our solutions, decreases in the number of customers, decreases in usage of our solutions by End Users, changes in the type and size of our customers, pricing changes, competitive conditions, the loss of our customers to other competitors and general economic conditions. We cannot assure you that our current customers will renew or expand their use of our solutions. If we are unable to attract new customers or retain or attract new business from current customers, our business, financial condition and results of operations may be materially and adversely affected.

We derive substantially all of our revenues from customers in the financial services industry, and any downturn or consolidation in the financial services industry, or unfavorable economic conditions affecting regions in which a significant portion of our customers are concentrated or segments of potential customers on which we focus, could harm our business.

A significant portion of our revenues is derived from financial institutions. Financial institutions have in the past experienced significant pressure due to economic uncertainty, liquidity concerns and increased regulation. In recent years, many financial institutions have merged or been acquired, and periodically during downturns many financial institutions fail. Failures and consolidations are likely to continue, and there are very few new financial institutions being created. Further, if our customers merge with or are acquired by other entities that have in-house developed solutions or that are not our customers or use fewer of our solutions, our customers may discontinue, reduce or change the terms of their use of our solutions. It is also possible that the larger financial institutions that result from mergers or consolidations could have greater leverage in negotiating terms with us or could decide to replace some or all of our solutions. Financial institutions increasingly face competition from non-depository institutions or other innovative products or emerging technologies, such as cryptocurrencies, which may reduce the number of End Users or transactions using their more traditional financial services. Any of these developments could have an adverse effect on our business, results of operations and financial condition. Recent economic pressures from inflation, rising interest rates, or a slowdown in the economy, financial markets and credit markets have or could have an impact on account holder or End User usage of our solutions and on our customers' prospects and our business sales cycles, our prospects' and customers' spending decisions, including for some of our non-implementation services which are more discretionary in nature, which has and may continue to impact the timing of purchasing decisions and demand for our solutions. Any downturn in the financial services industry or unfavorable economic conditions affecting the regions in which our customers or prospective customers are concentrated or particular segments of customers or prospective customers on which we focus, including the FinTech sector, may cause our customers or prospective customers to delay or reduce their spending on solutions such as ours, seek to terminate or renegotiate their contracts with us or fail.

We may encounter implementation challenges, particularly as the number, size, type and complexity of customers that we serve increase and change, and we may have to delay revenue recognition for some complex engagements, which would harm our business and operating results.

We have and may continue to face unexpected implementation challenges related to the complexity of our customers' implementation and integration requirements, particularly implementations for larger customers with more complex requirements in their hardware, software and network infrastructure needs. Our implementation expenses increase when customers have unexpected data, hardware or software technology challenges, or complex or unanticipated business or regulatory requirements. In addition, our customers in some cases may require complex acceptance testing related to the implementation of our solutions. Implementations often involve integration with or conversion of customers off of systems and services of third parties over which we do not have control. Implementation delays also may require us to delay revenue recognition under the related customer agreement longer than expected. Further, because we do not fully control our customers' implementation schedules, if our customers do not allocate the internal resources necessary to meet implementation timelines or if there are unanticipated implementation delays or difficulties, our revenue recognition may be delayed. Losses of End Users or any difficulties or longer implementation processes, including risks related to the timing and predictability of sales of our solutions, could cause customers to delay or forgo future purchases of our solutions, which would adversely affect the timing of bookings, which would have an adverse impact on our revenue and financial performance.

Our business could be adversely affected if our customers are not satisfied with our solutions, particularly as we introduce new products and solutions, or our systems, infrastructure and resources fail to meet their needs.

Our business depends on our ability to satisfy our customers and meet their needs. Our customers use a variety of network infrastructure, hardware and software, which typically increases in complexity the larger the customer is, and our solutions must support the specific configuration of our customers' existing systems, including in many cases the solutions of third-party providers. If our solutions do not currently support a customer's required data format or appropriately integrate with a customer's applications and infrastructure, then we must configure our solutions to do so, which could negatively affect the performance of our systems and increase our expenses and the time it takes to implement our solutions. Any failure of or delays in our systems or resources could cause service interruptions or impaired system performance. Some of our customer agreements require us to issue credits for downtime in excess of certain thresholds, and in some instances give our customers the ability to terminate the agreements in the event of significant amounts of downtime, or if we experience other defects with our solutions. If sustained or repeated, these performance issues could reduce the attractiveness of our solutions to new and existing customers, cause us to lose customers, and lower renewal rates by existing customers, each of which could adversely affect our revenue and reputation. In addition, negative publicity resulting from issues related to our customer relationships, regardless of accuracy, may damage our business by adversely affecting our ability to attract new customers and maintain and expand our relationships with existing customers.

If the use of our solutions increases, or if our customers demand more advanced features from our solutions, we will need to devote additional resources to improving our solutions, and we also may need to expand our technical infrastructure and related resources at a more rapid pace than we have in the past. This would involve spending substantial amounts to purchase or lease data center capacity and equipment, subscribe to new or additional third-party hosting services, upgrade our technology and infrastructure or introduce new or enhanced solutions. It takes a significant amount of time to plan, develop and test changes to our solutions and related infrastructure and resources, and we may not be able to accurately forecast demand or predict the results we will realize from such improvements. There are inherent risks associated with changing, upgrading, improving and expanding our technical infrastructure and related resources. Any failure of our solutions to operate effectively with future infrastructure and technologies could reduce the demand for our solutions, resulting in customer dissatisfaction and harm to our business. Also, any expansion of our infrastructure and related resources would likely require that we appropriately scale our internal business systems and services organization, including implementation and customer support services, to serve our growing customer base. If we are unable to respond to these changes or fully and effectively implement them in a cost-effective and timely manner, our service may become ineffective, we may lose customers, and our operating results may be negatively impacted.

Growth of our business depends on a strong brand and any failure to maintain, protect and enhance our brand could hurt our ability to retain or expand our base of customers.

We believe that a strong brand is necessary to continue to attract and retain customers. We need to maintain, protect and enhance our brand in order to expand our customer base. This depends largely on the effectiveness of our marketing efforts, our ability to provide reliable solutions that continue to meet the needs of our customers at competitive prices, our ability to maintain our customers' trust, our ability to continue to develop new functionality and use cases, and our ability to successfully differentiate our solutions and their capabilities from competitive products and services, which we may not be able to do effectively. While we may choose to engage in a broader marketing campaign to further promote our brand, this effort may not be successful or cost effective. Our brand promotion activities may not generate customer awareness or yield increased revenues, and even if they do, any increased revenues may not offset the expenses we incur in building our brand. If we are unable to maintain or enhance customer awareness in a cost-effective manner, our brand and our business, financial condition and results of operations could be materially and adversely affected.

Our corporate reputation is susceptible to damage by actions or statements made by adversaries in legal proceedings, current or former employees or customers, competitors and vendors, as well as members of the investment community and the media. There is a risk that negative information about our company, even if based on false rumor or misunderstanding, could adversely affect our business. In particular, damage to our reputation could be difficult and time-consuming to repair, could make potential or existing customers reluctant to select us for new engagements, resulting in a loss of business, and could adversely affect our employee recruitment and retention efforts. Damage to our reputation could also reduce the value and effectiveness of our brand name and could reduce investor confidence in us and materially and adversely affect our business, financial condition and results of operations.

The markets in which we participate are intensely competitive, and pricing pressure, new technologies or other competitive dynamics could adversely affect our business and operating results.

We currently compete with providers of technology and services in the financial services industry, including point system vendors, core processing vendors and systems internally developed by financial services providers. With respect to our digital banking platform, we have several point solution competitors, including NCR Corporation, or NCR, Alkami Technology, Inc. and Lumin Digital in the online, consumer and small business banking space and Finastra, ACI Worldwide, Inc. and Bottomline Technologies (de), Inc. in the commercial banking space. We also compete with core processing vendors that provide systems and services such as Fiserv, Inc., Jack Henry and Associates, Inc. and Fidelity National Information Services, Inc., or FIS. With respect to our lending platform, we compete against several point system competitors, including Abrigo, Baker Hill Solutions, LLC, Fair Isaac Corporation, nCino, Inc., Finastra, Moody's Analytics, Inc., Brilliance Financial Technology, Oracle Corporation, Temenos AG, and core processing vendors, including FIS and Fiserv. With respect to our Helix solution, we primarily compete with Galileo Financial Technologies, LLC, Marqeta, Inc. and Green Dot Corporation. Many of our competitors have significantly more financial, technical, marketing and other resources than we have, may devote greater resources to the promotion, sale and support of their systems than we can, have more extensive customer bases and broader customer relationships than we have and have longer operating histories and greater name recognition than we have. In addition, many of our competitors expend more funds on research and development.

We also may face competition from new companies entering our markets, which may include large established businesses that decide to develop, market or resell competitive solutions, acquire one of our competitors or form a strategic alliance with one of our competitors. In addition, new companies entering our markets may choose to offer competitive solutions at little or no additional cost to the customer by bundling them with their existing applications, including adjacent financial services technologies and core processing software. New entrants to the markets we serve might also include financial services providers developing financial services solutions and other technologies, including solutions built using competing BaaS solutions or open API platforms. Competition from these new entrants may make our business more difficult and adversely affect our results.

If we are unable to compete in this environment, sales and renewals of our solutions could decline and adversely affect our business, operating results and financial condition. With the introduction of new technologies and potential new entrants into the markets for our solutions, we expect competition to intensify in the future, which could harm our ability to increase sales and achieve profitability. In addition, we may face increased competition in our existing markets as we enter new markets or sections of a market with larger or different customers and new solutions. Our industry has also experienced recent consolidation which we believe may continue. Any further consolidation our industry experiences could lead to increased competition and result in pricing pressure or loss of market share, either of which could have a material adverse effect on our business, limit our growth prospects or reduce our revenues.

If we are unable to effectively integrate our solutions with other systems or services used by our customers and prospective customers, including if we are forced to discontinue integration due to security or quality concerns with a third-party system or service, or if there are performance issues with such third-party systems or services, our solutions will not operate effectively, our operations will be adversely affected and our reputation may be harmed.

The functionality of our solutions depends on our ability to integrate with other third-party systems and services used by our customers, including core processing software and, in the case of our Helix solutions, banking services. Certain providers of these third-party systems or services also offer solutions that are competitive with our solutions and may have an advantage over us with customers using their software by having better ability to integrate with their software and by being able to bundle their competitive products with other applications used by our customers and prospective customers at favorable pricing. We do not have formal arrangements with many of these third-party providers regarding our access to their APIs to enable these customer integrations. We also resell numerous third-party services and market integrations to a large number of third-party services, including third-party services and integrations offered through our Q2 Innovation Studio solution.

Our business and reputation may be harmed if any such third-party provider:

- changes the features or functionality of its services, applications and platforms in a manner adverse to us;
- discontinues or limits our solutions' access to its systems or services;
- suffers a security incident or other incident that requires us to discontinue integration with its systems or services or results in a compromise of our systems or services;
- experiences staffing shortages or other operational challenges, including as a result of the challenging macroeconomic environment, which interferes with their ability to implement or adequately support an integration with our solutions;

- ceases to operate;
- terminates or does not allow us to renew or replace our existing contractual relationships on the same or better terms;
- modifies its terms of service or other policies, including fees charged to, or other restrictions on, us or our customers; or
- establishes more favorable relationships with one or more of our competitors, or acquires one or more of our competitors and offers competing services.

Such events or circumstances could delay, limit or prevent us from integrating our solutions with these third-party systems or services, which could impair the functionality of our solutions, prohibit the use of our solutions or limit our ability to sell our solutions to customers, each of which could harm our business. If we are unable to integrate with such third-party systems or services as a result of changes to or restricted access to the systems or services by such third parties during the terms of existing agreements with customers using such third-party systems or services, we may not be able to meet our contractual obligations to customers, which may result in disputes with customers and harm to our business. In addition, if any such third-party providers experience an outage, our solutions integrated with such systems or services will not function properly or at all, and our customers may be dissatisfied with our solutions. If the systems or services of such third-party providers have performance or other problems, such issues may reflect poorly on us and the adoption and renewal of our solutions and our business may be harmed. Although we or our customers may be able to switch to alternative technologies if a provider's systems or services were unreliable or if a provider was to limit such customer's access and utilization of its data or the provider's functionality, our business could nevertheless be harmed due to the risk that our customers could reduce their use of our solutions.

If our security measures or the security measures of our customers or third-party providers on whom we rely are compromised or unauthorized access to our systems or customer data is otherwise obtained, our solutions may not be secure or may be perceived as not being secure, and customers may curtail or cease their use of our solutions, our reputation may be harmed, and we may incur significant liabilities.

Certain elements of our solutions process and store personally identifiable information, or PII, such as banking and personal information of our customers and their End Users, and we also may have access to PII during various stages of the implementation process or during the course of providing customer support. Furthermore, as we develop additional functionality, we may gain greater access to PII. We maintain policies, procedures and technological safeguards designed to protect the confidentiality, integrity, availability and privacy of this information and our information technology systems. However, we cannot entirely eliminate the risk of improper or unauthorized access to or disclosure of PII or other security and privacy events that impact the integrity, availability or privacy of PII or our systems and operations, or the related costs we may incur to mitigate the consequences from such events. Further, given the flexibility and complexity of our solutions, there is a risk that configurations of, or defects in, the solutions or errors in implementation could create vulnerabilities to security and privacy breaches. There may be unlawful attempts to disrupt or gain access to our information technology systems or the PII or other data of our customers or their End Users that may disrupt our or our customers' operations. In addition, because we leverage third-party providers, including cloud, software, data center and other critical technology vendors to develop and deliver our solutions to our customers and their End Users, we rely heavily on the data security technology practices and policies adopted by these third-party providers. A vulnerability in a third-party provider's software or systems, a failure of our third-party providers' safeguards, policies, procedures or overall business operations or a breach of a third-party provider's software or systems could result in the compromise of the confidentiality, integrity or availability of our systems or the data housed in our solutions.

Our security measures and the security measures of our customers or third-party providers on whom we rely may not be sufficient to prevent our systems from being compromised as a result of third-party action, the error or intentional misconduct of employees, customers or their End Users, malfeasance or stolen or fraudulently obtained login credentials. Security incidents can result in unauthorized access to, loss of or unauthorized disclosure of confidential information, litigation, indemnity obligations and other possible liabilities, as well as negative publicity, which could damage our reputation, impair our sales, harm our business and result in increased volatility in our stock price. Cyber-attacks, ransomware attacks, account take-over attacks, fraudulent representations and other malicious Internet-based activity continue to increase and evolve and financial services providers, their End Users, and technology providers are often targets of such attacks. In addition to traditional computer "hackers," malicious code (such as viruses and worms), phishing, employee theft or misuse and denial-of-service attacks, sophisticated criminal networks as well as nation-state and nation-state supported actors now engage in attacks, including advanced persistent threat intrusions. Current or future criminal capabilities, discovery of existing or new vulnerabilities, and attempts to exploit those vulnerabilities or other developments, may compromise or breach our systems or solutions.

In addition, third parties may attempt to fraudulently induce our employees or the employees of our customers or third-party providers into disclosing sensitive information such as usernames, passwords or other information to gain access to our confidential or proprietary information or the data of our customers and their End Users. A party who is able to compromise the security of our facilities could cause interruptions or malfunctions in our operations. We may be unable to anticipate or prevent techniques used to obtain unauthorized access or sabotage systems because they change frequently and generally are not detected until after an incident has occurred. As we increase our customer base and our brand becomes more widely known and recognized, we may become more of a target for third parties seeking to compromise our security systems or gain unauthorized access to the data of our customers and their End Users. In addition, there may be a heightened risk of state-sponsored cyberattacks or cyber fraud during periods of geopolitical uncertainty, as cybercriminals attempt to profit from the disruption, given increased online banking, e-commerce and other online activity. Additionally, there is an increased risk that we may experience cybersecurity-related events such as phishing attacks and other security challenges as a result of some of our employees and our service providers working remotely from non-corporate managed networks. Increased risks associated with cyberattacks, data and privacy breaches and breaches of security measures within our solutions, systems and infrastructure or the products, systems and infrastructure of third parties upon which we rely and the resultant costs and liabilities may cause failure or inability to meet our customers' expectations with respect to security and confidentiality and could harm our business and seriously damage our reputation and affect our ability to retain customers and attract new business.

Federal, state and other regulations may require us to notify customers and their End Users of data security incidents involving certain types of personal data. Security and privacy compromises experienced by our competitors, by our customers or by us may lead to public disclosures and widespread negative publicity. Any security and privacy compromise in our industry, whether actual or perceived, could erode customer confidence in the effectiveness of our security measures, negatively impact our ability to attract new customers, cause existing customers to elect not to renew their subscriptions or subject us to third-party lawsuits, regulatory fines or other action or liability, which could materially and adversely affect our business and operating results.

In addition, some of our customers contractually require notification of any data security and privacy compromise and include representations and warranties that our solutions comply with certain regulations related to data security and privacy. Although our customer agreements typically include limitations on our potential liability, there can be no assurance that such limitations of liability would be enforceable or adequate or would otherwise protect us from any such liabilities or damages with respect to any particular claim. We also cannot be sure that our existing general liability insurance coverage and coverage for errors or omissions will continue to be available on acceptable terms or will be available in sufficient amounts to cover one or more claims, or that our insurers will not deny or attempt to deny coverage as to any future claim. The successful assertion of one or more claims against us, the inadequacy of or denial of coverage under our insurance policies, litigation to pursue claims under our policies or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, financial condition and results of operations.

Defects or errors in our solutions, including failures associated with payment transactions, could harm our reputation, result in significant costs to us, impair our ability to sell our solutions and subject us to substantial liability.

Our solutions are inherently complex and may contain defects or errors, particularly when first introduced or as new functionality is released. The volume and dollar amount of payment transactions that we, our customers and our third-party partners process is significant and continues to grow. Transactions facilitated by us, our customers and our third-party partners include debit card, credit card, electronic bill payment transactions, Automated Clearing House, or ACH, payments, real-time payments through faster payment networks, transactions in cryptocurrencies and check clearing that support consumers, financial institutions and other businesses. Despite extensive testing, from time-to-time we have discovered defects or errors in our solutions or the solutions of our third-party partners. In addition, due to changes in regulatory requirements relating to our customers or to technology providers to financial services providers like us, we may discover deficiencies in our or our third party partners' software processes related to those requirements. Material performance problems or defects in our solutions might arise in the future.

Any such errors, defects, other performance problems or disruptions in service to provide bug fixes or upgrades, whether in connection with day-to-day operations or otherwise, could be costly for us to remedy, damage our customers' businesses and harm our reputation. If the continuity of operations, integrity of processing, or ability to detect or prevent fraudulent payments were compromised in connection with payments transactions, we could suffer financial as well as reputational loss. In addition, if we have any such errors, defects or other performance problems, our customers could seek to terminate their agreements, elect not to renew their subscriptions, delay or withhold payment or make claims against us. Any of these actions could result in lost business, increased insurance costs, difficulty in collecting our accounts receivable, costly litigation and adverse publicity. Such errors, defects or other problems could also result in reduced sales or a loss of, or delay in, the market acceptance of our solutions.

Moreover, software development is time-consuming, expensive, complex and requires regular maintenance. Unforeseen difficulties can arise. If we do not complete our periodic maintenance according to schedule or if customers are otherwise dissatisfied with the frequency or duration of our maintenance services, customers could elect not to renew, or delay or withhold payment to us or cause us to issue credits, make refunds or pay penalties. Because our solutions are often customized and deployed on a customer-by-customer basis, rather than through a multi-tenant SaaS method of distribution, applying bug fixes, upgrades or other maintenance services may require updating each instance of our software, which could be time consuming and cause us to incur significant expense. We might also encounter technical obstacles, and it is possible that we discover problems that prevent our solutions from operating properly. If our solutions do not function reliably or fail to achieve customer expectations in terms of performance, customers could seek to cancel their agreements with us and assert liability claims against us, which could damage our reputation, impair our ability to attract or maintain customers and harm our results of operations.

Failures or reduced accessibility of third-party hardware, software or other services on which we rely could impair the delivery of our solutions and adversely affect our business.

We rely on hardware and services that we purchase or lease and software, including open source software, that we develop or license from, or that is hosted by third parties, to offer our solutions. In addition, we obtain licenses from third parties to use intellectual property associated with the development of our solutions. These licenses might not continue to be available to us on acceptable terms, or at all. These third-party providers may in the future choose not to continue to support certain of the hardware, software or services we license. We also may in the future choose to discontinue the use of the hardware, services or software we acquire or license from such third-party providers, which may require that we pay termination fees or recognize related accounting charges or impairments. While we are not substantially dependent upon any third-party hardware, services or software other than our third-party data centers, the loss of the right or ability to use all or a significant portion of our third-party hardware, services or software required for the development, maintenance and delivery of our solutions could result in delays in the provision of our solutions until we develop or identify, obtain and integrate equivalent technology, which could harm our business.

Any errors or defects in the hardware, services or software we use could result in errors, interruptions or a failure of our solutions. Although we believe that there are alternatives, any significant interruption in the availability of all or a significant portion of such hardware, services or software could have an adverse impact on our business unless and until we can replace the functionality provided by these products at a similar cost. Furthermore, such hardware, services and software may not be available on commercially reasonable terms, or at all. The loss of the right to use all or a significant portion of such hardware, services or software could limit access to our solutions. Additionally, we rely upon third parties' abilities to enhance their current products, develop new products on a timely and cost-effective basis and respond to emerging industry standards and other technological changes. We may be unable to effect changes to such third-party technologies, which may prevent us from rapidly responding to evolving customer requirements. We also may be unable to replace the functionality provided by the third-party software currently offered in conjunction with our solutions in the event that such software becomes obsolete or incompatible with future versions of our solutions or is otherwise not adequately maintained or updated.

We depend on data centers operated by third parties and third-party Internet hosting providers, and any disruption in the operation of these facilities or access to the Internet could adversely affect our business.

We currently host our digital banking platform solutions primarily from two third-party data center hosting facilities located in Austin, Texas and Carrollton, Texas, which are both operated by the same third-party provider, and our lending solutions, Helix solutions and a certain portion of our digital banking platform solutions are hosted by cloud-based service providers, including Amazon Web Services and Microsoft Azure. The owners and operators of these current and future facilities and cloud-based hosting services do not guarantee that our customers' access to our solutions will be uninterrupted, error-free or secure. We may experience website disruptions, outages and other performance problems. These problems may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, operational disruption, spikes in customer usage and denial of service issues. As a result of increased online banking activity due to the COVID-19 pandemic, including periodic significant increases in logins by End Users seeking to check their accounts for receipt of government stimulus funds, financial institutions and their online banking service providers have experienced periods of unprecedented user login activity, at times, resulting in delayed access to online banking for many financial institutions, including many of our customers. We have made investments in additional data center capacity to increase the processing capacity of our online banking platform to minimize any future delays, and we expect to make additional incremental investments to further enhance our hosting infrastructure and support. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time. We do not control the operation of these data center facilities and cloud-based service providers, and such facilities and services are vulnerable to damage or interruption from human error, intentional bad acts, power loss, hardware failures, telecommunications failures, fires, wars, terrorist attacks, floods, earthquakes, hurricanes, tornadoes, pandemics or similar catastrophic events. They also could be

subject to break-ins, computer viruses, sabotage, intentional acts of vandalism and other misconduct. The occurrence of a natural disaster or an act of terrorism, a decision to close the facilities without adequate notice or terminate our hosting arrangement or other unanticipated problems could result in lengthy interruptions in the delivery of our solutions, cause system interruptions, prevent our customers' End Users from accessing their accounts or services online, reputational harm and loss of critical data, prevent us from supporting our solutions or cause us to incur additional expense in arranging for new facilities, services and support.

We also depend on third-party Internet-hosting providers and continuous and uninterrupted access to the Internet through third-party bandwidth providers to operate our business. If we lose the services of one or more of our Internet-hosting or bandwidth providers for any reason or if their services are disrupted, for example due to viruses or denial of service or other attacks on their systems, or due to human error, intentional bad acts, power loss, hardware failures, telecommunications failures, fires, wars, terrorist attacks, floods, earthquakes, hurricanes, tornadoes, pandemics or similar catastrophic events, we could experience disruption in our ability to offer our solutions and adverse perception of our solutions' reliability, or we could be required to retain the services of replacement providers, which could increase our operating costs and harm our business and reputation. Prolonged interruption in the availability, or reduction in the speed or other functionality, and frequent or persistent interruptions in our solutions could cause customers to believe that our solutions are unreliable, leading them to switch to our competitors or to avoid our solutions, which could also harm our business and reputation.

We do not have any control over the availability or performance of salesforce.com's Force.com platform, and if we or our digital lending solution customers encounter problems with it, we may be required to replace Force.com with another platform, which would be difficult and costly.

Certain of our digital lending solutions run on salesforce.com's Force.com platform, and we do not have any control over the Force.com platform or the prices salesforce.com charges to our customers. Salesforce.com may discontinue or modify Force.com or increase its fees or modify its pricing incentives for our customers. If salesforce.com takes any of these actions, we may suffer lower sales, increased operating costs and loss of revenue from certain of our digital lending solutions until equivalent technology is either developed by us, or, if available from a third party, is identified, obtained and integrated. Additionally, we may not be able to honor commitments we have made to our customers and we may be subject to breach of contract or other claims from our customers.

In addition, we do not control the performance of Force.com. If Force.com experiences an outage, certain of our digital lending solutions will not function properly, and our customers may be dissatisfied. If salesforce.com has performance or other problems with its Force.com platform or its operations generally, they will reflect poorly on us and the adoption and renewal of certain of our digital lending solutions and our business may be harmed.

If we fail to provide effective customer training on our solutions and high-quality customer support, our business and reputation would suffer.

Effective customer training on our solutions and high-quality, ongoing customer support are important to the successful marketing and sale of our solutions and for the renewal of existing customer agreements. Providing this training and support requires that our customer training and support personnel have financial services knowledge and expertise, which can make it difficult for us to hire qualified personnel and scale our training 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 solutions to existing and future customers could suffer and our reputation would be harmed.

If we fail to respond to evolving technological requirements or introduce adequate enhancements, new features or solutions, our solutions could become obsolete or less competitive.

The markets for our solutions are characterized by rapid technological advancements, changes in customer requirements and technologies, frequent new product introductions and enhancements and changing regulatory requirements. The life cycles of our solutions are difficult to estimate. Rapid technological changes and the introduction of new products and enhancements by new or existing competitors or large financial services providers could undermine our current market position. Other means of digital financial services solutions may be developed or adopted in the future, and our solutions may not be compatible with these new technologies. In addition, the technological needs of, and services provided by, customers may change if they or their competitors offer new services to End Users. Maintaining adequate research and development resources to meet the demands of the markets we serve is essential. The process of developing new technologies and solutions is complex and expensive. The introduction of new solutions by our competitors, the market acceptance of competitive solutions based on new or alternative technologies or the emergence of new technologies or solutions in the broader financial services industry could render our solutions obsolete or less effective.

The success of any enhanced or new solution depends on several factors, including timely completion, adequate testing and market release and acceptance of the solution. Any new solutions that we develop or acquire may not be introduced in a timely or cost-effective manner, may contain defects or may not achieve the broad market acceptance necessary to generate significant revenues. If we are unable to anticipate customer requirements or work with our customers successfully on implementing new solutions or features in a timely manner or enhance our existing solutions to meet our customers' requirements, our business and operating results may be adversely affected.

If we fail to effectively maintain or expand our sales and marketing capabilities and teams, as necessary, including through partner relationships, we may not be able to increase our customer base and achieve broader market acceptance of our solutions.

Increasing our customer base and achieving broader market acceptance of our solutions will depend on our ability to maintain and potentially expand our sales and marketing organizations and their abilities to obtain new customers and sell additional solutions and services to new and existing customers. We believe there is significant competition for direct sales professionals with the skills and knowledge that we require, and we may be unable to hire or retain sufficient numbers of qualified individuals in the future. Our ability to achieve significant future revenue growth will depend on our success in recruiting, training and retaining a sufficient number of direct sales professionals. New hires may require significant training and time before they become fully productive and may not become as productive as quickly as we anticipate. As a result, the cost of hiring and carrying new representatives cannot be offset by the revenues they produce for a significant period of time. Our growth prospects will be harmed if our efforts to expand, train and retain our direct sales team do not generate a corresponding increase in revenues. Additionally, if we fail to sufficiently invest in our marketing programs or they are unsuccessful in creating market awareness of our company and solutions, our business may be harmed and our sales opportunities limited.

In addition to our direct sales team, we also extend our sales distribution through formal and informal relationships with referral partners. While we are not substantially dependent upon referrals from any partner, our ability to grow revenue in the future may depend upon continued referrals from our partners and growth of the network of our referral partners. These partners are under no contractual obligation to continue to refer business to us, nor do these partners have exclusive relationships with us and may choose to instead refer potential customers to our competitors. We cannot be certain that these partners will prioritize or provide adequate resources for promoting our solutions or that we will be successful in maintaining, expanding or developing our relationships with referral partners. Our competitors may be effective in providing incentives to third parties, including our partners, to favor their solutions or prevent or reduce subscriptions to our solutions either by disrupting our relationships with existing customers or limiting our ability to win new customers. Establishing and retaining qualified partners and training them with respect to our solutions requires significant time and resources. If we are unable to devote sufficient time and resources to establish and train these partners or if we are unable to maintain successful relationships with them, we may lose sales opportunities and our revenues could suffer.

We rely on our management team and other key employees, and the loss of one or more key employees could harm our business.

Our success and future growth depend upon the continued services of our management team, in particular our Chief Executive Officer, and other key employees, including in the areas of research and development, marketing, sales, services and general and administrative functions. From time to time, there may be changes in our management team resulting from the hiring or departure of executives, which could disrupt our business. We also are dependent on the continued service of our existing development professionals because of the complexity of our solutions, including complexity arising as a result of the regulatory requirements that are applicable to our customers and the pace of technology changes impacting our customers and their End Users. We may generally terminate any employee's employment at any time, with or without cause, subject to local laws in particular non-U.S. jurisdictions, and any employee may resign at any time, with or without cause; however, our employment agreements with our named executive officers provide for the payment of severance under certain circumstances. We also have entered into employment agreements with our other executive officers which provide for the payment of severance under similar circumstances as in our named executive officers' employment agreements. The loss of one or more of our key employees could harm our business.

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

Competition for executive officers, software developers and other employees in our industry is intense. In particular, we compete with many other companies for executive officers, for software developers with high levels of experience in designing, developing and managing software, as well as for skilled sales and operations professionals and knowledgeable customer support professionals, and we may not be successful in attracting the professionals we need. Competition for software development and engineering personnel is intense. Recent macroeconomic challenges have resulted in inflation and have impacted many industries with increased employee resignations and turnover, labor shortages, extreme competition for talent, wage inflation and pressure to improve employee benefits and compensation to remain competitive, resulting in challenges with effectively managing the related personnel costs. In recent periods, we have experienced heightened employee turnover, delays in hiring suitable replacement candidates and increased costs to hire new employees. A sustained labor shortage or additional increases in turnover rates within our employee base could lead to further increased costs, such as increased wages or other compensation to attract and retain employees and could negatively affect our ability to support our operations and our plans for future growth. In addition, job candidates and existing employees often consider the actual and potential value of the equity awards they receive as part of their overall compensation. Thus, if the perceived value or future value of our stock declines, our ability to attract and retain highly skilled employees may be adversely affected. In addition, many of our existing employees may exercise vested options or vest in outstanding restricted stock units and sell our stock, which may make it more difficult for us to retain key employees. If we fail to attract and retain new employees, our business and future growth prospects could be harmed.

The residual impacts of the COVID-19 pandemic could further adversely affect our business, results of operations and financial condition.

Our business depends on the overall demand for our solutions, and on the economic health of our current and prospective customers. The residual impacts of the COVID-19 pandemic on our business, customers, partners, employees, markets and financial results and condition, are uncertain, evolving and dependent on numerous unpredictable factors outside of our control, including:

- the duration and severity of the pandemic as a public health matter and its impact on governments, businesses, society, our customers, our partners and our business;
- the measures being taken by governments, businesses and society in response to the pandemic;
- the scope and effectiveness of fiscal and monetary stimulus programs and other legislative and regulatory measures being implemented by federal, state and local governments;
- deterioration of worldwide credit and financial markets that could limit our ability to obtain external financing to fund our operations and capital expenditures or to refinance existing indebtedness;
- potential asset impairments, including goodwill, intangible assets, investments and other assets;
- the increase in business challenges among our customers and other businesses from macroeconomic factors; and
- the willingness of current and prospective customers to invest in our solutions.

Any of these factors may impact our business unfavorably. There can be no assurance that our actions taken in response to the COVID-19 pandemic will succeed in preventing or mitigating any negative impacts on our business. Even after the COVID-19 pandemic or a similar public health crisis had subsided, we may continue to experience adverse impacts to our business as a result of its global economic impact, including any recession, economic downturn, inflation, or increased unemployment that has occurred or may occur in the future.

Because our long-term success depends on our ability to operate our business internationally and increase sales of our solutions to customers located outside of the U.S., our business is susceptible to risks associated with international operations.

We have international operations in India, Australia, Canada and the United Kingdom. We also may expand our international operations in the foreseeable future. The continued international expansion of our operations requires significant management attention and financial resources and results in increased administrative and compliance costs. Our limited experience in operating our business in certain regions outside the U.S. increases the risk that our expansion efforts into those regions may not be successful. In particular, our business model may not be successful in particular countries or regions outside the U.S. for reasons that we currently are unable to anticipate. In addition, conducting international operations subjects us to risks that we have not generally faced in the U.S. These include, but are not limited to:

- fluctuations in currency exchange rates;
- the complexity of, or changes in, foreign regulatory requirements;
- the cost and complexity of bringing our solutions into compliance with foreign regulatory requirements, and risks of our solutions not being compliant;
- difficulties in managing the staffing of international operations, including compliance with local labor and employment laws and regulations;
- complexities implementing and enforcing cross-border information technology and security controls;
- potentially adverse tax consequences, including the complexities of foreign value added tax systems, overlapping tax regimes, restrictions on the repatriation of earnings and changes in tax rates;
- dependence on resellers and distributors to increase customer acquisition or drive localization efforts;
- the burdens of complying with a wide variety of foreign laws and different legal standards, certain of which may be significantly more burdensome than those in place in the U.S.;
- increased financial accounting and reporting burdens and complexities;
- longer payment cycles and difficulties in collecting accounts receivable;
- longer sales cycles;
- political, social and economic instability abroad;
- terrorist attacks and security concerns in general;
- integrating personnel with diverse business backgrounds and organizational cultures;
- difficulties entering new non-U.S. markets due to, among other things, consumer acceptance and business knowledge of these new markets;
- constraints of remote working by employees;
- reduced or varied protection for intellectual property rights in some countries; and
- the risk of U.S. regulation of foreign operations.

The occurrence of any one of these risks could negatively affect our international business and, consequently, our operating results. We cannot be certain that the investment and additional resources required to establish, acquire or integrate operations in other countries will produce desired levels of revenue or profitability. If we are unable to effectively manage our expansion into additional geographic markets, our financial condition and results of operations could be harmed.

In particular, we operate some of our research and development activities internationally and outsource a portion of the coding and testing of our products and product enhancements to contract development vendors. We believe that performing research and development in our international facilities and supplementing these activities with our contract development vendors enhances the efficiency and cost-effectiveness of our product development. If we experience problems with our workforce or facilities internationally, we may not be able to develop new products or enhance existing products in an alternate manner that may be equally or less efficient and cost-effective. In addition, if information technology and security controls we have implemented to address risks posed by research and development activities outside of the U.S. are breached or are otherwise ineffective, our intellectual property or technical infrastructure could be compromised or stolen and we could be subjected to cyberattacks or intrusions.

We may acquire or invest in companies, or pursue business partnerships, which may divert our management's attention and present additional risks, and we may be unable to integrate acquired businesses and technologies successfully or achieve the expected benefits of such acquisitions or investments, all of which could have a material adverse effect on our business and results of operations.

We have completed, and may in the future evaluate and consider, potential strategic transactions, including acquisitions of, or investments in, businesses, technologies, services, products and other assets. We also may enter into relationships with other businesses to expand our solutions, which could involve preferred or exclusive licenses, additional channels of distribution, discount pricing or investments in other companies. Negotiating these transactions can be time-consuming, difficult and expensive, and our ability to close these transactions may be subject to approvals that are beyond our control. In addition, we have limited experience in acquiring other businesses. We may not be able to find and identify desirable additional acquisition targets, we may incorrectly estimate the value of an acquisition target, and we may not be successful in entering into an agreement with any particular target. Consequently, these transactions, even if undertaken and announced, may not close.

We may not achieve the anticipated benefits from our past acquisitions or any additional businesses we acquire due to a number of factors, including:

- our inability to integrate, manage or benefit from acquired operations, technologies or services;
- our inability to successfully sell and maintain the solutions of the acquired business;
- unanticipated costs or liabilities associated with the acquisition, including the assumption of liabilities or commitments of the acquired business that were not disclosed to us or that exceeded our estimates;
- difficulty integrating the technology, accounting systems, operations and personnel of the acquired business;
- difficulties and additional expenses associated with supporting legacy solutions and hosting infrastructure of the acquired business;
- uncertainty of entry into markets in which we have limited or no prior experience or in which competitors have stronger market positions;
- difficulty converting the customers of the acquired business to our solutions and contract terms, including disparities in the revenues, licensing, support or professional services model of the acquired company;
- diversion of management's attention to other business concerns;
- adverse effects to our existing business relationships with business partners and customers as a result of the acquisition;
- use of resources that are needed in other parts of our business;
- the use of a substantial portion of our cash that we may need to operate our business and which may limit our operational flexibility and ability to pursue additional strategic transactions;
- the issuance of additional equity securities that would dilute the ownership interests of our stockholders;
- incurrence of debt on terms unfavorable to us or that we are unable to repay;
- incurrence of large charges or substantial liabilities;
- our inability to apply and maintain internal standards, controls, procedures and policies with respect to the acquired businesses;

- difficulties retaining key employees of the acquired company or integrating diverse software codes or business culture; and
- becoming subject to adverse tax consequences, substantial depreciation or deferred compensation charges.

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 operating results based on this impairment assessment process, which could adversely affect our results of operations.

We may not be able to secure sufficient additional financing on favorable terms, or at all, to meet our future capital needs.

We may require additional capital in the future to pursue business opportunities or acquisitions, pay off our existing debt or respond to challenges and unforeseen circumstances. We also may decide to engage in equity or debt financings or enter into credit facilities for other reasons. We may not be able to secure additional debt or equity financing in a timely manner, on favorable terms, or at all. Any debt financing we obtain in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and pursue business opportunities, including potential acquisitions.

Financial and Accounting-Related Risks

Because we recognize revenues from a significant portion of our solutions over the terms of our customer agreements, the impact of changes in the subscriptions for such solutions will not be immediately reflected in our operating results, and rapid growth in our customer base may adversely affect our operating results in the short term since we expense a substantial portion of implementation costs as incurred.

We generally recognize revenues monthly over the terms of our customer agreements. The initial term of our digital banking platform customer agreements averages over five years, although it varies by customer. As a result, the substantial majority of the revenues we report in each quarter are related to agreements entered into during previous quarters. Consequently, a change in the level of new customer agreements or implementations in any quarter may have a small impact on our revenues in that quarter but will affect our revenues in future quarters. Accordingly, the effect of significant downturns in sales and market acceptance of our solutions, or changes in our rate of renewals may not be fully reflected in our results of operations until future periods. Our subscription model also makes it difficult for us to rapidly increase our revenues through additional sales in any period.

Additionally, we recognize our expenses over varying periods based on the nature of the expense. In particular, we recognize a substantial portion of implementation expenses as incurred even though we recognize the related revenues over extended periods. As a result, we may report poor operating results in periods in which we are incurring higher implementation expenses related to revenues that we will recognize in future periods, including implementations for larger customers that have heightened levels of complexity in their hardware, software and network infrastructure needs. Alternatively, we may report better operating results in periods due to lower implementation expenses, but such lower expenses may be indicative of slower revenue growth in future periods. As a result, our expenses may fluctuate as a percentage of revenues and changes in our business generally may not be immediately reflected in our results of operations.

We may experience quarterly fluctuations in our operating results or key operating measures due to a number of factors, which makes our future results difficult to predict and could cause our operating results or key operating measures to fall below expectations or our guidance.

Our quarterly operating results and key operating measures have fluctuated in the past and are expected to fluctuate in the future due to a variety of factors, many of which are outside of our control. As a result, comparing our operating results or key operating measures on a period-to-period basis may not be meaningful. Our past results may not be indicative of our future performance. In addition to the other risks described in this report, factors that may affect our quarterly operating results or key operating measures include the following:

- the addition or loss of customers, including through acquisitions, consolidations or failures;
- the timing of large subscriptions and customer terminations, renewals or failures to renew;
- the amount of use of our solutions in a period and the amount of any associated transactional revenues and expenses;
- the amount and timing of professional service engagements and associated revenues and expenses;
- budgeting cycles of our customers and changes in spending on solutions by our current or prospective customers;

- seasonal variations in sales of our solutions, which may be lower in the first half of the calendar year;
- changes in the competitive dynamics of our industry, including consolidation among competitors, changes to pricing or the introduction of new products and services that limit demand for our solutions or cause customers to delay purchasing decisions;
- the amount and timing of cash collections from our customers;
- long or delayed implementation times for new customers, including larger customers, or other changes in the levels of customer support we provide;
- the timing and predictability of sales of our solutions and the impact that the timing of bookings may have on our revenue and financial performance in a period;
- the timing of customer payments and payment defaults by customers, including any buyouts by customers of the remaining term of their contracts with us in a lump sum payment that we would have otherwise recognized over the term of those contracts, and any costs associated with impairments of related contract assets;
- the amount and timing of our operating costs and capital expenditures;
- changes in tax rules or the impact of new accounting pronouncements;
- general economic conditions that may adversely affect our customers' ability or willingness to purchase solutions, delay a prospective customer's purchasing decision, reduce our revenues from customers or affect renewal rates;
- natural disasters or public health emergencies and their effect on the operations of us, our customers, our third-party providers and on the overall economy;
- impairment charges related to long-lived assets;
- unexpected expenses such as those related to non-recurring corporate transactions, litigation or other disputes, or changes in claim trends on our workers' compensation, unemployment, disability and medical benefit plans may negatively impact our operating costs;
- the timing of stock awards to employees and related adverse financial statement impact of having to expense those stock awards over their vesting schedules; and
- the amount and timing of costs associated with recruiting, hiring, training and integrating new employees, many of whom we hire in advance of anticipated needs.

Any one of the factors above, or the cumulative effect of some or all of the factors referred to above, may result in significant fluctuations in our quarterly and annual results of operations. This variability and unpredictability could result in our failure to meet or exceed our internal operating plan. Additionally, the price of our convertible notes and our common stock might be based on expectations of investors or securities analysts of future performance that are inconsistent with our actual growth opportunities or that we might fail to meet and, if our revenues or operating results fall below expectations, the price of our convertible notes and common stock could decline substantially.

We have a history of losses, and we do not expect to be profitable for the foreseeable future.

We have incurred losses from operations in each period since our inception in 2005, except for 2010 when we recognized a gain on the sale of a subsidiary. We incurred net losses of \$109.0 million, \$112.7 million and \$137.6 million for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, we had an accumulated deficit of \$560.3 million. These losses and accumulated deficit reflect the substantial investments we have made to develop, sell and market our solutions and acquire customers. As we seek to continue to grow our business, including through acquisitions, we expect to incur additional sales, marketing, implementation and other related expenses, including amortization of acquired intangibles. Our ability to achieve or sustain profitability will depend on our obtaining sufficient scale and productivity so that the cost of adding and supporting new customers does not adversely impact our margins. We also expect to continue to make other investments to develop and expand our solutions and our business, including continuing to increase our marketing, services and sales operations and continuing our significant investment in research and development and our technical infrastructure, while also managing our business in response to continued challenging macroeconomic conditions and any anticipated or resulting recession. We expect to incur losses for the foreseeable future as we continue to focus on adding new customers and solutions, and we cannot predict whether or when we will achieve or sustain profitability. Our efforts to grow our business may be more costly than we expect, and we may not be able to increase our revenues enough to offset our higher operating expenses. In addition, as a public company, we incur significant legal, accounting and other expenses. These

increased expenditures will make it harder for us to achieve and maintain profitability. While our revenues have grown in recent periods, such growth may not be sustainable, and our revenues could decline or grow more slowly than we expect. We also may incur additional losses in the future for a number of reasons, including due to litigation and other unforeseen reasons and the risks described in this report. Accordingly, we cannot assure you that we will achieve profitability in the future, nor that, if we do become profitable, we will be able to sustain profitability. If we are unable to achieve and sustain profitability, our customers may lose confidence in us and slow or cease their purchases of our solutions and we may be unable to attract new customers, which would adversely impact our operating results.

The markets in which we compete and demands of our customers are constantly changing and it is difficult to accurately predict the long-term rate of customer subscription renewals or adoption, or the impact these renewals and adoption, or any customer terminations, will have on our revenues or operating results.

As the markets for our existing solutions develop and evolve, we may be unable to attract new customers at the same price or based on the same pricing model as we have used historically. Additionally, as a result of the operational and economic challenges being faced by our customers, we could be forced to modify contractual or payment terms with our customers. Moreover, large or influential financial services providers may demand more favorable pricing or other contract terms, including termination rights. As a result, in the future we may not be able to maintain historical contract terms such as pricing and duration and instead may be required to reduce our prices or accept other unfavorable contract terms, each of which could adversely affect our revenues, gross margin, profitability, financial position and cash flow.

Our customers have no obligation to renew their subscriptions for our solutions after the expiration of the initial subscription term, and if our customers renew at all, then our customers may renew for fewer solutions or on different pricing terms. Our renewal rates may decline or fluctuate as a result of a number of factors, including our customers' satisfaction with our pricing or our solutions or their ability to continue their operations and spending levels. Additionally, certain agreements may include termination rights allowing customers to terminate their customer agreements in the event of, among other things, defects with our solutions, changes in our solution, breach by us of our obligations, requirements from regulatory authorities or a change in control of our company. If our customers terminate or do not renew their subscriptions for our solutions on similar pricing terms, our revenues may decline and our business could suffer. As we create new solutions or enhance our existing solutions to support new technologies and devices, our pricing of these solutions and related services may be unattractive to customers or fail to cover our costs.

Shifts over time in the number of End Users of our solutions, their use of our solutions and our customers' implementation and customer support needs could negatively affect our profit margins.

Our profit margins can vary depending on numerous factors, including the scope and complexity of our implementation efforts, the number of End Users on our solutions, the frequency and volume of their use of our solutions and the level of customer support services required by our customers. For example, our services offerings typically have a much higher cost of revenues than subscriptions to our solutions, so any increase in sales of services as a proportion of our subscriptions would have an adverse effect on our overall gross margin and operating results. If we are unable to increase the number of End Users and the number of transactions they perform on our solutions, the number of End Users on our solutions or the number of transactions they perform decreases, the types of customers that purchase our solutions changes, or the mix of solutions purchased by our customers changes, our profit margins could decrease and our operating results could be adversely affected.

The market data and forecasts included in this report may prove to be inaccurate, and even if the markets in which we compete achieve the forecasted growth, we cannot assure you that our business will grow at similar rates, or at all.

The market data and forecasts included in our Annual Report on Form 10-K for the year ended December 31, 2022 and our other filings with the SEC, including the data and forecasts published by BauerFinancial, Deloitte and Venture Scanner among others, and our internal estimates and research are subject to significant uncertainty and are based on assumptions and estimates that may not prove to be accurate. If the forecasts of market size, growth or anticipated spending prove to be inaccurate, our business and growth prospects could be adversely affected. Even if the forecasted size or growth proves accurate, our business may not grow at a similar rate, or at all. Our future growth is subject to many factors, including our ability to successfully execute on our business strategy, which itself is subject to many risks and uncertainties. Such reports speak as of their respective publication dates and the opinions expressed in such reports are subject to change. Accordingly, potential investors in our common stock are urged not to put undue reliance on such forecasts and market data.

We may not be able to utilize a significant portion of our net operating loss carryforwards, which could adversely affect our operating results and cash flows.

As of December 31, 2022, we had approximately \$590.1 million of U.S. federal net operating loss carryforwards. Utilization of these net operating loss carryforwards depends on many factors, including our future income, which cannot be assured. Our loss carryforwards begin to expire in 2026; loss carryforwards arising for 2018 and later do not expire. In addition, Section 382 of the Internal Revenue Code, as amended, generally imposes an annual limitation on the amount of net operating loss carryforwards that may be used to offset taxable income when a corporation has undergone an ownership change. An ownership change is generally defined as a greater than 50% change in equity ownership by value over a 3-year period. We have undergone one or more ownership changes as a result of prior financings and may have undergone an ownership change as a result of our initial public offering in March 2014, or our registered common stock offerings in March 2015, September 2015, June 2019, May 2020, or in connection with shares of our common stock issued in connection with our November 2020 convertible debt exchange, and any such change in ownership and the corresponding annual limitation may prevent us from using our current net operating losses prior to their expiration. In addition, our acquisition of the various businesses acquired since 2015 may result in an ownership change, and any such change in ownership may result in a corresponding annual limitation which may prevent us from being able to fully utilize the net operating losses we acquired prior to their expiration. Future ownership changes or future regulatory changes could further limit our ability to utilize our net operating loss carryforwards. To the extent we are not able to offset our future income against our net operating loss carryforwards, this would adversely affect our operating results and cash flows if we attain profitability.

Our business may be subject to additional obligations to collect and remit sales tax and other taxes, and we may be subject to tax liability for past sales. Any successful action by state, local or other authorities to collect additional or past sales tax could adversely harm our business.

We file sales and other tax returns within the U.S. and foreign jurisdictions as required by law and certain customer contracts for a portion of the solutions that we provide. Our tax liabilities with respect to sales and other taxes in various jurisdictions were approximately \$0.9 million as of December 31, 2022. From time to time, we face sales and other tax audits, and we will likely continue to do so in the future. Our liability for these taxes could exceed our estimates as tax authorities could still assert that we are obligated to collect additional amounts as taxes from our customers and remit those taxes to such authorities.

We do not collect sales or other similar taxes in other states or jurisdictions, and some jurisdictions do not apply sales or similar taxes to certain solutions. State, local and foreign taxing jurisdictions have differing rules and regulations governing sales and other taxes, and these rules and regulations are subject to varying interpretations that may change over time. In particular, the applicability of sales taxes to our solutions in various jurisdictions is unclear. We review these rules and regulations periodically, and when we believe we are subject to sales and other taxes in a particular jurisdiction, we may voluntarily engage tax authorities to determine how to comply with their rules and regulations. A successful assertion by one or more jurisdictions, including those for which we have not accrued tax liability, requiring us to collect sales or other taxes with respect to sales of our solutions or customer support could result in substantial tax liabilities for past transactions, including interest and penalties, discourage customers from purchasing our solutions or otherwise harm our business and operating results.

Changes in financial accounting standards or practices may cause adverse, unexpected financial reporting fluctuations and affect our reported results of operations.

Financial accounting standards may change or their interpretation may change. A change in accounting standards or practices can have a significant impact on our reported results and may even affect our reporting of transactions completed before the change becomes effective. Changes to existing rules or the re-examining of current practices may adversely affect our reported financial results or the way we conduct our business. Accounting for revenues from sales of our solutions is particularly complex, is often the subject of intense scrutiny by the SEC and will evolve as the Financial Accounting Standards Board, or FASB, continues to consider applicable accounting standards in this area.

If we fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, our ability to operate our business and investors' views of us.

Ensuring that we have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently, including if we acquire additional businesses and integrate their operations. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and preparation of financial statements in accordance with U.S. generally accepted accounting principles, or GAAP. While we have documented and assessed our internal controls, we continue to evaluate opportunities to further strengthen the effectiveness and efficiency of our internal controls and procedures for compliance with Section 404 of the Sarbanes-Oxley Act, which requires annual management assessment and annual independent registered public accounting firm attestation reports of the effectiveness of our internal control over financial reporting. If we make additional acquisitions, we will need to similarly assess and ensure the adequacy of the internal financial and accounting controls and procedures of such acquisitions. If we fail to maintain proper and effective internal controls, including with respect to acquired businesses, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, harm our ability to operate our business and reduce the trading price of our common stock.

Legal and Regulatory Risks

Our customers are highly regulated and subject to a number of challenges and risks. Our failure to comply with laws and regulations applicable to us as a technology provider to financial services providers and to enable our customers to comply with the laws and regulations applicable to them could adversely affect our business and results of operations, increase costs and impose constraints on the way we conduct our business.

Our customers and prospective customers are highly regulated and may be required to comply with stringent regulations in connection with subscribing to and implementing our solutions. As a provider of technology to financial institutions, we are examined on a periodic basis by various regulatory agencies and required to review certain of our suppliers and partners. The examination handbook and other guidance issued by the Federal Financial Institutions Examination Council, or FFIEC, govern the examination of our operations and include a review of our systems and data center and technical infrastructure, management, financial condition, development activities and our support and delivery capabilities. If deficiencies are identified, customers may choose to terminate or reduce their relationships with us. In addition, while much of our operations are not directly subject to the same regulations applicable to financial institutions, we are generally obligated to our customers to provide software solutions and maintain internal systems and processes that comply with federal, state and other regulations applicable to them. In particular, as a result of obligations under our customer agreements, we are required to comply with certain provisions of the Gramm-Leach-Bliley Act related to the privacy of consumer information and may be subject to other privacy and data security laws because of the solutions we provide. In addition, numerous regulations have been proposed and are still being written to implement the Dodd-Frank Act, including requirements for enhanced due diligence of the internal systems and processes of companies like ours by their financial institution customers. In general, larger financial institutions are subject to more stringent regulations and as a result, as we sell our solutions to larger financial institutions, we will become obligated to meet more stringent regulatory standards, including more in-depth audits. If we have to make changes to our internal processes and solutions as a result of these regulatory changes, we could be required to invest substantial additional time and funds and divert time and resources from other corporate purposes to remedy any identified deficiency.

This evolving, complex and often unpredictable regulatory environment could result in our failure to provide regulatory-compliant solutions, which could result in customers' not purchasing our solutions or terminating their agreements with us or the imposition of fines or other liabilities for which we may be responsible. In addition, federal, state or foreign agencies may attempt to further regulate our activities in the future. For example, Congress could enact legislation to regulate providers of electronic commerce services as consumer financial services providers or under another regulatory framework. If enacted or deemed applicable to us, such laws, rules or regulations could be imposed on our activities or our business thereby rendering our business or operations more costly, burdensome, less efficient or impossible, any of which could have a material adverse effect on our business, financial condition and operating results.

We are subject to various global data privacy and security regulations, which could result in additional costs and liabilities to us.

Our business is subject to a wide variety of local, state, national and international laws, directives and regulations that apply to the collection, use, retention, protection, disclosure, transfer and other processing of personal data. These data protection and privacy-related laws and regulations continue to evolve and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions and increased costs of compliance. Data privacy, information security, and data protection are significant issues in the U.S. and globally. The regulatory framework governing the collection, processing, storage, use and sharing of certain information, particularly financial and other PII, is rapidly evolving and is likely to continue to be subject to uncertainty and varying interpretations. The occurrence of unanticipated events and development of evolving technologies often rapidly drives the adoption of legislation or regulation affecting the use, collection or other processing of data and manner in which we conduct our business. In the U.S., these include rules and regulations promulgated under the authority of the Federal Trade Commission, and state breach notification laws. If there is a breach of our systems and we know or suspect that unencrypted personal customer or End-User information has been stolen, we may be required to inform the representative state attorney general or federal or country regulator, media and credit reporting agencies, and any customers whose information was stolen, which could harm our reputation and business. Other states and countries have enacted different requirements for protecting personal information collected and maintained electronically. We expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the U.S., the European Union and other jurisdictions, and we cannot yet determine the impact such future laws, regulations and standards will have on our business or the businesses of our customers, including, but not limited to, the European Union's GDPR, which came into force in May 2018 and the California Consumer Privacy Act, which came into force in January 2020, each of which creates a range of new compliance obligations, which could require us to change our business practices, and significantly increases financial penalties for noncompliance.

Failure to comply with laws concerning privacy, data protection and information security could result in enforcement action against us, including fines, imprisonment of company officials and public censure, claims for damages by customers, End Users and other affected individuals, damage to our reputation and loss of goodwill (both in relation to existing customers and End Users and prospective customers and End Users), any of which could have a material adverse effect on our operations, financial performance and business. In addition, we could suffer adverse publicity and loss of customer confidence were it known that we did not take adequate measures to assure the confidentiality of the personally identifiable information that our customers had given to us. This could result in a loss of customers and revenue that could jeopardize our success. We may not be successful in avoiding potential liability or disruption of business resulting from the failure to comply with these laws and, even if we comply with laws, may be subject to liability because of a security incident. If we were required to pay any significant amount of money in satisfaction of claims under these laws, or any similar laws enacted by other jurisdictions, or if we were forced to cease our business operations for any length of time as a result of our inability to comply fully with any of these laws, our business, operating results and financial condition could be adversely affected. Further, complying with the applicable notice requirements in the event of a security and privacy breach could result in significant costs.

Additionally, our business efficiencies and economies of scale depend on generally uniform solutions offerings and uniform treatment of customers and their End Users across all jurisdictions in which we operate. Compliance requirements that vary significantly from jurisdiction to jurisdiction impose added costs on our business and can increase liability for compliance deficiencies.

Our failure to comply with laws and regulations related to the Internet and mobile usage could adversely affect our business and results of operations, increase costs and impose constraints on the way we conduct our business.

We and our customers are subject to laws and regulations applicable to doing business over the Internet and through the use of mobile devices. It is often not clear how existing laws governing issues such as property ownership, sales and other taxes apply to the Internet and mobile usage, as these laws have in some cases failed to keep pace with technological change. Laws governing the Internet could also impact our business or the business of our customers. For instance, existing and future regulations on taxing Internet use, pricing, characterizing the types and quality of services and products, or restricting the exchange of information over the Internet or mobile devices could result in reduced growth of our business, a general decline in the use of the Internet by financial services providers, or their End Users, or diminished viability of our solutions and could significantly restrict our customers' ability to use our solutions. Changing laws and regulations, industry standards and industry self-regulation regarding the collection, use and disclosure of certain data may have similar effects on our and our customers' businesses. Any such constraint on the growth in Internet and mobile usage could decrease its acceptance as a medium of communication and commerce or result in increased adoption of new modes of communication and commerce that may not be supported by our solutions. Any such adverse legal or regulatory developments could substantially harm our operating results and our business.

Legislation relating to consumer privacy may affect our ability to collect data that we use in providing our customers' End-User information, which, among other things, could negatively affect our ability to satisfy our customers' needs.

We collect and store personal and identifying information regarding our customers' End Users to enable certain functionality of our solutions and provide our customers with data about their End Users. The enactment of new or amended legislation or industry regulations pertaining to consumer or private sector privacy issues, AI or machine learning could have a material adverse impact on our receipt, collection, storage, processing and transferring of such information. Legislation or industry regulations regarding consumer or private sector privacy issues could place restrictions upon the collection, sharing and use of information that is currently legally available, which could materially increase our cost of collecting some data. These types of legislation or industry regulations could also prohibit us from collecting or disseminating certain types of data, which could adversely affect our ability to meet our customers' requirements and our profitability and cash flow targets. These legislative measures impose strict requirements on reporting time frames for providing notice, as well as the contents of such notices. The costs of compliance with, the inability to determine whether a data breach has occurred within the time frame provided by, and other burdens imposed by, such laws and regulations may lead to significant fines, penalties or liabilities for any noncompliance with such privacy laws. Even the perception of privacy concerns, whether or not valid, may inhibit market adoption of our solutions.

In addition to government activity, privacy advocacy groups and the technology and other industries are considering various new, additional or different self-regulatory standards that may place additional burdens on us. If the collecting, storing and processing of personal information were to be curtailed, our solutions would be less effective, which may reduce demand for our solutions and adversely affect our business.

Any use of our solutions by our customers in violation of regulatory requirements could damage our reputation and subject us to additional liability.

If our customers or their End Users use our solutions in violation of regulatory requirements and applicable laws, we could suffer damage to our reputation and could become subject to claims. We rely on contractual obligations made to us by our customers that their use and their End Users' use of our solutions will comply with applicable laws. However, we do not audit our customers or their End Users to confirm compliance. We may become subject to or involved with claims for violations by our customers or their End Users of applicable laws in connection with their use of our solutions. Even if claims asserted against us do not result in liability, we may incur costs in investigating and defending against such claims. If we are found liable in connection with our customers' or their End Users' activities, we could incur liabilities and be required to redesign our solutions or otherwise expend resources to remedy any damages caused by such actions and to avoid future liability.

Any future litigation against us could be costly and time-consuming to defend.

We may become subject, from time to time, to legal proceedings and claims that arise in the ordinary course of business such as claims brought by our customers in connection with commercial or intellectual property disputes or employment claims made by our current or former employees. Litigation might result in substantial costs and may divert management's attention and resources, which might seriously harm our business, our overall financial condition and our operating results. Insurance may not cover such claims, provide sufficient payments to cover all the costs to resolve one or more 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 and impact our liquidity, thereby reducing our operating results and impacting our financial condition, leading analysts and investors to reduce their confidence and expectations and reduce the trading price of our stock.

Lawsuits by third parties against us or our customers for alleged infringement of the third parties' proprietary rights or for other intellectual property related claims could result in significant expenses and harm our operating results and financial condition.

Our industry is characterized by the existence of a large number of patents, copyrights, trademarks, trade secrets and other intellectual property and proprietary rights as well as a high number of allegations and disputes related to these rights. Our competitors and the competitors of our customers, as well as a number of other entities and individuals (both operating and non-operating), own or claim to own intellectual property relating to our industry. As a result, we regularly are subject to allegations and involved in disputes, either directly or on behalf of our customers, that our solutions and the underlying technology infringe the patent and other intellectual property rights of third parties. The frequency of these types of claims also may increase as we continue to add new customers and as a result of our being a public company. The defense against these allegations and disputes and, if unsuccessful, their resolution could result in our having to pay damages and negatively impact our ability to continue to sell and provide all or a portion of our solutions or certain third-party solutions, any of which could materially harm our reputation, business results and financial condition. Insurance may not cover such claims, provide sufficient payments to cover all the costs to resolve one or more such claims or continue to be available on terms acceptable to us. Successful outcomes in these disputes depend upon our ability to demonstrate that our solutions do not infringe upon the intellectual property rights of others. We have a very limited patent portfolio, which will likely prevent us from deterring patent infringement claims, and our competitors and others may now and in the future have significantly larger or more relevant patent portfolios than we have.

Our customer agreements typically require us to indemnify our customers in connection with claims alleging our solutions or the underlying technologies infringe the patent or other intellectual property rights of third parties. Our customers regularly receive allegations from third parties or are involved in these disputes with third parties, and we may be required to indemnify them in connection with these matters. We are currently involved in these types of disputes, and given the high level of this activity in our industry, we expect these types of disputes to continue to arise in the future. If we are unsuccessful in defending claims for which we are required to provide indemnity, our business and operating results could be adversely affected. Any significant disputes among us and our customers as to the applicability of our indemnity obligations could negatively impact our reputation and customer relations, affect our ability to sell our solutions and harm our operating results. Further, there can be no assurances that any provisions in our contracts that purport to limit our liability would be enforceable or adequate or would otherwise protect us from any such liabilities or damages with respect to any particular claim.

In certain instances, we license technologies from third parties for use directly or indirectly in our solutions or for resale with our solutions. Our contracts with these third parties may include provisions that require the third party to indemnify us in the event of any claim or dispute that the third party's technologies infringe upon the patent or other intellectual property rights of others. If we are unable for any reason to seek indemnity or otherwise collect from those third parties our direct or indirect liabilities related to any claim, then we may have to bear the liabilities ourselves and our business performance and financial condition could be substantially harmed.

The risk of patent litigation exists with operating entities but also has been amplified by the increase in the number of non-practicing patent asserting entities, or "patent trolls." Any claims or litigation, whether by operating entities or "patent trolls," could cause us to incur significant expenses and, if successfully asserted against us or our customers whom we indemnify, could require that we pay substantial damages or ongoing royalty payments, prevent us from offering our solutions or require that we comply with other unfavorable terms. 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 and operating results.

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

Our success depends upon our ability to protect our intellectual property, which may require us to incur significant costs. We have developed much of our intellectual property internally, and we rely on a combination of confidentiality obligations in contracts, patents, copyrights, trademarks, service marks, trade secret laws and other contractual restrictions to establish and protect our intellectual property and other proprietary rights. In particular, we enter into confidentiality and invention assignment agreements with our employees and consultants and enter into confidentiality agreements with the parties with whom we have business relationships in which they will have access to our confidential information. We also rely upon licenses to intellectual property from third parties. No assurance can be given that these agreements or other steps we take to protect our intellectual property or the third-party intellectual property used in our solutions will be effective in controlling access to and distribution of our solutions and our confidential and proprietary information. We will not be able to protect our intellectual property if we are unable to enforce our rights or if we do not detect unauthorized uses of our intellectual property.

Despite our precautions, it may be possible for third parties to copy our solutions and use information that we regard as proprietary to create solutions and services that compete with ours. Third parties also may independently develop technologies that are substantially equivalent to our solutions. Some license provisions protecting against unauthorized use, copying, transfer and disclosure of our solutions may be unenforceable under the laws of certain jurisdictions.

Our employees may use certain technological tools and infrastructure that allow us to enhance productivity, such as AI-enhanced chat bot functionality, that can generate code or other content. If we cannot develop or maintain effective policies and controls around the use of AI, or if resulting code or content inadvertently contains malicious or vulnerable data or code, open source code, infringes upon third-party intellectual property rights or is encumbered by third-party rights, our business and reputation could be harmed. Such use of AI may also result in disclosure of Q2 confidential or proprietary information to the third party providing the AI, or others, and potentially further use or copying by such third parties of Q2's proprietary information.

In some cases, litigation may be necessary to enforce our intellectual property rights or to protect our trade secrets. Litigation 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 and exposing us to significant damages or injunctions. Our inability to protect our intellectual property against unauthorized copying or use, as well as any costly litigation or diversion of our management's attention and resources, could delay sales or the implementation of our solutions, impair the functionality of our solutions, delay introductions of new solutions, result in our substituting less-advanced or more-costly technologies into our solutions or harm our reputation. In addition, we may be required to license additional intellectual property from third parties to develop and market new solutions, and we cannot assure you that we could license that intellectual property on commercially reasonable terms or at all.

As of December 31, 2022, we had seven U.S. patent applications pending and 11 issued U.S. patents. We do not know whether our pending patent applications will result in the issuance of patents or whether the examination process will require us to narrow the scope of our claims. To the extent that our pending patent applications or any portion of such applications proceed to issuance as a patent, any such future patent may be opposed, contested, circumvented, designed around by a third party or found to be invalid or unenforceable. In addition, our existing and any future issued patents may be opposed, contested, circumvented, designed around by a third party or found to be invalid or unenforceable. The process of seeking patent protection can be lengthy and expensive. We rely on a combination of patent, copyright, trade secret, trademark and other intellectual property laws to protect our intellectual property, and much of our technology is not covered by any patent or patent application.

We use "open source" software in our solutions, which may restrict how we use or distribute our solutions, require that we release the source code of certain software subject to open source licenses or subject us to litigation or other actions that could adversely affect our business.

We currently use in our solutions, and may use in the future, software that is licensed under "open source," "free" or other similar licenses where the licensed software is made available to the general public on an "as-is" basis under the terms of a specific non-negotiable license. Some open source software licenses require that software subject to the license be made available to the public and that any modifications or derivative works based on the open source code be licensed in source code form under the same open source licenses. Although we monitor our use of open source software, we cannot assure you that all open source software is reviewed prior to use in our solutions, that our programmers have not incorporated open source software into our solutions, or that they will not do so in the future. In addition, some of our products may incorporate third-party software under commercial licenses. We cannot be certain whether such third-party software incorporates open source software without our knowledge. In the past, companies that incorporate open source software into their products have faced claims alleging noncompliance with open source license terms or infringement or misappropriation of proprietary software. Therefore, we could be subject to suits by parties claiming noncompliance with open source licensing terms or infringement or misappropriation of proprietary software. Because few courts have interpreted open source licenses, the manner in which these licenses may be interpreted and enforced is subject to some uncertainty. There is a risk that open source software licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market or provide our solutions. As a result of using open source software subject to such licenses, we could be required to release our proprietary source code, pay damages, re-engineer our products, limit or discontinue sales or take other remedial action, any of which could adversely affect our business.

Our aspirations and commitments to ESG matters expose us to risks that could adversely affect our reputation and performance.

The positions we have taken and may take on ESG matters, human capital management initiatives, and ethical issues from time to time, may impact our brand, reputation, or ability to attract and retain customers, suppliers and employees. We are committed to sustainable business practices and strive for positive impacts in not just environmental matters, but also social and governance practices. We publish our goals, progress and accomplishments annually in our ESG Report. These statements, along with those on our website and/or from our management team, reflect our current plans and aspirations but are not guarantees that we will be able to achieve them.

Our ability to achieve any ESG objective is subject to numerous risks, many of which are outside of our control. Examples of such risks include:

- the availability and cost of low or non-carbon based energy sources;
- the evolving regulatory requirements affecting ESG standards or disclosures;
- the availability of suppliers that can meet our sustainability, diversity and other ESG standards;
- our ability to recruit, develop and retain diverse talent in our labor markets; and
- the success of our organic growth and acquisitions.

Standards for tracking and reporting ESG matters continue to evolve. In addition, our processes and controls may not always comply with evolving standards for identifying, measuring, and reporting ESG metrics, including ESG-related disclosures that may be required of public companies by the SEC, and such standards may change over time, which could result in significant revisions to our current goals, reported progress in achieving such goals, or ability to achieve such goals in the future. As an example of increased regulatory focus, in February 2021, the Acting Chair of the SEC issued a statement directing the Division of Corporation Finance to enhance its focus on climate-related disclosure in reporting company filings, and in March 2021, the SEC announced the creation of a Climate and ESG Task Force in the Division of Enforcement to develop initiatives which proactively identify ESG-related misconduct. In May 2022, the Chair of the SEC announced a proposal to improve disclosures by certain investment advisors and funds that purport to take ESG factors into consideration when making investing decisions. It is likely that increasing regulatory requirements and regulator scrutiny related to ESG matters will continue to expand globally and result in higher associated compliance costs.

Further, we may rely on data provided by third parties to measure and report our ESG metrics and if the data input is incorrect or incomplete, our brand, reputation, and financial performance may be adversely affected. Our failure or perceived failure to accomplish or accurately track and report on these goals on a timely basis, or at all, could adversely affect our reputation, financial performance and growth, our ability to attract or retain employees, the attractiveness of our securities as an investment, our relationships with business partners and/or service providers and expose us to increased scrutiny from the investment community, customers, suppliers, employees, as well as enforcement authorities and may also increase the risk we become subject to litigation.

Risks Related to Ownership of Our Common Stock

We have incurred and will continue to incur significant expenses and administrative burdens as a public company, which could have a material adverse effect on our operations and financial results.

As a public company, we have incurred and will continue to incur significant legal, accounting, administrative and other costs and expenses. For example, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and are required to comply with the applicable requirements of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the SEC, the Public Company Accounting Oversight Board and the New York Stock Exchange, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Compliance with public company requirements has increased our costs and made some activities more time-consuming. In addition, our management and other personnel have been required to divert attention from operational and other business matters to devote substantial time to these public company requirements.

Furthermore, if we identify any issues in complying with public company reporting requirements (for example, if our financial systems prove inadequate or we or our auditors identify deficiencies in our internal control over financial reporting), we could incur additional costs rectifying those issues, and the existence of those issues could adversely affect us, our reputation or investor perceptions of us. It is also more expensive to maintain director and officer liability insurance as a public company. Risks associated with our status as a public company may make it more difficult for us to attract and retain qualified persons to serve on our board of directors or as executive officers. The additional reporting and other obligations imposed on us by these rules and regulations have and we expect will continue to increase our legal and financial compliance costs and the costs of our related legal, accounting and administrative activities. These costs require us to divert a significant amount of money that we could otherwise use to expand our business and achieve our strategic objectives. Proposals submitted by stockholders at our annual meeting or other advocacy efforts by stockholders and third parties also may prompt additional changes in governance and reporting requirements, which could further increase our costs.

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 situation could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest 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 revenue-generating activities 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 investigations, inquiries, administrative proceedings or legal proceedings against us and our business may be adversely affected.

Any future sales of our common stock in the public markets, or the perception that such sales might occur, could reduce the price that our common stock might otherwise attain and may dilute the voting power and ownership interest in us of our then-existing stockholders.

As of December 31, 2022, we had an aggregate of 57,734,509 outstanding shares of common stock. The shares sold in our public offerings can be freely sold in the public market without restriction unless they are held by "affiliates," as that term is defined in Rule 144 under the Securities Act. The remaining shares can be freely sold in the public market, subject in some cases to volume and other restrictions under Rule 144 under the Securities Act and various agreements. As of December 31, 2022, we have registered 25,177,849 shares of common stock that we have issued and may issue under our stock plans. These shares can be freely sold in the public market upon issuance, subject in some cases to volume and other restrictions under Rules 144 under the Securities Act, and various vesting agreements. In addition, some of our employees, including some of our executive officers, have entered into 10b5-1 trading plans regarding sales of shares of our common stock. These plans provide for sales to occur from time to time. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Since our initial public offering, from time to time we have conducted registered offerings of our common stock. Additionally, in February 2018, we issued \$230.0 million aggregate principal amount of 0.75% Convertible Senior Notes due 2023, or the 2023 Notes. In June 2019, we issued \$316.3 million aggregate principal amount of 0.75% Convertible Senior Notes due 2026, or the 2026 Notes. In November 2020, we entered into a privately negotiated exchange and/or subscription agreements with certain new investors and certain holders of our existing 2023 Notes to exchange \$181.9 million of our 2023 Notes for \$210.7 million of our 0.125% Convertible Senior Notes due 2025, or the 2025 Notes, and to issue \$139.3 million of incremental 2025 Notes to new investors, resulting in the issuance of an aggregate of \$350.0 million principal amount of 2025 Notes. In the future, we may issue additional securities to raise capital or in connection with investments and acquisitions. In addition, a substantial number of shares of our common stock are reserved for issuance upon conversion of our convertible notes issued in connection with the offering of the 2023 Notes, 2025 Notes, 2026 Notes and exercise of our warrants issued in connection with the 2023 Notes. The amount of our common stock issued in connection with any such issuance could constitute a material portion of our then outstanding stock. Due to these factors, sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

If securities or industry analysts publish unfavorable or misleading research about our business, or cease coverage of our company, our stock price and trading volume could decline.

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

Our stock price has been and may continue to be highly volatile.

The trading price of our common stock has been and may continue to be highly volatile and could be subject to wide fluctuations in response to various factors, including the risk factors described in this report, and other factors beyond our control. Additional factors affecting the trading price of our common stock include:

- variations in our operating results or the operating results of similar companies;
- announcements of technological innovations, new solutions or enhancements or strategic partnerships or agreements by us or by our competitors;
- changes in the estimates of our operating results, our financial guidance or changes in recommendations by any securities analysts that follow our common stock;
- the gain or loss of customers, particularly our larger customers;
- adoption or modification of regulations, policies, procedures or programs applicable to our business and our customers' business;
- marketing and advertising initiatives by us or our competitors;
- threatened or actual litigation;
- changes in our senior management; and
- recruitment or departure of key personnel.

In addition, the stock market in general and the market for technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors may harm the market price of our common stock regardless of our actual operating performance. Each of these factors, among others, could adversely affect your investment in our common stock. Some companies that have had volatile market prices for their securities have had securities class action lawsuits filed against them. If a suit were filed against us, regardless of its merits or outcome, it could result in substantial costs and divert management's attention.

We currently do not intend to pay dividends on our common stock, and, consequently, the only opportunity to achieve a return on investment is if the price of our common stock appreciates.

We have never declared nor paid cash dividends on our capital stock. We currently do not plan to declare dividends on shares of our common stock in the foreseeable future. We currently intend to retain any future earnings to finance the operation and expansion of our business. Any payment of future dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant. Consequently, the only opportunity to achieve a return on investment in our company will be if the market price of our common stock appreciates and shares are sold at a profit. There is no guarantee that the price of our common stock that will prevail in the market will ever exceed the price that is paid for our common stock.

Anti-takeover provisions in our charter documents and Delaware law could discourage, delay or prevent a change in control of our company and may affect the trading price of our common stock.

We are a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law, which apply to us, may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the stockholder becomes an interested stockholder, even if a change in control would be beneficial to our existing stockholders. In addition, our amended and restated certificate of incorporation and amended and restated bylaws may discourage, delay or prevent a change in our management or control over us that stockholders may consider favorable. Our certificate of incorporation and bylaws:

- authorize the issuance of "blank check" preferred stock that could be issued by our board of directors to help defend against a takeover attempt;
- require that directors only be removed from office for cause and only upon a supermajority stockholder vote;
- provide that vacancies on the board of directors, including newly created directorships, may be filled only by a majority vote of directors then in office rather than by stockholders;
- prevent stockholders from calling special meetings;
- include advance notice procedures for stockholders to nominate candidates for election as directors or bring matters before an annual meeting of stockholders;
- prohibit stockholder action by written consent, requiring all actions to be taken at a meeting of the stockholders; and
- provide that certain litigation against us can only be brought in Delaware.

We may not be able to obtain capital when desired on favorable terms, if at all, and we may not be able to obtain capital or complete acquisitions through the use of equity or without dilution to our stockholders.

We may need additional financing to execute on our current or future business strategies, including to develop new or enhance existing products and services, acquire businesses and technologies, or otherwise to respond to competitive pressures. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and newly-issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we accumulate additional funds through debt financing, a substantial portion of our operating cash flow may be dedicated to the payment of principal and interest on such indebtedness, thus limiting funds available for our business activities. We cannot assure you that additional financing will be available on terms favorable to us, or at all. If adequate funds are not available or are not available on acceptable terms, when we desire them, our ability to fund our operations, take advantage of unanticipated opportunities, develop or enhance our products and services, or otherwise respond to competitive pressures would be significantly limited. Any of these factors could harm our results of operations and negatively impact the trading price of our common stock.

Risks Related to Our Convertible Notes

We incurred indebtedness by issuing our 2023 Notes in 2018, our 2026 Notes in 2019, and our 2025 Notes in 2020, and our debt repayment obligations may adversely affect our financial condition and cash flows from operations in the future.

Our indebtedness under our convertible notes may impair our ability to obtain additional financing in the future for general corporate purposes, including working capital, capital expenditures, potential acquisitions and strategic transactions, and a portion of our cash flows from operations may have to be dedicated to repaying the principal of the 2023 Notes in 2023, the principal of the 2026 Notes in 2026, and the principal of the 2025 Notes in 2025 or earlier if necessary. Our ability to meet our debt obligations will depend on our future performance, which will be affected by financial, business, economic, regulatory and other factors. We cannot control many of these factors. Additionally, if our stock price trades at a level where the conversion of any series of our convertible notes is not economical for holders of such convertible notes, the conversion of the applicable series of convertible notes is highly unlikely. This will result in us needing to repay the full aggregate principal amount outstanding of the applicable series of our convertible notes, plus accrued and unpaid interest and additional amounts (if any) at maturity in lieu of settling conversions of the convertible notes, and extinguishing our indebtedness under such convertible notes, with shares of our common stock. Our future operations may not generate sufficient cash to enable us to repay our debt, including the 2023 Notes, 2025 Notes or 2026 Notes. If we fail to make a payment on our debt, we could be in default on such debt. If we are at any time unable to pay our indebtedness when due, we may be required to renegotiate the terms of the indebtedness, seek to refinance all or a portion of the indebtedness or obtain additional financing. There can be no assurance that, in the future, we will be able to successfully renegotiate such terms, that any such refinancing would be possible or that any additional financing could be obtained on terms that are favorable or acceptable to us.

In addition, holders of each series of our convertible notes will have the right to require us to repurchase all or a portion of their notes upon the occurrence of a fundamental change, as defined in the respective indentures, at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest. Upon conversion of each series of convertible notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the series of notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of the series of convertible notes surrendered therefore or at the time such series of convertible notes is being converted. In addition, our ability to repurchase each series of convertible notes or to pay cash upon conversions of each series of convertible notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase a series of convertible notes at a time when the repurchase is required by the applicable indenture or to pay any cash payable on future conversions of such series of convertible notes as required by the indenture governing such series of convertible notes would constitute a default under such indenture. A default under one of the indentures governing our convertible notes or a fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment 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 make cash payments upon conversions thereof. An event of default under an indenture governing any of our convertible notes may lead to an acceleration of the applicable series of notes. Any such acceleration could result in our bankruptcy. In a bankruptcy, the holders of our convertible notes would have a claim to our assets that is senior to the claims of our equity holders.

Conversion of the convertible notes could dilute the ownership interest of our existing stockholders or may otherwise depress the price of our common stock.

The conversion of some or all of our convertible notes could dilute the ownership interests of existing stockholders. Any sales in the public market of our common stock issuable upon such conversion of our convertible notes could adversely affect prevailing market prices of our common stock. In addition, the existence of the convertible notes may encourage short selling by market participants because the conversion of the notes could be used to satisfy short positions, or anticipated conversion of the convertible notes into shares of our common stock could depress the price of our common stock.

Our convertible notes bond hedges and warrant transactions entered into in connection with the offering of the 2023 Notes may affect the value of our common stock.

In connection with the offering of the 2023 Notes, we entered into convertible notes bond hedges, or Bond Hedges, transactions with one or more counterparties. We also entered into warrant transactions with the counterparties pursuant to which we sold warrants for the purchase of our common stock. The Bond Hedges transactions related to the 2023 Notes are expected generally to reduce the potential dilution upon any conversion of 2023 Notes or offset any cash payments we are required to make in excess of the principal amount upon conversion of any 2023 Notes. The warrant transactions could separately have a dilutive effect to the extent that the market price per share of our common stock exceeds the strike price of the warrants. In connection with establishing their initial hedges of the 2023 Bond Hedges and warrant transactions, the counterparties or their respective affiliates purchased shares of our common stock or entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the 2023 Notes. The counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock or purchasing or selling our common stock in secondary market transactions prior to the maturity of the 2023 Notes, and are likely to do so during any observation period related to a conversion of 2023 Notes or following any repurchase of 2023 Notes by us. This activity could also cause or avoid an increase or a decrease in the market price of our common stock.

The capped call transactions entered into in connection with the offering of the 2025 Notes and 2026 Notes may affect the value of our common stock.

In connection with the offering of the 2025 Notes and 2026 Notes, we entered into capped call transactions with one or more counterparties, or the Capped Calls. The Capped Calls cover, subject to customary adjustments, the number of shares of our common stock initially underlying the 2025 Notes and 2026 Notes. The Capped Calls are expected to offset the potential dilution and/or offset any cash payments we are required to make in excess of the principal amount of converted 2025 Notes or 2026 Notes, as a result of conversion of the 2025 Notes or 2026 Notes, with such offset subject to a cap. In connection with establishing their initial hedges of the Capped Calls, the counterparties or their respective affiliates purchased shares of our common stock or entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the 2025 Notes and 2026 Notes. The counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives 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 2025 Notes and 2026 Notes, and are likely to do so during any observation period related to a conversion of the 2025 Notes or 2026 Notes or following any repurchase of 2025 Notes or 2026 Notes by us. This activity could also cause or avoid an increase or a decrease in the market price of our common stock.

We are subject to counterparty risk with respect to the bond hedge, warrant and capped call transactions, and they may not operate as planned.

The option counterparties to our bond hedge, warrant and capped call transactions entered into in connection with the convertible notes are financial institutions, and we will be subject to the risk that they might default under these derivative transactions. Our exposure to the credit risk of these counterparties will not be secured by any collateral. If an 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 our transactions with that option counterparty. Our exposure will depend on many factors, but, generally, the increase in our exposure will be correlated with increases in the market price or the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer more dilution than we currently anticipate with respect to our common stock underlying the convertible notes. We can provide no assurances as to the financial stability or viability of any option counterparty.

In addition, the bond hedge, warrant and capped call transactions are complex, and they may not operate as planned. For example, the terms of each may be subject to adjustment, modification or, in some cases, renegotiation if certain corporate or other transactions occur. Accordingly, these transactions may not operate as we intend if we are required to adjust their terms as a result of transactions in the future or upon unanticipated developments that may adversely affect the functioning of the bond hedge, warrant and capped call transactions.

Certain provisions in the indentures governing our convertible notes may delay or prevent an otherwise beneficial takeover attempt of us and may affect the trading price of our common stock.

Certain provisions in the indentures governing our convertible notes may make it more difficult or expensive for a third party to acquire us. For example, the indentures governing our convertible notes will require us to repurchase the convertible notes for cash upon the occurrence of a fundamental change (as defined in the respective indentures) of us and, in certain circumstances, to increase the conversion rate for a holder that converts the convertible notes in connection with a make-whole fundamental change. A takeover of us may trigger the requirement that we repurchase our convertible notes, and/or increase the conversion rate, which could make it more costly for a potential acquirer to engage in such takeover. Such additional costs may have the effect of delaying or preventing a takeover of us that would otherwise be beneficial to investors in our common stock.

If any of the conditional conversion features of any series of convertible notes is triggered, our financial condition and operating results may be adversely affected which could decrease the trading price of our common stock.

In the event any of the conditional conversion features of the 2023 Notes, 2025 Notes or 2026 Notes is triggered, note holders will be entitled to convert their 2023 Notes, 2025 Notes or 2026 Notes, as applicable, at any time during specified periods at their option. If one or more holders elect to convert the 2023 Notes, 2025 Notes or 2026 Notes, as applicable, we may elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), which would result in dilution to the holders of our common stock. If we elect to or would be required to settle a portion or all of our conversion obligation in cash, it could adversely affect our liquidity, which may negatively impact the trading price of our common stock. In addition, even if holders of the 2023 Notes, 2025 Notes or 2026 Notes do not elect to convert their 2023 Notes, 2025 Notes or 2026 Notes, as applicable, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the 2023 Notes, 2025 Notes or 2026 Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital, which may negatively impact the trading price of our common stock.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties.

Our principal executive offices are located in Austin, Texas in two adjacent buildings under separate lease agreements. Pursuant to the first of which the Company leases approximately 129,000 square feet of office space with an initial term that expires on April 30, 2028, with the option to extend the lease for an additional ten-year term, and pursuant to the second of which the Company leases approximately 129,000 square feet of office space with lease terms of approximately ten years, with the options to extend the leases on the second building. Approximately 105,000 square feet of the first building is being actively marketed for sublease. We also maintain office space in U.S. cities located in Nebraska, Iowa, North Carolina, Texas and Minnesota. Internationally we maintain offices in India, Australia, and the United Kingdom. We believe our current facilities are in good condition, suitable and adequate for the conduct of our business.

Item 3. Legal Proceedings.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. Our management believes that there are no claims or actions pending against us, the ultimate disposition of which would have a material impact on our business, financial condition, results of operations or cash flows.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information and Holders

Our common stock has been listed on the New York Stock Exchange under the symbol "QTWO" since March 20, 2014. Prior to that date, there was no public trading market for our common stock. Our common stock was priced at \$13.00 per share in our initial public offering on March 20, 2014.

As of December 31, 2022, we had 22 holders of record of our common stock. The actual number of holders of common stock is greater than this number of record holders and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and nominees. The number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never declared or paid any cash dividends on our common stock. Any future determination to declare cash dividends on our common stock will be made at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant. We do not anticipate paying cash dividends on our common stock for the foreseeable future.

Use of Proceeds From Registered Securities

On May 15, 2020, we completed a registered public offering of 4,735,294 shares of our common stock at a price of \$76.50 per share, before underwriting discounts and commissions. We sold 4,235,294 of such shares and existing stockholders sold 500,000 of such shares. We did not receive any proceeds from the sale of shares by the selling stockholders in the May 2020 common stock offering. The May 2020 common stock offering was made pursuant to an automatically effective shelf registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the "SEC") on June 4, 2019 (File No. 333-231947), as amended on May 11, 2020. There have been no material changes in the planned use of proceeds from our May 2020 common stock offering from that described in the final prospectus filed with the SEC pursuant to Rule 424(b) on May 13, 2020. With a portion of the proceeds from this offering, we used \$51.2 million to repurchase a portion of our 2023 Notes and unwind associated bond hedges and warrant transactions, we completed the acquisition of ClickSWITCH for \$65.5 million in cash (which included a hold-back of \$1.0 million) and we completed the acquisition of Sensibill for \$5.1 million in cash.

Equity Compensation Plan Information

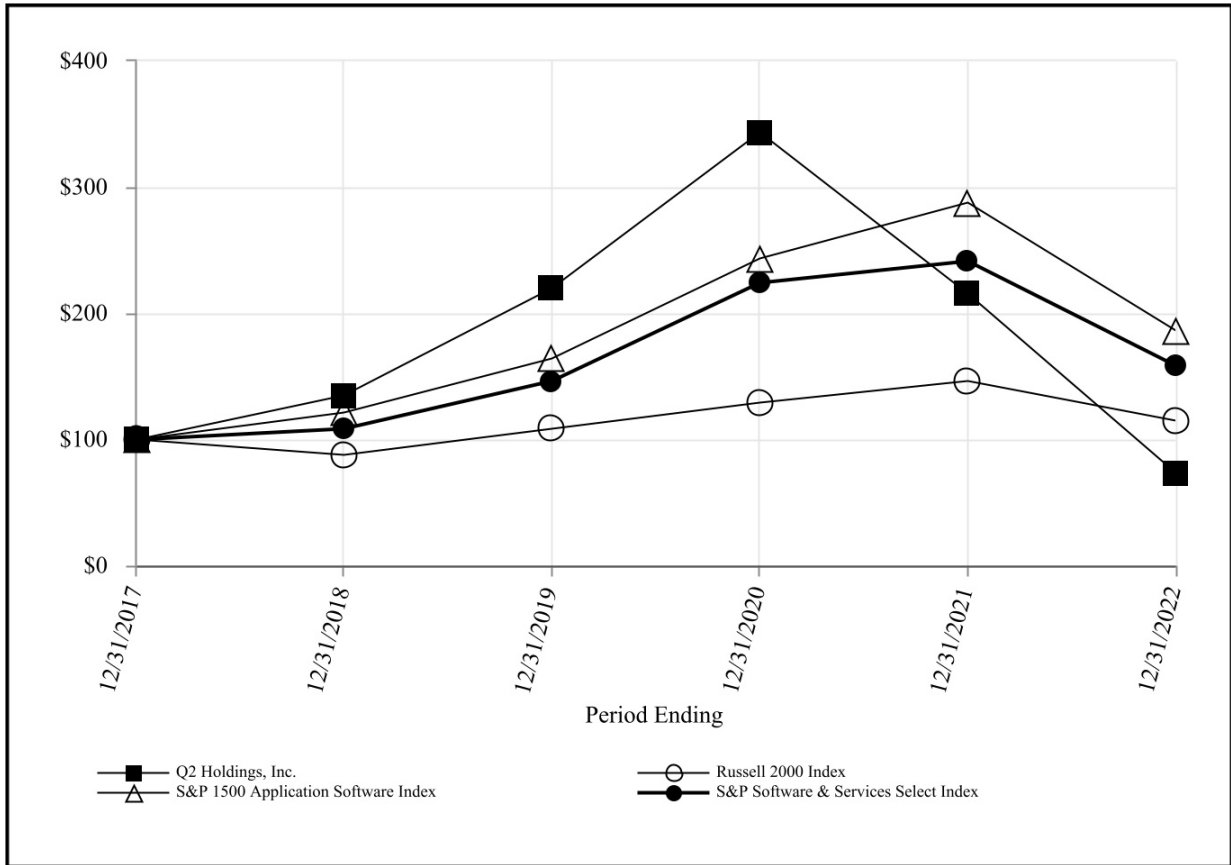
Information regarding the securities authorized for issuance under our equity compensation plans will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022 and is incorporated herein by reference.

Performance Graph

The graph set forth below compares the cumulative total stockholder return on our common stock between December 31, 2017 and December 31, 2022, with the cumulative total return of (i) the Russell 2000 Index, (ii) the S&P 1500 Application Software Index and (iii) the S&P Software & Services Select Index. This graph assumes the investment of \$100 on December 31, 2017 in our common stock, the S&P 1500 Application Software Index, the Russell 2000 Index and the S&P Software & Services Select Index, and assumes the reinvestment of dividends, if any.

In 2022 and going forward we will use the S&P Software & Services Select Index as we believe it is more reflective of the cyclical nature of the markets we serve and is a more appropriate index to compare our stock performance to our peer set. If a company selects a different index from an index used in the immediately preceding fiscal year, the company's stock performance graph must compare the registrant's total return to that of both the newly selected index and the index used in the immediately preceding fiscal year and explain the reason for the change. Pursuant to SEC rules, for this stock performance line graph and table we have included a comparison of our cumulative total return to the selected indices (i) the Russell 2000 Index, (ii) the S&P Software & Services Select Index and (iii) the discontinued S&P 1500 Application Software Index. Note that historic stock price performance is not necessarily indicative of future stock price performance.

The information contained in the Stock Performance Graph shall not be deemed to be soliciting material or to be filed with the SEC nor shall such information be incorporated by reference into any future filing under the Securities Act or the Exchange Act, except to the extent we specifically incorporate it by reference into such filing.



Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. In addition to historical consolidated financial information, the following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in the sections titled "Risk Factors" and "Special Note Regarding Forward Looking Statements" above for a discussion of the uncertainties, risks and assumptions associated with these statements. The following discussion and analysis also includes a discussion of certain non-GAAP financial measures. For a description and reconciliation of the non-GAAP measures discussed in this section, see "Non-GAAP Financial Measures."

Overview

We are a leading provider of secure, cloud-based digital solutions that transform the ways in which financial institutions and other financial services providers engage with account holders and end users, or End Users. We offer our solutions to financial institutions, financial technology companies, or FinTechs, alternative finance companies, or Alt-FIs, and other innovative companies, or Brands, wishing to incorporate banking into their customer engagement and servicing strategies. Our solutions include a broad and deep portfolio of digital banking solutions; lending solutions; an open technology platform, the Q2 Innovation Studio, which is a portfolio of technologies and programs which can be leveraged to design, develop, and distribute innovative products, services, features, and integrations by enabling a partnership ecosystem on Q2's digital banking platform; and Helix, a comprehensive banking as a service, or BaaS, solution, which enables innovative companies to integrate banking products and services into their offerings. We purpose-build our platforms and solutions to enable success for our customers and technology partners by allowing them to digitize their operations and offerings, differentiate their digital brands, integrate traditional and emerging financial services, and ultimately, enhance their End-User acquisition, engagement and retention and improve their operational efficiencies and profitability.

The effective delivery and management of secure and advanced digital solutions in the complex and heavily regulated financial services industry requires significant resources, personnel and expertise. We provide digital solutions that are designed to be highly configurable, scalable and adaptable to the specific needs of our customers. We design and develop our solutions with an open platform approach intended to provide comprehensive integration among our solution offerings and our customers' internal and third-party systems. This integrated approach allows our customers to deliver unified and robust financial experiences across digital channels. Our solutions provide our customers the flexibility to configure their digital services in a manner that is consistent with each customer's specific offerings, workflows, processes and controls. Our solutions also allow our customers to personalize the digital experiences they deliver to their End Users by extending their individual services and brand requirements across digital channels. Our solutions and our data center infrastructure and resources are designed to comply with the stringent security and technical regulations applicable to financial institutions and financial services providers and to safeguard our customers' data and that of their End Users.

We have deep domain expertise in developing and delivering secure, advanced digital solutions designed to help our customers and technology partners compete in the complex and heavily regulated financial services industry. Over 18 years ago, Q2 began by providing digital banking solutions to regional and community financial institutions. We have rapidly grown since then through a combination of broad market acceptance of our award-winning solutions and relentless innovation, investment and acquisitions, while expanding our solutions to larger financial institutions. Our portfolio of solutions now spans digital banking, lending, profitability, onboarding, security, and we now serve account holders and borrowers across retail, small business and commercial segments, in addition to our open technology platform and BaaS offerings. While we remain focused on our founding mission of building stronger and more diverse communities by strengthening their financial institutions, we intend to draw on our broad solution portfolio, deep domain expertise and robust customer base to lead the transformation into a new frontier of financial services.

The financial services industry is undergoing tremendous change, influenced by three major factors. First, financial institutions demand now, more than ever, to digitize their operations and offerings. Second, FinTechs and the innovation they bring to the market are increasing End-User demand and expectations for new, more engaging and meaningful digital financial experiences. And third, major innovative Brands recognize that incorporating banking into their strategy is an opportunity to leverage the trust that their End Users place in them, driving deeper engagement with those End Users. These three forces continue to converge, creating what we believe is a new frontier in financial services in which financial institutions, FinTechs and Brands will have new roles and interdependencies, and which will require new technology, new partners, and new business models. We believe that lasting value creation in financial services will be achieved by those companies that can support and enhance the convergence of these forces. In addition, we have built a broad set of solutions that we believe equips us to accelerate and optimize this convergence – from digitizing the entire bank, to facilitating partnerships among financial institutions and FinTechs, to enabling Brands to incorporate banking into their products and customer relationships.

We deliver our solutions to most of our customers using a software-as-a-service, or SaaS, model under which our customers pay subscription fees for the use of our solutions. Our digital banking platform customers have numerous End Users, and those End Users can represent one or more account holders registered to use one or more of our solutions on our digital banking platform. We generally price our digital banking platform solutions based on the number of solutions purchased by our customers and the number of Registered Users or commercial account holders utilizing our solutions. We generally earn additional revenues from our digital banking platform customers based on the number of transactions that End Users perform on our solutions in excess of the levels included in our standard subscription fee. As a result, our revenues from digital banking platform customers grow as our customers buy more solutions from us and increase the number of End Users utilizing our solutions and as those users increase their number of transactions on our solutions. The structure and terms of our newer lending arrangements vary, but generally are also sold on a subscription basis through our direct sales organization, and the related revenues are recognized over the terms of the customer agreements. The structure and terms of our Helix arrangements with FinTechs and Brands vary, but typically involve relatively lower contracted minimum revenues and instead emphasize usage-based revenue, with such revenue recognized as it is incurred.

We have achieved significant growth since our inception. During each of the past 10 years, our average number of Registered Users (as defined below) per installed customer on our digital banking platform, or Installed Customer, has grown, and in many instances we have been able to sell additional solutions to existing customers. Our revenues per Installed Customer and per Registered User vary period-to-period based on the length and timing of customer implementations, changes in the average number of Registered Users per customer, sales of additional solutions to existing customers, changes in the number of transactions on our solutions by Registered Users and variations among existing customers and new customers with respect to the mix of purchased solutions and related pricing. Please see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Operating Measures" for additional detail on how we define "Installed Customers" and "Registered Users."

We believe we have a significant opportunity to continue to grow our business and that the investments we are making are positioning us to continue to realize revenue growth and improve our operating efficiencies. These investments will increase our costs on an absolute dollar basis, but the timing and amount of these investments will vary based on the rate at which we expect to add new customers, the implementation and support needs of our customers, our software development plans, our technology and physical infrastructure requirements and the internal needs of our organization. Many of these investments will occur in advance of any associated benefit which at times may make it difficult to determine if we are effectively allocating our resources. If we are successful in growing our revenues by selling additional innovative solutions to existing customers and creating deeper End User engagement, we anticipate that greater economies of scale and increased operating leverage will improve our margins over the long term.

We sell our solutions primarily through our professional sales organization. While the financial institutions market is well-defined due to the regulatory classifications of those financial institutions, markets for FinTechs, Alt-FIs and brands are broader and more difficult to define due to the changing number of providers in each market. Over the long term, we intend to continue to invest in additional sales representatives to identify and address opportunities in the financial institution, FinTech, Alt-FI and Brand markets across the U.S. and internationally and to increase our number of sales support and marketing personnel, as well as our investment in marketing initiatives designed to increase awareness of our solutions and generate new customer opportunities.

We have continuously invested in expanding and improving our digital banking platform since its introduction in 2005, and we intend to continue investing both organically and inorganically through acquisitions to expand our portfolio of solutions. Additionally, over the past several years we have acquired or developed new solutions and additional functionality that serve a broader range of needs of financial institutions as well as the needs of FinTechs, Alt-FIs and Brands. Our integrated, end-to-end collection of solutions includes retail, small business and commercial banking, regulatory and compliance, digital lending, relationship pricing, open platform solutions, BaaS, digital account opening, account switching and data-driven sales enablement, spending insights and portfolio management solutions among others. We have also introduced the Q2 Innovation Studio, an API-based and SDK-based open technology platform that allows our financial institution customers and other technology partners to develop unique extensions of and integrations to our digital banking platform, allowing financial institutions to quickly and easily deploy customized experiences and the latest financial services expected by End Users.

We believe that financial services providers are best served by a broad integrated portfolio of digital solutions that provide rapid, flexible and comprehensive integration with internal and third-party solutions allowing them to provide modern, intuitive digital financial services in a secure, regulatory-compliant manner. We also believe that the breadth and depth of our solution offerings and customer base, our open and flexible platform approach, our position as a leading provider of digital banking solutions to a large network of financial institutions, and our expertise in delivering new, innovative, secure and regulatory-compliant digital solutions uniquely position us to capitalize on the new frontier in financial services. We currently intend to increase investments in technology innovation and software development as we enhance our solutions and platforms and increase or expand the number of solutions that we offer.

As our business grows, we intend to continue to invest in and grow our services and delivery organization to support our customers' needs, help them through their digital transformation, deliver our solutions in a timely and effective manner and maintain our strong reputation. We believe that delivery of consistent, high-quality customer support is a significant driver of purchasing and renewal decisions of our prospects and customers. To develop and maintain a reputation for high-quality service, we seek to build deep relationships with our customers through our customer service organization, which we staff with personnel who are motivated by our common mission of using technology to help our customers succeed and who are knowledgeable with respect to the regulated and complex nature of the financial services industry.

Recent Events

Macroeconomic conditions and the residual impacts of the COVID-19 pandemic continue to change globally. We believe the combination of product inflation, rising interest rates, supply chain disruptions, tight labor markets and wage inflation, pricing volatility for certain goods and services, developments related to the U.S. federal debt ceiling, geopolitical uncertainty, and other macroeconomic conditions puts pressure on corporate growth initiatives. Rising interest rates and recession fears, or an actual recession, also can reduce account holder demand for loans and can reduce the creditworthiness of existing borrowers, resulting in higher credit losses for financial institutions. Financial institutions may respond to this challenging operating environment by reducing or delaying purchases of digital solutions and associated services. During the second half of 2022, we observed a decline in customer demand relative to our expectations earlier in the year for certain discretionary aspects of our solutions, namely professional services, which we believe may be related to the current challenging macroeconomic environment. During the second half of 2022, we also observed a decline in transactional revenue from our Helix and payment solutions, resulting from decreased usage. We expect continued negative impacts on our professional services and transactional revenue into 2023 and until the macroeconomic environment stabilizes or improves. As a result of the macroeconomic impacts on our discretionary services and transactional revenue in the second half of 2022, we are anticipating a continued impact on those services in 2023. Further, as a result of the continued macroeconomic uncertainty, during the second half of 2022, we implemented certain measures to manage our expenses, which we expect to and will continue to have an emphasis on cost growth mitigation and profitable growth into 2023. The duration and severity of these events, general economic conditions and their long-term effects on us and our customers remain uncertain and difficult to predict. Refer to "Special Note Regarding Forward Looking Statements" and "Risk Factors" above and in our other SEC filings for further discussion of the impact and possible future impacts of the COVID-19 pandemic and general macroeconomic uncertainty on our business.

Key Operating Measures

In addition to the U.S. generally accepted accounting principles, or GAAP, measures described below in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Components of Operating Results," we monitor the following operating measures to evaluate growth trends, plan investments and measure the effectiveness of our sales and marketing efforts.

Installed Customers

We define Installed Customers as the number of customers on live implementations (or installations) of our digital banking platforms. The average size of our Installed Customers, measured in both Registered Users per Installed Customer and revenues per Installed Customer, has increased over time as our existing Installed Customers continue to add Registered Users and commercial account holders, buy more solutions from us, and as we add larger financial institutions to our Installed Customer base. The net rate at which we add Installed Customers varies based on our implementation capacity, the size and unique needs of our customers, the readiness of our customers to implement our solutions and customer attrition, including as a result of merger and acquisition activity among financial institutions. We had 444, 448 and 450 Installed Customers on our digital banking platform as of December 31, 2022, 2021 and 2020, respectively. The year-over-year change in our Installed Customer count for 2022 was associated with an uptick in customer go-lives, offset by customer merger and acquisition activity and customer terminations.

Registered Users

We define a Registered User as an individual related to an account holder of an Installed Customer on our consumer digital banking platform who has registered to use one or more of our digital banking solutions and has current access to use those solutions as of the last day of the reporting period presented. We generally price our consumer digital banking platform solutions based on the number of Registered Users, while our commercial digital banking platform solutions are priced using various methodologies, some of which have minimal impact on Registered Users. As the number of Registered Users of our solutions increases, our revenues generally tend to grow. Our average number of Registered Users per Installed Customer grows as our existing digital banking platform customers add more Registered Users and as we add larger financial institutions to our Installed Customer base. We anticipate that the number of Registered Users will grow at a faster rate than our number of Installed Customers, however this will be offset as our commercial digital banking platform represents a greater proportion of our Installed Customers solutions without the associated Registered User impact. The rate at which our customers add Registered Users vary significantly period-to-period based on the timing of our implementations of new customers, the timing of registration of new End Users and customers performing inactive account clean-up. We add new Registered Users through both organic and inorganic growth from existing customers and from the addition of End Users from new Installed Customers. Our aggregate number of Registered Users is negatively impacted to the extent Installed Customers terminate all or a portion of their arrangements with us. Our Installed Customers had approximately 21.1 million, 19.2 million and 17.8 million Registered Users as of December 31, 2022, 2021 and 2020, respectively.

Net Revenue Retention Rate

We believe that our ability to retain our customers and expand their use of our products and services over time is an indicator of the stability of our revenue base and the long-term value of our customer relationships. We assess our performance in this area using a metric we refer to as our net revenue retention rate, which we previously referred to as our revenue retention rate. We calculate our net revenue retention rate as the total revenues in a calendar year, excluding any revenues from acquired customers during such year, from customers who were implemented on any of our solutions as of December 31 of the prior year, expressed as a percentage of the total revenues during the prior year from the same group of customers. Our net revenue retention rate provides insight into the impact on current year revenues of: the number of new customers implemented on any of our solutions during the prior year; the timing of our implementation of those new customers in the prior year; growth in the number of End Users on such solutions and changes in their usage of such solutions; and sales of new products and services to our existing customers during the current year, excluding any products or services resulting from businesses acquired during such year and customer attrition. The most significant drivers of changes in our net revenue retention rate each year have historically been the number of new customers in the prior year and the timing of our implementation of those new customers. The timing of our implementation of new customers in the prior year is significant because we do not start recognizing revenues from new customers until they are implemented. If implementations are weighted more heavily in the first or second half of the prior year, our net revenue retention rate will be lower or higher, respectively. In the first half of 2021, our implementations were weighted more heavily, and we experienced a lower net revenue retention rate in 2022 as a result. Our use of net revenue retention rate has limitations as an analytical tool, and investors should not consider it in isolation. Other companies in our industry may calculate net revenue retention rate differently, which reduces its usefulness as a comparative measure. Our net revenue retention rate was 110%, 119% and 122% for the years ended December 31, 2022, 2021 and 2020, respectively.

Annualized Recurring Revenue

We believe Annualized Recurring Revenue, or ARR, provides important information about our future revenue potential, our ability to acquire new clients, and our ability to maintain and expand our relationship with existing clients. We calculate ARR as the annualized value of all recurring revenue recognized in the last month of the reporting period, with the exception of variable revenue in excess of contracted amounts for which we instead take the average monthly run rate of the trailing three months within that reporting period. Our ARR also includes the contracted minimums associated with all contracts in place at the end of the quarter that have not yet commenced, and revenue generated from Premier Services. Premier Services revenue is generated from select established customer relationships where we have engaged with the customer for more tailored, premium professional services resulting in a deeper and ongoing level of engagement with them, which we deem to be recurring in nature. ARR does not include revenue from professional services or other sources of revenue that are not deemed to be recurring in nature. ARR is not a forecast of future revenue, which can be impacted by contract start and end dates and renewal rates. ARR should be viewed independently of revenue and deferred revenue as ARR is an operating metric and is not intended to be combined with or replace these items. Our use of ARR has limitations as an analytical tool, and investors should not consider it in isolation. Other companies in our industry may calculate ARR differently, which reduces its usefulness as a comparative measure. Our ARR was \$655.2 million, \$574.2 million and \$464.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Revenue Churn

We utilize revenue churn, which we previously have referred to simply as churn, to monitor the satisfaction of our customers and evaluate the effectiveness of our business solutions and strategies. We define revenue churn as the amount of any monthly recurring revenue losses due to customer cancellations and downgrades, net of upgrades and replacements of existing solutions, during a year, divided by our monthly recurring revenue at the end of the prior year. Cancellations refer to customers that have either stopped using our services completely or remained a customer but terminated a particular service. Downgrades are a result of customers taking less of a particular service or renewing their contract for identical services at a lower price. We had annual revenue churn of 6.3%, 5.4% and 5.9% for the years ended December 31, 2022, 2021, and 2020, respectively. Our use of revenue churn has limitations as an analytical tool, and investors should not consider it in isolation. Other companies in our industry may calculate revenue churn differently, which reduces its usefulness as a comparative measure.

Non-GAAP Financial Measures

In addition to financial measures prepared in accordance with GAAP, we use certain non-GAAP financial measures to clarify and enhance our understanding, and aid in the period-to-period comparison, of our performance. We believe that these non-GAAP financial measures provide supplemental information that is meaningful when assessing our operating performance because they exclude the impact of certain categories that our management and board of directors do not consider part of core operating results when assessing our operational performance, allocating resources, preparing annual budgets and determining compensation. Accordingly, these non-GAAP financial measures may provide insight to investors into the motivation and decision-making of management in operating the business. Set forth in the tables below are the corresponding GAAP financial measures for each non-GAAP financial measure. Investors are encouraged to review the reconciliation of each of these non-GAAP financial measures to its most comparable GAAP financial measure included below. While we believe that these non-GAAP financial measures provide useful supplemental information, non-GAAP financial measures have limitations and should not be considered in isolation from, or as a substitute for, their most comparable GAAP measures. These non-GAAP financial measures are not prepared in accordance with GAAP, do not reflect a comprehensive system of accounting and may not be comparable to similarly titled measures of other companies due to potential differences in their financing and accounting methods, the book value of their assets, their capital structures, the method by which their assets were acquired and the manner in which they define non-GAAP measures. Items such as the deferred revenue reduction from purchase accounting, stock-based compensation, acquisition related costs, amortization of acquired technology, amortization of acquired intangible assets, partnership termination charges and lease and other restructuring charges can have a material impact on our GAAP financial results.

Non-GAAP Revenue

We define non-GAAP revenue as total revenue excluding the impact of purchase accounting. We monitor these measures to assess our performance because we believe our revenue growth rates would be understated without these adjustments. We believe presenting non-GAAP revenue aids in the comparability between periods and in assessing our overall operating performance.

	Year Ended December 31,		
	2022	2021	2020
Revenue:			
GAAP revenue	\$ 565,673	\$ 498,720	\$ 402,751
Deferred revenue reduction from purchase accounting	644	2,129	4,404
Total Non-GAAP revenue	<u>\$ 566,317</u>	<u>\$ 500,849</u>	<u>\$ 407,155</u>

Non-GAAP Operating Income

We provide non-GAAP operating income excluding such items as deferred revenue reduction from purchase accounting, stock-based compensation, acquisition related costs, amortization of acquired technology, amortization of acquired intangible assets, partnership termination charges and lease and other restructuring charges. We believe excluding these items is useful for the following reasons:

- *Deferred revenue reduction from purchase accounting.* We provide non-GAAP information that excludes the deferred revenue reduction from purchase accounting. We believe that the exclusion of deferred revenue reduction from purchase accounting allows users of our financial statements to better review and understand the historical and current results of our continuing operations.

- *Amortization of acquired technology and intangible assets.* We provide non-GAAP information that excludes expenses related to purchased technology and intangible assets associated with our acquisitions. We believe that eliminating these expenses from our non-GAAP measures is useful to investors, because the amortization of acquired technology and intangible assets can be inconsistent in amount and frequency and significantly impacted by the timing and magnitude of our acquisition transactions, which also vary in frequency from period to period. Accordingly, we analyze the performance of our operations in each period, both with and without such expenses.
- *Stock-based compensation.* We provide non-GAAP information that excludes expenses related to stock-based compensation. We believe that the exclusion of stock-based compensation expense provides for a better comparison of our operating results to prior periods and to our peer companies as the calculations of stock-based compensation vary from period to period and company to company due to different valuation methodologies, subjective assumptions and the variety of award types. Because of these unique characteristics of stock-based compensation, we exclude these expenses when analyzing the organization's business performance.
- *Acquisition related costs.* We exclude certain expense items resulting from our evaluation and completion of merger and acquisition opportunities, such as related legal, accounting and consulting fees, as well as changes in fair value of contingent consideration and retention expense. We consider these adjustments, to some extent, to be unpredictable and dependent on a significant number of factors that are outside of our control. Furthermore, merger and acquisition activities result in operating expenses that would not otherwise have been incurred by us in the normal course of our organic business operations. We believe that providing these non-GAAP measures that exclude acquisition related costs, allows users of our financial statements to better review and understand the historical and current results of our continuing operations, and also facilitates comparisons to our historical results and results of less acquisitive peer companies, both with and without such adjustments.
- *Partnership termination charges.* In the quarter ended June 30, 2020, in connection with the termination of a strategic partnership, we agreed to pay a termination fee of \$5.6 million in May 2020 and \$7.6 million in the third quarter of 2021. We are excluding the charges associated with this partnership termination as they are non-recurring in nature and would not otherwise have been incurred by us in the normal course of our organic business operations. We believe that providing these non-GAAP measures that exclude partnership termination charges allows users of our financial statements to better review and understand the historical and current results of our continuing operations, and also facilitates comparisons to our historical results and results of peer companies, both with and without such adjustments.
- *Lease and other restructuring charges.* We provide non-GAAP information that excludes restructuring charges related to the estimated costs of exiting and terminating facility lease commitments, partially offset by anticipated sublease income, any related impairments of the right of use assets as they relate to corporate restructuring and exit activities, as well as severance and other related compensation charges associated with eliminating certain positions in connection with initiatives to optimally align our resources to the businesses that will drive the most long-term value. These charges are inconsistent in amount and are significantly impacted by the timing and nature of these events. Therefore, although we may incur these types of expenses in the future, we believe that eliminating these charges for purposes of calculating the non-GAAP financial measures facilitates a more meaningful evaluation of our operating performance and comparisons to our past operating performance.

	Year Ended December 31,		
	2022	2021	2020
GAAP operating loss	\$ (104,761)	\$ (77,995)	\$ (99,833)
Deferred revenue reduction from purchase accounting	644	2,129	4,404
Stock-based compensation	65,157	54,334	49,235
Acquisition related costs	1,194	3,099	1,408
Amortization of acquired technology	22,690	21,969	21,341
Amortization of acquired intangibles	18,248	17,901	17,888
Partnership termination charges	—	—	13,244
Lease and other restructuring charges	13,225	2,008	2,181
Non-GAAP operating income	<u>\$ 16,397</u>	<u>\$ 23,445</u>	<u>\$ 9,868</u>

Adjusted EBITDA

We define adjusted EBITDA as net loss before depreciation, amortization, stock-based compensation, acquisition related costs, provision for income taxes, interest and other (income) expense, net, deferred revenue reduction from purchase accounting, partnership termination charges, loss on extinguishment of debt, and lease and other restructuring charges. We believe that adjusted EBITDA provides useful information to investors and others in understanding and evaluating our operating results for the following reasons:

- adjusted EBITDA is widely used by investors and securities analysts to measure a company's operating performance with and without regard to items that can vary substantially from company to company depending upon their financing, capital structures and the method by which assets were acquired;
- our management uses adjusted EBITDA in conjunction with GAAP financial measures for planning purposes, in the preparation of our annual operating budget, as a measure of our operating performance, to assess the effectiveness of our business strategies and to communicate with our board of directors concerning our financial performance;
- adjusted EBITDA provides more consistency and comparability with our past financial performance, facilitates period-to-period comparisons of our operations and also facilitates comparisons with other companies, many of which use similar non-GAAP financial measures to supplement their GAAP results; and
- our investor and analyst presentations include adjusted EBITDA as a supplemental measure of our overall operating performance.

Adjusted EBITDA should not be considered as an alternative to net loss or any other measure of financial performance calculated and presented in accordance with GAAP. The use of adjusted EBITDA as an analytical tool has limitations such as:

- depreciation and amortization are non-cash charges, and the assets being depreciated or amortized will often have to be replaced in the future and adjusted EBITDA does not reflect cash requirements for such replacements;
- adjusted EBITDA may not reflect changes in, or cash requirements for, our working capital needs or contractual commitments;
- adjusted EBITDA does not reflect the potentially dilutive impact of stock-based compensation;
- adjusted EBITDA does not reflect interest or tax payments that could reduce cash available for use; and
- other companies, including companies in our industry, might calculate adjusted EBITDA or similarly titled measures differently, which reduces their usefulness as comparative measures.

Because of these and other limitations, you should consider adjusted EBITDA together with our GAAP financial measures including cash flow from operations and net loss. The following table presents a reconciliation of net loss to adjusted EBITDA for each of the periods indicated (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Reconciliation of net loss to adjusted EBITDA:			
Net loss	\$ (108,983)	\$ (112,746)	\$ (137,620)
Depreciation and amortization	61,659	54,833	51,840
Stock-based compensation expense	65,157	54,334	49,235
Acquisition related costs	1,194	3,099	1,408
Provision for income taxes	2,908	1,643	1,416
Interest and other (income) expense, net	1,087	31,063	27,180
Deferred revenue reduction from purchase accounting	644	2,129	4,404
Partnership termination charges	—	—	13,244
Loss on extinguishment of debt	—	1,513	8,932
Lease and other restructuring charges	13,225	2,008	2,181
Adjusted EBITDA	<u>\$ 36,891</u>	<u>\$ 37,876</u>	<u>\$ 22,220</u>

Components of Operating Results

Revenues

Revenue-generating activities directly relate to the sale, implementation and support of our solutions within a single operating segment. We derive the majority of our revenues from subscription fees for the use of our solutions hosted in either our data centers or with cloud-based service providers, transactional revenue from bill-pay solutions, and revenues for professional services and implementation services related to our solutions. We recognize the corresponding revenues over time on a ratable basis over the customer agreement term. A small portion of our revenues are derived from customers which host and manage our solutions on-premises or in third-party data centers under term license and maintenance agreements. We recognize the software license revenue once the customer obtains control of the license and the remaining arrangement consideration for maintenance revenue over time on a ratable basis over the term of the software license.

Subscription fees are based on the number of solutions purchased by our customers, the number of End Users using the solutions and other usage fees those users generate using our solutions in excess of the levels included in our standard subscription fee. Subscription fees are billed monthly, quarterly or annually and are recognized monthly over the term of our customer agreements. The initial term of our digital banking platform agreements averages over five years, although it varies by customer. The structure and terms of our newer lending arrangements vary, but generally are also sold on a subscription basis through our direct sales organization, and the related revenues are recognized over the terms of the customer agreements. The structure and terms of our Helix arrangements with FinTechs and Brands vary, but typically involve relatively lower contracted minimum revenues and instead emphasize usage-based revenue, with such revenue recognized as it is incurred. We begin recognizing subscription fees when the control of the service transfers to the customer, generally when the solution is implemented and made available to the customer. We recognize revenue for bill-pay transaction services generated when End Users utilize debit cards integrated with its Helix products in the month incurred based on actual or estimated transactions. The timing of our implementations varies period-to-period based on our implementation capacity, the number of solutions purchased by our customers, the size and unique needs of our customers and the readiness of our customers to implement our solutions. We recognize any related implementation services revenues ratably over the initial customer agreement term beginning on the date we commence recognizing subscription fees. Contract asset balances arise primarily when we provide services in advance of billing for those services. Amounts that have been invoiced are recorded in accounts receivable, and in revenues or deferred revenues, depending on when control of the service transfers to the customer.

We continue to monitor the impacts the current inflationary environment and a potential global macroeconomic slowdown may have on our business into 2023. During the second half of 2022, we observed a decline in customer demand relative to our expectations earlier in the year for certain discretionary aspects of our solutions, namely professional services, which we believe may be related to the current challenging macroeconomic environment. During the second half of 2022, we also observed a decline in transactional revenue from our Helix and payment solutions, resulting from decreased usage. We expect continued negative impacts on our professional services and transactional revenue into 2023 and until the macroeconomic environment stabilizes or improves. However, we believe that our subscription revenue growth will accelerate in 2023 and continue to increase as a percentage of total revenue contribution. The recent challenging macroeconomic conditions and the residual impacts of the COVID-19 pandemic continue to be highly unpredictable and may continue to disrupt any seasonality trends that may otherwise typically be inherent in our historical operating results.

Cost of Revenues

Cost of revenues is comprised primarily of salaries and other personnel-related costs, including employee benefits, bonuses and stock-based compensation, for employees providing services to our customers. This includes the costs of our personnel performing implementation, customer support, data center and customer training activities. Cost of revenues also includes the direct costs of bill-pay and other third-party intellectual property included in our solutions, the amortization of deferred solution and services costs, amortization of certain software development costs, co-location facility costs and depreciation of our data center assets, debit card related pass-through fees, cloud-based hosting services, an allocation of general overhead costs, the amortization of acquired technology intangibles, and referral fees. We allocate general overhead expenses to all departments based on the number of employees in each department, which we consider to be a fair and representative means of allocation.

We capitalize certain personnel costs directly related to the implementation of our solutions to the extent those costs are recoverable from future revenues. We amortize the costs for an implementation once revenue recognition commences, and we amortize those implementation costs to cost of revenues over the expected period of customer benefit, which has been determined to be the estimated life of the technology. Other costs not directly recoverable from future revenues are expensed in the period incurred.

We capitalize certain software development costs for those employees who are directly associated with and who devote time to developing our software solutions on an individual product basis, including those related to programmers, software engineers and quality control teams, as well as third-party development costs. Software development costs are amortized to cost of revenues when products and enhancements are released or made available over the products' estimated economic lives.

We intend to continue to increase our investments in our implementation and customer support teams and technology infrastructure to serve our customers and support our growth. Over the long term, we expect cost of revenues to continue to grow in absolute dollars as we grow our business but to fluctuate as a percentage of revenues based principally on the level and timing of implementation support activities, timing of capitalized software development costs, debit card related pass-through fees, and other related costs.

Operating Expenses

Operating expenses primarily consist of sales and marketing, research and development and general and administrative expenses. They also include costs related to our acquisitions and the resulting amortization of acquired intangible assets from those acquisitions. Over the long term, we intend to continue to hire new employees and make other investments to support our anticipated growth. As a result, we expect our operating expenses to increase in absolute dollars but to decrease as a percentage of revenues over the long term as we grow our business.

Throughout 2021 and 2022, we experienced an exceptionally challenging hiring environment and intense competition for technical talent, resulting in incremental expenses related to the hiring process, including increased utilization of paid third parties to identify and hire talent. The hiring environment may continue to have the potential to drive increased inflation in the wages we have to pay to hire and retain qualified employees in future periods. Additionally, while throughout 2021 most of our employees continued to work remotely from home and we suspended most non-essential business travel and conference participation, during 2022 many of these activities, including costs associated with onsite attendance, resumed. As a result, we anticipate that we will continue to see a gradual increase in certain costs associated with operating physical locations and facilitating employee travel in future periods. Additionally, we believe employee preferences between remote, hybrid and onsite attendance are likely to change over time, and we will continue to adapt our physical facilities and IT infrastructure to accommodate a safe and successful work experience for our onsite, hybrid and remote employees. As a result of the macroeconomic impacts on our discretionary services and transactional revenue in the second half of 2022, we are anticipating a continued impact on those services in 2023.

Sales and Marketing

Sales and marketing expenses consist primarily of salaries and other personnel-related costs, including commissions, employee benefits, bonuses and stock-based compensation. Sales and marketing expenses also include expenses related to advertising, lead generation, promotional events, corporate communications, travel and allocated overhead.

Sales and marketing expenses as a percentage of total revenues will change in any given period based on several factors including the addition of newly hired sales professionals, the number and timing of newly-installed customers and the amount of sales commissions expense amortized related to those customers. Commissions are generally capitalized and then amortized over the expected period of customer benefit. Sales and marketing expenses will also be impacted by the timing of significant marketing programs such as our return to hosting our annual client conference in person in the Spring of 2023, which we typically hold during the second quarter.

Research and Development

We believe that continuing to improve and enhance our solutions is essential to maintaining our reputation for innovation and growing our customer base and revenues. Research and development expenses include salaries and personnel-related costs, including employee benefits, bonuses and stock-based compensation, third-party contractor expenses, software development costs, allocated overhead and other related expenses incurred in developing new solutions and enhancing existing solutions.

Certain research and development costs that are related to our software development, which include salaries and other personnel-related costs, including employee benefits, stock-based compensation and bonuses attributed to programmers, software engineers and quality control teams working on our software solutions, are capitalized and are included in intangible assets, net on the consolidated balance sheets. We intend to continue our investments in our software development teams and the associated technology in order to serve our customers and support our growth.

General and Administrative

General and administrative expenses consist primarily of salaries and other personnel-related costs, including employee benefits, bonuses and stock-based compensation, of our administrative, finance and accounting, information systems, legal and human resources employees. General and administrative expenses also include consulting and professional fees, insurance, travel and other corporate expenses. We expect to continue to incur incremental expenses associated with the growth of our business and to meet increased compliance requirements associated with operating as a regulated, public company. These expenses include costs to comply with Section 404 of the Sarbanes-Oxley Act and other regulations governing public companies, increased costs of directors' and officers' liability insurance and investor relations activities.

Acquisition Related Costs

Acquisition related costs include compensation expenses related to milestone provisions and retention agreements with certain former shareholders and employees of acquired businesses, which are recognized as earned, changes in fair value of the contingent consideration related to potential acquisition earnout payments and various legal and professional service expenses incurred in connection with merger and acquisition related matters, which are recognized when incurred.

Amortization of Acquired Intangibles

Amortization of acquired intangibles represents the amortization of intangibles recorded in connection with our business acquisitions which are amortized on a straight-line basis over the estimated useful lives of the related assets.

Partnership Termination Charges

Partnership termination charges represent the fees paid related to termination of a strategic partnership during the quarter ended June 30, 2020. These charges are non-recurring in nature and would not otherwise have been incurred by us in the normal course of our organic business operations.

Lease and other restructuring charges

Lease and other restructuring charges include costs related to the early vacating of certain facilities, any related impairment of the right of use assets and ongoing expenses of other vacated facilities, partially offset by anticipated sublease income from the associated facilities, as well as severance and other related compensation charges associated with eliminating certain positions in connection with initiatives to optimally align our resources to the businesses that will drive the most long-term value.

Total Other Income (Expense), Net

Total other income (expense), net, consists primarily of interest income and expense, other non-operating income and expense, loss on disposal of long-lived assets, foreign currency translation adjustment and loss on extinguishment of debt. We earn interest income on our cash, cash equivalents and investments. Interest expense consists primarily of the interest from the amortization of debt discount prior to the adoption of ASU 2020-06, issuance costs, and coupon interest attributable to our convertible notes issued in February 2018, or 2023 Notes, our convertible notes issued in June 2019, or 2026 Notes, and our convertible notes issued in November 2020, or 2025 Notes, as well as fees and interest associated with the letter of credit issued to our landlord for the security deposit for our corporate headquarters.

Provision for Income Taxes

As a result of our current net operating loss position, current income tax expenses and benefits consist primarily of state income tax expense, deferred income tax expense relating to the tax amortization of recently acquired goodwill and income tax expense from foreign operations.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses. In accordance with GAAP, we base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Actual results might differ from these estimates under different assumptions or conditions.

Our significant accounting policies are described in Note 2 to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K, and we believe that the accounting policies discussed below involve the greatest degree of complexity and exercise of significant judgments and estimates by our management. The methods, estimates and judgments that we use in applying our accounting policies have a significant impact on our results of operations and, accordingly, we believe the policies described below are the most critical for understanding and evaluating our financial condition and results of operations.

Revenue Recognition

Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services over the term of the agreement, generally when our solutions are implemented and made available to our customers. The promised consideration may include fixed amounts, variable amounts or both. Revenues are recognized net of sales credits and allowances.

Revenue-generating activities are directly related to the sale, implementation and support of our solutions within a single operating segment. We derive the majority of our revenues from subscription fees for the use of our solutions hosted in either our data centers or cloud-based hosting services, transactional revenue from bill-pay solutions and revenues for professional services and implementation services related to our solutions.

Subscription Revenues

Our software solutions are available for use as hosted application arrangements under subscription fee agreements without licensing rights to the software. Subscription fees from these applications, including contractual periodic price increases, are recognized over time on a ratable basis over the customer agreement term beginning on the date our solution is made available to the customer. Amounts that have been invoiced are recorded in accounts receivable and deferred revenues or revenues, depending on whether the revenue recognition criteria have been met. Periodic price increases are estimated at contract inception where appropriate and result in contract assets as revenue recognition may exceed the amount billed early in the contract. Additional fees for monthly usage above the levels included in the standard subscription fee are recognized as revenue in the month when the usage amounts are determined and reported.

A small portion of our customers host and manage our solutions on-premises or in third-party data centers under term license and maintenance agreements. Term licenses sold with maintenance entitle the customer to technical support, upgrades and updates to the software on a when-and-if-available basis. We recognize software license revenue once the customer obtains control of the license, which generally occurs at the start of each license term. We recognize the remaining arrangement consideration for maintenance revenue over time on a ratable basis over the term of the software license. Revenues from term licenses and maintenance agreements were not significant in the periods presented.

Transactional Revenues

We generate the majority of our transactional revenues based on the number of bill-pay transactions that End Users initiate on our digital banking platform. We also generate a smaller portion of our transactional revenues from fees generated when End Users utilize debit cards integrated with our Helix products. We recognize revenue for bill-pay transaction services in the month incurred based on actual or estimated transactions.

Services and Other Revenues

Implementation services are required for new digital banking and lending platform and other standalone contracts, and there is a significant level of integration and configuration for each customer. Our revenue for implementation services is billed upfront and generally recognized over time on a ratable basis over the customer agreement term for our hosted application agreements. Implementation services for on-premises agreements are recognized at commencement date. Under certain circumstances, we have determined that these implementation services qualify as a separate performance obligation in certain markets and geographies, and the implementation services for these agreements are recognized over time as services are performed.

Professional services revenues consist primarily of Premier Services. Premier Services revenue is generated from select established customer relationships where we have engaged with the customer for more tailored, premium professional services, resulting in a deeper and ongoing level of engagement with them. Professional services revenues also consist of custom services, core conversion services and other general professional services. These revenues are generally billed and recognized when delivered. Other Revenues also include certain debit card related pass-through fees that are not directly tied to card utilization.

Certain out-of-pocket expenses billed to customers are recorded as revenues rather than an offset to the related expense.

Significant Judgments

Performance Obligations and Standalone Selling Price

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of accounting. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. We have contracts with customers that often include multiple performance obligations, usually including multiple subscription and implementation services. For these contracts, we account for individual performance obligations that are separately identifiable by allocating the contract's total transaction price to each performance obligation in an amount based on the relative standalone selling price, or SSP, of each distinct good or service in the contract. In determining whether implementation services are distinct from subscription services, we considered various factors including the significant level of integration, interdependency, and interrelation between the implementation and subscription service, as well as the inability of the customer's personnel or other service providers to perform significant portions of the services. We have concluded that the implementation services included in contracts with multiple performance obligations across the majority of our markets and product offerings are not distinct and, as a result, we defer any arrangement fees for implementation services and recognize such amounts over time on a ratable basis as one performance obligation with the underlying subscription revenue for the initial agreement term of the hosted application agreements. We have concluded that for some of our products in certain markets the implementation services included in contracts with multiple performance obligations are distinct and, as a result, we recognize implementation fees on such arrangements over time as services are performed.

The majority of our revenue recognized at a particular point in time is for usage revenue, on-premise software licenses and certain professional services. These services are recognized as the customer obtains control of the asset, as services are performed, or the point the customer obtains control of the software.

Judgment is required to determine the SSP for each distinct performance obligation. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The primary method used to estimate SSP is the adjusted market assessment approach, which considers its overall pricing objectives, market conditions and other factors, including the value of our contracts, our discounting practices, the size and volume of our transactions, customer characteristics, price lists, go-to-market strategy, historical standalone sales and agreement prices, and the number and types of users within our contracts.

Variable Consideration

We recognize usage revenue related to a number of different interactions with our products including bill-pay transactions that End Users initiate on our digital banking platform, interchange fees that End Users generate using our solutions, instances of remote deposit capture utilization and End User text messaging events. Judgment is required to determine the accounting for these types of revenue. We consider various factors including the degree to which usage is interdependent or interrelated to past services, costs to us per user over the contract, and contractual price per user changes and their relationship to market terms, forecasted data, and our cost to fulfill the obligation. We have concluded that our usage revenue relates specifically to the transfer of the service to the customer and is consistent with the allocation objective of Topic 606 when considering all of the performance obligations and payment terms in the contract. Therefore, we recognize usage revenue on a monthly or quarterly basis in accordance with the agreement, as determined and reported. This allocation reflects the amount we expect to receive for the services for the given period.

We sometimes provide credits or incentives to our customers. Known and estimable credits and incentives represent a form of variable consideration, which are estimated at contract inception and generally result in reductions to revenues recognized for a particular contract. These estimates are updated at the end of each reporting period as additional information becomes available. We believe that there will not be significant changes to our estimates of variable consideration as of December 31, 2022.

Other Considerations

We evaluate whether we are the principal (i.e., report revenues on a gross basis) or agent (i.e., report revenues on a net basis) with respect to the vendor reseller agreements pursuant to which we resell certain third-party solutions along with our solutions. Generally, we report revenues from these types of contracts on a gross basis, meaning the amounts billed to customers are recorded as revenues, and expenses incurred are recorded as cost of revenues. Where we are the principal, we first obtain control of the inputs to the specific good or service and direct their use to create the combined output. Our control is evidenced by our involvement in the integration of the good or service on our platform before it is transferred to our customers and is further supported by us being primarily responsible to our customers and having a level of discretion in establishing pricing. Revenues provided from agreements in which we are an agent are insignificant.

Stock-Based Compensation

Stock options, restricted stock units, and market stock units awarded to employees, directors, and consultants are measured at fair value at each grant date. We do not use a forfeiture rate to recognize compensation expense. Generally, options vest 25% on the one-year anniversary of the grant date with the balance vesting monthly over the following 36 months, and restricted stock unit awards vest in four annual installments of 25% each. Market stock units are performance-based awards that vest based on our stockholder return relative to the total stockholder return of the Russell 2000 Index, or Index. Market stock units granted prior to fiscal 2021 vest over a three-year period on the anniversary of the date of grant, generally with anywhere from zero to up to one-third of the target shares of our common stock subject to each market stock unit award eligible to be earned after the first and second years and anywhere from zero to up to 200% of the full target number of shares subject to each market stock unit award eligible to be earned after the completion of the three-year performance period (less any shares earned for years one and two) based on the average price of our common stock relative to the Index during the performance period. Beginning in March 2021, newly granted market stock units vest over a two-year and three-year period, each running from approximately the date of grant, with anywhere from zero to up to one-third of the target shares of our common stock subject to each market stock unit award eligible to be earned after completion of the two-year performance period and anywhere from zero to up to 200% of the full target number of shares subject to each market stock unit award eligible to be earned after the completion of the three-year performance period (less any shares earned for the two-year performance period) based on the average price of our common stock relative to the Index during the performance period. From time to time, we may make grants of restricted stock units or market stock units with vesting formulas that vary from those described above.

We value stock options using the Black-Scholes option-pricing model, which requires the input of subjective assumptions, including the risk-free interest rate, expected life, expected stock price volatility and dividend yield. The risk-free interest rate assumption is based upon observed interest rates for constant maturity U.S. Treasury securities consistent with the expected term of our employee stock options. The expected life represents the time the stock options are expected to be outstanding and is based on the simplified method. Under the simplified method, the expected life of an option is presumed to be the mid-point between the vesting date and end of the contractual term. We use the simplified method due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected life of the stock options. Expected volatility is based on historical volatilities for publicly traded stock of comparable companies over the estimated expected life of the stock options. We assume no dividend yield because we do not expect to pay dividends in the near future, which is consistent with our history of not paying dividends. We recognize compensation expense ratably over the requisite service period of the stock option award.

We value restricted stock units at the closing market price on the date of grant and recognize compensation expense ratably over the requisite service period of the restricted stock unit award.

We estimate the fair value of market stock units on the date of grant using a Monte Carlo simulation model. The determination of fair value of the market stock units is affected by our stock price and a number of assumptions including the expected volatility and the risk-free interest rate. Our expected volatility at the date of grant was based on the historical volatilities of our stock and peer firms' stocks and the Index over the performance period. We assume no dividend yield and recognize compensation expense ratably over the performance period of the market stock unit award. We recognize compensation expense using the graded attribution method on a straight-line basis over the performance period for each market stock unit award.

Effective January 3, 2022, we implemented our Employee Stock Purchase Plan, or ESPP, previously approved by our board of directors and stockholders in March 2014. The ESPP generally permits our domestic employees who meet certain criteria to purchase our common stock through payroll deductions during six month offering periods. As is permitted under the ESPP, the initial offering period in fiscal 2022 extended for four months from February 1, 2022 through May 31, 2022, with the subsequent offering period extending from June 1, 2022 through November 30, 2022. For all subsequent years, unless otherwise determined by the compensation committee of the board of directors, there will be additional six-month offering periods commencing on each of June 1 and December 1. The ability to purchase shares of our common stock for 85% of the lower of the price on the first day of the offering period or the last day of the offering period represents an option and, therefore, the ESPP is a compensatory plan. Accordingly, stock-based compensation expense is determined based on the grant date fair value as estimated by applying the Black-Scholes option-pricing model and is recognized straight-line over the withholding period. We recognize compensation expense ratably over the requisite service period.

Purchase Price Allocation, Intangible Assets and Goodwill

The purchase price allocation for business combinations and asset acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired and liabilities assumed based on their respective fair values. We determine whether substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets. If this threshold is met, the single asset or group of assets, as applicable, is not a business. If it is not met, we determine whether the single asset or group of assets, as applicable, meets the definition of a business.

In connection with our business combinations, we recorded certain intangible assets, including acquired technology, customer relationships, trademarks and non-compete agreements. Amounts allocated to the acquired intangible assets are amortized on a straight-line basis over the estimated useful lives. We periodically review the estimated useful lives and fair values of our identifiable intangible assets, taking into consideration any events or circumstances which might result in a diminished fair value or revised useful life.

The excess purchase price over the fair value of assets acquired is recorded as goodwill. We test goodwill for impairment annually in October, or whenever events or changes in circumstances indicate an impairment may have occurred. Because we operate as a single reporting unit, the impairment test is performed at the consolidated entity level by comparing the estimated fair value of the company to the carrying value of the company. We estimate the fair value of the reporting unit using a "step one" analysis using a fair-value-based approach based on the market capitalization or a discounted cash flow analysis of projected future results to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. Determining the fair value of goodwill is subjective in nature and often involves the use of estimates and assumptions including, without limitation, use of estimates of future prices and volumes for our products, capital needs, economic trends and other factors which are inherently difficult to forecast. If actual results, or the plans and estimates used in future impairment analyses are lower than the original estimates used to assess the recoverability of these assets, we could incur impairment charges in a future period. The annual impairment test was performed as of October 31, 2022. No impairment of goodwill was identified during 2022.

Impairment of Long-Lived Assets

Impairment of long-lived assets such as property and equipment, acquired intangible assets, capitalized software development costs and right of use assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. We evaluate the recoverability of our long-lived assets by comparing the carrying amount of the asset group to the estimated undiscounted future cash flows. If the carrying value is not recoverable, an impairment is recognized to the extent that the carrying value of the asset group exceeds its fair value.

Results of Operations

The following table sets forth our results of operations data for each of the periods indicated (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Revenues ⁽¹⁾	\$ 565,673	\$ 498,720	\$ 402,751
Cost of revenues ⁽²⁾	309,328	273,685	228,152
Gross profit	256,345	225,035	174,599
Operating expenses:			
Sales and marketing	108,214	85,564	72,323
Research and development	130,103	116,952	97,381
General and administrative	90,163	77,915	70,937
Acquisition related costs	1,176	2,690	478
Amortization of acquired intangibles	18,248	17,901	17,888
Partnership termination charges	—	—	13,244
Lease and other restructuring charges ⁽³⁾	13,202	2,008	2,181
Total operating expenses	361,106	303,030	274,432
Loss from operations	(104,761)	(77,995)	(99,833)
Total other income (expense), net ⁽⁴⁾	(1,314)	(33,108)	(36,371)
Loss before income taxes	(106,075)	(111,103)	(136,204)
Provision for income taxes	(2,908)	(1,643)	(1,416)
Net loss	<u>\$ (108,983)</u>	<u>\$ (112,746)</u>	<u>\$ (137,620)</u>

⁽¹⁾ Includes deferred revenue reduction from purchase accounting of \$0.6 million, \$2.1 million and \$4.4 million for the years ended December 31, 2022, 2021 and 2020, respectively.

⁽²⁾ Includes amortization of acquired technology of \$22.7 million, \$22.0 million and \$21.3 million for the years ended December 31, 2022, 2021 and 2020, respectively.

⁽³⁾ Lease and other restructuring charges include costs related to the early vacating of various facilities and any related impairment of the right of use assets, partially offset by anticipated sublease income from these facilities and severance and other related compensation charges.

⁽⁴⁾ Includes a reduction of zero, \$1.5 million and \$8.9 million related to the early extinguishment of a portion of our 2023 Notes for the years ended December 31, 2022, 2021 and 2020, respectively.

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The following table sets forth our results of operations data as a percentage of revenues for each of the periods indicated:

	Year Ended December 31,		
	2022	2021	2020
Revenues ⁽¹⁾	100.0 %	100.0 %	100.0 %
Cost of revenues ⁽²⁾	54.7 %	54.9 %	56.6 %
Gross margin	45.3 %	45.1 %	43.4 %
Operating expenses:			
Sales and marketing	19.1 %	17.2 %	18.0 %
Research and development	23.0 %	23.5 %	24.2 %
General and administrative	15.9 %	15.6 %	17.6 %
Acquisition related costs	0.2 %	0.5 %	0.1 %
Amortization of acquired intangibles	3.2 %	3.6 %	4.4 %
Partnership termination charges	— %	— %	3.3 %
Lease and other restructuring charges ⁽³⁾	2.3 %	0.4 %	0.5 %
Total operating expenses	63.8 %	60.8 %	68.1 %
Loss from operations	(18.5)%	(15.6)%	(24.8)%
Total other income (expense), net ⁽⁴⁾	(0.2)%	(6.6)%	(9.0)%
Loss before income taxes	(18.8)%	(22.3)%	(33.8)%
Provision for income taxes	(0.5)%	(0.3)%	(0.4)%
Net loss	(19.3)%	(22.6)%	(34.2)%

(1) Includes deferred revenue reduction from purchase accounting of 0.1%, 0.4% and 1.1% for the years ended December 31, 2022, 2021 and 2020, respectively.

(2) Includes amortization of acquired technology of 4.0%, 4.4% and 5.3% for the years ended December 31, 2022, 2021 and 2020, respectively.

(3) Lease and other restructuring charges include costs related to the early vacating of various facilities and any related impairment of the right of use assets, partially offset by anticipated sublease income from these facilities and severance and other related compensation charges.

(4) Includes a reduction of 0.0%, 0.3% and 2.2% related to the early extinguishment of a portion of our 2023 Notes for the years ended December 31, 2022, 2021 and 2020, respectively.

Due to rounding, totals may not equal the sum of the line items in the tables above.

Comparison of the Years Ended December 31, 2022 and 2021

A discussion regarding year-to-year comparisons between the year ended December 31, 2022 and December 31, 2021 is presented below. A discussion regarding year-to-year comparisons between the year ended December 31, 2021 and December 31, 2020 can be found under Item 7 in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

Revenues

The following table presents our revenues for each of the periods indicated (dollars in thousands):

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Revenues	\$ 565,673	\$ 498,720	\$ 66,953	13.4 %

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Revenues increased by \$67.0 million, or 13.4%, from \$498.7 million for the year ended December 31, 2021 to \$565.7 million for the year ended December 31, 2022. This increase in revenue was primarily attributable to a \$50.9 million increase from the sale of additional solutions to new and existing customers and growth in Registered Users from new and existing customers. In addition, \$17.5 million of the increase was generated from the sale of additional professional services and pass-through fees.

Cost of Revenues

The following table presents our cost of revenues for each of the periods indicated (dollars in thousands):

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Cost of revenues	\$ 309,328	\$ 273,685	\$ 35,643	13.0 %
Percentage of revenues	54.7 %	54.9 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Cost of revenues increased by \$35.6 million, or 13.0%, from \$273.7 million for the year ended December 31, 2021 to \$309.3 million for the year ended December 31, 2022. This increase was primarily attributable to an \$14.4 million increase in third-party costs related to intellectual property included in our solutions, transaction processing costs incurred as a result of the increase in End Users from new and existing customers, as well as an increase in pass-through fees, a \$10.7 million increase in personnel costs due to an increase in the number of personnel who provide implementation and customer support services and maintain our data centers and other technical infrastructure, a \$6.2 million increase in co-location facility costs and depreciation for our data center assets resulting from the increased infrastructure necessary to support our growing customer base, a \$2.0 million increase in overhead costs and other discretionary and travel-related expenses, a \$1.3 million increase from amortization of capitalized implementation services and a \$0.7 million increase from amortization of acquired customer technology resulting from our recently acquired businesses.

We continue to invest in personnel, business processes, third-party partners for intellectual property and transactional processing in our solutions and systems infrastructure to standardize our business processes and drive future efficiency in our implementations, customer support and data center operations. We expect these investments will increase cost of revenues in absolute dollars as we continue to make investments in capacity, process improvement and systems infrastructure, and we expect such expenses to decline as a percentage of revenue as our operations continue to scale and revenues grow.

Operating Expenses

The following tables present our operating expenses for each of the periods indicated (dollars in thousands):

Sales and Marketing

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Sales and marketing	\$ 108,214	\$ 85,564	\$ 22,650	26.5 %
Percentage of revenues	19.1 %	17.2 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Sales and marketing expenses increased by \$22.7 million, or 26.5%, from \$85.6 million for the year ended December 31, 2021 to \$108.2 million for the year ended December 31, 2022. This increase was primarily attributable to a \$15.0 million increase in personnel costs due to the growth of our sales and marketing organizations to support current and projected bookings and revenue growth, a \$4.2 million increase in other discretionary expenses, including stadium sponsorship expenses, a \$1.6 million increase in travel-related expenses and a \$1.6 million increase in overhead costs.

We anticipate that sales and marketing expenses will continue to increase in absolute dollars in the future as we add personnel to support our revenue growth and as we increase marketing spend to attract new customers, retain and grow existing customers, build brand awareness, and as we continue to return to in-person sales formats and experiences for future user conferences, including our annual client conference to be held in 2023. While we anticipate sales and marketing expenses as a percentage of revenue may fluctuate on a quarter-over-quarter basis, we expect such expenses to decline as a percentage of our revenues over the long-term as our revenues grow.

Research and Development

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Research and development	\$ 130,103	\$ 116,952	\$ 13,151	11.2 %
Percentage of revenues	23.0 %	23.5 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Research and development expenses increased by \$13.2 million, or 11.2%, from \$117.0 million for the year ended December 31, 2021 to \$130.1 million for the year ended December 31, 2022. This increase was primarily attributable to a \$22.6 million increase in personnel costs as a result of the growth in our research and development organization to support continued enhancements to our solutions and a \$2.6 million increase in overhead and other discretionary and travel-related expenses. These increases were partially offset by a \$12.5 million decrease as a result of increased capitalized software development costs.

We anticipate that research and development expenses will increase in absolute dollars in the future as we continue to support and expand our platform and enhance our existing solutions, as we believe existing customers will have an increased focus on maintaining and improving their digital banking offerings, including functionality such as digital account opening and online lending.

General and Administrative

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
General and administrative	\$ 90,163	\$ 77,915	\$ 12,248	15.7 %
Percentage of revenues	15.9 %	15.6 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. General and administrative expenses increased by \$12.2 million, or 15.7%, from \$77.9 million for the year ended December 31, 2021 to \$90.2 million for the year ended December 31, 2022. The increase in general and administrative expenses was primarily attributable to a \$9.2 million increase in personnel costs to support the growth of our business, a \$1.9 million increase in overhead and other discretionary and travel-related expenses and a \$0.7 million increase in bad debt expense.

General and administrative expenses consist primarily of salaries and other personnel-related costs of our administrative, finance and accounting, information systems, legal and human resources employees. General and administrative expenses also include costs to comply with regulations governing public companies and financial institutions, costs of directors' and officers' liability insurance, investor relations activities and costs to comply with Section 404 of the Sarbanes-Oxley Act, or SOX. Over the long term, we anticipate that general and administrative expenses will continue to increase in absolute dollars as we continue to incur both increased external audit fees as well as additional spending to ensure continued regulatory and SOX compliance. We expect such expenses to decline as a percentage of our revenues over the longer term as our revenues grow.

Acquisition Related Costs

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Acquisition related costs	\$ 1,176	\$ 2,690	\$ (1,514)	(56.3)%
Percentage of revenues	0.2 %	0.5 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Acquisition related costs decreased by \$1.5 million, or 56.3%, from \$2.7 million for the year ended December 31, 2021 to \$1.2 million for the year ended December 31, 2022. Acquisition related costs for the year ended December 31, 2022 consisted of various legal and professional expenses incurred in connection with merger and acquisition activities. Acquisition related costs for the year ended December 31, 2021 included \$1.5 million of compensation expense related to the retention bonuses for employees of previous acquisitions and \$1.1 million of legal, professional services and other costs related to our acquisition of ClickSWITCH on April 1, 2021.

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Amortization of Acquired Intangibles

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Amortization of acquired intangibles	\$ 18,248	\$ 17,901	\$ 347	1.9 %
Percentage of revenues	3.2 %	3.6 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Amortization of acquired intangibles increased by \$0.3 million, or 1.9%, from \$17.9 million for the year ended December 31, 2021 to \$18.2 million for the year ended December 31, 2022. The acquired intangible assets are related to previously disclosed business combinations.

Lease and Other Restructuring Charges

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Lease and other restructuring charges	\$ 13,202	\$ 2,008	\$ 11,194	557.5 %
Percentage of revenues	2.3 %	0.4 %		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Lease and other restructuring charges increased by \$11.2 million, or 557.5%, from \$2.0 million for the year ended December 31, 2021 to \$13.2 million for the year ended December 31, 2022. During the year ended December 31, 2022, the charges included \$10.6 million primarily related to the vacating of a facility in Texas including the associated impairment of the right of use asset, updated assessments and ongoing expenses of other vacated facilities, as well as \$2.6 million related to severance and other related compensation charges associated with eliminating certain positions in connection with initiatives to optimally align our resources to the businesses that will drive the most long-term value. During the year ended December 31, 2021, the charges included costs related to an updated assessment and vacating of facilities, partially offset by anticipated sublease income from these facilities.

Total Other Income (Expense), Net

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Total other income (expense), net	\$ (1,314)	\$ (33,108)	\$ 31,794	(96.0)%
Percentage of revenues	(0.2)%	(6.6)%		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Total other income (expense), net increased by \$31.8 million, or 96.0%, from \$33.1 million for the year ended December 31, 2021 to \$1.3 million for the year ended December 31, 2022. The increase in total other income (expense), net was primarily due to a \$25.7 million decrease in non-cash interest expense related to our convertible notes as a result of the aforementioned adoption of ASU No. 2020-06 on January 1, 2022 and a \$4.1 million increase in income from cash and investments. Additional increases resulted from expenses incurred during the comparable period ended December 31, 2021, including a \$1.5 million loss from the early extinguishment of a portion of our 2023 Notes and a \$0.3 million decrease in loss on disposal of long-lived assets.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2022	2021	\$	(%)
Provision for income taxes	\$ (2,908)	\$ (1,643)	\$ (1,265)	77.0 %
Percentage of revenues	(0.5)%	(0.3)%		

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021. Total provision for income taxes increased by \$1.3 million from \$1.6 million for the year ended December 31, 2021 to \$2.9 million for the year ended December 31, 2022. The increase in the tax expense for the year ended December 31, 2022 related to the operations of the business and uncertain tax positions relating to Texas state tax expense.

Seasonality and Quarterly Results

Our overall operating results fluctuate from quarter to quarter as a result of a variety of factors, including the timing of investments to grow our business. The timing of our implementation activities and corresponding revenues from new customers are subject to fluctuations based on the timing of our sales. Historically, sales have tended to be lower in the first half of the year, but any resulting impact on our results of operation has been difficult to measure due to the timing of our implementations and overall growth in our business. The timing of our implementations also varies period-to-period based on our implementation capacity, the number of solutions purchased by our customers, the size and unique needs of our customers and the readiness of our customers to implement our solutions.

We continue to monitor the impacts the current inflationary environment and a potential global macroeconomic slowdown may have on our business in 2023. The recent macroeconomic conditions and the residual impacts of the COVID-19 pandemic continue to be highly unpredictable and may continue to disrupt any seasonality trends that may otherwise typically be inherent in our historical operating results.

Our quarterly results of operations may vary significantly in the future and period-to-period comparisons of our operating results may not be meaningful and should not be relied upon as an indication of future results.

Liquidity and Capital Resources

Sources of Liquidity

We have financed our operations primarily through the proceeds from the issuance of common stock from our initial public offering in March 2014, additional registered common stock offerings, including our June 2019 and May 2020 common stock offerings, our February 2018 convertible note offering, our June 2019 convertible note offering, our November 2020 convertible note offering, and cash flows from operations. As of December 31, 2022, our principal sources of liquidity were cash, cash equivalents and investments of \$433.4 million. Based upon our current levels of operations, we believe that our cash flow from operations along with our other sources of liquidity are adequate to meet our cash requirements for the next twelve months. However, if we determine the need for additional short-term liquidity, there is no assurance that such financing, if pursued, would be adequate or available on terms acceptable to us.

Cash Flows

The following table summarizes our cash flows for the periods indicated (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Net cash provided by (used in):			
Operating activities	\$ 36,556	\$ 31,092	\$ (2,938)
Investing activities	(165,555)	(65,129)	(124,163)
Financing activities	5,882	(51,160)	434,676
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(802)	(167)	48
Net increase (decrease) in cash, cash equivalents and restricted cash	<u>\$ (123,919)</u>	<u>\$ (85,364)</u>	<u>\$ 307,623</u>

Cash Flows from Operating Activities

Our operating activities are primarily influenced by net loss less non-cash items, the amount and timing of customer receipts and vendor payments and by the amount of cash we invest in personnel and infrastructure to support the anticipated growth of our business and increase in the number of installed customers.

For the year ended December 31, 2022, our net cash and cash equivalents provided by operating activities was \$36.6 million, which consisted of non-cash adjustments of \$166.0 million, partially offset by a net loss of \$109.0 million and cash outflows from changes in operating assets and liabilities of \$20.5 million. Non-cash adjustments primarily consisted of stock-based compensation, depreciation and amortization, amortization of deferred implementation and deferred solution and other costs, lease and other restructuring charges and amortization of debt issuance costs. The primary driver of the changes in operating assets and liabilities related to a \$19.8 million increase in deferred solution and implementation costs due to our increased customer growth and new and existing customers undergoing implementations during the period and a \$10.4 million decrease in accounts payable and accrued liabilities due to timing of payments in support of our expanding customer base and related growth in our technical infrastructure and payment of annual bonuses during the first quarter.

For the year ended December 31, 2021, our net cash and cash equivalents provided by operating activities was \$31.1 million, which consisted of non-cash adjustments of \$168.3 million, partially offset by a net loss of \$112.7 million and cash outflows from changes in operating assets and liabilities of \$24.5 million. Non-cash adjustments primarily consisted of depreciation and amortization, stock-based compensation, amortization of debt discount and issuance costs, amortization of deferred implementation and deferred solution and other costs and loss on the early extinguishment of a portion of our convertible notes. The primary driver of the changes in operating assets and liabilities related to a \$25.6 million increase in deferred solution and implementation costs due to our increased customer growth and new and existing customers undergoing implementations during the period.

For the year ended December 31, 2020, our net cash and cash equivalents used in operating activities was \$2.9 million, which consisted of a net loss of \$137.6 million and cash outflows from changes in operating assets and liabilities of \$26.9 million, partially offset by non-cash adjustments of \$161.6 million. The primary drivers of the changes in operating assets and liabilities related to a \$32.2 million increase in deferred solution and implementation costs due to our increased customer growth and new and existing customers undergoing implementations during the period and a \$14.6 million increase in accounts receivable due to the timing of payments received, partially offset by a \$20.4 million increase in deferred revenue due to increased payments and deposits received from customers prior to the recognition of revenue from those related payments. Non-cash adjustments primarily consisted of depreciation and amortization, stock-based compensation, amortization of debt discount and issuance costs, amortization of deferred implementation and deferred solution and other costs, loss on the early extinguishment of a portion of our convertible notes, and lease and other restructuring charges.

Cash Flows from Investing Activities

Our investing activities have consisted primarily of purchases and maturities of investments, acquisitions of businesses, purchases of property and equipment to support our growth and costs incurred for the development of capitalized software. Purchases of property and equipment may vary period-to-period due to the timing of the expansion of our operations, data center and other technical infrastructure.

For the year ended December 31, 2022, net cash used in investing activities was \$165.6 million, consisting of \$293.0 million for the purchase of investments, \$18.9 million in capitalized software development costs, \$11.1 million for the purchase of property and equipment and \$5.0 million for the acquisition of Sensibill, net of cash acquired. These outflows were partially offset by \$162.5 million received from the maturities of investments.

For the year ended December 31, 2021, net cash used in investing activities was \$65.1 million, consisting of \$124.0 million for the purchase of investments, \$64.7 million for the acquisition of ClickSWITCH, net of cash acquired, \$19.8 million for the purchase of property and equipment, and \$5.9 million in capitalized software development costs. These outflows were partially offset by \$149.2 million received from the maturities of investments.

For the year ended December 31, 2020, net cash used in investing activities was \$124.2 million, consisting of \$131.3 million for the purchase of investments, \$23.7 million for the purchase of property and equipment, and \$1.0 million in capitalized software development costs. These outflows were partially offset by \$31.8 million received from the maturities of investments.

Cash Flows from Financing Activities

Our recent financing activities have consisted primarily of our May 2020 common stock offering, our November 2020 offering of the 2025 Notes, our partial repurchase of the 2023 Notes, the payment of contingent consideration related to the acquisition of Cloud Lending, as well as net proceeds from exercises of options and contributions to our ESPP to purchase our common stock.

For the year ended December 31, 2022, net cash used in financing activities was \$5.9 million, consisting solely of cash received from exercises of stock options and contributions to our ESPP to purchase our common stock.

For the year ended December 31, 2021, net cash used in financing activities was \$51.2 million, consisting of \$63.7 million for the partial repurchase of 2023 Notes, partially offset by \$6.6 million of net proceeds received in connection with the early termination of bond hedges and warrants related to the 2023 Notes, and \$5.9 million of cash received from the exercise of stock options.

For the year ended December 31, 2020, net cash provided by financing activities was \$434.7 million, consisting of proceeds from the issuance of common stock of \$311.3 million, net of issuance costs, from the May 2020 common stock offering, issuance of \$132.6 million principal amount of the 2025 Notes, net of issuance costs, from the November 2020 offering of the 2025 Notes, \$34.1 million in net proceeds received in connection with the early termination of bond hedges and warrants related to the 2023 Notes, and \$13.3 million of cash received from the exercise of stock options, partially offset by the Capped Call transactions of \$39.8 million and payment of contingent consideration related to the acquisition of Cloud Lending, of which \$16.9 million of the payment was estimated at acquisition date fair value and included in financing activities.

Contractual Obligations and Commitments

Our principal commitments consist of the 2023 Notes, 2025 Notes, 2026 Notes, non-cancelable operating leases related to our facilities, minimum purchase commitments for sponsorship obligations, third-party products, co-location fees and other product costs. Our obligations under our convertible senior notes are described in Note 12 to our consolidated financial statements included in this Annual Report on Form 10-K. Information regarding our non-cancellable lease and other purchase commitments as of December 31, 2022 can be found in Note 11 to our consolidated financial statements included in this Annual Report on Form 10-K.

Recent Accounting Pronouncements

See Note 2 - Summary of Significant Accounting Policies contained in the Notes to Consolidated Financial Statements included in this report, regarding the impact of certain recent accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Market risk is the risk of loss to future earnings, values or future cash flows that may result from changes in the price of a financial instrument. The value of a financial instrument might change as a result of changes in interest rates, exchange rates, commodity prices, equity prices and other market changes. We do not use derivative financial instruments for speculative, hedging or trading purposes, although in the future we might enter into exchange rate hedging arrangements to manage the risks described below.

Interest Rate Risk

We have cash and cash equivalents held primarily in cash and money market funds. In addition, we have marketable securities which typically include U.S. government securities, corporate bonds and commercial paper and certificates of deposit. Cash and cash equivalents are held for working capital purposes. Marketable securities are held and invested with capital preservation as the primary objective. Due to the short-term nature of these investments, we believe that we do not have any material exposure to changes in the fair value of our investment portfolio as a result of changes in interest rates. Any declines in interest rates will reduce future interest income. If overall interest rates fell by 10% in 2022 or 2021, our interest income would not have been materially affected. As of December 31, 2022, we had an outstanding principal amount of \$327.2 million of 2023 Notes and 2026 Notes, which each have a fixed annual interest rate of 0.75% and an outstanding principal amount of \$350.0 million of 2025 Notes with a fixed annual interest rate of 0.125%.

Foreign Currency Risk

As of December 31, 2022, our most significant currency exposures were the Indian rupee, Canadian dollar, British pound, and Australian dollar. As of December 31, 2022, we had operating subsidiaries in India, Canada, the United Kingdom and Australia. Due to the relatively low volume of payments made by us through these foreign subsidiaries, we do not believe we have significant exposure to foreign currency exchange risks. However, fluctuations in currency exchange rates could harm our results of operations in the future.

We currently do not use derivative financial instruments to mitigate foreign currency exchange risks. We will continue to review this matter and may consider hedging certain foreign exchange risks in future years.

Inflation Risk

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

Item 8. Financial Statements and Supplementary Data.

The information required by this item is incorporated by reference to the consolidated financial statements and accompanying notes set forth on pages F-1 through F-43 of this Annual Report on Form 10-K.

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

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act refers to controls and procedures 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 such information is accumulated and communicated to a company's management, including its 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 Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022, the end of the period covered by this Annual Report on Form 10-K. Based upon such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of such date.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2022 based on the guidelines established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Our internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Based on that evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2022.

Our independent registered public accounting firm, Ernst & Young, LLP, issued an attestation report on our internal control over financial reporting. This report appears on page F-4.

Changes in Internal Control over Financial Reporting

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

Limitations on Controls

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

Item 9B. Other Information.

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information required by Part III, Item 10, will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022, and is incorporated herein by reference.

Item 11. Executive Compensation.

Information required by Part III, Item 11, will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022, and is incorporated herein by reference.

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

Information required by Part III, Item 12, will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022, and is incorporated herein by reference.

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

Information required by Part III, Item 13, will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022, and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

Information required by Part III, Item 14, will be included in our Proxy Statement relating to our 2023 annual meeting of stockholders to be filed with the SEC within 120 days after the end of our fiscal year ended December 31, 2022, and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) Documents Filed with Report

(1) *Financial Statements*

Report of Independent Registered Public Accounting Firm	F-2
Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting	F-4
Consolidated Balance Sheets	F-5
Consolidated Statements of Comprehensive Loss	F-6
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Consolidated Statements of Cash Flows	F-8
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(2) *Financial Statement Schedules.*

Schedules required by this item have been omitted since they are either not required or not applicable or because the information required is included in the consolidated financial statements included elsewhere herein or the notes thereto.

(3) *Exhibits.*

The information required by this Item is set forth on the exhibit index that precedes the signature page of this Annual Report on Form 10-K.

Exhibit Index

Exhibit Number	Description	Incorporated by Reference			Exhibit No.	Filed / Furnished Herewith
		Form	Filing No.	Filing Date		
2.1	Stock Purchase Agreement, dated July 31, 2015, by and among Q2 Software, Inc., Centrix Solutions, Inc., all shareholders of Centrix Solutions, Inc. and Timothy Schnell, as Agent	8-K	001-36350	7/31/2015	2.1	
2.2	Agreement and Plan of Merger, dated August 6, 2018, by and among Q2 Software, Inc., Montana Merger Subsidiary, Inc., Cloud Lending, Inc. and Fortis Advisors, LLC, as equity holder representative	8-K	001-36350	8/8/2018	2.1	
2.3	Agreement and Plan of Merger, dated September 30, 2019, by and among the Q2 Software, Inc., Merger Sub, Lender Performance Group, LLC, the Blockers, Blocker Merger Subs and Insight Venture Partners, LLC, as equity holder representative	8-K	001-36350	10/1/2019	2.1	
2.4	First Amendment to Agreement and Plan of Merger, dated October 31, 2019, by and among the Q2 Software, Inc., Merger Sub, Lender Performance Group, LLC, the Blockers, Blocker Merger Subs and Insight Venture Partners, LLC, as equity holder representative	10-K	001-36350	2/21/2020	2.4	
2.5	Second Amendment to Agreement and Plan of Merger, dated December 27, 2019, by and among the Q2 Software, Inc., Merger Sub, Lender Performance Group, LLC, the Blockers, Blocker Merger Subs and Insight Venture Partners, LLC, as equity holder representative	10-K	001-36350	2/21/2020	2.5	
3.1	Fifth Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-36350	6/12/2019	3.1	
3.2	Amended and Restated Bylaws of the Registrant	8-K	001-36350	6/12/2019	3.2	
4.1	Indenture, dated February 26, 2018, between the Registrant and Wilmington Trust, National Association, as trustee	8-K	001-36350	2/26/2018	4.1	
4.2	Form of Global Note, dated February 26, 2018, between the Registrant and Wilmington Trust, National Association, as trustee	8-K	001-36350	2/26/2018	4.2	
4.3	Indenture, dated June 10, 2019 between the Registrant and Wilmington Trust, National Association, as trustee	8-K	001-36350	6/11/2019	4.1	
4.4	Form of Global Note, dated June 10, 2019 between the Registrant and Wilmington Trust, National Association, as trustee	8-K	001-36350	6/11/2019	4.2	
4.5	Description of Registrant Securities Registered under Section 12 of the Exchange Act				*	
4.6	Indenture, dated November 18, 2020, between Registrant and Wilmington Trust National Association, as trustee	8-K	001-36350	11/20/2020	4.1	
4.7	Form of Global Note, dated November 18, 2020, between Registrant and Wilmington Trust National Association, as trustee	8-K	001-36350	11/20/2020	4.2	
10.1	Form of Indemnification Agreement for directors and officers	S-1/A	333- 193911	2/25/2014	10.1	
10.2.1	† 2007 Stock Plan, as amended	S-1/A	333- 193911	2/25/2014	10.2.1	
10.2.2	† Form of Stock Option Agreement under the 2007 Stock Plan	S-1	333- 193911	2/12/2014	10.2.2	
10.2.3	† Form of Stock Option Agreement for Executive Officers under the 2007 Stock Plan	S-1	333- 193911	2/12/2014	10.2.3	
10.2.4	† Form of Stock Option Agreement for Directors under the 2007 Stock Plan	S-1	333- 193911	2/12/2014	10.2.4	
10.3.1	Lease Agreement, dated November 20, 2012, by and among the Q2 Software, Inc. and 13785 Research Blvd, LLC	S-1	333- 193911	2/12/2014	10.4	
10.3.2	First Amendment to Lease Agreement and Tri-Party Agreement, dated February 27, 2015, by and among Q2 Software, Inc., FPG Aspen Lake Owner, L.P. and FPG TOH Owner, L.P., amending the Lease Agreement, dated November 20, 2012, by and among the Q2 Software, Inc. and 13785 Research Blvd, LLC	10-Q	001-36350	5/8/2015	10.1	

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Exhibit Number	Description	Incorporated by Reference				Filed / Furnished Herewith
		Form	Filing No.	Filing Date	Exhibit No.	
10.3.3	Second Amendment to Lease Agreement and Tri-Party Agreement, dated April 1, 2015, by and among Q2 Software, Inc., FPG Aspen Lake Owner, L.P. and FPG TOH Owner, L.P., amending the Lease Agreement, dated November 20, 2012, by and among the Q2 Software, Inc. and 13785 Research Blvd, LLC	10-Q	001-36350	5/8/2015	10.2	
10.3.4	Third Amendment to Lease Agreement, dated October 8, 2015, by and among Q2 Software, Inc. and FPG Aspen Lake Owner, L.P., amending the Lease Agreement, dated November 20, 2012, by and among the Q2 Software, Inc. and 13785 Research Blvd, LLC	10-Q	001-36350	11/6/2015	10.2	
10.3.5	Lease Agreement, dated July 18, 2014, by and among Q2 Software, Inc. and CREF Aspen Lake Building II, LLC	8-K	001-36350	7/23/2014	10.1	
10.3.6	First Amendment to Lease Agreement, dated May 1, 2015, by and among Q2 Software, Inc. and CREF Aspen Lake Building II, LLC	8-K	001-36350	5/4/2015	10.1	
10.3.7	Second Amendment to Lease Agreement, dated February 3, 2016, by and among Q2 Software, Inc. and CREF Aspen Lake Building II, LLC	10-Q	001-36350	5/10/2016	10.1	
10.4	Lease Agreement, dated December 18, 2019, by and among Q2 Software, Inc. and Aspen Lake Building Three, LLC	8-K	001-36350	12/20/2019	10.1	
10.5	† Amended and Restated Employment Agreement, dated September 23, 2021, by and among the Registrant and Matthew P. Flake	8-K	001-36350	9/24/2021	10.1	
10.6	† Amended and Restated Employment Agreement, dated September 23, 2021, by and among the Registrant and John E. Breeden	8-K	001-36350	9/24/2021	10.5	
10.7	† Amended and Restated Employment Agreement, dated September 24, 2021, by and among the Registrant and Michael A. Volanoski	10-K	001-36350	2/16/2022	10.7	
10.8	† Amended and Restated Employment Agreement, dated September 24, 2021, by and among the Registrant and David J. Mehok	8-K	001-36350	9/24/2021	10.2	
10.9.1	† 2014 Equity Incentive Plan and forms of agreements thereunder	S-1/A	333- 193911	3/6/2014	10.9	
10.9.2	† Forms of Restricted Stock Units Agreements under the Registrant's 2014 Equity Incentive Plan.	10-Q	001-36350	11/10/2014	10.2	
10.9.3	† Form of Stock Option Agreement and Restricted Stock Unit Agreement for Remote Executive Officers under Registrant's 2014 Equity Incentive Plan	10-Q	001-36350	11/6/2015	10.3	
10.9.4	† Form of Market Stock Units Agreement under the Registrant's 2014 Equity Incentive Plan	10-Q	001-36350	5/3/2018	10.4	
10.9.5	† Form of Market Stock Units Agreement under the Registrant's 2014 Equity Incentive Plan	10-Q	001-36350	5/6/2021	10.1	
10.10	† 2014 Employee Stock Purchase Plan	S-1/A	333- 193911	3/6/2014	10.1	
10.11.1	Master Service Agreement dated January 11, 2010, by and among the Registrant and Cyrus Networks, LLC	S-1	333- 193911	2/12/2014	10.12	
10.11.2	Service Level Agreement dated January 11, 2010, by and among the Registrant and Cyrus Networks, LLC	S-1	333- 193911	2/12/2014	10.12.1	
10.12	† Amended and Restated Employment Agreement, dated September 23, 2021, by and among the Registrant and Jonathan A. Price					*
10.13	Purchase Agreement, dated February 21, 2018, by and among the Registrant, Morgan Stanley & Co. LLC, J.P. Morgan Securities LLC and Stifel, Nicolaus & Company, Incorporated, as representatives of the several initial purchasers named therein	8-K	001-36350	2/26/2018	10.1	
10.14	Form of Bond Hedge Confirmation	8-K	001-36350	2/26/2018	10.2	
10.15	Form of Warrant Confirmation	8-K	001-36350	2/26/2018	10.3	

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Exhibit Number	Description	Incorporated by Reference				Filed / Furnished Herewith
		Form	Filing No.	Filing Date	Exhibit No.	
10.16	Purchase Agreement, dated June 5, 2019 by and among the Registrant, Morgan Stanley & Co. LLC, J.P. Morgan Securities LLC, Stifel, Nicolaus & Company, Incorporated and BMO Capital Markets Corp., as representatives of the several initial purchasers named therein	8-K	001-36350	6/6/2019	10.1	
10.17	Form of Capped Call Confirmation	8-K	001-36350	6/6/2019	10.2	
10.18	Executive Incentive Compensation Plan	8-K	001-36350	6/15/2020	10.1	
10.19	Form of Exchange and Subscription Agreement	8-K	001-36350	11/12/2020	10.1	
10.20	Form of Capped Call	8-K	001-36350	11/12/2020	10.2	
21.1	List of Subsidiaries of the Registrant					*
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm					*
24.1	Power of Attorney (see the signature pages to this Annual Report on Form 10-K).					*
31.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of The Sarbanes-Oxley Act of 2002.					*
31.2	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of The Sarbanes-Oxley Act of 2002.					*
32.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350 as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002.					#
32.2	Certification of Principal Financial Officer Required under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350 as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002.					#
101.INS	Inline XBRL Instance Document.					*
101.SCH	Inline XBRL Taxonomy Extension Schema.					*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.					*
101.LAB	Inline XBRL Taxonomy Extension Calculation Label Linkbase.					*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.					*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.					*
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)					*

* Filed herewith

Furnished herewith

† Management contract, compensatory plan or arrangement

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date:	Q2 HOLDINGS, INC.	
February 21, 2023	By: _____	/s/ MATTHEW P. FLAKE
		Matthew P. Flake <i>Chief Executive Officer</i>

SIGNATURES AND POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Matthew P. Flake, with full power of substitution and re-substitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorney-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

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

Name	Title	Date
/s/ MATTHEW P. FLAKE Matthew P. Flake	Chief Executive Officer (Principal Executive Officer) and Director	February 21, 2023
/s/ DAVID J. MEHOK David J. Mehok	Chief Financial Officer (Principal Financial and Accounting Officer)	February 21, 2023
/s/ R. H. SEALE, III R.H. Seale, III	Executive Chairman of the Board of Directors	February 21, 2023
/s/ R. LYNN ATCHISON R. Lynn Atchison	Director	February 21, 2023
/s/ JEFFREY T. DIEHL Jeffrey T. Diehl	Director	February 21, 2023
/s/ LYNN A. TYSON Lynn A. Tyson	Director	February 21, 2023
/s/ STEPHEN C. HOOLEY Stephen C. Hooley	Director	February 21, 2023
/s/ JAMES R. OFFERDAHL James R. Offerdahl	Director	February 21, 2023
/s/ MARGARET L. TAYLOR Margaret L. Taylor	Director	February 21, 2023

Q2 HOLDINGS, INC.
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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Q2 Holdings, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Q2 Holdings, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of comprehensive loss, changes in stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 21, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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

Accounting for Revenue Recognition

Description of the Matter

As described in Note 2 of the consolidated financial statements, the Company's revenue-generating activities are directly related to the sale, implementation and support of the Company's solutions. The Company derives the majority of its revenues from subscription fees for the use of its solutions hosted in either the Company's data centers or cloud-based hosting services, transactional revenue from bill-pay solutions and revenues for customer support and implementation services related to the Company's solutions. The Company's revenue recognition process involves several information technology (IT) applications responsible for the initiation, processing, and recording of transactions from the Company's various customers, and the calculation of revenue in accordance with the Company's accounting policy.

Auditing the Company's accounting for revenue recognition was complex due to the dependency on the effective design and operation of multiple IT applications, some of which are specifically designed for the Company's business and the use of multiple data sources in the revenue recognition process.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of internal controls over the Company's accounting for revenue from contracts with customers. For example, with the assistance of IT professionals, we tested the controls over the initiation and billing of new and recurring subscriptions and when control of the subscription performance obligation was transferred to the customer, which is referred to as the "go-live" date. We also tested the controls related to the key application interfaces between the provisioning, billing, and accounting systems, which included controls related to access to the relevant applications and data and changes to the relevant systems and interfaces, as well as controls over the configuration of the relevant applications.

To test the Company's accounting for revenue from contracts with customers, we performed substantive audit procedures that included, among others, testing on a sample basis the completeness and accuracy of the underlying data within the Company's billing system, performing data analytics by extracting data from the system to evaluate the completeness and accuracy of recorded revenue and deferred revenue amounts, tracing a sample of cash receipts to supporting journal entries, and testing the appropriate commencement of subscription revenue recognition on the "go-live" date.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2013.

Austin, Texas
February 21, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Q2 Holdings, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Q2 Holdings, Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Q2 Holdings, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Q2 Holdings, Inc. as of December 31, 2022 and 2021, the related consolidated statements of comprehensive loss, changes in stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and our report dated February 21, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Austin, Texas
February 21, 2023

Q2 HOLDINGS, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except per share data)

	December 31,	
	2022	2021
Assets		
Current assets:		
Cash and cash equivalents	\$ 199,600	\$ 322,848
Restricted cash	2,302	2,973
Investments	233,753	104,878
Accounts receivable, net	46,735	46,979
Contract assets, current portion, net	8,909	1,845
Prepaid expenses and other current assets	10,832	10,531
Deferred solution and other costs, current portion	21,117	25,076
Deferred implementation costs, current portion	7,828	7,320
Total current assets	531,076	522,450
Property and equipment, net	56,695	66,608
Right of use assets	39,837	52,278
Deferred solution and other costs, net of current portion	26,410	26,930
Deferred implementation costs, net of current portion	18,713	17,039
Intangible assets, net	145,681	162,461
Goodwill	512,869	512,869
Contract assets, net of current portion and allowance	16,186	22,103
Other long-term assets	2,259	2,307
Total assets	\$ 1,349,726	\$ 1,385,045
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 10,055	\$ 10,597
Accrued liabilities	20,748	18,343
Accrued compensation	23,460	31,725
Convertible notes, current portion	10,903	—
Deferred revenues, current portion	117,468	98,692
Lease liabilities, current portion	9,408	9,001
Total current liabilities	192,042	168,358
Convertible notes, net of current portion	657,789	551,598
Deferred revenues, net of current portion	21,691	29,168
Lease liabilities, net of current portion	52,991	61,374
Other long-term liabilities	6,189	4,251
Total liabilities	930,702	814,749
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Preferred stock: \$0.0001 par value; 5,000 shares authorized, no shares issued or outstanding as of December 31, 2022 and 2021	—	—
Common stock: \$0.0001 par value; 150,000 shares authorized, 57,735 shares issued and outstanding as of December 31, 2022, and 56,928 shares issued and outstanding as of December 31, 2021	6	6
Additional paid-in capital	982,300	1,064,358
Accumulated other comprehensive loss	(2,972)	(135)
Accumulated deficit	(560,310)	(493,933)
Total stockholders' equity	419,024	570,296
Total liabilities and stockholders' equity	\$ 1,349,726	\$ 1,385,045

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

Q2 HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenues	\$ 565,673	\$ 498,720	\$ 402,751
Cost of revenues	309,328	273,685	228,152
Gross profit	256,345	225,035	174,599
Operating expenses:			
Sales and marketing	108,214	85,564	72,323
Research and development	130,103	116,952	97,381
General and administrative	90,163	77,915	70,937
Acquisition related costs	1,176	2,690	478
Amortization of acquired intangibles	18,248	17,901	17,888
Partnership termination charges	—	—	13,244
Lease and other restructuring charges	13,202	2,008	2,181
Total operating expenses	361,106	303,030	274,432
Loss from operations	(104,761)	(77,995)	(99,833)
Other income (expense):			
Interest and other income	5,362	1,476	1,207
Interest and other expense	(6,676)	(33,071)	(28,646)
Loss on extinguishment of debt	—	(1,513)	(8,932)
Total other income (expense), net	(1,314)	(33,108)	(36,371)
Loss before income taxes	(106,075)	(111,103)	(136,204)
Provision for income taxes	(2,908)	(1,643)	(1,416)
Net loss	(108,983)	(112,746)	(137,620)
Other comprehensive gain (loss):			
Unrealized gain (loss) on available-for-sale investments	(1,873)	(213)	(118)
Foreign currency translation adjustment	(964)	110	72
Comprehensive loss	\$ (111,820)	\$ (112,849)	\$ (137,666)
Net loss per common share, basic and diluted	\$ (1.90)	\$ (2.00)	\$ (2.65)
Weighted average common shares outstanding:			
Basic and diluted	57,300	56,394	52,019

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

Q2 HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Total stockholders' equity, beginning balances	\$ 570,296	\$ 643,364	\$ 379,412
Common stock and additional paid-in capital:			
Beginning balances	1,064,364	1,024,583	622,697
Stock-based compensation expense	69,039	55,903	50,682
Exercise of stock options	707	5,892	14,283
Issuance of common stock under ESPP	5,175	—	—
Shares acquired to settle the exercise of stock options	—	(200)	(966)
Cumulative effect of the adoption of new accounting standard	(156,979)	—	—
Proceeds from issuance of common stock, net of issuance costs	—	—	311,321
Equity component of convertible notes, less issuance costs	—	—	73,097
Equity component of early extinguishment of convertible notes	—	(28,454)	(40,842)
Settlement of convertible bond hedges	—	26,295	171,679
Settlement of warrants	—	(19,655)	(137,538)
Purchase of capped call transactions	—	—	(39,830)
Ending balances	<u>982,306</u>	<u>1,064,364</u>	<u>1,024,583</u>
Accumulated deficit:			
Beginning balances	(493,933)	(381,187)	(243,299)
Cumulative effect of the adoption of new accounting standard	42,606	—	(268)
Net loss	(108,983)	(112,746)	(137,620)
Ending balances	<u>(560,310)</u>	<u>(493,933)</u>	<u>(381,187)</u>
Accumulated other comprehensive income (loss):			
Beginning balances	(135)	(32)	14
Other comprehensive income (loss)	(2,837)	(103)	(46)
Ending balances	<u>(2,972)</u>	<u>(135)</u>	<u>(32)</u>
Total stockholders' equity, ending balances	<u>\$ 419,024</u>	<u>\$ 570,296</u>	<u>\$ 643,364</u>
Common stock (in shares):			
Beginning balances	56,928	55,562	48,386
Exercise of stock options	27	307	720
Issuance of common stock under ESPP	171	—	—
Shares acquired to settle the exercise of stock options	—	(2)	(9)
Shares issued for the vesting of restricted stock awards	609	1,061	916
Proceeds from issuance of common stock, net of issuance costs	—	—	4,235
Equity component of early extinguishment of convertible notes	—	—	1,314
Ending balances	<u>57,735</u>	<u>56,928</u>	<u>55,562</u>

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

Q2 HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net loss	\$ (108,983)	\$ (112,746)	\$ (137,620)
Adjustments to reconcile net loss to net cash from operating activities:			
Amortization of deferred implementation, solution and other costs	23,270	24,496	22,936
Depreciation and amortization	61,659	54,833	51,840
Amortization of debt issuance costs	2,719	2,038	1,977
Amortization of debt discount	—	25,824	21,317
Amortization of premiums on investments	(302)	1,117	366
Stock-based compensation expense	65,157	55,903	50,682
Realized gain (loss) on sale of marketable securities	17	—	(14)
Deferred income taxes	1,611	180	946
Allowance for credit losses	179	(25)	306
Allowance for sales credits	(55)	39	2
Loss on disposal of long-lived assets	109	389	151
Loss on extinguishment of debt	—	1,513	8,932
Lease and other restructuring charges	11,669	2,008	2,181
Changes in operating assets and liabilities:			
Accounts receivable, net	286	(10,072)	(14,560)
Prepaid expenses and other current assets	494	532	(2,440)
Deferred solution and other costs	(7,599)	(12,776)	(15,333)
Deferred implementation costs	(12,243)	(12,847)	(16,880)
Contract assets, net	(1,101)	(4,165)	(3,721)
Other long-term assets	7,312	7,851	3,711
Accounts payable	(548)	1,757	(2,297)
Accrued liabilities	(9,845)	104	(685)
Deferred revenues	10,212	15,743	20,351
Deferred rent and other long-term liabilities	(7,462)	(10,604)	4,914
Net cash provided by (used in) operating activities	<u>36,556</u>	<u>31,092</u>	<u>(2,938)</u>
Cash flows from investing activities:			
Purchases of investments	(292,984)	(124,034)	(131,337)
Maturities of investments	162,521	149,176	31,841
Purchases of property and equipment	(11,142)	(19,754)	(23,715)
Business combinations, net of cash acquired	(5,040)	(64,652)	—
Capitalized software development costs	(18,910)	(5,865)	(952)
Net cash used in investing activities	<u>(165,555)</u>	<u>(65,129)</u>	<u>(124,163)</u>
Cash flows from financing activities:			
Proceeds from issuance of common stock, net of issuance costs	—	—	311,321
Proceeds from issuance of convertible notes, net of issuance costs	—	—	132,589
Purchases of capped call transactions	—	—	(39,830)
Payments for repurchases of convertible notes	—	(63,692)	—
Proceeds from bond hedges related to convertible notes	—	26,295	171,679
Payments for warrants related to convertible notes	—	(19,655)	(137,538)
Payment of contingent consideration	—	—	(16,862)
Proceeds from exercise of stock options and ESPP	5,882	5,892	13,317
Net cash provided by (used in) financing activities	<u>5,882</u>	<u>(51,160)</u>	<u>434,676</u>
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(802)	(167)	48
Net increase (decrease) in cash, cash equivalents and restricted cash	(123,919)	(85,364)	307,623
Cash, cash equivalents and restricted cash, beginning of period	325,821	411,185	103,562
Cash, cash equivalents and restricted cash, end of period	<u>\$ 201,902</u>	<u>\$ 325,821</u>	<u>\$ 411,185</u>
Supplemental disclosures of cash flow information:			
Cash paid for taxes, net of refund	<u>\$ 875</u>	<u>\$ 1,027</u>	<u>\$ 566</u>
Cash paid for interest	<u>\$ 2,891</u>	<u>\$ 3,104</u>	<u>\$ 4,096</u>

Q2 HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)
(in thousands)

Supplemental disclosure of non-cash investing and financing activities:			
Shares acquired to settle the exercise of stock options	\$ —	\$ (200)	\$ (966)
Impact of extinguishment of convertible senior notes due 2023	\$ —	\$ —	\$ (40,842)
Stock-based compensation for capitalized software development	\$ 2,396	\$ —	\$ —
Capitalized software development costs included in accounts payable and accrued liabilities	\$ 492	\$ —	\$ —
Property and equipment acquired and included in accounts payable and accrued liabilities	\$ 353	\$ 3,004	\$ 469
Property and equipment acquired through tenant improvement allowance	\$ —	\$ 9,692	\$ 878
Data center assets acquired under deferred payment arrangements or financing arrangements	\$ —	\$ —	\$ 448

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

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

1. Organization and Description of Business

Q2 Holdings, Inc. and its wholly-owned subsidiaries, collectively the Company, is a leading provider of secure, cloud-based digital solutions that transform the ways in which financial institutions and other financial services providers engage with account holders and end users, or End Users. The Company offers its solutions to financial institutions, financial technology companies, or FinTechs, alternative finance companies, or Alt-FIs, and other innovative companies, or Brands, wishing to incorporate banking into their customer engagement and servicing strategies. The Company's solutions enable customers to deliver robust suites of digital banking, lending, and banking-as-a-service, or BaaS, services that make it possible for account holders and End Users to transact and engage anytime, anywhere and on any device. The Company delivers its solutions to the substantial majority of its customers using a software-as-a-service, or SaaS, model under which its customers pay subscription fees for the use of the Company's solutions. The Company was incorporated in Delaware in March 2005 and is a holding company that owns 100% of the outstanding capital stock of Q2 Software, Inc. The Company's headquarters are located in Austin, Texas.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP, and Securities and Exchange Commission, or SEC, requirements. The consolidated financial statements include the accounts of Q2 Holdings, Inc. and its direct and indirect wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Reclassifications

During the year ended December 31, 2022, the Company began separately presenting the effect of exchange rate changes on cash and cash equivalents in its consolidated statements of cash flows due to volatility in foreign currency exchange rates. Amounts in the comparable prior periods have been reclassified to conform to the current period presentation. The reclassifications resulted in the disaggregation of the amount attributable to the "Effect of exchange rate changes on cash" of \$0.2 million and \$0.05 million, with a corresponding increase to "Net cash provided by operating activities," for the twelve months ended December 31, 2021 and 2020, respectively. The Company believes the reclassification is not material to the consolidated financial statements.

Use of Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses. Significant items subject to such estimates include: revenue recognition; estimate of credit losses; fair value of certain stock awards issued; the carrying value of goodwill; the fair value of acquired intangibles; the capitalization of software development costs; the useful lives of property and equipment and long-lived intangible assets; fair value of the conversion features of convertible notes; the impairment assessment of long-lived assets; and, income taxes. In accordance with GAAP, management bases its estimates on historical experience and on various other assumptions that management believes are reasonable under the circumstances. Management regularly evaluates its estimates and assumptions using historical experience and other factors; however, actual results could differ significantly from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments acquired with an original maturity of ninety days or less at the date of purchase to be cash equivalents. Cash equivalents are stated at cost or fair value based on the underlying security.

Restricted Cash

Restricted cash consists of deposits held as collateral for the Company's secured letters of credit or bank guarantees issued in place of security deposits for the Company's corporate headquarters and various other leases.

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

Investments

Investments typically include U.S. government securities, corporate bonds, commercial paper, certificates of deposit, money market funds and other equity investments. All debt investments are considered available for sale and are carried at fair value. Equity investments without a readily determinable fair value, where the Company has no influence over the operating and financial policies of the investee, are recorded at cost, less impairment and adjusted for subsequent observable price changes obtained from orderly transactions for identical or similar investments issued by the same investee. Adjustments resulting from impairment, fair value, or observable price changes are accounted for in the consolidated statements of comprehensive loss.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash and cash equivalents, restricted cash, investments, accounts receivable and contract assets. The Company's cash and cash equivalents, restricted cash and investments are placed with high credit quality financial institutions and issuers, and at times may exceed federally-insured limits. The Company has not experienced any loss relating to cash and cash equivalents or restricted cash in these accounts. The Company provides credit, in the normal course of business, to a majority of its customers. The Company performs periodic credit evaluations of its customers' financial condition and generally does not require collateral. No individual customer accounted for 10% or more of revenues for each of the years ended December 31, 2022, 2021 and 2020. Two customers accounted for 12% and 10% of accounts receivable, net, as of December 31, 2022 and one customer accounted for 14% of accounts receivable, net as of December 31, 2021.

Contract Balances

The timing of revenue recognition, billings and cash collections can result in billed accounts receivable, unbilled receivables, contract assets, and deferred revenues or contract liabilities. Billings scheduled to occur after the performance obligation has been satisfied and revenue recognition has occurred result in contract assets. Contract assets that are expected to be billed during the succeeding twelve-month period are recorded in contract assets, current portion, and the remaining portion is recorded in contract assets, net of current portion on the consolidated balance sheets at the end of each reporting period. A contract liability results when the Company receives prepayments or deposits from customers in advance for implementation, maintenance and other services, as well as initial subscription fees. Customer prepayments are generally applied against invoices issued to customers when services are performed and billed. The Company recognizes contract liabilities as revenues when the services are performed, and the corresponding revenue recognition criteria are met. Contract liabilities that are expected to be recognized as revenues during the succeeding twelve-month period are recorded in deferred revenues, current portion, and the remaining portion is recorded in deferred revenues, net of current portion, on the consolidated balance sheets at the end of each reporting period.

The Company is exposed to credit losses primarily through sales of products and services. The Company assesses the collectability of outstanding contract assets on an ongoing basis and maintains a reserve which is included in the allowance for credit losses for contract assets deemed uncollectible. The Company analyzes the contract asset portfolio for significant risks by considering historical collection experience and forecasting future collectability to determine the amount of revenues that will ultimately be collected from its customers. Customer type (whether a customer is a financial institution or other digital solution provider) has been identified as the primary specific risk affecting the Company's contract assets, and the estimate for losses is analyzed quarterly and adjusted as necessary. Future collectability is contingent upon current and anticipated macroeconomic conditions that could impact the Company's customers such as unemployment, inflation and regulatory matters. Additionally, specific allowance amounts may be established to record the appropriate provision for customers that have a higher probability of default. The Company has provisioned \$0.2 million and \$0.04 million in expected losses for the years ended December 31, 2022 and 2021, respectively, of which \$0.4 million and zero has been written off and charged against the allowance at December 31, 2022 and 2021, respectively. The allowance for credit losses related to contract assets was \$0.1 million and \$0.3 million as of December 31, 2022 and 2021, respectively.

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

Accounts Receivable

Accounts receivable are stated at net realizable value, including both billed and unbilled receivables to customers. Unbilled receivable balances arise primarily when the Company provides services in advance of billing for those services. Generally, billing for revenues related to the number of End Users and the number of transactions processed by the customers' End Users that are included in the customers' minimum subscription fee occurs in the month the revenue is recognized, resulting in accounts receivable. Billing for revenues relating to the number of End Users and the number of transactions processed by the End Users that are in excess of the customers' minimum subscription fees are, generally, billed in the month following the month the revenues were earned, resulting in an unbilled receivable. Unbilled receivables of \$5.8 million and \$4.8 million were included in the accounts receivable balance as of December 31, 2022 and 2021, respectively.

The Company assesses the collectability of outstanding accounts receivable on an ongoing basis and maintains an allowance for credit losses for accounts receivable deemed uncollectible. The Company analyzes the accounts receivable portfolio for significant risks and considers prior periods and forecasts future collectability to determine the amount of revenues that will ultimately be collected from its customers. This estimate is analyzed quarterly and adjusted as necessary. Identified risks pertaining to the Company's accounts receivable include the delinquency level and customer type. Future collectability is contingent upon current and anticipated macroeconomic conditions that could impact the Company's customers such as unemployment, inflation and regulation matters. Due to the short-term nature of such receivables, the estimate of the amount of accounts receivable that may not be collected is based on aging of the accounts receivable balances and the financial condition of customers. Historically, the Company's collection experience has not varied significantly, and bad debt expenses have been insignificant. The Company has provisioned \$0.6 million and \$0.1 million for expected losses as of December 31, 2022 and 2021, respectively, and \$0.4 million and \$0.2 million has been written off and charged against the allowance as of December 31, 2022 and 2021, respectively. The allowance for credit losses related to accounts receivable was \$0.7 million and \$0.5 million as of December 31, 2022 and 2021, respectively.

The Company maintains reserves for estimated sales credits issued to customers for billing disputes or other service-related reasons. These allowances are recorded as a reduction against current period revenues and accounts receivable. In estimating this allowance, the Company analyzes prior periods to determine the amounts of sales credits issued to customers compared to the revenues in the period that related to the original customer invoice. This estimate is analyzed semi-annually and adjusted as necessary. The Company also maintains specific reserves for anticipated contract concessions. The allowance for sales credits and specific reserves was \$1.2 million and \$1.9 million as of December 31, 2022 and 2021, respectively.

The following table shows the Company's allowance for sales credits, credit losses, and other reserved balances as follows:

	Beginning Balance	Additions	Deductions	Ending Balance
Year Ended December 31, 2020	\$ 539	\$ 5,187	\$ (2,620)	\$ 3,106
Year Ended December 31, 2021	3,106	3,760	(4,105)	2,761
Year Ended December 31, 2022	\$ 2,761	\$ 2,931	\$ (3,692)	\$ 2,000

Deferred Revenues

Deferred revenues primarily consist of amounts that have been billed to or received from customers in advance of revenue recognition and prepayments received from customers in advance for implementation, maintenance and other services, as well as initial subscription fees. The Company recognizes deferred revenues as revenues when the services are performed and the corresponding revenue recognition criteria are met. Customer prepayments are generally applied against invoices issued to customers when services are performed and billed.

The net increase in the deferred revenue balance for the year ended December 31, 2022 is primarily driven by cash payments received or due in advance of satisfying the Company's performance obligations of \$577.8 million for current year invoices, \$2.4 million from the netting of contract assets and liabilities on a contract-by-contract basis, partially offset by the recognition of \$472.6 million of revenue recognized from current year invoices and \$96.4 million of revenue that was included in the deferred revenue balance as of December 31, 2021. Amounts recognized from deferred revenues represent primarily revenue from the sale of subscription and implementation services.

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

The Company's payment terms vary by the type and location of its customer and the products or services offered. The period of time between invoicing and when payment is due is not significant. For certain products or services and customer types, the Company requires payment before the products or services are delivered to the customer.

On December 31, 2022, the Company had \$1.49 billion of remaining performance obligations, which represents contracted revenue minimums that have not yet been recognized, including amounts that will be invoiced and recognized as revenue in future periods. The Company expects to recognize approximately 50% of its remaining performance obligations as revenue in the next 24 months, an additional 36% in the next 25 to 48 months, and the balance thereafter.

Deferred Implementation Costs

The Company capitalizes certain personnel and other costs, such as employee salaries, stock-based compensation, benefits and the associated payroll taxes that are identifiable and directly related to the implementation of its solutions. The Company analyzes implementation costs that may be capitalized to assess their recoverability and only capitalizes costs that it anticipates being recoverable through the terms of the associated contract. The Company begins amortizing the deferred implementation costs for an implementation to cost of revenues once the revenue recognition criteria have been met, and the Company amortizes those deferred implementation costs ratably over the expected period of customer benefit. The Company has determined this period to be the estimated life of the technology for new contracts, which is estimated to be five to seven years, or over the term of the agreement for contract renewals and customer expansions. The Company determined the period of benefit by considering factors such as historically high renewal rates with similar customers and contracts, initial contract length, an expectation that there will still be a demand for the product at the end of its term, and the significant costs to switch to a competitor's product, all of which are governed by the estimated useful life of the technology. The Company monitors deferred implementation costs for impairment and records impairment when customers terminate or allow services to lapse due to contract modifications and/or from other assessments as needed. Any impairment losses identified are recognized in the form of an expense acceleration with the applicable amount recorded to deferred implementation costs, current portion and/or deferred implementation costs, net of current portion on the consolidated balance sheet and in cost of revenues in the consolidated statements of comprehensive loss.

The portion of deferred implementation costs expected to be amortized during the succeeding twelve-month period is recorded in current assets as deferred implementation costs, current portion, and the remainder is recorded in long-term assets as deferred implementation costs, net of current portion on the consolidated balance sheets. The Company capitalized implementation costs in the amount of \$13.7 million and \$11.9 million during the years ended December 31, 2022 and 2021, respectively, and recognized \$11.5 million, \$11.9 million and \$14.5 million of amortization during the years ended December 31, 2022, 2021 and 2020, respectively. Amortization expense is included in cost of revenues in the consolidated statements of comprehensive loss.

Deferred Solution and Other Costs

The Company capitalizes sales commissions and other third-party costs such as third-party licenses and maintenance related to its customer agreements. The Company capitalizes sales commissions because the commission payments are considered incremental and recoverable costs of obtaining a contract with a customer. The Company capitalizes commissions and related bonuses for those involved in the sale which are incremental to the sale and their associated management. Substantially all commissions are paid in a single payment once the contract has been executed and the initial deposit has been received from the customer. The Company begins amortizing deferred solution and other costs for a particular customer agreement once the revenue recognition criteria are met and amortizes those deferred costs over the expected period of customer benefit. The Company has determined this period to be the estimated life of the technology for new contracts, which is estimated to be five to seven years, or over the term of the agreement for contract renewals and customer expansions. The Company determined the period of benefit by considering factors such as historically high renewal rates with similar customers and contracts, initial contract length, an expectation that there will still be a demand for the product at the end of its term, and the significant costs to switch to a competitor's product, all of which are governed by the estimated useful life of the technology. The Company monitors deferred solution and other costs for impairment and records impairment when customers terminate or allow services to lapse due to contract modifications and/or from other assessments as needed. Any impairment losses identified are recognized in the form of an expense acceleration with the applicable amount recorded to deferred solution and other costs, current portion and/or deferred solution and other costs, net of current portion on the consolidated balance sheet and in sales and marketing expenses in the consolidated statements of comprehensive loss.

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

The Company capitalizes solution and other costs that it anticipates being recoverable. The portion of capitalized costs expected to be amortized during the succeeding twelve-month period is recorded in current assets as deferred solution and other costs, current portion, and the remainder is recorded in long-term assets as deferred solution and other costs, net of current portion. The Company capitalized \$14.2 million and \$10.5 million in deferred commissions costs during the years ended December 31, 2022 and 2021, respectively, and recognized \$11.7 million, \$12.6 million and \$8.5 million of amortization during the years ended December 31, 2022, 2021 and 2020 respectively. Amortization expense is included in sales and marketing expenses in the consolidated statements of comprehensive loss.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is calculated on a straight-line basis over the estimated useful lives of the related assets. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful lives of the related assets. Maintenance and repairs that do not extend the life of or improve an asset are expensed in the period incurred.

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

Computer hardware and equipment	3 - 5 years
Purchased software and licenses	3 - 5 years
Furniture and fixtures	7 years
Leasehold improvements	Lesser of estimated useful life or lease term

Purchase Price Allocation, Intangible Assets, and Goodwill

The purchase price allocation for business combinations and asset acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired and liabilities assumed based on their respective fair values. The Company determines whether substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets. If this threshold is met, the single asset or group of assets, as applicable, is not a business. If it is not met, the Company determines whether the single asset or group of assets, as applicable, meets the definition of a business.

In connection with the Company's business combinations, the Company recorded certain intangible assets, including acquired technology, customer relationships, trademarks, and non-compete agreements. Amounts allocated to the acquired intangible assets are amortized on a straight-line basis over the estimated useful lives. The Company periodically reviews the estimated useful lives and fair values of its identifiable intangible assets, taking into consideration any events or circumstances which might result in a diminished fair value or revised useful life.

The excess purchase price over the fair value of assets acquired is recorded as goodwill. The Company tests goodwill for impairment annually in October, or whenever events or changes in circumstances indicate an impairment may have occurred. Because the Company operates as a single reporting unit, the impairment test is performed at the consolidated entity level by comparing the estimated fair value of the Company to the carrying value of the Company. The Company estimates the fair value of the reporting unit using a "step one" analysis using a fair-value-based approach based on the market capitalization or a discounted cash flow analysis of projected future results to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. Determining the fair value of goodwill is subjective in nature and often involves the use of estimates and assumptions including, without limitation, use of estimates of future prices and volumes for the Company's products, capital needs, economic trends and other factors which are inherently difficult to forecast. If actual results, or the plans and estimates used in future impairment analyses are lower than the original estimates used to assess the recoverability of these assets, the Company could incur impairment charges in a future period.

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Revenues

Revenues are recognized when control of the promised goods or services is transferred to the Company's customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services over the term of the agreement, generally when the Company's solutions are implemented and made available to the customers. The promised consideration may include fixed amounts, variable amounts or both. Revenues are recognized net of sales credits and allowances.

Revenue-generating activities are directly related to the sale, implementation and support of the Company's solutions within a single operating segment. The Company derives the majority of its revenues from subscription fees for the use of its solutions hosted in either the Company's data centers or cloud-based hosting services, transactional revenue from bill-pay solutions and revenues for professional services and implementation services related to the Company's solutions.

The following table disaggregates the Company's revenue by major source:

	Year Ended December 31,		
	2022	2021	2020
Subscription	\$ 412,040	\$ 361,094	\$ 286,961
Transactional	67,373	68,829	55,580
Services and Other	86,260	68,797	60,210
Total Revenues	<u>\$ 565,673</u>	<u>\$ 498,720</u>	<u>\$ 402,751</u>

Subscription Revenues

The Company's software solutions are available for use as hosted application arrangements under subscription fee agreements without licensing rights to the software. Subscription fees from these applications, including contractual periodic price increases, are recognized over time on a ratable basis over the customer agreement term beginning on the date the Company's solution is made available to the customer. Amounts that have been invoiced are recorded in accounts receivable and deferred revenues or revenues, depending on whether the revenue recognition criteria have been met. Periodic price increases are estimated at contract inception where appropriate and result in contract assets as revenue recognition may exceed the amount billed early in the contract. Additional fees for monthly usage above the levels included in the standard subscription fee are recognized as revenue in the month when the usage amounts are determined and reported.

A small portion of the Company's customers host and manage the Company's solutions on-premises or in third-party data centers under term license and maintenance agreements. Term licenses sold with maintenance entitle the customer to technical support, upgrades and updates to the software on a when-and-if-available basis. The Company recognizes software license revenue once the customer obtains control of the license, which generally occurs at the start of each license term. The Company recognizes the remaining arrangement consideration for maintenance revenue over time on a ratable basis over the term of the software license. Revenues from term licenses and maintenance agreements were not significant in the periods presented.

Transactional Revenues

The Company generates the majority of its transactional revenues based on the number of bill-pay transactions that End Users initiate on its digital banking platform. The Company also generates a smaller portion of its transactional revenues from fees generated when End Users utilize debit cards integrated with its Helix products. The Company recognizes revenue for bill-pay transaction services in the month incurred based on actual or estimated transactions.

Services and Other Revenues

Implementation services are required for new digital banking and lending platform and other standalone contracts, and there is a significant level of integration and configuration for each customer. The Company's revenue for implementation services is billed upfront and generally recognized over time on a ratable basis over the customer agreement term for its hosted application agreements. Implementation services for on-premises agreements are recognized at commencement date. Under certain circumstances, the Company has determined that these implementation services qualify as a separate performance obligation in certain markets and geographies, and the implementation services for these agreements are recognized over time as services are performed.

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Professional services revenues consist primarily of Premier Services. Premier Services revenue is generated from select established customer relationships where the Company has engaged with the customer for more tailored, premium professional services, resulting in a deeper and ongoing level of engagement with them. Professional services revenues also consist of custom services, core conversion services and other general professional services. These revenues are generally billed and recognized when delivered. Other Revenues also include certain debit card related pass-through fees that are not directly tied to card utilization.

Certain out-of-pocket expenses billed to customers are recorded as revenues rather than an offset to the related expense.

Significant Judgments

Performance Obligations and Standalone Selling Price

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of accounting. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. The Company has contracts with customers that often include multiple performance obligations, usually including multiple subscription and implementation services. For these contracts, the Company accounts for individual performance obligations that are separately identifiable by allocating the contract's total transaction price to each performance obligation in an amount based on the relative standalone selling price, or SSP, of each distinct good or service in the contract. In determining whether implementation services are distinct from subscription services, the Company considered various factors including the significant level of integration, interdependency, and interrelation between the implementation and subscription service, as well as the inability of the customer's personnel or other service providers to perform significant portions of the services. The Company has concluded that the implementation services included in contracts with multiple performance obligations across the majority of its markets and product offerings are not distinct and, as a result, the Company defers any arrangement fees for implementation services and recognizes such amounts over time on a ratable basis as one performance obligation with the underlying subscription revenue for the initial agreement term of the hosted application agreements. The Company has concluded that for some of its products in certain markets the implementation services included in contracts with multiple performance obligations are distinct and, as a result, the Company recognizes implementation fees on such arrangements over time as services are performed.

The majority of the Company's revenue recognized at a particular point in time is for usage revenue, on-premise software licenses and certain professional services. These services are recognized as the customer obtains control of the asset, as services are performed, or the point the customer obtained control of the software.

Judgment is required to determine the SSP for each distinct performance obligation. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The primary method used to estimate SSP is the adjusted market assessment approach, which considers the Company's overall pricing objectives, market conditions and other factors, including the value of the Company's contracts, its discounting practices, the size and volume of its transactions, customer characteristics, price lists, go-to-market strategy, historical standalone sales and agreement prices, and the number and types of users within its contracts.

Variable Consideration

The Company recognizes usage revenue related to a number of different interactions with its products including bill-pay transactions that End Users initiate on its digital banking platform, interchange fees that End Users generate using the Company's solutions, instances of remote deposit capture utilization and End User text messaging events. Judgment is required to determine the accounting for these types of revenue. The Company considers various factors including the degree to which usage is interdependent or interrelated to past services, costs to the Company per user over the contract, and contractual price per user changes and their relationship to market terms, forecasted data, and the Company's cost to fulfill the obligation. The Company has concluded that its usage revenue relates specifically to the transfer of the service to the customer and is consistent with the allocation objective of Topic 606 when considering all of the performance obligations and payment terms in the contract. Therefore, the Company recognizes usage revenue on a monthly or quarterly basis in accordance with the agreement, as determined and reported. This allocation reflects the amount the Company expects to receive for the services for the given period.

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The Company sometimes provides credits or incentives to its customers. Known and estimable credits and incentives represent a form of variable consideration, which are estimated at contract inception and generally result in reductions to revenues recognized for a particular contract. These estimates are updated at the end of each reporting period as additional information becomes available. The Company believes that there will not be significant changes to its estimates of variable consideration as of December 31, 2022.

Other Considerations

The Company evaluates whether it is the principal (i.e., reports revenues on a gross basis) or agent (i.e., reports revenues on a net basis) with respect to the vendor reseller agreements pursuant to which the Company resells certain third-party solutions along with the Company's solutions. Generally, the Company reports revenues from these types of contracts on a gross basis, meaning the amounts billed to customers are recorded as revenues, and expenses incurred are recorded as cost of revenues. Where the Company is the principal, it first obtains control of the inputs to the specific good or service and directs their use to create the combined output. The Company's control is evidenced by its involvement in the integration of the good or service on its platform before it is transferred to its customers and is further supported by the Company being primarily responsible to its customers and having a level of discretion in establishing pricing. Revenues provided from agreements in which the Company is an agent are insignificant.

Cost of Revenues

Cost of revenues are comprised primarily of salaries and other personnel-related costs, including employee benefits, bonuses and stock-based compensation, for employees providing services to the Company's customers. This includes the costs of the Company's personnel performing implementation, customer support, data center and customer training activities. Cost of revenues also includes the direct costs of bill-pay and other third-party intellectual property included in the Company's solutions, the amortization of deferred solution and services costs, the amortization of capitalized software development costs, co-location facility costs and depreciation of the Company's data center assets, debit card related pass-through fees, cloud-based hosting services, an allocation of general overhead costs and referral fees. Direct costs of third-party intellectual property include amounts paid for third-party licenses and related maintenance that are incorporated into the Company's software and the amortization of acquired technology from the Company's recent acquisitions, with the costs amortized to cost of revenues over the useful lives of the purchased assets.

The Company capitalizes certain personnel costs directly related to the implementation of its solutions to the extent those costs are recoverable from future revenues. The Company amortizes the costs for an implementation once revenue recognition commences, and the Company amortizes those implementation costs to cost of revenues over the expected period of customer benefit, which has been determined to be the estimated life of the technology. Other costs not directly recoverable from future revenues are expensed in the period incurred.

Software Development Costs

During the application development stage, the Company capitalizes certain development costs associated with internal use software and the Company's SaaS platform. Software development costs include salaries and other personnel-related costs for those employees who are directly associated with and who devote time to developing the Company's software solutions, including employee benefits, stock-based compensation and bonuses attributed to software engineers, quality control teams and third-party development costs. Capitalized software development costs are computed on an individual product basis. The Company also capitalizes certain costs related to specific enhancements when it is probable the expenditures will result in additional features and functionality. Capitalization ceases for products and enhancements when released or made available. Internal-use software is amortized to cost of revenues over the products' estimated economic lives, which are expected to be three to five years. The costs related to software development are included in intangible assets, net on the consolidated balance sheets. Costs incurred in the preliminary stages of development and maintenance costs are expensed as incurred.

The Company capitalized software development costs in the amount of \$21.5 million and \$5.9 million during the years ended December 31, 2022 and 2021, respectively, and recognized \$3.0 million, \$1.3 million and \$0.8 million of amortization during the years ended December 31, 2022, 2021 and 2020, respectively.

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Research and Development Costs

Research and development costs include salaries and other personnel-related costs, including employee benefits, bonuses and stock-based compensation, third-party contractor expenses, third-party consultants, software development tools, an allocation of facilities and depreciation expenses and other related expenses incurred in developing new solutions and upgrading and enhancing existing solutions.

Certain research and development costs that are related to the Company's software development, which include salaries and other personnel-related costs, including employee benefits, stock-based compensation expense and bonuses attributed to programmers, software engineers and quality control teams working on the Company's software solutions, are capitalized and are included in intangible assets, net on the consolidated balance sheets.

Advertising

Advertising costs of the Company are generally expensed the first time the advertising takes place. Advertising costs were \$4.4 million, \$2.7 million and \$0.7 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company entered into a long-term stadium sponsorship agreement in 2020, and beginning in the second quarter of 2021, payments under this arrangement are deferred and expensed as advertising costs on a straight-line basis over the term of the arrangement.

Sales Tax

The Company presents sales taxes and other taxes collected from customers and remitted to governmental authorities on a net basis and, as such, excludes them from revenues.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity that result from transactions and economic events other than those with stockholders. Other comprehensive loss consists of net loss, unrealized gains and losses on available-for-sale investments, and foreign currency translation adjustments.

Stock-Based Compensation

Stock options, restricted stock units, and market stock units awarded to employees, directors, and consultants are measured at fair value at each grant date. The Company does not use a forfeiture rate to recognize compensation expense. Generally, options vest 25% on the one-year anniversary of the grant date with the balance vesting monthly over the following 36 months, and restricted stock unit awards vest in four annual installments of 25% each. Market stock units are performance-based awards that vest based on the Company's stockholder return relative to the total stockholder return of the Russell 2000 Index, or Index. Market stock units granted prior to fiscal 2021 vest over a three-year period on the anniversary of the date of grant, generally with anywhere from zero to up to one-third of the target shares of the Company's common stock subject to each market stock unit award eligible to be earned after the first and second years and anywhere from zero to up to 200% of the full target number of shares subject to each market stock unit award eligible to be earned after the completion of the three-year performance period (less any shares earned for years one and two) based on the average price of the Company's common stock relative to the Index during the performance period. Beginning in March 2021, newly granted market stock units vest over a two-year and three-year period, each running from approximately the date of grant, with anywhere from zero to up to one-third of the target shares of the Company's common stock subject to each market stock unit award eligible to be earned after completion of the two-year performance period and anywhere from zero to up to 200% of the full target number of shares subject to each market stock unit award eligible to be earned after the completion of the three-year performance period (less any shares earned for the two-year performance period) based on the average price of the Company's common stock relative to the Index during the performance period. From time to time, the Company may make grants of restricted stock units or market stock units with vesting formulas that vary from those described above.

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The Company values stock options using the Black-Scholes option-pricing model, which requires the input of subjective assumptions, including the risk-free interest rate, expected life, expected stock price volatility and dividend yield. The risk-free interest rate assumption is based upon observed interest rates for constant maturity U.S. Treasury securities consistent with the expected term of the Company's employee stock options. The expected life represents the time the stock options are expected to be outstanding and is based on the simplified method. Under the simplified method, the expected life of an option is presumed to be the mid-point between the vesting date and end of the contractual term. The Company used the simplified method due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected life of the stock options. Expected volatility is based on historical volatilities for publicly traded stock of comparable companies over the estimated expected life of the stock options. The Company assumes no dividend yield because it does not expect to pay dividends in the near future, which is consistent with the Company's history of not paying dividends. The Company recognizes compensation expense ratably over the requisite service period of the stock option award.

The Company values restricted stock units at the closing market price on the date of grant and recognizes compensation expense ratably over the requisite service period of the restricted stock unit award.

The Company estimates the fair value of market stock units on the date of grant using a Monte Carlo simulation model. The determination of fair value of the market stock units is affected by the Company's stock price and a number of assumptions including the expected volatility and the risk-free interest rate. The Company's expected volatility at the date of grant was based on the historical volatilities of its stock and peer firms' stocks and the Index over the performance period. The Company assumes no dividend yield and recognizes compensation expense ratably over the performance period of the market stock unit award. The Company recognizes compensation expense using the graded attribution method on a straight-line basis over the performance period for each market stock unit award.

Effective January 3, 2022, the Company implemented its Employee Stock Purchase Plan, or ESPP, previously approved by the Company's board of directors and stockholders in March 2014. The ESPP generally permits domestic employees who meet certain criteria to purchase the Company's common stock through payroll deductions during six month offering periods. As is permitted under the ESPP, the initial offering period in fiscal 2022 extended for four months from February 1, 2022 through May 31, 2022, with the subsequent offering period extending from June 1, 2022 through November 30, 2022. For all subsequent years, unless otherwise determined by the compensation committee of the board of directors, there will be additional six-month offering periods commencing on each of June 1 and December 1. The ability to purchase shares of the Company's common stock for 85% of the lower of the price on the first day of the offering period or the last day of the offering period represents an option and, therefore, the ESPP is a compensatory plan. Accordingly, stock-based compensation expense is determined based on the grant date fair value as estimated by applying the Black-Scholes option-pricing model and is recognized straight-line over the withholding period.

Convertible Senior Notes

When accounting for the issuance of convertible notes, prior to the adoption of ASU 2020-06, the Company separated each of the convertible notes into liability and equity components. The carrying amount of the liability component was calculated by measuring the fair value, as of the date of issuance, of a similar debt without the conversion feature. The carrying amount of the equity component representing the conversion feature was determined by deducting the fair value of the liability components from the total initial proceeds. The difference between the par amount of the convertible notes and the carrying amount of the liability component represented debt discounts that were amortized to interest expense over the respective terms of the convertible notes at their respective effective interest rates. The equity components were not remeasured as long as they continued to meet the conditions for equity classification. In accounting for the issuance costs related to its convertible notes, the Company allocated the total amount of issuance costs incurred to liability and equity components based on their relative values. Issuance costs attributable to the liability components were amortized to interest expense over the respective terms of the convertible notes using the effective interest rate method. The issuance costs attributable to the equity components were netted against the respective equity components in additional paid-in capital.

Upon adoption of ASU 2020-06 on January 1, 2022, the Company reversed the separation of the liability and equity components and accounted for the Notes wholly as debt. The Company also reversed the amortization of the debt discount with the cumulative adjustment to retained earnings on the adoption date. As such, the debt is no longer recorded at a discount and issuance costs are amortized on a straight-line basis, which approximates the effective interest rate method. Refer to the "Recent Accounting Pronouncements" section below for more detail on the adoption impacts.

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Leases

The Company determines if a contract contains a lease for accounting purposes at the inception of the arrangement. The Company has elected to apply the practical expedient which allows the Company to account for lease and non-lease components of a contract as a single leasing arrangement. In addition, the Company has elected the practical expedients related to lease classification and the short-term lease exemption, whereby leases with initial terms of one year or less are not capitalized and instead expensed generally on a straight-line basis over the lease term. The Company is primarily a lessee with a lease portfolio comprised mainly of real estate and equipment leases. As of December 31, 2022, the Company had no finance leases.

Operating lease assets are included on the Company's consolidated balance sheets in non-current assets as a right of use asset and represent the Company's right to use an underlying asset for the lease term. Operating lease liabilities are included on the Company's consolidated balance sheets in lease liabilities, current portion, for the portion that is due within 12 months and in lease liabilities, net of current portion, for the portion that is due beyond 12 months of the financial statement date and represent the Company's obligation to make lease payments.

Right of use assets and lease liabilities are recognized at the commencement date of the lease based on the present value of lease payments over the lease term using an appropriate discount rate. If an implicit rate is not readily determined by the Company's leases, the Company utilizes the incremental borrowing rate based on the available information at the commencement date to determine the present value of lease payments. The depreciable lives of the underlying leased assets are generally limited to the expected lease term inclusive of any optional lease renewals where the Company concludes at the inception of the lease that the Company is reasonably certain of exercising those options. The right of use asset calculation may also include any initial direct costs paid and is reduced by any lease incentives provided by the lessor. Lease expense for lease payments is recognized on a straight-line basis over the lease term, except for impaired leases for which the lease expense is recognized on a declining basis over the remaining lease term.

Impairment of Long-Lived Assets

Impairment of long-lived assets such as property and equipment, acquired intangible assets, capitalized software development costs and right of use assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. The Company evaluates the recoverability of its long-lived assets by comparing the carrying amount of the asset group to the estimated undiscounted future cash flows. If the carrying value is not recoverable, an impairment is recognized to the extent that the carrying value of the asset group exceeds its fair value.

Income Taxes

Deferred income taxes are provided for the tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their respective tax bases and operating loss carryforwards and credits using enacted tax rates expected to be in effect in the years in which the differences are expected to reverse. The Company assesses the likelihood that deferred tax assets will be realized and recognizes a valuation allowance if it is more likely than not that some portion of the deferred tax assets will not be realized. This assessment requires judgment as to the likelihood and amounts of future taxable income by tax jurisdiction. To date, the Company has provided a valuation allowance against most of its deferred tax assets as it believes the objective and verifiable evidence of its historical pretax net losses outweighs any positive evidence of its forecasted future results. The Company will continue to monitor the positive and negative evidence, and it will adjust the valuation allowance as sufficient objective positive evidence becomes available.

The Company evaluates its uncertain tax positions based on a determination of whether and how much of a tax benefit or expense taken by the Company in its tax filings or positions is more likely than not to be realized. The Company believes it has accrued adequate reserves related to its uncertain tax positions; however, ultimate determination of the Company's liability is subject to audit by taxing authorities in the ordinary course of business. The Company records interest and penalties associated with any uncertain tax positions as a component of income tax expense.

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Basic and Diluted Net Loss per Common Share

The following table sets forth the computations of net loss per share for the periods listed:

	Year ended December 31,		
	2022	2021	2020
Numerator:			
Net loss	\$ (108,983)	\$ (112,746)	\$ (137,620)
Denominator:			
Weighted-average common shares outstanding, basic and diluted	57,300	56,394	52,019
Net loss per common share, basic and diluted	<u>\$ (1.90)</u>	<u>\$ (2.00)</u>	<u>\$ (2.65)</u>

Due to net losses for each of the years ended December 31, 2022, 2021 and 2020, basic and diluted loss per share were the same, as the effect of all potentially dilutive securities would have been anti-dilutive. The following table sets forth the anti-dilutive common share equivalents for the periods listed:

	Year ended December 31,		
	2022	2021	2020
Stock options, restricted stock units, and market stock units	3,667	2,264	2,797
Shares issuable pursuant to the ESPP	85	—	—
Shares related to convertible notes	6,256	451	313
Shares subject to warrants related to the issuance of the 2023 Notes	—	39	96
	<u>10,008</u>	<u>2,754</u>	<u>3,206</u>

Under the modified retrospective method of adoption of ASU 2020-06, the dilutive impact of the convertible senior notes was calculated using the if-converted method for the year ended December 31, 2022. The Company's convertible senior notes were calculated using the treasury stock method for the year ended December 31, 2022. Refer to discussion within "Recent Accounting Pronouncements" below for further details. The exercise rights of the Warrants issued in connection with the 2023 Notes will have a dilutive impact on net income per share of common stock under the treasury-stock method when the average market price per share of the Company's common stock for a given period exceeds the conversion price of \$78.75 per share. However, since the Company is in a net loss position, there was no dilutive effect on net loss per share of the Company's common stock during any period presented.

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Recent Accounting Pronouncements

In August 2020, the FASB issued ASU No. 2020-06, "Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)" which simplifies the accounting for convertible debt instruments by eliminating the requirement to separate embedded conversion features from the host contract when the conversion features are not required to be accounted for as derivatives under Topic 815, Derivatives and Hedging, or that do not result in substantial premiums accounted for as paid-in capital. In addition, the guidance eliminates the treasury stock method to calculate diluted earnings per share for convertible instruments and requires the use of the if-converted method. The Company adopted the new guidance effective January 1, 2022, using the modified retrospective approach. The impact resulted in an increase to the convertible notes balance of \$114.4 million to reflect the full principal amount of the convertible notes outstanding net of issuance costs, a reduction to the additional paid in capital balance of \$157.0 million to remove the equity component separately recorded for the conversion features associated with the convertible notes, and an increase to the beginning balance of accumulated deficit of \$42.6 million. As a result of the adoption, non-cash interest expense was lower for the year ended December 31, 2022 and will be lower for the remaining term of the outstanding convertible notes. The adoption had no impact on the Company's consolidated statement of cash flows. Additionally, ASU 2020-06 eliminates the treasury stock method and instead requires the application of the if-converted method to calculate the impact of convertible instruments on diluted earnings per share when instruments may be settled in cash or shares. The required use of the if-converted method did not impact the diluted net loss per share as the Company was in a net loss position. The prior period consolidated financial statements have not been retrospectively adjusted and continue to be reported under the accounting standards in effect for those periods.

In May 2021, the FASB issued ASU No. 2021-04, "Earnings Per Share (Topic 260), Debt - Modifications and Extinguishments (Subtopic 470-50), Compensation - Stock Compensation (Topic 718), and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)" which clarifies and reduces diversity in the accounting for modifications or exchanges of freestanding equity classified written call options that remain equity classified after modification or exchange. The ASU provides a principles-based framework to determine whether an issuer should recognize the modification or exchange as an adjustment to equity or an expense. The Company has adopted the provisions of the new standard effective January 1, 2022. There was no impact on the Company's consolidated financial statements as of the adoption date.

In October 2021, the FASB issued ASU No. 2021-08, "Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers" which clarifies and reduces diversity in the accounting related to recognition of an acquired contract liability and payment terms and their effect on subsequent revenue recognized by the acquirer. The Company has early adopted the provisions of the new standard effective January 1, 2022. There was no impact on the Company's consolidated financial statements as of the adoption date.

3. Business Combinations***Sensibill***

On October 3, 2022, the Company acquired all of the outstanding equity interests of Sensibill Inc. ("Sensibill"), a privately-owned enterprise software company providing digital expense management solutions. The acquisition is intended to further enable the Company to offer an end-to-end commercial solution set by helping the Company's customers better serve and engage with small businesses.

Sensibill was acquired for approximately \$5.1 million in cash from existing balances. At closing, the Company deposited into an escrow account \$0.1 million of the initial consideration, or Sensibill Purchase Price Escrow Amount, to compensate for any post-closing purchase price adjustments. To the extent not utilized, the Sensibill Purchase Price Escrow Amount was to be paid to the former stockholders of Sensibill following an adjustment period which, absent any unresolved disputes, was expected to be completed within 120 days from closing. At closing, the Company also deposited into an escrow account \$1.0 million of the initial consideration, or Sensibill Escrow Amount, to compensate for any breach of a representation or warranty or any violation or default of any obligation by the sellers. To the extent not utilized, the remaining Sensibill Escrow Amount shall be paid to the former equity holders of Sensibill at the end of an 18-month period, in each case unless there are any unresolved claims remaining at that time. The total purchase price is as follows:

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	Purchase Consideration
Cash purchase price	\$ 5,000
Estimated working capital and other adjustments	145
Total purchase price	\$ 5,145

The Company recorded the purchase of Sensibill using the acquisition method of accounting and accordingly, recognized assets acquired and liabilities assumed at their fair values as of the date of acquisition. The results of Sensibill's operations are included in the Company's consolidated statements of comprehensive loss from the date of acquisition. Acquisition related transaction costs of \$0.4 million related to the Sensibill acquisition were expensed as incurred during the twelve months ended December 31, 2022, and were recorded within acquisition related expenses in the consolidated statements of comprehensive loss.

The table below summarizes the allocation of the purchase price based on the estimated fair value of the assets acquired and liabilities assumed. The fair values of assets acquired and liabilities assumed, including the valuations of intangibles assets, accruals, and income taxes, may change as additional information is received during the measurement period. The measurement period will end no later than one year from the acquisition date.

Assets acquired:	
Cash	\$ 104
Accounts receivable, net	161
Prepaid expenses and other current assets	912
Contract assets, net	46
Intangible assets, net	5,519
Total assets acquired	6,742
Liabilities assumed:	
Accounts payable, accrued liabilities, and accrued compensation	512
Deferred revenues	1,085
Total liabilities assumed	1,597
Fair value of assets acquired and liabilities assumed	\$ 5,145

The Company acquired one separately identifiable finite-lived intangible asset, acquired technology. The estimated fair value of this asset at acquisition date is \$5.5 million with an estimated useful life of 5 years. The intangible asset is amortized on a straight-line basis over the estimated useful life. The acquisition is a stock acquisition for tax purposes.

The results of operations of Sensibill have been included in the Company's consolidated financial statements from the date of the acquisition. The acquisition of Sensibill did not have a material impact on the Company's consolidated financial statements, and therefore historical and pro forma disclosures have not been presented.

ClickSWITCH

On April 1, 2021, the Company's wholly-owned subsidiary, Q2 Software, Inc. acquired all of the outstanding equity interests of ClickSWITCH Holdings Inc. ("ClickSWITCH"), a privately-owned provider of digital account switching solutions. The acquisition will further enable the Company to offer end-to-end digital customer acquisition, onboarding, and account switching offerings. The purchase price paid was in excess of the fair value of the net assets acquired and, as a result, the Company recorded goodwill.

ClickSWITCH was acquired for approximately \$65.5 million in cash from existing balances. At closing, the Company deposited into an escrow account \$1.0 million of the initial consideration, or CS Purchase Price Escrow Amount, to compensate for any post-closing purchase price adjustments. The Company released \$0.9 million of the CS Purchase Price Escrow Amount to the former stockholders of ClickSWITCH during the three months ended September 30, 2021, bringing the balance of the CS Purchase Price Escrow Amount to zero. At closing, the Company also deposited into an escrow account \$0.3 million of the initial consideration, or CS Escrow Amount, to compensate for any breach of a representation or warranty or any violation or default of any obligation by the sellers. During the three months ended December 31, 2022, the Company released \$0.3 million of the CS Escrow Amount to the former shareholders of ClickSWITCH, bringing the balance of the escrow to zero.

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4. Fair Value Measurements

The carrying values of the Company's financial assets not measured at fair value on a recurring basis, principally accounts receivable, restricted cash and accounts payable, approximated their fair values due to the short period of time to maturity or repayment.

Fair value is defined as the exchange price that would be received for an asset or an exit price paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The current accounting guidance for fair value measurements defines a three-level valuation hierarchy for disclosures as follows:

- Level I—Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level II—Inputs other than quoted prices included within Level I that are observable, unadjusted quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data; and
- Level III—Unobservable inputs that are supported by little or no market activity, which requires the Company to develop its own assumptions.

The categorization of a financial instrument within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The following table details the fair value hierarchy of the Company's financial assets measured at fair value on a recurring basis as of December 31, 2022:

Assets	Fair Value Measurements Using:			
	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level I)	Significant Other Observable Inputs (Level II)	Significant Unobservable Inputs (Level III)
Cash Equivalents:				
Money market funds	\$ 20,998	\$ 20,998	\$ —	\$ —
Certificates of deposit	25,547	—	25,547	—
U.S. government securities	2,498	2,498	—	—
	<u>\$ 49,043</u>	<u>\$ 23,496</u>	<u>\$ 25,547</u>	<u>\$ —</u>
Investments:				
Corporate bonds and commercial paper	\$ 56,739	\$ —	\$ 56,739	\$ —
Certificates of deposit	5,016	—	5,016	—
U.S. government securities	171,772	—	171,772	—
	<u>\$ 233,527</u>	<u>\$ —</u>	<u>\$ 233,527</u>	<u>\$ —</u>

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The following table details the fair value hierarchy of the Company's financial assets measured at fair value on a recurring basis as of December 31, 2021:

Assets	Fair Value Measurements Using:			
	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level I)	Significant Other Observable Inputs (Level II)	Significant Unobservable Inputs (Level III)
Cash Equivalents:				
Money market funds	\$ 170,907	\$ 170,907	\$ —	\$ —
Certificates of deposit	25,090	—	25,090	—
	<u>\$ 195,997</u>	<u>\$ 170,907</u>	<u>\$ 25,090</u>	<u>\$ —</u>
Investments:				
Corporate bonds and commercial paper	\$ 44,219	\$ —	\$ 44,219	\$ —
Certificates of deposit	12,161	—	12,161	—
U.S. government securities	48,498	—	48,498	—
	<u>\$ 104,878</u>	<u>\$ —</u>	<u>\$ 104,878</u>	<u>\$ —</u>

The Company determines the fair value of the vast majority of its debt investment holdings based on pricing from its pricing vendors. The valuation techniques used to measure the fair value of financial instruments having Level II inputs were derived from non-binding consensus prices that are corroborated by observable market data or quoted market prices for similar instruments. Such market prices may be quoted prices in active markets for identical assets (Level I inputs) or pricing determined using inputs other than quoted prices that are observable either directly or indirectly (Level II inputs).

5. Cash, Cash Equivalents and Investments

The Company's cash, cash equivalents and investments as of December 31, 2022 and 2021 consisted primarily of cash, U.S. government securities, corporate bonds, commercial paper, certificates of deposit, money market funds and other equity investments.

The Company classifies its debt investments as available-for-sale at the time of purchase and reevaluates such classification as of each balance sheet date. All debt investments are recorded at estimated fair value. Unrealized gains and losses on available-for-sale investments are included in accumulated other comprehensive income (loss), a component of stockholders' equity. If the Company does not expect to recover the entire amortized cost basis of the available-for-sale debt security, it considers the available-for-sale debt security to be impaired. For individual debt securities classified as available-for-sale and deemed impaired, the Company assesses whether such decline has resulted from a credit loss or other factors. Impairment relating to credit losses is recorded through a reserve, limited to the amount that the fair value is less than the amortized cost basis. Impairment deemed to be non-credit related is reported in other income (expense), net in the consolidated statements of comprehensive loss. Realized gains and losses are determined based on the specific identification method and are reported in other income (expense), net in the consolidated statements of comprehensive loss. Interest, amortization of premiums and accretion of discount on all debt investments classified as available-for-sale are also included as a component of other income (expense), net in the consolidated statements of comprehensive loss. Based on the Company's assessment, no impairments for credit losses were recognized during the years ended December 31, 2022 and 2021.

In 2022, the Company invested in a private financial technology investment fund, classified as an equity investment. This equity investment had a carrying amount of \$0.2 million as of December 31, 2022. An impairment charge to current earnings is recorded when the cost of the investment exceeds its fair value and this condition is determined to be other-than-temporary. As of December 31, 2022, the Company determined there were no other-than-temporary impairments on its equity investment.

As of December 31, 2022 and 2021, the Company's cash was \$150.6 million and \$126.9 million, respectively.

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A summary of the Company's cash equivalents and investments that are carried at fair value as of December 31, 2022 is as follows:

Cash Equivalents:	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Money market funds	\$ 20,998	\$ —	\$ —	\$ 20,998
Certificates of deposit	25,547	—	—	25,547
U.S. government securities	2,497	1	—	\$ 2,498
	<u>\$ 49,042</u>	<u>\$ 1</u>	<u>\$ —</u>	<u>\$ 49,043</u>

Investments:	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Corporate bonds and commercial paper	\$ 57,320	\$ 1	\$ (582)	\$ 56,739
Certificates of deposit	5,063	3	(50)	5,016
U.S. government securities	173,241	12	(1,481)	\$ 171,772
	<u>\$ 235,624</u>	<u>\$ 16</u>	<u>\$ (2,113)</u>	<u>\$ 233,527</u>

A summary of the Company's cash equivalents and investments that are carried at fair value as of December 31, 2021 is as follows:

Cash Equivalents:	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Money market funds	\$ 170,907	\$ —	\$ —	\$ 170,907
Certificates of deposit	25,090	—	—	25,090
	<u>\$ 195,997</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 195,997</u>

Investments:	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Corporate bonds and commercial paper	\$ 44,282	\$ 3	\$ (66)	\$ 44,219
Certificates of deposit	12,161	—	—	12,161
U.S. government securities	48,658	—	(160)	48,498
	<u>\$ 105,101</u>	<u>\$ 3</u>	<u>\$ (226)</u>	<u>\$ 104,878</u>

Investments may be sold or may settle at any time, without significant penalty, for use in current operations or for other purposes, even if they have not yet reached maturity. As a result, the Company classifies its investments, including investments with maturities beyond twelve months, as current assets in the consolidated balance sheets.

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The following table summarizes the estimated fair value of the Company's debt investments, designated as available-for-sale and classified by the contractual maturity date of the investments as of the dates shown:

	December 31,	
	2022	2021
Due within one year or less	\$ 171,831	\$ 63,935
Due after one year through five years	61,696	40,943
	<u>\$ 233,527</u>	<u>\$ 104,878</u>

The Company has certain available-for-sale debt investments in a gross unrealized loss position. The Company regularly reviews its debt investments for impairment resulting from credit loss using both qualitative and quantitative criteria, as necessary, based on the composition of the portfolio at period end. The Company considers factors such as the length of time and extent to which the market value has been less than the cost, the financial position and near-term prospects of the issuer or whether the Company has the intent to or it is more likely than not it will be required to sell the investment before recovery of the investment's amortized-cost basis. If the Company determines that impairment exists in one of these investments, the respective investment would be written down to fair value. For debt securities, the portion of the write-down related to credit loss would be recognized in other income, net in the consolidated statements of comprehensive loss if the intent of the Company was to sell the investment before recovery. If the Company did not intend to sell, the portion of the write-down related to credit loss would be recorded to a reserve. Any portion not related to credit loss would be included in accumulated other comprehensive income (loss) in the consolidated statements of comprehensive loss. Because the Company does not intend to sell any investments which have an unrealized loss position at this time, and it is not more likely than not that the Company will be required to sell the investment before recovery of its amortized cost basis, which may be maturity, the reserve for available-for-sale debt securities was zero as of December 31, 2022 and 2021.

The following table presents the fair values and the gross unrealized losses of these available-for-sale debt investments as of December 31, 2022, aggregated by investment category and the length of time that individual securities have been in a continuous loss position:

	Less than 12 months		12 months or greater	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Corporate bonds and commercial paper	\$ 45,094	\$ (449)	\$ 10,215	\$ (133)
Certificates of deposit	3,536	(50)	—	—
U.S. government securities	118,021	(893)	26,911	(588)
	<u>\$ 166,651</u>	<u>\$ (1,392)</u>	<u>\$ 37,126</u>	<u>\$ (721)</u>

The following table presents the fair values and the gross unrealized losses of these available-for-sale debt investments as of December 31, 2021, aggregated by investment category and the length of time that individual securities have been in a continuous loss position:

	Less than 12 months		12 months or greater	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Corporate bonds and commercial paper	\$ 41,434	\$ (66)	\$ —	\$ —
U.S. government securities	48,498	(160)	—	—
	<u>\$ 89,932</u>	<u>\$ (226)</u>	<u>\$ —</u>	<u>\$ —</u>

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6. Deferred Solution and Other Costs

Deferred solution and other costs, current portion and net of current portion, consisted of the following:

	December 31,	
	2022	2021
Deferred solution costs	\$ 12,673	\$ 17,428
Deferred commissions	8,444	7,648
Deferred solution and other costs, current portion	<u>\$ 21,117</u>	<u>\$ 25,076</u>
Deferred solution costs	\$ 6,180	\$ 8,389
Deferred commissions	20,230	18,541
Deferred solution and other costs, net of current portion	<u>\$ 26,410</u>	<u>\$ 26,930</u>

7. Property and Equipment

Property and equipment consisted of the following:

	December 31,	
	2022	2021
Computer hardware and equipment	\$ 66,003	\$ 59,843
Purchased software and licenses	15,001	15,284
Furniture and fixtures	9,791	8,953
Leasehold improvements	26,548	26,169
	<u>117,343</u>	<u>110,249</u>
Accumulated depreciation	(60,648)	(43,641)
Property and equipment, net	<u>\$ 56,695</u>	<u>\$ 66,608</u>

Depreciation expense was \$17.7 million, \$15.6 million and \$11.8 million for the years ended December 31, 2022, 2021 and 2020, respectively.

8. Goodwill and Intangible Assets

The carrying amount of goodwill was \$512.9 million at both December 31, 2022 and 2021. Goodwill represents the excess purchase price over the fair value of assets acquired. The annual impairment test was performed as of October 31, 2022 and no impairment of goodwill was identified during 2022, nor has any impairment of goodwill been recorded to date.

Intangible assets at December 31, 2022 and 2021 were as follows:

	As of December 31, 2022			As of December 31, 2021		
	Gross Amount	Accumulated Amortization	Net Carrying Amount	Gross Amount	Accumulated Amortization	Net Carrying Amount
Customer relationships	\$ 62,785	\$ (40,981)	\$ 21,804	\$ 62,785	\$ (28,349)	\$ 34,436
Non-compete agreements	13,275	(8,642)	4,633	13,275	(5,898)	7,377
Trademarks	19,870	(8,663)	11,207	19,870	(5,858)	14,012
Acquired technology	157,638	(74,910)	82,728	152,080	(52,220)	99,860
Capitalized software development costs	28,519	(3,210)	25,309	10,969	(4,193)	6,776
	<u>\$ 282,087</u>	<u>\$ (136,406)</u>	<u>\$ 145,681</u>	<u>\$ 258,979</u>	<u>\$ (96,518)</u>	<u>\$ 162,461</u>

During the year ended December 31, 2022, the Company decided to phase out the use of its acquired trademarks by the end of 2024. As a result, the Company recognized an additional \$0.6 million in amortization for the year ended December 31, 2022 and updated the estimated remaining useful lives of the trademarks to two years.

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The estimated useful lives and weighted average remaining amortization periods for intangible assets at December 31, 2022 are as follows (in years):

	Estimated Useful Life	Weighted Average Remaining Amortization Period
Customer relationships	4 - 5	1.8
Non-compete agreements	2 - 5	1.8
Trademarks	5 - 6	2.0
Acquired technology	5 - 7	3.8
Capitalized software development costs	3 - 5	4.6
Total		3.4

The Company recorded intangible assets primarily from various prior business combinations. Intangible assets are amortized on a straight-line basis over their estimated useful lives, which range from two to seven years. Amortization expense included in cost of revenues in the consolidated statements of comprehensive loss was \$22.7 million, \$22.0 million and \$21.3 million for the years ended December 31, 2022, 2021 and 2020, respectively. Amortization expense included in operating expenses in the consolidated statements of comprehensive loss was \$18.2 million, \$17.9 million and \$17.9 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company amortized \$3.0 million, \$1.3 million, and \$0.8 million of capitalized software development costs for the years ended December 31, 2022, 2021 and 2020, respectively.

The estimated future amortization expense related to intangible assets as of December 31, 2022 was as follows:

Year Ended December 31,	Amortization
2023	\$ 49,713
2024	44,635
2025	26,792
2026	20,223
2027	4,287
Thereafter	31
Total amortization	\$ 145,681

9. Accrued Liabilities

Accrued liabilities consisted of the following:

	December 31,	
	2022	2021
Accrued data center equipment, software and services	\$ 2,637	\$ 3,742
Accrued transaction processing fees	7,029	3,312
Accrued professional services	3,652	2,201
Lease and other restructuring charges	2,250	1,325
Other	5,180	7,763
Accrued liabilities	\$ 20,748	\$ 18,343

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10. Leases

The Company leases office space under non-cancellable operating leases for its corporate headquarters in Austin, Texas in two adjacent buildings under separate lease agreements. Pursuant to the first of which the Company leases office space with an initial term that expires on April 30, 2028, with the option to extend the lease for an additional ten-year term. The Company is not reasonably certain to exercise the renewal, therefore no amounts related to these options are recognized as part of lease liabilities or right of use assets. Pursuant to the second of which the Company leases office space with lease terms of approximately ten years, with options to extend the leases on the second building from five to ten years. The Company is reasonably certain to exercise the renewal options, therefore the Company's operating lease liabilities include \$14.0 million and right of use assets include \$8.1 million in optional lease renewals. The Company also leases office space in U.S. cities located in Nebraska, Iowa, North Carolina, Texas and Minnesota. Internationally, the Company leases offices in India, Australia and the United Kingdom.

The Company believes its current facilities will be adequate for its needs for the foreseeable future. Rent expense under operating leases was \$7.3 million, \$7.4 million and \$6.6 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The components of lease costs, lease term and discount rate as of December 31 were as follows:

	Operating Leases		
	2022	2021	2020
Lease expense:			
Operating lease expense	\$ 11,002	\$ 10,101	\$ 8,874
Sublease income	(1,308)	(1,047)	(691)
Total lease expense	<u>\$ 9,694</u>	<u>\$ 9,054</u>	<u>\$ 8,183</u>
Other information:			
Cash paid for operating lease liabilities	\$ 12,886	\$ 10,743	\$ 9,326
Right of use assets obtained in exchange for operating lease liabilities for the years ended December 31, 2022, 2021 and 2020	\$ 917	\$ 23,310	\$ 3,646
Weighted-average remaining lease term - operating leases	7.5 years	8.2 years	6.3 years
Weighted-average discount rate - operating leases	5.2 %	5.2 %	5.5 %

Maturities of the Company's operating lease liabilities for lease terms in excess of one year at December 31, 2022 were as follows:

Year Ended December 31,	Operating Leases
2023	\$ 12,372
2024	11,406
2025	10,476
2026	9,454
2027	8,282
Thereafter	23,408
Total lease payments	<u>\$ 75,398</u>
Less: imputed interest	<u>(12,999)</u>
Total operating lease liabilities	<u>\$ 62,399</u>

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As of December 31, 2022 the Company has active sublease agreements related to excess office space in Texas, North Carolina, Georgia, California and Nebraska. During the year ended December 31, 2022, the Company exited and made available for sublease certain leased office space in Texas. As a result, the Company evaluated the recoverability of its right of use and other lease related assets and determined that their carrying values were not fully recoverable. The Company calculated the impairment by comparing the carrying amount of the asset group to its estimated fair value using a discounted cash flow model. As such, an impairment of \$3.9 million was recorded to right of use assets, \$0.5 million was recorded to property and equipment and an additional \$3.7 million was recorded to accrued liabilities for expected expenses and fees associated with exiting the leased office space. These charges were recorded within operating expenses on the consolidated statements of comprehensive loss.

11. Commitments and Contingencies

The Company has non-cancelable contractual commitments related to the 2023 Notes, 2025 Notes and the 2026 Notes as well as the related interest. The interest on the 2023 Notes is payable semi-annually on February 15 and August 15 of each year. The interest on the 2025 Notes is payable semi-annually on May 15 and November 15 of each year. The interest on the 2026 Notes is payable semi-annually on June 1 and December 1 of each year. The Company also has non-cancelable contractual commitments for certain third-party products, co-location fees and other product costs. Several of these purchase commitments for third-party products contain both a contractual minimum obligation and a variable obligation based upon usage or other factors which can change on a monthly basis. The estimated amounts for usage and other factors are not included within the table below.

In 2020, the Company entered into a long-term stadium sponsorship agreement, beginning in 2021 and ending in 2028, which grants the Company exclusive naming rights, sponsorship, signage, advertising and other promotional rights and benefits. The advertising expense for these rights is amortized on a straight-line basis and recorded in sales and marketing expense in the consolidated statements of comprehensive loss. The prepaid commitment balance, net of amortization, is included in prepaid expenses and other current assets in the consolidated balance sheets.

Future minimum contractual commitments that have initial or remaining non-cancelable terms in excess of one year at December 31, 2022 were as follows:

	Contractual Commitments
Year Ended December 31,	
2023	\$ 53,167
2024	21,799
2025	362,916
2026	320,936
2027	3,500
Thereafter	3,500
Total commitments	<u>\$ 765,818</u>

Legal Proceedings

From time to time, the Company may become involved in legal proceedings arising in the ordinary course of its business. The Company is not presently a party to any legal proceedings that, if determined adversely to the Company, would have a material adverse effect on the Company.

Gain Contingencies

From time to time the Company may realize a gain contingency, however, recognition will not occur until cash is received. The Company received favorable settlements of two ordinary course disputes and recognized a gain of \$0.7 million and \$0.8 million during the years ended December 31, 2022 and 2021, respectively. These gains were included in interest and other income in the consolidated statements of comprehensive loss.

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Loss Contingencies

In the ordinary course of business, the Company is subject to loss contingencies that cover a range of matters. An estimated loss from a loss contingency, such as a legal proceeding or claim, is accrued if it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated.

12. Convertible Senior Notes

The following table presents details of the Company's convertible senior notes, which are further discussed below (original principal in thousands):

	Date Issued	Maturity Date ⁽¹⁾	Original Principal	Interest Rate per Annum	Conversion Rate for Each \$1,000 Principal	Initial Conversion Price per Share
2023 Notes	February 15, 2018	February 15, 2023	\$ 230,000	0.75 %	\$ 17.4292	\$ 57.38
2026 Notes	June 1, 2019	June 1, 2026	\$ 316,250	0.75 %	\$ 11.2851	\$ 88.61
2025 Notes	November 15, 2020	November 15, 2025	\$ 350,000	0.125 %	\$ 7.1355	\$ 140.14

⁽¹⁾ Unless earlier converted or repurchased in accordance with their terms prior to such date

⁽²⁾ Subject to adjustment upon the occurrence of certain specified events

As further defined and described below, the 2023 Notes, 2026 Notes and the 2025 Notes are collectively referred to as the Notes.

In February 2018, the Company issued \$230.0 million principal amount of convertible senior notes due in February 2023, or the 2023 Notes. Interest is payable semi-annually on February 15 and August 15 of each year, commencing on August 15, 2018. In November 2020, the Company exchanged \$181.9 million in aggregate principal amount of the 2023 Notes for \$210.7 million in aggregate principal of 2025 Notes and 1.3 million shares of common stock. The Company did not receive any cash proceeds from the exchange. In exchange for issuing 2025 Notes pursuant to the exchange transaction, the Company received and cancelled the exchanged 2023 Notes. As of the exchange date, the carrying value of the 2023 Notes, net of unamortized debt discount and issuance costs, was \$42.9 million. The partial exchange of the 2023 Notes resulted in an \$8.9 million loss on early debt extinguishment in fiscal year 2020, of which \$2.0 million consisted of unamortized debt issuance costs.

In May 2021, the Company repurchased \$37.1 million in aggregate principal amount of the 2023 Notes for \$63.7 million in cash. As of the repurchase date, the carrying value of the notes, net of unamortized debt discount and issuance costs, was \$10.0 million. The partial repurchase of the 2023 Notes resulted in a \$1.5 million loss on early debt extinguishment in fiscal year 2021, of which \$0.3 million consisted of unamortized debt issuance costs. The Company may repurchase additional 2023 Notes and/or its 2025 Notes and 2026 Notes from time to time through open market purchases, block trades, and/or privately negotiated transactions, in compliance with applicable securities laws and other legal requirements. The timing, volume, and nature of the repurchases will be determined by the Company based on the capital needs of the business, market conditions, applicable legal requirements, and other factors.

In June 2019, the Company issued \$316.3 million principal amount of convertible senior notes due in June 2026, or the 2026 Notes. Interest is payable semi-annually on June 1 and December 1 of each year, commencing on December 1, 2019.

In November 2020, the Company issued \$350.0 million principal amount of convertible senior notes due in November 2025, or the 2025 Notes. This was achieved by exchanging \$181.9 million principal amount of the 2023 Notes for \$210.7 million principal amount of the 2025 Notes and issuing an additional \$139.3 million of new notes. Interest is payable semi-annually on May 15 and November 15 of each year, commencing on May 15, 2021.

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

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On or after June 5, 2023 or November 20, 2023 for the 2026 Notes and 2025 Notes, respectively, the Company may redeem for cash all or any portion of the 2026 or 2025 Notes, at the Company's option if the last reported sale price of the Company's common stock has been at least 130% of the conversion price in effect for at least 20 trading days (whether or not consecutive) during any 30-consecutive trading-day period. If the Company calls any or all of the 2026 or 2025 Notes for redemption, holders may convert all or any portion of their 2026 or 2025 Notes at any time prior to the close of business on the scheduled trading day prior to the redemption date, even if the 2026 or 2025 Notes are not otherwise convertible at such time. After that time, the right to convert such 2026 or 2025 Notes will expire, unless the Company defaults in the payment of the redemption price, in which case a holder of 2026 or 2025 Notes may convert all or any portion of its 2026 or 2025 Notes until the redemption price has been paid or duly provided for.

On or after November 15, 2022, March 1, 2026 or August 15, 2025 for the 2023 Notes, 2026 Notes and 2025 Notes, respectively, holders may convert all or any portion of their Notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date, regardless of the succeeding conditions described herein. Upon conversion, the Company will pay or deliver cash, shares of its common stock or a combination of cash and shares of its common stock, at its election, as described in the indenture governing the Notes.

Holders may convert their Notes at their option at any time prior to the close of business on the business day immediately preceding November 15, 2022, March 1, 2026 or August 15, 2025 for the 2023 Notes, 2026 Notes and 2025 Notes, respectively, only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on June 30, 2018, September 30, 2019 or March 30, 2021 (and only during such calendar quarter), for the 2023 Notes, 2026 Notes and 2025 Notes, respectively, if the last reported sale price of the 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 consecutive business day period after any five consecutive trading day period in which the trading price per \$1,000 principal amount of the Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day; or
- upon the occurrence of specified corporate events.

If a fundamental change (as defined in the relevant indenture governing each of the Notes) occurs prior to the maturity date, holders of each of the Notes may require the Company to repurchase all or a portion of their notes for cash at a repurchase price equal to 100% of the principal amount of the Notes, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

Of the initial 2023 Notes outstanding, 22 notes, with a principal amount of \$1,000 each, have been converted since original issuance of the 2023 Notes through the date of this filing. As of December 31, 2022, the 2026 Notes and 2025 Notes were not convertible. On February 15, 2023, the Company paid off the remaining principal of \$10.9 million on its 2023 Notes using existing cash balances.

Prior to the adoption of ASU 2020-06 and in accordance with accounting guidance for cash conversion features, the Company valued the liability component for the Notes at the estimated fair value, as of the date of issuance, of a similar debt without the conversion feature. The liability component of the Notes was recorded in long-term debt. The Company recorded the difference between the initial proceeds of the convertible debt and the fair value of the conversion feature to additional paid-in capital as the carrying amount of the equity component. The excess of the principal amount of the liability component over its carrying amount, or the debt discount, was amortized to interest expense at an effective interest rate of 5.88%, 5.38% and 5.00% for the 2023 Notes, 2026 Notes and 2025 Notes, respectively. Upon adoption of ASU 2020-06 on January 1, 2022, the Company reversed the separation of the liability and equity components and accounted for the Notes wholly as debt. The Company also reversed the debt discount, with a cumulative adjustment to retained earnings on the adoption date. As such, the debt is no longer recorded at a discount and issuance costs are amortized on a straight-line basis, which approximates the effective interest rate method.

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In accounting for the transaction costs for the Notes, prior to the adoption of ASU 2020-06, the Company allocated the costs incurred to the liability and equity components in proportion to the allocation of the proceeds from issuance to the liability and equity components. Issuance costs attributable to the liability component were amortized to expense over the expected life of the Notes using the effective interest method. The liability issuance costs originally totaled \$5.3 million, \$6.4 million and \$5.4 million for the 2023 Notes, 2026 Notes, and 2025 Notes, respectively. Issuance costs attributable to the equity component related to the conversion feature were netted with the equity component. The equity issuance costs originally totaled \$1.5 million, \$2.9 million and \$1.5 million for the 2023 Notes, 2026 Notes and 2025 Notes, respectively. Upon the adoption of ASU 2020-06, the Company reversed the separation of the liability and equity components and accounted for the entire amount as debt issuance costs that will be amortized on a straight-line basis, which approximates the effective interest method, to interest expense over the expected life of the Notes. Refer to Note 2, "Summary of Significant Accounting Policies" for further details on the impact of adoption.

The 2023 Notes, 2026 Notes and 2025 Notes consist of the following:

	As of December 31, 2022			As of December 31, 2021		
	2023 Notes	2026 Notes	2025 Notes	2023 Notes	2026 Notes	2025 Notes
Liability component:						
Principal	\$ 10,908	\$ 316,250	\$ 350,000	\$ 10,908	\$ 316,250	\$ 350,000
Unamortized debt discount ⁽¹⁾	—	—	—	(634)	(56,918)	(59,436)
Unamortized debt issuance costs ⁽¹⁾	(5)	(4,563)	(3,898)	(64)	(4,276)	(4,232)
Net carrying amount	10,903	311,687	346,102	10,210	255,056	286,332
Equity component:						
Net carrying amount ⁽¹⁾	\$ —	\$ —	\$ —	\$ 2,321	\$ 81,550	\$ 73,109

⁽¹⁾ See Note 2, "Summary of Significant Accounting Policies" for more information regarding the effect of adoption of ASU 2020-06

The following table sets forth total interest expense recognized related to the 2023 Notes, 2026 Notes and 2025 Notes:

	As of December 31, 2022	As of December 31, 2021	As of December 31, 2020
Contractual interest expense	\$ 2,892	\$ 3,000	\$ 3,982
Amortization of debt issuance costs ⁽¹⁾	2,719	2,038	1,977
Amortization of debt discount ⁽¹⁾	—	25,824	21,317
Total	\$ 5,611	\$ 30,862	\$ 27,276

⁽¹⁾ See Note 2, "Summary of Significant Accounting Policies" for more information regarding the effect of adoption of ASU 2020-06

As of December 31, 2022, the remaining period over which the debt issuance costs will be amortized for the 2023 Notes, 2026 Notes, and 2025 Notes was 0.1 years, 3.4 years, and 2.9 years, respectively.

As of December 31, 2022, the if-converted value of the 2023 Notes, 2026 Notes and 2025 Notes did not exceed the principal amount. As of December 31, 2021, the if-converted value of the 2023 Notes exceeded the principal amount by \$4.2 million, but did not exceed the principal amount of the 2026 Notes or 2025 Notes. These if-converted values were determined based on the closing price of the Company's stock on December 31, 2022 and 2021, respectively.

Bond Hedges and Warrants Transactions

Concurrent with the February 2018 convertible note offering, the Company entered into separate convertible notes bond hedges, or Bond Hedges, and Warrants transactions. The Bond Hedges are generally expected to reduce potential dilution to the Company's common stock upon conversion of the 2023 Notes. The Bond Hedges are call options that give the Company the

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option to purchase, subject to anti-dilution adjustments substantially identical to those in the 2023 Notes, approximately 0.9 million shares of its common stock for \$57.38 per share, exercisable upon conversion of the 2023 Notes and expires in February 2023. The total cost of the Bond Hedges transactions was \$41.7 million.

In November 2020, and in connection with the partial exchange of the 2023 Notes, the Company terminated Bond Hedges corresponding to approximately 0.7 million shares for cash proceeds of \$171.7 million. In May 2021, and in connection with the partial repurchase of the 2023 Notes, the Company terminated Bond Hedges corresponding to approximately 0.1 million shares for cash proceeds of \$26.3 million. The proceeds were recorded as an increase to additional paid-in capital in the consolidated balance sheets. As of December 31, 2022, there remained outstanding Bond Hedges giving the Company the option to repurchase approximately 0.1 million shares.

Under the February 2018 Warrant transactions, the Company issued warrants to acquire, subject to anti-dilution adjustments, up to approximately 4.0 million shares over 80 scheduled trading days beginning on May 15, 2023 at an exercise price of \$78.75 per share. If the Warrants are not exercised on their exercise dates, they will expire. Pursuant to the Warrants, if the average market value per share of the Company's common stock for the reporting period, as measured under the Warrants, exceeds the exercise price of the Warrants of \$78.75, the Warrants will have a dilutive effect on the Company's earnings per share, assuming the Company is profitable. The Company received \$22.4 million in cash proceeds from the sale of the Warrants.

In November 2020, and in connection with the partial exchange of the 2023 Notes, the Company terminated Warrants corresponding to approximately 3.2 million shares for total cash payments of \$137.5 million. In May 2021, and in connection with the partial repurchase of the 2023 Notes, the Company terminated Warrants corresponding to approximately 0.6 million shares for total cash payments of \$19.7 million. The termination payment was recorded as a decrease to additional paid-in capital in the consolidated balance sheets. As of December 31, 2022, there remained outstanding Warrants to acquire up to approximately 0.2 million shares.

The Bond Hedges and the Warrants are separate transactions, in each case, entered into by the Company with counterparties, and are not part of the terms of the 2023 Notes and will not affect any holders' rights under the 2023 Notes. The holders of the 2023 Notes will not have any rights with respect to the Bond Hedges or Warrants transactions. The Bond Hedges and Warrants do not meet the criteria for derivative accounting as they are indexed to the Company's stock. The amounts paid for the Bond Hedges and the proceeds received from the sale of the Warrants have been included as a net reduction to additional paid-in capital.

Capped Call Transactions

In connection with the issuance of the 2026 Notes and 2025 Notes, the Company entered into two separate capped call transactions with one or more counterparties, or the Capped Calls. The Capped Calls associated with the 2026 Notes have an initial strike price of \$88.6124 per share, subject to certain adjustments, which corresponds to the initial conversion price of the 2026 Notes. The Capped Calls associated with the 2025 Notes have an initial strike price of \$140.1443 per share, subject to certain adjustments, which corresponds to the initial conversion price of the 2025 Notes. The Capped Calls associated with the 2026 Notes have an initial cap price of \$139.00 per share. The Capped Calls associated with the 2025 Notes have an initial cap price of \$211.54 per share. The Capped Calls are expected to offset the potential dilution to the common stock upon any conversion of the 2026 Notes or 2025 Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the 2026 Notes or 2025 Notes in the event the market price per share of common stock is greater than the strike price of the Capped Call, with such offset subject to a cap. If, however, the market price per share of the common stock exceeds the cap price of the Capped Calls, there would be dilution and/or there would not be an offset of such potential cash payments, in each case, to the extent that the then-market price per share of the common stock exceeds the cap price. As the Capped Calls are considered indexed to the Company's stock and are considered equity classified, they are recorded in stockholders' equity on the consolidated balance sheet and are not accounted for as derivatives. The cost of \$40.8 million incurred in connection with the Capped Calls associated with the 2026 Notes was recorded as a reduction to additional paid-in capital. The cost of \$39.8 million incurred in connection with the Capped Calls associated with the 2025 Notes was recorded as a reduction to additional paid-in capital.

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13. Stock-Based Compensation

In March 2014, the Company's board of directors approved the 2014 Equity Incentive Plan, or 2014 Plan, under which stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares and units and other cash-based or stock-based awards may be granted to employees, consultants and directors. Shares of common stock that are issued and available for issuance under the 2014 Plan consist of authorized, but unissued or reacquired shares of common stock or any combination thereof.

As of December 31, 2021, a total of 15,823 shares had been reserved for issuance under the 2014 Plan. The 2014 Plan contains a provision that automatically increases the shares available for issuance under the plan on January 1 of each year subsequent to the 2014 Plan's adoption through 2024, by an amount equal to the smaller of (a) 4.5% of the number of shares of common stock issued and outstanding on the immediately preceding December 31, or (b) an amount determined by the Company's board of directors. On January 1, 2022, 2,562 shares were added to the 2014 Plan in accordance with the annual automatic increase provision of the 2014 Plan. In addition, the 2014 Plan reserve is automatically increased to include any shares issuable upon expiration or termination of options granted under the Company's 2007 Stock Plan, or 2007 Plan, for options that expire or terminate without having been exercised. For the year ended December 31, 2022, no shares have been transferred to the 2014 Plan from the 2007 Plan, and as of December 31, 2022, a total of 18,385 shares were allocated for issuance under the 2014 Plan. As of December 31, 2022, options to purchase a total of 2,706 shares of common stock have been granted under the 2014 Plan, 9,224 shares have been reserved under the 2014 Plan for the vesting of restricted stock units and for the on target performance of market stock units, 1,789 shares have been returned to the 2014 Plan as a result of termination of options that expired or terminated without having been exercised and restricted stock awards that terminated prior to the awards vesting, and 8,244 shares of common stock remain available for future issuance under the 2014 Plan, assuming on target performance.

In March 2014, the Company also adopted the ESPP. The plan was implemented starting January 3, 2022, pursuant to which certain participating domestic employees are able to purchase shares of the Company's common stock at a 15% discount of the lower of the market price at the beginning or end of the offering period. The Board provided for a share reserve with respect to the ESPP of 800 shares. The ESPP contains a provision that automatically increases the shares available for issuance under the plan on January 1 of each year through 2024, by an amount equal to the smaller of (a) 500 shares, (b) 1% of the number of shares issued and outstanding on the immediately preceding December 31, or (c) such other amount as may be determined by the Company's board of directors. The Company has reserved 800 shares of common stock for future issuance under the ESPP. The ESPP's initial four-month purchase period began in February 2022. During the year ended December 31, 2022, the Company issued 171 shares under the ESPP. As of December 31, 2022, 629 shares remain authorized and available for issuance under the ESPP.

In July 2007, the Company adopted the 2007 Plan under which options or stock purchase rights may be granted to employees, consultants and directors. Upon the completion of the Company's initial public offering, or IPO, in March 2014, the board of directors terminated the 2007 Plan in connection with the IPO and all shares that were available for future issuance under the 2007 Plan at such time were transferred to the 2014 Plan. The 2007 Plan will continue to govern the terms and conditions of all outstanding equity awards granted under the 2007 Plan. As of December 31, 2022, no shares remain available for future issuance under the 2007 Plan.

Stock-based compensation expense was recorded in the following cost and expense categories in the Company's consolidated statements of comprehensive loss:

	Year Ended December 31,		
	2022	2021	2020
Cost of revenues	\$ 12,262	\$ 10,590	\$ 9,888
Sales and marketing	15,379	11,153	8,770
Research and development	13,987	13,273	12,869
General and administrative	23,529	19,318	17,708
Total stock-based compensation expense	<u>\$ 65,157</u>	<u>\$ 54,334</u>	<u>\$ 49,235</u>

Stock-based compensation capitalized as an asset was \$3.9 million, \$1.6 million and \$1.4 million in the years ended December 31, 2022, 2021 and 2020, respectively.

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Stock Options

There were no stock options granted during the years ended December 31, 2022, 2021 or 2020. The following summarizes the assumptions used for estimating the fair value of stock options granted during the period indicated:

	Year Ended December 31, 2018
Risk-free interest rate	2.6%
Expected life (in years)	4.8
Expected volatility	41.0%
Dividend yield	—
Weighted-average grant date fair value per share	\$18.14

Stock option activity was as follows:

	Number of Options	Weighted Average Exercise Price
Balance as of January 1, 2020	1,419	\$ 23.61
Granted	—	—
Exercised	(720)	19.82
Forfeited	(29)	29.50
Balance as of December 31, 2020	670	27.43
Granted	—	—
Exercised	(307)	19.16
Forfeited	—	—
Balance as of December 31, 2021	363	34.42
Granted	—	—
Exercised	(27)	26.06
Forfeited	—	—
Expired	(12)	35.80
Balance as of December 31, 2022	324	\$ 35.07

The summary of stock options outstanding as of December 31, 2022 is as follows:

Range of Exercise Prices	Options Outstanding and Exercisable		
	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)
\$19.26 - \$30.15	43	\$ 26.69	0.6
\$35.05 - \$52.58	281	36.34	1.2
	324	\$ 35.07	1.1

The aggregate intrinsic value of stock options exercised during each of the years ended December 31, 2022, 2021 and 2020 was \$0.6 million, \$26.2 million and \$53.4 million, respectively. The total fair value of stock options vested during each of the years ended December 31, 2022, 2021 and 2020 was \$0.01 million, \$0.4 million and \$2.4 million, respectively.

As of December 31, 2022, the aggregate intrinsic value of options outstanding was \$0.1 million. As of December 31, 2022, all options are vested, therefore the unrecognized stock-based compensation expense related to stock options is zero.

Restricted Stock Units

The Company's restricted stock units typically vest over a four-year period and upon vesting, the vested shares are issued to the recipient of the restricted stock units.

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Restricted stock unit activity was as follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested as of January 1, 2020	1,952	\$ 58.86
Granted	772	82.51
Vested	(752)	54.77
Forfeited	(215)	61.02
Nonvested as of December 31, 2020	1,757	70.74
Granted	786	109.91
Vested	(671)	64.12
Forfeited	(252)	81.89
Nonvested as of December 31, 2021	1,620	90.75
Granted	2,186	45.62
Vested	(609)	82.50
Forfeited	(253)	78.70
Nonvested as of December 31, 2022	2,944	\$ 59.99

The total fair value of restricted stock units vested during each of the years ended December 31, 2022, 2021 and 2020 was \$29.1 million, \$66.0 million and \$65.9 million, respectively. Total unrecognized stock-based compensation expense related to restricted stock units was \$140.8 million, which the Company expects to recognize over a weighted average period of 2.8 years.

Market Stock Units

Market stock unit activity was as follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested as of January 1, 2020	434	\$ 28.85
Granted	148	32.85
Vested	(164)	15.71
Forfeited	(48)	33.46
Nonvested as of December 31, 2020	370	35.67
Granted	125	77.63
Change in awards based on performance ⁽¹⁾	206	39.67
Vested	(390)	33.49
Forfeited	(30)	40.19
Nonvested as of December 31, 2021	281	59.74
Granted	239	46.75
Vested	—	—
Forfeited	(121)	41.71
Nonvested as of December 31, 2022	399	\$ 57.42

⁽¹⁾ Represents the change in the number of MSUs earned based on performance achievement for the performance period.

The Company estimates the fair value of market stock units on the date of grant using a Monte Carlo simulation model. The determination of fair value of the market stock units is affected by the Company's and peer firms' stock prices and a number of assumptions including the expected volatilities of the Company's and peer firms' stock and the Index, and its risk-free interest rate. The Company's expected volatility at the date of grant was based on the historical volatilities of its stock and peer firms' stocks and the Index over the performance period. The Company did not estimate a dividend rate or a forfeiture rate for the market stock units due to the limited size, the vesting period and nature of the grantee population and the lack of history of granting this type of award.

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Significant assumptions used in the Monte Carlo simulation model for the market stock units granted during the year ended December 31, 2022, 2021, and 2020 are as follows:

	As of December 31,		
	2022	2021	2020
Volatility	45.4%	42.3 - 43.5%	31.3 - 42.8%
Risk-free interest rate	1.9%	0.3 - 1.0%	0.2 - 0.6%
Dividend yield	—	—	—
Longest remaining performance period (in years)	3	3	3

The total fair value of market stock units vested during each of the years ended December 31, 2022, 2021 and 2020 was zero, \$41.6 million and \$12.1 million, respectively. Total unrecognized stock-based compensation expense related to market stock units was \$11.9 million, which the Company expects to recognize over a weighted average period of 1.8 years.

Employee Stock Purchase Plan

The following summarizes the assumptions used for estimating the fair value of ESPP purchase rights:

	Year Ended December 31, 2022
Risk-free interest rate	0.3 - 4.7%
Expected life (in years)	0.3 - 0.5
Expected volatility	49.7 - 65.6%
Dividend yield	—
Grant date fair value per share	\$9.45 - \$17.30

During the year ended December 31, 2022, the Company's employees purchased 171 shares under the ESPP at a weighted-average price of \$33.74 per share, resulting in cash proceeds of \$5.2 million. Total unrecognized stock-based compensation expense related to the ESPP was \$1.2 million, which the Company expects to recognize over a weighted average period of 0.4 years.

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14. Provision for Income Taxes

The U.S. and non-U.S. components of loss before income taxes consisted of the following:

	December 31,	
	2022	2021
U.S.	\$ (106,743)	\$ (114,127)
Non-U.S.	668	3,024
Loss before income taxes	<u>\$ (106,075)</u>	<u>\$ (111,103)</u>

The components of the Company's provision for income taxes consisted of the following:

	Year Ended December 31,		
	2022	2021	2020
Current taxes:			
Foreign	\$ 959	\$ 959	\$ (104)
State	1,268	144	240
Total current taxes	<u>\$ 2,227</u>	<u>\$ 1,103</u>	<u>\$ 136</u>
Deferred taxes:			
Federal	\$ 420	\$ 419	\$ 508
Change in valuation allowance - acquisitions	—	(74)	—
Foreign	(355)	(127)	180
State	616	322	592
Total deferred taxes	<u>681</u>	<u>540</u>	<u>1,280</u>
Provision for income taxes	<u>\$ 2,908</u>	<u>\$ 1,643</u>	<u>\$ 1,416</u>

The Company had federal net operating loss carryforwards of approximately \$590.1 million and \$633.8 million at December 31, 2022 and 2021, respectively, which \$158.8 million will expire at various dates beginning in 2026, if not utilized, and \$431.3 million have an indefinite carryforward period. Federal net operating losses generated during and after the year ended December 31, 2018 will have an indefinite carryforward period. The Company also held state tax credits of \$0.3 million and \$3.0 million for the years ended December 31, 2022 and 2021, respectively, and federal R&D tax credits of \$8.9 million for both the years ended December 31, 2022 and 2021. The federal and state R&D tax credit carry overs will begin to expire in 2033, if not utilized.

Utilization of the net operating losses and credit carryforwards may be subject to a substantial annual limitation due to the "change in ownership" provisions of the Internal Revenue Code of 1986. The annual limitation may result in the expiration of net operating losses and credit carryforwards before utilization.

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Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred taxes consisted of the following:

	December 31,	
	2022	2021
Deferred tax assets:		
NOL and credit carryforwards	\$ 157,480	\$ 161,425
Deferred revenue	15,036	16,406
Accrued expenses and other	5,676	8,093
Stock-based compensation	10,079	7,776
Lease liabilities	15,167	17,160
Interest expense carryforwards	13,721	14,795
Convertible debt hedge	11,115	15,074
IRC Section 174 expenditures	29,610	—
Total deferred tax assets	<u>257,884</u>	<u>240,729</u>
Deferred tax liabilities:		
Deferred expenses	(13,080)	(12,371)
Convertible debt	—	(28,615)
Depreciation and amortization	(24,447)	(27,779)
Capitalized software	(1,468)	(1,657)
Right of use assets	(9,614)	(12,737)
Total deferred tax liabilities	<u>(48,609)</u>	<u>(83,159)</u>
Deferred tax assets less tax liabilities	209,275	157,570
Less: valuation allowance	(212,202)	(159,778)
Net deferred tax liability	<u>\$ (2,927)</u>	<u>\$ (2,208)</u>

The Company has established a valuation allowance due to uncertainties regarding the realization of deferred tax assets based on the Company's lack of earnings history. During 2022, the valuation allowance increased by approximately \$16.2 million due to continuing operations and \$7.9 million due to the current year acquisition. The valuation allowance included an increase of \$28.3 million recorded to the beginning balance of accumulated deficit related to the adoption of ASU 2020-06, which caused the reversal of deferred tax assets and liabilities relating to the debt discount and issuance costs of the convertible debt transactions.

At December 31, 2022, the Company did not provide any U.S. income or foreign withholding taxes on approximately \$7.0 million of certain foreign subsidiaries' undistributed earnings, as such earnings have been retained and are intended to be indefinitely reinvested. It is not practicable to estimate the amount of any taxes that would be payable upon remittance of these earnings, because such tax, if any, is dependent upon circumstances existing if and when remittance occurs.

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The Company's provision for income taxes attributable to continuing operations differs from the expected tax benefit amount computed by applying the statutory federal income tax rate of 21% to income before taxes for each of the years ended December 31, 2022, 2021, and 2020, respectively, primarily as a result of the following:

	Year Ended December 31,		
	2022	2021	2020
Income tax at U.S. statutory rate	21.0 %	21.0 %	21.0 %
Effect of:			
Increase in deferred tax valuation allowance	(14.8)	(30.2)	(35.8)
Stock compensation	(4.8)	14.5	11.4
Acquisitions	(0.2)	(0.2)	(0.6)
R&D credit	(2.4)	—	0.1
State taxes, net of federal benefit	0.6	3.9	4.6
Change in uncertain tax positions	1.5	(2.2)	—
Executive compensation	(1.8)	(7.4)	(2.5)
GILTI inclusion	(1.6)	—	—
Other permanent items	(0.2)	(0.9)	0.9
Income tax benefit (provision) effective rate	<u>(2.7)%</u>	<u>(1.5)%</u>	<u>(0.9)%</u>

The Company files income tax returns in the U.S. federal jurisdiction, several state jurisdictions, and several foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state or local income tax examinations by tax authorities for years before 2019. Operating losses generated in years prior to 2019 remain open to adjustment until the statute of limitations closes for the tax year in which the net operating losses are utilized. The tax years 2019 through 2022 remain open to examination by all the major taxing jurisdictions to which the Company is subject, and the Company is currently under examination by the state of Texas.

The total amount of uncertain tax positions as of December 31, 2022 and 2021 was \$1.0 million and \$2.6 million, respectively. The reconciliation of uncertain tax positions at the beginning and end of the year is as follows:

	Year Ended December 31,	
	2022	2021
Beginning balance	\$ 2,568	\$ 358
Gross increase (decrease) related to prior year positions	(1,855)	2,568
Gross decrease related to settlements	—	(358)
Gross increase related to current year positions	264	—
Ending balance	<u>\$ 977</u>	<u>\$ 2,568</u>

At December 31, 2022, approximately \$1.0 million, including interest, would reduce the Company's annual effective tax rate, if recognized. As of December 31, 2022, the Company had no accrued interest. The Company believes it is reasonably possible that half of the \$1.0 million of its unrecognized tax benefits will be resolved within the next 12 months due to amended state tax returns. The Company records any interest and penalties related to unrecognized tax benefits in income tax expense.

15. Employee Benefit Plan

In January 2009, the Company adopted a 401(k) retirement savings plan, or 401(k) Plan, covering substantially all employees. Employees can contribute between 1% and 50% of their total earnings. The 401(k) Plan also provides for employer contributions to be made at the Company's discretion.

The Company makes matching contributions equal to 50% of employee contributions, which could be applied to up to 6% of each participant's compensation. Employees are eligible to participate upon date of hire and are immediately vested in all matching contributions. The Company's policy prohibits participants from direct investment in shares of its common stock within the plan. The Company's contributions charged to expense were \$7.2 million, \$5.4 million and \$2.7 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Q2 HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except per share amounts and unless otherwise indicated)

16. Segments and Geographic Information

All revenue-generating activities are directly related to the sale, implementation and support of the Company's solutions in a single operating segment. The Company's chief operating decision maker, the Chief Executive Officer, reviews financial information presented on a consolidated basis for purposes of allocating resources and evaluating financial performance. Substantially all of the Company's principal operations, assets and decision-making functions are located in the United States.

17. Related Parties

The Company recorded revenues from a related-party customer of zero for the year ended December 31, 2022 and \$0.6 million for each of the years ended December 31, 2021 and 2020.

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

Q2 Holdings, Inc. ("Q2") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): our common stock, par value \$0.0001 per share (the "common stock").

DESCRIPTION OF COMMON STOCK

The following summary description sets forth some of the general terms and provisions of the common stock. Because this is a summary description, it does not contain all of the information that may be important to you. For a more detailed description of the common stock, you should refer to the provisions of our fifth amended and restated certificate of incorporation (the "certificate of incorporation") and our amended and restated bylaws each of which is an exhibit to the Annual Report on Form 10-K to which this description is an exhibit.

General

Under the certificate of incorporation, Q2 is authorized to issue up to 150 million shares of common stock with a par value of \$0.0001 per share and up to 5 million shares of preferred stock with a par value of \$0.0001 per shares (the "preferred stock"). The shares of common stock currently outstanding are fully paid and nonassessable. No shares of preferred stock are currently outstanding. The board of directors has the authority to repeal, alter or amend the bylaws or adopt new bylaws, subject to certain limitations set forth in the bylaws.

No Preemptive, Redemption or Conversion Rights

The common stock is not redeemable, is not subject to sinking fund provisions, does not have any conversion rights and is not subject to call. Holders of shares of common stock have no preemptive rights to maintain their percentage of ownership in future offerings or sales of stock of Q2.

Voting Rights

Holders of shares of common stock have one vote per share in all elections of directors and on all other matters submitted to a vote of stockholders of Q2. Holders of shares of common stock do not have cumulative voting rights.

Board of Directors

At our 2019 annual meeting of stockholders our stockholders approved an amendment to our certificate of incorporation to eliminate our previously existing classified board of directors. Prior to such amendment, we had a classified board of directors, divided into three classes, with each class elected every three years. As amended at our 2019 annual meeting of stockholders, our certificate of incorporation provides that the declassification of our board of directors will be phased in so that it will not affect the unexpired term of any director elected before our 2020 annual meeting. Directors elected prior to the effectiveness of the amendment who are nominated for re-election will stand for election for one-year terms once their then-current terms expire. This means that directors whose terms expire at the 2021 annual meeting of stockholders will be elected for one-year terms, and beginning with our 2022 annual meeting of stockholders, all directors will be elected for one-year terms at each annual meeting of stockholders. Our bylaws establish that the size of the whole board of directors shall be 8, or as otherwise fixed from time to time by a duly adopted resolution of the board of directors.

Anti-Takeover Provisions in Our Certificate of Incorporation and Bylaws

Certain provisions of our certificate of incorporation and bylaws could have the effect of delaying, deterring or preventing another party from acquiring or seeking to acquire control of us. These anti-takeover provisions included in our certificate of incorporation and bylaws are described in the subsection entitled "*Anti-takeover provisions in our charter documents and Delaware law could discourage, delay or prevent a change in control of our company and may affect the trading price of our common stock*" in Item 1A (Risk Factors) in the Annual Report on Form 10-K to which this description is an exhibit.

No Action by Stockholder Consent

The certificate of incorporation prohibits action that is required or permitted to be taken at any annual or special meeting of stockholders of Q2 from being taken by the written consent of stockholders without a meeting.

Power to Call Special Stockholder Meeting

Under Delaware law, a special meeting of stockholders may be called by our board of directors or by any other person authorized to do so in the certificate of incorporation or bylaws. Pursuant to our bylaws, special meetings of the stockholders may be called, for any purpose or purposes, by our board of directors, the Chairman of our board of directors or our Chief Executive Officer at any time.

Dividend Rights

Subject to the preferences applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive dividends, if any, as and when declared, from time to time, by our board of directors out of funds legally available therefor.

Liquidation, Dissolution or Similar Rights

Subject to the preferences applicable to any outstanding shares of preferred stock, upon liquidation, dissolution or winding up of the affairs of Q2, the holders of common stock will be entitled to participate equally and ratably, in proportion to the number of shares held, in the net assets of Q2 available for distribution to holders of stock of Q2.

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

This Amended and Restated Executive Employment Agreement (the “**Agreement**”) is entered into and made effective on September 23, 2021 (the “**Effective Date**”), by and between Q2 Software, Inc., a Delaware corporation (“**Company**”), and Jonathan A. Price (“**Executive**”). Each of the Company and Executive are a “**Party**” and, collectively, they are the “**Parties**.”

WHEREAS, the Parties previously entered into an Employment Agreement dated March 13, 2019, as amended to date (the “**Prior Agreement**”) and desire for this Agreement to amend, restate and supersede the Prior Agreement and govern the terms of Executive’s employment with the Company in each case from and following the Effective Date.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and promises contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1 Employment. Company agrees to employ Executive on a full-time basis, and Executive hereby accepts employment by the Company on the terms and conditions set forth herein. Executive’s term of employment by the Company under the terms of this Agreement (the “**Term**”) shall commence on the Effective Date and end on the date on which the term of employment is terminated in accordance with Section 5.

2 Duties.

2.1 Position. Executive is employed as Company’s Executive Vice President, Emerging Business, Corporate and Business Development and shall have the duties and responsibilities, commensurate with the Executive’s position, as may be reasonably assigned from time to time by Company’s Chief Executive Officer, to whom Executive shall report. Executive shall perform faithfully and diligently all duties assigned to Executive. Company reserves the right to modify Executive’s position and duties at any time in its sole and absolute discretion.

2.2 Best Efforts/Full-time. During this Term, Executive will (a) use Executive’s best efforts to promote and serve the best interests of the Company, (b) abide by all policies and decisions made by Company, as well as all applicable federal, state and local laws, regulations or ordinances; (c) in all respects conform to and comply with the lawful and good faith directions and instructions given to Executive by the Chief Executive Officer; and (d) devote Executive’s full business time and efforts to the performance of Executive’s assigned duties for Company. Further, unless the Company consents in writing, the Executive shall not, directly or indirectly, render services to any other person or organization or otherwise engage in activities that would interfere significantly with Executive’s faithful performance of Executive’s duties hereunder or otherwise create an actual conflict of interest with Company. Notwithstanding the foregoing, the Executive may (i) serve on a limited number of corporate boards, provided Executive receives prior written permission from the Company’s General Counsel; and (ii) serve on a limited number of civic organizations or charitable boards, or engage in other charitable or civic activities without remuneration therefor, provided that such activity does not contravene the first sentence of this Section 2.2.

2.3 Work Location. Executive’s principal place of work shall be located in Austin, Texas, or such other location as the Company may direct from time to time.

3 Compensation. Subject to the provisions of this Agreement, the Company shall pay and provide the following compensation and other benefits to the Executive during the Term as compensation for Executive's performance of Executive's duties hereunder.

3.1 Base Salary. The Company shall pay to Executive an initial salary (the "**Base Salary**") at an annual rate of \$295,000, to be paid in substantially equal installments in accordance with the Company's then current regular payroll cycle, less required deductions for federal and state withholding tax, social security and all other employment taxes and payroll deductions. In the event Executive's employment under this Agreement is terminated by either Party, for any reason, Executive will earn the Base Salary prorated to the date of termination.

3.2 Incentive Compensation. Executive shall be eligible to receive an annual cash incentive bonus of up to 50% of Base Salary (the "**Incentive Bonus**") under the Company's Executive Incentive Compensation Plan or any successor plan (the "**Incentive Plan**") and on such terms and subject to such conditions as may be decided from time to time by the Company, less required deductions for federal and state withholding tax, social security and all other employment taxes and payroll deductions. The Company shall pay out the cash Incentive Bonus, if any, annually in the form of a lump sum within ninety (90) days following the end of the applicable performance year. Notwithstanding anything to the contrary contained in the Incentive Plan or any other applicable bonus plan, program or arrangement, Executive must be employed by the Company at the time any annual cash Incentive Bonus is payable in accordance with this Section 3.2 in order to be eligible to earn such bonus. The Company reserves the right to vary or terminate any bonus scheme, including the Incentive Bonus scheme, in place from time to time, on a prospective basis.

3.3 Equity Compensation. All of Executive's previously granted and outstanding equity compensation awards shall continue to be governed pursuant to their terms. Executive shall be eligible to receive additional equity awards as determined solely in the discretion of the Compensation Committee of the Company's Board of Directors (the "**Board**").

3.4 Customary Fringe Benefits. Executive will be eligible for all customary and usual fringe benefits generally available to similarly situated employees of the Company, subject to the terms and conditions of Company's benefit plan documents and generally applicable Company policies. Executive shall be entitled to Paid Time Off benefits ("**PTO**") subject to the terms and conditions of the Company's PTO policy.

3.5 Business Expenses. Executive will be reimbursed for all reasonable, out-of-pocket business expenses incurred in the performance of Executive's duties on behalf of Company. To obtain reimbursement, expenses must be submitted promptly with appropriate supporting documentation in accordance with Company's policies.

4 At-Will Employment. Executive's employment with Company is at-will and not for any specified period and may be terminated at any time, with or without Cause (as defined below), by either Executive or Company, although subject to the provisions of Sections 5 through 7 below, and Executive shall have no rights to continued employment with the Company. No representative of Company other than the Company's Board has the authority to alter the at-will employment relationship. Any change to the at-will employment relationship must be by specific, written agreement signed by Executive and the Company's Board. Nothing in this Agreement is intended to or should be construed to contradict, modify or alter this at-will relationship.

5 Termination. The termination provisions of this Agreement regarding the Parties' respective obligations in the event Executive's Term of employment is terminated are intended to be exclusive and in lieu of any other rights to which Executive may otherwise be entitled by law,

in equity, or otherwise. This Agreement, and Executive's employment hereunder, may be terminated at any time after the Effective Date, as follows:

5.1 Termination by Mutual Consent. This Agreement may be terminated at any time by the written mutual consent of Company and Executive. Any agreement to terminate must be by specific, written agreement signed by Executive and a representative member of the Company's Board.

5.2 Termination by Company. Executive's employment may be terminated by Company at any time, with or without Cause, with or without advance notice, by the delivery to Executive of written notice of termination.

5.3 Resignation by Executive. Executive shall have the right to terminate his or her employment hereunder by providing the Company with a notice of termination at least thirty (30) days prior to such termination.

5.4 Death or Disability. Executive's employment shall terminate automatically upon Executive's death during the Term, and the Company may terminate the Executive's employment on account of Executive's Disability. For purposes of this Agreement, "**Disability**" shall mean the Executive is eligible to receive benefits under the Company's long-term disability benefit plan as in effect on the date of termination, as determined by the third-party insurer of such plan. If the Company does not have a long-term disability benefit plan in effect on the date of termination, then "Disability" has the applicable meaning as set forth in Section 409A of the Internal Revenue Code.

6 Benefits Upon Termination

6.1 Accrued Compensation. Upon termination of employment for any reason, Executive shall receive payment of his or her then unpaid Base Salary, pro-rated to the date of termination, as well as any other accrued, but unpaid benefits (collectively the "**Accrued Compensation**"). Accrued Compensation will be paid in a lump sum on the date required under applicable law. Except as expressly stated in this Agreement or contemplated by another agreement between the Executive and the Company, or as otherwise required by law, upon the expiration of the Term, all other employment related obligations of Company to Executive, including all compensation, equity plans, and benefits payable to Executive under this Agreement, shall automatically terminate and completely extinguish on the date of termination of Executive's employment under the terms of this Agreement.

6.2 Definitions. For all purposes of this Agreement, the following terms shall have the following meanings:

(a) "**Cause**" means (a) acts or omissions constituting gross negligence, recklessness or willful misconduct on the part of Executive with respect to Executive's obligations or otherwise relating to the business of Company; (b) Executive's material breach of this Agreement or Company's Confidentiality, Non-Competition and Proprietary Rights Assignment Agreement (the "**PRIA**"); (c) Executive's conviction or entry of a plea of *nolo contendere* for fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; or (d) Executive's willful failure to perform Executive's material duties as determined in the sole and exclusive discretion of the Company (other than any such failure resulting from a Disability).

(b) "**Change in Control**" has the meaning set forth in the Company's 2014 Equity Incentive Plan, as in effect as of the Effective Date.

(c) “**Change in Control Period**” means the period commencing 60 days prior to the Closing of a Change in Control and ending 24 months following the Closing of a Change in Control.

(d) “**Change in Control Termination**” means Executive’s resignation for Good Reason or termination without Cause in each case which occurs during the Change in Control Period. For such purposes, if the events giving rise to Executive’s right to a resignation for Good Reason arises within the Change in Control Period, and Executive’s resignation occurs not later than 30 days after the expiration of the Cure Period (as defined below), such termination shall be a Change in Control Termination.

(e) “**Closing**” means the initial closing of the Change in Control as defined in the definitive agreement executed in connection with the Change in Control. In the case of a series of transactions constituting a Change in Control, “Closing” means the first closing that satisfies the threshold of the definition for a Change in Control.

(f) “**Equity Award**” means any Company equity award granted to Executive, but excluding any such equity awards issued under or held in any tax qualified retirement plan, if applicable.

(g) “**Good Reason**” for Executive’s resignation from employment with the Company means the occurrence of any of the following actions are taken by the Company without the Executive’s prior written consent: (i) a material reduction in Base Salary; (ii) a material reduction in Executive’s authorities, duties or responsibilities; (iii) a material diminution in the authority, duties, or responsibilities of the Chief Executive Officer to whom Executive is required to report; (iv) a material diminution in the budget over which Executive retains authority; (v) relocation of Executive’s principal place of employment to a place that increases Executive’s one-way commute by more than 30 miles as compared to Executive’s then-current principal place of employment immediately prior to such relocation; or (vi) any material breach by the Company of the terms of this Agreement. In order to resign for Good Reason, the Executive must provide written notice to the Company’s Chief Executive Officer, within 30 days after the first occurrence of the event giving rise to Good Reason setting forth the basis for Executive’s resignation, allow the Company at least 30 days from receipt of such written notice to cure such event (“**Cure Period**”), and if such event is not reasonably cured within such period, Executive must resign from all positions Executive then holds with the Company not later than 30 days after the expiration of the Cure Period.

(h) “**Regular Termination**” means Executive’s termination by the Company without Cause that does not occur within the Change in Control Period. A Regular Termination does not include any termination of Executive’s employment for any other reason, including but not limited to any termination that occurs due to Executive’s death or Disability or Executive’s resignation for Good Reason.

(i) **Release** has the meaning set forth in Section 6.7 below.

6.3 Severance Upon Regular Termination. In the event the Executive’s employment terminates due to a Regular Termination, subject to the Executive’s satisfaction of the conditions set forth in Section 6.7 (including Executive’s timely provision of an effective Release), in addition to the Accrued Compensation, the Company shall provide Executive with the following severance benefits:

(a) an amount equal to the sum of: (i) 150% Executive’s then annual Base Salary, plus (ii) a pro-rata amount of Executive’s target Incentive Bonus for the

fiscal year in which the termination occurs, with such pro-rata portion calculated by reference to the number of days in the calendar year preceding the date of termination divided by the total number of days in such calendar year) (such total amount, the “**Regular Cash Severance**”). Payment of the Regular Cash Severance will be made in equal installments in accordance with the Company’s regular payroll practice over the 18 month period following the date of Regular Termination, subject to applicable deductions and withholdings; provided, however that any payments of Regular Cash Severance otherwise scheduled to be made prior to the effective date of the Release shall instead accrue and be paid on the first regularly scheduled payday following the Release effective date, with the remainder of the payments made as originally scheduled.

(b) immediate vesting acceleration of the portion of any then outstanding Equity Awards otherwise scheduled to vest subject solely to Executive’s continued services over the 12-month period following the date of Regular Termination;

(c) continued eligibility to vest in the portion of any then outstanding performance based vesting Equity Awards that were otherwise eligible to vest based on the attainment of corporate performance goals within the 12-month period following the date of Regular Termination, with the applicable vesting level for such Equity Awards to be determined in accordance with their terms and based on actual performance levels attained (without regard to Executive’s termination), as determined by the Board; and

(d) payment of the premiums for group health continuation coverage for Executive and Executive’s covered dependents pursuant to Title X of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended and any state law equivalent (“**COBRA**”), for a period of up to 18 months following Executive’s termination of employment with the Company, subject to Executive’s timely election of and continued eligibility for COBRA coverage ((the “**COBRA Payment Period**”); provided, however that the Company’s obligation to continue to pay such premiums shall end on such earlier date to the extent that Executive and/or Executive’s covered dependents are no longer eligible for continued COBRA coverage. For purposes of this Section, (i) references to COBRA shall be deemed to refer also to analogous provisions of state law and (ii) any applicable insurance premiums that are paid by the Company shall not include any amounts payable by Executive under an Internal Revenue Code Section 125 health care reimbursement plan, which amounts, if any, are Executive’s sole responsibility. Executive acknowledges and agrees that such payment is intended to constitute a COBRA subsidy for purposes of the American Rescue Plan Act of 2021, to the extent applicable. Notwithstanding the foregoing, if at any time the Company determines, in its sole discretion, that it cannot provide the COBRA premium benefits without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then in lieu of paying COBRA premiums on the Executive’s behalf, the Company will instead pay Executive on the last day of each remaining month of the COBRA Payment Period a fully taxable cash payment equal to the COBRA premium for that month, subject to applicable tax withholding (such amount, the “**Special Severance Payment**”), such Special Severance Payment to be made without regard to Executive’s election of COBRA coverage or payment of COBRA premiums and without regard to Executive’s continued eligibility for COBRA coverage during the COBRA Payment Period. Such Special Severance Payment shall end upon expiration of the COBRA Payment Period.

6.4 Severance Upon Change in Control Termination. In the event the Executive’s employment terminates due to a Change in Control Termination, subject to the Executive’s satisfaction of the conditions set forth in Section 6.7 (including Executive’s timely provision of an effective Release), in addition to the Accrued Compensation, the Company shall

provide Executive with the following severance benefits, in each case calculated prior to giving effect to any reductions in compensation that would give rise to Executive's right to resign for Good Reason:

(a) an amount equal to the sum of: (i) 200% Executive's then annual Base Salary, plus (ii) a pro-rata amount of the greater of (A) the Target Bonus for the year of termination, or (B) the amount of Incentive Bonus Executive would otherwise be eligible to earn based on applicable performance levels attained through the date of termination, (with such pro-rata amount calculated by reference to the number of days in the calendar year preceding the date of the Change in Control Termination divided by the total number of days in such calendar year) (such total amount, the "**CIC Termination Severance**"). Payment of the CIC Termination Severance shall be made in single lump sum on the first regularly scheduled payday following the Release Effective Date, subject to applicable deductions and withholdings;

(b) payment of the premiums for group health continuation coverage for Executive and Executive's covered dependents pursuant to Title X of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended and any state law equivalent ("**COBRA**"), for a period of up to 24 months following Executive's termination of employment with the Company, subject to Executive's timely election of and continued eligibility for COBRA coverage (the "**COBRA Payment Period**"); provided, however, that the Company's obligation to continue to pay such premiums shall end on such earlier date to the extent that Executive and/or Executive's covered dependents are no longer eligible for continued COBRA coverage. For purposes of this Section, (i) references to COBRA shall be deemed to refer also to analogous provisions of state law and (ii) any applicable insurance premiums that are paid by the Company shall not include any amounts payable by Executive under an Internal Revenue Code Section 125 health care reimbursement plan, which amounts, if any, are Executive's sole responsibility. Executive acknowledges and agrees that such payment is intended to constitute a COBRA subsidy for purposes of the American Rescue Plan Act of 2021, to the extent applicable. Notwithstanding the foregoing, if at any time the Company determines, in its sole discretion, that it cannot provide the COBRA premium benefits without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then in lieu of paying COBRA premiums on the Executive's behalf, the Company will instead pay Executive on the last day of each remaining month of the COBRA Payment Period a fully taxable cash payment equal to the COBRA premium for that month, subject to applicable tax withholding (such amount, the "**Special Severance Payment**"), such Special Severance Payment to be made without regard to Executive's election of COBRA coverage or payment of COBRA premiums and without regard to Executive's continued eligibility for COBRA coverage during the COBRA Payment Period. Such Special Severance Payment shall end upon expiration of the COBRA Payment Period.

(c) the following equity benefits:

(i) immediate vesting acceleration of the portion of any then outstanding Equity Awards otherwise scheduled to vest subject solely to Executive's continued services; and

(ii) continued eligibility to vest in the portion of any then outstanding performance based vesting Equity Awards that were otherwise eligible to vest based on the attainment of corporate performance goals following the date of termination, with the applicable vesting level for such Equity Awards to be determined in accordance with their terms and based on actual performance

levels attained (without regard to Executive's termination), as determined by the Board.

If necessary to give effect to the intent of this Section, notwithstanding anything to the contrary set forth in Executive's stock award agreements or the applicable equity incentive plan under which such stock award was granted that provides that any then unvested portion of an Equity Award will immediately expire upon Executive's termination of service, the unvested portion of such Equity Award shall not terminate for such applicable to the extent eligible to potentially thereafter vest pursuant to the terms of this Agreement.

6.5 Death or Disability Termination. In the event the Executive's employment terminates due to Executive's death or Disability, subject to the Executive's (or the applicable representative of Executive's estate) satisfaction of the conditions set forth in Section 6.7 (including timely provision of an effective Release), in addition to the Accrued Compensation, the Company shall provide Executive or Executive's estate with the following severance benefits:

(i) immediate vesting acceleration of the portion of any then outstanding Company Equity Awards otherwise scheduled to vest subject solely to Executive's continued services; and

(ii) continued eligibility to vest in the portion of any then outstanding performance based vesting Equity Awards that were otherwise eligible to vest based on the attainment of corporate performance goals following the date of termination, with the applicable vesting level for such Equity Awards to be determined in accordance with their terms and based on actual performance levels attained (without regard to Executive's termination), as determined by the Board.

6.6 No Duplication of Severance Benefits. In no event may the Executive become entitled to severance benefits under both Section 6.3 and 6.4 of this Agreement. If Executive commences to receive severance benefits under Section 6.3 and thereafter becomes entitled to severance benefits under Section 6.4, the severance benefits provided to Executive under Section 6.4 will be reduced by any severance benefits previously provided to Executive under Section 6.3.

6.7 Release and PRIA Requirement. Collectively, the benefits set forth in Section 6.3, 6.4 and 6.5 shall be referred to as the "**Severance Benefits**." The Company's obligation to provide Executive (or Executive's estate) with any Severance Benefits is in each case contingent upon Executive's (or the applicable representative of Executive's estate) execution and non-revocation and delivery to the Company of a full general release of claims in such form as is acceptable to the Company (the "**Release**"), with such Release effective and enforceable no later than the sixtieth day following the applicable date termination of Executive's employment. Such Release will not affect Executive's continuing obligations to the Company under the PRIA or any other agreement. The Company's obligation to pay and Executive's right to receive any Severance Benefits shall cease in the event of Executive's breach of any of his or her obligations under this Agreement or the PRIA.

6.8 Application of Section 409A.

(a) Notwithstanding anything set forth in this Agreement to the contrary, no amount payable pursuant to this Agreement which constitutes a "deferral of compensation" within the meaning of the Treasury Regulations issued pursuant to

Section 409A (the “**Section 409A Regulations**”) of the Internal Revenue Code of 1986, as amended (the “**Code**”), and which is payable upon termination of employment, shall be paid unless and until Executive has incurred a “separation from service” within the meaning of the Section 409A Regulations. Furthermore, to the extent that Executive is a “specified Executive” within the meaning of the Section 409A Regulations as of the date of Executive’s separation from service, no amount that constitutes a deferral of compensation which is payable on account of Executive’s separation from service shall be paid to Executive before the date (the “**Delayed Payment Date**”) which is the first day of the seventh month after the date of Executive’s separation from service or, if earlier, the date of Executive’s death following such separation from service. All such deferred compensation amounts that would, but for this Section, become payable prior to the Delayed Payment Date will be accumulated and paid on the Delayed Payment Date.

(b) To the extent any payments or benefits provided under the Agreement constitute a “deferral of compensation” within the meaning of the Section 409A of the Code (“**Section 409A**”) and the Executive’s termination of employment occurs at a time during the calendar year when the Release could become effective in the calendar year following the calendar year in which the Executive’s separation from service occurs, then regardless of when the Release is returned to the Company and becomes effective, the Release will not be deemed effective any earlier than its latest permitted effective date for purposes of determining the timing of payment of any severance benefits under this Agreement.

(c) The Company intends that any benefits provided to Executive pursuant to this Agreement will be exempt from or compliant with the requirements of Section 409A of the Code, and therefore not be subject to taxation under Section 409A. The provisions of this Agreement shall be interpreted and construed in favor of satisfying any applicable requirements of Section 409A of the Code. **However, the Company does not guarantee any particular tax treatment for income provided to Executive pursuant to this Agreement.** In any event, except for the Company’s responsibility to withhold applicable income and employment taxes from compensation paid or provided to Executive, the Company shall not be responsible for the payment of any applicable taxes on compensation paid or provided to Executive pursuant to this Agreement.

(d) Notwithstanding anything herein to the contrary, the reimbursement of expenses or in-kind benefits provided pursuant to this Agreement shall be subject to the following conditions: (1) the expenses eligible for reimbursement or in-kind benefits in one taxable year shall not affect the expenses eligible for reimbursement or in-kind benefits in any other taxable year; (2) the reimbursement of eligible expenses or in-kind benefits shall be made promptly, subject to the Company’s applicable policies, but in no event later than the end of the year after the year in which such expense was incurred; and (3) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit.

(e) For purposes of Section 409A, the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments.

6.9 Parachute Payments.

(a) If any payment or benefit Executive will or may receive from the Company or otherwise (a “**Payment**”) would (i) constitute a “parachute payment” within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the “**Excise Tax**”), then any such

Payment shall be equal to the Reduced Amount. The “**Reduced Amount**” shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in the Executive’s receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the “**Reduction Method**”) that results in the greatest economic benefit for the Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the “**Pro Rata Reduction Method**”). If the Executive receives a Payment for which the Reduced Amount was determined pursuant to clause (x) above and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, Executive agrees to promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) above) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) above, the Executive shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

(b) Notwithstanding any provisions in this Section above to the contrary, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for the Executive as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (e.g., being terminated without Cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are “deferred compensation” within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

(c) The Company shall appoint a nationally recognized accounting or law firm to make the determinations required by this Section. The Company shall bear all expenses with respect to the determinations by such accounting or law firm required to be made hereunder.

7 Restrictive Covenants.

7.1 Confidentiality and Proprietary Rights. As a condition to continued employment and for good and valuable consideration, including that set forth therein, Executive shall execute and return a signed copy of the PRIA attached hereto as Exhibit A. Any breach (or threatened breach) by the Executive of Executive’s obligations under the PRIA, as determined by the Board in its reasonable discretion, shall constitute a material breach of this Agreement.

7.2 Non-Disparagement. Executive shall not, at any time during the Term or thereafter, make statements or representations, or otherwise communicate, directly or indirectly, in writing, orally, or otherwise, or take any action that will, or that is intended to, directly or indirectly, disparage or otherwise defame the Company or any of its subsidiaries or affiliates or

their respective officers, directors, employees, advisors, businesses or reputations. This includes, but is not limited to, publishing disparaging and/or defamatory comments through online posts or social media, whether published anonymously or directly attributed to Executive. Notwithstanding the foregoing, nothing in this Agreement shall be construed as prohibiting Executive from making truthful statements that are required by applicable law, regulation or legal process, or engaging in concerted activity protected by the National Labor Relations Act.

8 Injunctive Relief; Tolling. Executive acknowledges that Executive's breach of the covenants contained in Section 7 and Exhibit A (collectively "Covenants") would cause irreparable injury to Company, for which the Company has no adequate remedy at law. Executive acknowledges and agrees that, in the event of any such breach, the Company will suffer irreparable damage for which monetary damages are insufficient such that, in addition to any other remedies it may have, the Company shall be entitled to injunctive relief without the necessity of proving actual damages and that, should the court deem it necessary for the Company to post a bond or deposit other security in order to obtain such injunctive relief, an amount of One-Thousand (\$1,000.00) shall be adequate and sufficient.

9 No Violation of Rights of Third Parties. During Executive's employment with Company, Executive will not (a) breach any agreement to keep in confidence any confidential or proprietary information, knowledge or data acquired by Executive prior to Executive's employment with Company or (b) disclose to Company, or use or induce Company to use, any confidential or proprietary information or material belonging to any previous employer or any other third party. Executive is not currently a party, and will not become a party, to any other agreement that is in conflict, or will prevent Executive from complying, with this Agreement.

10 General Provisions.

10.1 Successors and Assigns. The rights and obligations of Company under this Agreement shall inure to the benefit of and shall be binding upon the successors and assigns of Company without the consent of Executive. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such affiliate or successor person or entity. Executive shall not be entitled to assign this Agreement or any of Executive's rights or obligations hereunder. Any purported assignment or delegation by the Executive in violation of the foregoing shall be null and void *ab initio* and of no force and effect.

10.2 No Waiver. Either Party's failure to strictly enforce any provision of this Agreement shall not in any way be construed as a waiver of any such provision, or prevent that Party thereafter from enforcing each and every other provision of this Agreement.

10.3 Taxes and Withholding. All compensation paid or provided under this Agreement to the Executive will be paid or provided less applicable tax withholdings and any other withholdings required by law or authorized by the Executive.

10.4 Severability. In the event any provision of this Agreement is found to be unenforceable by a court of competent jurisdiction, such provision shall be deemed modified to the extent necessary to allow enforceability of the provision as so limited, it being intended that the Parties shall receive the benefit contemplated herein to the fullest extent permitted by law. If a deemed modification is not satisfactory in the judgment of such court, the unenforceable provision shall be deemed deleted, and the validity and enforceability of the remaining provisions shall not be affected thereby.

10.5 Interpretation; Construction. The headings set forth in this Agreement are for convenience only and shall not be used in interpreting this Agreement. This Agreement has been drafted by legal counsel representing Company, but Executive has participated in the

negotiation of its terms. Furthermore, Executive acknowledges that Executive has had an opportunity to review and revise the Agreement and have it reviewed by legal counsel, if desired, and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting Party shall not be employed in the interpretation of this Agreement.

10.6 Governing Law; Venue; Fees. This Agreement will be governed by and construed in accordance with the laws of the State of Texas, without regard to conflict of law principles. Each Party consents to the jurisdiction and venue of the state and federal courts of Travis County, Texas, for the purposes of any action, suit, or proceeding arising out of or relating to this Agreement. The prevailing Party in any dispute shall be entitled to recover from the other Party reasonable attorneys' fees, costs and expenses incurred by the prevailing Party.

10.7 Notices. Any notice required or permitted by this Agreement shall be in writing and shall be delivered as follows with notice deemed given as indicated: (a) by personal delivery when delivered personally; (b) by overnight courier upon written verification of receipt; (c) by telecopy, facsimile, or e-mail transmission upon acknowledgment of receipt of electronic transmission; or (d) by certified or registered mail, return receipt requested, upon verification of receipt. Notice shall be sent to the addresses set forth below, or such other address as either Party may specify in writing.

10.8 Third Party Beneficiary. The Parties agree that Q2 Holdings, Inc. ("Q2H") shall be a third-party beneficiary to this Agreement, but Q2H shall have no duties or obligations under this Agreement.

10.9 Survival. Sections 7 ("Restrictive Covenants"), 8 ("Injunctive Relief; Tolling"), 9 ("No Violation of Rights of Third Parties"), and 10 ("General Provisions") of this Agreement shall survive Executive's employment by Company.

10.10 Entire Agreement. This Agreement, the PRIA, and the agreements specifically incorporated herein constitute the entire among the Parties relating to this subject matter and supersedes all prior or simultaneous representations, discussions, negotiations, and agreements, whether written or oral, including but not limited to the Prior Agreement. between the Company and Executive. This Agreement may not be amended, modified, or waived in any manner, except with the written consent of Executive and Company. No oral waiver, amendment or modification will be effective under any circumstances whatsoever and any such oral waiver, amendment or modification will be null and void.

10.11 Counterparts. This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

[Signature page follows.]

THE PARTIES TO THIS AGREEMENT HAVE READ THE FOREGOING AGREEMENT AND FULLY UNDERSTAND EACH AND EVERY PROVISION CONTAINED HEREIN. WHEREFORE, THE PARTIES HAVE EXECUTED THIS AGREEMENT ON THE DATES SHOWN BELOW.

Dated: 9/23/2021

/s/ Jonathan A. Price

Jonathan A. Price

Q2 Software, Inc.

Dated: 9/23/2021

/s/ Kimberly A. Rutledge

Kimberly A. Rutledge

Title: EVP, People

List of Subsidiaries of the Registrant

Wholly-Owned Subsidiaries of the Registrant:

<u>Name of Subsidiary</u>	<u>Jurisdiction of Organization</u>
Q2 Software, Inc.	Delaware

Indirect Subsidiaries of the Registrant:

<u>Name of Subsidiary</u>	<u>Jurisdiction of Organization</u>	<u>Ownership</u>
Clickswitch Holdings, Inc.	Delaware	100% by Q2 Software, Inc.
Cloud Lending U.K. Ltd.	United Kingdom	100% by Q2 Software, Inc.
Cloud Lending Australia Pty. Ltd.	Australia	100% by Q2 Software, Inc.
MFIFLEX Tech. Pvt. Ltd.	India	100% by Q2 Software, Inc.
Lender Performance Group, LLC	Delaware	100% by Q2 Software, Inc.
LPG - International, LLC	Delaware	100% by Lender Performance Group, LLC
LPG - AU Services Pty Ltd	Australia	100% by LPG - International, LLC
LPG - UK Services Pty Ltd	United Kingdom	100% by LPG - International, LLC
Sensibill USA Inc.	Delaware	100% by Q2 Software, Inc.
Sensibill Inc.	Canada	100% by Q2 Software, Inc.
Sensibill Europe Ltd	United Kingdom	100% by Q2 Software, Inc.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

- 1) Registration Statement (Form S-3 No. 333-206869) of Q2 Holdings, Inc.;
- 2) Registration Statement (Form S-3 No. 333-231947) of Q2 Holdings, Inc.;
- 3) Registration Statement (Form S-8 No. 333-195981) pertaining to the 2007 Stock Plan, 2014 Employee Stock Purchase Plan, and 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 4) Registration Statement (Form S-8 No. 333-202062) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 5) Registration Statement (Form S-8 No. 333-209522) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 6) Registration Statement (Form S-8 No. 333-216156) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 7) Registration Statement (Form S-8 No. 333-223087) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 8) Registration Statement (Form S-8 No. 333-229733) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 9) Registration Statement (Form S-8 No. 333-236569) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.;
- 10) Registration Statement (Form S-8 No. 333-253305) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.; and
- 11) Registration Statement (Form S-8 No. 333-262789) pertaining to the 2014 Equity Incentive Plan of Q2 Holdings, Inc.

of our reports dated February 21, 2023, with respect to the consolidated financial statements of Q2 Holdings, Inc. and the effectiveness of internal control over financial reporting of Q2 Holdings, Inc. included in this Annual Report (Form 10-K) of Q2 Holdings, Inc. for the year ended December 31, 2022.

/s/ Ernst & Young LLP

Austin, Texas
February 21, 2023

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO
SECTION 302(a) OF THE SARBANES-OXLEY ACT OF 2002**

I, Matthew P. Flake, certify that:

1. I have reviewed this Annual Report on Form 10-K of Q2 Holdings, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2023

/s/ MATTHEW P. FLAKE

Matthew P. Flake
Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO
SECTION 302(a) OF THE SARBANES-OXLEY ACT OF 2002**

I, David J. Mehok, certify that:

1. I have reviewed this Annual Report on Form 10-K of Q2 Holdings, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2023

/s/ DAVID J. MEHOK

David J. Mehok
Chief Financial Officer
(Principal Financial and Accounting Officer)

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

The undersigned, the Chief Executive Officer of Q2 Holdings, Inc. (the “Company”), does hereby certify under the standards set forth and solely for the purposes of 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2022 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 21, 2023

/s/ MATTHEW P. FLAKE

Matthew P. Flake
Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

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

The undersigned, the Chief Financial Officer of Q2 Holdings, Inc. (the “Company”), does hereby certify under the standards set forth and solely for the purposes of 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2022 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 21, 2023

/s/ DAVID J. MEHOK

David J. Mehok

Chief Financial Officer

(Principal Financial and Accounting Officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.